

***Brazilian Income Policies**
***Social Economics and Public Policy**
Marcelo Neri

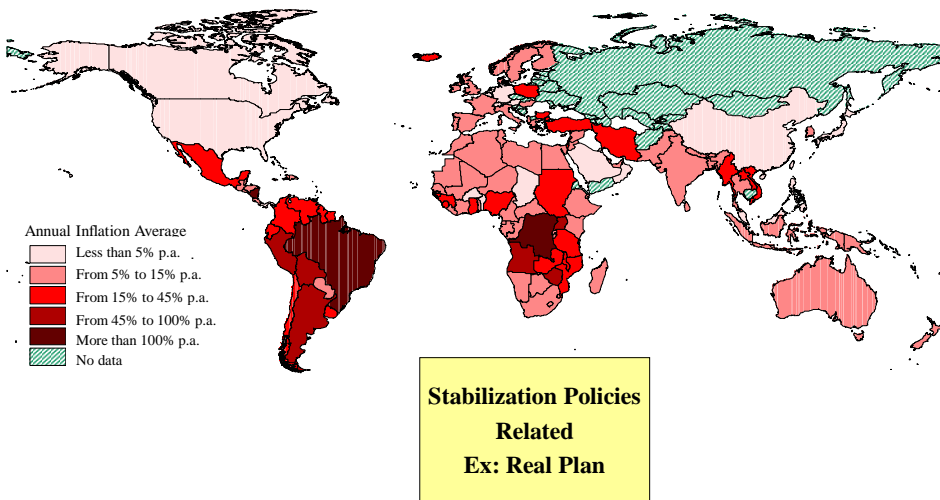
POLICY ORIENTATION:

Official Cash Transfers
Ex: Bolsa Familia

Income Setting
Ex: Minimum Wage
(traditional effect)

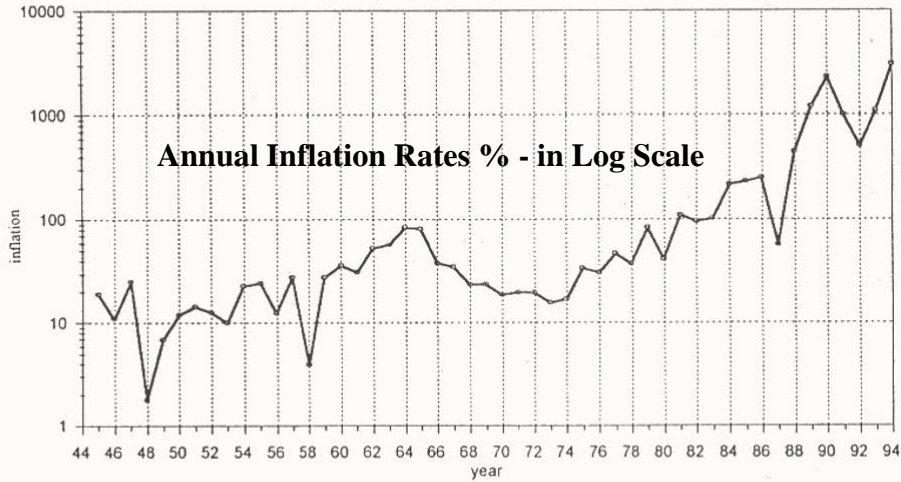
Stabilization Policies
Related
Ex: Real Plan

World Map – Average Inflation Rate (Consumer Prices)
 1970 - 2008



Source: IMF

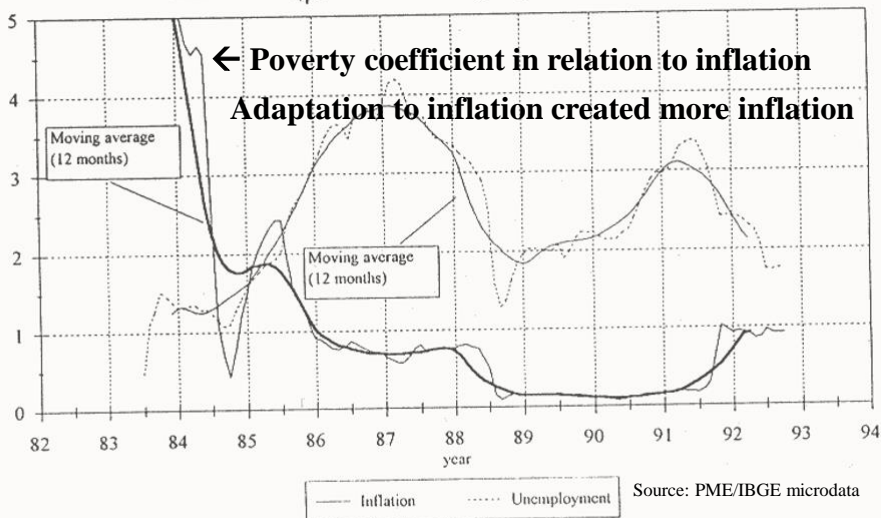
Figure 1: The long-term evolution of the annual inflation rate in Brazil



Notes:

1. Data source: IBGE (1987) and Revista de Conjuntura Econômica (1988 to 1994).
2. Inflation is measured by the variation in IGP-DI from January of each year to January of the next year.

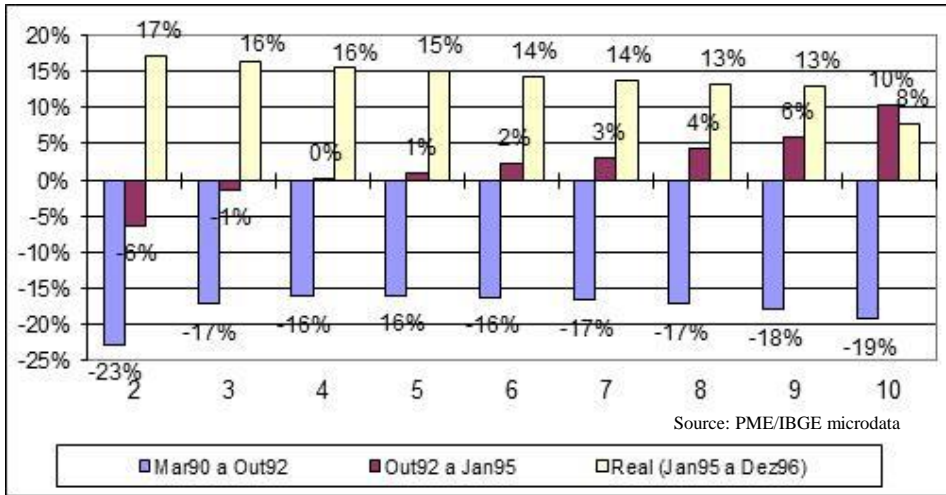
Figure 9: Regression coefficients on inflation (β) and unemployment (η)



Notes:

1. Data source: Regressions of poverty against inflation and unemployment. Each one using data for a period of 36 months.
2. Both moving averages are weighted moving average, where the weights are the inverse of the standard error of the estimates regression coefficient.
3. The inflation coefficient measures the impact on poverty of an increase in inflation of 5 percentage points.

Annual Growth Rate of Per Capita Household Income per Decile



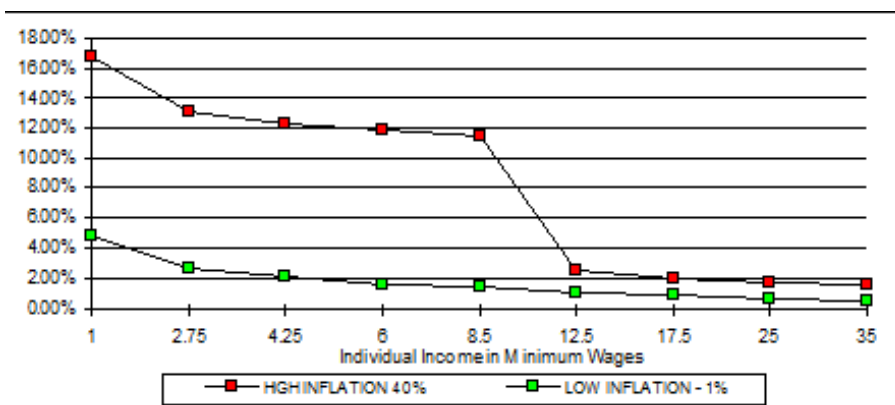
Collor
Progressive
Recession

Itamar
Inflationary &
Regressive

Cardoso (FHC) Start
Progressive
Expansion

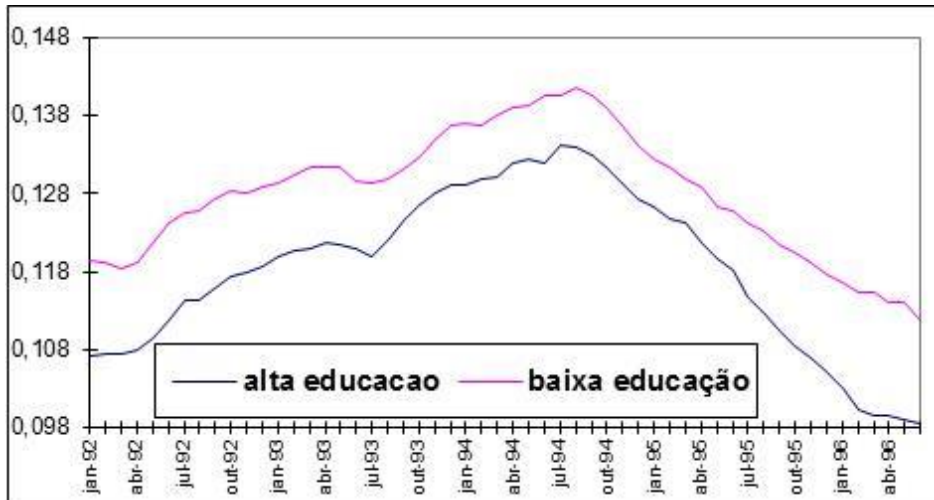
Inflationary Tax and Income Distribution

Relative Inflationary Loss by Range of Income by Minimum Wage



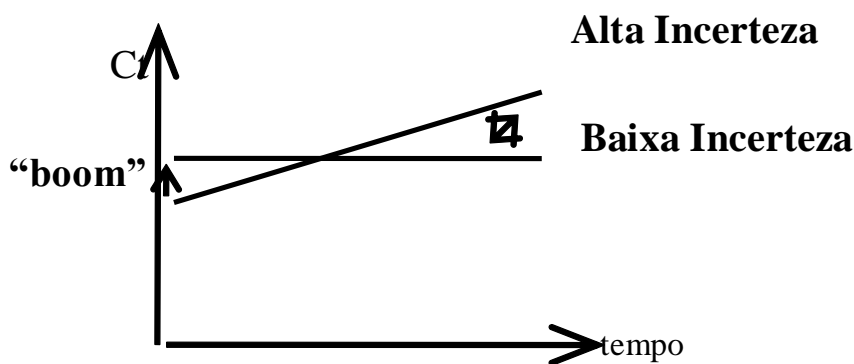
Source: microdata from PME/IBGE - 6 Principais Regiões Metropolitanas

Temporal Variability 4 Months – Individual Median Years of Schooling



Source: PME/IBGE microdata

Consumption Boom & Uncertainty Fall

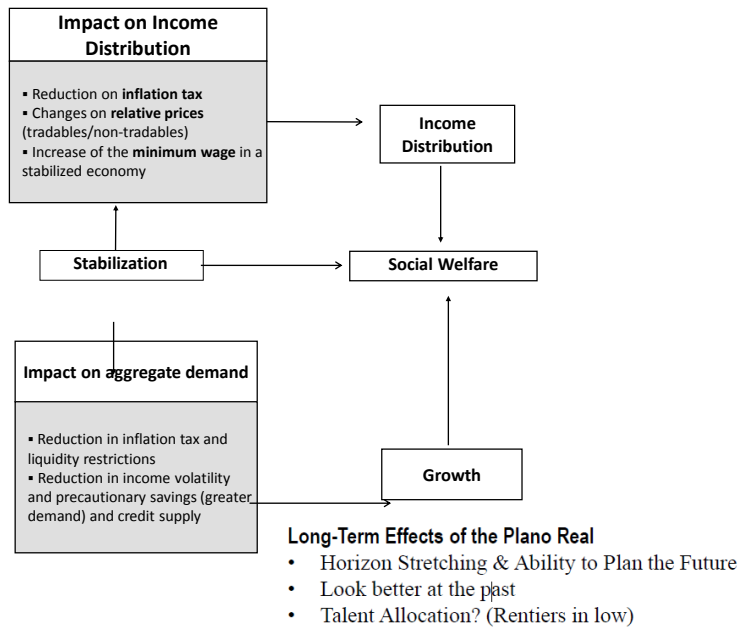


$$\text{Max } E_t \left[\sum (-1/\alpha) \exp(-\alpha C_t) / 0 \right]$$

$$\text{Subject to: } A_{t+1} = (A_t + Y_t - C_t) (1 + r_t)$$

$$\text{FOC: } C_{t+1} = C_t + \alpha\sigma/2 + et \text{ (Euler Equation)}$$

Immediate Impacts of the Plano Real on Social Welfare

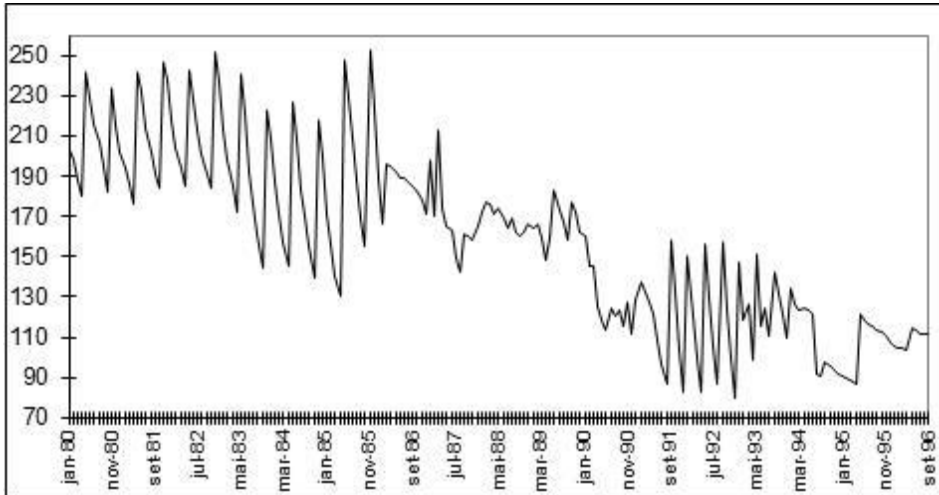


Minimum Wages Trends

Income Setting
Ex: Minimum Wage
(traditional effect)

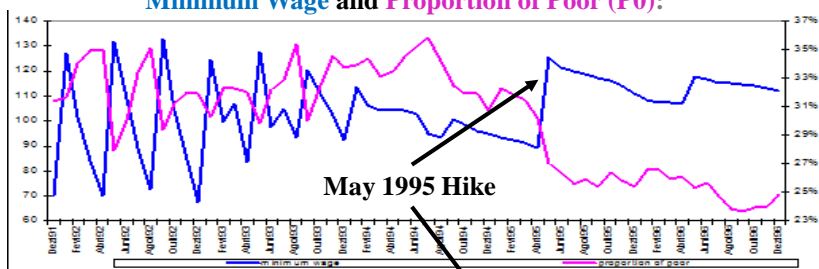


Minimum Wage High Inflation years

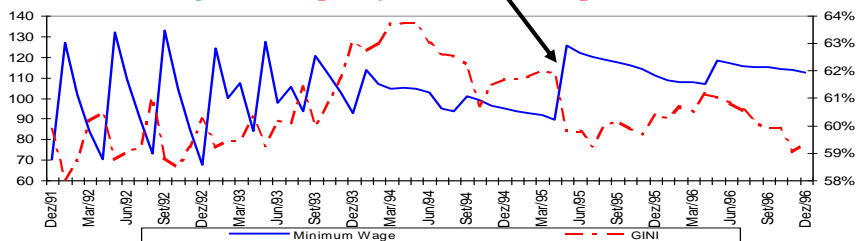


Minimum Wage and Labor Income Based Indicators

Minimum Wage and Proportion of Poor (P0):

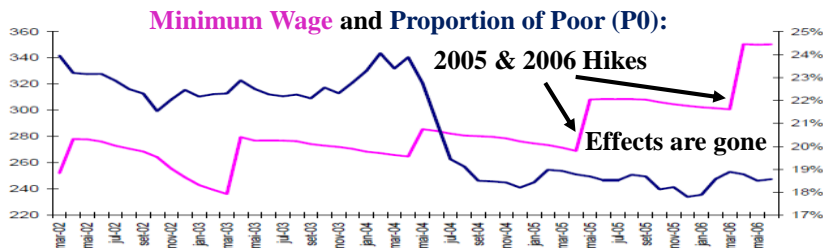
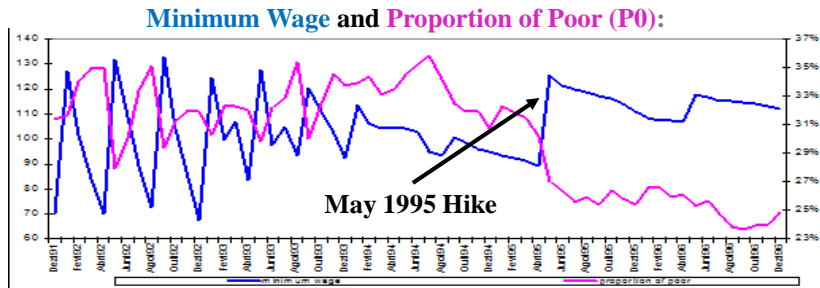


Minimum Wage and Inequality (Gini) of Per Capita Labor Income



Source: PME/IBGE microdata

Minimum Wage and Labor Income Based Indicators

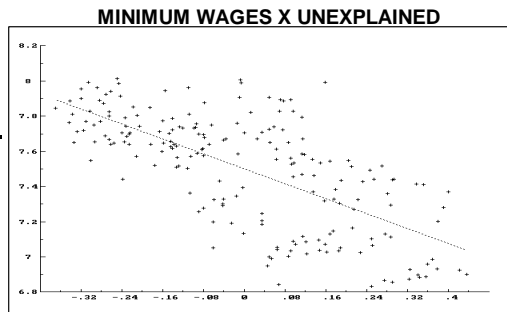


Source: PME/IBGE microdata

Partial Regression Analysis

Monthly Data In Logs

MONTHLY DATA IN LOGS			
BRAZIL			
Poverty Line	LOW	MEDIUM	HIGH
Inflation Rate	0.018	0.017	0.013
	3.32	4.154	4.344
Unemployment Rate	0.377	0.262	0.176
	8.548	7.95	7.594
Minimum Wage	-0.434	-0.305	-0.219
	-11.449	-10.743	-11.012

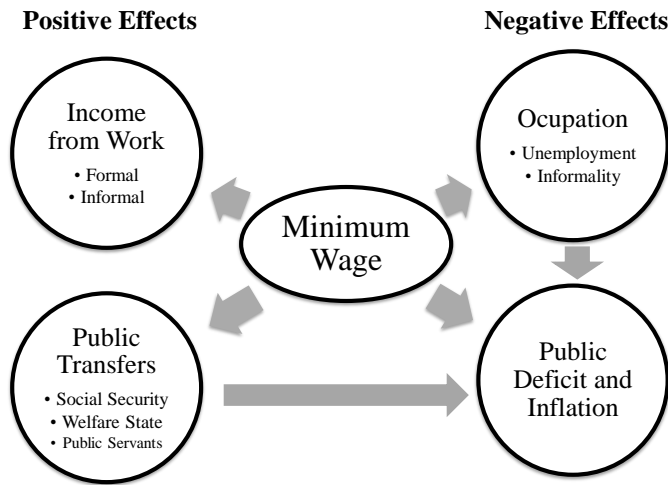


Source: PME/IBGE microdata

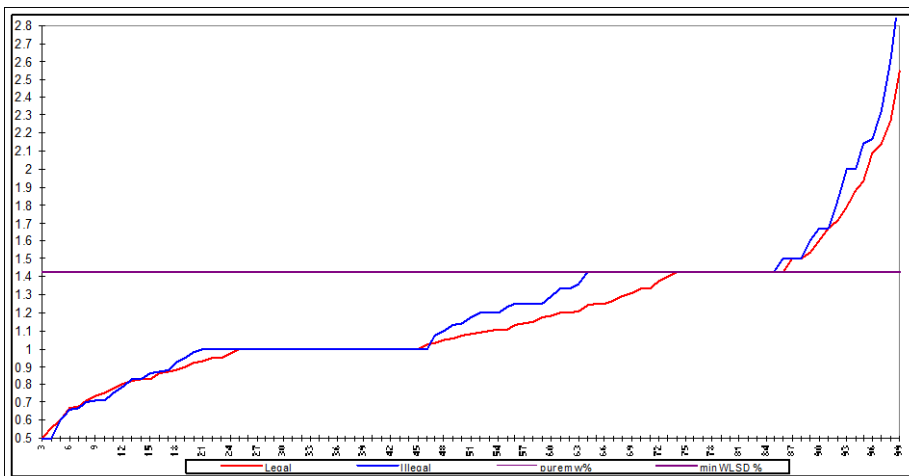
p.s.: Small numbers correspond to the t-statistic

* Residual of the regression of the Head-Count Ratio against inflation and unemployment

Minimum Wage Effects

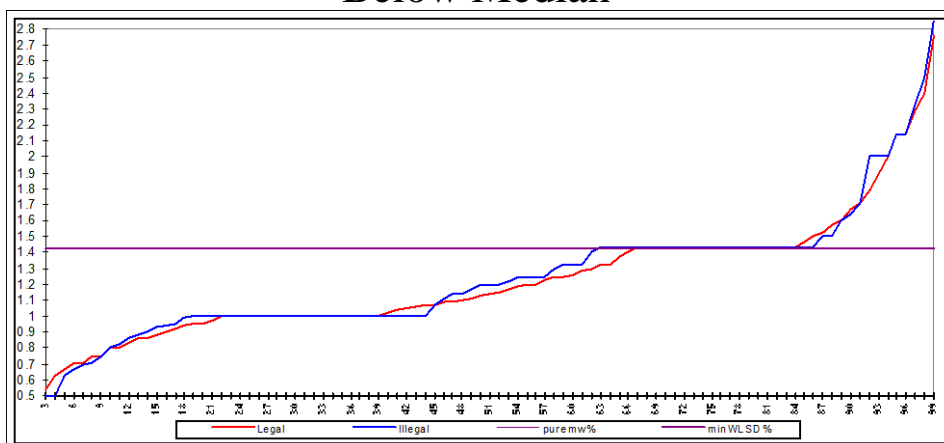


May 1995 Minimum Adjusts from R\$ 70 to R\$ 100
 Nominal Monthly Wage Adjustment Factor
 Formal x Informal Employees



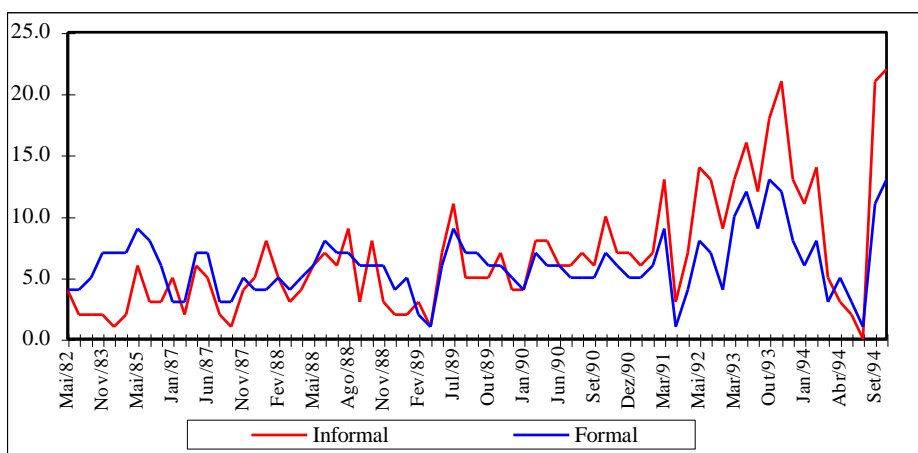
Source: PME/IBGE microdata

May 1995 Minimum Adjusts from R\$ 70 to R\$ 100 Nominal Monthly Wage Adjustment Factor Formal x Informal Employees with Schooling Below Median



Source: PME/IBGE

Share of Nominal Monthly Wage Adjustments Equal to the Minimum (%) - Employees Formal X Informal



Source: PME/IBGE

Effective Workweek, Before and After the Change in the Constitution

(The Legal Maximum Was Lowered from 48 to 44 Hours in 1988)

Hours per week	Legal Employees		Illegal Employees	
	1987	1990	1987	1990
0-30	9	11	9	9
30	5	5	4	6
30-40	5	7	4	5
40	30	31	21	22
40-44	1	1	1	1
44	3	20	3	8
44-48	6	4	4	4
48	32	15	25	19
48-60	6	4	14	15
60 and +	3	2	15	11
All	100	100	100	100

Source: PME/IBGE microdata

Variability

Indicator	Sector of Employment	
	Formal: With Signed Card	Informal: Without Signed Card
Payroll Taxes (% of Workers whose firms...)		
Paid INSS Contributions	94.5	4.5
Paid FGTS Contributions	95.0	5.0
Wage Regulations (% of Workers with...)		
Payment Period of Exactly One Month	83.0	79.0
Paid Exactly One Minimum Wage	7.0	14.0
Wage Change = Minimum Wage Increase		
- March 1990 to January 1994	6.9	10.3
- September 1994 to May 1995	12.0	21.5
Hours Restrictions (% of Workers)		
Workweek Equal to Journey		
1987 (before Constitution)	32	25
1990 (after Constitution)	20	8

Source: PME/IBGE

What?

Many of the characteristics found in the legal labor market in Brazil are also found in the illegal segment. Furthermore, this similarity appears to be largely influenced by labor market regulations set by the government. In other words, the labor laws affect not only the regulated sector, but the "unregulated" sector as well. In most cases, we find that the typical kinks and corners produced by legislation on formal labor markets outcomes distribution are also present in the informal labor market segment.

Other regulations that are related not with the firm-employee relationship per se but with the relation of both these agents with the government are quite different. Specifically, we contrast the public-private outcomes observed in the legal with the illegal segments of the Brazilian labor market, such as the payment of social security contributions and firing fines to the government. We find substantial legal-illegal differences between contribution patterns.

Why? Informality in Brazil is mainly a fiscal phenomenon.

Labor legislation seems to substantially affect the work relationships (wages, hours, and payment practices) not just in Brazil's regulated sector – which would be expected – but also those of illegal employees. A plausible explanation for this effect of labor legislation in illegal labor markets is the possibility that employees can take their respective employers to court – which have sweeping powers under current Brazilian law – in order to force them to pay for their legal working rights, whether or not their contract had been ratified by the Ministry of Labor. Given the high probability of the cases being resolved in favor of the worker, employers accord these workers all the rights under the labor law even when they do not have legal contracts. The nature of enforcement of labor laws therefore endows informal sector workers "*ex post* legality" even though these workers are "*ex ante* illegal".

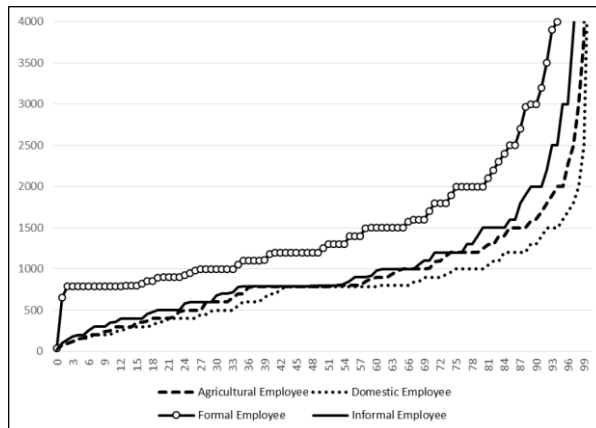
In contrast, the relationship of illegal employees – and hence of their employers – with the government in terms of payroll taxes (e.g., social security contributions) is significantly different from the one found for the legal sector. These findings can be read as an evidence that informality in Brazil may be largely explained by the level of payroll taxes and the design of the programs they fund, and not by the effect of restrictions of labor laws within the private regulated sector. The latter could be because of the ambiguity in the design of labor legislation and slanted nature of its enforcement by labor courts. *Ceteris paribus*, the incentives to stay informal are higher for workers who are assured of protection under labor legislation regardless of the nature of their contract, which only alters their financial relationship with the government.

Positive Income from Main Work - 2015

	% Positive	< MW	MW	> MW
Total	43.72	17.46	10.31	72.22
Working Class				
Agricultural Employee	99.57	36.31	15.88	47.81
Domestic Worker	99.79	43.14	17.41	39.45
Formal Worker	100	1.53	11.24	87.22
Informal Worker	100	34.59	12.7	52.71
Self-Employed	99.98	34.37	5.33	60.29
Employer	99.97	2.89	2.23	94.88
Public Servant	99.99	4.13	11.87	84
Region - Without Rural North				
North	40.17	22.24	14.36	63.4
Northeast	37.51	36.09	18.07	45.84
Southeast	46.22	10.35	7.66	81.99
South	48.12	10.99	5.06	83.95
Center	47.46	10.75	9.25	79.99
State - Without Rural North				
AL	32.14	30.37	25.21	44.42
SP	47.41	7.9	4.4	87.7
Public Servant by Level of Government				
Federal	100	4.54	3.73	91.74
State	100	2.9	4.48	92.63
Municipality	99.98	4.75	18.51	76.74

Source: FGV Social with PNAD's microdata

Positive Lorenz – Labor Income Level by Working Class (2015)



Source: FGV Social with PNAD's microdata

Variables as Controls (↓)		Statistical Significance	Odds Ratio
Sex	Women	**	1.7750
	Men		1.0000
Age	15 to 19 years old	**	1.5138
	20 to 24 years old	**	1.5574
	25 to 29 years old	**	1.1152
	60 or more years old		1.0000
Schooling	1 to 3 years	**	5.7109
	12 years or more		1.0000
Working Class	Self-Employed	**	2.1459
	Agricultural Employee	**	6.0701
	Domestic Worker	**	7.5945
	Formal Worker	**	5.7409
	Informal Worker	**	5.6653
	Public Servant	**	6.6156
State with Minimum Wage Floor	Employer		1.0000
	No	**	2.6601
Year	Yes (RJ, RS, SC, PR, SP)		1.0000
	2015	**	1.4964
	2001		1.0000

Logistic Regression:

Income from Work = Minimum Wage

** : statistical significance at 95%

Source: FGV Social with PNAD's microdata

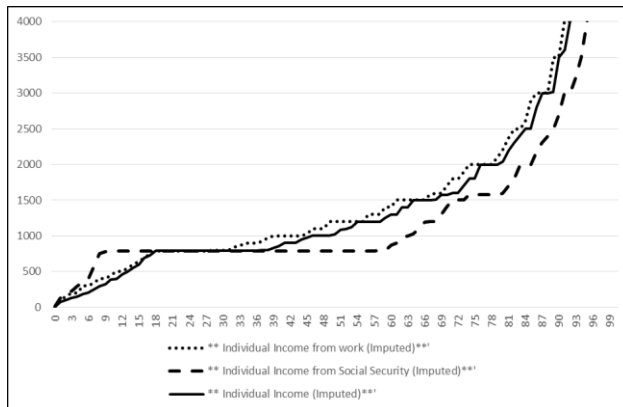
Logistic Regression: Income from Work = Minimum Wage (Interactive Variables)

Interactive Variables (↓)		Statistical Significance	Odds Ratio
State with Minimum Wage Floor	No	**	2.2823
	Yes (RJ, RS, SC, PR, SP)		
Year	2015	**	1.1934
	2001		
State with Minimum Wage Floor * Year	2015 * No	**	1.3346
	2015 * Yes		1.0000
	2001 * No		1.0000
	2001 * Yes		1.0000

** : statistical significance at 95%

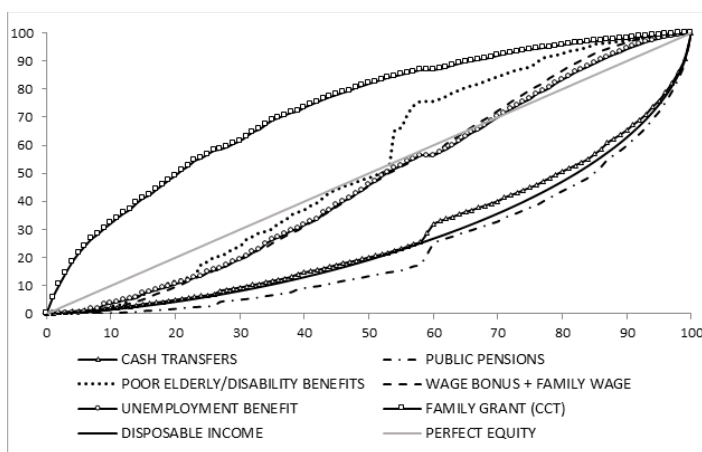
Source: FGV Social with PNAD's microdata

Positive Lorenz – Imputed Individual Income Concepts (2015)



Source: FGV Social with PNAD's microdata

Concentration Curves of Cash Transfers ordered by Disposable Income (2015)



Source: FGV Social with BRAHMS microsimulations

**Positive Income from Work and Minimum Wage:
Income with Imputed Income (2001 and 2015)**

Income Concept		Year	
		2001	2015
Income from All Works	% Positive	39.27	43.74
	< MW	18.92	17.27
	MW	8.62	10.14
	> MW	72.46	72.59
Income from Main Work	% Positive	39.21	43.72
	< MW	19.3	17.46
	MW	8.81	10.31
	> MW	71.88	72.22
Income from Social Security	% Positive	11.87	15.73
	< MW	5.56	9.41
	MW	47	47.21
	> MW	47.43	43.38
Income from All Sources	% Positive	49.85	61.43
	< MW	16.16	17.82
	MW	14.71	17.75
	> MW	69.13	64.43
per capita Income from All Sources	% Positive	98.52	99.56
	< MW	54.59	55
	MW	1.75	3.07
	> MW	43.66	41.93

Source: FGV Social with PNAD's microdata