Rental Market Survey and prediction of rent levels

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Outline

• Norwegian rental market
• Rental market survey (RMS)
• Regression model
• Estimated results
• Alternative data sources
Norwegian rental market

- Heterogeneous rental market
  - Stock of rented dwellings (size and type of dwelling)
  - Types of landlords

- Rental share of 23%
  - Population and Housing Census 2011
Norwegian rental market, cont.

- Almost absence of rent control
  - The tenancy Act
- Clear elements of “reduced price” tenancies
  - Tenancy agreements with friends and family
  - Social rental housing
- Renting is primary a transitional phenomenon
  - Young people
Yearly Rental Market Survey

- First carried out in 2005
  - Need for more detailed and improved rental statistics
- Became official statistics in 2006 – price level survey
- Complex sampling plan
  - No complete register of rental units nor tenants in Norway
  - A potential population of tenants is created
- Gross sample of 22,000 potential tenants
  - End up with about 7,000 tenants
- High non-response
  - Tenants move more often than the owner occupiers
  - Longer tenancies are being replaced by shorter tenancies
Yearly Rental Market Survey, cont.

• Data collected by online and paper questionnaires, CATI and electronically register data from large public suppliers

• Extensive data material with rent information and a wide range of explanatory variables such as physical attributes, location, tenant-landlord interaction etc.
  – Suitable for regression modelling purposes
  – Started publishing predicted monthly rents based on hedonic regression in April 2013
Links to rent indices in the CPI

• Strong link between the RMS and rent indices in the CPI
  – RMS is the foundation of the monthly rent indices in the CPI
    ♦ Follow a sample of 2 500 of the 7 000 tenants
  – RMS is the price reference period for the rent indices

• Challenges
  – Deviation between the rent development in the CPI and change rates based on average prices

• The CPI follows identical rental objects

• Independent samples each year in the RMS

• Use of hedonics in the RMS should reduce the deviation
Regression model

• Log-linear price model
  – Square metre and material standard (log)
  – Dummy variables

• Adjusted R-square 62%

• Only “market price” contracts included

• One identical model – consistent estimates

• Model used for official figures excludes tenant characteristics
### Estimation results

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Parameter Name</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>T-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td>8.34961</td>
<td>0.03812</td>
<td>219.01</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Oslo (City centre, western part of Oslo)</td>
<td>Reference category</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Bergen City centre</td>
<td></td>
<td>-0.16032</td>
<td>0.01630</td>
<td>-9.84</td>
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<td>Trondheim City centre</td>
<td></td>
<td>-0.16608</td>
<td>0.01677</td>
<td>-9.90</td>
<td>&lt;0.0001</td>
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<tr>
<td>Urban settlements between 200 – 1 999 inhab. and sparsely populated areas</td>
<td></td>
<td>-0.72296</td>
<td>0.01738</td>
<td>-41.61</td>
<td>&lt;0.0001</td>
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<tr>
<td>Square metre (log)</td>
<td></td>
<td>0.14678</td>
<td>0.00864</td>
<td>16.99</td>
<td>&lt;0.0001</td>
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<tr>
<td>Number of room 1</td>
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<td>-0.15944</td>
<td>0.01236</td>
<td>-12.90</td>
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<td>Number of room 2</td>
<td>Reference category</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of room 3</td>
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<td>0.15889</td>
<td>0.00806</td>
<td>19.72</td>
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<td>Number of room 5 or more</td>
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<td>0.36543</td>
<td>0.01204</td>
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<td>Housing quality standard (log)</td>
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<td>0.14576</td>
<td>0.00849</td>
<td>17.17</td>
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<tr>
<td>Start tenancy agreement, present year</td>
<td>Reference category</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Start tenancy agreement, 1 year before</td>
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<td>-0.03179</td>
<td>0.00875</td>
<td>-3.63</td>
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<tr>
<td>Start tenancy agreement, 3 year before</td>
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<td>-0.14268</td>
<td>0.01198</td>
<td>-11.91</td>
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<tr>
<td>Older tenancy agreement</td>
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<td>-0.22127</td>
<td>0.00891</td>
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<tr>
<td>Electricity/heating</td>
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<td>0.05142</td>
<td>0.00724</td>
<td>7.10</td>
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<tr>
<td>Detached houses/terrace houses etc</td>
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<td>-0.04551</td>
<td>0.01270</td>
<td>-3.58</td>
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<tr>
<td>Lodgings</td>
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<td>-0.06075</td>
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<td>Balcony</td>
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<td>0.04614</td>
<td>0.00675</td>
<td>6.84</td>
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<tr>
<td>Tenant income - high</td>
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<td>0.04071</td>
<td>0.00779</td>
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<td>&lt;0.0001</td>
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<tr>
<td>Place of birth – foreign country</td>
<td></td>
<td>0.02679</td>
<td>0.00669</td>
<td>4.00</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
Alternative data sources

• Other more accessible data sources?
  – Internet announcement
  – Electronically reported data from large suppliers

• Weaknesses
  – Cover only parts of the market
  – Cover only “market price” – new contracts
  – Not necessarily actual contracts
  – Asking price
  – Selective sampling/sample bias