

# Acquisition Tax Reduction for the Vitalization of Housing Transactions and Its Effect on Local Tax Revenues

December 2013 | Younghoon Ro

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# I

## Introduction

On February 6, 2013 during a provisional session of the National Assembly of the Republic of Korea, the Public Administration and Security Committee passed a bill that temporarily extended the period of a prior reduction in the real estate acquisition tax until June 2013, a measure which had expired at the end of 2012. Although a revision to ‘the Restriction of Special Local Taxation Act’ stipulating the extension of this tax exemption by an additional year until the end of 2013, as well as retroactive application of the law to January 1, 2013, was initially proposed, concerns over a shortfall in local tax revenues as a result of the acquisition tax cut led to the adoption of an amendment that reduced the exemption period to six months. Consequently, the former concessional acquisition tax rate was not applied to housing transactions taking place after July 2013. However, on August 28, 2013 a real estate policy was announced by the Korean central government that included a permanent tax cut on housing acquisition and a measure to compensate for any corresponding loss of local revenues. On September 26, the government detailed this policy by presenting a basic action plan in a press release titled “Measures to Adjust Functions and Tax Revenues for Improvement of Local Tax Revenues.”

As a result, a revision of the Local Tax Act was presented on October 30 and passed in a National Assembly plenary session on December 10 introducing three stages of acquisition tax rate cuts on houses; subsequently imposing a rate of one percent on houses valued at 600 million won or less; two percent on houses valued at 600-900 million won; and three percent on houses valued at more than 900 million won. The previous acquisition tax rates were two percent

for houses valued at 900 million won or less and 4 percent for houses worth more than 900 million won or for owners of multiple houses. Thanks to this modification, therefore, the acquisition tax rate fell from 2 percent to 1 percent on homes worth 900 million won or less; from 4 percent to 2 percent on homes valued at 900 million to 1.2 billion won; and from 4 percent to three percent on homes worth more than 1.2 billion won, together with the abolishment of the differential tax rate for owners of multiple houses. The revised act was applied retroactive to August 28, 2013, when the real estate policy was announced. As a result of the measures released on August 28 cutting the acquisition tax rates on houses, the loss in tax revenues from acquisition tax and local education tax was estimated to be 2.4 trillion won annually. In order for the central government to fully compensate for this loss of local tax revenue, the proportion provided to local governments from the national value added tax as a local consumption tax was raised by 6 percentage points from 5 percent to 11 percent in accordance with a revision to the Value-Added Tax Act.

Eventually, the acquisition tax rate came to be permanently lowered, a departure from the temporary nature of the reduction for acquisition tax on houses implemented for the nine months from March to December 2011, three months from September to December 2012, and six months between January and June 2013. In addition, the issue of compensating losses in local tax revenue—the reason why the acquisition tax reduction policy had been implemented only temporarily in the past—came to be resolved through an adjustment in functions and tax revenues between the central and local governments in terms of welfare burdens, including care for infants and young children, along with increasing the local consumption tax rate.

Tax burden relief for housing transactions by value goes back even further to 2005 during the Roh Moo-hyun Government, which adopted policies to relax real estate transaction taxes while raising the real estate holding tax. The statutory transaction tax rate, a combination of the acquisition tax and registration tax, had remained at 5.8 percent for a considerable time, but was reduced after 2005 for existing housing transactions between individuals for value. In the second half of 2006, the transaction tax rate plunged to 2.3 percent, less than half of the previous rate. In the meantime, the tax base for these tax items was determined by reported value in accordance with the principle of “value as at

the time of acquisition (or registration)” as stated in a provision of the Local Tax Act. On the premise of faithful reporting, an actual transaction price could serve as the tax base, but the Act includes a provisory clause that allows self-assessment on tax returns and payments as long as the reported value is more than “the statutory standard price of fair market value.” As a result, until 2003 the tax base for acquisition and registration taxes was significantly low, for example 40-50 percent of the actual transaction prices for land and 20-60 percent for houses. In Ro Younghoon (2003), which examined the burden on appropriate acquisition tax and registration tax rates, in the case of imposing taxes on actual transaction prices, the imposition of taxes based on such prices has the effect of expanding the tax base 2.24-2.52 times.<sup>1)</sup> Therefore, Ro’s paper argues that even lowering statutory tax rates by half is ineffective for reducing the actual tax burden, since imposing taxes on an actual transaction price brings about the effect of expanding the tax base. As the term in the related provision of the Local Tax Act was amended from “statutory standard price of fair market value” to “officially assessed house price and actual transaction price,” the Ministry of Land, Transport and Maritime Affairs (present-day Ministry of Land, Infrastructure and Transport) came to exert greater influence than did local tax authorities in the course of determining the tax base for acquisition and registration taxes which pertain to local taxes, thus generating an increase in the tax base. While discussing the reduction of transaction tax rates at the time, various opinions were presented, for example the assertion that even though transaction costs are high in advanced countries, transaction-related tax rates are low and that considering brokerage and other fees, it would be fair to state that other countries also shoulder a considerable burden of transaction costs. In addition, studies on international comparisons of real estate transaction costs have been conducted.<sup>2)</sup> It is interesting to note that policy authorities at the time did not pay great attention to three items: the effect on transaction volumes

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1) See <Table 12> and <Table 13> on pages 74–75 in Ro Younghoon (2003). After eight years had passed, it was reported that the ratio of officially assessed prices of land, apartment, and detached houses (as released by the Ministry of Land, Transport and Maritime Affairs) to the actual market price of each item was 57.1 percent, 72.7 percent, and 58.8 percent, respectively.

2) Kim Junghun (2005), Kim Hyun-A (2010).

of changes in burden incurred at the time of transaction as upfront costs including transaction tax or transaction fees in the housing market; economic inefficiency causing a burden that exceeds transaction tax revenue; and the welfare effect of lowering the transaction tax burden. They instead regarded the tax cut purely as a secondary policy tool to alleviate taxpayer resistance to the main policy goal, namely to restraining demand for real estate through an increase in the holding tax rate.

In late 2008, the Korean housing market began to sharply contract in the wake of the global financial crisis as a dip in house prices led to insolvency in private sector mortgage loans and a growing number of foreclosed properties were put up for sale while loan conditions and appraisals became stricter during the mortgage loan application process. In particular, the country's unique pre-sale housing system invoked special problems. Two or three years prior to the completion of a construction project, people in South Korea engage in an apartment contract on a pre-sale apartment unit with 5-10 percent of the pre-sale price offered as a deposit. They are likely to take out a collective loan on the related apartments<sup>3)</sup> in order to make an intermediate payment. With the market value of pre-sale apartments falling below the pre-sale prices determined at the time of approval for use (or completion) of the property, those who engaged in pre-sale contracts refused to move into the new apartments or filed a lawsuit against the construction company. As diverse phenomena deriving from the fall of housing prices and decline in house transaction volumes indicated the advent of a housing market downturn, the matter became an area of intense focus; whether the burden of house acquisition tax as one of main components of transaction costs had been relatively eased compared to holding tax.

As a departure point for discussion on the relation between housing market

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3) An apartment collective loan is taken out by contractees of pre-sale apartments using as security an apartment that will be constructed in the future, and thus contractees do not gain full ownership of the real estate in question but rather the right to purchase the apartment. As opposed to a mortgage loan against existing housing, such a loan against a pre-sale house requires lending institutions to predict the future value of the mortgaged home at the time of moving in and assess the creditworthiness of an individual contractee. However, lending institutions are prone to make errors when providing a loan against a home whose price was assessed based on its market value two or three years before the completion of construction.

transaction volume and the decline in housing transaction tax revenues, this study takes two news articles released in 2012 offering opposing points of view on housing policy. The first article “Acquisition Tax Exemption Leads to 2.8% Rise in Monthly Housing Transaction Volume”<sup>4)</sup> was printed on August 13, 2012 and was based on a report titled “Study on Prediction of Housing Market Change and Analysis of Tax Policy Effect” conducted by the real estate research team at Woori Bank. The other article, “Acquisition Tax Exemption Undermining Seoul Tax Revenue,” was a summary of the policy report “Plan for Local Taxation Reform Following Acquisition Tax Cut”<sup>5)</sup> prepared by the Seoul Institute. The former article argued that the acquisition tax cut was quite effective when specifically quantifying the effect of the transaction tax burden, including the acquisition tax, on transaction volumes in the housing market. However, the latter insisted that the reduction in the transaction tax had no effect on vitalizing real estate transactions.

There was a controversy regarding the tax cut, of course, after the government announced a plan on March 22, 2011 to reduce the acquisition tax by 50 percent as a stimulus for housing transactions. When the government launched a task force to investigate the need to compensate for any overall loss in local government tax revenue resulting from a reduction of the housing acquisition tax, there were conflicting opinions regarding the scale of compensation from the central government. Local governments and the Ministry of Public Administration and Security claimed the total decrease in acquisition tax should be considered as a loss of tax revenue caused by the tax cut since the housing market is extremely inelastic to housing transaction tax deductions. However, related ministries on the side of partial compensation, including the Ministry of Land, Transport and Maritime Affairs, stated that the tax deduction policy aiming at promoting transactions would in fact increase the transaction volume to a certain degree, thus indicating that only partial compensation for the loss of local tax revenues was warranted given the potential for an increase in

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4) The real estate research team at Woori Bank asserted that the temporary tax exemption in 2011 had an effect of an increase in transaction volume by 2.8 percent per month, which corresponds to a 25 percent overall increase given the nine-month period of the tax exemption (report by Seoul Finance).

5) Kim Jin, Bae Jun-Sik, the Seoul Institute (the former Seoul Development Institute) (report by *Segye Ilbo*).

transaction volumes caused by transaction tax credits.

On September 10, 2012, in the final year of its tenure, the Lee Myung-bak government announced a comprehensive plan consisting of measures to boost domestic demand and real estate transactions: as for the former, an individual consumption tax credit and adjustment of income tax withholding were proposed, while for the latter, a 50 percent cut in the acquisition tax and tax reduction from capital gains for five years after the purchase of unsold new apartments were suggested. In addition, a policy of extending the period of the housing acquisition tax credit for a further six months — implemented in February 2013 immediately before the inauguration of the Park Geun-hye Government — and a measure for exempting transfer tax for five years contained in the real estate measures announced on April 1 of that year are essentially equal in a broad sense, given their basic approach to revitalizing transactions by means of a reduction in the burden of transfer and acquisition taxes that occur over the course of a transaction.

In order to measure transaction volumes in an objective manner, this study first reviews the issues apparent in domestic data regarding the volume of housing transactions in the South Korean market. To begin, Chapter II performs a close examination of transaction statistics related to the Korean housing market. Transaction volume generally refers to the number of changes in ownership of existing homes in the housing market. When buildings are newly constructed and provided for residence, however, this can be also considered a transaction as a result of original acquisition. In this case, registration of ownership preservation under the name of the constructor first takes place, and then a subsequent registration of ownership transfer is followed. Therefore, it is important to determine whether transactions in purchase rights — generated over the course of the demolition of existing housing, their reconstruction or redevelopment, and then the supply of new housing — together with existing housing sales, are counted in transaction volume. This study deals with this matter as a critical issue. In order to examine the impact of a temporary reduction of housing acquisition tax on the transaction volume over a certain period, it first compares the housing transaction statistics collected and released by the Ministry of Land, Infrastructure and Transport (MOLIT) with micro data collected by the Korea Land and Housing Corporation through the housing and

real estate transaction reporting system. This study focuses extra attention on three factors in order to conduct a more accurate, empirical analysis on the impact of a housing acquisition tax exemption aimed at stimulating housing transactions: First, whether only the effect of the tax cut is being estimated among other measures in a comprehensive plan; second, the announcement effect resulting from the time discrepancy between the announcement of an acquisition tax cut and its eventual enforcement; and third, the effect of any time notch or price notch. A time notch effect takes place due to the behavioral response of hastening or postponing taxable transactions that would otherwise be concluded during the period between the announcement of a tax cut and its enforcement in order to avoid a higher tax, while a price notch effect results from the application of differential tax rates to housing acquisition by reported price range. In addition, this chapter addresses whether the frequent use of reductions in acquisition tax, a source of local government tax revenue, does in fact have actual effectiveness in stimulating transactions, along with compensation issues for the loss of tax revenue.

Chapter III presents an international comparison of housing acquisition taxes, which have been pointed to as one of major factors influencing the volume of housing sector transactions. It first divides countries into unitary states and federal states in order to identify if there are particular stylized facts in the proportion of property transaction taxes between central and local governments. After introducing features of housing transaction taxes in major cities around the world and comparing the effective burdens of such taxes in each city, it draws the related implications and their significance. Lastly, in Chapter IV, the conclusion and policy implications are presented.

First of all, this paper reviews the existing literature on this topic. Taxes levied on sales of real estate, including houses, can be observed in a variety of types and forms in a number of countries. Existing research has mainly focused on the impact of local property taxes, categorized as a holding tax on the housing market. While little economic literature regarding the taxation of transactions in houses has been generated overall, an increasing number of papers on this subject have recently been published.

Slemrod *et al.* (2012) estimated the lock-in effect of residential real estate transfer tax, a measure that was conducted in Washington D.C. Since 2003,

the transfer tax rate increased from 2.2 percent to 3 percent of sales prices, but only for houses with a reported transaction price of 250,000 US dollars or more. In Washington D.C. a home buyer and seller bear two separate transfer taxes — a deed recordation tax and a deed transfer tax, respectively — of equal magnitude, which means one party assumes one half of the 3 percent above-mentioned transfer tax rate. Using both a time notch of January 1, 2003 and a price notch of a reported price of 250,000 US dollars for identifying variations, the authors studied the medium-term lock-in effect triggered by the tax rate change. It was found that there was substantial manipulation of sales prices around the price notch, but there was little manipulation around the time notch. The paper indicated that ignoring this behavioral pattern of manipulation would lead to substantially overstating the lock-in effect. Since using an instrumental variable in regression analysis is not a satisfactory econometric solution, it suggested an alternative manner of addressing the sampling process from selection to treatment. Consequently, it estimated that every one-percent increase in the transfer tax rate decreases the (annual) transaction volume by 0.20 percent (an elasticity of 0.2).

Christian A. L. Hilber and Teemu Lyytikäinen (2012) confirmed the negative effect on owner-occupier mobility as the UK stamp duty land tax rate increase by 2 percentage points from 1 to 3 percent on a baseline of a reported price of 250,000 pounds. More specifically, there was 2 percentage point gap in the stamp duty land tax rate between the 1 percent tax on houses with a reported value of less than 250,000 pounds and the 2 percent tax on houses valued between 250,000 and 500,000 pounds, which in turn reduced the annual rate of mobility by 2-3 percentage points. The effect of a housing-related transaction tax on household mobility cannot be said to correspond precisely with that on owner-occupiers' housing sales. For owner-occupiers, a housing sale transaction simply indicates a move to another residence, but for housing investors, a housing transaction is one thing and a move is another. Owner-occupiers can avoid the effect of a housing transaction tax such as a stamp tax by renting out their previous dwelling rather than selling it when moving to a new unit. In such cases, the stamp duty leads to a distortion in a household's investment portfolio, but may affect mobility to a lesser extent.

Dachis *et al.* (2012) estimated the impact of real estate transfer taxes on

the market for single family homes by exploiting the imposition of the Land Transfer Tax introduced in early 2008 in Toronto, Canada. Analysis results show that Toronto's 1.1 percent tax caused a 15 percent decline in the number of sales and a fall in housing prices roughly equal to the tax. Relative to an equivalent property (holding) tax, the associated welfare loss is substantial, about one Canadian dollar per every eight Canadian dollars in tax revenues. Considering this significant welfare loss, the study concluded that it is more desirable to conduct a neutral tax reform by abolishing the land transfer tax and compensating for losses in tax revenue with ordinary property taxes.

## II

# Decrease in Housing Transaction Volume and Changes in Housing Acquisition Tax Burden and Tax Revenue

## 1 Characteristics of Transaction Statistics in the South Korean Housing Market

### A. Statistics on Volume of South Korean Housing Transactions: Separating existing house transactions from those of newly built houses

There are two major sources of data on transaction volume in the South Korean housing market, as seen in the <Table 1> in appendix: building transaction statistics from the Onnara Real Estate Information Portal of the Ministry of Land, Transport and Maritime Affairs (MOLTMA) and data from actual apartment transaction reports. The former gathers records for seven categories of transactions: sale, court decision, exchange, gift, trust/cancellation, purchase right and other, but since 2013 transactions due to trust/cancellation have been excluded. The latter data has been accessible since the introduction of the housing and real estate transaction reporting system in 2006, and excludes outliers such as inappropriate and uncompleted cases, along with deed transfers such as purchase rights and residency rights, from among the transactions in exchange for value. Such data adjustment aims to improve accuracy in calculating transaction price indices.<sup>6)</sup> Among the housing transaction statistics divided into

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6) As compared with the number of sale transactions released by the MOLTMA (Onnara Portal), the number

the transaction types of sale, court decision, exchange, gift, purchase right and other (based on buildings) on the MOLTMA's portal site, transactions which fall under the categories of sale and exchange that are made between individuals appear to be the most reasonable indicator for determining the actual volume of housing transaction for value.

There is no issue resulting from excluding gift transactions from the statistics of building transactions, but omission of transfers due to court auction and public sale may yield a serious flaw; in a housing slump, real estate is often put up for court auction or public sale, which accompanies market price adjustments in general. The number of housing-related court auctions stood at 13,446 in Seoul; 10,411 in Incheon; and 26,118 in Gyeonggi Province over the twelve months from September 2011 to August 2012. The number of deals resulting from the auctions above totaled 4,234 in Seoul, 3,663 in Incheon and 8,085 in Gyeonggi Province, with selling rates (or the rate of successful bids) of 31.5 percent, 35.2 percent, and 31 percent, respectively. Thus, it appears reasonable to add at minimum 5-10 percent to the apartment transaction volume in Seoul and the Seoul Metropolitan Area in order to more accurately estimate transactions in existing apartment ownership by including distressed sales through court auction and public sale. For reference, the National Association of Realtors in the U.S. releases its annual rate of existing home sales every month, an adjusted annual rate per month, in which distressed sales<sup>7)</sup> such as foreclosure and even short sales approved by banks are included. Therefore, South Korea should incorporate such distressed sales when estimating transaction volumes by receiving court auction data from the Office of Court Administration of the Supreme Court.

South Korea maintains a unique housing pre-sale system which is broadly adopted for the supply of multi-family homes, including apartment units. Particular attention should be focused on this system, especially when defining the range of houses and period unit for estimation of transaction volumes. A contract for trading the residency right (of association members) or purchase

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of apartment sales used to estimate actual prices of apartment transactions shows a difference in degree of variation by region, but it accounts for a mere 77–86 percent of its counterpart on average, which indicates its transaction volume is underestimated.

7) In the U.S., distressed sales accounted for 30 to 50 percent of the total annual sales volume of 4.5 to 6.5 million units during the period of 2008 to 2010.

right, which refers to the right to purchase a home built in the future, can be categorized as futures trading in which a house scheduled to be constructed in the future is traded at a price agreed upon on the pre-sale day under the condition of delivery of the house by a specified future date. Thus, such a contract could in a broad sense be counted as a housing transaction. Although the object of such a futures contract is not an actual house but the right to purchase the house, this type of trading can be included among housing transactions when the housing market is defined from a long-term perspective that encompasses housing futures as well as actual structures. In such a transaction, it is important to determine at what point a transaction is deemed to be concluded, since the house exists in the form of a purchase right for two or three years after being presold and then is converted to an actual object upon completion of new construction or reconstruction. Since under the pre-sale system, newly-built houses can be interpreted as having been traded two or three years prior, when the pre-sale contract was signed, and been delivered upon completion, it is reasonable to exclude them from existing home sale transactions. However, they are currently counted in the statistics of transaction volume. In the case of housing reconstruction or residential redevelopment projects, it appears appropriate for homes to be subtracted from the housing stock upon their demolition and then counted as supply upon the completion of reconstruction. However, up to 2012 they were included among the statistics on transaction volume and starting from 2013 they have been classified into trust/cancellation to be excluded.<sup>8)</sup> As a result, it is now possible to distinguish the trading of residency and purchase rights by association members, along with completed (or use-approved) presold homes from existing houses, but unsold new houses are still being counted. A delay in implanting a housing reconstruction or residential redevelopment project slows down the trust registration of the trust and cancellation processes of existing homes to an association, which can be interpreted as a sign of a downtrend in housing transactions.

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8) In the case of apartments involved in a housing reconstruction project, existing apartment is registered as a trust to an association and after a public announcement of transfer upon completion of construction, the trust registration is cancelled and a registration of ownership preservation for newly built apartments is processed. The timing of recording this as sale is important, particularly in the housing market of Seoul and the Seoul Metropolitan Area where these kinds of transactions are frequently concluded.

One feature can be observed when examining changes in the ratio of purchase right to sales in <Tables II-1> and <Tables II-2>, which show annual apartment transactions for the MOLIT's six assigned transaction types. In 2010, with the apartment sales market in a slump, the Seoul Metropolitan Area and Seoul showed 62.1:31.9 and 70.4:21.5, respectively, which indicates high transaction rates for sales against those for purchase right. On the other hand, while in 2006 during the boom in sale transactions the proportion of purchase rights in the Seoul Metropolitan Area and within Seoul city were 14.6 percent and 10.9 percent, respectively, the figures show a decline by almost half by 2010. Given such findings, for a proper understanding of market trends the transactions in purchase rights (newly built houses into which residents are expected to move or residency rights of association members for apartments under construction) are as important as sales of existing houses. Therefore, the related figures should be factored in for the analysis of the volume of housing transactions during the recession.

<Table II-1> **Apartment Transactions by Transaction Type in Seoul Metropolitan Area  
(based on reported data)**

(Unit: No. of buildings (units), %)

	Total	Sale	Court decision	Exchange	Gift	Purchase right	Other
2006	573,280 (100.00)	436,978 (76.22)	1,306 (0.23)	126 (0.02)	11,795 (2.06)	83,739 (14.61)	39,336 (6.86)
2007	353,343 (100.00)	251,069 (71.06)	1,538 (0.44)	116 (0.03)	9,407 (2.66)	72,177 (20.43)	19,036 (5.39)
2008	330,287 (100.00)	236,753 (71.68)	1,311 (0.40)	190 (0.06)	10,486 (3.17)	73,871 (22.37)	7,676 (2.32)
2009	376,601 (100.00)	257,539 (68.39)	1,128 (0.30)	227 (0.06)	19,052 (5.06)	96,282 (25.57)	2,373 (0.63)
2010	283,859 (100.00)	176,408 (62.15)	860 (0.30)	131 (0.05)	12,988 (4.58)	90,439 (31.86)	3,033 (1.07)
2011	333,665 (100.00)	246,846 (73.98)	1,045 (0.31)	134 (0.04)	12,547 (3.76)	70,876 (21.24)	2,217 (0.66)
2012	260,276 (100.00)	173,757 (66.76)	897 (0.34)	138 (0.05)	12,022 (4.62)	72,087 (27.70)	1,375 (0.53)
2013 (Sept.)	229,393 (100.00)	166,206 (72.45)	600 (0.26)	110 (0.05)	7,859 (3.43)	53,171 (23.18)	1,447 (0.63)

Source: Onnara Real Estate Information Portal (<http://www.onnara.go.kr>)

〈Table II-2〉 Apartment Transactions by Transaction Type in Seoul  
(based on reported data)

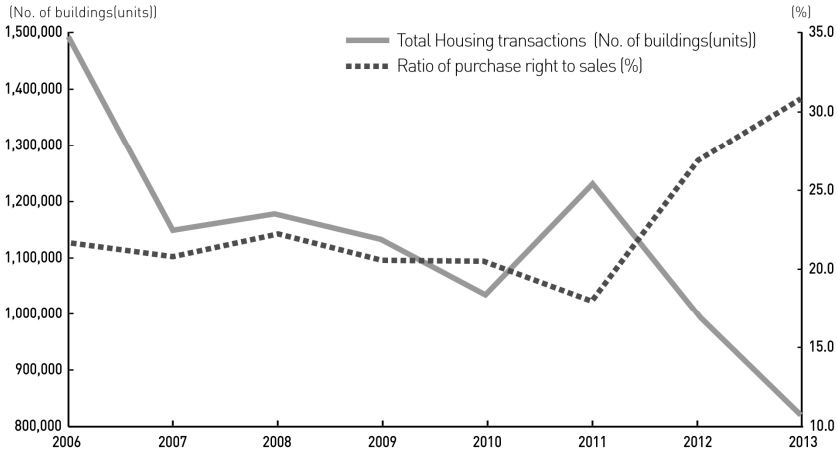
(Unit: No. of buildings (units), %)

	Total	Sale	Court decision	Exchange	Gift	Purchase right	Other
2006	182,299 (100.00)	141,812 (77.79)	673 (0.37)	67 (0.04)	4,840 (2.65)	19,838 (10.88)	15,069 (8.27)
2007	88,448 (100.00)	65,817 (74.41)	816 (0.92)	61 (0.07)	3,321 (3.75)	13,012 (14.71)	5,421 (6.13)
2008	88,171 (100.00)	63,347 (71.85)	579 (0.66)	94 (0.11)	4,296 (4.87)	15,871 (18.00)	3,984 (4.52)
2009	104,452 (100.00)	79,042 (75.67)	362 (0.35)	122 (0.12)	5,648 (5.41)	17,950 (17.18)	1,328 (1.27)
2010	66,301 (100.00)	46,672 (70.39)	397 (0.60)	55 (0.08)	4,227 (6.38)	14,222 (21.45)	728 (1.10)
2011	80,537 (100.00)	63,622 (79.00)	377 (0.47)	65 (0.08)	3,925 (4.87)	11,921 (14.80)	627 (0.78)
2012	60,840 (100.00)	44,771 (73.59)	281 (0.46)	73 (0.12)	3,740 (6.15)	11,581 (19.04)	394 (0.65)
2013 (Sept.)	60,894 (100.00)	44,539 (73.14)	256 (0.42)	56 (0.09)	3,112 (5.11)	12,451 (20.45)	480 (0.79)

Source: Onnara Real Estate Information Portal (<http://www.onnara.go.kr>).

Even when narrowing the scope of analysis to a sale transactions market that measures demand and supply of only transferred homes (sales) among the existing housing stock in a quarterly or annual unit rather than a monthly unit, there is still a market trading in the right to purchase a home in terms of timing to be considered in Korea, and it bears a close interconnection to the movements of the market for new home sales. Therefore, it is desirable to conduct an analysis in connection with these elements. Such a feature is well reflected in Figure II-1, as it shows changes in housing transaction volume and the transaction ratio of sales to purchase rights based on data for the 2006-2013 period as provided by the MOLIT.

**[Figure II-1] Comparison of Housing Transactions and Ratio of Purchase Rights to Housing Sales Based on MOLIT Data**



Note: The figure for 2013 refers to the aggregate value by September of the year.  
Source: Onnara Real Estate Information Portal (<http://www.onnara.go.kr>).

### B. Taxation Data including Housing Acquisition Tax

Every country promulgates laws and regulations that make it compulsory to register or report a change in the legal relationships of rights and duties regarding real estate to an administrative district office or registry office, thus enabling the public records (register) containing such administrative affairs to be documented for the identification of the specific details of real estate transactions. In South Korea, public records include a real estate register at the Court Registry Office, as well as cadaster, land and building ledgers and a real estate transaction report ledger at provincial, city and country offices. As all types of taxes are imposed over the course of transaction according to the details of the transaction being reported, tax authorities pursue a duty to update data and convert the record of transactions into a relevant property tax register which can be managed and maintained as a source for holding tax.

In 2005, the reform of (local) property taxes and the establishment of comprehensive real estate tax under the Roh Moo-hyun government policy to

reinforce taxation on possession of real estate brought about great changes in tax and tax calculation to acquisition and registration taxes which had been classified as transaction taxes at the time. The acquisition tax on a house was levied on residential buildings and attached land separately until 2004, which had been managed through a report of tax return form and taxation ledger. The acquisition tax section of the *Yearbook of Local Tax Administration* is also divided into articles subject to acquisition tax into land, buildings and heavy equipment. Although a house in Korea is generally sold as a set of a building and the appurtenant land, data on acquisition tax contained two different acquisition taxes for land and buildings, which makes it impossible to accurately extract the acquisition tax imposed only on houses. Since 2005, the *Yearbook of Local Tax Administration* has included the number of cases and total amount of acquisition tax on houses nationwide and by metropolitan city in the acquisition tax section, and has also recorded acquisition tax by tax payment method, such as self-assessment and general collection. The reason for this revision has to do with the change of taxation method; assessing a house with land and buildings combined and imposing a tax on the house in a comprehensive manner.

As confirmed in the provision of the Local Tax Law,<sup>9)</sup> the liability for the acquisition tax on houses as one of the local taxes is mainly levied on transactions of existing houses for value or on acquisition of newly-built houses. A form for return of acquisition tax, etc.

At the point at which a permit for building completion or a use approval is issued to a newly-built apartment, or a contractee of pre-sale housing moves in, the obligation to pay the acquisition tax is incurred even before the registration of ownership preservation is completed. According to the *Yearbook of Local Tax Administration*, the number of cases and total amount of housing acquisition

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9) Under Article 6 of the Local Tax Act, the term 'acquisition' refers to original acquisition, acquisition by succession, or all other forms of acquisition with or without compensation, which include acquisitions resulting from sales, exchanges, inheritance, donation, contribution, investment in kind in a corporation, construction, repair, reclamation of public waters, creation, etc. of land through reclamation and any other acquisition similar thereto. It has a broader sense in that it "includes newly-built houses as well as sales, exchange, inheritance, donation or all other acquisition of existing houses with or without compensation," and features a different concept of transfer from that found in the national transfer income tax since the term here does not include "right to purchase a house" among the objects of taxation.

tax stood at 1.28 million and 2.9331 trillion won in 2008, respectively; 1.15 million and 2.9626 trillion won in 2009; and 1.07 million and 2.842 trillion won in 2010. The tax imposition number of over 1 million cases appears to include the number of newly-built houses as well as repaired and renovated houses. Comparing the 1,037,229 nationwide housing transactions of the residential building type all among building transactions as compiled by the Ministry of Land, Transport and Maritime Affairs (MOLTMA), cases of newly-built houses are included as transactions in the Ministry of Land, Infrastructure and Transport (MOLIT), while the Ministry of Public Administration and Security (MOPAS) regards them as acquisitions. Therefore, newly-built houses are included in both records (see <Table II-8>). In addition, the MOPAS tax data regarding housing acquisition tax include cases of extension, repair and remodeling of houses, as well as transactions through gift, and thus it has applied the broadest sense of the concept of transaction. Therefore, in order to estimate the change in transactions driven by the change in the acquisition tax rate applied to housing transactions, existing house sales for value should be extracted from the MOPAS data just as is the MOLTMA data.

## 2 Changes in Housing Transaction Volume and Burden of Housing Acquisition Tax

### A. Estimation of Transaction Volume and its Variability by Period Unit

Many papers stressed the dramatic plunge in housing transactions in 2013 by applying the MOLIT transaction volume statistics. Common mistakes made by many papers in setting a comparison period are examined by this paper. The MOLIT has released statistics on annual transaction volume that contain monthly transaction volumes by region, housing type and transaction type for the January-December period. If an attempt is made to determine whether there is a high or low volume of transactions as of July 2012, there are three possible ways of comparing the data if the monthly transaction volume by the end of July is available: i) comparing the annual total for the period of January through

December in the past years with the total for the period of January through July 2012 and taking into account the difference in period unit; ii) comparing the cumulative total for the period of January through July 2012 with that for the same period in 2011; and iii) comparing the cumulative total for the period of August 2011 through July 2012 (one year) with that in the same period in preceding years. A period of one month is not appropriate as a period unit for comparison of transaction volumes because monthly transaction volume is not only highly variable, as seen in [Figure II-2] and [Figure II-3], but a housing transaction—only limited to one type of sale—generally requires more than three months from the signing of a contract to closing. Therefore, it is desirable to compare quarterly, semiannual or annual transaction data, which are seasonally adjusted.

The number of housing transactions in Seoul stood at 141,596 in 2011, accounting for 43.8 percent, or less than a half, of 323,391 transactions in 2006. Nationally, housing transactions stood at 735,414 for 2012, down by approximately 25 percent from the previous year, marking the lowest figure since the MOLIT began to collect relevant data in 2006. However, when the transaction volume for 2012 is compared with that for 2010 instead of for 2011, when transaction volumes were substantial, the finding would be a mere 8 percent decline (Onnara Real Estate Information Portal). Thus, the slowdown in transaction volume can be interpreted differently depending on what period or region is used as a baseline. As a way to correct such a problem, <Table II-3> is provided, showing the ratio of annual housing transactions according to MOLIT to the overall housing stock as determined by the census. In 2012, only 4.8 percent of houses across the nation were traded, which shows a noticeable decline in the transaction volume or transaction rate in comparison even with 2010 and its sluggish market, let alone with that of 2006 when the market was booming. When narrowing the regional scope from the nation to the Seoul Metropolitan Area and Seoul, the decline in transaction rates becomes more significant, at 3.95 percent and 3.15 percent, respectively.

<Table II-3> Ratios of Housing Sales to the Housing Stock in Various Areas

(Unit: house, No., %)

	Housing Stock			Housing Sales			Ratios of Housing Sales to the Housing Stock		
	Nationwide	Seoul Metropolitan Area	Seoul	Nationwide	Seoul Metropolitan Area	Seoul	Nationwide	Seoul Metropolitan Area	Seoul
2005	13,222,641	5,781,751	2,321,949						
2006	13,513,597	5,938,450	2,362,601	1,082,453	697,676	263,599	8.01	11.75	11.16
2007	13,804,552	6,095,149	2,403,253	867,933	482,533	159,396	6.29	7.92	6.63
2008	14,095,508	6,251,847	2,443,906	893,790	449,867	147,023	6.34	7.20	6.02
2009	14,386,463	6,408,546	2,484,558	870,353	395,278	138,016	6.05	6.17	5.55
2010	14,677,419	6,565,245	2,525,210	799,864	282,503	88,737	5.45	4.30	3.51
2011	14,968,375	6,721,944	2,565,862	981,238	372,814	114,315	6.56	5.55	4.46
2012	15,259,330	6,878,643	2,606,514	735,414	271,955	83,257	4.82	3.95	3.19
First three quarters of 2013	11,662,714	5,276,506	1,985,375	583,449	239,339	74,250	5.00	4.54	3.74

Notes: 1. The total number of houses in 2005 and 2010 refers to the number of detached houses (for both residence and business) from the census, including vacant houses (but excluding deserted houses) and multi-family dwellings.

2. The number of houses in other years is estimated by linear interpolation.

3. The number of apartments in the first half from the 2013 census is used to derive an estimate for the first three quarters.

4. The number of houses includes houses in non-residential buildings.

5. The number of housing sales is based on MOLIT data.

6. The number of housing stock is based on the census.

Source: 2005 and 2010 Population and Housing census.

Onnara Real Estate Information Portal (<http://www.onnara.go.kr>).

As seen in <Table II-4>, the transaction rate for apartments among other housing types fall even further. In Seoul, the rate stood at 3.14 percent in 2010 and 2.84 percent in 2012, which indicates a mere 2-3 percent of the apartment stock was traded. The figures make a upturn in the first half of 2013 compared to those for 2010 or 2012, but the transaction rate against housing stock or turnover ratio in the first half of 2013 is still lower than rates for years prior to 2009.

〈Table II-4〉 Ratios of Apartment Sales to the Apartment Stock in Various Areas  
(Unit: House, No., %)

	Apartments Stock			Apartment Sales			Ratios of Apartment Sales to the Apartment Stock		
	Nationwide	Seoul Metropolitan Area	Seoul	Nationwide	Seoul Metropolitan Area	Seoul	Nationwide	Seoul Metropolitan Area	Seoul
2005	6,962,689	3,363,006	1,258,658						
2006	7,285,354	3,521,117	1,304,100	721,283	436,978	141,812	9.90	12.41	10.87
2007	7,608,019	3,679,228	1,349,542	539,792	251,069	65,817	7.10	6.82	4.88
2008	7,930,683	3,837,339	1,394,985	582,926	236,753	63,347	7.35	6.17	4.54
2009	8,253,348	3,995,450	1,440,427	632,258	257,539	79,042	7.66	6.45	5.49
2010	8,576,013	4,153,561	1,485,869	580,910	176,408	46,672	6.77	4.25	3.14
2011	8,898,678	4,311,672	1,531,311	705,303	246,846	63,622	7.93	5.73	4.15
2012	9,221,343	4,469,783	1,576,753	503,587	173,757	44,771	5.46	3.89	2.84
Third quarter of 2013	7,158,006	3,470,921	1,216,647	408,733	166,206	44,539	5.71	4.79	3.66

- Notes: 1. The number of apartments in 2005 and 2010 refers to the number of apartments from the census including vacant houses (but excluding deserted houses).  
 2. The number of apartments in other years is estimated by linear interpolation.  
 3. The number of apartments in the first half from 2013 census is used to derive an estimate for the three quarters.  
 4. The number of apartments sales is based on MOLIT data.  
 5. The number of apartment stock is based on the census.

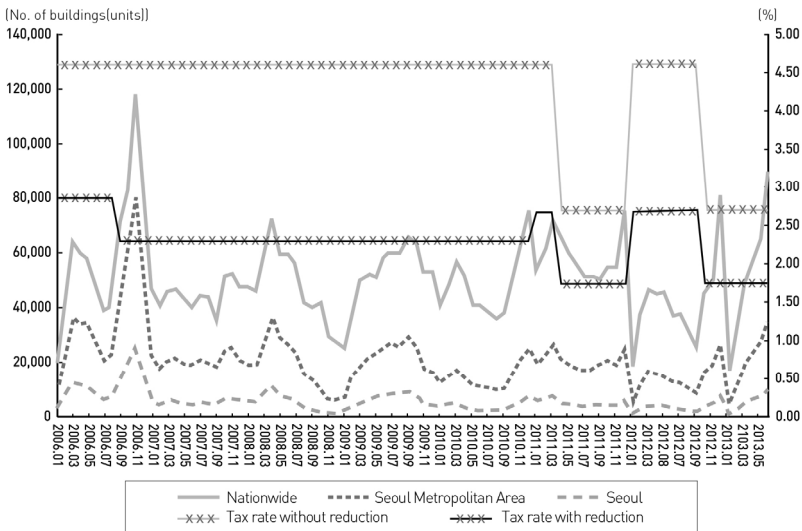
Source: 2005 and 2010 Population and Housing Census.  
 Onnara Real Estate Information Portal (<http://www.onnara.go.kr>).

There is a method of alleviating the problem with the absolute value of the MOLIT's number of transaction reports; calculating the average of transaction volumes excluding the highest and lowest values. By excluding the highest and lowest values among annual totals on reported transactions collected in the same manner since 2006, transactions for the five years from 2007 to 2011 can be added up and then divided by five. The calculation result, 882,635, is set as the annual reference sales volume.

By comparing the 2012 transaction volume, or roughly 500,000, with the annual reference sales volume, it can be judged that the transaction volume dramatically plunged in 2012 to a much lower level than that for any other year, and even fell short of the value for 2010 when the housing market was

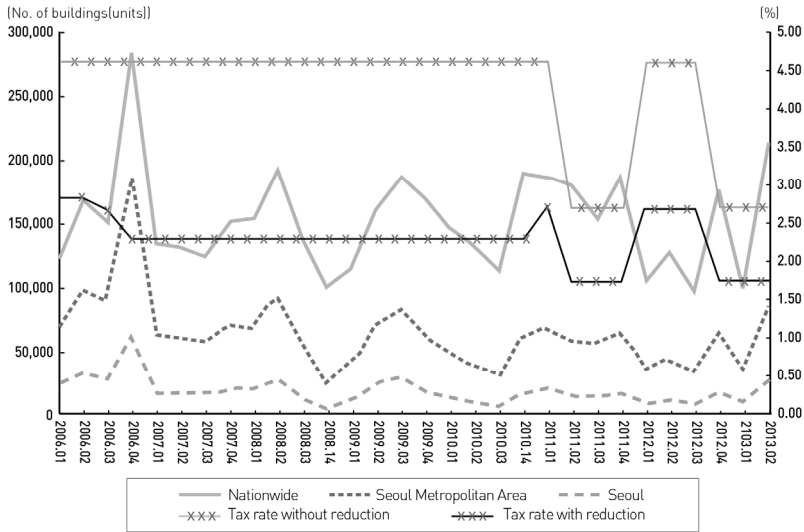
in the doldrums. Regionally, the downturn in sale transactions is most remarkable in the Seoul Metropolitan Area and Seoul itself, as well as among apartments as a housing type. The Seoul Metropolitan Area and Seoul accounted for 60.6 percent and 19.7 percent of total apartment transactions in 2006, respectively, sharply declining to 33.9 percent and 8.6 percent in 2012. Taking a closer look at [Figure II-3], which illustrates apartment sales by quarter, the transaction volume in the first quarter of 2012 was close to its lowest in the fourth quarter of 2008 when the global financial crisis swept markets, as well as the figure for the third quarter of 2010, regardless of regional divisions including nationwide, the Seoul Metropolitan Area and Seoul. The transaction volume showed the same trend in early 2013 and then improved due to the real estate measures announced on April 1 of that year.

[Figure II-2] Apartment Sales and Housing Acquisition Tax Rates (monthly)



Note: 1. Acquisition tax rates include the special rural development tax and education tax.  
2. The figure is based on the number of apartment sales.  
Source: Onnara Real Estate Information Portal (<http://www.onnara.go.kr>).

[Figure II-3] Apartment Sales and Housing Acquisition Tax Rates (quarterly)



Note: 1. The acquisition tax rate include the special rural development tax and education tax, and is quarterly average.  
2. The figure is based on the number of apartment sales.  
Source: Onnara Real Estate Information Portal (<http://www.onnara.go.kr>).

**B. Effect of Housing Transaction Tax Policy on Transaction Volume: Price and Time Notches**

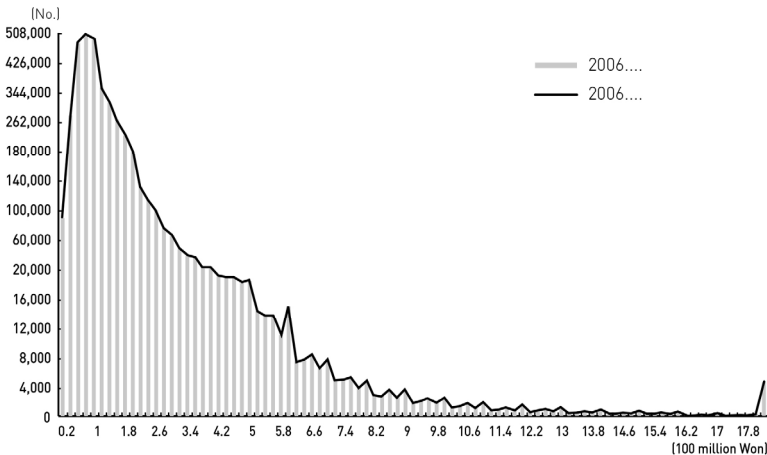
[Figure II-4] depicts the distribution of transaction prices as reported under the real estate transaction reporting system over the five years from 2006 to 2010, a period when the tax burden on housing transactions, including acquisition tax and registration tax, remained relatively stable.<sup>10)</sup> This graph is obtained by drawing a line between the endpoints on a column after creating a bar chart with price bands of 20 million won. The line makes a smooth curve through

10) [Figure II-4] through [Figure II-6] depict the distribution of transactions by price band by dividing the 6,642,871 reported cases into respective periods, the data for which has been collected over the years between 2006, when the real estate transaction reporting system introduced, and the end of 2012.

the price bands of 500 million won or less, even with a price interval of 20 million won, but in the price ranges over 500 million won, the transaction volume fluctuates, demonstrating a wave-like pattern.

As reported housing prices become higher, a higher frequency of transactions is observed to be reported at prices with intervals of 50 million won. For example, commonly submitted figures include 750 million won, 800 million won, 850 million won, 900 million won and 950 million won. As often identified in survey or report materials, survey respondents and applicants for tax reports tend to round down the actual price to the nearest 50 million won. The fact that the number of transactions surged at price bands of 640-660 million won and 680-700 million won can be interpreted as an effect resulting from the approximate value by taking such behavior into account.

**[Figure II-4] Distribution of Transactions by Reported Price Band between 2006 and 2010 (based on reported data)**



Source: MOLIT internal data.

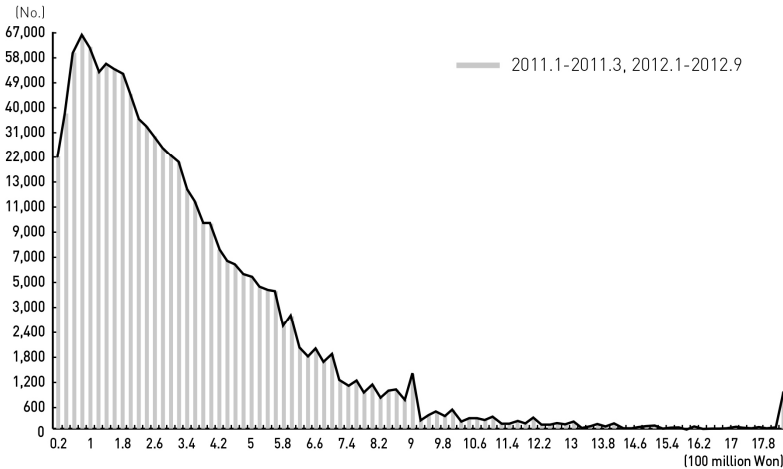
During the period between 2006 and 2010, the total statutory tax rate, combining acquisition tax and registration tax, was 4 percent and applied to housing acquisition. However, transactions between individuals or purchases of

a newly built house from a corporation were assigned a 2 percent tax cut, a tax exemption that was renewed automatically every year. This resulted in trade partners considering the reduced tax rate to be the baseline (see [Figure II-2]). This aforementioned period is prior to the introduction of differential tax rates with a threshold at a house price of 900 million won, so no higher frequency of transactions was observed beyond the 900 million won threshold. The number of contracts stood at 16,553 in the price band of 580-600 million won, 35 percent higher than the 12,229 in the preceding band of 560-580 million won. Compared with 7,964 in the next price band of 600-620 million won, it marked an increase of more than 108 percent.

Based on implementation of tax exemptions with a price of 900 million won as the cut-off point, two types of periods can be identified after 2011: those years in which the statutory basic tax rate under the Local Tax Act was applied without a tax exemption and sub-periods when the tax rate was temporarily reduced by 50 percent. [Figure II-5] shows the distribution of transaction volumes by price band, transactions which were reported to be concluded during two sub-periods — January through March 2011 and January through September 2012 — times when a 50 percent tax cut was not in effect on housing acquisition. [Figure II-6] shows the distribution of transaction volume by price band, transactions within which were reported to be concluded during two sub-periods — April through December 2011 and October through December 2012 — when a 50 percent tax cut was applied to housing acquisition. A price notch effect, resulting from the applicable housing price threshold, can be clearly noticed at around 900 million won, regardless of the application of a 50 percent tax exemption on housing acquisition. Both [Figure II-5] and [Figure II-6] span a one-year period since the standard tax rate was applied in the first quarter of 2011 (three months) and the first through third quarters of 2012 (nine months) and the 50 percent reduction in the tax rate was applied in the second through fourth quarters of 2011 (nine months) and the fourth quarter of 2012 (three months). Even though the year-long period stretches across two different years, the number of transactions on the vertical axis can be regarded as an annual transaction volume when comparing [Figure II-5] with [Figure II-6]. The differential tax rates with a threshold of 900 million won are applied to both Figure II-6 with its 50 percent tax reduction and to [Figure II-5] showing the standard tax rate. In terms of the

number of contracts, [Figure II-5] and [Figure II-6] respectively show 817 and 720 contracts in the price band of 860-880 million won; 1,410 and 1,313, respectively in the price band of 880-900 million won; and 317 and 228, respectively in the price band of 900-920 million won. The figures in the 880-900 million won price band show drastic increases compared to the next-lower band by 72.6 percent and 82.4 percent, while in the 900-920 million won price band, plunges of 77.5 percent and 82.6 percent are observed in the respective figures. Regardless of the application of tax exemptions, the differential tax rates resulted in a price notch effect around the baseline of 900 million won. However, the price bands on either side of the price cut-off point showed a relatively small price notch effect when the 50 percent tax reduction was applied. In other words, it can be interpreted that the houses valued at over 900 million won experienced the greatest decline in transactions, since a higher tax was then imposed on houses worth over 900 million won in the case where no tax exemption was applied.

**[Figure II-5] Periods of January-March 2011 and January-September 2012: Application of Normal Differential Tax Rates with the Baseline of 900 million**

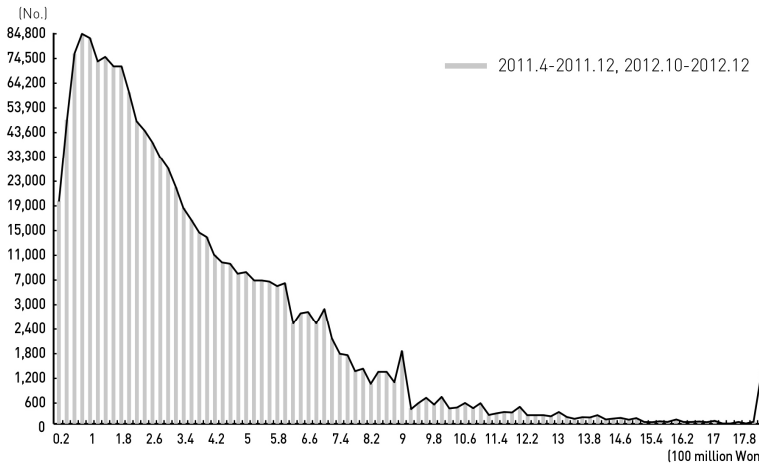


Note: 2% on houses worth 900 million won or less and 4% on houses worth more than 900 million won or multiple house owners / based on reported data.

Source: MOLIT internal data.

If a tax burden is differentiated due to the introduction of a price notch at 900 million won through the housing transaction tax system, transaction volume declines in those houses subject to higher taxes. Such a phenomenon can be explained by two causes. First, in order to reduce the tax burden, the concerned parties to a transaction manipulate a reported price lower than 900 million won even when a house is traded at 900 million won or more in reality, or they lower the actual trading price through a mutual agreement that would not otherwise have occurred if there were no price notch. Second, the transaction volume can be reduced due to a lock-in effect through which people become reluctant to trade houses out of fear of a growing tax burden resulting from high tax rates.

**[Figure II-6] Periods of April-December 2011 and October-December 2012: Application of a 50 Percent Tax Exemption for Housing Transactions (based on reported data)**



Source: MOLIT internal data

Next, the figures were examined in order to study the time notch effect. The government had announced measures to temporarily reduce tax rates only until the end of the year in question, thus imposing a clear time limit for the tax exemption. During the periods of April-December 2011 and October-December 2012, the tax rate was lowered from 2 percent to 1 percent for the owner of

a single house valued at 900 million won or less; and from 4 percent to 2 percent for an owner of a single house valued at over 900 million won or for owners of multiple houses. In addition to the price notch effect at the level of around 900 million won, the transaction volume experienced a time notch effect due to the public tendency to conclude more transactions during a period characterized by a tax exemption in order to receive a tax benefit. Such a time notch effect can be observed through a comparison between [Figures II-5] and [Figures II-6].

This time notch effect took place for a specific reason: if a measure granting a 50 percent tax cut on housing acquisition is implemented until the end of year and the normal rate will be applied on January 1 of the following year, the transaction volume is destined to sharply decline in January of the following year. People tend to attempt to avoid higher taxes by accelerating transactions prior to the end of a time notch or postpone transactions while a high tax rate is being applied, that is to say, a lock-in effect.

In order to more accurately measure the degree of transaction fluctuation on either side of a cut-off point at which differential tax rates are applied, the gap between the transactions densely packed in the price band of 895-900 million won and a “vacant space” to the right after the price band as seen in the figures above is compared with a normal distribution curve. After a polynomial function with a price variable is estimated the most appropriate fit to the distribution curve, a determination is made of by how much transactions are reduced at the cut-off point by comparing with the normal transaction volume in order to estimate the effect of the housing transaction tax on the decline in transaction volume. Besides the price, other control variables with influence on the transaction volume are insufficient in this individual micro data and thus use of this methodology will be examined later.

### **3** Empirical Analysis of Transaction Volume Changes Using Micro Data from House/Real Estate Transaction Reports

#### **A. Outline of Reported Data on Individual Real Housing Transaction Prices**

After the introduction of the housing and real estate transaction reporting

system, the MOLIT has released two different reports on transactions, one for real estate and the other for housing. In accordance with Article 27 (Report of Real Estate Transaction) of the Business Affairs of Licensed Real Estate Agents and Report of Real Estate Transaction Act, a real estate transaction must be reported to the head of a provincial, city or country office within 60 days from the transaction contract date, while a housing transaction must be reported within 15 days from the transaction contract date under Article 80-2 (Report of Housing Transaction) of the Housing Act. As seen in the report form attached in the Appendix, the report contains the personal information of the buyer and seller, trading article and trading conditions, including price.

The number of transactions totals more than 8.1 million over the seven years and eight months falling between January 2006 and August 2013. This study extracted only housing sales for value and sorted them in order of contract date. Of the total real estate transaction reports, only 6.86 million reports were extracted for reported housing sales, excluding 1.87 million seal cases. Then, excluding roughly 300,000 additional cases of purchase right sales and adding around 150,000 cases of sales reported through the housing transaction reporting system, a total of 6,714,956 cases became the subject of analysis here.

As for transactions in purchase rights, those reports of real estate transactions were selected for analysis that feature a mark in the ‘purchase right’ of the ‘transaction division’ in the report form. Among them, 1,167,736 cases with a mark in the ‘seal of approval’ of the ‘application division’ and 303,049 cases with a mark in the ‘report’ of the ‘application division’ were extracted. Therefore, a total of 1,470,785 cases became the subject of analysis.

<Table 1> in appendix shows the process by which the data on transactions in housing and purchase rights was collected and organized.

[Figure 1] in appendix shows changes in monthly reports and the monthly real price index of national apartment transactions. Taking a close look at the five year period between 2006 and 2010, the price change appears to precede the change in transaction volume by around a month. This means a price rise or fall is observed immediately before the transaction volume in the national apartment sales market either increases or decreases. As the tax rate was returned to its initial standard level of 4 percent with the registration tax integrated into the acquisition tax in early 2011 after a 50 percent tax cut had been automatically

implemented in order to lower the acquisition and registration tax rate of 4 percent to 2, a growing transaction tax burden led to different movements in the transaction volume and the rate of price change. In particular, in December 2011 when the tax reduction for housing transactions was ending, the number of apartment sales nationwide surged to close to 80,000 from its usual value of 50,000. A spike in transaction volume also can be observed in December 2012. The national average apartment real price marked a negative monthly change of one percent (-1%) in December of both 2011 and 2012, and in the following month of January in 2012 and 2013, the figure showed positive 1 percent growth.

〈Table II-5〉 **Difference between MOLIT Data and Extracted Data Regarding Annual Housing Sales and Purchase Right Transactions**

(Unit: No., %)

	No. of Housing sales			
	MOLIT data (nationwide) (A)	Extracted data (B)	Difference between the MOLIT data and extracted data(B-A)	Ratio of extracted data to MOLIT data (B/A)
2006	1,082,453	1,061,586	-20,867	98.1
2007	867,933	857,161	-10,772	98.8
2008	893,790	891,977	-1,813	99.8
2009	870,353	871,311	958	100.1
2010	799,864	798,381	-1,483	99.8
2011	981,238	980,217	-1,021	99.9
2012	735,414	728,729	-6,685	99.1
2013	526,716	525,594	-1,122	99.8
	Purchase right			
	MOLIT data (nationwide) (A)	Extracted data (B)	Difference between MOLIT data and extracted data(B-A)	Ratio of extracted data to MOLIT data (B/A)
2006	234,626	230,734	-3,892	98.3
2007	180,948	183,030	2,082	101.2
2008	198,573	191,939	-6,634	96.7
2009	179,600	171,918	-7,682	95.7
2010	163,484	162,068	-1,416	99.1
2011	177,712	175,598	-2,114	98.8
2012	197,615	194,644	-2,971	98.5
2013	164,622	160,854	-3,768	97.7

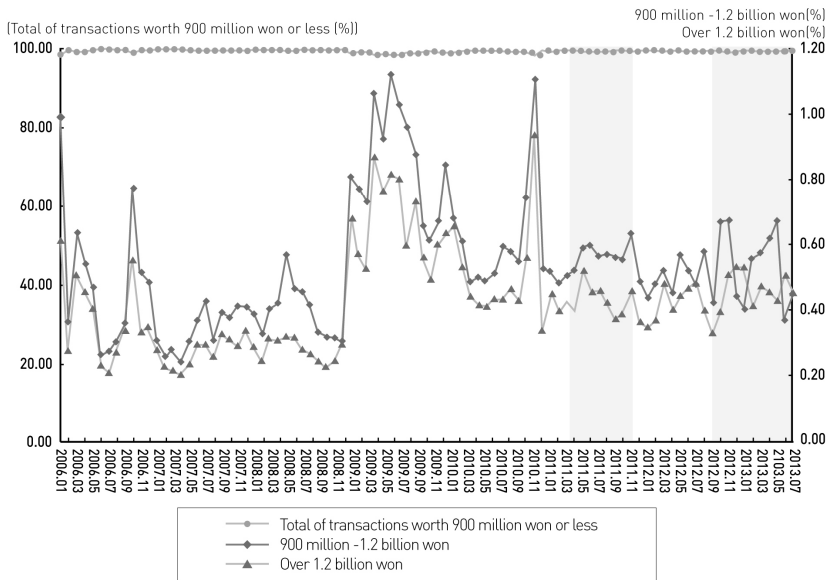
Note: The figure for 2013 refers to the aggregate value by August 2013.  
Source: MOLIT internal data.

Onnara Real Estate Information Portal (<http://www.onnara.go.kr>).

In addition, the difference between the MOLIT's monthly and annual reports and the reports extracted from the micro data of individual reports is provided in <Table II-5>. Housing sales indicate a slight difference of within 1-2 percent between the two report records, while transactions in purchase rights show a gap of within 1-5 percent, although each year produces a different figure.

<Table II-6> shows the monthly reports obtained by collecting the number of transactions per month from the micro data from individual actual transaction price reports and then organizing them by transaction price band. There are slight discrepancies between years, but housing sale transactions in the price band of 900 million won or less account for almost 98-99 percent, while the transactions in the price band of over 900 million won accounted for 0.61-1.21 percent. According to the monthly movement in the transaction rate by housing price band as illustrated in [Figure II-7], South Korea experienced a boom in housing transactions during the period of July through August 2009, which is

[Figure II-7] Trend in Rate of Housing Sale Transactions by Monthly Reported Price



Source: MOLIT internal data.

a unique development and distinct from what can be observed in other countries in the wake of the global financial crisis at the end of 2008. At the time, houses valued at over 900 million won accounted for over 1 percent of total housing transactions. Taking into account the impact on tax revenue of the different reduction rates of housing acquisition tax by transaction price band, tax revenue losses can be estimated by using only the housing acquisition tax rate applied to almost less than 9 percent of housing transactions and the corresponding tax reduction rate.

[Figure II-8] depicts the time series of reports by transaction report price band of 300 million won, 900 million won, and 1.2 billion won. Transactions in the price bands of 300 million won or less and 300-900 million won made up the majority of transaction volume and transactions pertaining to the price bands of 900 million-1.2 billion won and more than 1.2 billion won are indistinguishable with the horizontal axis. Thus, different scales are used to the left and right sides of the vertical axis, as provided in [Figure II-9].

[Figure II-9] shows the change in monthly transaction reports, which features considerable fluctuations in three price bands as well as a repeated pattern—that transactions peak in the month preceding the end of the housing acquisition tax exemption and hit a trough in the following month—witnessed in every December from 2010 to 2012 and again in June 2013. It can also be noted that this spike in housing transactions resulting in a doubling from 50,000 to 100,000 transactions per month in houses worth 900 million won or less, with the exception of in 2006 when the housing market was booming, while transactions in houses valued at over 900 million won increased by four times from 500 to 2,000 cases at the end of 2010. At that time the tax exemption on housing transactions, a measure that had been repeated on an annual basis for five consecutive years, terminated and the differential tax rate system was introduced with a baseline of 900 million won. As a result, the tax burden on acquiring a house valued at over 900 million increased from 2.3 percent to 4.6 percent, including the education surtax, in terms of statutory tax rate. Against this backdrop, houses worth over 900 million won can be interpreted as showing a greater response in terms of transaction volume compared to houses valued at less than 900 million won subject to a 50 percent tax exemption.

〈Table II-6〉 Monthly in Housing Sale Transactions by Transaction Price Band (excluding deed transfers): Based on Report Date  
(Unit: No. %, million won)

	Amount				Rate							
	Less than 300	300-900	Subtotal of transactions worth 900 or less	900-1,200	Over 1,200	Total	Less than 300	300-900	Subtotal of transactions worth 900 or less	900-1,200	Over 1,200	Total
Jan. 2006	10,387	1,837	12,224	123	76	12,423	83.61	14.79	98.40	0.99	0.61	100.00
Feb. 2006	45,473	4,523	49,996	183	139	50,318	90.37	8.99	99.36	0.36	0.28	100.00
Mar 2006	71,321	8,857	80,178	516	414	81,108	87.93	10.92	98.85	0.64	0.51	100.00
Apr 2006	71,073	10,221	81,294	445	374	82,113	86.56	12.45	99.00	0.54	0.46	100.00
May 2006	74,269	10,842	85,111	403	348	85,862	86.50	12.63	99.13	0.47	0.41	100.00
June 2006	67,283	7,709	74,992	198	174	75,364	89.28	10.23	99.51	0.26	0.23	100.00
July 2006	55,729	5,406	61,135	167	130	61,432	90.72	8.80	99.52	0.27	0.21	100.00
Aug. 2006	56,727	5,757	62,484	191	172	62,847	90.26	9.16	99.42	0.30	0.27	100.00
Sept. 2006	94,635	10,748	105,383	387	359	106,129	89.17	10.13	99.30	0.36	0.34	100.00
Oct. 2006	102,601	17,397	119,998	943	672	121,613	84.37	14.31	98.67	0.78	0.55	100.00
Nov. 2006	146,763	23,122	169,885	885	570	171,340	85.66	13.49	99.15	0.52	0.33	100.00
Dec. 2006	119,493	15,396	134,889	659	476	136,024	87.85	11.32	99.17	0.48	0.35	100.00
Total 2006	915,754	121,815	1,037,569	5,100	3,904	1,046,573	87.50	11.64	99.14	0.49	0.37	100.00
Jan. 2007	70,326	6,684	77,010	239	218	77,467	90.78	8.63	99.41	0.31	0.28	100.00
Feb. 2007	59,311	4,657	63,968	167	145	64,280	92.27	7.24	99.51	0.26	0.23	100.00
Mar. 2007	68,058	4,958	73,016	206	159	73,381	92.75	6.76	99.50	0.28	0.22	100.00
Apr. 2007	70,091	5,108	75,199	185	153	75,537	92.79	6.76	99.55	0.24	0.20	100.00
May 2007	66,625	5,075	71,700	220	169	72,089	92.42	7.04	99.46	0.31	0.23	100.00
June 2007	58,569	5,174	63,743	238	189	64,170	91.27	8.06	99.33	0.37	0.29	100.00

Table II-6 Continued

	Amount					Rate						
	Less than 300	300-900	Subtotal of transactions worth 900 or less	900-1,200	Over 1,200	Total	Less than 300	300-900	Subtotal of transactions worth 900 or less	900-1,200	Over 1,200	Total
July 2007	60,105	5,730	65,835	283	196	66,314	90.64	8.64	99.28	0.43	0.30	100.00
Aug. 2007	58,765	5,303	64,068	200	168	64,436	91.20	8.23	99.43	0.31	0.26	100.00
Sept. 2007	50,514	5,410	55,924	221	185	56,330	89.68	9.60	99.28	0.39	0.33	100.00
Oct. 2007	73,193	7,581	80,774	304	252	81,330	90.00	9.32	99.32	0.37	0.31	100.00
Nov. 2007	72,279	7,947	80,226	331	235	80,792	89.46	9.84	99.30	0.41	0.29	100.00
Dec. 2007	63,929	7,321	71,250	295	244	71,789	89.05	10.20	99.25	0.41	0.34	100.00
<b>Total 2007</b>	<b>771,765</b>	<b>70,948</b>	<b>842,713</b>	<b>2,889</b>	<b>2,313</b>	<b>847,915</b>	<b>91.02</b>	<b>8.37</b>	<b>99.39</b>	<b>0.34</b>	<b>0.27</b>	<b>100.00</b>
Jan. 2008	62,717	6,716	69,433	270	202	69,905	89.72	9.61	99.32	0.39	0.29	100.00
Feb. 2008	60,488	6,520	67,008	222	164	67,394	89.75	9.67	99.43	0.33	0.24	100.00
Mar. 2008	79,160	9,576	88,736	362	279	89,377	88.57	10.71	99.28	0.41	0.31	100.00
Apr. 2008	97,130	14,239	111,369	475	343	112,187	86.58	12.69	99.27	0.42	0.31	100.00
May 2008	83,565	11,987	95,552	548	310	96,410	86.68	12.43	99.11	0.57	0.32	100.00
June 2008	80,825	11,533	92,358	435	295	93,088	86.83	12.39	99.22	0.47	0.32	100.00
July 2008	76,520	9,939	86,459	398	244	87,101	87.85	11.41	99.26	0.46	0.28	100.00
Aug. 2008	57,400	7,126	64,526	271	174	64,971	88.35	10.97	99.32	0.42	0.27	100.00
Sept. 2008	54,003	5,429	59,432	198	146	59,776	90.34	9.08	99.42	0.33	0.24	100.00
Oct. 2008	55,881	4,827	60,708	194	138	61,040	91.55	7.91	99.46	0.32	0.23	100.00
Nov. 2008	39,434	3,379	42,813	136	106	43,055	91.59	7.85	99.44	0.32	0.25	100.00
Dec. 2008	35,249	3,439	38,688	119	115	38,922	90.56	8.84	99.40	0.31	0.30	100.00
<b>Total 2008</b>	<b>782,372</b>	<b>94,710</b>	<b>877,082</b>	<b>3,628</b>	<b>2,516</b>	<b>883,226</b>	<b>88.58</b>	<b>10.72</b>	<b>99.30</b>	<b>0.41</b>	<b>0.28</b>	<b>100.00</b>

〈Table II-6〉 Continued

	Amount				Rate							
	Less than 300	300-900	Subtotal of transactions worth 900 or less	900-1,200	Over 1,200	Total	Less than 300	300-900	Subtotal of transactions worth 900 or less	900-1,200	Over 1,200	Total
Jan. 2009	29,026	4,179	33,205	271	229	33,705	86.12	12.40	98.52	0.80	0.68	100.00
Feb. 2009	42,320	7,142	49,462	386	285	50,133	84.42	14.25	98.66	0.77	0.57	100.00
Mar. 2009	54,064	9,643	63,707	470	338	64,515	83.80	14.95	98.75	0.73	0.52	100.00
Apr. 2009	57,028	10,954	67,982	737	603	69,322	82.27	15.80	98.07	1.06	0.87	100.00
May 2009	55,374	12,293	67,667	634	525	68,826	80.46	17.86	98.32	0.92	0.76	100.00
June 2009	64,826	13,993	78,819	899	658	80,376	80.65	17.41	98.06	1.12	0.82	100.00
July 2009	67,664	14,477	82,141	858	669	83,668	80.87	17.30	98.17	1.03	0.80	100.00
Aug. 2009	65,821	13,669	79,490	773	479	80,742	81.52	16.93	98.45	0.96	0.59	100.00
Sept.2009	74,410	15,149	89,559	795	667	91,021	81.75	16.64	98.39	0.87	0.73	100.00
Oct. 2009	73,826	14,383	88,209	585	501	89,295	82.68	16.11	98.78	0.66	0.56	100.00
Nov. 2009	65,596	9,941	75,537	468	378	76,383	85.88	13.01	98.89	0.61	0.49	100.00
Dec. 2009	64,386	9,365	73,751	501	450	74,702	86.19	12.54	98.73	0.67	0.60	100.00
<b>Total 2009</b>	<b>714,341</b>	<b>135,188</b>	<b>849,529</b>	<b>7,377</b>	<b>5,782</b>	<b>862,688</b>	<b>82.80</b>	<b>15.67</b>	<b>98.47</b>	<b>0.86</b>	<b>0.67</b>	<b>100.00</b>
Jan. 2010	47,041	7,415	54,456	467	349	55,272	85.11	13.42	98.52	0.84	0.63	100.00
Feb. 2010	53,539	8,910	62,449	430	416	63,295	84.59	14.08	98.66	0.68	0.66	100.00
Mar. 2010	66,330	10,146	76,476	471	411	77,358	85.74	13.12	98.86	0.61	0.53	100.00
Apr. 2010	63,851	7,965	71,816	352	320	72,488	88.08	10.99	99.07	0.49	0.44	100.00
May 2010	52,169	6,791	58,960	296	247	59,503	87.67	11.41	99.09	0.50	0.42	100.00
June 2010	51,455	6,660	58,115	286	240	58,641	87.75	11.36	99.10	0.49	0.41	100.00
July 2010	47,276	6,408	53,684	278	234	54,196	87.23	11.82	99.06	0.51	0.43	100.00

Table II-6 Continued

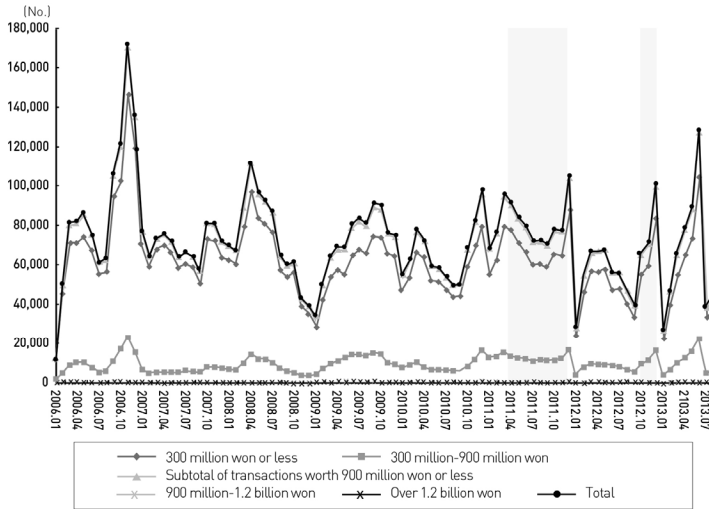
	Amount					Rate						
	Less than 300	300-900	Subtotal of transactions worth 900 or less	900-1,200	Over 1,200	Total	Less than 300	300-900	Subtotal of transactions worth 900 or less	900-1,200	Over 1,200	Total
Aug. 2010	43,749	5,836	49,585	298	217	50,100	87.32	11.65	98.97	0.59	0.43	100.00
Sept. 2010	44,361	5,879	50,240	293	236	50,769	87.38	11.58	98.96	0.58	0.46	100.00
Oct. 2010	59,578	8,083	67,661	374	291	68,326	87.20	11.83	99.03	0.55	0.43	100.00
Nov. 2010	69,678	12,056	81,734	614	465	82,813	84.14	14.56	98.70	0.74	0.56	100.00
Dec. 2010	79,788	16,256	96,044	1,085	920	98,049	81.38	16.58	97.96	1.11	0.94	100.00
<b>Total 2010</b>	<b>678,815</b>	<b>102,405</b>	<b>781,220</b>	<b>5,244</b>	<b>4,346</b>	<b>790,810</b>	<b>85.84</b>	<b>12.95</b>	<b>98.79</b>	<b>0.66</b>	<b>0.55</b>	<b>100.00</b>
Jan. 2011	55,625	12,328	67,953	359	230	68,542	81.15	17.99	99.14	0.52	0.34	100.00
Feb. 2011	62,443	13,342	75,785	394	344	76,523	81.60	17.44	99.04	0.51	0.45	100.00
Mar. 2011	79,403	15,259	94,662	459	376	95,497	83.15	15.98	99.13	0.48	0.39	100.00
Apr. 2011	77,459	13,251	90,710	464	390	91,564	84.60	14.47	99.07	0.51	0.43	100.00
May 2011	71,052	12,586	83,638	440	335	84,413	84.17	14.91	99.08	0.52	0.40	100.00
June 2011	66,577	12,150	78,727	470	418	79,615	83.62	15.26	98.88	0.59	0.53	100.00
July 2011	60,354	11,006	71,360	430	328	72,118	83.69	15.26	98.95	0.60	0.45	100.00
Aug. 2011	60,218	11,499	71,717	408	335	72,460	83.11	15.87	98.97	0.56	0.46	100.00
Sept. 2011	58,704	11,060	69,764	398	299	70,461	83.31	15.70	99.01	0.56	0.42	100.00
Oct. 2011	65,542	11,377	76,919	435	290	77,644	84.41	14.65	99.07	0.56	0.37	100.00
Nov. 2011	64,633	12,037	76,670	429	299	77,398	83.51	15.55	99.06	0.55	0.39	100.00
Dec. 2011	87,350	16,541	103,891	665	488	105,044	83.16	15.75	98.90	0.63	0.46	100.00
<b>Total 2011</b>	<b>809,360</b>	<b>152,436</b>	<b>961,796</b>	<b>5,351</b>	<b>4,132</b>	<b>971,279</b>	<b>83.33</b>	<b>15.69</b>	<b>99.02</b>	<b>0.55</b>	<b>0.43</b>	<b>100.00</b>
Jan. 2012	24,008	3,998	28,006	138	103	28,247	84.99	14.15	99.15	0.49	0.36	100.00
Feb. 2012	46,408	7,891	54,299	240	189	54,728	84.80	14.42	99.22	0.44	0.35	100.00

〈Table II-6〉 Continued

	Amount				Rate							
	Less than 300	300-900	Subtotal of transactions worth 900 or less	900-1,200	Over 1,200	Total	Less than 300	300-900	Subtotal of transactions worth 900 or less	900-1,200	Over 1,200	Total
Mar. 2012	57,129	9,163	66,292	322	248	66,862	85,44	13,70	99,15	0,48	0,37	100,00
Apr. 2012	56,951	9,434	66,385	351	324	67,060	84,93	14,07	98,99	0,52	0,48	100,00
May 2012	57,742	9,041	66,783	306	269	67,358	85,72	13,42	99,15	0,45	0,40	100,00
June 2012	47,282	8,375	55,657	320	250	56,227	84,09	14,89	98,99	0,57	0,44	100,00
July 2012	47,658	7,903	55,561	292	262	56,115	84,93	14,08	99,01	0,52	0,47	100,00
Aug. 2012	40,383	6,302	46,685	224	230	47,139	85,67	13,37	99,04	0,48	0,49	100,00
Sept.2012	33,356	5,506	38,862	227	157	39,246	84,99	14,03	99,02	0,58	0,40	100,00
Oct. 2012	55,403	9,671	65,074	278	216	65,568	84,50	14,75	99,25	0,42	0,33	100,00
Nov. 2012	59,197	11,340	70,537	474	283	71,294	83,03	15,91	98,94	0,66	0,40	100,00
Dec. 2012	83,091	16,411	99,502	675	513	100,690	82,52	16,30	98,82	0,67	0,51	100,00
<b>Total 2012</b>	<b>608,608</b>	<b>105,035</b>	<b>713,643</b>	<b>3,847</b>	<b>3,044</b>	<b>720,534</b>	<b>84,47</b>	<b>14,58</b>	<b>99,04</b>	<b>0,53</b>	<b>0,42</b>	<b>100,00</b>
Jan. 2013	22,582	3,323	25,905	115	139	26,159	86,33	12,70	99,03	0,44	0,53	100,00
Feb. 2013	39,681	6,498	46,179	189	248	46,616	85,12	13,94	99,06	0,41	0,53	100,00
Mar. 2013	55,010	9,972	64,982	364	271	65,617	83,83	15,20	99,03	0,55	0,41	100,00
Apr. 2013	65,245	12,572	77,817	451	372	78,640	82,97	15,99	98,95	0,57	0,47	100,00
May 2013	73,304	14,972	88,276	552	407	89,235	82,15	16,78	98,93	0,62	0,46	100,00
June 2013	104,687	22,555	127,242	861	550	128,653	81,37	17,53	98,90	0,67	0,43	100,00
July 2013	33,384	5,216	38,600	144	197	38,941	85,73	13,39	99,12	0,37	0,51	100,00
Aug. 2013	38,851	6,720	45,571	209	208	45,988	84,48	14,61	99,09	0,45	0,45	100,00
<b>Total 2013</b>	<b>432,744</b>	<b>81,828</b>	<b>514,572</b>	<b>2,885</b>	<b>2,392</b>	<b>519,849</b>	<b>83,24</b>	<b>15,74</b>	<b>98,98</b>	<b>0,55</b>	<b>0,46</b>	<b>100,00</b>

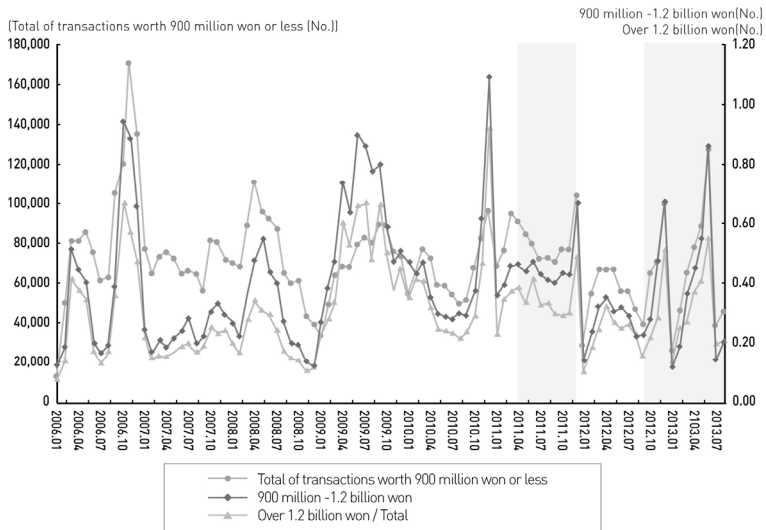
Source: MOLIT internal data.

[Figure II-8] Monthly Housing Sale Transactions by Reported Price Band-1



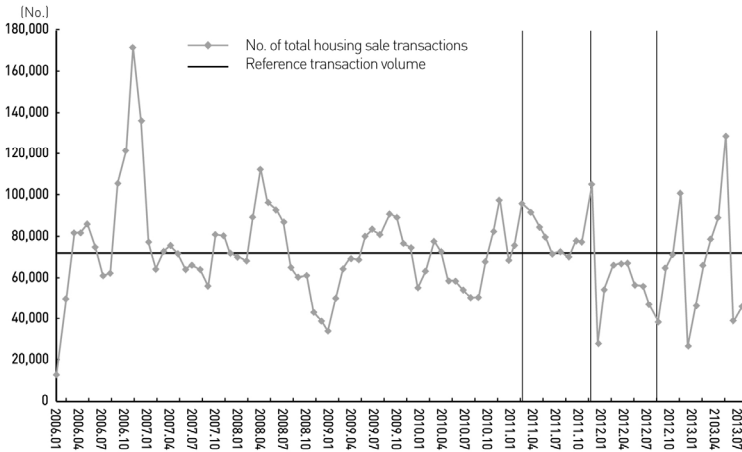
Source: MOLIT internal data.

[Figure II-9] Monthly Housing Sale Transactions by Reported Price Band-2



Source: MOLIT internal data.

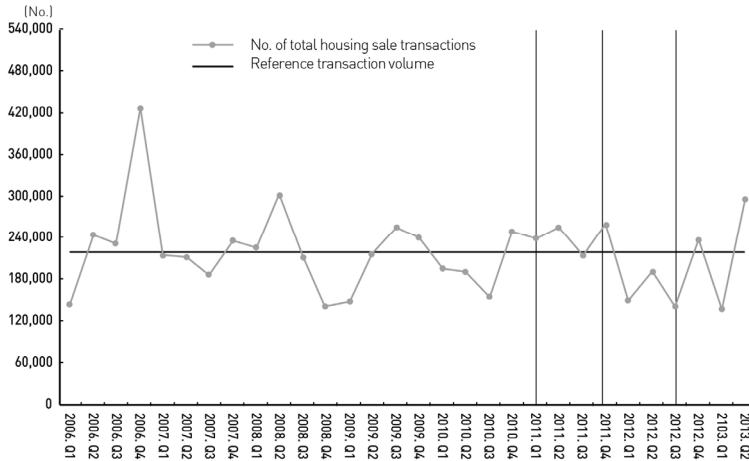
[Figure II-10] Monthly Housing Sale Transactions (based on reported data)



Note: The reference transaction volume refers to a monthly average of total housing sale transactions. The monthly average stands at 72,205.

Source: MOLIT internal data.

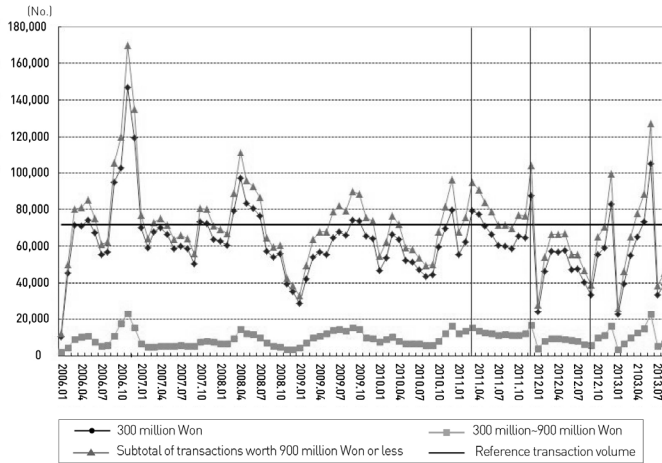
[Figure II-11] Quarterly Housing Sale Transactions (based on reported data)



Note: The reference transaction volume refers to a quarterly average of total housing sale transactions. The quarterly average stands at 218,598.

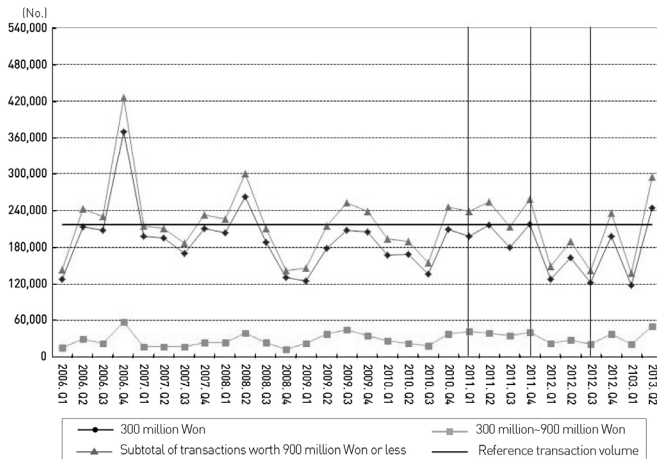
Source: MOLIT internal data.

[Figure II-12] Monthly Housing Sale Transactions Valued at 900 Million Won or Less (based on reported data)



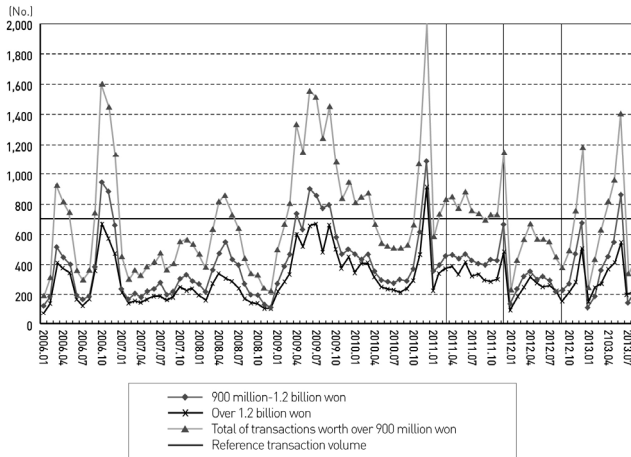
Note: The reference transaction volume refers to a monthly average of total housing transactions valued at 900 million won or less. The monthly average stands at 71,501  
Source: MOLIT internal data.

[Figure II-13] Quarterly Housing Sale Transactions Valued at 900 Million Won or Less (based on reported data)



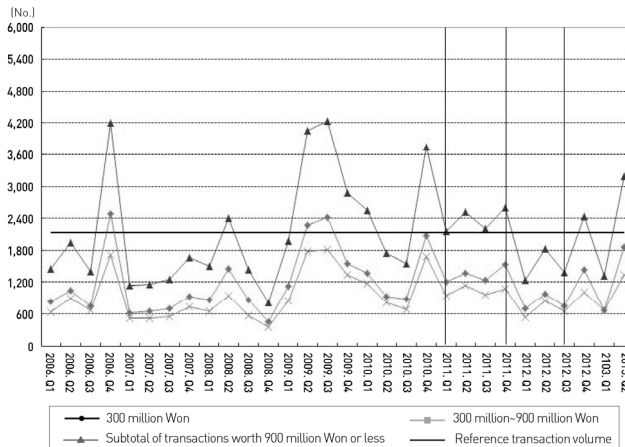
Note: The reference transaction volume refers to a quarterly average of total housing transactions valued at 900 million won or less. The quarterly average stands at 216,465.  
Source: MOLIT internal data.

[Figure II-14] Monthly Housing Sale Transactions Valued at over 900 Million Won (based on reported data)



Note: The reference transaction volume refers to a monthly average of total housing transactions valued at over 900 million won. The monthly average stands at 704.  
Source: MOLIT internal data.

[Figure II-15] Quarterly Housing Sale Transactions Valued at over 900 Million Won (based on reported data)



Note: The reference transaction volume refers to a quarterly average of total housing transactions worth over 900 million won. The quarterly average stands at 2,133.  
Source: MOLIT internal data.

As explained above, transaction volume shows a difference in volatility depending on the period unit, such as by month or quarter. Table II-7 presents the coefficient of variation gained by quantifying the extent of variability in monthly and quarterly transactions for each reported price band. The quarterly coefficient of variation is 27.6, while the monthly coefficient of variation is 32.4. Regardless of price bands, the monthly figures in the table are observed to be higher than their quarterly counterparts in general. Also, the coefficient of variation is higher for more expensive houses valued at over 900 million won compared to that for houses worth 900 million or less, but, interestingly the situation is reversed for extremely expensive houses—the coefficient of variation is lower among houses valued at over 1.2 billion won than that for houses valued at 900 million-1.2 billion won. The coefficient of variation is the lowest in the price band of 300 million or less.

〈Table II-7〉 Coefficient of Variation of Monthly and Quarterly Housing Transaction Volumes by Reported Price Band

(Unit: No., million won)

	300 or less	300–900	Subtotal of transactions worth 900 or less	900–1,200	Over 1,200	Subtotal of transactions worth over 900	Total
Monthly	31,8192	44,1814	32,3919	52,8296	49,9740	51,1368	32,4205
Quarterly	26,9861	39,5936	27,5525	46,5665	43,4265	44,9715	27,5782

Source: MOLIT internal data.

## B. Empirical Model of Determinants of Variation in Transaction Volume Time Series

This section presents the results of a regression analysis performed in order to explain transaction volume by period using micro data from individual reported housing transactions over the seven years and eight months between January 2006 and August 2013. Although existing studies including Kim, Hyun-A (2010) and Lim, Sang Soo (2013) have conducted a similar empirical analysis, this empirical study is distinct for the following reasons.

First, in order to observe time-series transactions, Kim, Hyun-A (2010) used

the transaction volume of residential buildings as released by the MOLIT, while Lim, Sang Soo (2013) accessed the number of reported transactions available from the MOLIT. In contrast, this paper applied modified transaction volume data by reclassifying actual individual housing transactions into a monthly or annual unit based on the contract date.

Second, the preceding studies used monthly transaction volume in order to increase the number of available samples with no consideration of lagged variables. However, this study is able to secure 72 samples for the Seoul Metropolitan Area (Seoul, Gyeonggi Province, and Incheon) and 384 samples for the rest of country (16 metropolitan cities and provinces) for regression analysis, while setting a quarter as the basic period unit for quantifying transaction volume. The periods of implementing an existing tax cut on housing acquisition do not correspond precisely to quarterly units. Even though the acquisition tax exemption is assumed to have been implemented in the second quarter of 2011 and the fourth quarter of 2012, rather than their actual implementation dates of March 22, 2011 and September 24, 2012, respectively, each shows a time lag of simply one week. More importantly, setting quarter as a period unit rather than a month is more desirable, since a quarterly unit well reflects the characteristics of housing transactions of requiring considerable time to progress from signing a contract to closing. In addition, it is more appropriate given the fact that market participants need time to respond to policy changes such as an acquisition tax cut.

Third, it is well known that both transaction volume and price, which are important factors in the housing market, exhibit seasonality. Thus, unlike previous research focusing on examining the change in monthly transaction volume, this study attempts to explain year-on-year change in transaction volume by observing quarterly differences from one year to another. Even if a time-invariant or a region of a metropolitan city has a unique fixed effect, with quarter and metropolitan city set as a unit of period and space observation, this can be solved through using the difference, which marks another further advantage.

Values of dependent variables and explanatory variables used in a simple regression analysis are dealt with in the Appendix and basic statistics on these variables are summarized in <Table II-8> and <Table II-9>. <Table II-10> shows values for three dummy variables for each period—a heavy tax on housing

transfer; the impact of the global financial crisis of 2008; and exemption from the housing acquisition tax. The dummy for the burden of transfer income tax on a house is limited to the period between 2007 and 2008 since from 2008 the normal tax rate has been applied as a result of enforcement of the Restriction of Special Taxation Act, although a single heavy tax rate is fixed as a statutory tax rate for owners of multiple houses, and in the second half of 2008 tax reform was implemented to expand the special deduction for long-term holding, thus significantly easing the burden on transfer income tax. The impact of the global financial crisis is interpreted as climaxing at the end of 2008 and then weakening only in the Seoul Metropolitan Area thanks to a boom in the apartment reconstruction and redevelopment market, but lingering until the end of 2010.

〈Table II-8〉 Summary of Basic Statistics on Quarterly Data (nationwide)

Variable		Minimum	Maximum	Mean	Standard deviation
Transaction contracts (no.)	chsn	3,174	172,482	20,103.59	23,003.79
Sale price (index)	hsp	45,06929	109,3019	78.75151	14.51571
Chonse price (index)	hrp	32,52391	101,2245	72.30161	14.47752
Nominal ordinary income (won)	minn	1,820,138	4,077,821	2,903,998	661,880
Real ordinary income (won)	minr	2,566,611	3,813,277	3,281,112	334,883.6
Stock price index (KOSPI)	sinx	317.58	2,116.547	1,196.17	536.4273
GDP (thousand won)	gdpn	120,831.2	33,2464.3	222,223.2	62,392.97
GDP (thousand won)	gdpr	134,483	289,366.3	217,841	41,378.21
Return on corporate bonds (%)	rcb	3.04	20.71	6.442581	3.031834
Dummy for transfer tax increase	tind	0	1	0.1290323	0.3354289
Dummy for financial crisis	crld	0	1	0.1451613	0.3524665
Dummy for acquisition tax exemption	acqd	0	1	0.3709677	0.4833423
Acquisition tax rate	acqr	1.76	5.8	3.988871	1.709198
Sample size		868			

Source: MOLIT internal data.

Korean Statistical Information Service of Statistics Korea (<http://kosis.kr/>).

Economic Statistics System of the Bank of Korea (<http://ecos.bok.or.kr/>).

<Table II-9> Summary of Basic Statistics on Quarterly Data (Seoul Metropolitan Area)

Variable		Minimum	Maximum	Average	Standard deviation
Transaction contracts (no.)	chsn	11,109	172,482	52,330.25	32,232.27
Sale price (index)	hsp	45,069.29	109,301.9	80,580.32	21,385.03
Chonse price (index)	hrp	38,174.31	100,627.1	73,180.4	16,247.59
Nominal ordinary income (won)	minn	1,820,138	4,077,821	2,903,998	663,284
Real ordinary income (won)	minr	2,566,611	3,813,277	3,281,112	335,593.9
Stock price index (KOSPI)	sinx	317.58	2,116.547	1,196.17	537.5652
GDP (thousand won)	gdpn	120,831.2	33,2464.3	222,223.2	62,525.33
GDP (thousand won)	gdpr	134,483	289,366.3	217,841	41,465.98
Return on corporate bonds (%)	rcb	3.04	20.71	6.442581	3.038265
Dummy for transfer tax increase	tind	0	1	0,1290323	0,3361405
Dummy for financial crisis	crid	0	1	0,1451613	0,3532142
Dummy for acquisition tax exemption	acqd	0	1	0,3709677	0,4843677
Acquisition tax rate	acqr	1.76	5.8	3,988871	1,712823
Sample size		186			

Source: MOLIT internal data.

Korean Statistical Information Service of Statistics Korea (<http://kosis.kr/>).

Economic Statistics System of the Bank of Korea (<http://ecos.bok.or.kr/>).

<Table II-10> Period of Application of Dummy Used in Regression Analysis

Dummy	Period	Remark
Transfer tax	First quarter of 2007–fourth quarter of 2008	Period of heavy transfer tax imposed: 1
Financial crisis	Fourth quarter of 2008–fourth quarter of 2010	Period of financial crisis: 1
Acquisition tax	Fourth quarter of 2006–fourth quarter of 2010 <sup>1)</sup> , Second quarter of 2011–fourth quarter of 2011 Fourth quarter of 2012–first quarter of 2013	Period of acquisition tax exemption: 0

Note: 1) A tax exemption measure was initially intended to be implemented from September 2006 until the end of 2009, but the exemption period was extended by one additional year until the end of 2010.

Results of a simple regression analysis on quarterly housing sale transactions with several combinations of explanatory variables are provided in <Table II-11> for 16 metropolitan cities and provinces nationwide, and in <Table II-12> for three regions of the Seoul Metropolitan Area. Outcomes of empirical analyses can be interpreted as follows.

The correlation between house price and house transactions all has a negative value in the coefficient estimate at around -2.3 through -2.5. This is statistically significant at the 1 percent level, and according to the elasticity concept, it can be interpreted that a 1 percent increase in housing price would result in a 2 percent decline in housing transaction volume, which indicates a very high level of elasticity.

In all cases of setting a regression model for houses nationwide, the Chonseil price (a unique Korean housing rental system that requires a large sum of housing leasehold deposit in place of a monthly payment) appears to have a positive effect on housing transaction volume. This might be interpreted as an increase in Chonseil price having an influence on people's decision to purchase rather than lease a home, which has statistically significant elasticity of around 2 percent.

The study mainly focused on the regression analysis using a dummy variable for housing acquisition tax in order to determine the degree to which a tax exemption on housing acquisition results in an increase in housing transaction volume. The related results can be seen in the shaded row in the table. In the Appendix, the dummy variable is assigned 0 for those quarters in which the exemption of housing acquisition tax is implemented and 1 for periods when the standard tax rate is applied. The coefficient estimate on the dummy variable for transaction tax exemption is between 0.18 and 0.25, statistically significant at almost the 0.1 percent or less as its t-values were very high, ranging from 3.7 to 5.0. It can be seen that the transaction volume increased by around 1.2 percent in quarters when a reduction of housing acquisition tax was implemented, regardless of the degree of the tax cut, but the magnitude is not significant. Treating the dummy variable for acquisition tax exemption uniformly — despite differences in the degree of acquisition tax reduction — makes it difficult to accurately measure elasticity. As an alternative, the results of the regression model using the acquisition tax rate rather than exemption from acquisition tax are presented in <Table II-13> for the entire nation and in <Table II-14> for the Seoul Metropolitan Area. As the coefficient estimate on the explanatory variable of housing acquisition tax rate has t-values ranging from 2.9 to 3.7, this can be said to be statistically significant at a level of 1 percent or less, and its magnitude ranges from -0.22 to 0.31. Therefore, it is fair to state that

the variable shows inelasticity. If all other factors are assumed to be the same while taking roughly -0.25 as the median, it can be noted that a 1 percent decrease in the acquisition tax rate (not 1 percentage point) has an effect of increasing the housing transaction volume by 0.25 percent. Although the Seoul Metropolitan Area has slightly lower statistical significance, it is very similar since its coefficient estimate ranges from -0.25 to 0.34.

In all model settings, the global financial crisis clearly had a negative effect. As for the entire nation, the impact of the financial crisis mostly offset the effect of the dummy variable for acquisition tax exemption. However the fact that the order of magnitude for the estimate of the global financial crisis variable is more than twice that of the acquisition tax indicates that in the Seoul Metropolitan Area, the combined effect of the global financial crisis and the acquisition tax exemption is slightly negative for the period when the effects overlapped between the final quarter of 2008 and the end of 2010.

The effect of the heavy transfer income tax varies depending on the model setting, thus showing no consistent positive or negative sign. In models in which the KOSPI index and return on corporate bonds are included or excluded on the assumption that stocks and corporate bonds could replace housing assets when people adjust their asset portfolios, a high return on corporate bonds results in a decrease in the housing transaction volume. Furthermore, a rise in the KOSPI index accompanies growth in transaction volumes, which can be considered a coupling effect.

Among explanatory variables, real ordinary income shows the most unexpected results in that it consistently demonstrates a very high negative value of estimated coefficient in all statistical models with a high significance. This can be interpreted that the transaction volume for a quarter is in an inverse relationship with the change in real income in the immediately preceding quarter (year-on-year) and shows a much greater response, which differs from previous expectations. Such results are consistently observed in all types of regression analysis conducted in this study. This means that housing transaction volumes increase in regions that have witnessed real income decreasing in the immediately preceding quarter compared to that for the same period of the previous year. There is no other available explanation, except for the interpretation that households in such a region would purchase a house when shifting their asset

portfolio. This is true to the results of a regression analysis on ordinary income. Results are the same even when the stock price variable and corporate bond price variable — as alternative assets to a house—are not included in whole or in part. The magnitude is around -0.5, which appears to be highly elastic.

Since results of a regression analysis on housing transactions for the three regions of the Seoul Metropolitan Area appear inconsistent with <Table II-11>, which covers the whole country, another regression analysis was conducted on transactions in only existing houses, excluding newly-built houses and residency rights, as well as purchase rights as explained in the previous chapter. The results are given in attached <Table II-11>. It shows a slight, though clear, positive effect of the dummy variable for acquisition tax exemption and somewhat improves explanatory power in general.

〈Table II-1〉 OLS Regression Results of National Housing Transaction Volume

Variable	OLS I (Dependent variable: lnNo. of transactions)		OLS II (Dependent variable: lnNo. of transactions)		OLS III (Dependent variable: lnNo. of transactions)		OLS IV (Dependent variable: lnNo. of transactions)	
	Coefficient (Coeff.: $\beta_1$ )	t-ratios	Coefficient (Coeff.: $\beta_1$ )	t-ratios	Coefficient (Coeff.: $\beta_1$ )	t-ratios	Coefficient (Coeff.: $\beta_1$ )	t-ratios
Constant	-0.466455	-0.90	-0.0453971	-0.94	-0.2026612	-3.56	-1.1003016	-1.73
ln[Sale price]	-2.522444	-4.64	-2.266848	-4.49	-2.411076	-4.62	-2.266307	-4.50
ln[Chonseil price]	2.071966	3.02	1.79927	2.83	2.579354	3.88	2.018311	3.12
lnKOSPI ( $t-1$ )			.5114064	7.92			.4343386	5.53
lnCorporate bonds ( $t-1$ )							-2.792917	-1.71
lnOrdinary income ( $t-1$ )	-4.97976	-7.53	-5.063755	-8.26	-4.96598	-7.82	-5.046264	-8.25
Transfer tax dummy	-0.529522	-1.13	-0.0164045	-0.38	.2403764	3.53	.0809614	1.13
Financial crisis dummy	-2.166369	-5.05	-1.484316	-3.65	-2.153215	-5.23	-1.1582486	-3.86
Dummy for acquisition tax exemption	.2452804	4.97	.1712844	3.67	.2309654	4.86	.177415	3.80
Sample size		384		384		384		384
Prob > F		0.0000		0.0000		0.0000		0.0000
R2		0.2418		0.3502		0.3027		0.3552

〈Table II-12〉 OLS Regression Results of Housing Transaction Volume in the Seoul Metropolitan Area

Variable	OLS I (Dependent variable: No. of transactions)		OLS II (Dependent variable: No. of transactions)		OLS III (Dependent variable: No. of transactions)		OLS IV (Dependent variable: No. of transactions)	
	Coefficient (Coef.: $\beta_1$ )	t-ratios	Coefficient (Coef.: $\beta_1$ )	t-ratios	Coefficient (Coef.: $\beta_1$ )	t-ratios	Coefficient (Coef.: $\beta_1$ )	t-ratios
Constant	-.0609125	-0.37	.0193301	0.14	-.4357978	-2.94	-.2726311	-1.70
ln[Sale price]	-3.116334	-1.76	-3.138961	-2.11	-3.093328	-2.15	-3.112694	-2.23
ln[Chonseil price]	2.342239	1.28	.31977	0.20	3.940936	2.60	2.357405	1.45
ln.KOSPI ( $t-1$ )			1.007956	5.32			.532514	2.27
ln[Corporate bonds ( $t-1$ )]					-2.12589	-5.86	-1.44101	-3.11
ln[Ordinary income ( $t-1$ )]		-5.00	-9.900943	-5.63	-10.37608	-6.11	-10.10999	-6.12
Transfer tax dummy		-0.09	.051441	0.26	.6973983	3.03	.5041639	2.11
Financial crisis dummy		-4.25	-.4767897	-4.14	-.5928758	-5.38	-.5350975	-4.88
Dummy for acquisition tax exemption	.3307511	2.14	.203118	1.54	.2709595	2.15	.2227921	1.79
Sample size		72		72		72		72
Prob > F		0.0000		0.0000		0.0000		0.0000
R2		0.4195		0.5973		0.6224		0.6509

〈Table II-13〉 OLS Regression Results of National Housing Transaction Volume (1<sup>st</sup> quarter of 2006-2<sup>nd</sup> quarter of 2013) (acquisition tax rate) (ordinary income of the previous period)

Variable	OLS I (Dependent variable: lnNo. of transactions)		OLS II (Dependent variable: lnNo. of transactions)		OLS III (Dependent variable: lnNo. of transactions)		OLS IV (Dependent variable: lnNo. of transactions)	
	Coefficient (Coef: $\beta_1$ )	t-ratios	Coefficient (Coef: $\beta_1$ )	t-ratios	Coefficient (Coef: $\beta_1$ )	t-ratios	Coefficient (Coef: $\beta_1$ )	t-ratios
Constant	0.1076813	2.54	0.0603771	1.53	-0.0622265	-1.24	0.0120862	0.24
ln [Sale price]	-2.533967	-4.6	-2.258212	-4.44	-2.41495	-4.57	-2.257144	-4.45
ln [Chonseil price]	1.855562	2.65	1.626956	2.52	2.382552	3.52	1.827413	2.79
ln KOSPI			0.5341545	8.31			0.4620333	5.9
ln Corporate bonds					-0.8200025	-5.84	-0.2638845	-1.61
ln Ordinary income (t-1)	-4.959057	-7.35	-5.039329	-8.12	-4.93622	-7.63	-5.021142	-8.1
Transfer tax dummy	0.0140772	0.32	0.0302689	0.74	0.3114775	4.7	0.1237889	1.74
Financial crisis dummy	-0.1266021	-3.14	-0.0834014	-2.23	-0.1304238	-3.37	-0.0904642	-2.4
ln Acquisition tax rate	-0.310117	-3.69	-0.2236069	-2.87	-0.2994095	-3.72	-0.2318416	-2.97
Sample size		384		384		384		384
Prob>F		0.0000		0.0000		0.0000		0.0000
R2		0.2203		0.3413		0.2851		0.3458

〈Table II-14〉 OLS Regression Results of Housing Transaction Volume in the Seoul Metropolitan Area (1<sup>st</sup> quarter of 2006-2<sup>nd</sup> quarter of 2013) (acquisition tax rate) (ordinary income of the previous period)

Variable	OLS I (Dependent variable: No. of transactions)		OLS II (Dependent variable: No. of transactions)		OLS III (Dependent variable: No. of transactions)		OLS IV (Dependent variable: No. of transactions)	
	Coefficient (Coeff.: $\beta_1$ )	t-ratios	Coefficient (Coeff.: $\beta_1$ )	t-ratios	Coefficient (Coeff.: $\beta_1$ )	t-ratios	Coefficient (Coeff.: $\beta_1$ )	t-ratios
Constant	0.1467825	1.05	0.11494402	1.29	-0.2734097	-2.02	-0.1199955	-0.84
In [Sale price]	-3.049049	-1.69	-3.111425	-2.08	-3.035504	-2.06	-3.076023	-2.18
In [Chonseil price]	2.02607	1.05	-0.0719883	-0.04	3.736509	2.33	1.920002	1.13
In KOSPI			1.048907	5.58			0.599028	2.56
In Corporate bonds					-2.163088	-5.83	-1.381147	-2.94
In Ordinary income (t-1)	-10.50645	-4.86	-9.803271	-5.47	-10.4449	-5.93	-10.06557	-5.93
Transfer tax dummy	0.0786953	0.33	0.1122036	0.57	0.7914099	3.44	0.5529052	2.31
Financial crisis dummy	-0.4542124	-3.56	-0.3983407	-3.76	-0.4944517	-4.74	-0.4479973	-4.41
In Acquisition tax rate	-0.3401149	-1.24	-0.272252	-1.2	-0.2629342	-1.17	-0.2520781	-1.17
Sample size		72		72		72		72
Prob>F		0.0000		0.0000		0.0000		0.0000
R2		0.393		0.5915		0.6037		0.6409

### C. Empirical Analysis of Transaction Volumes through the Expansion of Time Series

Prior to the implementation of the actual transaction price reporting system in 2006, there existed a wide range of bodies of statistical data designed to identify trends in transaction volumes in the housing market. The Korea Land Corporation surveyed and released the Land Transaction Statistics, which largely divided transactions of land into subdivisions of residential, commercial and industrial use according to the building's use, if there exists any building on the land. The statistics of residential land transactions, published on a quarterly basis, were available based on the number of land lots and on land size. Regional differences existed in criteria for documenting information on residential real estate: some regions recorded information on housing transactions based on appurtenant land. In such areas, when a house or a residential property for which the appurtenant land stretched across multiple lots was traded, only a single representative lot was deemed the subject of the transaction, and it was recorded as a transaction of a single residential lot in the data. On the other hand, some regions based their land transaction records on the area of the land involved. For example, when one apartment housing unit was traded, the area of land subject to the transaction was calculated according to the proportion of the appurtenant land that the unit represented out of the total appurtenant land for the apartment building as documented on the aggregate building ledger. In the national land transaction trend statistics from 1998 to 2011, the numbers of residential land lots and residential property transactions are separately documented as for the transactions taking place after the first quarter of 2006. It enables this study to estimate the numbers of residential land transactions occurring 1998 to 2005 so that the study obtained the data on residential property transactions for an extended time series.

First, the author calculated the quarterly average ratios of the total number of traded lots to the total number of transactions that took place nationwide, in the Seoul Metropolitan Area and within the city limits of Seoul. For the number of transactions taking place from 1998 to 2005, it is estimated by multiplying the number of traded lots for the quarter and the area in question, which are available in the aforementioned data, by the quarterly average ratio

of the regional category in question.

Through this calculation, I was able to gain figures for housing transactions occurring over the eight years prior to the implementation of the transaction reporting system and unite them with the data on the reported transactions for the seven years after 2006. The study is thus able to examine not only the boom housing market years of 2006 and immediately afterwards, but also the down years following the 1997 Asian financial crisis and the succeeding recovery years that led to the peak volumes that took place in 2006, thereby allowing the estimation to strike a balance in terms of covering cyclical fluctuations in the housing market.

[Figure 2] in appendix and [Figure 3] in appendix show the quarterly numbers of transactions nationwide, in the Seoul Capital Area, and in Seoul, respectively, drawn based on the report and contract date. They include data for the extended period obtained through the above estimation. This expanded set of data covering a broader span of time is more desirable for providing a mid-to-long term perspective that enables the observation of a wider picture by presenting data from both booms and downturns. Even when looking at general changes in housing transaction volumes on a quarterly basis, a more accurate picture of housing market trends can be gained by observing the more expansive period covering from the first quarter of 1998, a down quarter showing the deepest impact of the 1997 Asian financial crisis, to the second quarter of 2003, where a growing transaction volume led into the boom years of the housing market, rather than by simply observing the declining trend that followed the fourth quarter of 2006. The quarterly average transaction volumes for the time period of 2006 to 2011 for the nation as a whole, the Seoul Metropolitan Area and Seoul are 3.4 percent and 8.7 percent, respectively, which are about 20 percent lower than those of the period spanning 1998 to 2011. This indicates that considering the data for the years after 2006 when identifying housing transaction trends in Seoul would lead to an underestimation of transaction volumes in Seoul, and a bias stemming from the selection of the period could occur. For these 15 years, the quarterly average transaction volume for the country is calculated at about 228,000, for the Seoul Metropolitan Area it averages 118,000, and for Seoul, 44,000.

The basic data on the dependent variables and explanatory variables for

regression analysis are summarized for the nation and the Seoul Metropolitan Area in <Table 2> in appendix and <Table 3> in appendix.

This study conducted a regression analysis on the quarterly housing transaction volume over the extended period from 1998 by applying different combinations of explanatory variables. The results of the regression analysis covering the whole country and the Seoul Metropolitan Area are presented in <Table II-15> and <Table II-16>, respectively. The coefficient estimates for the acquisition tax variable, the variable of interest, range from -0.2 to -0.3 in the former, and from -0.4 to -0.5 in the latter, both significant at the one percent level. The greatest difference is observed in the housing price index variable: the values for the housing price index have a positive sign with a lower statistical significance and coefficient estimates less elastic, ranging from 0.2 to 0.3. However, the remaining explanatory variables show a similar pattern in terms of the coefficient estimates and significance, while the order of magnitude shows a slight difference. With the period of analysis extended, the results of regression analysis shifted in some regards: the influences of some explanatory variables such as Chonsei deposit, financial crisis dummy and housing acquisition tax rate are enhanced.

〈Table II-15〉 OLS Regression of National Housing Transaction Volume (1<sup>st</sup> quarter of 1998 – 2<sup>nd</sup> quarter of 2013) (Acquisition tax rate) (Ordinary income of the previous period) (excluding South Gyeongsang Province and Jeju Island)

Variable	OLS I (Dependent variable: No. of transactions)		OLS II (Dependent variable: No. of transactions)		OLS III (corporate bonds, ordinary income) (Dependent variable: No. of transactions)		OLS IV (Dependent variable: No. of transactions)	
	Coefficient (Coeff.: $\beta_j$ )	t-ratios	Coefficient (Coeff.: $\beta_j$ )	t-ratios	Coefficient (Coeff.: $\beta_j$ )	t-ratios	Coefficient (Coeff.: $\beta_j$ )	t-ratios
Constant term	0.00772	0.62	0.007251	0.59	0.006455	0.52	0.00659	0.53
In[Sale price]	-0.6197	-3.02	-0.60452	-2.97	-0.55293	-2.68	-0.56856	-2.77
In[Chonseil price]	1.295173	7.81	1.127413	6.66	1.054468	5.53	1.010134	5.32
InKOSPI			0.136876	4.05			0.12192	3.43
InCorporate bonds					-0.10449	-2.53	-0.05887	-1.37
InOrdinary income (t-1)	-0.54798	-2.97	-0.55575	-3.05	-0.3631	-1.84	-0.45074	-2.28
Transfer tax dummy	-0.07611	-2.33	-0.07372	-2.28	-0.05541	-1.65	-0.06232	-1.87
Financial crisis dummy	-0.10411	-3.37	-0.09931	-3.24	-0.11496	-3.70	-0.10594	-3.42
InAcquisition tax rate	-0.30243	-6.26	-0.22173	-4.28	-0.25782	-5.03	-0.20541	-3.86
Sample size	788		788		788		788	
Prob>F	0.0000		0.0000		0.0000		0.0000	
R2	0.3503		0.3637		0.3556		0.3652	

〈Table II-16〉 Regression Analysis on Seoul Metropolitan Area Housing Transaction Volume (1<sup>st</sup> quarter of 1998 – 2<sup>nd</sup> quarter of 2013) (acquisition tax rate) (ordinary income of the previous period)

Variable	OLS I (Dependent variable: No. of transactions)		OLS II (Dependent variable: No. of transactions)		OLS III (Corporate bonds, ordinary income) (Dependent variable: No. of transactions)		OLS IV (Dependent variable: No. of transactions)	
	Coefficient (Coeff.: $\beta_j$ )	t-ratios	Coefficient (Coeff.: $\beta_j$ )	t-ratios	Coefficient (Coeff.: $\beta_j$ )	t-ratios	Coefficient (Coeff.: $\beta_j$ )	t-ratios
Constant term	-0.0207	-0.5	-0.03171	-0.75	-0.10837	-2.21	-0.12207	-2.44
In[Sale price]	0.244781	0.65	0.240623	0.64	0.339862	0.93	0.336952	0.92
In[Chonseil price]	2.578808	7.36	2.495945	7	2.486816	7.26	2.393732	6.87
In[KOSPI]			0.091195	1.21			0.100654	1.37
In[Corporate bonds]					-0.40873	-3.12	-0.41596	-3.18
In[Ordinary income (t-1)]	-4.41712	-4.63	-4.21972	-4.37	-3.37441	-3.42	-3.13811	-3.14
Transfer tax dummy	-0.18092	-2.62	-0.17576	-2.55	-0.07766	-1.04	-0.07014	-0.94
Financial crisis dummy	-0.28668	-4.23	-0.27412	-4.00	-0.27014	-4.08	-0.25599	-3.83
In[Acquisition tax rate]	-0.41912	-3.39	-0.40459	-3.26	-0.53696	-4.25	-0.52301	-4.14
Sample size	171		171		171		171	
Prob>F	0.0000		0.0000		0.0000		0.0000	
R2	0.4038		0.3837		0.4374		0.4438	

## 4 Changes in Housing Acquisition Tax Rates and Tax Revenues

### A. Changes in Taxation on Housing Transactions

<Table II-17> shows changes in statutory nominal tax rates for housing transaction-related taxes from 2004. Before 2004, when the Rho, Moo-hyun government strengthened the taxation on real estate possession and relaxed that for property transactions, the total tax rate for a house, including acquisition and registration taxes and various surtaxes, amounted to 5.8 percent. However, the figure for transactions between individuals fell considerably, to 2.3 percent, thanks to reductions in the housing registration tax in 2005 and acquisition tax in 2006. At that point the annual average tax rate for housing transactions, weighted for time, stood at 2.67 percent, showing a drop of one-third of the past. As for tax base, the fact that reported prices for (housing) acquisition and registration were generally underreported prior to 2005 should be considered since the trading tax base for assessment was revised to reflect actual housing transaction values in 2005. At a time when the mandatory reporting of actual transaction value system was introduced, the tax base for acquisition and registration taxes among local taxes on detached houses were three times greater than the statutory standard price of fair market value (set by the then Ministry of Government Administration and Home Affairs); as for apartments, the real trading value was 1.5-2 times higher compared to the fair market price (as set by the National Tax Service and applied to speculation target areas). Therefore, it can be seen that taxpayers were burdened with heavier taxes on housing transactions as a result of this combination of a tax rate cut but tax base rise.<sup>11)</sup>

Initially, the lower tax rates were stipulated with a sunset provision in the subsection provisions of the Local Tax Act, being applied temporarily from September 1, 2006 when the revised Local Tax Act came into force until the end of the year. However, the Lee, Myung-bak administration extended the period of their application until the end of 2010 in an effort to revitalize the sluggish housing market. The tax rate was supposed to return to 4 percent from 2010,

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11) See Ro Younghoon (2003) for more concrete and specific explanation

but the period of application was extended by a year. Starting from 2011, a statutory tax rate of 4 percent was applied to the acquisition of a housing property worth over 900 million won or for those who possessed multiple houses, but the acquisition tax rates for the former and latter were reduced again to 1 percent and 2 percent, respectively, within just three months for the purpose of promoting transactions in the housing market. The aforementioned acquisition tax reduction measures ended at the end of 2011, and the acquisition tax rate for properties over 900 million won was set at a reduced tax rate of 2.7 percent, and an initial statutory rate of 4 percent was applied to owners of multiple houses in 2012. A growing tax burden on transactions in properties worth more than 900 million won was expected for 2011, so in the fourth quarter of 2010 there was a spike in such transactions in Gangnam District of Seoul, where such high-end housing properties are concentrated. This can be interpreted as a number of future transactions being shifted forward due to the anticipated tax burden. Along with the market distortion caused by more high-end house transactions occurring prior to when they otherwise would have taken place, an issue of fairness in tax burden arises under this tax rate system, since it is difficult to claim that those who acquire a housing property slightly over 900 million won have a taxation capacity two times higher than those who acquire a house under 900 million won.

Starting from 2011, the former acquisition and registration taxes, which had been levied separately during the transaction process, were incorporated into a new acquisition tax as a measure to simplify local tax items through unification of similar items. Before this, parties were required to report and pay each tax separately but afterwards they were required to report and pay acquisition tax simply within 60 days from the date of remainder payment.<sup>12)</sup>

The objects of acquisition tax and registration tax did not fully correspond with each other. Therefore, transactions in land and buildings were separately documented in the records on acquisition tax imposition and collection, while the two items were unilaterally documented as real estate for registration tax, thereby making it difficult to identify the precise amount of tax revenues derived

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12) Registration taxes and license taxes unrelated to acquisition are incorporated as registration and license tax.

from the acquisition and registration taxes on housing properties.

<Table II-18> contains the number of cases of imposition of registration tax and the tax amount involving acquisition of housing properties for value in columns C and D, respectively, among registration tax impositions until 2010, a year before real estate acquisition and registration taxes were unified in 2011. This makes it possible to consistently compare annual acquisition and registration taxes imposed in the process of house transactions occurring since 2006.

<Table II-18> includes data from 2005 when housing acquisition tax began to be gathered separately in (tax) revenue statistics. According to columns A and B, the year 2006 recorded the largest volume of acquisition tax imposition, 3.0776 trillion won imposed on 1.345 million acquisition cases. In 2007, the housing acquisition tax imposition and tax amount were 2.7432 trillion won imposed on 1.22 million cases; in 2008, 2.9331 trillion won imposed on 1.28 million cases; in 2009, 2.9626 trillion won imposed on 1.15 million cases; and in 2010, 2.842 trillion won imposed on 1.07 million cases. The year 2010 showed the lowest figures; compared to the peak year of 2006, it marks a 20 percent drop in the number of impositions but a fall of only less than 8 percent in terms of the tax amount. This means declines in tax amount were relatively modest compared to the drop in the number of transactions, thereby resulting in relatively mild shifts in tax revenues. However, when the registration taxes imposed on acquisition for value (presented in column D) are considered, the tax revenue decreases by 14.4 percent, from 5.5502 to 4.7496 trillion won. During the period of interest for this study, the statutory tax rate on housing transactions between individuals, which are subject to concessional tax rates, decreases by .55 percentage points, or 19.3 percent, from 2.85 percent to 2.3 percent. It's worth noticing that consistent declines are observed in transaction volumes during this period both in the Ministry of Land, Infrastructure and Transport's transaction data and in the Ministry of Security and Public Administration's data on the number of imposition of acquisition and registration taxes, even though the reduced tax rate was applied from September 1, 2006 to late 2010.

It is problematic to estimate the correlation between transaction tax rates and transaction volumes by simply comparing the figures from 2005 and 2006. The statutory nominal tax rates on housing transactions were cut to an annual average of 2.67 percent<sup>13)</sup> in 2006 from 4.0 percent in 2005, resulting in a

reduction of 33 percent, or to two-thirds of its former level. According to the Ministry of Security and Public Administration data on the number of impositions of acquisition and registration taxes, the imposition of housing acquisition tax increased by 12.5 percent and the tax amount rose by 25.6 percent during the aforementioned period. Based on this, simply stating that the transaction volume elasticity of the related taxes is 0.37 and tax amount elasticity is 0.77 would be an overgeneralization. This is because the effective tax rates, which determine the actual tax burden on housing transactions, are not simply affected by changes in statutory tax rates, but also reflect changes in the tax base. In addition, transaction volumes vary according to interactions among a number of deciding factors in the housing market related to the taxation system and financial conditions as well as transaction-related taxes.

In the results of the time series regression analysis model on transaction volumes as presented in the previous section, the transaction volume elasticity of the explanatory variable of acquisition tax rate ranges from -0.29 to -0.22 nationwide. Therefore, a median value of -0.25 can be assumed as the elasticity. Based on this, it can be estimated that if other factors are the same, a drop of 1 percent in the acquisition tax rate would bring about an increase of 0.25 percent in quarterly national housing transactions. This means, for example, that with the tax base calculation system unchanged, if the statutory nominal tax rate declines from 2 percent to 1.8 percent, a 10 percent decrease, the transaction volume would increase by 2.5 percent. This elasticity of 0.25, which is under 1, can be considered 'inelastic,' but the figure is statistically significant, making it impossible to conclude that a cut in transaction tax rates has no influence. However it is also impossible to argue that acquisition tax revenues are absolutely proportional to a decrease in housing transaction tax rates when other conditions are equal because increases in housing acquisition tax revenues are also believed to be derived from an increased number of transactions. It is noteworthy that the above conclusion is similar to the estimation result by Slemrod *et al.*, introduced as a preceding study in the introduction of this paper, who presented

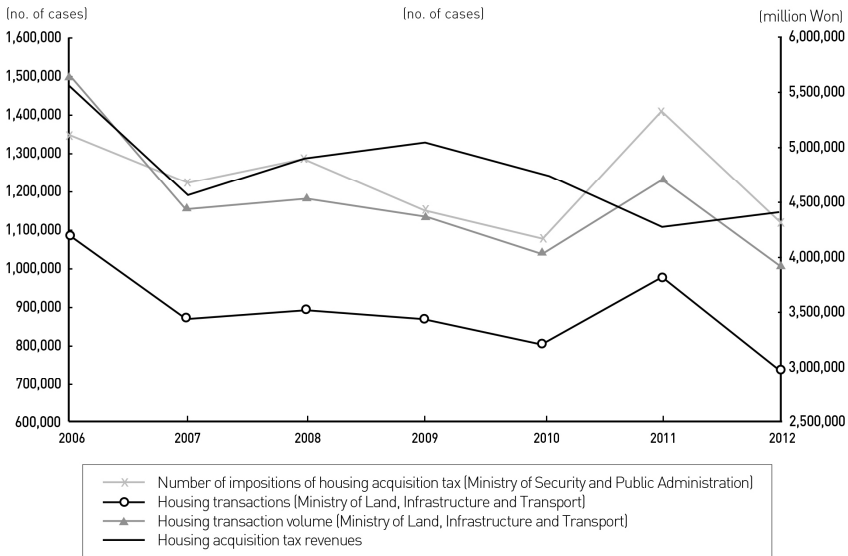
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13) A reduced rate of 2.3 percent began to be applied from September 1, 2006; therefore, for the previous eight months of the year, 2.85 percent is applied and for the rest 4 months, the 2.3 percent is applied for calculation.

their micro-data-grounded findings on that a 1 percent increase in transaction-related tax rates would bring down the annual transaction volume by 0.20 percent (elasticity of -0.2), although there exist differences in other estimation results and in the period subject to analysis.

In addition, this study differs from other existing literature which emphasizes the short-term impact of tax reductions based on drastic spikes and plunges in monthly transaction volumes in periods adjacent to the implementation of concessional tax rates in that a balanced time span has been set here that covers both boom and down years in the housing market ranging from 1998 to the first half of 2013, and in that the study analyzes related-figures on a quarterly basis rather than on a monthly basis.

**[Figure II-16] Comparison of Housing Transaction Volumes and Housing Acquisition Tax (including registration taxes)**



Source: Onnara Real Estate Information Portal (<http://www.onnara.go.kr>),  
MOLIT internal data,  
MOPAS, *Yearbook of Local Tax Administration*, annual,  
MOSPA, *Annual Local Tax Statistics Report*, 2013.

**Table II-17) Changes in Statutory Tax Rates of Housing Transaction Taxes**

(Unit: %)

Tax		Year		Jan. 1, 2006	Sept. 1, 2006	Jan. 1, 2011	Mar. 22, 2011	Jan. 1, 2012	Sep. 24, 2012 <sup>5)</sup>
		2004	2005	-Aug.31, 2006	-Dec.31, 2010 <sup>1)</sup>	-Mar.21, 2011 <sup>2)</sup>	-Dec.31, 2011 <sup>3)</sup>	-Sep.23, 2012	
Acquisition Tax	Principal tax (transaction and exchange for value)	2	→	2 (1.5)	2 (1.0)	4 (2.0)	2 (1)	4 (2.0)	2 (1)
	Special rural development tax (10% of tax amount)	0.2	→	0.2 (0.15)	0.2 (0.1)	0.2 (0.5) <sup>4)</sup>	0.5 (0.65) <sup>4)</sup>	0.2 (0.5)	0.5 (0.65)
	Education tax (20% of tax amount)	-	-	-	-	0.4 (0.2)	0.2 (0.1)	0.4 (0.2)	0.2 (0.1)
	Sub-total	2.2	→	2.2 (1.65)	2.2 (1.1)	4.6 (2.7)	2.7 (1.75)	4.6 (2.7)	2.7 (1.75)
Registration Tax	Principal tax (registration of transfer)	3	2 (1.5)	2 (1.0)	→	Incorporated into acquisition tax	-	-	
	Education tax (20% of tax amount)	0.6	0.4 (0.3)	0.4 (0.2)	→	Imposing on acquisition tax	-	-	
	Sub-total	3.6	2.4 (1.8)	2.4 (1.2)	→	-	-	-	
Total		5.8	4.6 (4.0)	4.6 (2.85)	4.6 (2.3)	4.6 (2.7)	2.7 (1.75)	4.6 (2.7)	2.7 (1.75)

Notes: 1. Figures in parentheses are statutory tax rates adjusted considering tax reductions on housing transactions between individuals.

1) According to the Local Tax Act revision (amended in Sept. 1, 2006), the reduced tax rate that was formerly applied only to housing transactions between individuals was expanded to housing property transactions involving a corporation, and the reduced rate increased from 25 percent to 50 percent, which had been effective until December 31, 2010.

2) Starting from January 1, 2011, registration (license) taxes were not levied on real estate registrations filed due to acquisition, and acquisition and registration taxes were unified, meaning only acquisition taxes were thereafter levied. A 50 percent tax reduction of acquisition and registration taxes benefiting on housing transactions between individuals, initially scheduled to expire at the end of 2010 was extended by one year until the end of 2011 for those who acquire a housing property worth 900 million won or less (the reduced rate was effective only for those not already in possession of one or more houses). This means that acquirers of a housing property worth over 900 million won or multiple-house owners were excluded from the benefit starting from January 1, 2011.

\* Acquisition tax rates

- Property price of 900 million won or less/single-house owner: 2% (50% reduction)

- Property price of over 900 million won/multiple-house owner: 4%

3) A temporary reduction was applied to housing properties of which the remainders were paid from March 22 to December 31, 2011.

- Property price of 900 million won or lower/single-house owner: 1% (75% reduction)

- Property price of over 900 million won/multiple-house owner: 2% (50% reduction)

4) If the reduced rate is applied, 20% of reduced tax amount

5) The temporary reduction benefit was applied on properties acquired from September 24 to December 31 in 2012.

- Property price of 900 million won or lower/single-house owner: 1% (75% reduction)

- Property price over 900 million won to 1.2 billion won/multiple-house owner: 2% (50% reduction)

- Property price over 1.2 billion won/multiple-house owner: 3% (25% reduction)

**<Table II-18> Comparison of Housing Transaction Volumes and Housing Acquisition Tax (including registration taxes)**

(Unit: no. of transactions, million won)

Year	Housing transaction volume (MOLIT)	Housing sale transaction (MOLIT)	Ministry of Security and Public Administration (MOSPA)				
			No. of cases acquisition tax imposed (A)	Housing acquisition tax revenues (B)	No. of housing registration (acquisition for value) (C)	Tax revenues from housing registration (acquisition for value) (D)	Housing acquisition tax revenues + Tax revenues from housing registration acquisition for value (B+D)
2005			1,195,608	2,449,599	1,069,678	2,038,714	4,488,313
2006	1,494,935	1,082,453	1,344,607	3,077,652	1,242,195	2,472,569	5,550,221
2007	1,148,574	867,933	1,221,564	2,743,246	954,826	1,810,122	4,553,368
2008	1,179,742	893,790	1,277,821	2,933,131	1,092,499	1,965,895	4,899,026
2009	1,133,637	870,353	1,149,145	2,962,601	1,013,655	2,068,706	5,031,307
2010	1,037,229	799,864	1,074,593	2,842,000	956,509	1,907,589	4,749,589
2011 <sup>1)</sup>	1,231,393	981,238	1,405,442	4,269,168			4,269,168
2012	1,004,006	735,414	1,116,953	4,413,838			4,413,838
2013(9) <sup>2)</sup>	820,684	583,449					

Note: 1. Number of cases and tax amounts of acquisition and registration taxes are documented based on imposition.

1) From 2011, registration tax is incorporated into acquisition tax if the registration in question is due to acquisition.

2) The 2013 figures cover from January to September.

Source: Onnara Real Estate Information Portal (<http://www.onnara.go.kr>).

MOLIT internal data.

Ministry of Public Administration and Security, *Yearbook of Local Tax Administration*, annual.

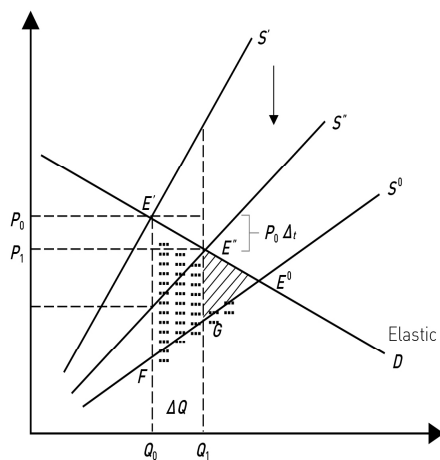
Ministry of Security and Public Administration, *Annual Local Tax Statistics Report*, 2013.

## B. Changes in Excess Burden Following the Reduction of the Flat Ad-valorem Housing Acquisition Tax Rate

This analysis estimates the excess burden resulting from a decreased housing acquisition rate by applying a calculation method of excess burden regarding ad-valorem commodity tax on the consumers and suppliers of goods. First, when acquisition tax on housing properties is levied at a flat rate, buyers and sellers of such property are affected as follows: the supply curve faced by the buyer when acquisition tax is levied on the seller moves upward as shown in [Figure

II-17], resulting in a decrease in transaction volumes and an increase in after-tax prices. If it is assumed that a tax rate is decreased by  $\Delta t$ , rather than a new commodity tax being introduced, a hypothetical equilibrium point  $(P_0, Q_0)$ , describing a certain hypothetical point when tax is nonexistent, shifts to  $(P', Q')$  with the introduction of a tax, and then to the final equilibrium point of  $(P^N, Q^N)$ , when the tax rate is reduced. The demand and supply curves move according to the added tax wedge of an amount of  $\Delta t P_0$ , a increment/decrement of nominal tax amount; and the recovery effects caused by cuts in tax rates followed by a drop in the transaction volume vary depending on the demand and the supply elasticity at the equilibrium point around which changes are made in house acquisition tax policies.

[Figure II-17] Elastic Supply Curve

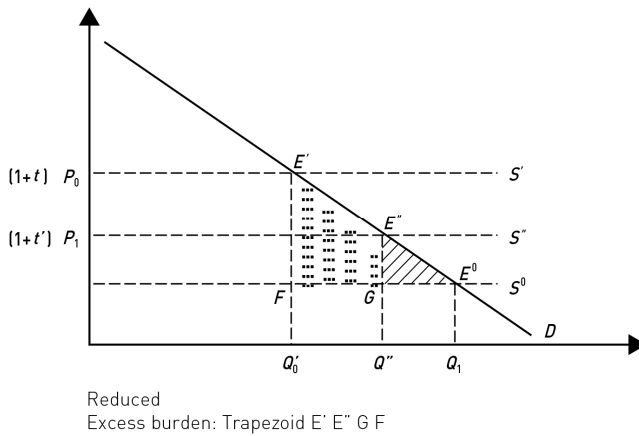


Reduced  
Excess burden: Trapezoid  $E'E''GF$

The decreasing effect on excess burden caused by a reduced housing acquisition tax rate differs according to whether the supply curve for the housing market is elastic or inelastic, because the effects depend on the extent to which the after tax equilibrium price drops again as well as the degree to which trading volumes recover. A case where the market's supply is inelastic is shown in

Figure II-18, and an alternative case where supply is indeed affected by changes in prices to an extent is presented in [Figure II-17]. In both cases, price elasticity of the supply is necessary in order to calculate the excess burden, so it was decided that a transaction volume elasticity estimate of -0.25, a median value from the regression analysis presented in the above section, should be used.

[Figure II-18] Perfectly Inelastic Supply Curve



In both cases, the decrease in the excess burden can be obtained by calculating the area of trapezoid E' E'' G F. The calculation formula for the excess burden or deadweight loss is presented below. In order to accurately calculate the changes in the amount of excess burden, the hypothetical trading volume and prices if housing acquisition tax did not exist at all are required. In the absence of such information, an approximation can be calculated by multiplying transaction volume elasticity, changes in after-tax average prices, and the degree of recovery in trading volumes following the application of a reduced tax rate.

$$\begin{aligned}
 EB &= \frac{1}{2} [tP] [t \cdot \eta \cdot Q] \\
 &= \frac{1}{2} \eta P \cdot Q \cdot t
 \end{aligned}$$

## 5 Compensation for Tax Revenue Loss Following Reduction in Housing Acquisition Tax

In 2006, the central government of South Korea began to make use of the intergovernmental fiscal co-ordination system in order to reimburse the loss of local tax revenues caused by tax reductions for housing acquisition taxes. The statutory nominal tax rate had been reduced since 2005 in an effort to relieve the burden of real estate transaction taxes under the Local Subsidy Act and its sub-provisions, which was introduced in order to compensate for the decrements in local property taxes when the Comprehensive Real Estate Tax (national tax) was introduced in 2005 as a means to increase the burden of holding tax. The reimbursement of losses in local tax revenues began on December 27, 2006 when the Enforcement Decree of the Local Subsidy Act, which defines the criteria for governmental subsidies of the Comprehensive Real Estate Tax, began to divide revenue losses into decrements in property tax and decrements in transaction tax<sup>14)</sup>. Since 2006, when losses in transaction revenues began to be reimbursed, the proportion of total tax losses for which decrements in transaction tax revenues accounted increased considerably. In 2006, the decrement in property taxes was recorded at 384 billion won, and that in transaction taxes marked 482.7 billion won, amounting to 55.7 percent of total losses. However, in 2007, the proportion of the latter reached 92.2 percent with a decrement of 919.9 billion won. In 2008, the proportion rose to as high as 97 percent, with the decrement in transaction tax being 746.5 billion won. When the Comprehensive Real Estate Tax was introduced in 2005, revenue loss took place only in property taxes, but over the following three years reimbursement was made mainly for the losses in transaction taxes. Since 2008, when the remainder after reimbursing the decrements in revenues spiked considerably, the proportion of real-estate related subsidies paid from the remaining revenues (2,115.6 billion won) accounted for 73.3 percent of the total of the real-estate

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14) "Decrement in transaction tax" for 2005 is calculated as follows:  $\{(\text{acquisition tax} + \text{registration tax, imposed in 2005}) \times \text{10-year average percentage change index of acquisition and registration taxes}\} - (\text{real estate acquisition and registration tax amounts})$

transaction related subsidies.

For the collected tax amount attributable to 2006 and 2007, the amounts of subsidies were calculated according to the following criteria and proportions under the Enforcement Decree of the Local Subsidy Act: local government financial condition involving the remainder excepting the decrements in tax revenues, 80 percent; the operational condition of local taxes, 15 percent; and the size of real estate possession tax, 5 percent. However the Decree was revised on December 13, 2007 in order to apply the following criteria and proportions starting in 2008: local government financial condition, 50 percent; social welfare, 25 percent; regional education, 20 percent; and the size of real estate possession tax, 5 percent. The aforementioned changes, pursued as part of the Rho, Moo-hyun Government's efforts to broaden welfare-related spending through legal revisions, was aimed at making use of real estate subsidies as financial resources for expanding welfare-related expenditures. Consequently, the revision served as a starting point from which local subsidies were used in relation to the central government's welfare and educational programs; for instance, real estate subsidies began to be used as a financial resource for the Basic Old-age Pension and the Elderly Long-term Care Insurance, as well as for after-school programs. Prior to the revision, real estate subsidies had been directed toward the reimbursement of revenue losses, and most of the remainder (80 percent), allotted as general discretionary local government financial resources, was granted according to the criteria for revenue equalization; however, as revenues from the Comprehensive Real Estate Tax increased considerably and a further future rise was expected<sup>15)</sup>, the allocation system for the remainder was transformed in order to specify that disbursement be used 'for welfare and education,' according to which the remainder became made up of 45 percent of expenditures related to welfare and education.

Since 2008, real estate subsidies have served as a tool to reimburse the decrements in transaction taxes. This is why there have been constant conflicts

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15) After public notice of real estate value was decided to be used as the tax base for land and housing property taxes, sub-provisions of the revised act stipulated that the application rate should begin at 55 percent in 2006 for land and buildings and 50 percent for 2006 and 2007 for housing properties. The application rate then was to be expanded by 5 percent on an annual basis to reach 100 percent in 2015 and 2017, respectively. Accordingly, increases in tax revenues were expected.

between the central and local governments surrounding the volume of revenue losses and the appropriate form of reimbursement whenever a central government-led nominal tax rate reduction was introduced. This appears to be attributable to the fact that revenues from the Comprehensive Real Estate Tax, a major source for tax-loss reimbursement, have been on the decline since 2008 when measures to relieve the burden from this tax were introduced, from a peak amount of 2.7 trillion won to the one trillion won level, making it difficult to strike a balance between the real estate subsidies, the main sources for revenue loss reimbursement, and the decrements in revenues.

On August 28, 2013, the government announced its “Measures to Stabilize Monthly Lease and Chonseil Deposit for the Housing of Ordinary People,” that included a revenue compensation plan for a permanent tax reduction while considering the adverse effects stemming from the temporary housing acquisition tax reductions. In fact, the central government had led three rounds of temporary housing acquisition tax reduction policies, each lasting less than a single year, in order to promote housing transactions in the market. The implementation of such policies gave rise to the following issues: ① conflicts between the central and local governments during negotiations for preserving tax revenues; ② market disturbances caused by uncertainty during the legislative period. In fact, when acquisition tax reduction policies were implemented from 2007 to 2010, there was room during the budget preparation period for the central and local governments to discuss how to reimburse losses in local tax revenues. However, unlike these initial reductions, the final three rounds were announced in the middle of the fiscal year as countermeasures to a sluggish market; therefore, it is fair to say the central and local fiscal authorities have faced the aforementioned difficulty more than three times.

As a permanent housing tax reduction has recently been introduced, this is an appropriate time to review intergovernmental fiscal co-ordination measures such as the transfer of housing acquisition tax to national tax items and other exchanges of tax items between the central and local governments. Currently, a number of options are under discussion, from minor adjustments such as increases in local shared tax rates or national subsidy rates to measures for increasing general local taxes as a decentralization measure. Given the fact that fiscal responsibility on the part of local governments is considered important

and acquisition tax has been utilized as a tool to revitalize the housing market as a whole, it is more desirable that the current status of national acquisition tax being transferred to local governments as a local tax. When implementing the transfer of a particular national tax item to local governments as a local tax in order to mitigate a loss of tax revenue caused by the acquisition tax reduction, not only tax revenue neutrality but also comparison of excess burden or regional distribution of tax sources should be considered. In fact, there is no need for a new distribution of tax sources to perfectly mirror the current example, but a similar regional distribution at the provincial level would raise the feasibility of tax item exchanges that could be acceptable to local governments.

### III

## Comparison of Transaction Taxes between Countries and Related Implications

### 1 Ratio of National Tax to Local Tax in Property Transaction Tax in OECD Member Countries

In order to observe whether transaction taxes imposed in the housing market are levied as a national tax of the central government or as a local tax belonging to a local government, OECD revenue statistics are reorganized as seen in <Table II-1> and <Table II-2>. Because few countries impose transaction taxes purely on housing properties or assets, this study examines these revenue statistics against taxes on financial and capital transactions, of which the middle classification code is 4400 in the statistics, and which include revenues from housing transaction revenues.

The reason a tax called a stamp duty is imposed as a national tax by the central government or as a local tax by a state government in most member countries is that in these countries the law stipulates a duty to report under which the right to assets such as ownership is registered on an official document according to a general consensus that such registration duties pertain to the administrative affairs of central or local governments, and that any legal activities between private individuals involving property ownership should be certified by the government based on public information registered in the public record. For example, Britain's collection of taxes on financial and capital transactions (reclassification code 4400) was 7.141 billion pounds as stamp duty in 2009,

and the figure is consistent with the number recorded in the stamp duties section for 2009 in 23.9 HM Revenue and Customs Taxes and Duties released by Britain's National Office of Statistics.

The group of nations classified as unitary states has a nearly 100 percent proportion of national tax to local tax in terms of transaction taxes, since in these countries, transaction taxes are levied in the name of the central government in the form of stamp duties or registration license tax. Exceptions include France, Hungary, Japan, South Korea and Spain, among which particular attention is required to the governmental structures of Spain and France. First, Spain is classified as a regional country in the OECD data, but some other reports consider the nation as a federal state, and so does the press.<sup>16)</sup> Therefore, this study takes into account these two opinions regarding the country's type and includes Spain in <Table III-1> and <Table III-2> simultaneously. Second, the tri-level structure of the French central and local governments, similar to that of Spain in which a region, corresponding to a state in a federated nation, is responsible for registration business and imposition of transaction taxes, but power is concentrated within the central government. This is why France is categorized as a unitary country by the OECD. Under these circumstances, it is fair to state that Spain and France can both be considered federal countries in terms of local tax imposition in that the two systems are very similar. If so, then exceptions in terms of the ratio of national asset transaction tax revenues to local ones are limited to Hungary, Japan, and South Korea. As for Japan, its stamp revenues as seen in the OECD statistics are consistent with the sum of the amount of Japanese National Tax Agency (NTA) revenue in tax and stamp revenues from the *NTA Statistical Yearbook* and the amount from custom houses and Japan Post, as presented on page 35 of the 135<sup>th</sup> *NTA Statistical Yearbook* (the 21<sup>st</sup> year of the Heisei era, 2009).

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16) As seen in articles discussing Spain in the midst of the recent European financial crisis: "...the Andalusia state of Spain became the fourth state to petition for fiscal support to the central government," Spain's local governments are referred to as "state," although the country is not a federation.

〈Table III-1〉 Ratio of Central Government Property Tax Revenue to that of Local Governments in Unitary Countries (2010)

(Unit: %)

		4000							Total revenues
		Taxes on Property	Recurrent taxes on immovable property	Recurrent taxes on net wealth	Estate, inheritance and gift taxes	Taxes on financial and capital transactions	Non-recurrent taxes	Other recurrent taxes on property	
Chile	Central	31.2	1.6	0.0	100.0	100.0	0.0	0.0	93.5
	Local	8.8	98.4	0.0	0.0	0.0	0.0	0.0	6.5
Czech Republic	Central	46.5	0.1	0.0	100.0	100.0	0.0	0.0	97.6
	Local	53.5	99.9	0.0	0.0	0.0	0.0	0.0	2.4
Denmark	Central	28.2	0.0	0.0	100.0	100.0	0.0	0.0	72.6
	Local	71.8	100.0	0.0	0.0	0.0	0.0	0.0	27.4
Estonia	Central	0.0	—	—	—	—	—	—	83.6
	Local	100.0	100.0	0.0	0.0	0.0	0.0	0.0	16.4
Finland	Central	44.0	0.0	0.0	100.0	100.0	0.0	0.0	65.2
	Local	56.0	100.0	0.0	0.0	0.0	0.0	0.0	34.8
France	Central	18.9	0.1	100.0	100.0	11.6	0.0	0.0	76.4
	Local	81.1	99.9	0.0	0.0	88.4	0.0	0.0	23.6
Greece	Central	71.2	0.0	0.0	100.0	98.6	0.0	100.0	98.3
	Local	28.8	100.0	100.0	0.0	1.4	0.0	0.0	1.7
Hungary	Central	58.6	0.0	100.0	56.2	56.2	0.0	0.0	90.7
	Local	41.4	100.0	0.0	43.8	43.8	0.0	0.0	9.3
Iceland	Central	25.4	0.5	100.0	100.0	100.0	100.0	100.0	74.5
	Local	74.6	99.5	0.0	0.0	0.0	0.0	0.0	25.5
Ireland	Central	43.4	0.0	0.0	100.0	100.0	0.0	0.0	96.3
	Local	56.6	100.0	0.0	0.0	0.0	0.0	0.0	3.7
Israel	Central	25.9	0.3	0.0	0.0	100.0	100.0	0.0	90.9
	Local	74.1	99.7	0.0	0.0	0.0	0.0	0.0	9.1
Italy	Central	64.8	0.0	100.0	93.4	93.4	99.7	74.7	77.5
	Local	35.2	100.0	0.0	6.6	6.6	0.3	25.3	22.5
Japan	Central	17.7	0.0	0.0	100.0	73.0	0.0	0.0	56.0
	Local	82.3	100.0	0.0	0.0	27.0	0.0	0.0	44.0
South Korea	Central	33.7	13.3	0.0	100.0	32.9	0.0	0.0	78.3
	Local	66.3	86.7	0.0	0.0	67.1	0.0	0.0	21.7

〈Table III-1〉 Continued

(Unit: %)

		4000							Total revenues
		4100	4200	4300	4400	4500	4600		
		Taxes on Property	Recurrent taxes on immovable property	Recurrent taxes on net wealth	Estate, inheritance and gift taxes	Taxes on financial and capital transactions	Non-recurrent taxes	Other recurrent taxes on property	
Luxembourg	Central	96.4	0.0	100.0	100.0	93.7	0.0	0.0	93.9
	Local	3.6	100.0	0.0	0.0	6.3	0.0	0.0	6.1
Netherlands	Central	52.3	0.0	100.0	100.0	100.0	0.0	0.0	94.0
	Local	47.7	100.0	0.0	0.0	0.0	0.0	0.0	6.0
New Zealand	Central	2.1	0.0	0.0	100.0	100.0	0.0	0.0	92.8
	Local	97.9	100.0	0.0	0.0	0.0	0.0	0.0	7.2
Norway	Central	51.8	16.2	45.1	100.0	100.0	0.0	0.0	86.4
	Local	48.2	83.8	54.9	0.0	0.0	0.0	0.0	13.6
Poland	Central	0.0	–	–	–	–	–	–	80.3
	Local	100.0	100.0	0.0	100.0	0.0	0.0	0.0	19.7
Portugal	Central	47.3	0.0	0.0	100.0	98.9	0.0	0.0	92.2
	Local	52.7	100.0	0.0	0.0	1.1	0.0	0.0	7.8
Slovakia	Central	0.0	0.0	0.0	0.0	0.0	0.0	0.0	94.8
	Local	100.0	100.0	0.0	0.0	0.0	0.0	0.0	5.2
Slovenia	Central	0.0	0.0	0.0	0.0	0.0	0.0	0.0	81.8
	Local	100.0	100.0	0.0	100.0	100.0	0.0	0.0	18.2
Sweden	Central	61.4	46.6	0.0	100.0	100.0	0.0	0.0	59.5
	Local	38.6	53.4	0.0	0.0	0.0	0.0	0.0	40.5
Turkey	Central	67.1	0.0	0.0	89.3	89.3	0.0	0.0	87.6
	Local	32.9	100.0	0.0	10.7	10.7	0.0	0.0	12.4
Britain	Central	57.9	48.0	0.0	100.0	100.0	0.0	0.0	93.7
	Local	42.1	52.0	0.0	0.0	0.0	0.0	0.0	6.3
Spain	Central	55.65	1.00	0.00	1.82	3.93	0.07	0.00	100.00
	Local	44.35	99.00	100.00	98.18	96.07	99.93	100.00	0.00

Note: Social security contributions are excluded.

Source: OECD, Revenue Statistics – Comparative tables (<http://stats.oecd.org/index.aspx>).

〈Table III-2〉 Ratio of Central Government Property Tax Revenue to that of Local Governments in Federal Country (2010)

(Unit: %)

		4000	4100	4200	4300	4400	4500	4600	Total revenues
		Taxes on Property	Recurrent taxes on immovable property	Recurrent taxes on net wealth	Estate, inheritance and gift taxes	Taxes on financial and capital transactions	Non-recurrent taxes	Other recurrent taxes on property	
Australia	Federal	0.04	0.00	0.00	0.00	0.10	0.00	0.00	80.33
	State	62.72	37.43	0.00	0.00	99.90	0.00	0.00	16.21
	Local	37.24	62.57	0.00	0.00	0.00	0.00	0.00	3.46
Austria	Federal	58.26	4.84	0.00	100.00	100.00	100.00	0.00	93.08
	State	2.57	5.87	0.00	0.00	0.00	0.00	0.00	2.30
	Local	39.16	89.30	0.00	0.00	0.00	0.00	0.00	4.62
Belgium	Federal	7.86	0.75	100.00	0.00	10.59	100.00	0.00	84.66
	State	52.50	3.29	0.00	100.00	89.41	0.00	0.00	7.70
	Local	39.64	95.96	0.00	0.00	0.00	0.00	0.00	7.64
Canada	Federal	0.00	-	-	-	-	-	-	45.44
	State	13.30	7.80	100.00	0.00	78.34	8.42	0.00	43.32
	Local	86.70	92.20	0.00	0.00	21.66	91.58	0.00	11.23
Germany	Federal	0.00	-	-	-	-	-	-	51.88
	State	46.15	0.00	100.00	100.00	100.00	0.00	0.00	35.00
	Local	53.85	100.00	0.00	0.00	0.00	0.00	0.00	13.12
Mexico	Federal	0.00	-	-	-	-	-	-	95.80
	State	33.72	33.13	0.00	0.00	34.88	0.00	0.00	2.80
	Local	66.28	66.87	0.00	0.00	65.12	0.00	0.00	1.39
Spain	Federal	1.00	0.00	1.82	3.93	0.07	0.00	100.00	55.65
	State	46.44	0.00	94.55	93.10	96.53	0.00	0.00	29.16
	Local	52.56	100.00	3.64	2.97	3.40	100.00	0.00	15.19
Switzerland	Federal	23.96	0.00	0.00	0.00	97.67	0.00	0.00	47.55
	State	45.62	29.55	59.69	70.67	1.88	0.00	0.00	32.03
	Local	30.42	70.45	40.31	29.33	0.44	0.00	0.00	20.43
U.S.	Federal	3.27	0.00	0.00	76.85	0.00	0.00	0.00	50.81
	State	4.07	3.30	0.00	21.57	0.00	0.00	0.00	27.54
	Local	92.65	96.70	0.00	1.59	0.00	0.00	0.00	21.65

Note: Social security contributions are excluded.  
Source: OECD, Revenue Statistics – Comparative tables (<http://stats.oecd.org/index.aspx>).

## 2 Housing Transaction Taxes in Other Countries<sup>17)</sup>

### A. Housing Transfer Taxes in the U.S.

Dachis *et al.* (2012) reports that housing transfer taxes exist in 35 states in the U.S., as well as in municipalities within states. Let us take a look at the examples of the City of New York and Washington D.C.

The New York City Real Estate Transfer Tax is levied on any transaction over 500 dollars regarding a certain right to real estate property, which includes deeds. The tax must be paid within 15 days after the completion of a transaction, meaning immediately after the right is transferred the tax is imposed at a rate of two dollars per 500 dollars of gross consideration or fraction thereof, with the tax rate set at 0.4 percent. What is notable is that the taxpayer is the granter, but if the granter does not pay, or if he or she is a non-taxable individual, the recipient must pay, meaning the two parties have a shared payment responsibility.

Based on the New York City Administrative Code<sup>18)</sup>, New York City imposes a real property transfer tax, while the New York State government imposes a real estate transfer tax. For a house priced at 500,000 dollars or less, the tax rate is one percent, and for those priced over 500,000 dollars, a rate of 1.425 percent is applied to the total amount of transaction, not to the excess portion. For commercial properties, the rate is set at 1.425 percent for those priced at 500,000 dollars or less and 2.625 percent<sup>19)</sup> for those over 500,000 dollars. The real estate transfer tax is electronically reported and paid within 30 days of the transaction through the Automated City Register Information System (ACRIS). In most cases, the Real Estate Transfer Tax is paid by proxy

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17) Since a number of OECD member countries implementing value-added tax (VAT) unexceptionally introduced a tax exemption policy for sale and purchase of existing housing properties, VAT is excluded from the discussion.

18) NYC Administrative Code, Local Law: Title 11, Chapter 21, Administrative Code, Enabling Act: Tax Law Section 1201(b).

19) The figure results from the addition of 1.625 percent, a city tax belonging to the general finance of New York City and 1 percent pertaining to the Mass Transit Authority and private bus service operators.

by the attorney of either the seller or the buyer, after being settled as one of the closing costs during the process of completing the transaction.

Even if New York State's Mansion Tax, imposed only on high-value homes over one million dollars, is additionally levied, the effective tax burden involving housing transaction-related taxes in New York City is 2.825 percent or less.

In Washington D.C., the housing property transfer tax rate increased from 2.2 percent to 3 percent in 2003, but this higher rate is applied only to housing properties with a reported transaction price of 250,000 dollars or over. Since the upper rate is applied to the total amount of transaction when the property's price is 250,000 dollars or over, a difference of a single dollar in the transaction price—between 249,999 dollars and 250,000 dollars—could lead to a difference of 2,000 dollars in tax, creating a price notch effect. Therefore, an incentive to keep the official house transaction price under the threshold of 250,000 dollars has been in place since January 1, 2003 for house sellers intending to market a property evaluated at somewhere around 250,000 dollars. The house buyer pays deed recordation tax, and the seller, deed transfer tax, respectively,<sup>20)</sup> with each party burdened with an identical amount. Under these circumstances, the two parties have an incentive to keep the transaction price under 250,000 dollars, considering that they can save in deed recordation tax and deed transfer tax 1,000 dollars each ( $250,000 \text{ USD} \times (3\% - 2.2\%) / 2$ ), a reduction by one-half if the price is reported under the cut-off point.

The high tax rate of 3 percent and the resulting price notch effect ended on October 1, 2004 with the abolishment of the policy, but on the same date in 2006 a new cut-off point for a tax rate raise was introduced which raised the tax rate to 2.9 percent for high-value homes over 400,000 dollars, creating a shared tax difference of 2,800 dollars as calculated in the above manner.

<Table III-3> provides the ratio of several costs occurring from the purchase/sale compared to transaction prices for each of these metropolitan cities from the U.S. In the back-end stage, the seller is burdened with a simple average of 6.3 percent, and even during the period of his/her possession, the seller has to pay a local property tax of 1.3 percent on an annual basis. In the process

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20) Usually, the buyer pays deed recordation tax in the process of registration and the seller pays deed transfer tax. The housing turnover tax means the combination of these two taxes in this study.

of purchase, he/she pays 1.45 percent along with the transfer tax of 0.78 percent. All things considered, the seller has to pay a relatively large amount of taxes from the moment of purchasing a property until selling it. In particular, New York and Philadelphia show high housing transfer taxes, 2 percent and 4 percent, respectively; while more than a few cities are found to levy a negligible transaction tax or none at all. Based on this, it is concluded that housing transfer tax is not a universal local tax across the entire federation of the U.S.

◁Table III-3▷ **Costs of House Transaction in Major Cities: Ratios of Transaction Cost to House Value**

(Unit: %)

	Transfer tax	Costs on purchasing	Property tax rate	Costs on selling
Atlanta	0.10	1.20	1.00	5.60
Boston	0.46	1.15	1.31	5.96
Chicago	1.20	2.51	2.02	6.70
Cincinnati	0.30	1.35	1.27	5.80
Cleveland	0.40	1.00	1.58	5.90
Dallas	0.00	1.23	1.93	5.50
Denver	0.01	1.03	0.70	5.51
Detroit	0.86	1.27	1.88	6.36
Honolulu	0.10	1.00	0.29	5.60
Houston	0.00	1.32	2.02	5.50
Kansas City	0.00	1.22	1.31	5.50
L.A.	0.11	1.33	0.70	5.61
Miami	0.95	1.83	1.30	6.45
Milwaukee	0.30	1.42	1.76	5.80
Minneapolis	0.56	2.12	1.19	6.06
New York	2.05	2.20	1.70	7.55
Philadelphia	4.00	1.94	1.63	9.50
Pittsburgh	4.00	1.84	1.50	9.50
Portland	0.00	1.02	1.05	5.50
San Diego	0.11	1.24	0.73	5.61
San Francisco	0.68	1.24	0.75	6.18
Seattle	1.78	2.20	1.02	7.28
Saint Louis	0.00	0.79	1.30	5.50
Average	0.78	1.45	1.30	6.28
Median	0.30	1.27	1.30	5.80

Source: Calculation by Harris (2013) based on data from the U.S. Federal Housing Finance Agency (FHFA) Tax Foundation (2009).

During the 2008 financial crisis, the U.S. introduced a federal income tax credit of 8,000 dollars to encourage home purchases through the First-Time Homebuyer Credit. It is worth noting that at a time when discussion is taking place regarding policies aimed at cutting back local property income tax deductions on mortgage interest and payments (which accounted for the largest proportion in tax expenditure items) for the purpose of reducing fiscal deficits, changes in transaction costs derived from decreases in the housing transfer taxes imposed by local governments and municipalities could have similar effects on the housing market. Of course, it is questionable whether policy measures involving federal income taxes can be replaced with local tax credits related to housing properties, since such measures require settlement of intergovernmental fiscal adjustments. However, it is clear that there was growing attention being paid to the relaxation of transfer taxes and costs on transactions as a policy measure to revitalize a housing market sluggish after the transfer tax was relaxed.

## **B. Stamp Duty in the U.K.**

In the U.K., the Stamp Duty is levied as a national tax. Since 2003, when the Stamp Duty began to include land tax, it has been referred to as the Stamp Duty Land Tax (SDLT). While housing transaction taxes exist in the form of local taxes in many other countries, in the U.K. it is levied by the central government. Table III-4 shows the progressive SDLT rates—from one to seven percent—by transfer price band, which are applied both to the purchase of freeholds and to lease contracts. The highest tax rate of 7 percent on houses valued at over 2 million pounds, also known as a mansion tax, was newly introduced on March 22, 2012. Prior to the 2012 imposition of the mansion tax, the highest SDLT rate was 5 percent. In addition, a punitive tax rate of 15 percent, which is applied to houses over 2 million pounds, was introduced on foreign buyers in an effort to prevent such buyers from avoiding taxes by purchasing housing properties as a corporate, rather than individual, party, especially by means of a trust entity. In 2003, the Stamp Duty was revised into the SDLT in an attempt to prevent the avoidance of the Stamp Duty through the practice of separately trading furniture and built-in interior

decorations for exaggerated prices. Currently, it is mandatory to report the transfer price, including any such interior items and facilities, to the register office. To prevent tax evasion, the register office compares the reported price with other corresponding properties located in the surrounding area. As for residential and commercial properties or commercial properties, tax rates differ according to the price range, ranging from one to four percent, but the tax rates are relatively lower compared to those applied to residential properties. What is immediately noticeable is that the SDLT is not an excess progressive tax, but rather a simple progressive tax in that when a transfer value falls into a certain tax base range, the tax rate is applied en bloc. If a house worth 900 million won to 1 billion won, which is categorized as high-end, were traded in the U.K., the effective tax burden would be less than 4 percent, and if a house worth over 3 billion won, categorized as super high-value, was traded in the U.K., the tax burden would rise to seven percent for transactions occurring after March 21, 2012.

Many economists predict that the U.K. SDLT, which applies different tax rates on land and real estate property transactions (including share transactions) according to real estate type and transfer value, will place a considerable financial burden on sellers. Particularly, in a housing market of inelastic supply, a seller has no choice but to accept requests from a buyer to lower the price. This leads to an absolute capitalization of higher taxes, creating discounted trading prices and thereby considerably burdening the seller. Therefore, the U.K. SDLT is generally perceived as an economically inefficient tax system among economists. *The Mirrlees Review*, an Institute for Fiscal Studies' report on taxation reform released in 2011, pointed out, "(The British SDLT) creates a disincentive for people to move house, and the adverse consequences of this on the functioning of housing and labour markets."<sup>21)</sup> Despite such arguments, the U.K. government has widened the price band of the differentiated taxation since 2012.

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21) p. 403, "The British SDLT creates a disincentive for people to move house, and the adverse consequences of this on the functioning of housing and labour markets."

〈Table III-4〉 U.K.'s SDLT Rates

(Unit: %)

Purchase price	SDLT rates
Under GBP125,000	0
Over GBP125,000 to GBP250,000	1
Over GBP250,000 to GBP500,000	3
Over GBP500,000 to GBP1,00,000	4
Over GBP1,000,000 to GBP2,000,000	5
Over GBP2,000,000 (from March 22, 2012)	7
Over GBP2 million (purchased by certain persons, including corporate bodies) from 21 March, 2012	15

Source: <http://www.hmrc.gov.uk/sdlt/intro/rates-thresholds.htm>

### C. Japan's House-related Turnover Taxes

In the case of a transaction of a house located in the City of Tokyo, the acquirer has to pay the following taxes: ① property acquisition tax, a form of prefecture tax<sup>22)</sup>; ② registration and license tax, a national tax; and ③ stamp tax, a national tax. The first two taxes follow the principle of payment by report, but the standard levied amount is decided by the fixed asset assessment amount rather than through self-assessment<sup>23)</sup> (as in Korea's property tax base). The second type of tax is based on the amount written on the contract. The most noticeable aspect in understanding Japan's real estate acquisition tax is that its tax base is the same as that for its fixed assets tax, which is a real estate holding tax. Therefore, taxation data on real estate properties subject to fixed asset tax plays an important role in determining the revenues from real estate acquisition tax. That is, the tax base for real estate acquisition tax is determined according to the assessment amount for holding tax as annually evaluated, not the actual transaction price paid by the buyer upon purchase. The tax base for real estate acquisition tax is first decided, regardless of the

22) [http://www.tax.metro.tokyo.jp/shisan/fudosan.html#hu\\_1](http://www.tax.metro.tokyo.jp/shisan/fudosan.html#hu_1)

23) The law stipulates "the price appraised and decided based on fixed asset valuation criteria set by the Prime Minister," and, in principle, the prices are the ones written in ledgers of fixed asset tax (property tax in Korea).

transaction value written on the contract, and then attached to the certified copy of the register, which is reported to Tokyo by the local register office for the estimation of real estate acquisition tax revenue. The acquisition tax is reported to the prefecture tax office (or prefecture tax branch), or local branch office that holds jurisdiction over the location of the real estate within 30 days from the date of acquisition. The registration and license tax is paid upon application of registration, and the payment of stamp tax is made through the purchase of a stamp when transfer contract-related documents are written, according to the Stamp Tax Act.

The acquisition tax is imposed regardless of registration status when a real estate property is acquired by purchasing land or a housing property for value or free of charge, or when constructing a new residential house. Therefore, it is fair to say that the taxable object for real estate acquisition tax is the acquisition by an individual or a corporate entity through sale or purchase, gift, exchange, or construction (new construction, extension of a building, remodeling). The tax rate is set at three percent for real estate properties acquired from April 1, 2003 to March 31, 2015. As for real estate properties acquired prior to March 31, 2003, however, the tax rate is four percent (for housing properties, three percent).<sup>24)</sup>

Because Japan has managed registration and taxation ledgers for land and buildings separately, even in the case of house acquisition, the property acquisition tax and registration and license taxes are levied separately on the house (the residential building) and on its appurtenant land in a way that the deductible amounts are first subtracted separately and a basic tax rate of three percent is applied to both taxes, and then each tax amount is aggregated. Unlike South Korea, Japan has meticulously maintained separate evaluation and taxation of houses (buildings) and appurtenant lands even for residential housing buildings. A tax reduction on acquisition of a housing site and appurtenant land is applied when the acquirer constructs a new building after the purchase or lease of the land. The reduction on residential houses (buildings) is differently applied according to residential conditions, floor area

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24) For land acquisition tax on a house built on non-housing appurtenant land, the tax rate of 3.5 percent has been applied since April 1, 2006.

(under a certain size), the year of construction, etc. If the standard assessment value for fixed asset tax is assumed to be 70 percent for land and 30 percent for buildings and no deduction is applied, the effective tax rate for real estate acquisition tax is estimated at 1.5 percent, even though the legal nominal rate is three percent.

In Japan, the statutory nominal rate for registration and license tax, imposed as a national tax, is 2 percent, as seen in <Table III-5>. However, the effective rate is assumed to be less than 1 percent given the low actualization rate of the tax base. Finally, the nominal tax rates for the stamp tax, imposed as a national tax, are presented in <Table III-6>. Unlike the aforementioned real estate acquisition tax and registration and license tax, the tax base for the stamp tax is “the amount written on the contract.” When a faithful report is assumed, the effective tax burden varies depending on the range of the value for purchase and sale: 0.1 percent-0.4 percent for low-priced houses worth 10 million yen or less; and under 0.1 percent for houses priced over 10 million yen. Additionally, a tax reduction of 10 to 20 percent is applied to housing properties over 10 million yen whose transaction contract was made after April 1, 1997. In the end, it is found that the effective tax burden, totaling all taxes related to a transaction of a house located in Tokyo, does not exceed 2.6 percent of the actual value for purchase and sale.

<Table III-5> Tax Burden of Registration License Tax on Housing Transactions in Japan

	Description	Tax base	Tax rate	Reduced tax rate
Land registration	Transaction or auction	Property value <sup>2)</sup>	2%	Apr. 1, 2012 –Mar. 31, 2013: 1.5%
Building registration	Transaction or auction	Property value	2%	When an individual newly constructs or purchases a house for the purpose of residence, a reduced tax rate <sup>1)</sup> is applied.

Note: 1) 0.1%–0.3%

2) Property value means the registered value under Article 10 of the Registration and License Act, and the registered price on the taxation ledger for fixed assets recorded in pursuant to Article 341–9 of the Local Tax Act, not the price of purchase and sale.

〈Table III-6〉 Stamp Tax for Housing Transactions in Japan

	Tax base of stamp tax	Amount	Average reduced tax rate (%)
Real estate sale contract/ real estate exchange contract/ real estate intermediation certificate	Under JPY 10,000	No taxation	
	JPY100,000 or less	JPY 200	
	JPY 100,000 – 500,000	JPY 400	
	JPY 500,000 – 1 million	JPY 1,000	
	JPY 1 million – 5 million	JPY 2,000	
	JPY 5 million – 10 million	JPY 10,000	
	Stamp tax amount	Amount	Average reduced tax rate (%)
	JPY 10 million – 50 million	JPY 20,000 → 15,000(▽5,000 JPY)	0.15 – 0.03
	JPY 50 million – 100 million	JPY 60,000 → 5,000(▽15,000)	0.09 – 0.045
	JPY 100 million – 500 million	JPY 100,000 → 80,000(▽20,000)	
	JPY 500 million – 1 billion	JPY 200,000 → 180,000(▽20,000)	
JPY 1 billion – 5 billion	JPY 400,000 JPY → 360,000(▽40,000)		
JPY Over 5 billion	JPY 600,000 → 540,000(▽60,000)	0.00108 –	
	Contract amount not written	JPY 200	

Note: Among transactions occurring from April 1, 1997 to March 31, 2013, if the contract amount written on the contract on property transfer exceeds 10 million JPY, a tax reduction is applied.

#### D. China's Contract Tax

In China, a local tax known as Contract Tax is imposed on a house at the following rates: i) one percent for small-sized houses with a floor area of 90 m<sup>2</sup> or less and where purchase of the house is the first such occasion for the buyer; ii) 1.5 percent for other cases; and iii) three percent for commercial housing (non-general housing). The tax base is the actual transaction price as noted in the contract of purchase and sale, attached to registration documents and submitted to the Shanghai real estate transaction center (the registration office of Shanghai). The buyer is responsible for paying the contract tax. Like other countries, China maintains stamp-tax-like taxation items such as “stamp tax on contract” or “stamp tax on certificate of entitlement.” However, these two taxes are imposed at a negligible level; the former is merely 80 yuan and the latter 5 yuan. Therefore, the tax burden on a housing transaction is three percent or less in Shanghai, even when the housing property in question is an elaborate, high-value mansion.

〈Table III-7〉 Comparison of Housing Transaction Taxes between Major Cities (taxable)

City	Tax	Taxation subject	Payer	Tax base	Statutory nominal tax rate	Other
New York State	Real Estate Transfer Tax (NYS-RETT)	State tax	Seller	Actual value for purchase and sale	0.4%	
	Mansion Tax	State tax	Buyer	Actual value for purchase and sale	1%	Additional taxation on high-value housing over USD 1 million
New York City	Real estate transfer tax (NYC-RPTT)	State tax	Seller	Actual value for purchase and sale	1% (under USD 500,000) 1.425% (over USD 500,000)	
London	Stamp duty and land tax (SDLT)	National tax	Buyer	Actual value for purchase and sale	1% (GBP125,000–250,000) 3% (GBP250,00–500,000) 4% (GBP500,000–1million) 5% (GBP1 million–2million) 7% (Over GBP2 million) (after March 22, 2012)	
Tokyo	Real estate acquisition tax	Prefecture tax	Buyer	Fixed asset valuation	3%	
	Registration and license tax	National tax	Buyer	Fixed asset valuation	2%	
	Stamp tax	National tax	Buyer	Actual value for purchase and sale	Flat rate by transaction value	
Shanghai	Contract tax	City tax	Buyer	Actual value for purchase and sale	1% (small house and first housing purchase) 1.5% (small houses) 3% (commercial houses)	
Seoul	Acquisition tax Stamp tax	Provincial tax	Buyer	Actual value for purchase and sale	2.7% (reduced rate) 4.6% (over 900 million won)	Non-taxable in the cases of houses less than 100 million won
	Stamp tax	National tax	Buyer	Actual value for purchase and sale1)	150,000 won (houses priced at 100 million–1 billion won) 350,000 won (houses priced over 1 billion won)	

Source: Ro, Younghoon (2012).

### 3 Implications of Other Countries Tax System and Expected Effects of Acquisition Tax Exemption

#### A. Implications and Considerations of Comparative Study of Other Countries Housing Tax Systems

As observed above, OECD member countries' transaction taxes on housing, real estate, and financial assets are mainly imposed by central governments as a form of national tax, particularly in the form of a stamp tax. There are some exceptions in which local governments, usually state governments, impose such items as a local tax. It was also found that South Korea has a relatively low proportion of national taxes in transaction tax revenues. The reason why Korea's acquisition tax, a kind of transaction tax on houses, has remained a local tax while the tax base and rates are standardized nationally is in part related to traditions left over from the period of Japanese colonial rule of Korea. In 1997, the value-added tax (VAT) was first introduced as a national tax, and in the process the Amusement and Restaurant Tax, one of the local tax items of the time, was incorporated into the VAT. In an attempt to compensate for the losses in local tax revenues resulting from this absorption, the central government elected to convert the registration tax from a national tax into a local tax. As a result, both acquisition and registration taxes came to be included among the local tax revenues of metropolitan provincial and municipal governments, which is far different from the system in Japan where registration and license tax are national items. This has resulted in a considerable divergence between the two countries' taxation revenue composition: Japan's ratio of national tax revenue to local tax revenue in transaction taxes is 72.5 to 27.5, while that of Korea is 32.8 to 67.2.

In an attempt to draw implications through an international comparison of the transaction tax burden of buyers and sellers, several positions regarding raising or lowering transaction tax rates based on a simple comparison of statutory nominal tax rates between countries should be reviewed. Examples of typical positions are as follows: Korea's relatively high transaction tax rates have caused contractions of the domestic housing market; there is no need to

continue to extend the reduction in the transaction tax rates because the average transaction tax burden is not high compared to that of other countries; and Korea's nominal transaction tax rate is in fact in the middle among OECD countries. These assertions seem to overlook an important point: the local natures of housing markets. Housing markets can by definition be characterized as segregated from one another regionally, even within a given country. Needless to say, one country's national housing market is completely unique from that of another country, and furthermore, houses are non-tradable goods. Considering all this, it can be concluded that the difference in transaction tax rates between countries and international metropolitan cities is not likely to have an influence on decisions made by participants in the respective housing market. Even from the perspective of international property investors, who are indeed active players in the international real estate market, transaction taxes are simply one of the diverse elements contributing to initial investment costs. It is possible that they may avoid real estate transactions occurring in certain countries if a high tax burden there impacted the after-tax return on investment, but the majority of housing market participants are local residents, and in a country like Korea where the housing acquisition tax rate is identical nationwide, the housing acquisition tax is accepted as a norm.

An observation of housing acquisition tax systems in major cities reveals the following characteristics worthy of attention in discussing how to overhaul Korea's transaction taxation system. The example of New York City's Real Estate Transfer tax, which is imposed on a seller according to value (*ad valorem*), shows how changes in the bearer of a tax burden can affect the housing market. With a transaction taxation system in which the tax base for acquisition tax is identical to that of fixed assets tax, as in Japan, the transaction tax rate is likely to influence the period for which a buyer holds a property, rather than impact the decision to purchase a house in the first place, assuming a buyer will perceive the acquisition tax as an upfront fee equivalent to the local holding tax of several years paid in advance. Such real estate acquisition taxes would relieve the frictional effects of transaction taxes. Meanwhile, California imposes tax not on housing transactions for value, but instead applies an actual tax base, reflecting real market housing prices only to the initial property holding taxes for those who newly purchase housing properties. By connecting transaction

and holding taxes, the state's taxation system is operated in a way that taxes exert influence on people's decisions on whether to buy a property and how long to hold it, just as if it included a transaction tax.

## B. Expected Effects of Tax Reduction on Housing Acquisition

In the end, rather than to raise concerns about contractions in the housing market or argue for reform based on inter-country or inter-city comparisons of housing transaction-related tax burden or fees, it is more desirable to pursue a discussion on modifications of the housing transaction-related tax system based on long-term observations of changes in the housing transaction tax burden within a given regional market and on possible adverse effects caused by differential taxation on individual assets.

For example, after-tax return on investment in housing capital is expressed as in the equation (1). Whether the prospective buyer is the end user, actually living in the house in question, or an investor with multiple houses, the before-tax user costs on housing capital is mainly decided by the two following factors: rental income (rate)  $\gamma$ , or opportunity cost on the housing capital, as well as expected capital gains ( $p^e - p/p$ ). In addition, after-tax user costs are calculated by factoring in the following: income tax rate ( $t_y$ ), which includes various taxes relating to housing capital investment or possession; capital gains tax rate ( $t_{ca}$ ); housing property holding tax rate ( $\tau$ ); and the annual installment payment rate of the housing acquisition tax ( $\gamma$ ).<sup>25</sup> The depreciation of the house and management costs are counted in the regular expenses during the period of the possession of the house, even though they are not included among the taxation items. This study's subject of interest, the housing acquisition tax according to value is  $t_a \cdot P$ , and if one adds to it  $\gamma$ , an inflation-adjusted value of  $\gamma \cdot P$ , the installments during the expected period of possession ( $n$ ), which reflects the present value, then the final value of after-tax return on investment (see equation (2)) can be calculated.

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25) If a buyer pays brokerage fees, costs on loans, and other transaction costs at once, as in housing acquisition tax, additional loans can be granted worth the total sum of these initial transaction costs from a financial institution with a fixed installment annual payment plan for the expected period of holding.

$$\text{Equation (1)} \quad \rho = \gamma(1 - t_v + (\frac{\rho}{\rho} - 1)(1 - t_{cg})) - d - \tau - \gamma$$

$$\text{Equation (2)} \quad t_a \cdot P = \sum_{t=0}^{n-1} \gamma \cdot P / (1+r)^t$$

Through the above equations, a prediction can be made as to whether a 50 percent reduction of the housing acquisition tax and tax exemption on transfer gains earned by long-term property holders (more than five years) would boost the demand for houses, thereby stimulating housing transactions. For those who are considering the purchase of a house for purposes of residence, the first term ‘rental income’ is not generated. In that case, they would select a point of purchase at which the house price is low enough to reasonably predict that it will rise in the future. If it is also expected that a rise in the house’s price will create a transfer gain within five years after the purchase, they would choose to buy a house during a period when the 50 percent acquisition tax reduction is provided in order to take advantage of the benefit, thereby maximizing the after-tax return on investment. If the price of a house a buyer intends to purchase, located in a region of interest, is expected to drop further or to go unchanged for a considerable period of time, tax exemptions on transfer gains provided to long-time house holders (over five years) become meaningless. This is because tax credits on transfer gains can serve as an incentive to boost demand for purchase only when transfer gains are in fact generated; however, no benefit is in effect when a transfer loss is expected or the difference stands at zero. If an individual with an intention to buy a house is a tenant on a biannual contract (known as Chonsei in Korea), and decides to purchase a first home due to the current record-high Chonsei deposits required, and if the price of the house of interest is not expected to fall further, the tax exemption on transfer gains and 50 percent reduction on housing acquisition tax would stimulate purchase demand. When the housing acquisition tax rate was raised in an attempt to stabilize housing prices during the boom years of the housing market, questions regarding its effectiveness were raised. However, in a sluggish housing market like at present, transaction tax reductions targeting a certain group of buyers could in fact boost transaction volumes by bringing down after-tax user costs.

As for those who intend to benefit from rental income by owning several houses, due to uncertainty regarding the income taxes imposed on their rental income, the first term in the above equation for return on investment, they may hesitate to buy a targeted house even when a transfer gain is expected within five years of purchase. Those in possession of three houses or more are subject to taxation on imputed rental income, and therefore income tax is imposed on the sum of Chonsei deposits received from each house, without exception. Also, if an individual purchases a high-priced house to become a single-house owner, any monthly rental income that may be gained is subject to taxation. Therefore, given the uncertainty underlying two components of return on investment, rental income and capital gains, it is difficult to expect that a 50 percent reduction in housing acquisition tax would raise transaction volumes among those who are considering the purchase of house for the purpose of investment.

## IV

### Conclusion and Policy Implications

In an attempt to stabilize local tax structures vulnerable to fluctuations in the housing market, the central government announced in December 2013 its Measures for Coordination in Function and Fiscal Revenues between Central and Local Governments, according to which local governments' share of national VAT revenues was stipulated to increase from 5 to 11 percent in 2014, while housing transaction taxes remained as a local tax item. It is fair to state that this decision stems from a reexamination of the past practices of the government attempting to stimulate housing transactions by temporarily reducing the acquisition tax rate by 50 percent for periods of three or nine months. In the process of utilizing local taxes as a tool to pursue national policy, the central government was often subject to requests from local governments to compensate for the losses in local tax revenues resulting from housing acquisition tax reductions. Under such circumstances, the central government was required to select among limited options, such as making adjustments in shared taxes or local consumption tax. The government appears to have eventually addressed this recurring issue by raising local governments' share of total VAT revenues. However, this study suggests that the central government should have taken one step further by converting housing transaction tax, including acquisition tax, into a national tax and making use of it as a tool to regulate the housing market to a degree while converting alternative national tax items to a local tax in order to enhance local governments' fiscal responsibility. By automatically transferring a share of VAT revenues to local revenues through local consumption tax, the central government is also burdened with resolving the negative influence

of a transaction tax cut on local governments' education funding: more specifically, to deal with losses in money transferred from special education accounts caused by decreased housing acquisition tax revenues, as well as the decrements in financial grants for local education caused by increases in local consumption tax.

The perception of the extent to which the national housing market has slowed differs depending on which year is set as a baseline and how transactions are categorized. Transactions may be divided by various criteria: region, housing type, or transaction type. For example, if the past 20 years of the housing market are viewed and 2006, the peak boom year with the most frequent transactions and highest housing prices, is set as a baseline, comparing the most recent two or three years with the baseline in terms of housing prices and transaction volumes would reveal a high level of contraction in recent years. On the other hand, if the last seven years are targeted with the boom year of 2006 (which recorded the highest transaction volume in the MOLIT annual housing transaction statistics excluding transactions of purchase rights) and the most sluggish year of 2012 excluded, the average for the remaining five years is 882,000. This figure can be seen as a reference sales volume, and when taking it into account, it can be concluded that the housing transaction volume decreased by over 10 percent from 2010 to 2012.

Also, Korea's unique transaction type of pre-sale housing and collective housing reconstruction/redevelopment projects makes it difficult to set a time unit for transaction volume (and price). For example, when analyzing the sales and purchases of existing houses taking place in 2012, by comparing them to the data from three years ago, newly-built houses which were completed in 2012 and later for which pre-transactions of purchase rights were concluded in 2010 have to be excluded while including transactions initiated through court auction. This study examined how likely transaction data may be to overestimate or underestimate the actual number of transactions due to several complications such as how to deal with transactions in purchase right by observing fluctuations in the ratio of total transactions to purchase right transactions, or to sales transactions.

In Chapter II, this paper reorganized by contract date roughly 6 million individual housing transactions filed through the real estate transaction reporting

system and conducted an empirical analysis on quarterly changes in all housing transactions or in apartment transactions nationwide, in the Seoul Metropolitan Area and within the city limit of Seoul itself. The effect of transaction tax reductions on the annual transaction volume quarter-to-quarter turns out to be statistically significant but not remarkably large. Although transaction volumes fluctuated dramatically immediately after the introduction of the aforementioned tax credits or right before they ended, the estimation of the dummy variable coefficient, which compares the transaction volume of the full period of implementation with that of no tax credit, shows that implementation affects transaction volumes by one to two percent. The results of regression analysis, taking housing acquisition tax as a continuous variable, also show that the elasticity of transaction volume to the acquisition tax rate ranges from -0.2 to -0.3, or from -0.4 to -0.5, depending on the time of analysis and regional scope, which indicates the two have an inelastic relationship.

Of course, housing prices and transaction volume are affected by a diversity of other factors within both supply and demand in a highly complex manner, but as expressed in equation (1), the major determinants are the two components of before-tax return on investment: capital gains and rental income. In addition, temporary transaction costs such as high tax burdens and housing acquisition tax, which influence these two elements, also have an impact on after-tax return on investment. Not only statutory nominal tax rates, but also the assessment ratio of the tax base has an impact through allowed exemptions or reductions. Therefore, the effect of the statutory rate reduction of the acquisition tax as a means to stimulate transactions is severely limited when other factors are assumed to be identical. However, among those who were waiting for such policies, the announcement of the reimplementation of a 50 percent reduction in housing acquisition tax in September 2012 and in early 2013, which were at the same level with that of the previous year, would have served as an incentive to buy a home. This can be interpreted as such tax credits prompting additional housing transactions among tenants who were planning to purchase a house for residency even in a sluggish housing market to intend to become owner-occupiers by taking advantage of the temporary discounts in housing transaction tax.

The 50 percent reduction in the housing acquisition tax, implemented on only a temporary and limited basis, was applied—in both rounds of introduction

in late 2012 and early 2013—only in cases where an individual buys a house to become a single-house owner or when a household already in possession of a house attempts to buy another house priced under 900 million won. In the latter case, the household is required to sell the house already in its possession within two years of the transaction in order not to become subject to additional collection of the reduced acquisition tax. As for transactions involving a housing property valued over 900 million won, the acquisition tax is calculated by applying the statutory nominal rate of 4.6 percent to the tax base of actual transaction price. However, for houses worth 900 million won or less, the decreased tax rate of 2.7 percent is applied to the real transaction price or to the appraised housing value according to the Land and Housing Corporation, which is lower than the actual price, creating a tax wedge of 100 percent or larger. The scale of the excess burden caused by a tax wedge depends on the extent of elasticity in the demand and supply; that is, the magnitude of the decrease in transaction volumes and the after-tax price increase. If the reality is that it is impossible to abolish the housing acquisition tax, a type of closing-price commodity tax, it would be more desirable to revise the taxation system into a fixed-rate system, considering the inefficiency in the housing market caused by differential tax rates, rather than to discuss whether the current statutory rate is too high or whether the tax burden is too heavy. Some might argue that a house price of over 900 million won and housing possession status (multiple-house owner) reflect a given buyer's economic position but the excess burden placed on them in terms of housing acquisition should be reduced. However, this study concludes that the price of a house and the number of houses held are an imperfect proxy for high income and net wealth. In addition, the current system is unfair in that it applies a higher tax rate (4.6 percent compared to 2.7 percent) to the full sum of the transaction price rather than to the difference between the total price and the threshold price of 900 million won as would be done in an excess progressive tax system, raising the tax burden for purchasers of an expensive house to a level twice that of others. From the perspective of tax capacity, the current system is unreasonable since an individual's tax capacity does not double immediately upon purchasing a house priced at over 900 million won. Therefore, this study proposes a single and fixed rate tax on housing transactions, but if strong resistance arises against

this notion, the introduction of an excess progressive tax system in which a higher rate is applied only to the portion that exceeds the threshold price, as is done with other tax items, is recommended. This transition appears more sensible from the perspective of tax capacity.

In an attempt to stimulate housing transactions, the central government has consistently turned to reductions in housing acquisition taxes, which make up a lion's share of local tax revenues, and in turn it has reimbursed local tax losses through real estate subsidies. If this situation were to continue, it would be likely that the dependency of local governments on the central government would be exacerbated, undermining the fiscal autonomy of local governments. Given the fact that no local government applies a proprietary transaction tax base or rate, but rather that all local governments nationwide apply the same rate, it would be preferable to transfer acquisition tax and registration tax to national tax items, accompanied by a further exchange of tax items and tax revenue adjustments between central and local governments. This would rectify the 1997 error of handing over registration tax to local governments in exchange for amusement and restaurant tax, then local tax items, and incorporating the latter into the newly-introduced value-added tax. Since that exchange, both acquisition and registration taxes have pertained to local governments. In fact, it can be found by observing the transaction tax systems and the ratio of national tax revenues to those of local governments in OECD countries that they are similarly cautious regarding the economic inefficiency of a tax wedge caused by the application of differential commodity tax rates by locality.

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## Appendix

〈Table 1〉 Statistical Surveys on Real Estate (apartment)

Source	Onnara Real Estate Portal ("Real estate" statistics)		Real-time listings of available apartments
	Number of land transactions	Number of premises transactions	
Type	Official statistics approved by Statistics Korea.		Press releases (for reference purposes only)
Included subjects	Real estate and housing transactions that have been reported to the authorities, in addition to the past records that have been verified.		Real estate and housing transaction reports (since 2006)
Scope	Transactions of land and premises classified as "building sites" or "factory sites" and of premises classified as "apartments" (i.e. the number of all such classified lots traded).	Transactions of premises involving buildings classified as "apartments" (i.e. the number of household units traded).	Apartment transactions whose real prices have been verified to be "appropriate" (i.e. out of all listings where the real price is disclosed). * These listings are published on a monthly basis, with additional listings disclosed later after verifications are completed. For the integrity of the time series, the additionally and latently disclosed listings were omitted.
	Eleven types of transactions (i.e. sales, court orders, exchanges, bequeathals, lot ownerships, and six others) and separate statistics on trusted and un-trusted properties included.		
Excluding	Transactions of real estate properties involving court-ordered tenders, public sales (i.e. by KAMCO and other public institutions that have seized properties as a way to settle debts), inheritance and expropriations.		
Transactions omitted from statistics	Transactions of apartments located on plots of land not classified as "building sites" or "factory sites" and transactions involving apartments sold without land.	The most accurate statistics on apartment transactions to date.	Sales transactions unsuited to public disclosure (e.g. transactions that have been verified to be "inappropriate" or that have not been verified yet, transactions of ownership shares, resale of ownership rights, etc.).
Updated	Monthly (as of the dates the transactions are reported to the authorities)		
Time series scope	Since 1998 (While there is less of a need to keep records of transactions from 2006 and onward, records are still kept in the interest of time series integrity)	Since 2006, when the Real Price Report Requirement Program took effect.	Since 2006, when the Real Price Report Requirement Program took effect.

**Table 2 Summary Statistics (nationwide)**

Variable		Minimum	Maximum	Median	S.D.
Number of contracts	chsn	1,088	140,816	13,783.46	14,792.96
Sale price (index)	hsp	67,08457	109,3019	87,92259	10,19679
Chonse price (index)	hrp	65,20069	99,96133	82,287	9,699214
Ordinary (nominal, KRW)	minn	2,918,022	4,077,821	3,466,205	342,127.3
Ordinary (real, KRW)	minr	3,312,438	3,813,277	3,547,136	135,186
Stock price index (KOSPI)	sinx	1,130.183	2,116,547	1,682.713	274.596
GDP (KRW 1,000)	gdpn	211,557.4	332,464.3	274,582.5	34,472.55
GDP (KRW 1,000)	gdpr	212,469.3	289,366.3	252,481.2	19,479.71
Rate of return on company bonds (%)	rcb	3.07	8.29	5.148276	1.149383
Capital gains tax increase dummy	tind	0	1	.2758621	.44743
Financial crisis dummy	crld	0	1	.3103448	.4631341
Acquisition tax exemption dummy	acqd	0	1	.7586207	.4283816
Sample size		464			

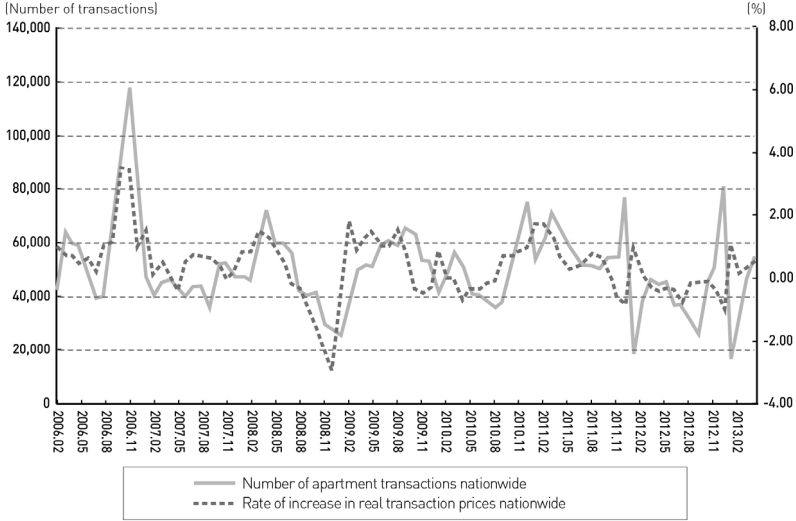
Sources: MOLIT internal data,  
 Statistics Korea (<http://kosis.kr/>),  
 Bank of Korea (<http://ecos.bok.or.kr/>).

**Table 3 Summary Statistics (Seoul Metropolitan Area)**

Variable		Minimum	Maximum	Median	S.D.
Number of contracts	chsn	6,852	140,816	34,735.45	23,418.78
Sale price (index)	hsp	77,22994	109,3019	99,8122	8,083267
Jeonse price (index)	hrp	67,87466	99,67252	84,82108	9,358288
Ordinary (nominal, KRW)	minn	2,918,022	4,077,821	3,466,205	343,739.7
Ordinary (real, KRW)	minr	3,312,438	3,813,277	3,547,136	135,823.1
Stock price index (KOSPI)	sinx	1,130.183	2,116,547	1,682.713	275.8901
GDP (KRW 1,000)	gdpn	211,557.4	332,464.3	274,282.5	34,635.01
GDP (KRW 1,000)	gdpr	212,469.3	289,366.3	252,481.2	19,571.51
Rate of return on company bonds (%)	rcb	3.07	8.29	5.148276	1.1548
Capital gains tax increase dummy	tind	0	1	.2758621	.4495387
Financial crisis dummy	crld	0	1	.3103448	.4653167
Acquisition tax exemption dummy	acqd	0	1	.7586207	.4304005
Sample size		87			

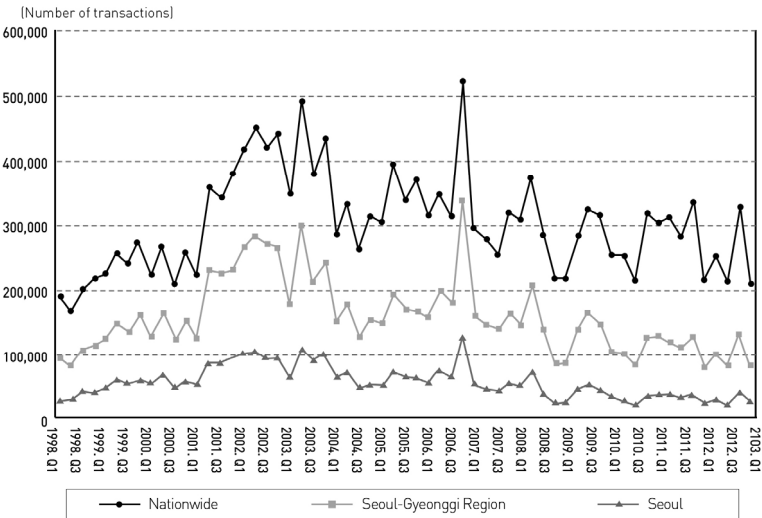
Sources: MOLIT internal data,  
 Statistics Korea (<http://kosis.kr/>),  
 Bank of Korea (<http://ecos.bok.or.kr/>).

[Figure 1] Apartment Sales and Increasing Rate of Apartment prices (nationwide)



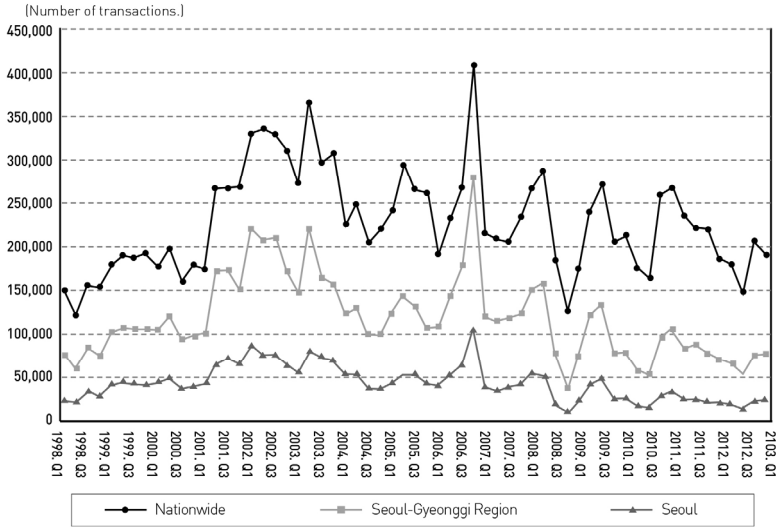
Sources: Onnara Real Estate Portal (<http://www.onnara.go.kr>).

[Figure 2] Quarterly Housing Sale Transactions (based on report date)



Sources: MOLIT internal data,  
Onnara Real Estate Portal (<http://www.onnara.go.kr/ep/statistics2/statistics00.jsp>).

[Figure 3] Quarterly Housing Sale Transactions (based on contract date)



Sources: MOLIT internal data

Onnara Real Estate Portal (<http://www.onnara.go.kr/ep/statistics2/statistics00.jsp>).