Measuring the Level of Capacity Utilisation in Non-Manufacturing Sectors

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Business and Consumer Surveys – FGV
Outline

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• Preliminary studies
  • Benchmarking
  • Survey: Do firms understand the LCU concept?
• Questionnaire
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Introduction

• The Getulio Vargas Foundation (FGV) provides a survey-based LCU indicator for the Manufacturing Industry since 1966;

• FGV’s Manufacturing LCU is widely used as a measure of the output gap in Brazil;

• In the last decade, the relevance of this indicator has decreased somehow due to (among other reasons) the increase in the share of Services in GDP;

• Recently, FGV started to produce monthly tendency surveys for the Services Sector (2008), Trade (2010) and Construction (2010) following the European model;

• In 2012, FGV started working on a measure of LCU for the non-manufacturing sectors with the support of Brazilian Central Bank.
Preliminary studies

- Benchmarking
  - Services - the European model is the reference
  - Trade - we hardly found any references
  - Construction - there are many different approaches (KOF, WIFO, South African BER, etc.)

- Survey: “Do firms understand the LCU concept?”
Survey: Do firms understand the LCU concept?

The survey was conducted during the first semester of 2013 obtaining two types of information:

- Do firms monitor their LCU?
- What variables are taken into account along this process?

Around 4,200 firms were consulted:

- 2,350 from the Services Sector;
- 1,150 from the Trade Sector;
- 700 from the Construction Sector.
Survey: Do firms monitor their LCU?

Do firms monitor their capacity utilisation levels?

<table>
<thead>
<tr>
<th></th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Companies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal and accounting activities</td>
<td>70.1%</td>
<td>66.5%</td>
</tr>
<tr>
<td>Advertising</td>
<td>63.9%</td>
<td></td>
</tr>
<tr>
<td>Selection, management and leasing of temporary manpower</td>
<td>60.8%</td>
<td></td>
</tr>
<tr>
<td>Families</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreational and cultural activities</td>
<td>73.4%</td>
<td>62.9%</td>
</tr>
<tr>
<td><strong>Services</strong></td>
<td><strong>76.6%</strong></td>
<td><strong>23.4%</strong></td>
</tr>
</tbody>
</table>

**Specific Cases in the Services Sector**

<table>
<thead>
<tr>
<th>Segments</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal and accounting activities</td>
<td>70.1%</td>
<td>83.6% (max)</td>
</tr>
<tr>
<td>Advertising</td>
<td>63.9%</td>
<td>86.7%</td>
</tr>
<tr>
<td>Selection, management and leasing of temporary manpower</td>
<td>60.8%</td>
<td>87.6%</td>
</tr>
<tr>
<td>Families</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreational and cultural activities</td>
<td>73.4%</td>
<td>81.9%</td>
</tr>
</tbody>
</table>

**Trade**

<table>
<thead>
<tr>
<th>Segments</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction material</td>
<td>74.5%</td>
<td>80.5%</td>
</tr>
<tr>
<td>Retail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Furniture and Appliances</td>
<td>74.0%</td>
<td>84.3%</td>
</tr>
<tr>
<td>Books, newspapers, magazines and stationery</td>
<td>74.5%</td>
<td>89.0%</td>
</tr>
<tr>
<td>Textiles, apparel and footwear</td>
<td>75.8%</td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food, Beverages and Tobacco</td>
<td>80.5%</td>
<td>90.0% (max)</td>
</tr>
<tr>
<td>Fuels and lubricants</td>
<td></td>
<td>84.3%</td>
</tr>
<tr>
<td>Wholesale</td>
<td></td>
<td>83.2%</td>
</tr>
<tr>
<td>Intermediate products</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Survey: How the concept of LCU in non-manufacturing firms is defined

- Labour is the major factor taken into account in all three sectors;

- 46% of the firms considered their Own labour as the main labour factor (80% in the construction sector);

- Capital is the second most important factor;

- Own machinery & equipment was mentioned by 25% of the companies. (Services sector 33%);

- Financial factors were mentioned by 18.0% of the companies (25% in Services Sector);

- Only 4.0% of the firms measure LCU based on other factors.
Formulation of the questions

Taking into account...

...the benchmark research;

...the survey on LCU knowledge;

...conversations with experts...

FGV decided to **use the European formulation** for the Services *and* the Trade LCU indicators on a **monthly** basis.

An additional question was added in all sectors:

“How do you evaluate the supply capacity of your firm at the moment?”

(More than sufficient/ Normal / Insufficient)
In the case of the Construction sector FGV decided to obtain two separate measures:

For Labor: "Regarding the labor available at this moment, what is the rate of the current productive capacity utilization of the company?"

For Machines and Equipment: “With respect to machines and equipment available at this moment, what is the company’s rate of productive capacity utilization?”
Results in the Service Sector
Brazilian Services Survey – a quick overview

- Monthly since June, 2008;
- Sample size: 2400 firms
- Coverage: Brazil, 29 segments corresponding to 2/3 of the Services Sector
- Subsectors:
  - Services provided to families (accommodation, restaurants, etc)
  - Services provided to firms (accounting, publicity, cleaning, security, etc)
  - Transportation
  - Information (telecommunications, IT, etc);
  - Real estate activities and renting of material;
  - Others
Results – Service vs Manufacturing

- Average LCU in the Services Sector is approx. 3 pps. higher than in Manufacturing;
- Both Services and Manufacturing LCUs have low volatility;
- Non adjusted figures have been showing opposite directions since May, 2013. After adjusting Manufacturing for seasonality both seem to follow a similar pattern (less seasonality in Services?)
Results – Services Sector

<table>
<thead>
<tr>
<th>Segments</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Services</td>
<td>87.3</td>
</tr>
<tr>
<td>Services rendered to families</td>
<td>84.4</td>
</tr>
<tr>
<td>Information Services</td>
<td>88.4</td>
</tr>
<tr>
<td>Services provided to companies</td>
<td>86.7</td>
</tr>
<tr>
<td>Transportations, auxiliary services to transports and mail</td>
<td>88.5</td>
</tr>
<tr>
<td>Real estate activities and rental of movable and immovable property</td>
<td>86.1</td>
</tr>
<tr>
<td>Maintenance and repair services</td>
<td>85.3</td>
</tr>
<tr>
<td>Other service activities</td>
<td>86.6</td>
</tr>
</tbody>
</table>

Source: FGV; data not seasonally adjusted

- In general, four out of the seven more relevant segments of the services sector present an average LCU below the global average of the services sector;

- In Transportation, the Railway and subway subsetor present the highest average LCU (93.4%);

- In the Services provided to companies, the activity of selection, management and leasing of temporary manpower shows the lowest LCU (82.7%).
Results – Services Sector

Consistency evaluation – correlation in changes in related variables
(Average of third quarter minus second quarter)

Source: FGV; data not seasonally adjusted
Results – Services Sector
Short-term volatility in Services Segments

Volatility defined as $\frac{\text{average}(|\Delta \text{LCU}|)}{\text{average}(\text{LCU})}$
Results – Other Sectors vs Manufacturing

- Average Trade LCU is also higher than in Manufacturing while Construction (Labour LCU) is being measured below manufacturing average levels;
- Construction also shows higher volatility (sd = 1.4).
Results – Other Sectors vs Manufacturing

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Conclusions

- FGV introduced questions on LCU in its non-manufacturing monthly surveys with good acceptance by the companies;

- The results show a reasonable cyclical behavior and are related to other variables within the surveys;

- The descriptive statistics (average, volatility) appear to be aligned and comparable with the Manufacturing LCU;

- Results of Manufacturing and Services appear to confirm the cyclical behavior of these sectors as measured by other survey and quantitative indicators;
Next Steps

- Survey on answering practices with special focus on the interpretation of the increase in the volume of activity (in percent or percentage points);

- As more data is collected a more details analyses of the aggregate and sectorial results;

- Comparisons with international results;

- Introducing an aggregate LCU question for Construction.
Thank You!
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