Calculation of Owner-Occupied Dwelling Services in Georgia

Abstract

Output of owner-occupied dwellings (OOD) is included within the production boundary according to the System of National Accounts. Different methods may be selected for measuring OOD services due to housing market development level. The paper presents estimation of services produced by OODs based on a User Cost Method, which replaced a self-assessment method in 2019 year in the National Accounts of Georgia during the general revision of time series.

Key words: Owner-Occupied Dwellings, Imputed rent, User Cost Method

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Introduction

Imputed rents, representing services produced by owner-occupied dwellings (OOD), has always been included within the production boundary of National Account and are part of the official GDP estimates of Georgia as well.

In 2019 transition to the SNA 2008 was implemented[1] in the National Accounts of Georgia from the SNA 1993, accompanied with a general revision of time series. Along with other major changes related to the newly adopted methodology, user-cost method was implemented for measuring imputed rents for owner occupied houses, while self-assessment method was used until 2019 year.

The paper describes a methodological background and detailed calculation steps for measuring imputed rents of OODs in Georgia, based on the user-cost method, briefly summarizes widely used approaches for estimating services of OODs and provides arguments for adopting the use-cost method for the country. Final results are presented in the last part of the paper.

1.   Methodological Framework

Methodology for measuring imputed rents of owner-occupied dwellings differs by country based on a rental market development level. According to the European Commission Regulation (EC) N1722/2005, stratification method is the most preferable one and a well-developed rental market is required for its implementation. The method uses a total housing stock broken down by strata according to particular characteristics and actual rental is determined for each stratum. For countries, with less developed rental

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[1] Transition to the SNA 2008 was supported by expert missions from the International Monetary Fund and Statistics Denmark within the framework of the Twinning project.

market, user cost method is suggested in case: 1) A share of privately rented dwellings is less than 10 percent of total dwellings and 2) disparity between private and other paid rentals exceeds a factor of three. According to the operational guidelines of the international comparison program 2011 (World Bank Group, 2015), using the user cost method is suggested if: "1) Less than 25 percent of all dwellings are actually rented; 2) More than half of the rented dwellings are occupied by foreigners paying high rents, or government or other employees paying low rents and 3) Rented dwellings are not evenly distributed over all parts of the economy" (World Bank Group, 2015). Other approaches are the self-assessment and administrative assessment methods, which may be affected by subjective influence of respondents in case of the first one, while the later may be biased when it is related to taxation.

Results of a survey of dwellings, conducted in 2014 year along with the population census were decisive to choose the user cost method, as around 90 percent of dwellings are occupied by owners, leaving only 10 percent of dwellings rented. Housing survey results also showed that dwellings are mainly rented in the capital and in other major cities and they are not evenly distributed over the country, which is an additional indicator of a rental market development level.

Survey of dwellings covered only inhabited structures and information on holiday houses and garages are not included.

2. Calculation of Components of the User Cost Method

Output of OOD services measured by the user cost method, is a sum of the following expenditures of inhabitants, living in their own dwellings: Intermediate consumption, Other taxes on production, Consumption of fixed capital (CFC) and Net operating surplus. Disaggregation of main categories is presented in Table 1, while estimation of CFC and net operating surplus requires measuring of housing stock, which is calculated based on components provided in Table 2.

Table1

N	Description of the component
	Intermediate Consumption
01	Expenditure on maintenance and repair of owner-occupied dwellings
02	Gross insurance premiums paid on owner-occupied dwellings
03	Premium supplements
04	Insurance claims paid to owners (minus)
05	Net insurance premiums paid by owners. (02) + (03) - (04)
06	FISIM

07	Total intermediate consumption. (01) + (02) - (04) + (06)
	Other taxes on production
08	Taxes paid by owners on the value of owner-occupied dwellings and their associated land
	Consumption of fixed capital
09	Consumption of fixed capital on owner-occupied dwellings at current prices (excluding land)
	Net operating surplus
10	Current market value of the stock of owner-occupied dwellings at the beginning of the year (including land)
11	Current market value of the stock of owner-occupied dwellings at the end of the year (including land)
12	Current market value of the stock of owner-occupied dwellings at mid-year (including land) ((10) + (11))/2
13	Real rate of return on owner-occupied dwellings (including land) in percent per annum
14	Real net operating surplus. (13) * (12)/ 100
	Total Expenditure on owner-occupied dwelling services
15	Total Expenditures on owner-occupied dwelling services (07) + (08) + (09) + (14)

Table 2

	Description of the item
K1	Surface area of owner-occupied dwellings from 2014 census (millions of square meters)
K2	Estimated surface area of OODs in the middle of current year (millions of square meters)
K3	Average cost of newly constructed dwellings in current year (per square meter), excluding land
K4	Average net value of a dwelling in the accounting period (per square meter)
K5	Value at current prices of the net stock of OODs (millions of GEL)
K6	Value of land under dwellings as a share of the value of dwelling stock
K7	Value of land under dwellings (K5) * (K6)
K8	Estimated service life of OODs
K9	Depreciation rate for OODs (1.6/K8)

Imputed rent of OODs is calculated for 11 regions in Georgia (capital city Tbilisi and 10 regions) disaggregated by rural and urban area.

- **Intermediate consumption** includes:

01 - Expenditure on maintenance and repair of owner-occupied dwellings. Data source is a household budget survey;

02 - Insurance premiums, covering the calculating year, paid by owner-occupiers to the insurance companies. Data source is an Insurance State Supervision Service of Georgia;

03 - Premium supplements, investment income of insurance companies is considered as income of policy holder transferred to the insurance company. Data source is an Insurance State Supervision Service of Georgia;

04 - Insurance claims paid to owners referring the accounting period, covered by the insurance package;

05 - Net insurance premiums paid by owners is calculated as (02) + (03) – (04);

06 - FISIM is calculated for mortgage loans only.

- **Other taxes on production**

08 - Taxes paid by owners of owner-occupied dwellings consists of a property tax paid by owner-occupiers according to the value of dwelling and a land under the structure. Data is provided by the Ministry of Finance.

- **Consumption of Fixed Capital**

Consumption of fixed capital requires estimated value of capital stock, which is calculated using the following information:

K1 - Surface area of owner-occupied dwellings. Results of the survey of dwellings, conducted along with the population census in 2014 year, is used as a base information, while residential surface of completed construction of residential buildings is used to estimate a dwelling surface for the accounting period;

K2 - Estimated surface area of OODs in the middle of current year is calculated as an average of end period surface areas for two consecutive years;

K3 - Average cost of newly constructed dwellings in current year excluding land. Average prices of newly constructed dwellings were calculated in 2018 year based on the information obtained using web scrapping techniques from web pages of the most popular real estate agencies in the country. Land price under the dwelling is assumed to be 15% of the total price in all regions. Average prices until 2018 year were estimated using the rent index, calculated for consumer price index purposes, while average prices in consecutive periods are calculated based on a construction cost index.

K4 - Average net value of a dwelling (per square meter) in the accounting period. Assuming that dwelling prices decline by equal amount each year and are fully amortized in the last year, price of a dwellings of

average age will equal to (K3) * (1-(A/L)), where A is an average age of dwelling and L is the expected service period (see OECD, 2008; World Bank Group, 2015);

K5 - Value at current prices of the net stock of OODs is a product of estimated surface area of OODs and an average net value of a dwelling (per square meter): (K2) * (K4);

K6 - Value of land under dwellings as a share of the value of dwelling stock is estimated based on assumption provided in K3;

K7 - Value of land under dwellings is calculated as (K5) *(K6), which is: Value of land under dwellings as share of the value of dwelling stock * Value of the net stock of owner-occupied dwellings at current prices;

K8 - Estimated service life of OODs is 75 years in the capital city, while it is 80 years in other regions;

K9 – Depreciation rate is considered as 1.6/K8 (OECD, 2008; World Bank Group, 2015);

09 – Consumption of fixed capital (CFC) on owner-occupied dwellings at current prices (excluding land) is estimated using geometric depreciation with no mortality function. CFC equals (K5) * (K9): Value of the net stock of owner-occupied dwellings at current prices (excluding land) * Depreciation rate for OODs;

- **Net Operating Surplus**

10 - Current market value of the stock of owner-occupied dwellings at the beginning of the year (including land);

11 - Current market value of the stock of owner-occupied dwellings at the end of the year (including land);

12 - Current market value of the stock of owner-occupied dwellings at mid-year (including land) equals: ((10) + (11))/2;

13 - Real rate of return on owner-occupied dwellings (including land equals 2.5 percent, as an internationally accepted assumption (OECD, 2008; World Bank Group, 2015);

14 - Real net operating surplus equals average market value of the stock of OODs (including land) times real rate of return: (13) * (12)/100.

Real growth of imputed rent is measured using a growth rate of residential area of owner-occupied dwellings as a volume indicator.

3. Final results

Summary results of the user cost method are provided on Table 3, while Table 4 presents comparison of value added calculated by the self-assessment approach and the user-cost method. Results show that the

value added calculated by the user cost approach is significantly higher compared to the results of previously used method.

Table 3

Output of an imputed rent of owner-occupied dwellings using the User Cost method

	2014	2015	2016	2017	2018	2019
Intermediate consumption	360.0	422.9	423.6	527.1	568.6	545.0
Consumption of fixed capital	1,169.3	1,264.0	1,306.8	1,358.0	1,408.7	1,546.8
Net operating surplus	1,619.7	1,750.2	1,808.1	1,878.0	1,947.1	2,137.1
Other taxes on production	17.5	15.8	18.3	21.4	24.8	29.9
Output of OOD-s	**3,166.5**	**3,452.9**	**3,556.7**	**3,784.4**	**3,949.2**	**4,258.7**
Value added of OOD-s	**2,806.5**	**3,030.0**	**3,133.1**	**3,257.3**	**3,380.6**	**3,713.7**

Table 4

Share of value added of OODs in GDP at basic prices

	2014	2015	2016	2017	2018	2019
Self-assessment method	3.4%	3.2%	3.2%	3.0%	2.8%	…
User-cost method	10.1%	10.0%	9.9%	9.2%	8.7%	8.6%

Conclusion

Implementation of the user cost method for measuring imputed rent of owner-occupied dwellings is the best approach for Georgia, given a current rental market development level of the country, as rented dwellings amount to around 10 percent of total dwelling stock and are not evenly distributed over the country. Introduction of the user cost method in the National Accounts of Georgia, along with transition to the SNA 2008 and a planned general revision of series, improved a quality of GDP of the country, as updated estimates significantly differ from the results of preceding estimation.

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