

LABOR ECONOMICS

Basic Definitions

Occupied population (E):

People working

Unemployed population (U):

People looking for job but not occupied

Inactive population (I):

People not occupied neither looking for a job

Active Age Population AAP (PIA):

Population with working age. Depends of the definition, but normally correspond to a population between 15 and 65 years old, sometimes above 10 years old as PNAD and PME questionnaire.

It can also exclude people in jail and in the army.

Corresponds to the sum of the occupied + unemployed + inactive (E + U + I)

Economically Active Population EAP (PEA)

People within the labor market

Corresponds to the sum of the occupied + unemployed (E + U)

Participation Rate(l): $(PEA) / (PIA) = (E + U) / (E + U + I)$

Unemployment Rate(1-e): $(Unemployed\ population) / (PEA) = (U) / (E + U)$

Occupation Rate in PEA: $(Occupied\ population) / (PEA) = (E) / (E + U)$

Relation between indicators:

Occupied = Occupation R.X Participation R. X Active Age Population

$$\left(\frac{E}{E+U}\right) \times \left(\frac{E+U}{E+U+I}\right) \times (E+U+I) = E$$

At the household level...

per capita Income = Participation R. X Occupation R. X Working Hours X Earnings¹

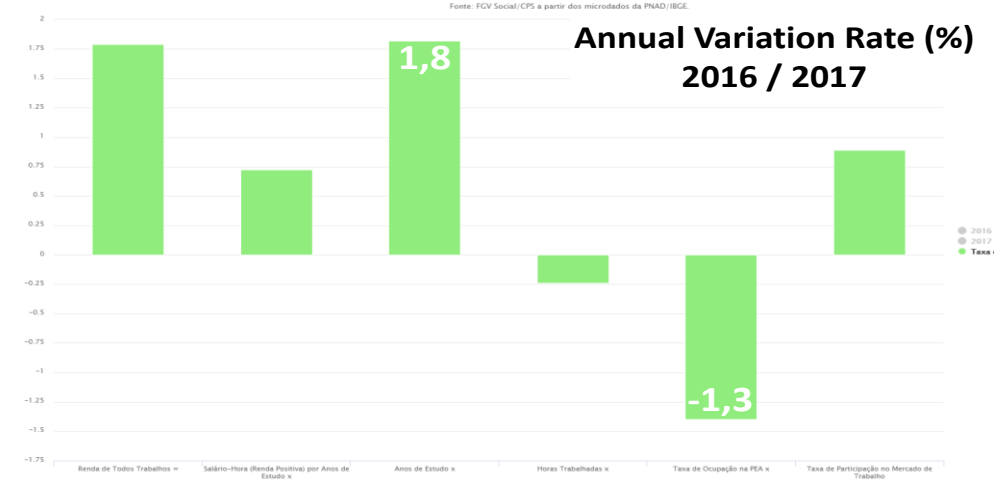
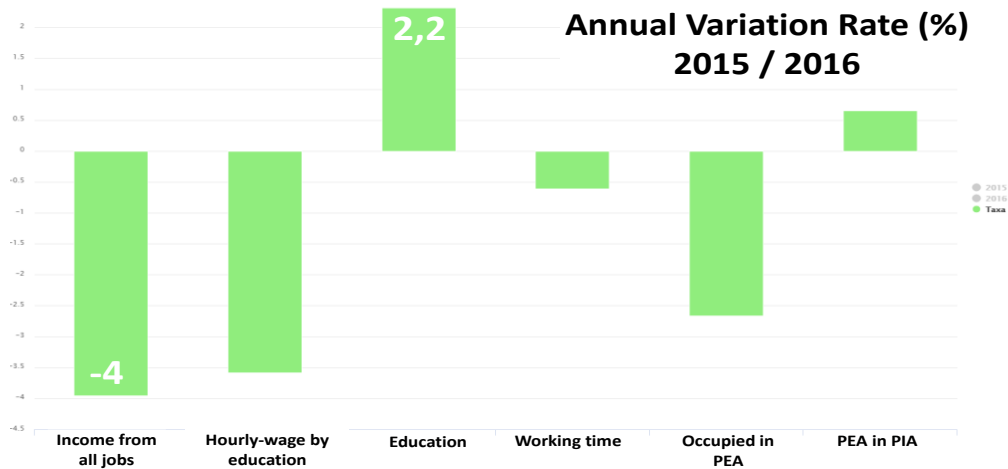
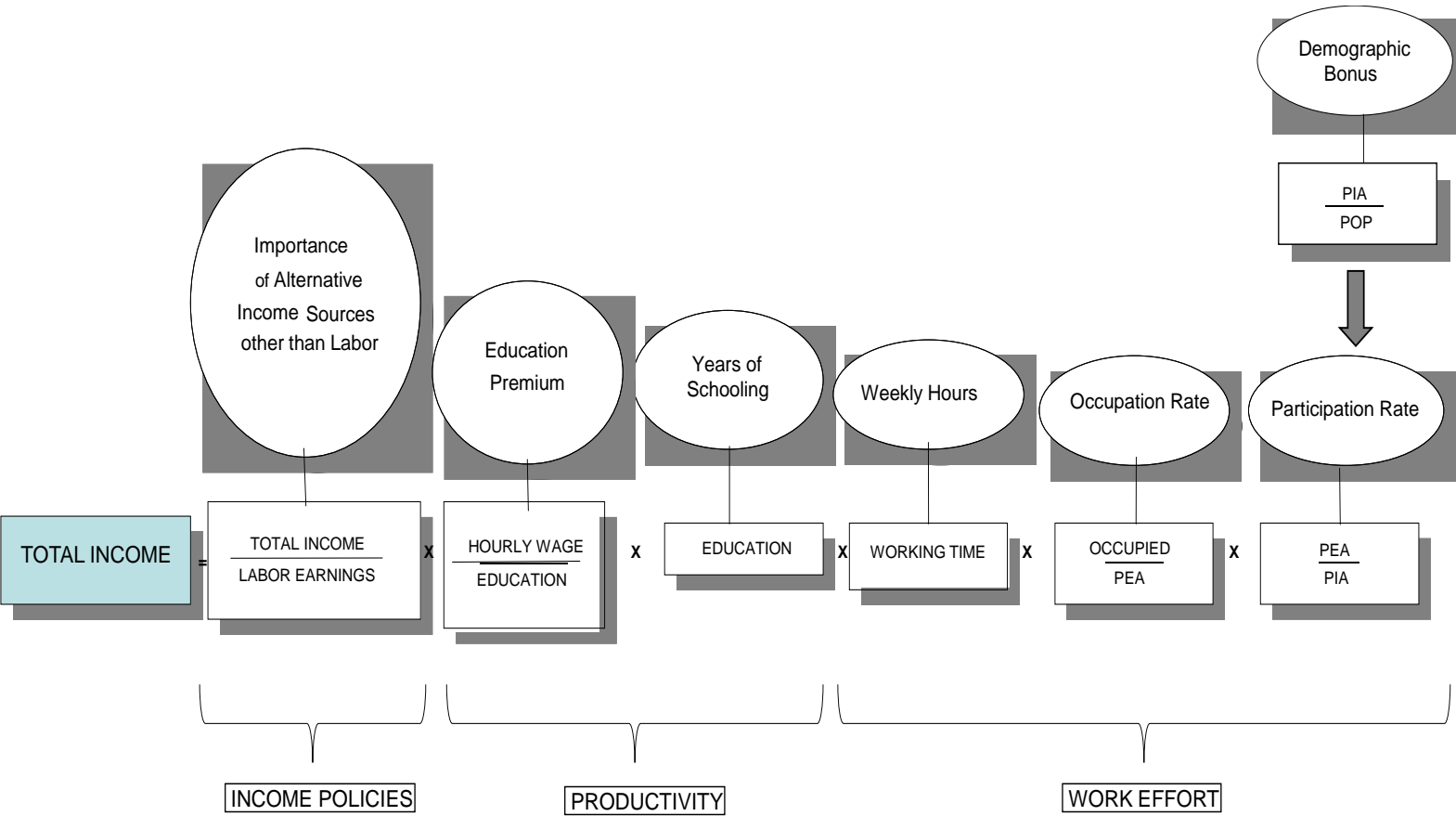
$$l \times \left(\frac{e}{l}\right) \times \left(\frac{h}{e}\right) \times \left(\frac{y}{h}\right) = y$$

Labor Earnings Mass: (# occupied) X (hourly wages X working hours)

Per capita Labor earnings: (R\$ labor earnings) / (population)

Productivity: (per capita Income) / (working hours)

¹ Wages =Productivity



Specific Application of the Labor Decomposition Methodology

Category	Year	Income from all jobs =	Hourly-wage (positive income) by education	Education	Working Time	Occupied in PEA	Participation Rate in Labor Market
			x	x	x	x	
The Critical moment of the Crisis	1502	801,9519	4,7063	9,6758	40,2286	0,8897	0,492
	1602	756,8998	4,5223	9,735	39,8834	0,8673	0,497
	Annual Variation Rate (%)	-5,6178	-3,9097	0,6118	-0,8581	-2,5177	1,0163
Status inside the Family							
Head of the family	1502	1420,4328	5,8844	8,904	41,763	0,9494	0,6837
	1602	1288,953	5,573	8,9775	40,999	0,9309	0,675
	Annual Variation Rate (%)	-9,2563	-5,292	0,8255	-1,8294	-1,9486	-1,2725
Spouse	1502	863,3178	4,5061	9,9006	38,4909	0,8798	0,5714
	1602	899,3896	4,4945	9,859	39,0186	0,8835	0,5888
	Annual Variation Rate (%)	4,1783	-0,2574	-0,4202	1,371	0,4206	3,0452

Source: FGV Social with PNADC/IBGE microdata

Added Worker Effect during the Crisis

➤ The only winning major group are the spouses:

"in all periods they are the ones who made the difference in time of crisis or after it."

This is the additional worker effect that compensates the losses of the other family members.

In 80% of cases spouses are females. The only major social group that has advanced in employment and wages in times of high unemployment and inflation.

**The Exit
of the Crisis**

Category	Year	Income from all jobs =	Hourly-wage (positive income) by education	Education	Working Time	Occupied in PEA	Participation Rate in Labor Market
			x	x	x	x	
Total	1602	756,8998	4,5223	9,735	39,8834	0,8673	0,497
	1702	768,4273	4,522	10,0477	39,7833	0,8509	0,4996
	Annual Variation Rate (%)	1,523	-0,0066	3,2121	-0,251	-1,8909	0,5231
Status inside the Family							
Head of the family	1602	1288,953	5,573	8,9775	40,999	0,9309	0,675
	1702	1276,0415	5,5125	9,3536	40,7163	0,917	0,6628
	Annual Variation Rate (%)	-1,0017	-1,0856	4,1894	-0,6895	-1,4932	-1,8074
Spouse	1602	899,3896	4,4945	9,859	39,0186	0,8835	0,5888
	1702	963,7663	4,5751	10,0943	39,2482	0,8735	0,6087
	Annual Variation Rate (%)	7,1578	1,7933	2,3867	0,5884	-1,1319	3,3798

Source: FGV Social with PNADC/IBGE microdata

Why Spouses made the difference

The heroines of the crisis are the spouses. During the most critical phase up to mid-2016, when the mean earnings in the whole population fell 5,6% during the 12 previous months, they achieved real income gains of 4,2% against loss of 9,3% of the heads of the family and increased their participation on the labor market by 3,46%, while the heads' participations fell 3,2%.

After that when the nation's earnings has grown 1,5% by June 2017, the spouses have gained 7,2% in income in the last 12 months against the loss of 1% of the heads. That is 4,5 times the nation's mean. The better performance of spouses wrt heads is due to greater participation in the labor market (3,37% versus -1,81%) associated with a gain in working hours (0,59% versus -0,69%) and lower impact of unemployment (-1,13% vs. -1,49%) combined with higher salaries (4,19% versus 3,1%). The spouses went to the labor market to compensate for the loss of income of their husbands, and were able to leverage income, hours and the occupation itself.