Transition Analyses on Landuse and Land-price in Nagoya CBD during the deregulation decade

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Deregulation Policies in CBD

• United States: From the 80’s
• United Kingdom: From the 80’s
• Japan: From the 00’s

⇒ Introducing much more ‘market mechanism’ inside CBD

⇒ Retrospective Analyses are required by ‘decade-scale’ changes of land use and prices
Case Study Area: Nagoya
(3rd Largest Metropolitan Area in Japan, City Pop: 2.15M, 20km Pop: 5.5M)
Typical Issue: A Seesaw Game between “Duel Cores” in Nagoya CBD

TV Tower is symbolized as the center of metropolitan area.

TGV (Shinkansen) + Linear Motor Train Plan

Meieki (Ngoya Sta.)

Sakae
MEIEKI vs SAKAE
High-Rise Buildings near Station Emerged in the 00’s

TV Tower, Open-Space and A Fleet of Dep’t Stores…But…
Fig 1. Precincts (cho-me) in Nagoya CBD

(National Census Units)
Basically the whole grew, some of them are urban Renewal Effects

Fig 2. Comparison between floor area ratios from 2001 to 2006, Nagoya CBD
Specialized Coefficients

floor use ratio of the precinct (cho-me)
the average of floor use ratio
In Store Mass, Sakae is stronger than Meieki

(Other various Census Data: Ward, School District, 1km Mesh)

Fig 1. Outline analysis of retail structure in Nagoya CBD
GIS Aggregation Results suggests the balanced escalation

<table>
<thead>
<tr>
<th>Meieki Block</th>
<th>Sakae Block</th>
</tr>
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<tbody>
<tr>
<td>770,531m²</td>
<td>(59) 1,109,505m²</td>
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<tr>
<td>792,101m²</td>
<td>(60) 1,203,118m²</td>
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<tr>
<td>1,405,721m²</td>
<td>(47) 1,230,408m²</td>
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<tr>
<td>1,654,204m²</td>
<td>(47) 1,467,177m²</td>
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<tr>
<td>504,192m²</td>
<td>(38) 304,374m²</td>
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<tr>
<td>629,112m²</td>
<td>(37) 363,925m²</td>
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</tbody>
</table>

(Both total areas)

※() the number shows the ratio of the sum of Meieki area and Sakae area.

Fig 4. Comparison of floor amounts between Meieki block and Sakae block
MEIEKI had caught up to SAKAE in Department Stores, esp. Sales. (First, Meieki’s Aggressive Expansion, Then, Sakae’s Defensive Move)

Fig 4. Change of the department stores in Meieki and Sakae zone
But, Sales-Space Efficiency were down at the both.
Land price bipolarization in the whole CBD
Meieki Got High Point, but Sakae Kept Aerial Advantage
<table>
<thead>
<tr>
<th>Category</th>
<th>Variable</th>
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</thead>
<tbody>
<tr>
<td>Explained variables</td>
<td></td>
</tr>
<tr>
<td>FAR</td>
<td>Y1 FAR 2006(%)</td>
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<td>Y2 FAR 2006(Retail)(%)</td>
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<tr>
<td></td>
<td>Y3 FAR 2006(Office)(%)</td>
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<td></td>
<td>Y4 FAR 2006(Residence)(%)</td>
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<tr>
<td>A fluctuated range of FAR</td>
<td>Y5 Change of FAR 2001-2006(%)</td>
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<tr>
<td></td>
<td>Y6 Change of FAR 2001-2006(Retail)(%)</td>
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<td></td>
<td>Y7 Change of FAR 2001-2006(Office)(%)</td>
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<tr>
<td></td>
<td>Y8 Change of FAR 2001-2006(Residence)(%)</td>
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<td>Candidate variables</td>
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<tr>
<td>Precinct(situations)</td>
<td>X1 FAR 2001(%)</td>
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<tr>
<td></td>
<td>X2 FAR 2001(Retail)(%)</td>
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<td></td>
<td>X3 FAR 2001(Office)(%)</td>
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<td></td>
<td>X4 FAR 2001(Residence)(%)</td>
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<td>X5 FAR 2001(Hotel)(%)</td>
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<td></td>
<td>X6 FAR 2001(Cultural public welfare)(%)</td>
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<td></td>
<td>X7 FAR 2001(Factory)(%)</td>
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<td>X8 The density of buildings 2001(number of build./ha)</td>
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<tr>
<td>Precinct(characteristics)</td>
<td>X9 Specialization index 2001(Retail)</td>
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<tr>
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<td>X10 Specialization index 2001(Office)</td>
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<td>X11 Specialization index 2001(Residence)</td>
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<tr>
<td>Land price index</td>
<td>X12 Land price index 2001(thousands ¥/sqm)</td>
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<td></td>
<td>X13 The rate of change of the land price index for five years(%)</td>
</tr>
<tr>
<td>Accessibilities</td>
<td>X14 Dummy variable(Meieki)</td>
</tr>
<tr>
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<td>X15 Dummy variable(Sakae)</td>
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</tbody>
</table>

Dummy variable: "1" Meieki(or Sakae) and adjoining town area(is A), "1/2" The town which adjoins A(is B), "1/3" The town which adjoins B.
**Factor Analysis (by Multi-Regression Method)**

FAR Increase in five years  
Y5(Tot), F6(Com), F7(Ofc), F8(Rsd)

<table>
<thead>
<tr>
<th></th>
<th>Y1</th>
<th>Y2</th>
<th>Y3</th>
<th>Y4</th>
<th>Y5</th>
<th>Y6</th>
<th>Y7</th>
<th>Y8</th>
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<td>X1</td>
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<td>-0.492</td>
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<td>X12</td>
<td>0.379</td>
<td>0.509</td>
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**Multiple correlation coefficient:**  
0.953 0.981 0.908 0.940 0.396 0.713 0.323 0.522
Factor Analysis (by Discrimination Analysis) on Change of Office FAR (Y7)

Group 1 (Decrease) caused by Ofc FAR (X7) and Price Chg (X13) negatively.
Group 2 (Slight Increase) caused by Rsd Coef. (X11) positively.
Group 3 (Large Increase) caused by Ofc FAR (X7) and Price Chg (X13) positively.
Findings from Nagoya CBD study

• **Floor masses** of the both cores **grew**, and the balance is not changed basically in this period.

• **Land prices** had the **bipolarization** in the whole CBD. Meiki had got the highest point, but Sakae had kept an aerial advantage.

• Location of each **floor use** show a tendency to make **agglomerations**, the reverse direction to “**Re-Mixing**”
My Complementary to these results

• What we should be considered
  – Japan Proper Reasons

• Aftermath of Drastically Change of Japan’s Real-Estate Appraise Method in 1997:
  – From ‘Sales Comparison Approach’
  – to ‘Income Approach’
  – This is the reason of the ‘bipolarization’ phenomena
  – (In the early 00’s, the whole Japan had influenced aftermath)

• Low Demand Pressure under the given maximum volume except Tokyo and few cases
  – Fortunately Meieki faced this pressure, but the whole CBD was not
  – (It means that Many office tenants moved from Sakae to Meieki.)