Stabilizing Capital Chain and Solve the Housing Rigid Demand–Rent-To-Own Selling Mode in Real Estate Industry

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Abstract. In the new normal of China's economy, the real estate enterprises are facing some funding chain pressures such as financial problem and de-inventory. This paper introduces a new house-selling mode RTO which also known as Rent-To-Own to enrich the selling mode of China's real estate, reduce the operating pressure of the real estate industry, and promote the development of the real estate industry. Firstly, this paper introduces the RTO mode, analyzes it and compares it with the China's traditional house-selling mode, explains and summarizes the characteristics of RTO house-selling mode; then through the study of the pricing mode of RTO, established a pricing model, a pricing method have been put forward.

Introduction to RTO

Rent-To-Own (RTO), also known as rental-purchase, has been used for a long time in the United States and Europe, it is a type of legitimate transaction which can be used in tangible property, such as furniture, motor vehicles, home appliances and real property in the local. Its payment mode is that the renter pays weekly or monthly at first, then pays the price at some point during the agreement(usually at the time of signing the contract price, and there are no longer changes in the rental and total price) , to purchase the property. That is, after signing the contract, consumer lease the property by installment, after the expiration the consumer can renew, or pay for it directly. There are two purchase forms, one is that according to the provisions of the contract, to pay the remaining funds in a specific period; the second one is more common, according to the wishes of the user, the money can be paid at any time during the contract period\cite{1}. The entire process is shown in Figure 1. Compared to the traditional lease mode, lessors prefers to pay more attention to the tangible property maintenance work\cite{2}. In China, RTO house-selling mode can become a new mode which is more flexible, and can be a replenishment of the traditional house-selling mode.

RTO house-selling mode has a certain historical and widely applications in the United States and Europe, but in Chain it is not the case. The reason is likely to be that over the past ten or twenty years, China's real estate industry is developing rapidly, commercial housing sales hotly, only through the traditional house-selling mode the real estate enterprises' sales needs can be met, so there is no soil to cultivate RTO house-selling mode. But in recent years, under China's economic transformation and heavy downward pressure, the real estate market is depressed. US researchers found that, in the economy and the real estate market downturn, RTO house-selling mode provided a great help both to consumers and the real estate business, consumers can have houses without loans, and the real estate developers can also attract more customers\cite{3}. Therefore, in the new normal economy of our country, the reasonable attempt and scientific introduction of the RTO house-selling mode will have a certain significance for solving the pressure on real estate de-stocking and promoting the sustainable development of real estate industry.
The Characteristics of the Traditional House-selling Mode and the RTO House-selling Mode

According to the different payment with consumers purchase, this paper mainly analyzes three house-selling modes: the full house-selling mode, the loan house-selling mode and the RTO house-selling mode, and compares them with each other, to illustrate the feasibility and advantage of RTO house-selling mode.

Traditional House-selling Mode

Full and loan purchase modes are traditional. As the name suggests, the full purchase mode is a one-time full payment of the principal, the loan purchase is to apply for bank credit to pay the down payment, and then repay the housing loan on schedule[4].

Compared to the loan purchase, the full purchase without interest, not only in the overall reduction of expenditure, there are no monthly repayments, so it can reduce the time and effort on the cost. But the full purchase requires consumers to make a one-time large-scale of spending, it is a great test its economic ability. To study the scope of the full purchase, first of all, China's current housing demand situation and the purchase of the crowd are analyzed. China's current housing demand is composed of the following four parts: the first purchase demand, improve sexual demand, relocation and investment demand[5]. In addition, according to the theory of technical economics, financing produces cost, including the interest and financing costs. In other words, in addition to interest, time, effort (opportunity cost) and the fee to fund should be considered as the price for financing[6]. Obviously, loan purchase is the greater cost in this respect.

RTO House-selling Mode

As mentioned above, the rigid demand should have certain purchasing power, but the analysis is in terms of economic and practical, and combination the actual housing demand and potential purchasing power. However, the actual purchasing power is low for part of the crowd, such as university graduates or young workers, they are not belong to the rigid demand crowd, but really need to solve the personal housing problem; from the perspective of China's traditional culture, this

![Figure 1. RTO mode flow chart.](image-url)
part of the crowd have a real and practical need for purchase, rental housing is only a matter of expediency for they. They have not the ability to purchase the full amount, and due to fewer years of work, busy work and life, insufficient capital accumulation, lack of time or energy, or difficult to pay down and repay the mortgage, the loan purchase for them is also uneasy.

In the traditional house-selling mode, people who real difficulty in purchasing often chose rent to solve the housing problem. While the RTO house-selling mode, just correspond the demand and capacity with that population; for this part, when they have a certain capital accumulation over time, they will still choose to purchase, in RTO mode, the per-rent can act as the housing money, this part can purchase the houses just filled the remaining funds, which corresponding to their needs and lower economic capacity. Foreign studies also showed that income and loan difficulty have a significant impact to people whether to use RTO[7]. Therefore the RTO house-selling mode has an advantage for solving the problem of low-income groups. Compared the RTO mode and the traditional mode, giving the characteristics comparison table of the three modes, see Table 1.

<table>
<thead>
<tr>
<th></th>
<th>Total price</th>
<th>Fund flexibility</th>
<th>House sales</th>
<th>Payment difficulty</th>
<th>Risk</th>
<th>Cost of financing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full house-selling</td>
<td>Housing fund</td>
<td>Low</td>
<td>Less</td>
<td>Very high</td>
<td>Larger</td>
<td>Low</td>
</tr>
<tr>
<td>Loan house-selling</td>
<td>Housing fund + interest</td>
<td>Higher</td>
<td>Great</td>
<td>Lower</td>
<td>Smaller</td>
<td>High</td>
</tr>
<tr>
<td>RTO house-selling</td>
<td>Housing fund</td>
<td>High</td>
<td>-</td>
<td>Very low</td>
<td>Moderate</td>
<td>Low</td>
</tr>
</tbody>
</table>

Can be seen that RTO mode have the full purchase advantages such as low total price, consume less time and energy, also have the loan purchase characteristics like high flexibility, low payment difficulty. With the RTO mode, in addition to compared with the traditional mode, the SWOT analysis also can suitable for its own characteristics, see Fig.2.

RTO house-selling mode reduce the threshold of consumer purchase and reduce inventory and promote the healthy development of real estate enterprises. Can be said that the new economic norm
is the best temporal for RTO mode to existence, cultivation and development; RTO house-selling mode both have the full and loan purchase advantages for consumers, and because can be rented as first, for housing quality, comfort and property services consumers have a more direct experience; for real estate companies, RTO mode have the advantages of de-inventory and recovery of liquidity; but in the first-tier cities which sales better implement RTO is more difficult, and may not be a good choice for the people whose work is not stable, the future income increase more and the willing of purchase a better quality housing; in the legal context, there is no specific laws and regulations for this mode, which may lead to a series of "loopholes" and other legal issues, and exist some threats for development RTO house-selling mode, make it face greater risks in the early development. Therefore, under the new economic norm, RTO house-selling mode has the soil of introduction, testing and development, also has the corresponding demand, but in the introduction and development process, synchronous formulation of the relevant laws and regulations should be noted to regulate this mode.

**Pricing Model of the RTO House-selling Mode**

**Method and Discussion**

If the consumer choice loan purchase and use average capital plus interest method, set the loan amount as $a$, the monthly interest rate as $i$, repayment months as $n$, the monthly repayment amount as $b$, according to the formula of average capital plus interest method, the average monthly repayment amount:

$$b = a \times i \times \frac{(1 + i)^n}{(1 + i)^n - 1}.$$  

(1)

Used the RTO house-selling mode, if the monthly rent is $R \leq \alpha b$, and the monthly rent is acceptable to consumers. Among them, $\alpha$ is the adjustment factor, such as according to the actual situation set $R \leq 1.2b$. Typically, in order to maximize the benefits, real estate companies will use the maximum rent which consumer affordable, that is $R = 1.2b$.

For real estate enterprises, the sales income in the traditional mode is $A_1$:

$$A_1 = n_1 \times P.$$  

(2)

Among them, $n_1$is the number of commercial housing sold by real estate enterprises only used in the traditional model , $P$ is the total price of commercial housing.

In the RTO house-selling mode, the income is $A_2$:

$$A_2 = n_2 \times P + \sum_{i=1}^{t} R \times m_i.$$  

(3)

Among them, $n_2$ is the number of commercial housing which are completely sold in the traditional and RTO mode; $R$ is the monthly rent under RTO house-selling mode; $\sum_{i=1}^{t} R \times m_i$ is the rental income to the incompletely sold.

For the rental income $\sum_{i=1}^{t} R \times m_i$, the real estate enterprises can assess the factors such as potential customers according to the specific circumstances of different properties , then estimate its expected value as follows:

(1) In the economic point, $R'$ represents the average of the local general rent, $R - R'$ represents the higher part between the RTO house-selling mode and the ordinary rent average (can called "excess rent"). In the coming $m$ months, if the consumer who has signed the RTO contract has an income increase $d(m)$ exceeding the cumulative excess rent value, which is $d(m) \geq m(R - R')$, it may be give up continue to pay rent or purchase;

(2) Consumers to give up continue to pay rent or purchase, is also influenced by other factors, such as location change, buy a better housing and living time. These factors have greatly difference depending on the actual situation in different regions, after determining $m$ by $d(m) \geq m(R - R')$,it is necessary to carry out certain analysis and investigation according to the concrete situation,
determine the adjustment coefficient $\lambda$ and adjust the value of $m$, $0 \leq \lambda \leq 1$, the greater of $\lambda$, indicating that consumers are more inclined to give up to pay rent or purchase.

In addition, with the implementation of RTO house-selling mode, part of the original traditional mode consumers may switch to RTO mode, and give up to pay rent and purchase in the process, resulting the income reduction of the real estate business from this part. Therefore, need to determine the proportion that ordinary buyers transfer to RTO mode after implementation RTO house-selling mode. In fact, low-income consumers will switch to RTO house-selling mode. Determine the consumers ratio $r$ when income repayment ratio $p \leq p_0$ ($p_0$ is the critical value of income repayment ratio, according to the actual determined by the real estate agent), further get $n_2 = (1 - r) \times n_1 + \Delta n$, and $\Delta n$ represent the new join complete home buyers after RTO house-selling mode introduction.

Form the above analysis, the following models can be obtained:

\[
\frac{R}{\alpha} \leq a \times i \times (1 + i)^n \div [(1 + i)^n - 1] \quad (4)
\]

\[
n_1 \times P \leq n_2 \times P + \sum_{i=1}^{t} R \times m_i \quad (5)
\]

\[
n_2 = (1 - r) \times n_1 + \Delta n \quad (6)
\]

\[
d(m) \geq m(R - R') \quad (7)
\]

\[
\lambda d(m)/m(R - R') \geq 1 \quad (8)
\]

**Results**

Based on the above model and the actual situation, determine the rental value $R$, and examine whether the firm has a higher yield relative to the past at this rental value. The process is as follows: determine $R$, the maximum rent that the consumer can accept $\rightarrow$ determine the number of houses $n_1$ and $n_2$ $\rightarrow$ determine the excess rent $R - R'$ and the income growth function $d(m) \rightarrow$ determine the average monthly rent $m$ to the incomplete purchase $\rightarrow$ determine the rental income $\sum_{i=1}^{t} R \times m_i \rightarrow$ inspection whether the real estate enterprises have higher income under the RTO house-selling mode.

**Conclusion and Prospect**

This paper analyzed the traditional house-selling mode and comparison with the RTO mode and prove that in the current new economy norm the RTO mode can be test and implement; then, a pricing model is proposed. However, the RTO mode is still a new attempt introduction into real estate sales. It is necessary to establish the synchronous laws and regulations, and practice to test its effect. The pricing method and charging mode of RTO house-selling mode still need further study.

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