



Consumer price indices: achievements and future directions for improving the organization and methodology of calculations

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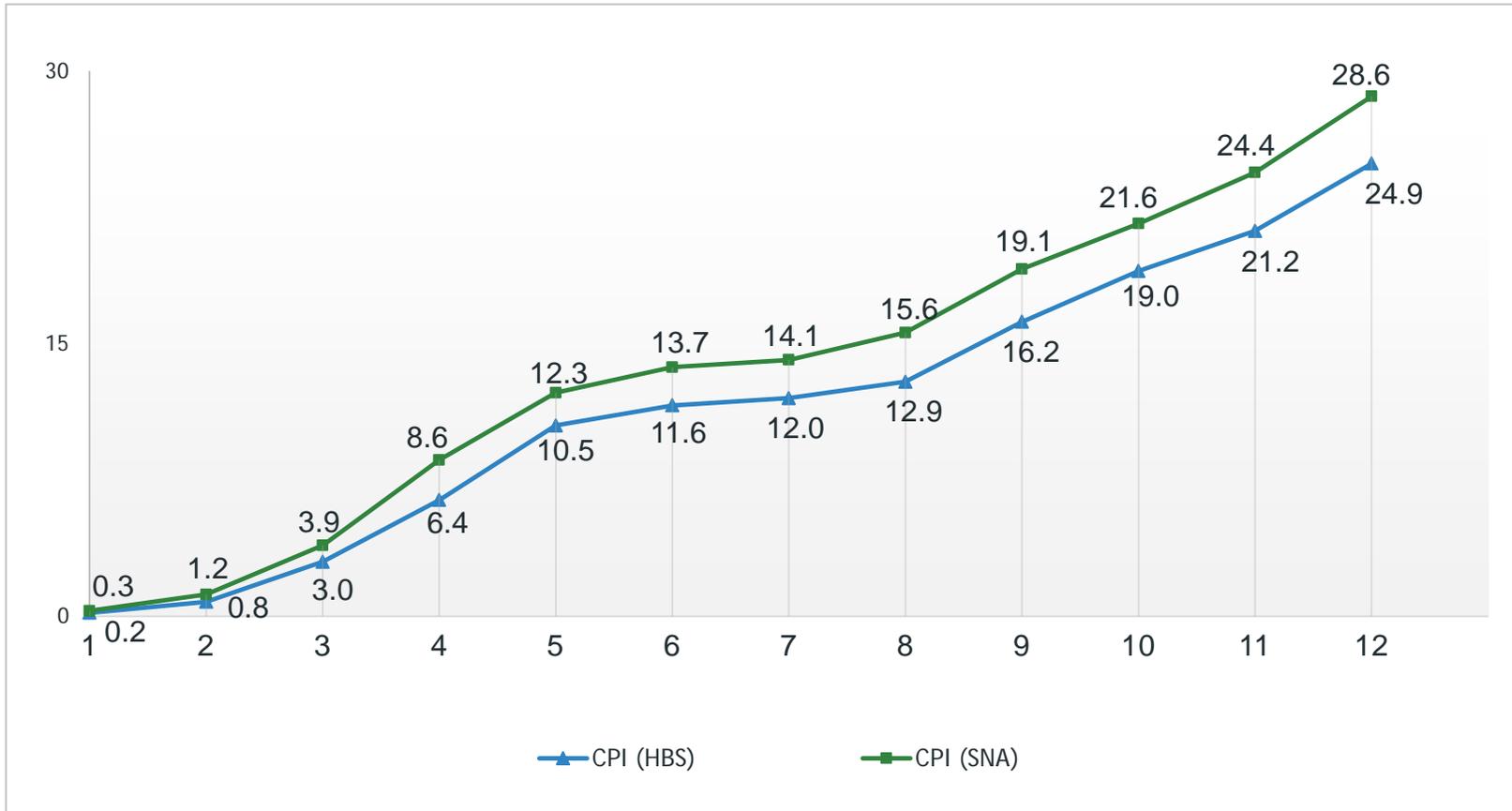
weights according to HBS/SNA structure

		Year 2013		Year 2014	
		HBS	SNA	HBS	SNA
00.	Consumer price index	1.00000	1.00000	1.00000	1.00000
01.	Food and non-alcoholic beverages	0.50690	0.39416	0.50773	0.39918
02.	Alcoholic beverages, tobacco products	0.06860	0.08565	0.06884	0.08625
03.	Clothing and Shoes	0.07022	0.06749	0.07124	0.06010
04.	Accommodation, water, electricity, gas and other fuels	0.11073	0.06888	0.11312	0.06930
05.	Household use, household equipment and routine maintenance of housing	0.02629	0.04686	0.02496	0.04642
06.	Health care	0.03790	0.05473	0.04076	0.05609
07.	Transport	0.04934	0.13062	0.05078	0.12684
08.	Communication	0.03378	0.03367	0.03261	0.03370
09.	Recreation and culture	0.02361	0.03782	0.01975	0.04035
10.	Education	0.01431	0.01438	0.01338	0.01249
11.	Restaurants and hotels	0.02865	0.02806	0.02672	0.02895
12.	Other goods and services	0.02968	0.03768	0.03011	0.04032



CPI in 2014, experimental settlements

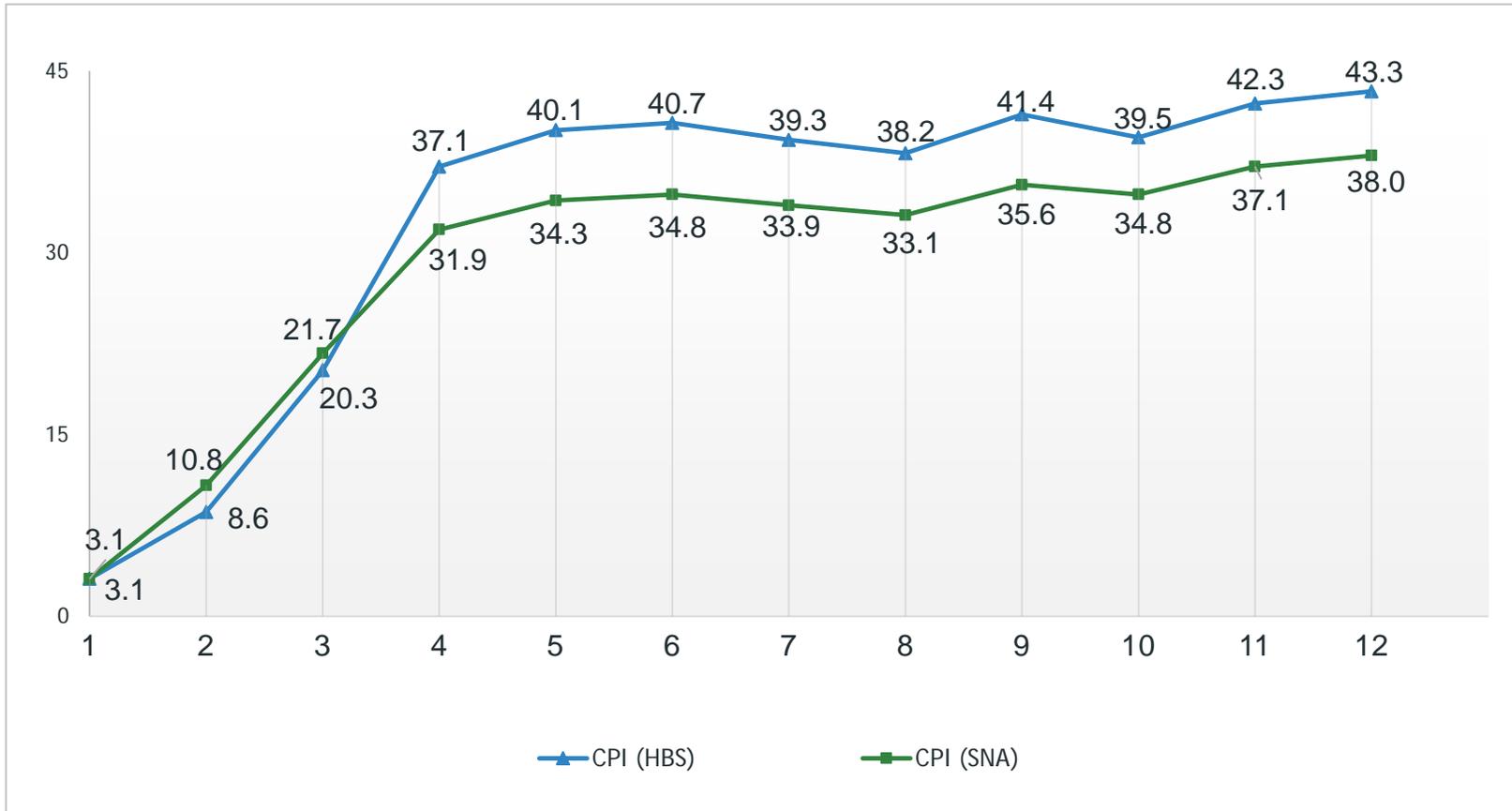
(Change to December of the previous year, percent)





CPI in 2015, experimental settlements

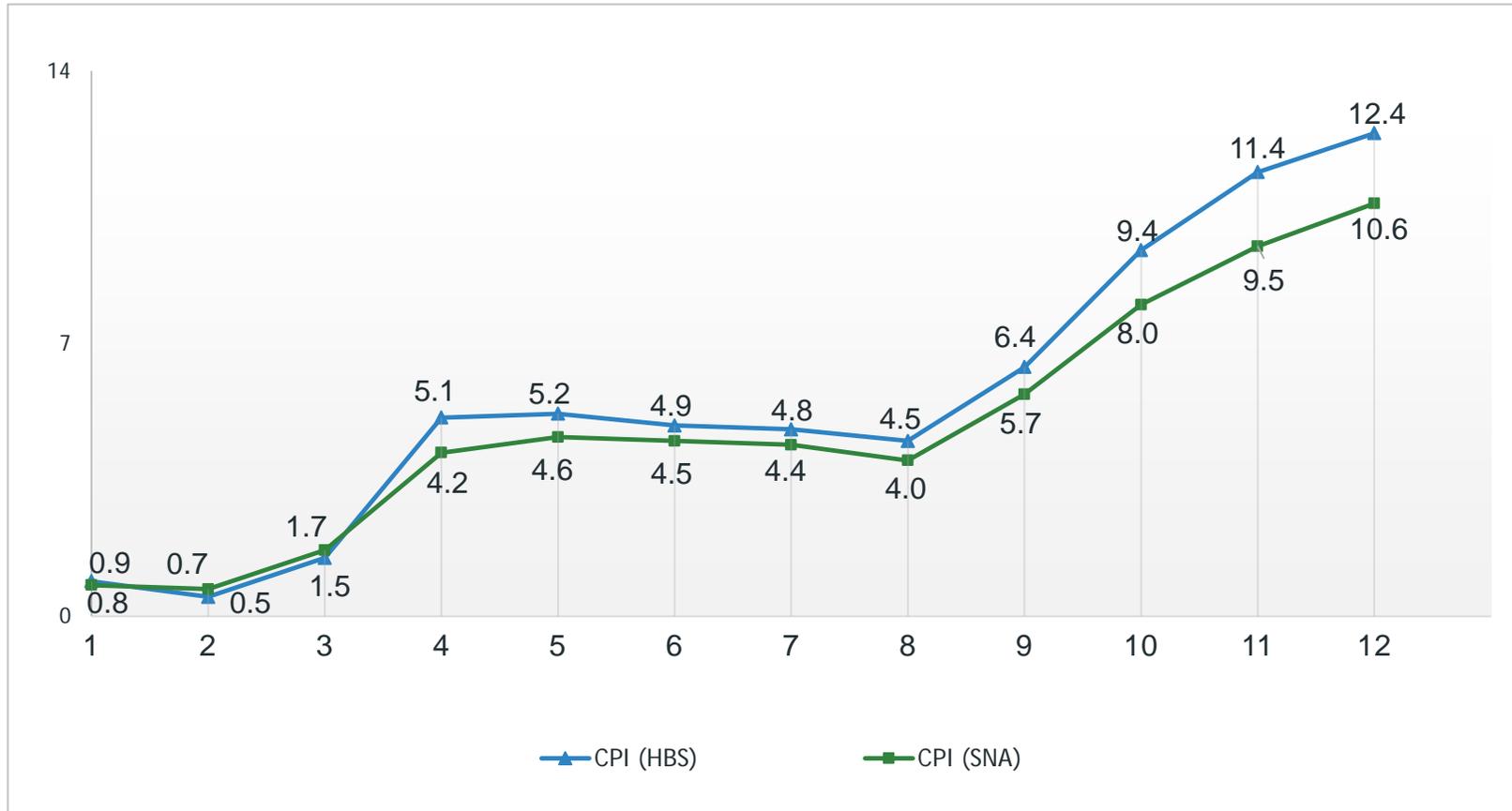
(Change to December of the previous year, percent)





CPI in 2016, experimental settlements

(Change to December of the previous year, percent)





Selecting areas

- ▶ Selection of cities is carried out at the central level
- ▶ The observations are collected from cities all over the country
- ▶ Cities are selected on the basis of the stratified multistage selection method with probabilities proportionate to their size
- ▶ The cities are divided into 4 strata based on the average number of the present urban population
 - ▶ Stratum 1 – cities with a population of 100,000 people and more
 - ▶ Stratum 2 – 50,000-99,999 people.
 - ▶ Stratum 3 – 25,000-49,999 people.
 - ▶ Stratum 4 - to 24,999 people.



Selecting areas

In the **second, third and fourth** strata only cities were selected that met the following requirements:

- ▶ The largest population
- ▶ Representative consumption patterns for each of the regions
- ▶ Sufficient saturation of the consumer market products for recording the maximum number of goods (services) - representatives
- ▶ Uniform geographical coverage



Determination of the number of quotations of representative goods (services)

- ▶ Each representative product (service) is determined by the number of quotations
- ▶ Number of quotations are calculated taking into account the weighting coefficients, the cost of price registration and the variance of price indices
- ▶ The number of groups is determined for quotations cities according to strata
- ▶ For cities with populations over 1 million pers. a specific approach is applied, in view of the rapid development and saturation of the consumer market
- ▶ Calculations of the number of quotations are carried out simultaneously with the revision of the consumer basket of goods (services) – representatives for calculating the CPI



The number of quotations is calculated using the formula:

$$n_i = \frac{W_i \times \sigma_i}{\sqrt{C_i + C_j}} \times 1000$$

W_i - weighting coefficient of the i-th representative good;

σ_i - conditional variance of price indices of the i-th representative good;

C_i - cost of registration of prices of the i-th representative good;

C_j - the cost of price registration for j-th type trading enterprises.



At the first stage those representative goods are determined, which have uniform prices (tariffs) regulated by the relevant executive authorities. For such positions, the number of quotes is one.

At the second stage, the cost of registering prices is determined for each representative good.

Products that are "easy to register"
(They have simple characteristics that do not change often, they are easy to find)
Conditional coefficient 2

Products that are "difficult to register"
(They have a complex characteristic with a high frequency of changes)
Conditional coefficient 6

Products that do not belong to the first two categories
Conditional coefficient 4

Classification of goods (services), representatives



The classification of types of outlets by the size of their retail space





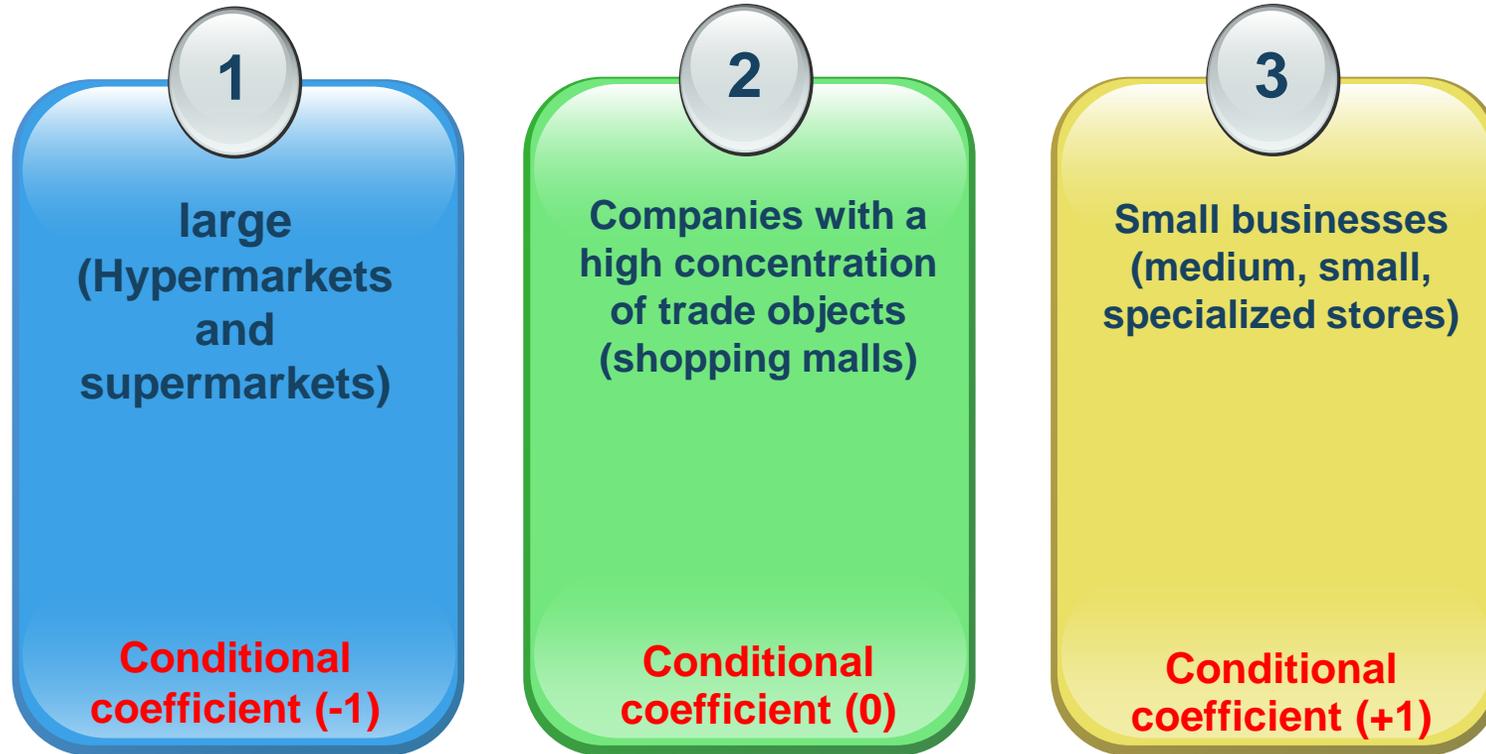
The classification of types of outlets by the size of their retail space

Non-food stores

- department stores
- specialised stores
- small shops
- other specialised stores



Classification of types of outlets





The third stage - determination of the conditional variance of price indices.

Goods for which there is no variance or indices can be defined as the minimum

Conditional coefficient
1

Goods, which are characterized by a small variance of indices

Conditional coefficient
2

Goods, which are characterized by the average variance of indices

Conditional coefficient
3

Goods, which are characterized by a significant variance of indices

Conditional coefficient
4



Procedure for registration of prices and tariffs

- ▶ Collection of price information is carried out by experts of the territorial bodies of the State Statistice Committee
- ▶ Registration of prices (tariffs) on a monthly basis
 - ▶▶ for all the cities - from 1 to 25
 - ▶▶ for individual goods – during the whole month
- ▶ Prices, which are regulated by the decisions or orders of the relevant executive authorities or local self-government bodies are registered once per month, taking into account the date of their implementation
- ▶ About 170 thousand prices are registered each month



Tariff rates

Tariff plans that operate in the consumer market of Ukraine can be divided into the following groups

- ▶ Increase in prices during the period of peak demand - producers set higher prices for the purpose of balanced use of production capacity
- ▶ Two-part tariff, when consumers are charged a one-time fee for the opportunity to use the service, as well as a fee for each consumed unit
- ▶ Block tariffs, according to which prices vary depending on the volume of consumption



Tariff rates

When calculating price indexes by tariffs, such methods are applied

- ▶ **The direct-comparison method** is used if the constituent element of the tariff remains unchanged relative to its specification. The price of this element in the new and old tariffs is compared directly, and the increase (decrease) in the price is taken into account in the CPI
- ▶ **The consumer profiles method** is used if the constituent element of the tariff changes relative to its specification, or a new element is added which does not form a new product (service) to the consumer. The essence of the method is that the price change is calculated using weights corresponding to the structure of consumption that was applied during the year, to the corresponding change in the tariff element
- ▶ **The method of selecting a new product** is used when the specifications of the tariff components undergo significant changes so that they create for the consumer a virtually new product (service). In this case, the new tariff is included in the monitoring, starting from the month when it comes into force



Further development of consumer price statistics

Transition to electronic data collection

Expected results

- ▶ Increase of the reliability and accuracy of the calculation of the CPI due to:
 - Tracking of the location of the price collector during collection
 - Online help to the price collector from the examining expert
 - Operational comparison with historical data, other online tests
- ▶ Improved relevance of data due to the possibility of operational planning and adjustment of the work schedule of the collector of prices
- ▶ Increased efficiency of the price registration process thanks to:
 - Acceleration and simplification of data collection, the possibility to increasing the number of quotations included in the calculation of the CPI
 - No need to use paper forms
 - Reduced need for additional audit work registrars
 - Automating the construction of samples, identification of specific quotations and the like



Further development of consumer price statistics

Scanner data

Benefits

- ▶ We know that it is a sold product
- ▶ Shares are taken into account, but do not have much of an impact on the index
- ▶ Reduce costs

Disadvantages

- ▶ We don't know who bought the household goods or for example, if it was a restaurant
- ▶ Dependence from trade businesses
- ▶ Challenges that arise for the IT units



Further development of consumer price statistics

Owner-occupied housing

Calculation methods

Method of use

- ▶ Cost of use
 - ▶ Probably the best approach taking into account the purpose of calculating the cost of living
 - ▶ However, it is very difficult to calculate in practice
 - ▶ Capital gains may show a negative value
- ▶ Equivalent rent
 - ▶ The rent of leased accommodation is taken as a measure of the cost of use
 - ▶ This approach is based on imputed prices
 - ▶ Some requirements:
 - ▶ Large-scale rental housing market with characteristics similar to homeowners' housing
 - ▶ competitive market (not regulated)
 - ▶ The lease should be a net rental price, not including services such as electricity and insurance



Further development of consumer price statistics

Calculation methods (continued)

Method of (pure) acquisition

- ▶ The house is treated as a purchase of the goods, which relates in part to the assets (land), and partly to the consumption (housing)
- ▶ This approach is comparable to the treatment of other durable goods in the CPI
- ▶ It reflects changes in the real prices of transactions that correspond to the indicator of monetary inflation



Further development of consumer price statistics

Calculation methods (continued)

Payment method

- ▶ The goal - measurement of payments related to housing, owner-occupied
- ▶ All payments that households make when consuming housing services should be included:
 - ▶ services of real estate agencies and lawyers for newly acquired residential premises
 - ▶ mortgage repayments, including interest, that are part of these payments
 - ▶ home insurance
 - ▶ maintenance and repair
 - ▶ rates and taxes on property
- ▶ It includes actual observed data
- ▶ Excluding depreciation



Thank you for your attention!

