Measures of Polarization and Conceptualization of Middle Class

• The EGR strategy generates brackets of income classes of the income distribution observed in practice. The brackets chosen were the ones which better distinguish the 3 groups in a sense that they select the lowest possible differences inside them (identification) and on the other hand maximize the differences between groups (alienation). We calculated the brackets of income for the case of 3 segments (AB, C e DE).
Explanatory Power of Economic Classes Segmentation: EGR x Equal Sizes

CORTES E MEDIDAS DE DESIGUALDADE - ÍNDICE DE THEIL

% da desigualdade explicada pelo ENTRE segmentos de renda

<table>
<thead>
<tr>
<th>CLASSES ECONOMICAS</th>
<th>GRUPOS % IGUAIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPS/FGV</td>
<td>(1/3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data</th>
<th>EGR</th>
<th>IGUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>PME 2002-2003</td>
<td>76.71%</td>
<td>59.34%</td>
</tr>
<tr>
<td>PNAD 2003</td>
<td>79.71%</td>
<td>59.91%</td>
</tr>
<tr>
<td>PNAD 2009</td>
<td>74.29%</td>
<td>57.96%</td>
</tr>
<tr>
<td>POF 2008-2009</td>
<td>71.40%</td>
<td>59.29%</td>
</tr>
</tbody>
</table>

Fonte: CPS/FGV a partir dos microdados do IBGE

\[ T = T_e + \sum_{h=1}^{K} Y_h T_h \]

Te / T is the Contribution of economic classes brackets to inequality

**Economic Classes** Defined by Total Household Income (calculated originally in per capita terms) (Monthly R$)

<table>
<thead>
<tr>
<th>Economic Classes</th>
<th>Lower Limit</th>
<th>Upper Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class E</td>
<td>0</td>
<td>1184</td>
</tr>
<tr>
<td>Class D</td>
<td>1184</td>
<td>1893</td>
</tr>
<tr>
<td>Class C</td>
<td>1893</td>
<td>8159</td>
</tr>
<tr>
<td>Class B</td>
<td>8159</td>
<td>10637</td>
</tr>
<tr>
<td>Class A</td>
<td>10637</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: PNAD/IBGE and POF/IBGE microdata * R$ may 2019 prices

Self-perceptions on Class – in 2014 how does Brazilians ranked themselves in terms of economic class, ranging from extremely poor to the elite, passing by people who call themselves vulnerable and several middle class bands (low, medium and high). The self-perception of the whole middle class (share in ABC classes) by Brazilians is 62.76 per cent, higher than the 58.68 per cent in PNAD for 2014.
% in Class ABC - By Municipalities

% Access to Motorcycles

% Access to Cars

Cars maps are looks like ABC classes map, Motorcycles map looks like D class

Source: FGV Social/CPS from Demographic Census 2010/IBGE
% in AB Classes X Mean Per Capita Household Income

Source: FGV Social/CPS from Demographic Census 2010/IBGE

Ranking Individual Adult Incomes Using Personal Income Tax 2017

- among 5500 Municipalities includes those that do not declare or pay taxes (divided by the whole population)

A1 Class Map

Brazilian Municipalities

<table>
<thead>
<tr>
<th>Rank</th>
<th>Municipality</th>
<th>State</th>
<th>A1 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Niterói</td>
<td>RJ</td>
<td>17.61%</td>
</tr>
<tr>
<td>2</td>
<td>Santana de Parnaíba</td>
<td>SP</td>
<td>16.515%</td>
</tr>
<tr>
<td>3</td>
<td>Vitória</td>
<td>ES</td>
<td>15.06%</td>
</tr>
<tr>
<td>4</td>
<td>Florianópolis</td>
<td>SC</td>
<td>14.90%</td>
</tr>
<tr>
<td>5</td>
<td>São Caetano do Sul</td>
<td>SP</td>
<td>14.75%</td>
</tr>
<tr>
<td>6</td>
<td>Brasília</td>
<td>DF</td>
<td>14.01%</td>
</tr>
<tr>
<td>7</td>
<td>Porto Alegre</td>
<td>RS</td>
<td>13.24%</td>
</tr>
<tr>
<td>8</td>
<td>Nova Lima</td>
<td>MG</td>
<td>11.64%</td>
</tr>
<tr>
<td>9</td>
<td>Santos</td>
<td>SP</td>
<td>11.13%</td>
</tr>
<tr>
<td>10</td>
<td>Balneário Camboriú</td>
<td>SC</td>
<td>10.76%</td>
</tr>
<tr>
<td>11</td>
<td>Belo Horizonte</td>
<td>MG</td>
<td>10.71%</td>
</tr>
<tr>
<td>12</td>
<td>Curitiba</td>
<td>PR</td>
<td>10.47%</td>
</tr>
<tr>
<td>13</td>
<td>Vinhedo</td>
<td>SP</td>
<td>10.46%</td>
</tr>
<tr>
<td>14</td>
<td>Presidente Castello Branco</td>
<td>SC</td>
<td>10.38%</td>
</tr>
<tr>
<td>15</td>
<td>Rio Fortuna</td>
<td>SC</td>
<td>10.37%</td>
</tr>
<tr>
<td>16</td>
<td>Rio de Janeiro</td>
<td>RJ</td>
<td>10.27%</td>
</tr>
<tr>
<td>17</td>
<td>Valinhos</td>
<td>SP</td>
<td>10.24%</td>
</tr>
<tr>
<td>18</td>
<td>São Paulo</td>
<td>SP</td>
<td>9.46%</td>
</tr>
<tr>
<td>19</td>
<td>Campinas</td>
<td>SP</td>
<td>9.24%</td>
</tr>
<tr>
<td>20</td>
<td>Holambra</td>
<td>SP</td>
<td>9.13%</td>
</tr>
<tr>
<td>21</td>
<td>Águas de São Pedro</td>
<td>SP</td>
<td>8.83%</td>
</tr>
</tbody>
</table>

Source: FGV Social/CPS from Demographic Census 2010/IBGE
% Evolution of ABC Classes (Traditional and New Middle Classes)

% Classe ABC 1993
13.01 - 28.32
28.32 - 43.63
43.63 - 58.93
58.93 - 74.24
74.24 - 89.55

% Classe ABC 2003
13.01 - 28.32
28.32 - 43.63
43.63 - 58.93
58.93 - 74.24
74.24 - 89.55

% Classe ABC 2009
13.01 - 28.32
28.32 - 43.63
43.63 - 58.93
58.93 - 74.24
74.24 - 89.55

% Classe ABC 2014
13.01 - 28.32
28.32 - 43.63
43.63 - 58.93
58.93 - 74.24
74.24 - 89.55

Source: FGV Social/CPS from PNAD/IBGE microdata

Economic Classes % Composition 1992 to 2015
Geologic Layers of Classes – Brazil

Source: FGV Social/CPS from PNAD and PNADC /IBGE microdata Harmonized 2015
### Economic Classes Pyramid

Source: FGV Social/CPS from PNAD and PNADC /IBGE microdata Harmonized 2015

Ranking Latin America

<table>
<thead>
<tr>
<th>Annual Growth 2003-12 Per Capita HH Income</th>
<th>GDP growth wise 10th in the same comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Argentina 5.50%</td>
<td>249.5 10% Poorest</td>
</tr>
<tr>
<td>2 Colombia 4.68%</td>
<td>187.9 Social Welfare</td>
</tr>
<tr>
<td>3 Brasil 4.60%</td>
<td>157.7</td>
</tr>
<tr>
<td>4 Perú 4.56%</td>
<td>142.5 10% richest</td>
</tr>
<tr>
<td>5 Uruguay 4.42%</td>
<td></td>
</tr>
<tr>
<td>6 Bolivia* 3.96%</td>
<td>139.1</td>
</tr>
<tr>
<td>7 Ecuador 3.79%</td>
<td></td>
</tr>
<tr>
<td>8 Panamá 2.77%</td>
<td>136.8</td>
</tr>
<tr>
<td>9 Paraguay 2.74%</td>
<td></td>
</tr>
<tr>
<td>10 Costa Rica 2.72%</td>
<td>128.2</td>
</tr>
<tr>
<td>11 Chile* 2.48%</td>
<td></td>
</tr>
<tr>
<td>12 México 1.08%</td>
<td></td>
</tr>
<tr>
<td>13 El Salvador 1.03%</td>
<td></td>
</tr>
<tr>
<td>14 Honduras 0.94%</td>
<td></td>
</tr>
<tr>
<td>15 Dominicana -0.87%</td>
<td></td>
</tr>
<tr>
<td>16 Nicaragua* -1.52%</td>
<td></td>
</tr>
<tr>
<td>17 Guatemala* -1.84%</td>
<td></td>
</tr>
</tbody>
</table>

Source: CEDLAS microdata * Little Different Periods

Median Cumulative Growth can be seen a relative middle class performance measure. It is close to the one for Sen Social Welfare..
What Explains Sales? GDP or HH Income? Mean, Inequality or Both?

Retail Sales Volume (October 2003=100)

Growth in 20 years:
Income per Brazilian: 39.74%
Population Growth: 31.97%
Number of Households: 72.41%
For items per household multiply by 1/ Household Size (N)

Social Welfare = Mean * (1-Gini)

Performing a horse race (stepwise procedure) between mean income, squared income, and Economic Class to explain demand for insurance (health) the latter wins but all are significant

Highly non linear income impact at the micro level
Acquisition of Goods and Services

Acquired this good or service in the last 3 years (%)?

1st Acquisition of Goods and Services

1st time acquiring goods or services: Among those who purchased it in the last 3 years

Idea of the New Middle Class

Source: SAE designed questions in SECOM – Quarterly Public Perception Poll – July/2014
Coverage of Basic Goods and Services

Pop. with basic set of durable goods × Pop. with basic set of public services

Conditions in Houses improved + than public services out

Perceived Policies – Household Budget Survey POF/IBGE shows that the perception of the C class on the problems of infrastructure & public services such as transport, sports, leisure, education and health, is more on quality than on coverage.

Notes:
* = telephone (landline or mobile), color TV, stove with two burners or +, refrigerator, radio and washing machine
** = electricity, garbage collection, sewage (rede ou fossa ligada à rede), water (rede).

Source: Pnad/IBGE microdata. Excluding rural areas of the North region (except Tocantins).

Channels of Impact of Policies for the Middle Class

MIDDLE CLASS

INVESTMENT ON PEOPLE

INCOME GENERATION

PRODUCTION FUNCTION

QUALITY OF WORKER TRAINING AND CERTIFICATION

INCOME GROWTH

CASH TRANSFERS

CURRENT NET INCOME

DIRECT EFFECT

QUALITY OF JOBS ROTATION AND INCENTIVES

BUSINESS ENVIRONMENT SIMPLES, CREDIT AND INNOVATION

COMMUNICATION ICTs

TRANSPORTATION SEWAGE

EXTERNAL INFRASTRUCTURE

INTERNAL INFRASTRUCTURE Own House

QUALITY OF EDUCATION EVALUATION AND FUNDING

SAVINGS, CREDIT AND INSURANCE MICROFINANCE

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