

# Mizuho Economic Outlook & Analysis

May 18, 2009

## **An Overview and Impact of the Expanded Tax Cut on Residential Mortgages**

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## Introduction

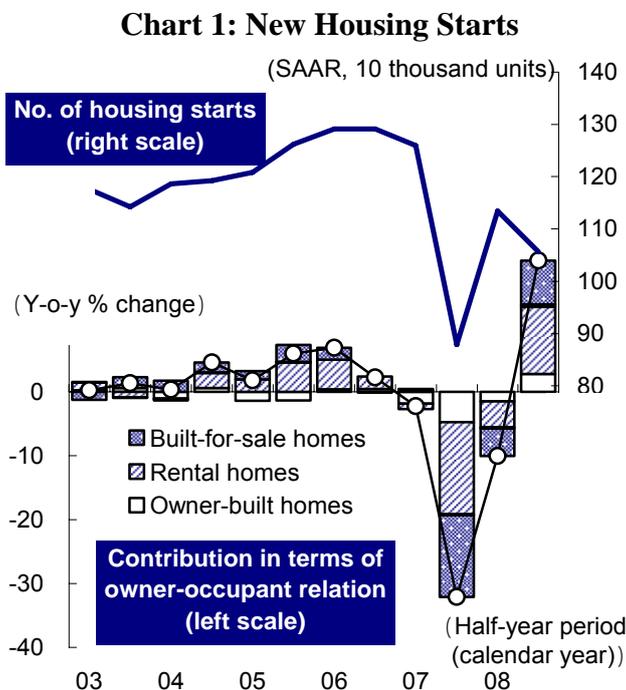
Amid the rapid economic downturn, the Japanese government has hammered out four economic stimulus packages since the second half of 2008. One of the most important government initiatives, and one which has received a great deal of attention, is the tax cut on residential mortgages. Following the passage of the tax reform bill at the end of March 2009, this report will clarify the characteristics of the tax cut and analyze its impact on housing starts and housing-related spending.

### 1. Background and Outline

#### (1) The Current Housing Market

##### Declining housing starts

The housing market is stagnant. Housing starts in 2008 were expected to grow considerably in a reaction to the sharp drop in 2007 due to the revision of the Building Standards Act<sup>1</sup> (1.061 million units, -17.2% y-o-y). However, growth has been sluggish (1.093 million units, +3.1% y-o-y). Housing starts this year are 15.3 % lower than the level in 2006 (1.29 million units **Chart 1**).

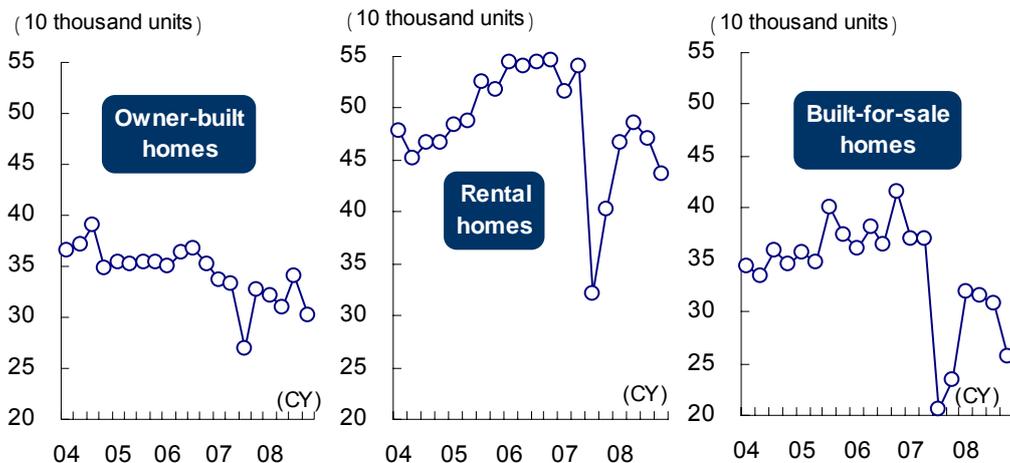


Source: Ministry of Land, Infrastructure, Transport and Tourism, *Jutaku Chakko Tokei (Housing Starts Statistics)*.

<sup>1</sup> In June 2007, the regulations on construction inspection were tightened to avoid fraud in earthquake-resistance data. The change caused confusion due to the lack of prior explanations and led to a plunge in housing starts.

In terms of owner-occupant relation, owner-built, rental and built-for-sale homes are all weakening (**Chart 2**). In the second half of 2007, starts of owner-built homes, which had only been affected mildly by the legal amendment, recovered to pre-amendment levels. Yet, the figure has been declining again since last fall. Starts of rental homes and built-for-sale homes, both of which were affected seriously by the legal amendment have not really picked up and show no signs of recovery.

**Chart 2: No. of Housing Starts (by Owner Occupant Relation)**



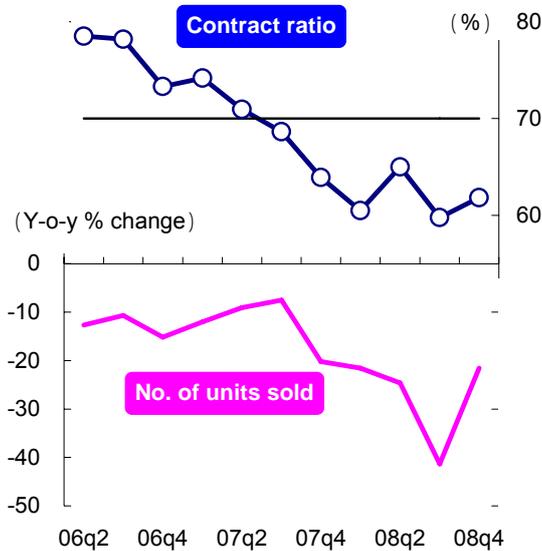
Note: Seasonally-adjusted annual rates (SAAR)

Source: Ministry of Land, Infrastructure, Transport and Tourism, *Jutaku Chakko Tokei (Housing Starts Statistics)*.

### Condominiums are subject to rising inventory adjustment pressures

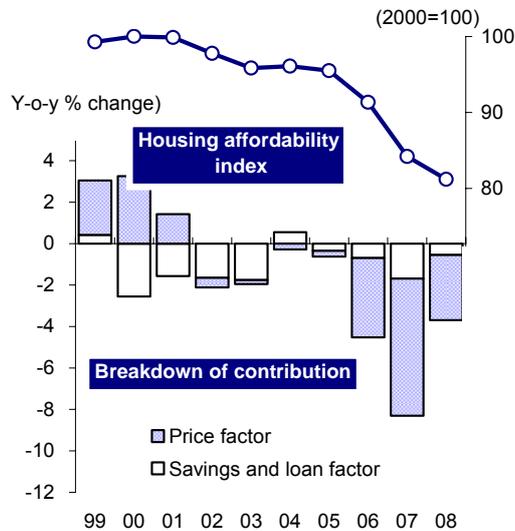
Condominiums sales make up more than 60% of all built-for-sale homes which most clearly reflect the weak housing market, and the segment has fallen into a vicious circle: the sharp increase in condominium inventory resulting from decline in demand (=serious sales slump) has given rise to expectations that prices will fall, in turn leading to further sales downturn. Even though only a limited number of condominiums have been put up for sale in the Tokyo metropolitan area and the Kinki region, the contract ratio (units sold/units for sale × 100) has remained far below 70%, the threshold between peaks and troughs (**Chart 3**). Indeed, the number of condominiums sold from 2006 to 2008 in the two areas plummeted by half, with inventory rising to 19 thousand units. Taking into consideration the existence of an “invisible inventory” -- which cannot be confirmed by statistical data due to cutbacks upon supply -- this figure would rise to around 30 thousand units.

**Chart 3: The Condominium Market in the Tokyo Metropolitan Area and the Kinki Region**



Note: The Tokyo Metropolitan area and the Kinki region combined.  
 Source: Real Estate Economic Institute Co., Ltd., *Manshon Shijo Doko (Condominium Market Trends)*.

**Chart 4: The Housing Affordability Index**



Note: 1. Housing affordability index = Amount of available funds/home prices in the Tokyo metropolitan area and the Kinki region (median)  
 Amount of available funds = Amount available to borrow + amount saved  
 (Based upon the assumption that the amount of annual payment is less than 25% of annual income and that the loan repayment period is 25 years.)  
 2. To calculate the index, the figure for the year 2000 was considered as a base score of 100.  
 Source: Calculation based upon Real Estate Economic Institute Co., Ltd, *Manshon Shijo Doko (Condominium Market Trends)*,  
 Ministry of Internal Affairs and Communications, *the Family Income and Expenditure Survey*.

The prolonged slump is attributed to stagnation in income growth and high home prices.

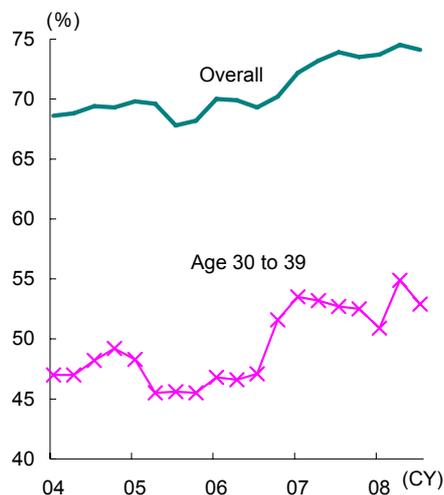
In response to the significant rise in home prices (14% rise in three years) from 2005 to mid-2008, the housing affordability index<sup>2</sup> for 2008 hit the lowest point since 1994 (**Chart 4**).

Since the second half of 2008, condominium sellers have started to cut prices in response to the serious sales slump. As a result, current marketing prices are said to have already dropped to 2006 levels. At this juncture however, demand remains sluggish given the widespread expectation among consumers of even lower prices ahead, due in part to a dramatic slowdown in income growth.

**The demand for owner-occupied and built-for-sale homes will shrink**

Thus, the housing market, especially for condominiums, is sagging and unlikely to recover anytime soon. To begin with, the decline in marriage rates implies that the number of households in their thirties with two or more persons -- a key segment of the home-purchase market -- is falling. Meanwhile, the home ownership rate for married households has increased, and the rate for households in the 30-39 age bracket hit a high of 50% (**Chart 5**). These trends imply that demand for owner-occupied (owner-built + built-for-sale) homes will fall.

**Chart 5: Home Ownership Rates**



Note: The home ownership rates of working households with two or more members.  
 Source: Ministry of Internal Affairs and Communications, *The Family Income and Expenditure Survey*.

**(2) Overview of the Tax Cut on Residential mortgages**

In an attempt to stimulate the housing market, the government decided last fall to

<sup>2</sup> The housing affordability index indicates the ratio of the amount of available funds of households (borrowings + savings) to home prices. The index – as it grows larger - indicates that it is easier to purchase homes.

implement a record tax cut on residential mortgages. This initiative is included in Japan's economic stimulus measures and is one of the items in the tax reform package for FY2009. The outline of the government's policy to promote housing investment will be clarified here along with other measures.

### **Tax cut on conventional homes**

The tax cut on residential mortgages is aimed at cutting the tax burden falling on family finances and stimulating home purchases, by deducting a certain percentage of an outstanding mortgage loan from tax due. Even though there have been tax cuts of this sort in the past, the amount of deduction this time has been raised significantly. For conventional homes (residences other than high-quality homes built to last for a long time period, ("durable high-quality residences"), the maximum total deduction is JPY5 million, which is comparable to tax measures taken from 2001 to 2004 (**Chart 6**). The maximum deduction has thus been increased more than threefold from JPY1.6 million in 2008. (That does not mean, however, that the benefit each household receives will automatically triple - a point discussed later in this report (2-(1) )).

There is another notable feature of the new tax reform. Since tax revenue sources were transferred from the national government to local governments in 2007, the amount of income tax payable by each individual taxpayer has decreased. Thus, a deduction for residential mortgages may turn out to be higher than the amount of income tax. In such a case, the income tax will be balanced out, and the difference (=the deduction of amount minus the income tax) will be carried over to resident tax (maximum JPY97.5 thousand). Given that the amount of resident tax has increased due to the transfer of tax revenue sources, it is reasonable to expand the deduction to resident tax.

**Chart 6: Overview of the Recent Tax Cut on Residential Mortgages**

The year of resident registration	Eligibility period	Deduction rate to mortgage outstanding at year-end (Maximum deduction)			Maximum total deduction
		1st to 6th years	7th to 11th years	12th to 15th years	
From Jan 1, 1999 to Jun 30, 2001	15 years	1% (JPY500,000)	0.75% (JPY375,000)	0.50% (JPY250,000)	JPY5,875,000)
From Jul 1, 2001 to Dec 31, 2004	10 years	1% (JPY500,000)	—	—	JPY5,000,000
From Jan 1, 2005 to Dec 31, 2005	10 years	1% (JPY400,000)	0.50% (JPY200,000)	—	JPY3,600,000
From Jan 1, 2006 to Dec 31, 2006	10 years	1% (JPY300,000)	0.50% (JPY150,000)	—	JPY2,550,000
From Jan 1, 2007 to Dec 31, 2007	10 years	1% (JPY250,000)	0.50% (JPY125,000)	—	JPY2,000,000
(Note: Either eligibility period should be selected)	15 years	0.60% (JPY150,000)	0.40% (JPY100,000)	—	
From Jan 1, 2008 to Dec 31, 2008	10 years	1% (JPY200,000)	0.50% (JPY100,000)	—	JPY1,600,000
(Note: Either eligibility period should be selected)	15 years	0.60% (JPY120,000)	0.40% (JPY800,000)	—	
From Jan 1, 2009 to Dec 31, 2010	10 years	1% (JPY500,000)	—	—	JPY5,000,000
From Jan 1, 2011 to Dec 31, 2011	10 years	1% (JPY400,000)	—	—	JPY4,000,000
From Jan 1, 2012 to Dec 31, 2012	10 years	1% (JPY300,000)	—	—	JPY3,000,000
Jan 1, 2013 to Dec 31, 2013	10 years	1% (JPY200,000)	—	—	JPY2,000,000

Note: The recent tax cut applies to the shaded part (in the case of conventional homes).  
Sources: National Tax Agency, Ministry of Land, Infrastructure, Transport and Tourism.

### Other housing investment stimulus measures

As part of this tax cut package, a preferential tax treatment for residential mortgages for durable high-quality residences has been adopted; that is, the maximum deductible amount will be raised to JPY6 million<sup>3</sup>. In addition to the mortgage deduction, various housing investment stimulus measures have been introduced (**Chart 7**). The main objectives of the measures are to improve housing quality and make homes more durable.

<sup>3</sup> According to the Law Concerning the Promotion of the Spread of Durable High-Quality Housing, “durable high-quality homes” are defined as those whose structural features meet certain conditions set to prevent erosion and decay, ensure earthquake resistance and offer a barrier-free environment (durable high-quality structures, etc.)

**Chart 7: Major Housing Investment Stimulus Measures**

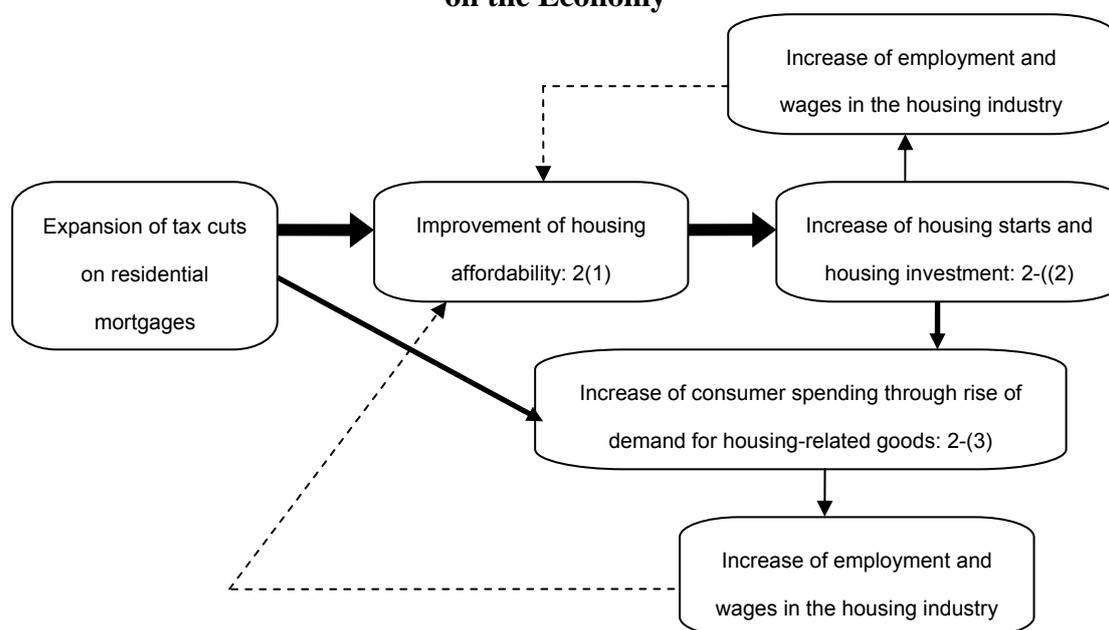
<p><b>Tax cuts (FY2009 Tax Reform)</b></p>	<p><b>Extension and expansion of tax cuts on residential mortgages</b> Maximum deduction raised from JPY5 million for conventional homes and JPY6 million for durable high-quality residences</p> <p><b>Promotion of construction of durable high-quality residences</b> When building or purchasing a durable high-quality home, 10% of the average cost for durability enhancement (maximum JPY10 million) will be deducted from income tax. &lt;Eligibility period: from the date of implementation of the Law Concerning the Promotion of the Spread of Durable High-Quality Housing ~ December 31, 2011&gt;</p> <p><b>Promotion of home renovation</b> · When energy-saving or barrier-free renovation is carried out, 10% of the lesser amount of the actual cost or the average cost (maximum JPY2 million) will be deducted from income tax for the year. &lt;Eligibility period: from April 1, 2009 ~ December 31, 2010&gt; · Relaxation of eligibility requirements for the tax cut on earthquake-proof renovation and a five-year extension of the eligibility period. &lt;Eligibility period: from January 1, 2009 ~ December 31, 2013&gt;</p>
<p><b>Financial aid</b></p>	<p><b>Expansion of the system supporting the purchase of high-quality homes</b></p> <p>· Expansion of the system supporting the purchase of high-quality homes (preferential interest rates) offered by the Japan Housing Finance Agency to including existing homes whose structural features meet certain conditions regarding energy-saving and barrier-free qualities. (0.3% reduction during the initial five-year period) &lt;Eligibility period: from January 5, 2009 ~ (applications accepted until the amount offered is reached)&gt;</p> <p>· The eligibility period for the preferential interest rates has been extended from the initial 5 years to the initial 10 years &lt;April 1, 2009 ~ (applications accepted until the amount offered is reached)&gt;</p>

Source: Based upon data from the Ministry of Land, Infrastructure, Transport and Tourism and Japan Housing Finance Agency.

## 2. The Effect of the Tax Cut on Residential Mortgages

Among the several housing investment stimulus measures, we focused upon the tax cut on residential mortgages, which is considered most effective, and carried out a quantitative analysis regarding the tax cut. The mortgage tax cut does not merely stimulate housing investment, but may also encourage consumption through the rise of purchases of housing-related consumer goods, and contribute to employment growth in housing-related industries (**Chart 8**). Here we shall look at (1) the impact of the tax cut upon the household sector, (2) the positive impact upon housing starts, and (3) the impact on consumer spending.

**Chart 8: The Ripple Effect of the Tax Cuts on Residential Mortgages on the Economy**



Source: Mizuho Research Institute (MHRI).

### (1) Impact on Housing Affordability

The tax cut on residential mortgages will reduce the burden of purchasing a home. We have estimated its impact by calculating how much of a tax cut it will provide to sample households.

**Our calculations are based upon the following premises**

**(For more details, refer to the notes in Chart 9)**

<Premises of the residential mortgage>

- The head of each sample household is assumed to have taken out a 25-year mortgage (at the age of 35) of JPY 30 million at an annual interest rate of 3%.

<Household Composition>

- Three sample households were used: A two-person household (husband and wife), a three-person household (husband and wife + one child), and a four-person household (husband and wife + two children). Children are assumed to be under the age of fifteen (They do not fall into the category of specified dependents.)
- The income of each household head = household income. Household income is assumed to increase from JPY 5.5 million at the time of purchase (the age of 35) at a constant rate.

The results of the estimation are set forth in **Chart 9**.

**Chart 9: Tax Cuts for Sample Households**

	Husband and wife (JPY10,000)	Husband and wife + one child (JPY10,000)	Husband and wife + two children (JPY10,000)
2004	244	228	203
2005	223	207	182
2006	211	196	171
2007	177	168	144
2008	154	154	142
2009 ~ 2010	244	228	203

- Notes: 1. Each household is assumed to have taken out a 25-year mortgage of JPY 30 million at an annual interest rate of 3%, and total deduction amounts for the first 10 years were rounded off. (The figures were calculated according to the prevailing tax system.)
2. The figures up to 2008 were deducted from income tax, and for 2009 and 2010, from income tax and resident tax.
3. The temporary tax cut up to 2007 is not taken into consideration.
4. The figures for 2007 and 2008 were calculated on the premise that the 15-year plan with a higher total deduction has been selected.
5. For 2009 and 2010, each household is assumed to start to live in a conventional home.

Premises of calculation:

1. To calculate the tax amounts, only the deductions for employment income, spouse, dependents and social insurance premiums and standard deduction are taken into consideration. All other deductions such as deduction for dividends are not taken into consideration.
2. The income of each household head is assumed to be JPY5.5 million when the mortgage was taken out at the age of 35 and to continue to increase to JPY7.5 million up to the age of 55 at a constant rate.

Source: MHRI

The total tax cut over a period of ten years totaled JPY2.44 million for two-person households, JPY2.28 million for three-person households, and JPY2.03 million for four-person households. Unlike past tax cuts on residential mortgages, this time the maximum tax cut was raised, and the tax cut was extended to resident taxes, enabling households to enjoy greater benefits. If the tax cut were not extended to resident taxes, the tax cut would be significantly lower as follows: JPY1.85 million for two-person households, JPY1.48 million for three-person households, and JPY1.11 million for four-person households (**Chart 10**). These differences imply that the measure is effective to a certain degree. However, by removing the cap on the deduction from resident tax (JPY97.5 thousand), households would enjoy even greater tax cuts. For all the sample households, the reduction would be approximately JPY2.5 million. In the case of four-person households, the tax cut would increase by approximately JPY500 thousand.

**Chart 10: Tax Cuts on Resident Taxes and the Amount of Tax Cut**

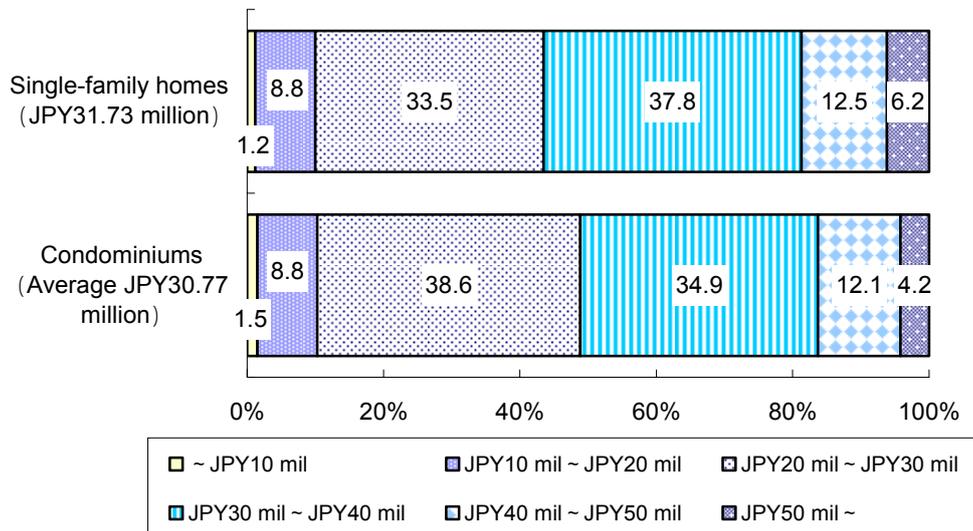
	Husband and wife	Husband and wife + one child	Husband and wife + two children
(The upper line: total deduction (JPY 10 thousand) The lower line; reduction rate (%))			
No limit	251 52.2	251 61.2	250 73.8
The current case	244 50.8	228 55.7	203 59.9
No deduction from resident tax	185 38.5	148 36.1	111 32.9

Note: "Reduction rate" refers to the ratio of deduction to the total of income tax and resident tax. The same premises as Chart 9 were adopted.

Source: MHRI

The total tax cut over a ten-year period reaches the maximum deduction of JPY5million when the original loan is slightly below JPY73 million. According to a survey on purchasers of newly-built homes in the Tokyo metropolitan area, those who took out mortgages larger than JPY50 million account for only 5% (**Chart 11**). Thus, only a few homeowners are eligible to receive JPY5 million in tax credits.

**Chart 11: Distribution of Loans (in terms of amounts)**



Sources: Recruit, *Survey on Trends in Purchasers of Newly Built Single-family Homes in the Tokyo Metropolitan Area 2007*, *Survey on Trends in Purchasers of Newly Built Condominiums in the Tokyo Metropolitan Area 2007*.

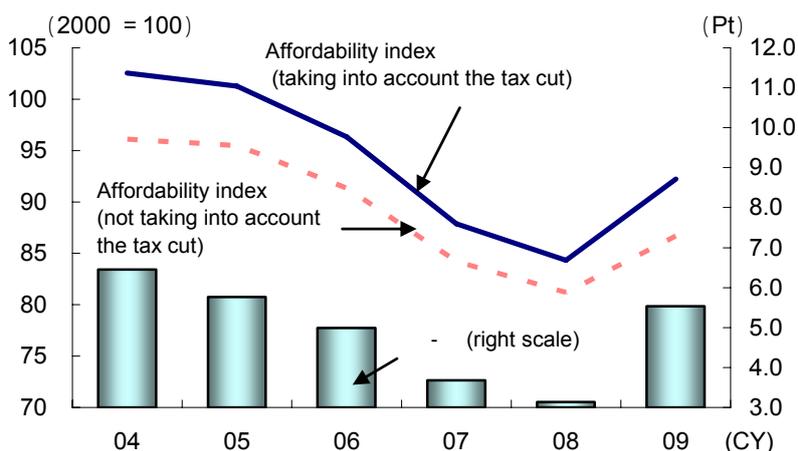
### A bargain sentiment among consumers

Next, the impact of the tax cut on housing affordability will be analyzed using the housing affordability index (= the amount of available funds/home price). There are two

ways to calculate the foregoing; namely, subtracting the tax cut from the home price (the denominator of housing affordability) or adding it to the amount of available funds (=the numerator). We used the former method on the assumption that the tax cut would create a bargain sentiment among households.

**Chart 12** shows a comparison of two versions of housing affordability index for a typical three-person household. The tax cut is reflected in one, but not in the other (The household is assumed to have purchased a condominium). Even though the index has been pushed up to a certain degree as the result of past tax cuts on residential mortgages, a more definite boost can be detected in 2009 due to the expansion of the tax cut. In view of the fall of condominium prices coupled with the impact of the tax cut, the housing affordability index is projected to rise to a three-year high in 2009.

**Chart 12: The Positive Impact of the Tax Cut upon the Housing Affordability Index**



Note: 1. Housing affordability index = the amount of available funds/home prices in the Tokyo metropolitan area and the Kinki region  
The amount of available funds = amount available to borrow + amount saved  
(Calculated based upon the assumption that annual payment is less than 25% of annual income and that a payback period is 25 years.)  
2. To calculate the index, the figure for the year 2000 was considered a base score of 100.  
3. It is assumed that home prices in 2009 would drop to the 2006 level.  
Income and interest rates are calculated on the basis of MHRI's economic outlook.  
Source: Calculation based upon Real Estate Economic Institute Co., Ltd, *Manshon Shijo Doko* (*Condominium Market Trends*), Ministry of Internal Affairs and Communications, *the Family Income and Expenditure Survey* and others.

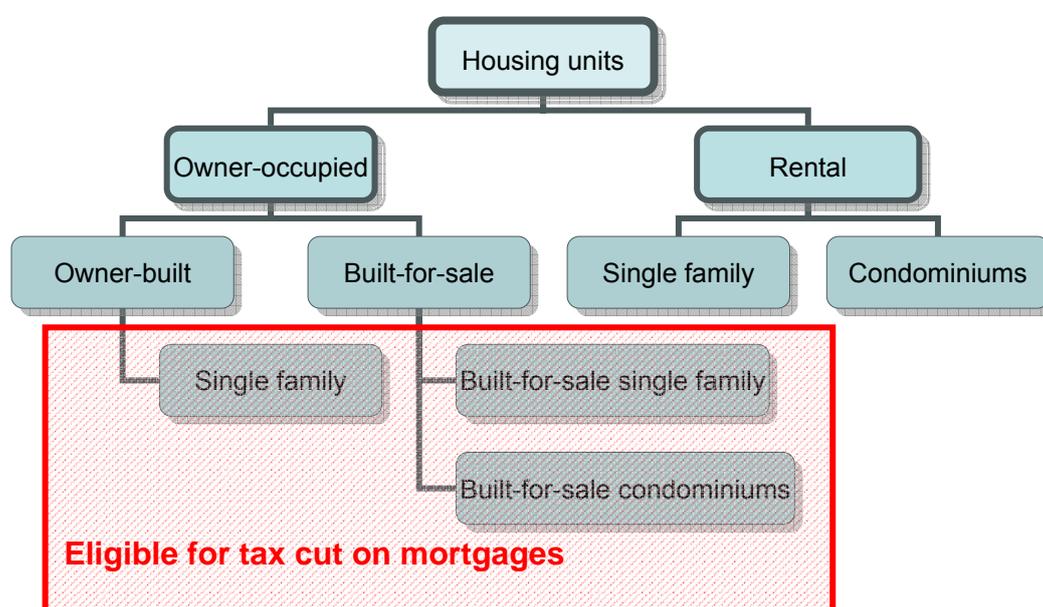
## (2) The Impact upon Housing Investment

In the next section, we shall look at how the improvement in housing affordability will contribute to the rise of housing starts.

### Classification of housing units and the logic behind the analysis on housing starts

Of owner-occupied homes and rental homes, the tax cut applies to the former (**Chart 13**). Owner-occupied homes are categorized into owner-built and built-for-sale. Owner-built homes are defined as housing units which are built for the construction clients' own residence. For these homes, the occupants (=purchasers) are already determined at the time of construction, and thus there would be no unsold inventory. For built-for-sale homes, it is difficult for construction clients such as condominium sellers to fully grasp demand, leaving the possibility of excess supply or demand.

**Chart 13: Classification of Housing Units**

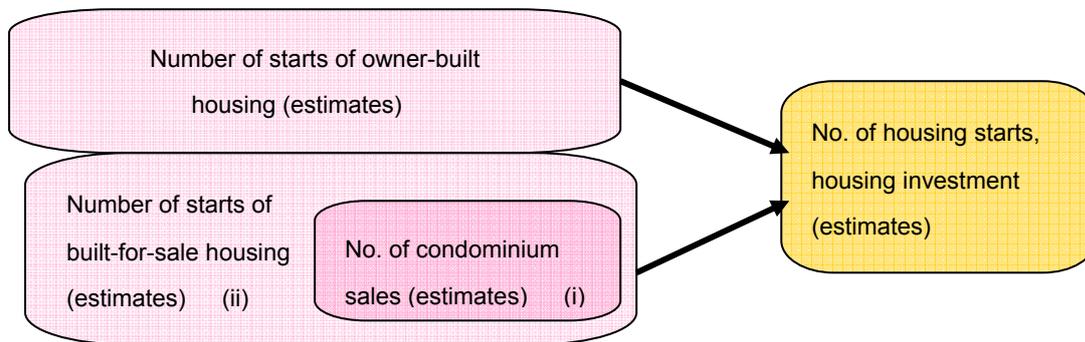


Source: MHRI

Given the foregoing difference, housing starts and sales of built-for-sale homes will not be equal, unlike those for owner-built homes. To estimate the positive impact on housing starts, these two types of housing units were examined separately before estimating the overall effect (**Chart 14**)<sup>4</sup>.

<sup>4</sup> Real estate agents (the supply side), rather than residents (the demand side) play a larger role in starting construction of rental homes. Therefore, it is difficult to gauge the impact of the tax cut on residential mortgages on starts of rental homes even though the figures are likely to decline due to shifts in demand to condominiums. For this reason, an analysis of rental home starts are not included in this paper.

**Chart 14: Flow of Housing Investment Estimate**



Source: MHRI

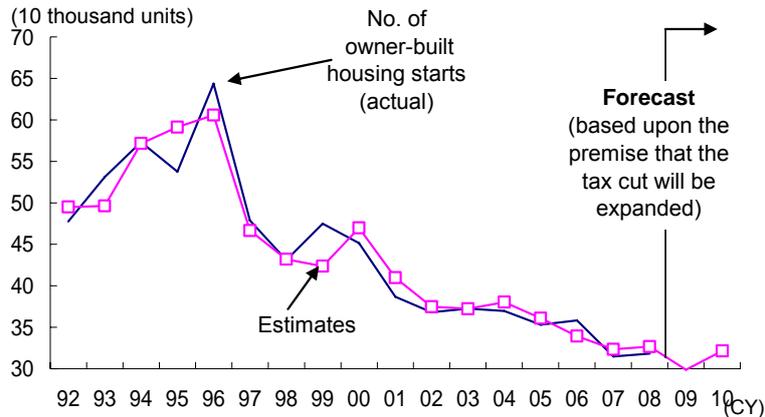
### **The impact upon owner-built homes**

In calculating starts for owner-built homes, we used the following explanatory variables: housing starts (for the previous term), the consumption tax rate, the maximum deduction in the tax cut on residential mortgages (for the following term) and consumer confidence (consumer confidence index). The maximum deduction for the following term was used because there is a time lag between the decision to build a house and the completion of construction of owner-built homes (There is no such lag for condominiums because finished units are put up for sale.)

According to our estimate, starts of owner-built homes will decrease by 19 thousand units on a year-on-year (y-o-y) basis in 2009 and will increase by 22 thousand units y-o-y in 2010 (**Chart 15**). Given the absence of unsold inventory of owner-occupied homes, the figure for 2009 should have increased as a result of the tax cut. Yet, our analysis suggested otherwise for the following reasons: (a) the rapid deterioration of employment and income is likely to depress consumer confidence, making consumers reluctant to purchase homes; (b) since this tax treatment will be effective until 2013, many consumers probably put off purchasing homes amid a heightened sense of uncertainty about the future<sup>5</sup>. Since the amount of deduction for the following term was used, there is a large gap between the estimated figure, for which the deduction amount was supposed to remain unchanged, and the actual figure for 2008 (**Chart 16**).

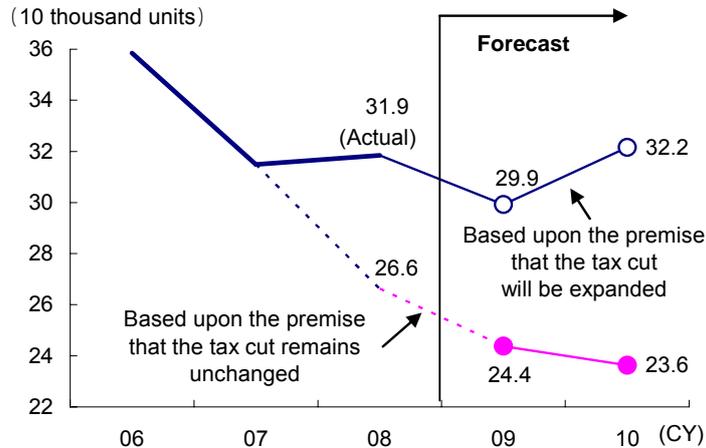
<sup>5</sup> To qualify for the tax cut on residential mortgages, applicants need to start occupying the residence within the designated period of time. Under this tax treatment, the maximum deduction is JPY4 million for 2011, JPY3 million for 2012 and JPY2 million for 2013. Given that the average amount of deduction is JPY2.3 million (Chart 9), its substantial impact upon households would not differ up to 2012.

**Chart 15: Owner-Built Housing Starts**



Note:  $\ln(\text{MoC}) = 0.7\ln(\text{MoC}(t-1)) + 0.2\ln(\text{M}(t+1)) - 0.7\ln(\text{CT}) + 0.2\ln(\text{Emp}) + 3.1$   
 [6.3] [3.4] [-6.23] [2.1] [1.8]  
 adj.R2=0.91, DW=2.4 (MoC: starts of owner-occupied homes, M: the maximum deduction, CT: consumption tax, Emp: consumer confidence index (employment situation)),  
 The values in brackets are t values. The estimated period is between 1992 and 2008.  
 Source: Calculation by MHRI based upon the data from the Ministry of Land, Infrastructure, Transport and Tourism and the Ministry of Internal Affairs and Communications.

**Chart 16: Effect of the Tax Cut on Starts of Owner-Built Homes**



Note: Since the amount of deduction for the following term was used, there is a gap between the estimated figure, for which the tax cut is assumed to remain unchanged, and the actual figure for 2008.  
 Source: Calculation by MHRI

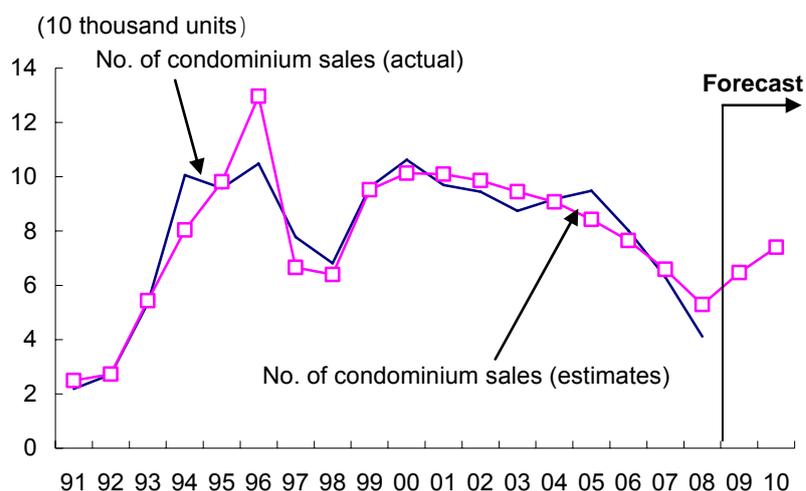
**The impact upon built-for-sale homes**

Since the number of unsold built-for-sale homes has been rising, the impact of the expanded tax cut will become evident in the following sequence: increase in sales decrease in inventory increase in starts. In this report, condominium sales figures were first calculated taking into consideration the tax cut. Based upon the results, starts of built-for-sale homes were computed.

**(i) Estimate of condominium sales in the Tokyo metropolitan area and the Kinki region**

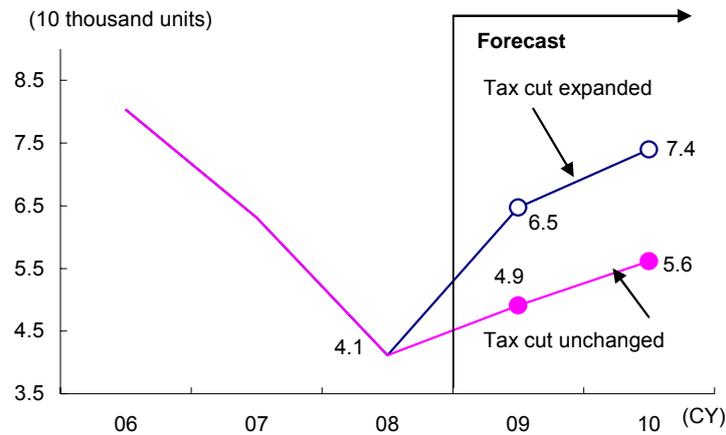
In calculating condominium sales in the Tokyo metropolitan area and the Kinki region, we used as variables the housing affordability index, the consumption tax rate, and the maximum deduction. According to our calculation, sales figures for 2009 in both regions will increase by 24 thousand units y-o-y, which is slightly higher than 2007. In 2010, sales are expected to grow further by 9 thousand units from the level in 2009 (Chart 17). Compared to the figures calculated upon the assumption that the amount of deduction as of the end of 2008 will remain unchanged, actual condominium sales will be 16 thousand units higher in 2009 and 18 thousand units higher in 2010 (Chart 18).

**Chart 17: Condominium Sales in the Tokyo Metropolitan Area and the Kinki Region**



Note: Estimate of sales in the Tokyo Metropolitan Area and the Kinki Region  
 Regression result:  $\ln(mh) = 2.0\ln(NS(t-1)) - 1.5\ln(CT) + 0.2\ln(M) + 4.1$   
                           [ 11.8]           [-7.2]           [ 3.3]   [ 14.0]  
 (mh=condominium sales, NS=housing affordability, CT=consumption tax, M=the maximum deduction), adj.R2=0.92, D.W.=2.0. The values in brackets are t values.  
 The estimated period is between 1989 and 2008.  
 Source: Calculation by MHRI based upon data from Real Estate Economic Institute Co., Ltd.

**Chart 18: Effect of the Tax Cut on Condominium Sales**



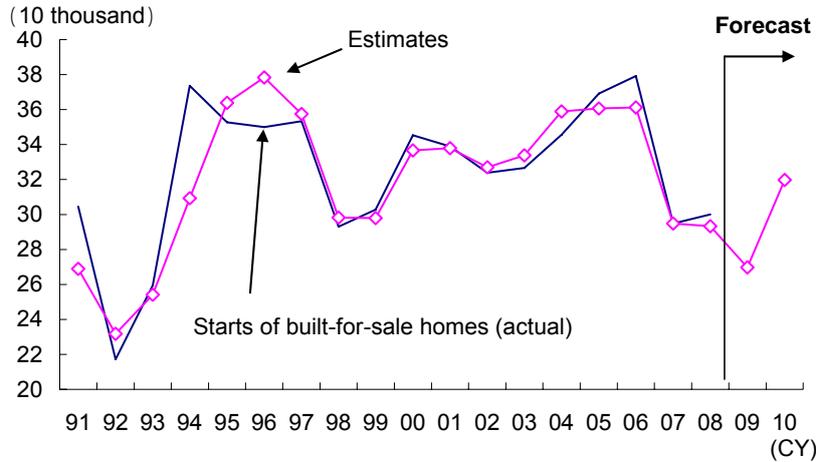
Note: Condominium sales in the Tokyo Metropolitan Area and the Kinki Region  
Source: Calculation by MHRI.

**(ii) Starts of built-for-sale homes**

Next, starts of built-for-sale homes were estimated. Based upon forecasts on condominium sales in the Tokyo metropolitan area and the Kinki region calculated above, we estimated condominium starts in those areas. Then, the figure was divided by its ratio to the number of condominium units in the entire country to figure out starts of built-for-sale homes throughout Japan.

For the calculation, the number of condominium units sold, land prices and dummies for the revision of the Building Standards Act were used as variables. Our estimates on starts of built-for-sales homes are as follows: -30 thousand units y-o-y in 2009 and +50 thousand units y-o-y in 2010. (**Chart 19**). The starts are expected to decline even though condominium sales will most likely increase in 2009, because the rise of sales initially draws on existing inventories. In 2010 the starts will begin to rise in response to the decline of inventories due to the rise of sales in 2009. Under a glut of unsold condominiums as currently experienced, it takes a while for the tax cut on residential mortgages to lead to the rise of starts.

**Chart 19: Starts of Built-for-Sale Homes**



Note: Based upon condominium sales in the Tokyo metropolitan area and the Kinki region shown in Chart 17, condominium starts in the two areas were calculated using the following formula. Then, the computed figures were divided by the ratio of condominium starts to the built-for-sale housing starts across the country.

$$\text{Regression result: } \ln(\text{mc}) = 0.3\ln(\text{mh}) + 0.3\ln(\text{mh}(t-1)) - 0.2\ln(\text{P}(t-1)) - 0.2\text{DUM} + 8.0$$

$$\begin{matrix} [2.4] & [4.6] & [-2.6] & [-2.5] & [7.8] \end{matrix}$$

(mc: condominium starts (the Tokyo metropolitan area and the Kinki region),

mh: condominium sales (the Tokyo metropolitan area and the Kinki region),

p: Posted prices (residential areas in three major metropolitan areas)

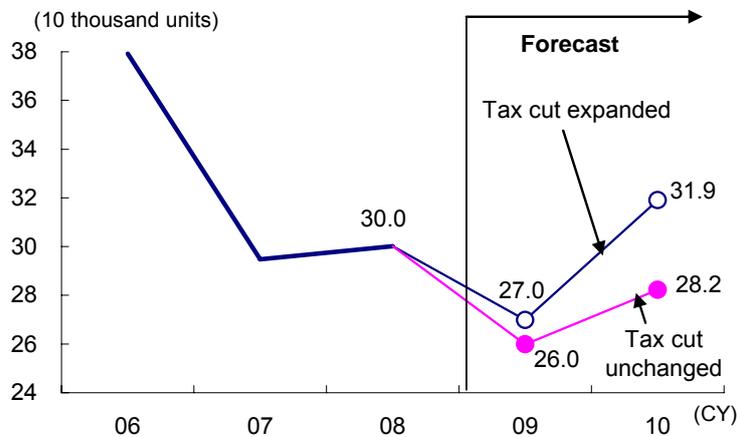
DUM: Dummy for the revision of Building Standards Act (Year 2007=1), adj.R<sup>2</sup>=0.91, DW=2.1

The values in brackets are t values. The estimated period is between 1989 and 2008.

Source: Calculation by MHRI based upon data from the Ministry of Land, Infrastructure, Transport and Tourism and Real Estate Economic Institute Co., Ltd.

Summarizing the foregoing, the expanded tax cut will push up starts of built-for-sale homes by 10 thousand units in 2009 and 37 thousand units in 2010 compared to figures calculated on the assumption that the tax cut remains unchanged from the 2008 level (Chart 20).

**Chart 20: Effect of the Tax Cut on Starts of Built-for-Sale Homes**



Note: Starts of built-for sales homes across the country.

Source: Calculation by MHRI.

### The positive impact upon housing starts

The expanded tax cut is envisaged to boost housing starts of owner-occupied homes by 65 thousand units in 2009 and 123 thousand units in 2010 (**Chart 21**). Assuming that housing starts for 2009 and 2010 continue to stand at the level in 2008, the ratio of increase to total starts of the three types of housing units (owner-built, built-for-sale and rental) would be 6.7% for 2009 and 12.5% for 2010.

**Chart 21: The Positive Impact of the Tax Cut on Starts of Owner-occupied Homes**

	2009	2010
Housing starts increased due to tax cut (10 thousand units)	6.5	12.3
Owner-built (10 thousand units)	5.5	8.5
Built-for-sale (10 thousand units)	1.0	3.8

Note: Comparison with figures calculated based upon the premise that the amount of tax deduction would remain unchanged (calendar year basis).

Source: MHRI.

### (3) The Impact Upon Consumers

The tax cut on residential mortgages is expected to stimulate purchases of durable goods as well (See **Chart 8**).

According to a survey conducted by the Japan Housing Finance Agency every five years, the average amount home purchasers spend on durable goods was JPY1.734 million in 2003. Assuming that the quantity of durable goods purchased has not changed, spending on durable goods would be approximately JPY1.55 million now in consideration of the price changes during this time span.

Since purchases of durable goods correspond to the number of housing units sold rather than housing starts, we first calculated the number of owner-occupied home sales likely boosted by the tax cut. As mentioned earlier, owner-built home starts equal the number of units sold. Thus, the number of units sold will most likely increase by 55 thousand units in 2009 and by 85 thousand units in 2010 compared to cases where the amount of deduction does not change (See **Chart 16**). Regarding built-for-sale homes, condominium sales in the Tokyo metropolitan area and the Kinki region are expected to grow by 16 thousand units (See **Chart 18**). The positive impact of the tax cut on built-for-sale homes sales across the country can be calculated by dividing this figure (16

thousand) by the ratio of condominium starts in the two areas to nationwide starts of built-for-sale homes, which results in 35 thousand units for 2009. Similarly, starts would rise to 40 thousand units in 2010.

These calculations suggest that sales of owner-occupied homes will grow by 90 thousand units (55 thousand + 35 thousand) in 2009 and by 125 thousand units (85 thousand + 40 thousand) in 2010. According to our estimation, purchases of durable goods will rise by JPY 140 billion (JPY1.55 million × 90 thousand units) and JPY 200 billion (JPY1.55 million × 125 thousand units) respectively. Their ratios to nominal GDP will be 0.03% for 2009 (approximately 0.05% as a ratio to personal consumption) and 0.04% for 2010 (approximately 0.07% as a ratio to personal consumption).

#### **(4) Summary: the Positive Effect on GDP**

Based upon the foregoing, we estimate that the tax cut will push up nominal GDP by 0.3% in 2009 and 0.5% in 2010 (**Chart 22**). The tax measure, therefore, will be successful to a certain extent. Nevertheless, amid the severe economic environment, housing starts may decline further, since downward pressure such as weakening demand could cancel out the positive impact of the tax cut.

**Chart 22: Positive Effect of the Tax Cut on Mortgages on GDP**  
(%)

	2009	2010
GDP	0.3	0.5
Housing investment	6.7	12.5
Personal consumption	0.0	0.1

Note: The positive effect upon housing investment = increase in housing starts.  
Source: MHRI.

#### **Conclusion**

The tax cut on residential mortgages is expected to push up starts of owner-occupied homes and housing investment to a certain degree. To make the economic stimulus package more effective, discussions on further measures such as the removal of the cap on the amount deductible from resident tax may be beneficial.

However, as we indicated earlier, it is possible that the deterioration of the economy may offset the impact of the tax cut. New housing starts have been increasing much faster than the number of households, tapping future demand. Moreover, the number of

family-raising households will peak out in the near future owing to the declining birthrate and the aging population. These factors serve as latent negative pressure on the housing market. Despite the favorable effects of the tax measures including the tax cut on residential mortgages, the housing market will remain in dire straits for some time.

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