Presented at the FIG Working Week 2019, April 22-26, 2019 in Hanoi, Vietnam

"Geospatial Information for a Smarter Life and Environmental Resilience"
Nationwide real estate market transparency in Germany
- part of preventing a bubble -
1. Significance of the Real Estate Market in Germany

2. Transparency: What my son is asking me

3. What do we describe on real estate market

4. Govermental Real Estate Purchase Price Collection

5. Structure of the committees of expert valuers in Germany
1. What are we talking about: Significance of Real Estate Market
Number of transactions (1 million)

and

sale-investments in Germany (237,5 billion)

Transaktionen über alle Immobilienarten in Tsd.

<table>
<thead>
<tr>
<th>Year</th>
<th>Transactions</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>836</td>
<td>-2%</td>
</tr>
<tr>
<td>2008</td>
<td>817</td>
<td>12%</td>
</tr>
<tr>
<td>2009</td>
<td>912</td>
<td>5%</td>
</tr>
<tr>
<td>2010</td>
<td>955</td>
<td>-1%</td>
</tr>
<tr>
<td>2011</td>
<td>1,004</td>
<td>14%</td>
</tr>
<tr>
<td>2012</td>
<td>992</td>
<td>1%</td>
</tr>
<tr>
<td>2013</td>
<td>887</td>
<td>-11%</td>
</tr>
<tr>
<td>2014</td>
<td>900</td>
<td>14%</td>
</tr>
<tr>
<td>2015</td>
<td>1,025</td>
<td>-1%</td>
</tr>
<tr>
<td>2016</td>
<td>1,016</td>
<td></td>
</tr>
</tbody>
</table>

(-0.9% = Veränderung zum Vorjahr)

Geldumsatz über alle Immobilienarten in Mrd. Euro

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>174,0</td>
<td>-25%</td>
</tr>
<tr>
<td>2008</td>
<td>131,0</td>
<td>-1%</td>
</tr>
<tr>
<td>2009</td>
<td>129,8</td>
<td>14%</td>
</tr>
<tr>
<td>2010</td>
<td>147,7</td>
<td>12%</td>
</tr>
<tr>
<td>2011</td>
<td>165,8</td>
<td>3%</td>
</tr>
<tr>
<td>2012</td>
<td>170,1</td>
<td>5%</td>
</tr>
<tr>
<td>2013</td>
<td>177,8</td>
<td>7%</td>
</tr>
<tr>
<td>2014</td>
<td>191,0</td>
<td>19%</td>
</tr>
<tr>
<td>2015</td>
<td>227,8</td>
<td>4%</td>
</tr>
<tr>
<td>2016</td>
<td>237,5</td>
<td></td>
</tr>
</tbody>
</table>

ca. 270 Billion in 2018/2019
Real estate investment versus gross domestic product

Percentage of real estate investment (only in purchase) of gross domestic product

Geldumsatz für Immobilienkäufe (Mrd. Euro)

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>174.0</td>
<td>131.0</td>
<td>129.8</td>
<td>147.7</td>
<td>165.8</td>
<td>170.1</td>
<td>177.8</td>
<td>191.0</td>
<td>227.8</td>
<td>237.5</td>
</tr>
</tbody>
</table>

Peter ACHE, Germany
4/25/2019, 4:00 PM

FIG WORKING WEEK 2019
Purchase investments by property-category (in billion euro)
Total = 237,5 Billion Euro

In the purchase of residential real estate 66% of the total money turnover is invested.
Total value of the real estate industry compared to other types of economy (in billion Euro)

- Manufacturing (excluding construction industry): 729 Mrd. Euro
- Public Services: 515 Mrd. Euro
- Real estate industry in the broad sense: 500 Mrd. Euro
- Trade, Transport and Hospitality: 454 Mrd. Euro
- Information and communication: 134 Mrd. Euro

- Gross value added: ca. 500 bill. Euro (≜ 18 % off all)
- Companies: ca. 817,000 (≜ 25 % of all)
- Employee: ca. 3 millions (≜ 9,5 % of all)
• The real estate sector is the third strongest segment of the German economy.

• Property has a strong influence on the quality of life and work.

• The real estate sector has a close connection to the financial industry.
What is our goal?
Transparency of Real Estate Market!
„Transparency of Real Estate Market?“

Not concrete enough!
2. Transparency is: What my son needs to know!
I want to move out from home.....
....I am looking for an appartment...

... does it make sence to buy an appartment ...

...or to rent one

... do I have enough money to pay the mortgage ??
Translation for experts:

... how much are the costs of an apartment in this city?

... in the moment - is the number of sales increasing or decreasing?

... are apartments more expensive than last year?

... will the prices increase or decrease in the next 10 years?

... when I sell it in 10 years, do I get enough out of it to pay back the mortgage?
Translation for fathers:

… how much are the costs of an appartement in this city?

… in the moment, is the number of sales increasing or decreasing?

… are apartments more expensive than last year?

… will the prices increase or decrease in the next 10 years?

… can I pay the mortgage after 10 years?
Translation for fathers:

... how much are the costs of an appartement in this city?

... in the moment, is the number of sales increasing or decreasing?

... are apartments more expensive than last year?

... will the prices increase or decrease in the next 10 years?

... can I pay the mortgage after 10 years?

CAN YOU HELP ME WITH THE MONEY!
A wrong investment, can be a desaster for my son....
....and my desaster too....
Mothers, Fathers

Doughters, Sons,

Polititians,

Investors,

…. revenue officials from the tax-offices

…they need independent valuations and opinions about the things that are going on at the real estate market.
Apartment - Prices in different regions in northern Germany?
Investors or real estate agent companies unlikely show decreasing prices............
Independent Valuers can show.............
3. What to describe...
....to give the customers a good idea of the market?
...what to describe...

Revenues
• in money
• in number of transaction
• in sold aerea (agriculture area, living space, trade aera)

Prices
• total price
• price relative to a meaningful size (..per living space, per m²-land...)  
• yields in comercial real estate

Time series
• Prices
• Yields
• Revenues
Revenues
- in money
- in number of transactions
- in sold area (agriculture area, living space, trade area)

Prices
- total price
- price relative to a meaningful size (per living space, per m², land...)
- yields in commercial real estate

Time series
- Prices
- Yields
- Revenues

...........in useful spatial areas
Define the spatial area (without overlapping)
Germany in useful spatial areas

City and county types

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big cities (&gt; 600 K Inhabitants)</td>
<td>7</td>
</tr>
<tr>
<td>Large cities (500 - 600 K)</td>
<td>8</td>
</tr>
<tr>
<td>Small cities (100 - 500 K)</td>
<td>61</td>
</tr>
<tr>
<td>County-free cities (10 - 100 K)</td>
<td>41</td>
</tr>
<tr>
<td>Central county cities and urban districts</td>
<td>171</td>
</tr>
<tr>
<td>Compacted rural area</td>
<td>90</td>
</tr>
<tr>
<td>Sparsely populated rural area</td>
<td>107</td>
</tr>
</tbody>
</table>
...what to describe...

Revenues
- in money
- in number of transaction
- in sold aerea (agriculture area, living space, trade aera)

Prices
- total price
- price relative to a meaningful size (per living space, per m²-land…)
- yields in comercial real estate

Time series
- Prices
- Yields
- Revenues

.........in usefull factual submarkets
Define the factual submarket (without overlapping)
Collecting real estate purchase data in Germany is „governmental data-collecting“.
smallest unit of our data:
The Purchase Contract
How to get market information.....

.................out of this few sheets of contract paper

...matching with other data sources

...asking the buyer and seller

... adding experiences from local boards of expert valuers.
5. Structure of the committees of expert valuers

- Working group of upper Expert Committees: Nationwide
- Upper Expert Committees: Federal State wide
- Very important Base: Lokal Expert Committees: lokal
Different Areas of Responsibility

Upper Expert Comities

Source: AK OGA, Immobilienmarktbericht DE 2017
Boards of expert valuers

Data Collections…

…. are not open data,

…. using them is often with costs

…. using them is limited by

- personal data protection
- utilization only for the target it is bought for
- the content of the data is different and roughly harmonized
Conclusion

1. A free market is following economical rules.....but only as long as if it is really transparent.

2. Wise political decisions against Price Bubbels can only be based on good Data and good Analyses.

3. The local experience is worth just as much as the pure data
Market Transparency

- For our childrens questions …..

Full Paper:
http://www.fig.net/resources/proceedings/fig_proceedings/fig2019/papers/ts08i/TS08I_ache_9866.pdf