

Middle Class and Polarization: Concepts and Empirical Evidence

* See materials in the Middle Class box

Brazil's Middle Classes - Marcelo Neri

Full paper: https://www.cps.fgv.br/cps/bd/curso/Middle-Class/3-NCM_Neri_EPGE_MiddleClass.pdf

Abstract - This part discusses from first principles the concepts of polarization, alienation, identification and its relationship with the idea of middle class. Then we apply to a specific of the Brazilian middle class, its definition, evolution, profile, attitudes and durability. It describes the methodology that uses per capita household income derived from household surveys to determine economic classes. It gauges their respective aggregate trends and gauges individual income risks using longitudinal data. An income-based approach is only the beginning. This initial approach is integrated with subjective data to measure expectations and attitudes of different economic classes combined with a structural approach that takes into account the roles played by human, physical and social capital in the production factors, in terms of income generation and temporal allocation of resources. In all cases, income is the chosen numeraire by which all dimensions analyzed are projected. In the end of the article, all forms of measurement proposed – current income, consumption smoothing (permanent income), productive assets and subjective aspects – are combined to discuss the design of public policies aimed at the Brazilian middle classes.

Middle Class and Polarization: Concepts

https://www.cps.fgv.br/cps/bd/curso/Middle-Class/1-NCM_Polarization%20and%20Social%20tension_HO.pdf

Polarization - In order to differentiate polarization from income inequality per se, consider the following useful example, adapted from Gasparini *et al.* (2008). Consider a simple society with six people called A, B, C, D, E and F, with incomes of R\$ 6, 5, 4, 3, 2 and 1, respectively. Suppose that one Real is transferred from D to F and from A to C. Inequality indices that respect the so-called principle of transfers will necessarily decline. After these distributive changes, we will have a perfectly divided society in two internally homogeneous groups: an income of R\$ 2 for D, E and F and an income of R\$ 5 for A, B and C. Although less unequal, after these progressive transfers, society has become more polarized.

A society is said to be polarized when it is divided into groups, with substantial intra group homogeneity and intergroup heterogeneity. Based on this definition, Esteban and Ray (1994) identified two distinct notions of polarization. The first is the alienation, which measures how far apart are different groups and the second is the identification, which measures how closely the members of a group are aligned with each other sharing common aspirations and values. The existence of such groups has potential for social conflicts.

Suppose a society is divided into three groups: the poor, middle class and the rich. Then the shrinking of the middle class and an increasing gap between the poor and the rich implies increasing polarization in the society. A polarized society has small middle class and sizable poor and rich classes with large income gap between them.

Polarization, Alienation & Identification

General Social Welfare Function: $W = \int_0^{\infty} u(x)v(x)f(x)dx$

Alienation: A person is assumed to be alienated if her income spreads from the middle. Suppose m is the median income, then her alienation is given by the difference of the individual income from the median. The utility that takes account the alienation from the median may be defined as:

$$\begin{aligned} u(x) &= x - (m - x) \text{ if } x < m \\ &= x - (x - m) \text{ if } x > m \end{aligned}$$

Welfare of the society is :

$W_A = \mu - \frac{(m_2 - m_1)}{2}$ where m_1 and m_2 are the mean incomes of the population having income below and above the median income, respectively.

Identification - The second aspect of polarization refers to the case where incomes below the median or above the median become closer to each other: "bunching of the two groups in the sense that the gaps between the income below the median (or above the median) have been reduced". The polarization increases when the two groups become homogeneous. How should then weights $v(x)$ be determined so that the sum of all weights adds to 1?

$$\begin{aligned} v(x) &= 4F(x) \quad \text{if } x < m \\ &= 4[1 - F(x)] \quad \text{if } x \geq m \end{aligned}$$

Overall Polarization: So total welfare becomes:

$$W_B = \int_0^{\infty} u(x)v(x)f(x)dx = \mu - (m_2 - m_1) + 2\mu G$$

$$\text{Or, } W_B = \mu - 2(G_B - G_W)$$

where G_B and G_W are the between and within group inequalities measured by the Ginis when the two groups are formed of the populations having income less and greater than the median income, respectively. The polarization measure B in (18) is similar to the measure proposed by Foster and Wolfson (1992). This is a measure of social tension due to the existence of polarization in the society.

Polarization based Middle Class Lines :

We move from a relative to an absolute measure fixing the lines in real terms for further periods. Our definition of middle class income brackets is theoretically consistent and empirically close to that determined by the extended polarization concept proposed by Esteban, Gradin and Ray (2007, called EGR). The EGR strategy generates, in a more general setting of polarization measures, endogenously cuts of the observed income distribution. The chosen cuts obtained are those that maximize the criterion of polarization in a given point in time. They are the ones that best distinguish the income groups in order to make the internal differences of these groups as small as possible and on the other hand maximize the differences between these groups.

OBS: The explanatory power of economic classes segmentation of EGR in Brazil is 20 percentage points higher than **Equal Sizes classes** using the Theil Index metric T_e / T contribution of economic classes brackets to total inequality

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 initially the brackets of income for the case of 3 segments (AB, C e DE) then we replicate the same strategy to subdivide AB classes.

Economic Classes Defined by Total Household

Income (calculated originally in per capita terms) (Monthly R\$)

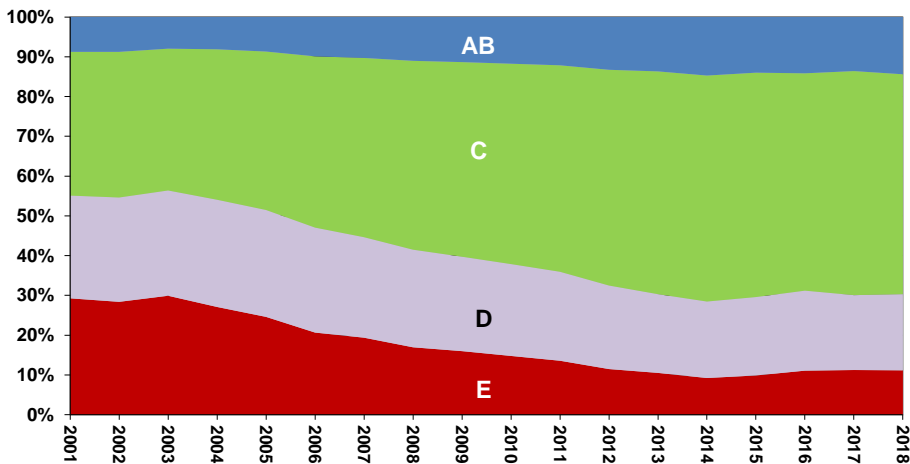
			Economic Classes	Lower Limit	Upper Limit	
			Class E	0	1184	
			Class D	1184	1893	
			Class C	1893	8159	<-New Middle Class
Class B2	8159	8239	Class B	8159	10637	
Class B1	8239	10637				
Class A2	10637	15742	Class A	10637	-	<-Traditional Middle Class (A+B) US style
Class A1	15742	-				

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.

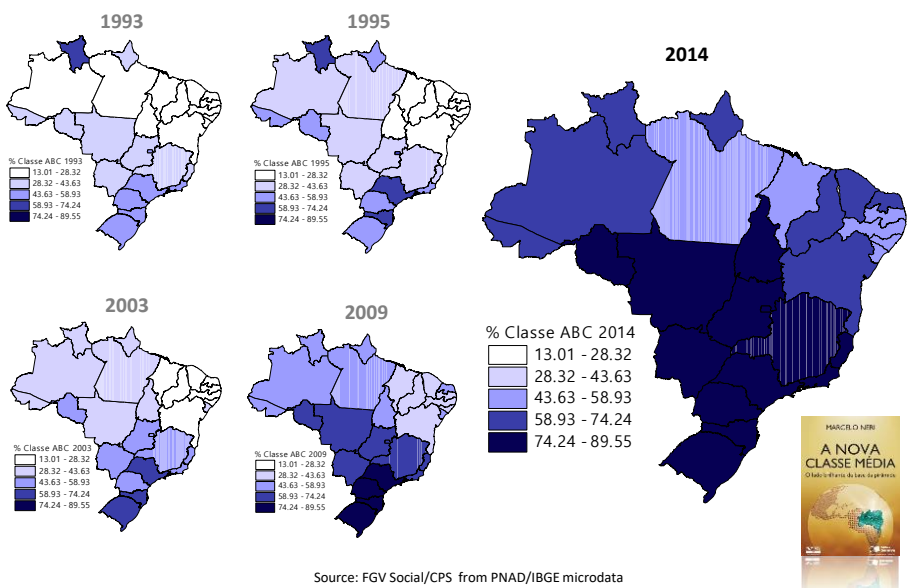
Economic Classes % Composition 2001 to 2018

Geologic Layers of Classes – Brazil



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

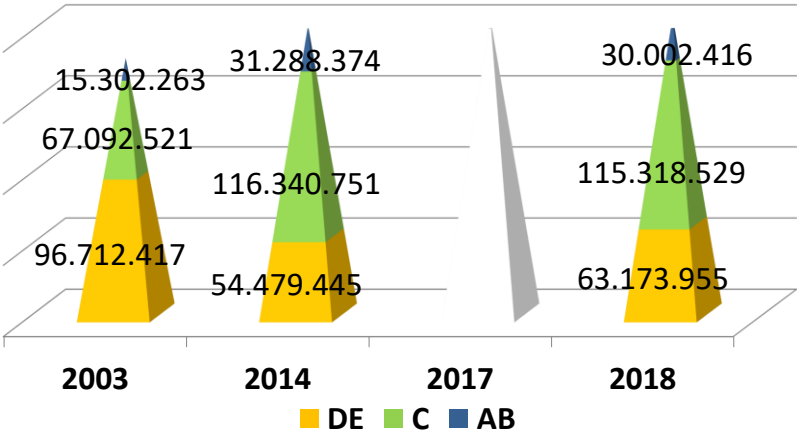
% Evolution of ABC Classes (Traditional and New Middle Classes)



Source: FGV Social/CPS from PNAD/IBGE microdata

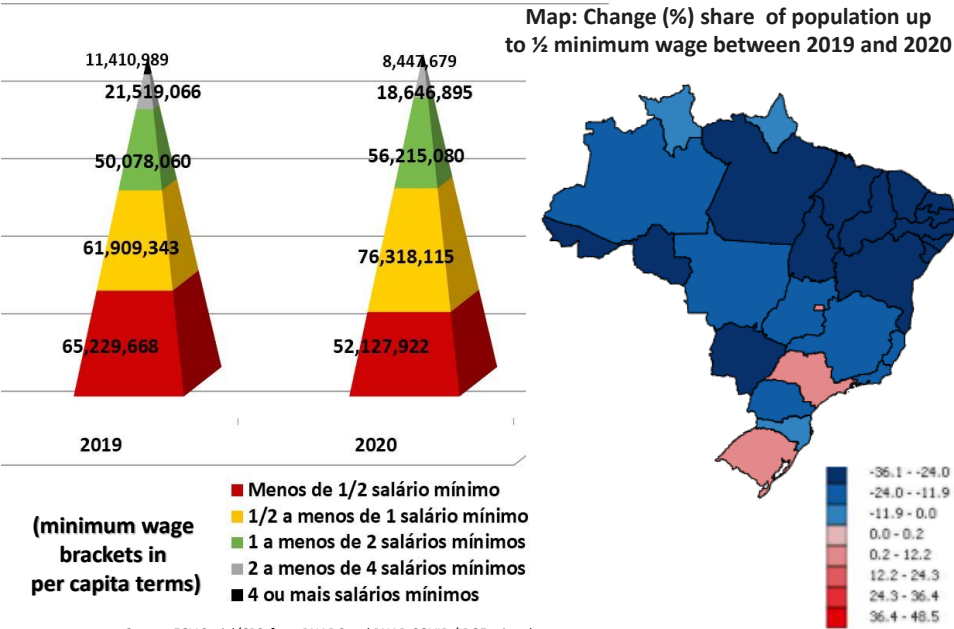


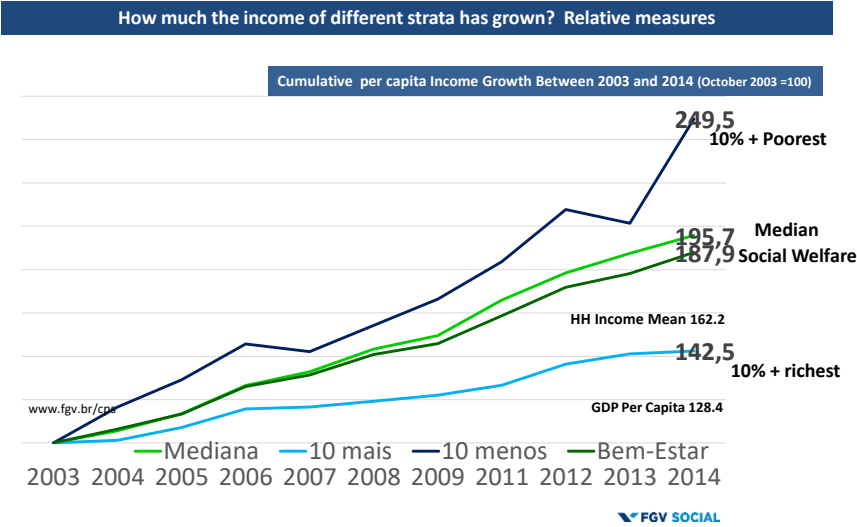
Economic Classes Pyramid



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

Economic Classes Pyramid: Pandemic & Auxílio Emergencial Impacts

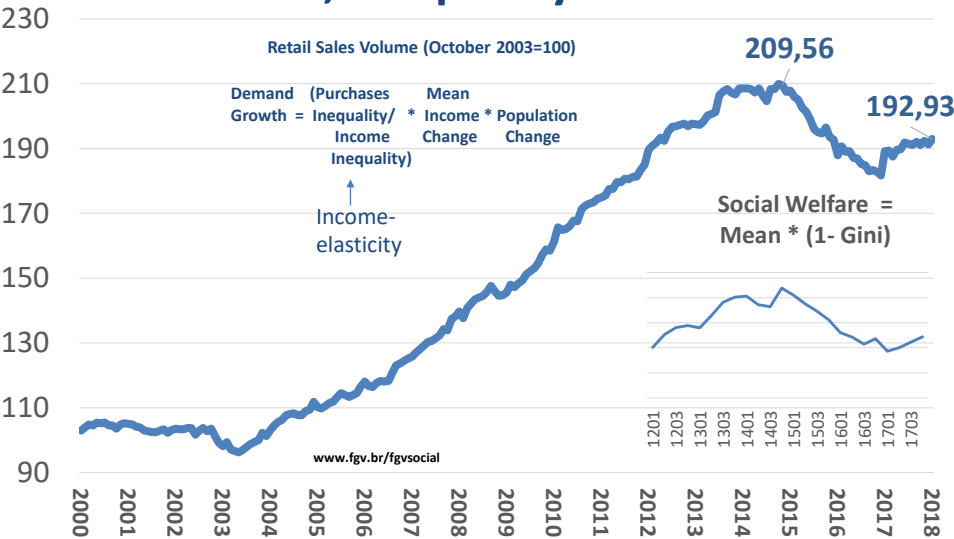




Median Cumulative Growth can be seen a relative middle class performance measure.
It is close to the one for Sen Social Welfare

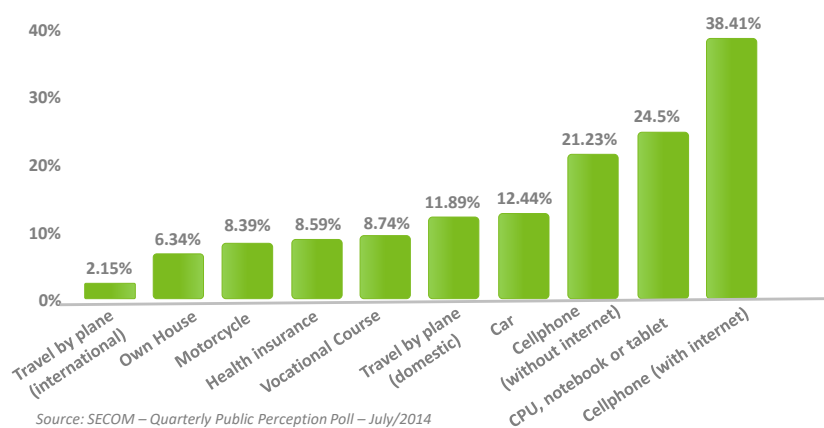
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What Explains Sales? GDP or HH Income? Mean, Inequality or Both?



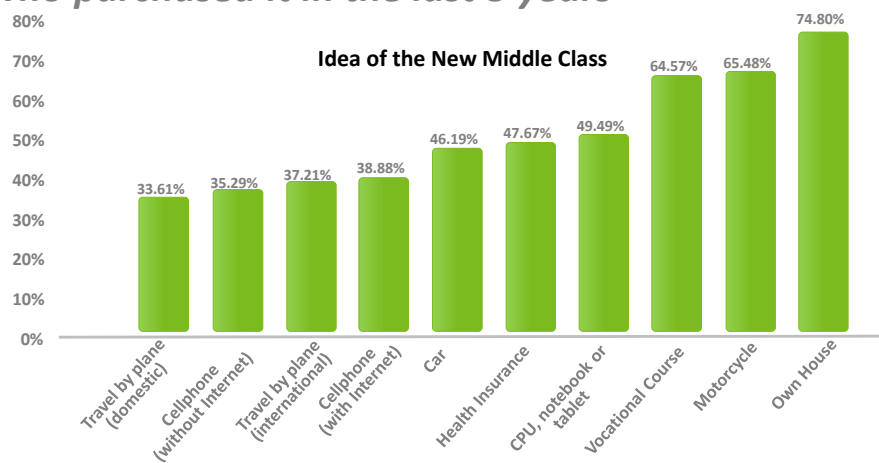
Acquisition of Goods and Services

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



*only takes into account the ones who acquired the good or service in the last 3 years

Source: SAE designed questions in SECOM – Quarterly Public Perception Poll – July/2014

Channels of Impact of Policies for the Middle Class

