

Treatment of Urban Land Transactions in the National Accounts in China

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Abstract

Although land, a major type of non-produced assets, and land transactions have not been recorded in National Accounts of China yet, the treatment of land transactions in the national accounts has become an increasingly important issue in recent years with the deepened reform of land use system in China. Because the assignment payment is paid at a lump sum at the outset, there are some special problems in the accounting of land transactions in China. After detailed comparison between two alternative treatments, treating assignment payment as rents and as acquisition of land-use right, this paper concludes that the former is of more significance in China. Methods of amortization of the assignment payment are also considered.

Key words: assignment payment, rent, intangible non-produced asset, amortization

1. Introduction

Although land, a major type of non-produced assets, and land transactions have not been recorded in National Accounts of China yet, the treatment of land transactions in the national accounts has become an increasingly important issue in recent years with the deepened reform of land use system in China. Before 1980s, the urban land use system can be summarized as three features: administrative allocation, free and permanent usage and forbidden transfer of land-use right. Under this system, strictly speaking, there is no land market, and therefore, no necessary to account land transactions in China. From 1980s onwards, with the traditional land use system failing to meet the needs from marketization, urbanization and industrialization in China, the urban land use system reform was initiated and a new system involving assignment, transfer, rent, mortgage and termination of land-use right has been established. The total area of assigned land was 0.2325 million hectares, and assignment payment went up to RMB767.689 billion in 2006¹, about 19.5% of total government revenue of the same year. However, such huge amount of assignment payment is not recorded in the National Accounts of China at present, which surely reduces the accuracy of associated accounting aggregates and validity of analyses and decisions.

¹ Data source: Communiqué on Land and Resources of China 2006,
http://www.mlr.gov.cn/pub/gtzyb/zwgk/ggtg/t20070629_81492.htm, 06/29/2007

The accounting of land transaction in China is faced with some special problems due to some unique features of land transactions in China. First, all the land is owned by the State in China, which determines that the land transactions is only those of land-use right, but not of the land ownership. Secondly, assignment payment is paid in a lump sum at the outset. Therefore, the accounting of land transactions in China requires some innovative treatments because *1993 SNA* provides little direct guidance for this issue.

In this paper, we aim to propose an applicable methodology to account land transactions in China based on basic principles of *1993 SNA*. The paper is structured as follows. Section two describes various flows involved in the land transaction accounting in China and clarifies their accounting features. Section three compares two alternative methods to account assignment payment from multiple aspects. Section four discusses the amortization method of assignment payment. The last section is the conclusion.

2. Main flows and accounting features of urban land transaction in China

2.1 Main types of urban land transaction in China

As mentioned above, the land in China is totally owned by the State, so all the land transactions in China are those of land-use right. The main types of urban land transactions in China are as follows:²

1. Land-use right assignment. The land-use right assignment refers to the act of the State as the owner of the land who, within the term of a certain number of years, assigns the land-use right to land users, who shall in turn pay fees for the assignment thereof to the State. An assignment contract shall be signed for assigning the land-use right.

The maximum term with respect to the assigned land-use right shall be determined respectively in the light of the purposes listed below:

- (1) 70 years for residential purposes;
- (2) 50 years for industrial purposes;
- (3) 50 years for the purposes of education, science, culture, public health and physical education;
- (4) 40 years for commercial, tourist and recreational purposes; and
- (5) 50 years for comprehensive utilization or other purposes.

2. Land-use right transfer. The transfer of the land-use right refers to the land user's act of re-assigning the land-use right, including the sale, exchange, and donation thereof. A transfer contract should be signed for the land-use right transfer. With the transfer of the land-use right, the rights and obligations specified in the contract for assigning the land-use right and in the registration documents shall be transferred accordingly.

The land user who has acquired the land-use right by means of the transfer thereof shall have a term of use which is the remainder of the term specified in the contract for assigning the land-use right minus the number of the years in which the original land user has used the land. With the transfer of the land-use right, the ownership of the above-ground buildings and other attached objects shall be transferred accordingly.

3. Land-use right lease. The lease of the land-use right refers to the act of the land user as the lessor to lease the land-use right together with the above-ground buildings and

² Besides these four types of land-use right transactions, the land-use right is allowed to be mortgaged in China. However, we won't discuss land-use right mortgage because it is essentially a kind of financial transaction, not of the land transaction.

other attached objects to the lessee for use who shall in turn pay lease rentals to the lessor.

A lease contract shall be signed for leasing the land-use right by and between the lessor and the lessee. After leasing the land-use right the lessor must continue to perform the contract for assigning the land-use right.

4. Land-use right termination. The land-use right shall terminate for such reasons as the expiration of the term of use as stipulated in the contract for assigning the land-use right, the withdrawal of the right before the expiration, or the loss of the land.

2.2 The accounting features of urban land transactions in China

Different type of urban land transactions has different accounting feature in SNA.

1. Land-use right assignment is the only one among all types of transactions in China that occurs directly between the land owner and the land user. This type of transaction could be interpreted as either the lease of land itself (see *1993 SNA* 7.88, 7.128-131, and 10.129), the tangible non-produced asset, or the sell of land-use right, the intangible non-produced asset (see *1993 SNA* 10.129-130 and 13.62). These two options give rise to different treatment in SNA; however, the *1993 SNA* provides few discussions of the borderline between these two alternatives, which will be discussed in detail in next section.

2. The transfer and lease of land-use right are both transactions around land lease, while there is a distinction between them. In the land-use right transfer, the right and obligation born by original land-user will be transferred to new land-user; while in the land-use right lease, the original land-user should continue to perform the contract with the land-owner.

It is obvious that the accounting feature of the land-use right transfer is the same as that of the land-use right assignment, so that their treatment should be consistent.

On the other hand, the land-use right lease involves the lease of land lease, a sort of intangible non-produced asset. Since the text of *1993 SNA* does not have specific guidance on this case, the treatment needs to refer to analogous cases such as the payments to copyrights, which are also intangible non-produced assets. In *1993 SNA*, any payments received by the owner of the holder of the copyright from other units who are licensed to use the asset are conceptually equivalent to the rentals received by owners of tangible fixed assets who lease them out, that they are treated as payments for services provided by the owner of the asset. Accordingly, the payment received by the lessor of land-use right should be treated as payment for service.

3. The accounting method of land-use right termination depends on the accounting method of land-use right assignment. If treating assignment payment as rent, the relevant records involved in land-use right termination in China should include the termination of financial claims and obligations. If assignment payment is treated as acquisition of land-use right, land-use right termination should be recorded as economic disappearance (or appearance) of land-use right in the land-user's (or land-owner's) Other Changes in the Volume of Assets Account.

3. Options of land-use right assignment payment treatment

3.1 The accounting feature of land-use right assignment payment

Classifying land as one type of tangible non-produced assets, the *1993 SNA* introduced a new category of assets called non-financial intangible non-produced assets among which is an item called leases and other transferable contracts (see annex to Chapter 13 of the *1993 SNA*). Thus, the land-use right assignment could be treated in two alternatives ways as mentioned in Section 2, transaction of land or that of land-use right. Although *1993 SNA* does not provide clear guidance about how to treat land-use right assignment in China, we have found that *2003 SEEA* and the treatment of mobile phone license payments in the national accounts could provide many helpful experiences (*2003 SEEA*; Binns et al., 2005; Robert Dippelsman and Nils Maehle, 2000).

According to *2003 SEEA*, we could distinguish payments for the use of a naturally occurring asset between rent and the acquisition of an intangible non-produced asset (land lease here) in light of the use term and the mechanism that payment is decided. Rent usually relates to a payment due *within a year* for the use of the asset in question for that period only and the level of rent may be subject to a price *increase every year* or may even be *completely renegotiated each year*. A property right constitutes an intangible non-produced asset only if the right to use the asset is conveyed for a period *exceeding a year*, and the total acquisition cost will be *negotiated at the outset* and this cost is seldom subject to adjustment or renegotiation during the period of its validity. (See *2003 SEEA* 6.37-6.38; 6.45-6.48)

When studying the accounting of mobile phone license payments, Robert Dippelsman and Nils Maehle point out that the permission to use an asset owned by another party becomes an asset when some of the benefits and risks of ownership are transferred to the other party, with some important indications including limited cancellability, degree of exclusiveness, actual or de facto transferability, demonstrable value, preagreed value of payments, length of the license and control.

As introduced in section 2, the term of land assignment in China generally exceeds one year, and the assignment payment is paid in a lump sum at the outset. The land user shall, in conformity with the stipulations of the contract for the land-use right assignment and the requirements of city planning, develop, utilize and manage the land, bearing the profits and obligations by using the land assigned, and may transfer, lease or mortgage the land-use right. The State shall not withdraw before the expiration of the term of use the land-use right which the land user acquired in accordance with the law unless the State may, based on the requirements of social public interests, withdraw the right before the expiration of the term of use in line with the relevant legal procedures. Considering these facts, it seems more appropriate that the assignment payment in China should be recorded as acquisition of land lease, not property income.

However, it must be addressed that these two accounting methods have both advantages and disadvantages. Next, we will compare them from three different aspects.

3.2 Comparison of two accounting options

3.2.1 Comparison from the perspective of feasibility

Under the framework of *1993 SNA*, the rent received by a landowner from a tenant should be recorded on an accrual basis, i.e., rent is treated as accruing continuously to the landowner throughout the period of the contract agreed between the landowner and the tenant. The rent recorded for a particular accounting period is, therefore, equal to the value of the accumulated rent payable over that period of time, as distinct from the amount of rent due to be paid during that period or the rent actually paid (see *1993 SNA*

7.128). Since the land assignment payment in China is paid in a lump sum at the outset, a series of year rents must be derived throughout the whole assignment term if treating land assignment payment as rents.

If the land assignment payment is treated as acquisition of land-use right, the accounting will be simpler because the payment will be recorded as acquisition of land-use right at Capital Account just once. However, of course, the amortization of land-use right owned by land user should be recorded in each year in order to reflect the fact that the value of land-use right will decline as the right heads toward expiry, which should be recorded at Other Changes in the Volume of Assets Account. Considering the fact that the land-use right assignment payment is recorded as the acquisition of intangible asset and is amortized during the assignment term in China's business accounting practice, it is naturally concluded that treating assignment payment as acquisition of land-use right is more feasible in China.

In spite the simplicity and good micro data basis, treating assignment payment as acquisition of land-use right faces some difficulties in China.

First, Other Changes in the Volume of Assets Account has not been compiled in China at present. According to *1993 SNA*, the land-use right should be recorded as the economic appearance in land-owner's Other Changes in the Volume of Assets Account and then be recorded at Capital Accounts of both sides if assignment payment is treated as acquisition of land-use right. At the same time, the amortization and the termination of land-use right should be recorded as the economic disappearance in land-owner's Other Changes in the Volume of Assets Account. It's obvious that the current accounting system in China could not have a complete record if the land-use right assignment would be treated as the acquisition of intangible asset.

Secondly, the price of land-use right is usually unavailable in subsequent transactions after the initial assignment. It is easy to record the acquisition of land-use right for the initial assignment transaction as mentioned above, however, in some sequent transactions about land-use right, for instance, the transfer of land-use right together with the ownership transfer of above-ground buildings and other attached objects, it is usually hard to observe the value of land-use right because the buildings or other objects are often purchased or sold together with the land on which they are situated, without separate valuations being placed on the objects and the land. Therefore, it's impossible to record the acquisition of land-use right precisely under these situations.

To the contrary, these problems can be avoided if we treat land-use right assignment payment as rents, which are recorded in the Primary Distribution of Income Account and are irrelative to the change of value of land-use right.

3.2.2 Comparison from the perspective of impact on the associated aggregates

If treating land-use right assignment payment as rents, recorded at the Primary Distribution of Income Account, the primary income will be affected, and the saving and the net lending or borrowing will subsequently be affected by the amount of rent for each year, without the non-financial investment being affected. These influences will last throughout the whole assignment term.

If treating land-use right assignment payment as acquisition of intangible asset, recorded at the Capital Account, non-financial investment will be affected, without the primary income and the saving being affected, and the net lending or borrowing will be

affected accordingly by the amount of the total assignment payment. These influences will only appear in the first year of assignment.

From the perspective of the entire economy, these two treatments have no impacts on all aggregates if both sides are residents, but have different impacts on associated aggregates if one side is non-resident, with impact on Gross National Income, Gross Savings and Gross Net Lending or Borrowing if treating land-use right assignment payment as rents, while only on Gross Net Lending or Borrowing if treating assignment payment as acquisition of intangible asset.

As mentioned in 3.2.1, the land assignment payment in China should be amortized as rents for each year throughout the whole assignment period if it is treated as rents, therefore, the accuracy of associated aggregates will be probably reduced due to the amortization. To the contrary, it is unnecessary to amortize land assignment payment in the Capital Account if treating the land assignment payment as acquisition of intangible asset is of more, and thus no aggregates' accuracy will be reduced. It seems more appropriate to treat land assignment payment as acquisition of intangible asset from this aspect.

3.2.3 Comparison from the perspective of analytical significance

The essential of land assignment payment from the viewpoint of government is an exchange by the land-use right in the next years for inflow of funds at present. This fund resource won't be sustainable due to the rigidity of land stock. It is rational to consider the land assignment payment as implicit debt of government, i.e. overdraft of future income, if the government aims to strengthen the robustness of its revenue.

Treating land assignment payment as rents can perfectly reveal the implicit indebtedness of assignment payment because under this treatment, the land assignment payment is regarded as the sum of discounted rents, and only a certain part of the total assignment payment should be recorded as the rent of accounting period and the remainder should be recorded as the prepaid rents, that is the debt of the government. If treating land assignment payment as acquisition of intangible asset, all assignment payment is recorded as increase of government's financial asset, meanwhile the reduce of non-financial asset won't be recorded due to non-existence of balance sheet in China, which will result that the asset stock will be over estimated. Thus, it's of high probability that the government would blindly expend too much which will prosper the economy in the short run at a price of sustainability of the economic development in the long run. It seems more appropriate to treat land assignment payment as rents from this aspect.

Integrating the above comparisons, we suggest treating land assignment payment as rent, especially in terms of the analytical significance. Of course, the amortization of land assignment payment must be carefully designed in order to offset the potential negative results by this treatment, which will be discussed in the next section.

4. Amortization of land-use right assignment payment

As mentioned above, the land-use right assignment payment treated as land rents should be amortized throughout the whole assignment term to derive rents for each year and the remainder is recorded as a financial asset for land user or a liability for the

government (in the form of other accounts payable/receivable)³. 1993 SNA does not refer to this problem directly, and we think the pricing of bonds is of good guidance.

4.1 Derivation of rents for certain assignment payment

Based on symmetry of return and cost, the price of bonds is the cost paid in order to gain cash flows in the future. The pricing formula is as follows:

$$P = \sum_{t=1}^n \frac{C_i}{(1+r)^t} \quad (1)$$

where, P is the price of bond, C_i is cash flows, r is rate of discount, and t is number of period. This formula means the bond buyer must pay a cost of P at present in order to receive future cash flows C_i .

Similar to pricing of bonds, the up-front paid assignment payment satisfies the symmetry of return and cost, that the land user must pay a lump sum equivalent to assignment payment in order to receive returns from using land equivalent to rents in each future year. Although it seems that the estimation of land rent is essentially an inverse operation of pricing, the estimation of land rent can vary with different assumptions. Under the simplest assumption of constant amortization, which means the rent of each year is of the same quantity, we have:

$$P = \sum_{t=1}^n \frac{R}{(1+r)^t} \Rightarrow R = \frac{P}{\sum_{t=1}^n \frac{1}{(1+r)^t}} = \frac{rP}{1 - \frac{1}{(1+r)^n}} \quad (2)$$

where, P is the up-front assignment payment, R is rent of each year, n is the assignment term, and r is the rate of discount, which can be derived from the yield on government bonds.

Due to the appreciation of land-use right, the constant rent assumption does not fit the reality well, and should be revised with some growth path. The simplest growth assumption is constant growth rate, and we have:

$$P = \sum_{t=1}^n \frac{R_0(1+g)^t}{(1+r)^t}$$

$$R_0 = \frac{P}{\sum_{t=1}^n \frac{(1+g)^t}{(1+r)^t}} = \frac{(r-g)P}{1+g - \frac{(1+g)^{n+1}}{(1+r)^n}} \quad (3)$$

$$R_t = R_0(1+g)^t$$

³ There are some more details to be considered here. First, if taking the interests payment by the government into account, we have “the stock of debt at the end of the year = the stock of debt at the beginning of the year – rent payable + interest” (see Robert Dippelsman and Nils Maehle, 2000). Secondly, if the land-use right is transferred to a new user, the rents payment after transfer will be recorded at the new user’s account. Meanwhile, the payment made by the new user to the original user should be recorded as the transfer of financial asset, that the financial claim of the original user to the government is transferred to the new user, which should be recorded at the Finance Account. Thirdly, if the land is withdrawn before the expiration of the term of use the land-use right, some part of the payment made by the government to the assignee should be recorded as the repayment of financial debt till the date withdrawing, recorded at the Finance Account.

where, R_t is the rent of the t th year.

It should be noted that all the formulae assume that the assignment payment is paid at the beginning of the assigned year, and the rent is paid at the end of each year. The estimation of rent will be more precise if we take more careful account of time, but we don't think it is necessary considering the macro characteristics of national accounting.

4.2 Some discussions about derivation of rent at national level

The gross land rent at the national level will be easily derived by summation of rent of each land-use right assignment transaction at the first glance; however, that will possibly be unwieldy, for instance, we may have to make different assumption about the growth rate for different lands assigned. In general, we can estimate rents at national level as follows:

At first, estimate total rent income for the government. Considering the data availability, the main data resource should come from departments in charge of land-use right assignment. The government is the unique institutional sector who receives the land rent due to system of State-owned land in China; therefore, the rent income of government is the gross rent income of the whole economy.

Secondly, divide rents between corporations sector and households sector. The first assignee is usually corporations including real estate developers and other enterprises in China, but households may become final assignees after they purchase houses from developers, so the gross land rent must be divided between corporations sector and households sector. For the reason of feasibility and simplicity, we can record the rents derived from assignment payment for the residential purpose as the rent payment paid by the households and the other rents as the rent payment paid by the corporations. This method implies that the assignment payment paid by the developers is essentially loans to the households, and the developers do not need to pay rents to the government. The relationship between the developers and the households should be regarded as creditors and debtors, which will cease after houses are sold to households. This treatment will give rise to imputed debts and assets for households and corporations, however, the total net lending or borrowing at national level won't change.

Thirdly, if using formula (3) to derive rent, it's unnecessary to estimate the growth rate for each piece of land assigned, but estimate the average growth rate for different regions. The growth rate can be estimated by regression if data are enough, otherwise can be given by expert valuers.

5. Conclusion

Although we have had some discussions about the treatment of urban land transactions in the national accounts in China, there have many technical details to be studied at length, such as the amortization method of assignment payment, and the treatment of assignment payment paid by real estate developers. Moreover, we did not have an experimental accounting using real data based on the proposed accounting method of the assignment payment due to data availability, and hence did not study the impact of land transaction on Chinese economic development, which are more challenging issues.

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