On the usage of statistics to review and improve the Regulatory Impact Assessment system in Portugal

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Outline

Motivation

A New Approach

Objectives

Administrative Microdata

Field research

Results

Tariff Component

Time Component

Cost Calculation (internal)
Standard Cost Model (SCM)

- Information obligations
- Administrative activities
- Cost parameters: two components
  1. Time
  2. Tariff
<table>
<thead>
<tr>
<th>Regulation</th>
<th>IO 1</th>
<th>IO 2</th>
<th>...</th>
<th>IO k</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA11</td>
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<tr>
<td>AA12</td>
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<td>...</td>
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<tr>
<td>AA1r</td>
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<td></td>
</tr>
</tbody>
</table>

- **Time (Hrs)**
- **Tariff (Euros)**
- **Cost per Activity** = \( P \)
- **Frequency**
- **Number of AA per year** = \( Q \)

\[
\text{Cost} = P \times Q
\]
1. To evaluate the **Tariff** component (hourly cost: wage+overhead; productivity; opportunity cost)

2. To estimate the **Time** component (administrative activities that must be undertaken in order to comply with regulation)
Previous Procedure

**Tariff** component:
- estimated using the average compensation of employees or the productivity
- constant over industry

**Time** component
- estimated on an ad-hoc basis using information provided by the different ministries, case-by-case
- high discretion
- who reports values is not who performs the task
Outline

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Cost Calculation (internal)
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Cost Calculation (internal)
Answering Questions using Data!
1. **What** should we be calculating?
2. **Why** should we be calculating that?
3. **How** can we use the calculator to calculate it?
Goals: Answering Questions using Data

What?
To systematize and standardize values for:

1. **Tariff** component
2. **Time** component
### Goals: Answering Questions using Data

### Why?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong></td>
<td>reduce arbitrariness and discretion</td>
</tr>
<tr>
<td><strong>2.</strong></td>
<td>increase the consistency and reliability of the RIA</td>
</tr>
<tr>
<td><strong>3.</strong></td>
<td>promote better regulation</td>
</tr>
</tbody>
</table>
### How?

1. Using INE’s micro data:
   - the Business Costs of Context Survey - IaCC
   - the Integrated Business Accounts System - SCIE

2. Conducting a market survey

3. Integrating the data
• Developing a statistical study;
• Promoting comparative analysis and market research in Portugal to establish a set of standardised parameters for compliance costs/ costs of context
• Improving the implementation of the SME test, to look at the regulatory compliance cost impacts of regulation;
• Identifying standard data to support the estimation of costs incurred by companies to fulfil the information obligations.
Outline

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Cost Calculation (internal)
Costs of Context are understood as the negative effects resulting from rules, procedures, actions or omissions that hinder businesses and that are not attributable to the investor, its business or organization.

Focused on nine main domains, identified as potential areas of obstacle to businesses’ activities (on a 1 to 5 scale):

- starting a business,
- licensing,
- network industries,
- financing,
- judicial system,
- tax system,
- administrative burden,
- barriers to internationalisation and
- human resources.

4,248 companies from the non-financial sector
• A new module in 2017: *Costs from compliance with information obligations*
• Aims to identify the costs incurred in compliance with IO.
• 8 types of IO have been identified
  1. the provision and delivery of business and fiscal information;
  2. applications for licenses, certificates, authorisations or permissions;
  3. the registers and notifications;
  4. the application for subsidies or other supports;
  5. the availability of manuals of procedures and action plans;
  6. cooperation with audits, checks and inspections;
  7. the provision of information labels; and
  8. the provision of information to consumers and other entities.
• The average annual costs per company with these IO were obtained in two ways:
  1. When fulfilled by the use of outsourcing, the value considered was the one indicated by the company in the survey;
  2. When fulfilled internally by the company, the time spent with the fulfilment of the obligation was taken as reference, multiplied by a monetary value that translated the direct and indirect costs incurred by the company.
• For each economic activity and size-class, the monetary value was obtained by the quotient between the gross value added and the total number of hours worked in 2016
• This quantity was obtained according to the Integrated Business Accounts System.
Integrated Business Accounts System - SCIE

- Integrated Business Accounts System (SCIE) results from a process of statistical data integration that covers enterprises and is based on administrative data, with an emphasis on Simplified Business Information (IES).
- This data is complemented with information collected from sole proprietors and independent workers from the Ministry of Finance and from Statistics Portugal’s Business Register.
- Data has been produced taking into account the Regulation (EC) No 295/2008, regarding the Structural Business Statistics.
- The main objective of the SCIE is to characterize the economic and financial behaviour of companies.
- Micro-dataset that covers 1,196,102 companies
Examples

- People employed
- Wages
- GFCF
- Gross value added
- Gross operating surplus
- Turnover
- etc
Outline

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Cost Calculation (internal)
Methodology

Population:

- The target population of the market survey includes all companies located in Portugal.

Sample and sampling design:

- Random stratified sampling;
- Sample is stratified by crossing the economic activity and the enterprise size;
- The enterprise size is aggregated in 3 groups:
  1. Micro enterprises;
  2. Small and medium enterprises;
  3. Large enterprises.
Methodology

Sample and sampling design:

- The economic activity is grouped into 8 sectors:
  1. Agriculture, farming of animals, hunting, forestry, mining and quarrying (CAE Rev.3 Section A);
  2. Mining, quarrying and manufacturing (CAE Rev.3 Section B and C);
  3. Energy, water and sewerage (CAE Rev.3 Section D and E);
  4. Construction and real estate activities (CAE Rev.3 Section F);
  5. Wholesale and retail trade; repair of motor vehicles and motorcycles (CAE Rev.3 Section G);
  6. Transportation and storage; information and communication activities (CAE Rev.3 Section H and J);
  7. Accommodation and food service activities (CAE Rev.3 Section I);
  8. Other service activities (CAE Rev.3 Section M, N, P, Q, R and S).
## Methodology

### Population and sample allocation by stratum:

<table>
<thead>
<tr>
<th>Economic activity (CAE Rev.3)</th>
<th>Micro enterprises</th>
<th>Small and medium enterprises</th>
<th>Large enterprises</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, farming of animals, hunting, forestry, mining and quarrying (CAE Rev.3 Section A)</td>
<td>131.380</td>
<td>1.456</td>
<td>8</td>
<td>132.844</td>
</tr>
<tr>
<td>Mining, quarrying and manufacturing (CAE Rev.3 Section B and C)</td>
<td>55.338</td>
<td>12.335</td>
<td>325</td>
<td>67.998</td>
</tr>
<tr>
<td>Energy, water and sewerage (CAE Rev.3 Section D and E)</td>
<td>4.645</td>
<td>508</td>
<td>53</td>
<td>5.206</td>
</tr>
<tr>
<td>Construction and real estate activities (CAE Rev.3 Section F)</td>
<td>108.875</td>
<td>5.715</td>
<td>63</td>
<td>114.653</td>
</tr>
<tr>
<td>Wholesale and retail trade; repair of motor vehicles and motorcycles (CAE Rev.3 Section G)</td>
<td>210.167</td>
<td>10.006</td>
<td>186</td>
<td>220.359</td>
</tr>
<tr>
<td>Transportation and storage; information and communication activities (CAE Rev.3 Section H and J)</td>
<td>35.089</td>
<td>3.028</td>
<td>135</td>
<td>38.252</td>
</tr>
<tr>
<td>Accommodation and food service activities (CAE Rev.3 Section I)</td>
<td>92.914</td>
<td>4.599</td>
<td>49</td>
<td>97.562</td>
</tr>
<tr>
<td>Other service activities (CAE Rev.3 Section M, N, P, Q, R and S)</td>
<td>529.585</td>
<td>7.467</td>
<td>280</td>
<td>537.332</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Segment</th>
<th>Population</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>1,167,993</td>
<td>45,114</td>
</tr>
</tbody>
</table>

2.000 | 2.000 | 994 | 4,994 |
Methodology

Questionnaire:

• **A - The different kind of information obligations:**
  1. Provision and delivery of business / tax information;
  2. License applications, certificates or permissions;
  3. Records and notifications;
  4. Applying for subsidies or other support;
  5. Provision of manuals of procedures and action plans;
  6. Cooperation with audits and inspections;
  7. Placing informational labels and providing information to consumers and other entities;
  8. Other obligations, if other obligations are identified.
Methodology

Questionnaire:

- B - The administrative tasks associated to each information obligation:
  1. Familiarization with the obligation;
  2. Collection of information;
  3. Information organization;
  4. Information processing;
  5. Submission of information;
  6. Waiting times;
  7. Travel;
  8. Others, if other administrative tasks are identified.
Methodology

Questionnaire:

• C - Resources - Companies can use their own resources or third parties by means of subcontracting:
  
  • With own company resources:
    • Average time spent on delivery;
    • Number of deliveries per year;
    • Salary of the employee allocated to the fulfilment of the obligation.

  • With subcontracting:
    • Annual cost (in Euros);
    • Number of deliveries per year.
Quanto aos Pedidos de Licenças, Certidões, autorizações ou permissões, e para as seguintes tarefas:

Esta obrigação de Informação abrange todos os procedimentos necessários à obtenção de licenças, certidões, autorizações ou permissões / isenções, obrigatórias para o exercício de uma determinada atividade. Inclui pedidos de licenças ambientais; pedidos de licenças camarásias; pedidos de autorizações/licenças para obras ou instalações; pedidos de autorização para prestação de serviço ou colocação de produto no mercado; certificação de produtos ou processos; etc.

Indique por favor se as seguintes tarefas administrativas associadas à Obrigação são realizadas internamente ou externamente?

<table>
<thead>
<tr>
<th>Familiarização com a obrigação de Informação</th>
<th>Interno</th>
<th>Externo</th>
<th>Ambos</th>
<th>Não aplicável</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organização/Compilação da informação</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparação/Tratamento da informação</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tempo de espera</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deslocações</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submissão/envio/disponibilização/prestação de informação</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outra Atividade administrativa:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Quanto aos Pedidos de Licenças, Certidões, autorizações ou permissões, e para a as seguintes tarefas:
Indique também quais os custos anuais associados às seguintes tarefas em termos de tempo despendido e salários de Colaboradores

<table>
<thead>
<tr>
<th>Tempo médio despendido por pedido</th>
<th>Horas</th>
<th>Minutos</th>
<th>Salário(^1) médio mensal do Colaborador responsável pela tarefa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familiarização com a obrigação de Informação</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organização/Compilação da informação</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparação/Tratamento da informação</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submissão/envio/disponibilização/prestação de informação</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\)Salário Médio Mensal = Salário Bruto Mensal, incluindo o subsidio de almoço e outros subsídios ou abonos.
Qual o custo anualmente despendido com Terceiros com as várias tarefas associadas aos Pedidos de Licenças, Certidões, autorizações ou permissões?

NR

E quais os Pedidos foram realizados no último ano?

NR
Data Collection:

- To improve response rate the survey has been split into two groups, where each respondent is questioned about up to 4 groups of information obligation. This corresponds to a duration of approximately 25 minutes;
- The 4 groups are randomly selected;
- Companies may choose to participate by telephone, online or personal interviews;
- The data is being collected from two sources:
  - Directly interviewing companies or
  - Interviewing the companies’ service provider that fulfils these obligations.
Methodology

Data Collection:

- telephone
- online
- personal

- Directly companies
- companies’ service provider

Costs (RCC)
Outline

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Time Component

Cost Calculation (internal)
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Cost Calculation (internal)
Results

Proxy for productivity: gross value added/hours worked

1. large
2. sme
3. micro

Agriculture, forestry and fishing
Manufacturing
Energy, water and sanitation
Construction and real estate
Retail trade, repair of motor vehicles
Accommodation and food service
Transportation and storage, info and communication
Other service activities
Outline

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Cost Calculation (internal)
Results

Fiscal/Business info: VAT declarations

- **Agriculture, forestry and fishing**
- **Manufacturing**
- **Energy, water and sanitation**
- **Construction and real estate**
- **Retail trade, repair of motor vehicles**
- **Accommodation and food service**
- **Transportation and storage info**
- **Other service activities**

Time in hours

Hours

<table>
<thead>
<tr>
<th>Category</th>
<th>Large</th>
<th>SME</th>
<th>Micro</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fiscal/Business info: VAT declarations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results

Fiscal/Business info: Corporate Income tax (IRC)

Time in hours

Agriculture, forestry and fishing
Manufacturing
Energy, water and sanitation
Construction and real estate
Retail trade, repair of motor ve
Accommodation and food service
Transportation and storage, info
Other service activities

Hours

1. large
2. sme
3. micro

1. large
2. sme
3. micro

1. large
2. sme
3. micro

1. large
2. sme
3. micro

1. large
2. sme
3. micro

1. large
2. sme
3. micro

1. large
2. sme
3. micro

1. large
2. sme
3. micro

0 10 20 30 40

21.30 13.54 6.79 36.42 17.57 7.70 22.29 8.78 5.78 41.45 19.65 6.24 37.54 14.20 4.92 32.21 15.59 4.09 40.10 15.57 8.47 26.78 11.24 5.64
Results

Fiscal/Business info: Special Payment on Account (IRC)
Fiscal/Business info: Single Transit Tax (IUC)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry and fishing</td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td></td>
</tr>
<tr>
<td>Energy, water and sanitation</td>
<td></td>
</tr>
<tr>
<td>Construction and real estate</td>
<td></td>
</tr>
<tr>
<td>Retail trade, repair of motor ve</td>
<td></td>
</tr>
<tr>
<td>Accommodation and food service</td>
<td></td>
</tr>
<tr>
<td>Transportation and storage, info</td>
<td></td>
</tr>
<tr>
<td>Other service activities</td>
<td></td>
</tr>
</tbody>
</table>

Time in hours
Results

Fiscal/Business info: Municipal Property Tax (IMI)
Results

Fiscal/Business info: Stamp tax

Time in hours

Agriculture, forestry and fishing
Manufacturing
Energy, water and sanitation
Construction and real estate
Retail trade, repair of motor vehicles
Accommodation and food service
Transportation and storage, info
Other service activities

0.60 0.71 0.40 0.89 0.81 0.25 1.31 0.31 0.26 0.96 0.62 0.47 1.33 0.32 0.20 0.59 0.57 0.21 0.24 0.17 0.65 0.55
Fiscal/Business info: Regulatory authorities

Time in hours

Agriculture, forestry and fishing
Manufacturing
Energy, water and sanitation
Construction and real estate
Retail trade, repair of motor ve
Accommodation and food service
Transportation and storage, info
Other service activities
Outline

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Cost Calculation (internal)
Results

Fiscal/Business info: VAT declarations

Unity cost in euros
Results

Fiscal/Business info: Simplified Business Information (IES)

Unity cost in euros
Results

Fiscal/Business info: Corporate Income tax (IRC)

Unity cost in euros
Fiscal/Business info: Special Payment on Account (IRC)
Results

Fiscal/Business info: Single Transit Tax (IUC)

Unity cost in euros
## Results

### Fiscal/Business info: Municipal Property Tax (IMI)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Large</th>
<th>SME</th>
<th>Micro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>1. 2.</td>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>43.8</td>
<td>7.77</td>
<td>2.43</td>
</tr>
<tr>
<td>Energy, water and sanitation</td>
<td>36.61</td>
<td>13.95</td>
<td>3.02</td>
</tr>
<tr>
<td>Construction and real estate</td>
<td>27.20</td>
<td>9.69</td>
<td></td>
</tr>
<tr>
<td>Retail trade, repair of motor ve</td>
<td>21.41</td>
<td>11.88</td>
<td>2.93</td>
</tr>
<tr>
<td>Accommodation and food service</td>
<td>18.71</td>
<td>6.47</td>
<td>0.76</td>
</tr>
<tr>
<td>Transportation and storage, info</td>
<td>6.00</td>
<td>5.43</td>
<td></td>
</tr>
<tr>
<td>Other service activities</td>
<td>42.25</td>
<td>11.09</td>
<td>4.46</td>
</tr>
</tbody>
</table>

Unity cost in euros

![Graph showing the fiscal/business info for Municipal Property Tax (IMI) across different industries and business sizes.](attachment:graph.png)

Fiscal/Business info: Municipal Property Tax (IMI)

- **Agriculture, forestry and fishing**
- **Manufacturing**
- **Energy, water and sanitation**
- **Construction and real estate**
- **Retail trade, repair of motor ve**
- **Accommodation and food service**
- **Transportation and storage, info**
- **Other service activities**

Unity cost in euros
Results

Fiscal/Business info: Inventory

Unity cost in euros

Fiscal/Business info: Inventory
Results

Fiscal/Business info: Stamp tax

Unity cost in euros

Agriculture, forestry and fishin
Manufacturing
Energy, water and sanitation
Construction and real estate
Retail trade, repair of motor ve
Accommodation and food service
Transportation and storage, info
Other service activities

Euros

54
Fiscal/Business info: Single Report

Unity cost in euros
Results

Fiscal/Business info: Regulatory authorities

Unity cost in euros

<table>
<thead>
<tr>
<th>Sector</th>
<th>1. Large</th>
<th>2. SME</th>
<th>3. Micro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>15.14</td>
<td>34.58</td>
<td>4.26</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>208.20</td>
<td>38.29</td>
<td>3.92</td>
</tr>
<tr>
<td>Energy, water and sanitation</td>
<td>20778.42</td>
<td>1695.52</td>
<td>23.01</td>
</tr>
<tr>
<td>Construction and real estate</td>
<td>53.37</td>
<td>47.33</td>
<td>8.75</td>
</tr>
<tr>
<td>Retail trade, repair of motor ve</td>
<td>105.18</td>
<td>47.33</td>
<td>8.75</td>
</tr>
<tr>
<td>Accommodation and food service</td>
<td>22.01</td>
<td>11.65</td>
<td>0.88</td>
</tr>
<tr>
<td>Transportation and storage info</td>
<td>310.68</td>
<td>37.79</td>
<td>85.31</td>
</tr>
<tr>
<td>Other service activities</td>
<td>74.77</td>
<td>47.68</td>
<td>7.08</td>
</tr>
</tbody>
</table>
Challenges

- "Only" 8 Information Obligations are standardized.
- How to identify similarities and dissimilarities with new IO?
- Is this the moment to start using Machine Learning and Artificial Intelligence to support RIA?
Questions?