

17TH MEETING OF THE OTTAWA GROUP

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The use of administrative data for Italian private housing rental prices index compilation

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Outline

- Availability of administrative data and the change in the Italian survey design on private rentals for CPI
- Main characteristics of the Tax Office data base
- Preliminary selection of statistical units
- Data cleaning
- Identification of the final price of the rent calculation
- Rent index compilation
- Indices from survey and from administrative data: comparison (year 2021)
- Concluding remarks and perspectives

The availability of administrative data and the new survey design on private rentals

- Availability of the database of private rentals held by the Real Estate Market Observatory of the Tax Office. A typical administrative data source suitable for statistical aims
- Data provision since 2017
- The framework of the cooperation between Istat and the fiscal agencies of the Ministry of Economy and Finance (established in a formal agreement)
- Since January 2022 the Italian CPI and HICP indices of housing rentals index for private sector are calculated using administrative data

The availability of administrative data and the new survey design on private rentals

- Production of housing rentals consumer price index for private sector (excluding social rents) → transition from traditional survey data collection to administrative data
- From a survey based on a sample to a survey based to almost the census of the statistical units to observe that meant a complete change in the data treatment and in the methodology of calculation of the indices.
- Actually the data base does not include the entire universe of private rentals because it does not contain the information on the rentals agreed before 2017 and cannot be used for social housing sector but it could be considered widely representative given the characteristics of the private rental market and the average duration of the contracts.

Main characteristics of the Tax Office data base

Data source	Database of new rental contracts (Tax Office)
Data availability	From 2017
Geographical coverage	Entire national territory (special case: Trentino)
Frequency	Quarterly (monthly from the second quarter of 2022)
Reference period	Quarter (month from the second quarter of 2022)
Timeliness	35/40 days after the end of the reference quarter (it will be reduced with the switch to the monthly provision of the data)

- Starting from June 2022 data provision should be monthly
- Procedures to be adjusted accordingly

Main characteristics of the Tax Office data base

Data collected from Registration Leases Properties model (RLI) integrated with Cadastral information and Real Estate Market Observatory (in Italian OMI) database.

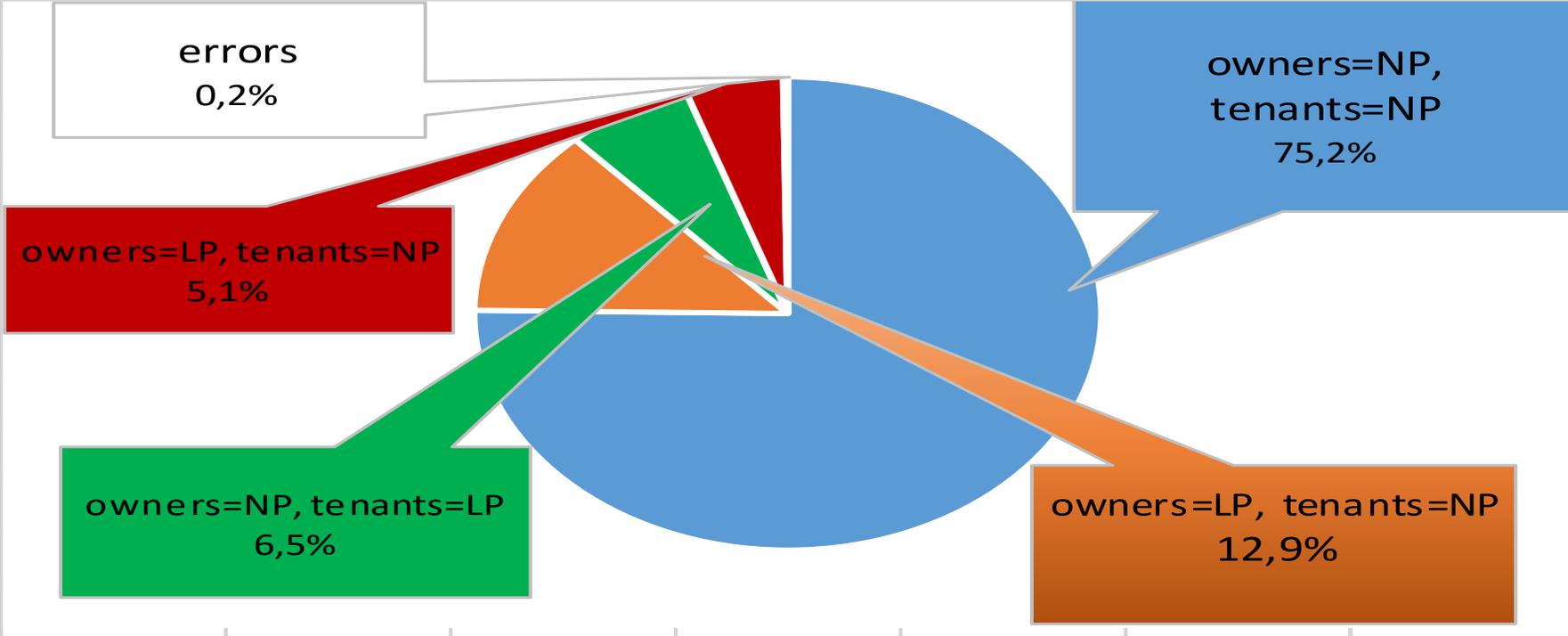
Variables

- type of property;
- type of the contract;
- size (square meters and/or number of rooms);
- location (cadastral code; map sheet and number; OMI zone; address);
- rent;
- start date of occupancy;
- end date of occupancy and sometimes the date of the early termination;
- information about landlords and tenants including fiscal code;
- option for flat-rate tax.

Preliminary selection of statistical units

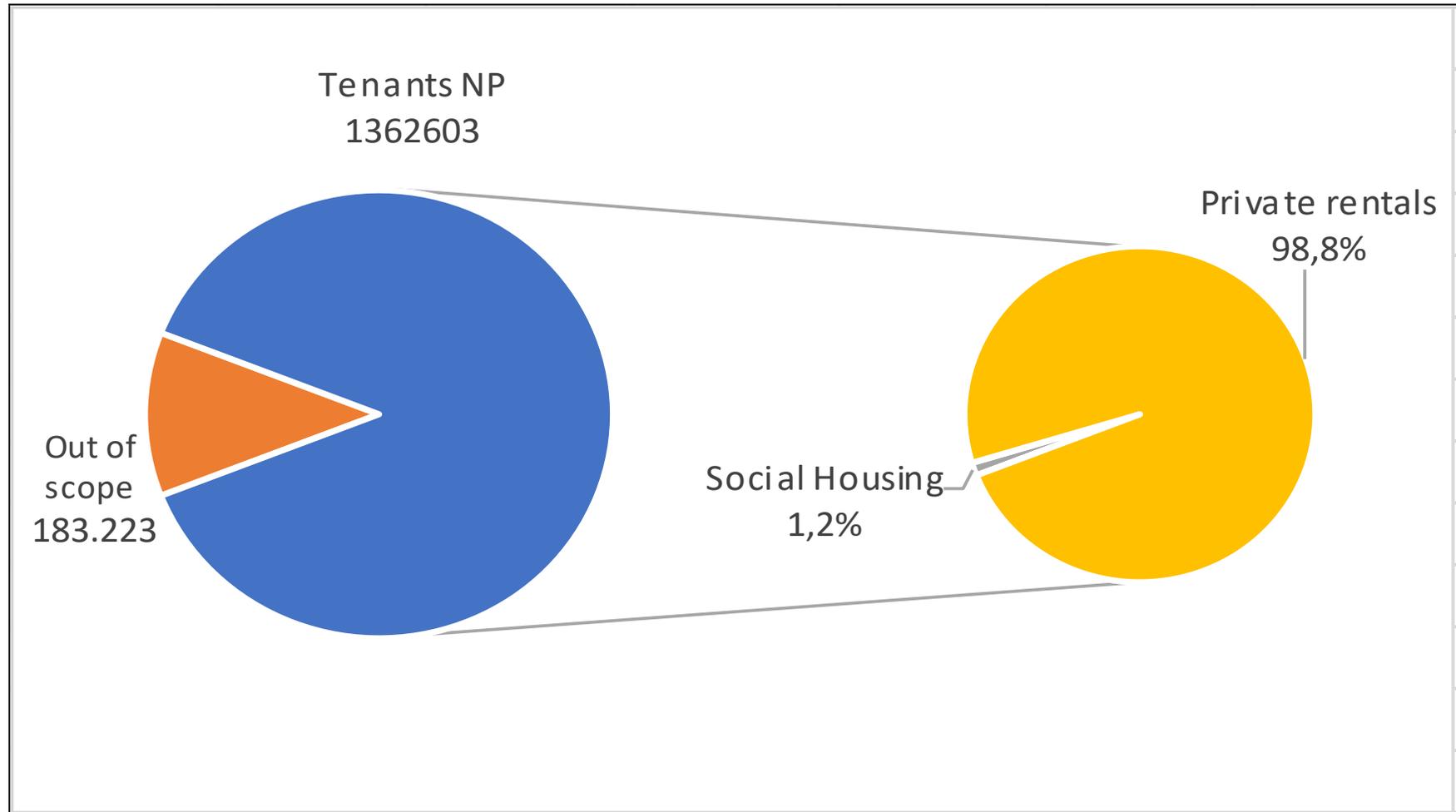
New contracts (thousands)	Year			
	2017	2018	2019	2020
	1,682	1,670	1,752	1,545
Target population (thousands)	1,417 (84%)	1,407 (84%)	1,486 (85%)	1,345 (87%)

Year 2020



Preliminary selection of statistical units

**Year
2020**



Preliminary selection of the statistical units

- Only contracts involving a whole apartment belonging to residential categories are selected

Type of property	Residential (only whole apartment)	<p>A/1 – Luxury dwellings</p> <p>A/2 – Well-finished (civil) dwellings</p> <p>A/3 – Economic dwellings</p> <p>A/4 – Popular dwellings</p> <p>A/5 – Ultra-popular dwellings</p> <p>A/6 – Rural dwellings</p> <p>A/7 – Detached houses</p> <p>A/8 – Villas</p> <p>A/9 – Castles, palaces of great artistic and historical value</p> <p>A/11 – Traditional local dwellings and accommodations</p>
	Non-residential (out of scope)	

Preliminary selection of the statistical units

New contracts (thousands)	Year			
	2017	2018	2019	2020
	1,682	1,670	1,752	1,545
Target population (thousands)	1,417 (84%)	1,407 (84%)	1,486 (85%)	1,345 (87%)
Selected contracts (thousands)	813 (48%)	814 (48%)	844 (48%)	769 (50%)

Data cleaning

- Exclusion of dwellings rented for less than 32 days (proxy of short-stay accommodation)
- Removal of duplicates in the same month and in the same quarter (for example, contracts regarding the same dwellings with the same start date of occupancy but different key registration probably due to mistakes during documents compilation: the last one is used for calculation)
- Removal of ambiguous contracts (for example, if the start date of occupancy and the date of the early termination of a contract are coincident or nearly coincident);
- Outliers in terms of dwelling area and rent per square meter are dropped out from calculation (rent must be more than 0.5 euros per square meter and less than 110 euros per square meter).
- As a result, around 8-10% of the observations is excluded

Data cleaning

Final results (thousands)

	Year			
	2017	2018	2019	2020
New contracts	1,682	1,670	1,752	1,545
Selected contracts	813 (48%)	814 (48%)	844 (48%)	769 (50%)
Cleaned data	647 (38%)	700 (42%)	730 (42%)	655 (42%)

Final price of the rent calculation

- Final price: price per squared meter + registration tax (RT) (if due)
- RT is 2% for the ordinary contracts and 2% of the 70% of the rentals for the subsidized ones
- In case of flat tax option RT is not due and the rental cannot be increased for the duration of the contract. The rental price is stable throughout the duration of the contract
- For rentals where the owner does not benefit of the flat tax regime and the rentals can be yearly updated, in correspondence of the yearly recurring of the date of stipulation of the contract a procedure updates the amount due considering the index for blue and white-collar adopted for indexation aims (net of tobacco prices). It regards about 4% of the contracts each month and the RT is calculate accordingly
- All the rental contracts (both of new and previously stipulated but still into force are considered) are considered each month (panel + cross section approach). It mean about 1 million and half contracts available each month (not all used yet)

Rent index compilation - stratification

- Price indices of rentals for HICP and CPI, are calculated using a stratification approach to control for quality changes in the composition of rented properties
- For the time being the only 107 Italian provincial chief towns are considered
- For the biggest provincial chief towns (11) strata are identified by the following variables: OMI macro areas (*) + contract type (ordinary; subsidized) + market segment (long and transitory for ordinary contract; agreed and transitory for subsidized contract) + surface (classes based on quartiles) - 1057 strata (indices for year 2021);
- For all the other chief towns: OMI aggregated segments (central and semi-central; peripheral; suburban and extra-urban) (**) + type of contract (ordinary; subsidized) + surface (classes based on quartiles) - 1407 strata (indices for year 2021).

Rent index compilation – stratification (a couple of definitions)

- OMI (the acronym is derived from Osservatorio del Mercato Immobiliare, Observatory of Real Estate Market) zones are territorial areas homogeneous in terms of main characteristics of the real estate market.
- The definition provided by the Observatory is the following “Portion of the territorial strip that reflects a homogeneous sector of the local real estate market, in which there is a substantial uniformity of appreciation for economic and socio-environmental conditions. This uniformity is translated into homogeneity of the values of market of real estate units included in a range with one deviation between minimum and maximum value, as a rule, not more than 50%.” The OMI zones are almost 27,500 (to have a term of comparison, Italian municipalities are less than 8,000).
- OMI macro areas (*) are aggregations of OMI zones
- An OMI segment (**) is an aggregation of contiguous homogeneous zones. It represents a territorial area with specific geographical location in the municipality and reflects a consolidated urban location. Each municipal territory is divided into the following segments: Central, Semi-central, Peripheral, Suburban, Extra-urban.

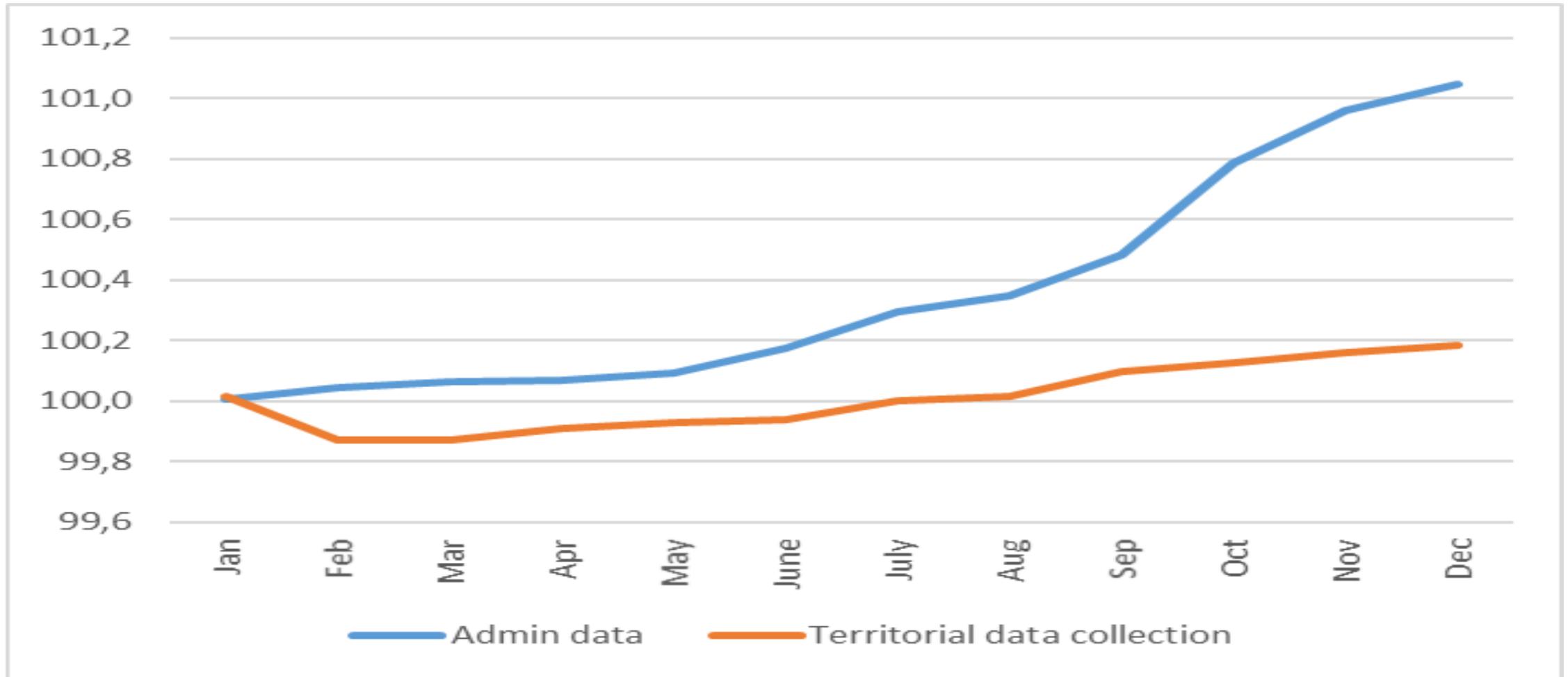
Rent index compilation - Provincial chief town index

- Provincial town (i) index = weighted arithmetic means of strata indices; weights = calculated from administrative database (transaction values previous year).
- Elementary index for strata (h) and provincial town (i) =
$$\frac{\text{geometric mean of rental prices of contracts in force in the current period}}{\text{geometric mean of rental prices of contracts in force in December of the previous year}}$$
- Regional index = weighted arithmetic means of indices of provincial towns using weights proportional to population living in rented houses (choice coherent with weights system of other elementary aggregates in Italian HICP/CPI basket; in progress the revision of this approach).

Rent index compilation - special case of Trentino Alto Adige region

- No information on dwelling area and the number of rooms.
- Stratification based on type and duration of contract (free, long or transitory contract; agreed fee long or transitory contract).
- Index compilation based on a panel approach; rental price imputation for entry/exit of dwellings over the year.

Indices from survey and from administrative data: comparison (year 2021)



Indices from survey and from administrative data: comparison (year 2021)

- In December 2021, the m/m-12 rate of change of the index based on the data collected at territorial level is equal to +0.2%, that of the index compiled on the basis of admin data is equal to +1.0%
- In the Euro-area the HICP of actual rentals registered a rate of change equal to +1.2% in the same time span and it seems that the new data base for Italian index perform better in terms of detection of the temporal evolution of such important component of the HICP/CPI basket
- The main reason of this improvement could be attributed to the possibility of taking into account in the monthly estimation of this index of the new contract and not only of those already established in base reference period

Concluding remarks and perspectives

- The strengths:
 - ❑ full coverage → all municipalities; all different types of contracts; both contracts already into force and those newly signed
 - ❑ characteristics useful to divide rental real estate market into homogenous strata;
 - ❑ correct identification of prices to be used for index calculation
- Open issues:
 - ❑ the frequency (quarterly until the first quarter of 2022) and it is on the way to be solved
 - ❑ the timeliness (the contracts signed in month m are available about 35/40 days later). It should be drastically reduced together with the monthly provision of the data that should (to 15 days, thanks to the sound and productive cooperation with the experts of the Real Estate Observatory of the Tax Office)

Concluding remarks and perspectives

- The perspectives:
 - extend the coverage to all national territory (not only provincial chief towns)
 - possibility to cover ECOICOP subclass 04.1.2.1 “Actual rentals paid by tenants for secondary residences”
 - improve the estimation of imputed rentals in the frame of HBS
 - estimate the weight of existing dwellings in the OOHPI estimation
 - improve the estimation of the thresholds of absolute poverty in Italy thereof one component is related to housing

Thank you for your attention

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