Module 5 Supplementary Info: Housing: Approaches and Data Requirements

Introduction

- For the computation of PPPs, two broad components must be addressed

Expenditures

Prices

- According to the ICP Classification, four categories relate directly to dwelling services. Under these four categories, four basic headings:

  → 1104111 – Actual rentals for housing

  → 1104211 – Imputed rentals for housing

  → 1201111 – Housing (Under Individual Consumption Expenditure by NPISHS)

  → 1301111 – Housing (Under Individual Consumption Expenditure by Government)

Introduction (Cont'd)

Dwellings fall into two subsets

Rented Dwellings

Owner-Occupied Dwellings

It is easier to tell how much tenants are paying for dwelling services

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It is more complex

→ *Household consumption expenditures should include both the **actual expenditure by household on rents for dwellings** and an **estimate of how much owner-occupiers would have to pay if they had to pay rent for their dwellings instead of owning them***

Estimating Household Expenditures On Owner-Occupied Dwelling Services

- The estimation of household expenditures on <u>owner-occupied dwelling</u> services is referred to as an "imputation"

- According to the System of National Accounts (SNA), the best way to make the imputation is to use the rents actually paid for similar dwellings

Example

*The rent of an owner-occupier living in a two-room detached house with 120 square meters of floor space in the city, is to be **imputed** at the average rent actually paid for similar dwelling in a similar location*

To make these imputations, the national accounts compiler will need information on the rents being paid for different kinds of houses and apartments in different parts of the country

Calculating PPPs For Dwelling Services

There are two approaches to calculate PPPs for dwelling services

Rental Approach

Volume Approach
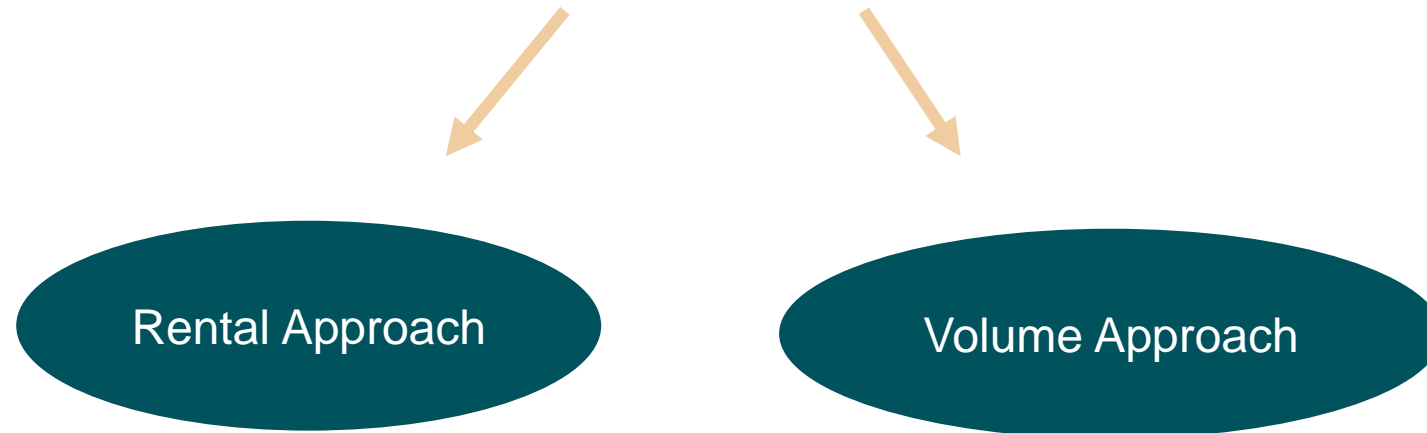
The Rental Approach to Estimate PPPs

When do we use the rental approach?

This method has been found to work well in countries in which

The dwellings actually rented are representative of the stock of dwellings as a whole

The national statistical offices collect information on rents paid for the different kinds of dwellings that are rented in most of the country

How are PPPs calculated ?

- Market rents for a selected list of dwellings representative of housing stock in the region are collected. PPPs are obtained by **averaging rent relatives** for identical, or very similar, dwelling services in each country

The Rental Approach to Estimate PPPs

ICP 2017

For ICP 2017, the participating countries were asked to provide information on rents for dwellings using the **Rental Survey Questionnaire** prepared by the Global Office just like in 2011. However, in 2017 the types of dwellings were reviewed and more specified in order to make them more comparable.

This questionnaire asked member countries to report average rents paid for several types of dwellings with different kinds of amenities

Information from the rental survey was used to calculate PPPs for dwelling services for those countries

Houses & Apartments

Electricity & Private Toilet

The Rental Approach to Estimate PPPs

ICP 2017

World Bank

Arab Region

Annual rents collected by NSOs are compared for each type of dwelling across countries

Annual rents are obtained by multiplying the price of one meter square for the same dwelling by the mid-point of the dwelling surface and then compared across member countries

The Rental Approach to Estimate PPPs

Rental Survey

Item Code	1104111108	1104111101
Item Name	Studio apartment, 15-35 m^2	Single-detached house, 120-180 m^2
Number of units	1	1
Unit of measurement	Annual rent (national average)	Annual rent (national average)
Dwelling size (usable surface) in m^2	15-35	120-180
Dwelling size (usable surface) in	160-380	1300-1950
Dwelling facilities include	Electricity line; inside water (cold and hot); private toilet with water; private kitchen	Electricity line; inside water (cold and hot); private toilet with water; private kitchen
Rent excludes	Furniture; materials and services for maintenance; energy supply (such as water, electricity, gas and other fuels); subsidies from government or employers	Furniture; materials and services for maintenance; energy supply (such as water, electricity, gas and other fuels); subsidies from government or employers
Specify	Dwelling size; Annual rent per m^2	Dwelling size; Annual rent per m^2

DATA ENTRY	Example
Annual rent	20,000
Dwelling Size (usable surface) in m^2	150
Annual rent per m^2	133

The Rental Approach to Estimate PPPs

Challenges faced when using the rental approach

1 In case employers provided their employees with free or inexpensive accommodations

2 When rents are subsidized by the government

3 The rental market might not be large and representative enough of the dwelling in the countries and may not represent housing in rural and semi-urban areas

4 Dwellings for rent may differ significantly from owner-occupier housing, thus rental data may not be appropriate for imputing housing services expenditures for owner-occupier dwellings

The Volume Approach to Estimate PPPs

When do we use the volume approach?

When member countries are not able to report average rents paid for several types of dwelling with several different kinds of amenities → The volume approach is applied
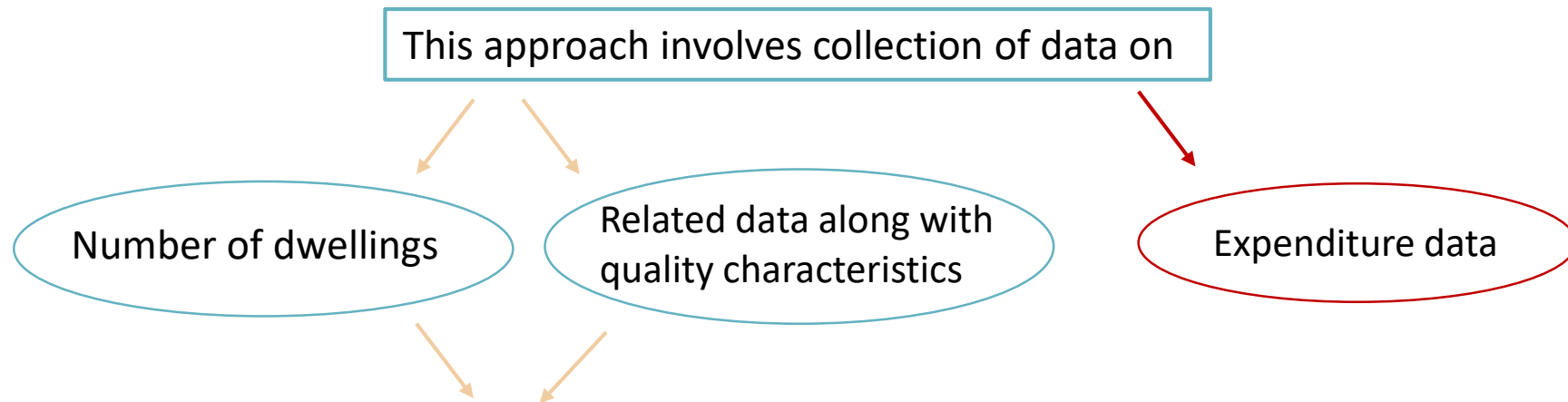
How are PPPs calculated ?

PPPs are obtained by dividing the ratios of the volumes of dwelling services into their "expenditures relatives"

These relatives are the ratios of the participating countries' expenditures on actual and imputed rents for dwellings taken from the national accounts

The Volume Approach to Estimate PPPs

❌ The volume approach does not depend on rental markets and data on rents. Instead, the volume approach measures **housing stock** in the participating economies directly

This approach involves collection of data on

Number of dwellings

Related data along with quality characteristics

Expenditure data

These data are in turn used in constructing quality adjusted volume aggregates for housing

The Volume Approach to Estimate PPPs

Housing Volume Survey

National Total	Formal dwellings							Informal dwellings
	Type of dwelling construction				Location of dwellings			
	Modern construction		Traditional	Dwelling Type Total	Urban	Rural	Location Total	
	Houses	Apartments						
	(H)	(A)	(T)	(C)* = (H + A + T)	(U)	(R)	(L)* = (U + R)	(I)
Number of dwelling units								
Number of occupants								
Number of rooms								
Usable surface area in m^2								
Number of dwelling units with:								
Electricity								
Inside water								
Private toilets								
Central heating								
Air conditioning								
Number of dwelling units that are:								
Rented								
Owner occupied								

ICP Dwelling Services Questionnaire: Volume of Dwellings

The Volume Approach to Estimate PPPs

The volume of dwelling services is obtained in two stages

1

The quantity of dwelling services is calculated using a simple measure such as the floor space, the number of rooms, number of occupants or number of dwelling units

2

The quality indicators referring to amenities such as electricity and running water are used when these quantity measures are converted into volume measures

The Volume Approach to Estimate PPPs

Key points when constructing the volume index

1 The quantitative data are, in order of preference: the <u>usable surface of dwellings</u>, the <u>number of rooms</u>, the <u>number of occupants</u> and the <u>number of dwellings</u>

→ *One of these quantity measures is taken as the **quantity index***

2 The qualitative data are the percentages of dwellings with facilities such as: <u>electricity</u>, <u>inside water supply</u>, <u>private toilets</u>, and <u>air-conditioning</u> or <u>central heating</u>

→ *The percentages of dwellings with these various facilities are averaged to produce a **quality index***

3 The quantity index is multiplied by the quality index to obtain the **volume index**, which in turn is used to <u>measure the relative volume of dwelling services provided in each country</u>

The Volume Approach to Estimate PPPs

Example

1 ***Quantity index*** → *Usable surface of the dwelling*

2 ***Quality index*** → *Average of the % of dwellings that have one of the three facilities shown: electricity, inside water, inside toilet*

Notes

- Although economy B has a much larger usable surface of dwellings than economy A, the quality of economy B's dwellings is lower than of A

When the amount of floor space is adjusted for differences in quality, the volume of dwelling services in two countries is nearly the same

Table 9.3 Worked Example of the Quantity Approach, ICP 2011

1. Estimation of **quantity index** for economy B relative to economy A	Usable surface of dwellings in economy A: 240 million m²				
1	Usable surface of dwellings in economy B: 375 million m²				
	Quantity index for economy B relative to economy A: 375/240 = **1.56**				

2. Estimation of **quality index** for economy B relative to economy A	Facility	No. of dwellings with given facility (thousands)			Share of dwellings with given facility (%)	
2		Economy A	Economy B	Weight	Economy A	Economy B
	Electricity	2,900	6,411	0.333	100	84
	Inside water	2,863	4,503	0.333	99	59
	Inside toilet	2,729	3,739	0.333	94	49
	Total	2,900	7,632	1.000	98	64
	Quality index for economy B relative to economy A: 64/98 = **0.65**					

3 3. Estimation of **volume index** for economy B relative to economy A	Volume index equals quantity index times quality index: 1.56 × 0.65 = **1.01**

Source: ICP, http://icp/worldbank.org/.

The Volume Approach to Estimate PPPs

Major challenge faced when using the volume

1 No availability of updated housing census data

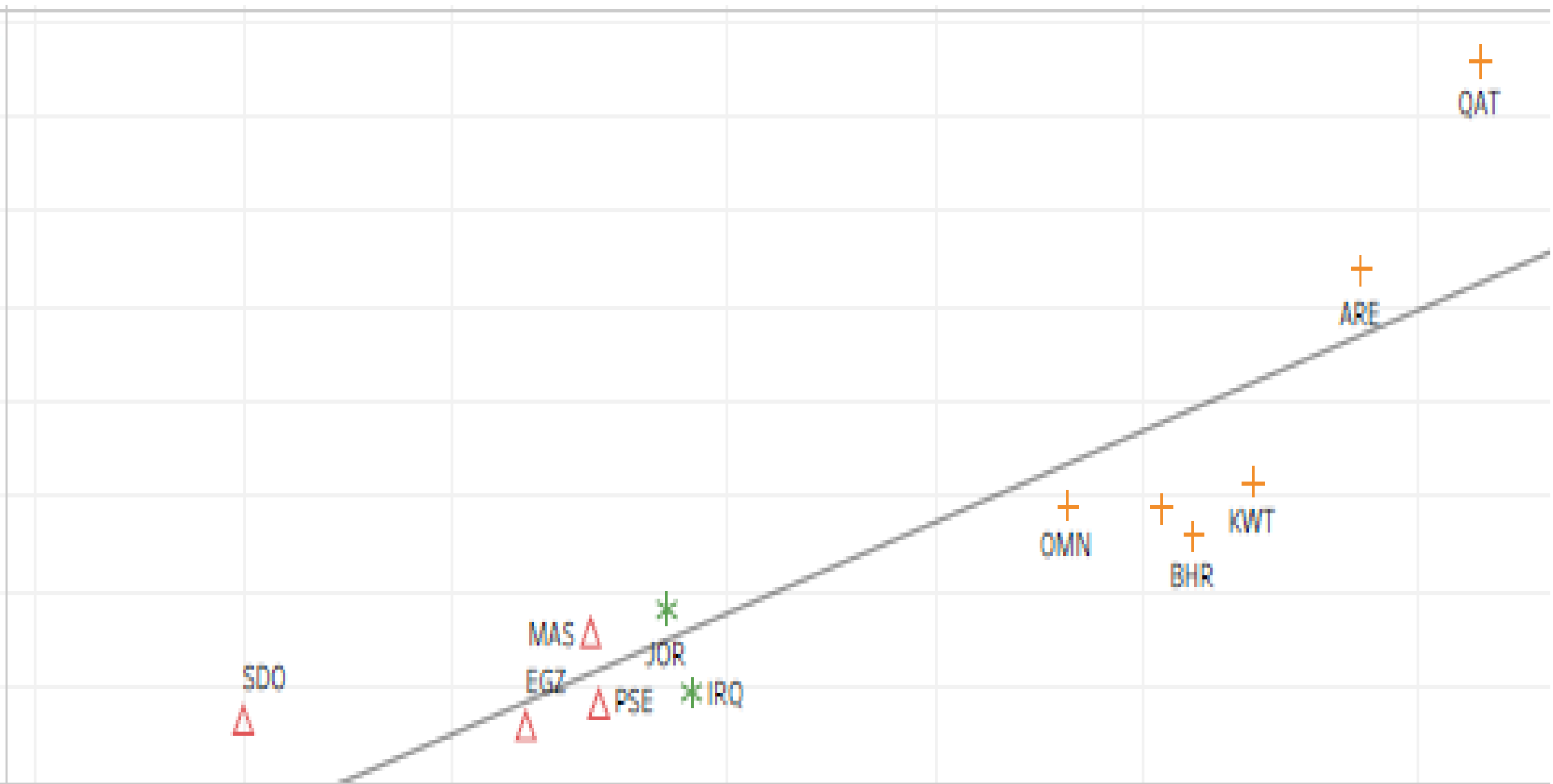**2** Lack of data collected by the NSOs such as the number of houses and apartments in different parts of the country