



# Overview

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Pre-background on Fertility in Brazil

The current panorama of fertility in Brazil

Theoretical approaches

Data and methods

Results

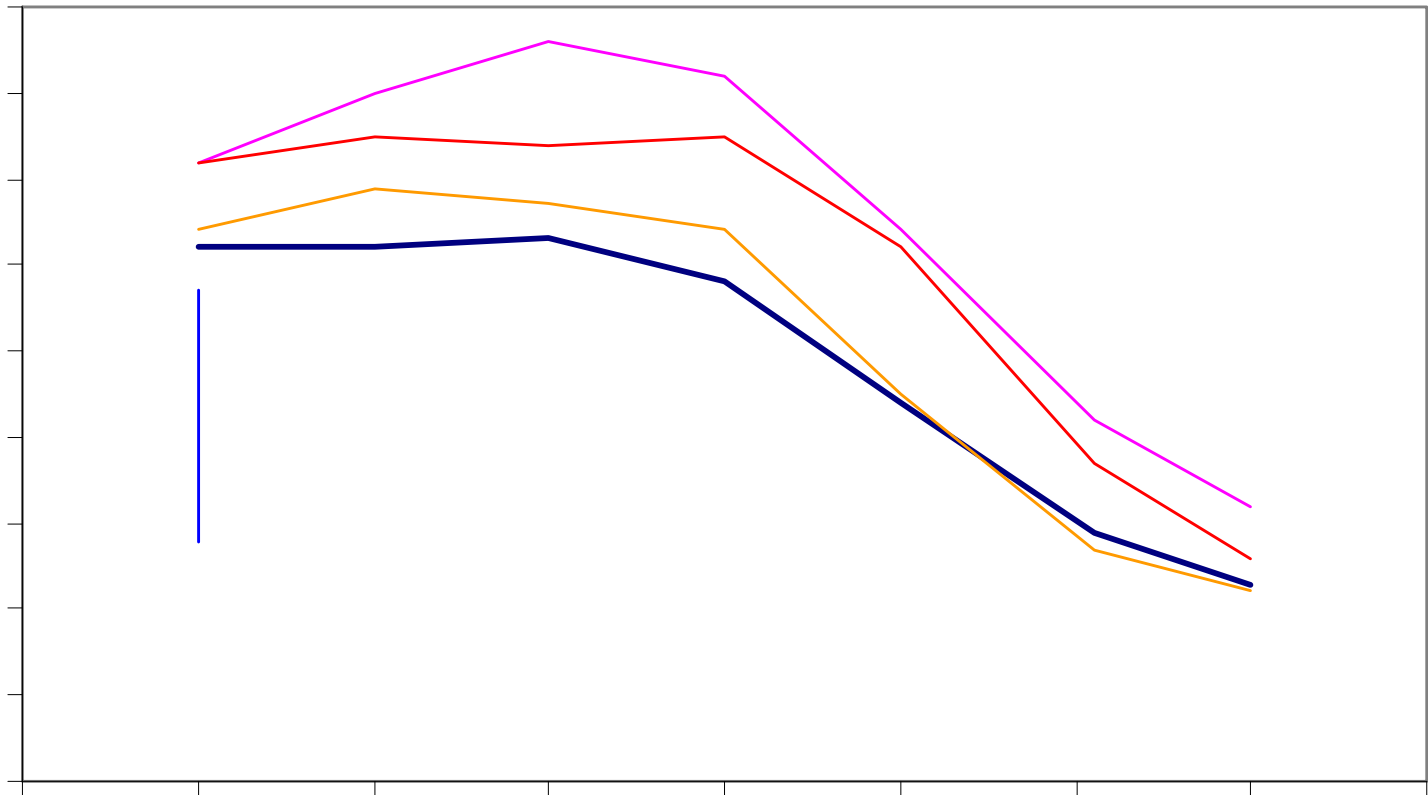
Discussion

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# Total Fertility Rates by regions. Brazil, 1940 to 2000.

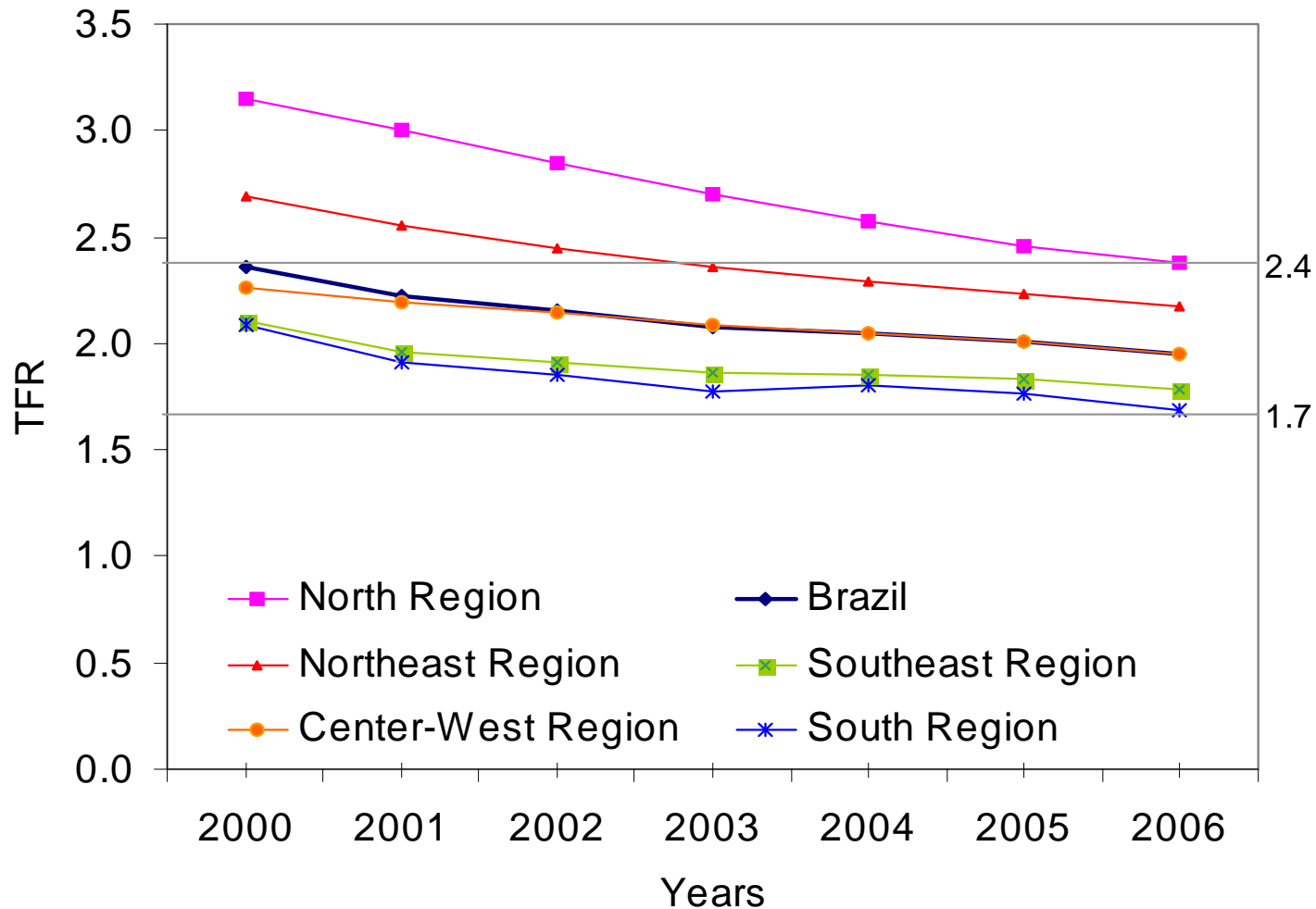
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Sources: Brazilian Demographic Censuses of 1940 to 2000.

# Total Fertility Rates by regions. Brazil, 2000 to 2006.



Sources: DATASUS, IDB 2008. Brazilian Demographic Census 2000; National Annual Household Surveys (PNAD) of 2001 & 2006.

# Current panorama of Brazilian fertility: what we know?

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1. TFR is below replacement level for the country (1.8 to 1.9 children per women)
2. There are large differentials by socioeconomic groups in TFR (ranging from about 4 to 1 children)
3. There are smaller differentials at regional levels in TFR (2.4 to 1.7 children)
4. Fertility is concentrated at ages below 29
5. High ASFR for women aged 15-19 (high adolescent and young motherhood – average about 80 children per thousand women)
6. Large socioeconomic differentials for adolescent motherhood (28 per thousand for wealthier to 220 for the poorest)
7. High prevalence of contraception (80% of current use and 72% is modern contraception – hormonal + female sterilization)
8. High incidence of birth interruption (figures are not certain but it ranges from (1 abortion to each 4 births to 1 to each 3 births)  
(600,000 to 1,000,000 yearly to 3,000,000 births)

# What is (and will be) the future path of low and lowest-low fertility in Brazil? - Brief approaches.

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Bongaarts    the lowest-low fertility is due the momentum (quantum vs timing of fertility) – there is a postponement of birth    cohort fertility will be at replacement level or around it at the end of reproductive life.

Lesthaeghe and others

# Objective

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The objective is to investigate whether the timing of childbearing in Brazil has the same pattern: having fewer children and having them early, for several socioeconomic groups, in order to predict the path of fertility in the future in Brazil, and to understand why and how the fertility schedule is so different from other low fertility experiences.



# Data and methods

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Data: for TFR and ASFR calculations from:

Demographic Census

Population and household annual surveys (PNAD)

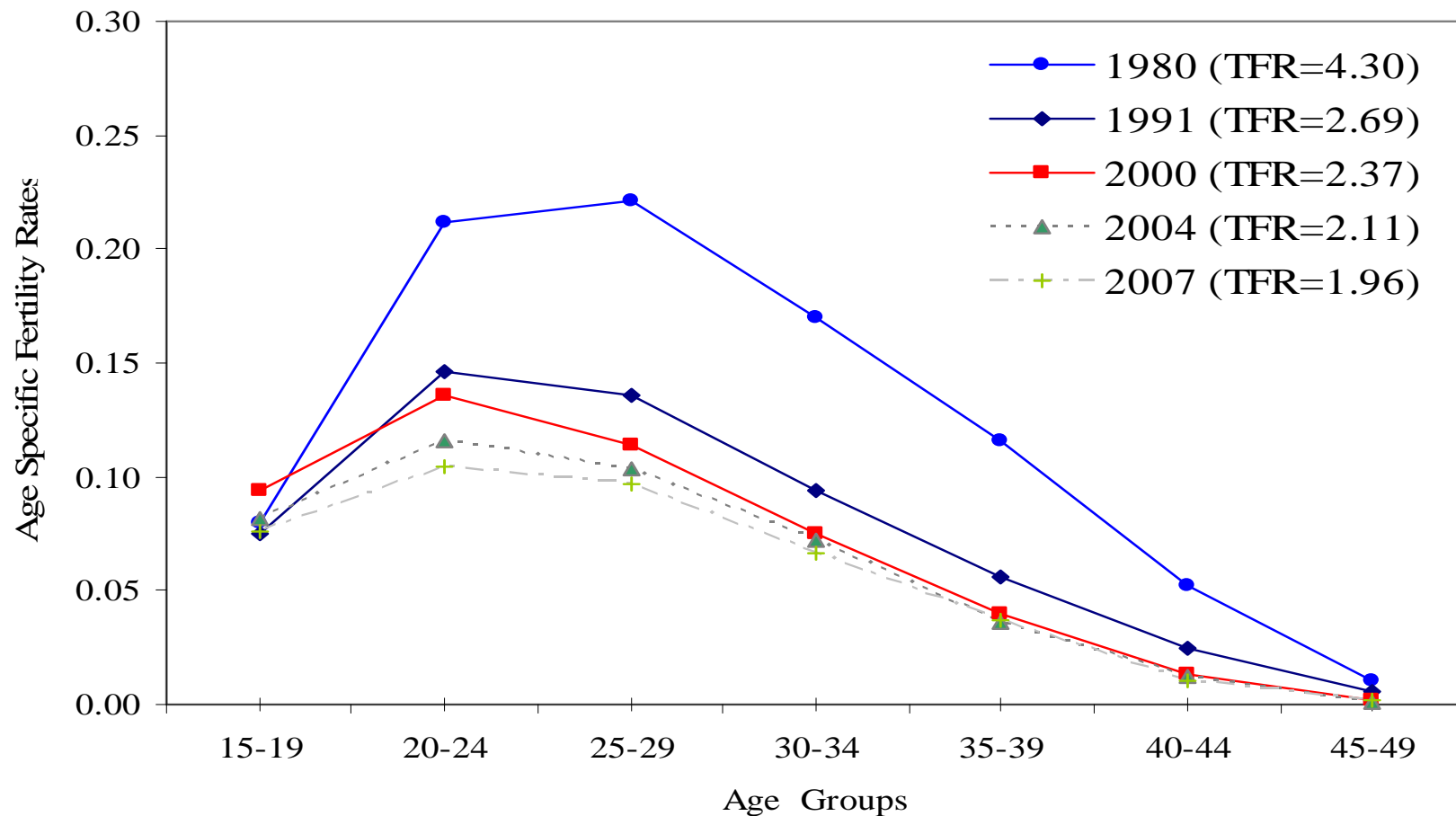
Demographic and Health Surveys (PNDS=DHS)

## Method

For Census and PNAD data: indirect method (P/F Brass)

For DHS: direct method as average of previous 5-years

# ASFR and TFR, Brazil, 1980, 1991, 2000, 2004, and 2007.

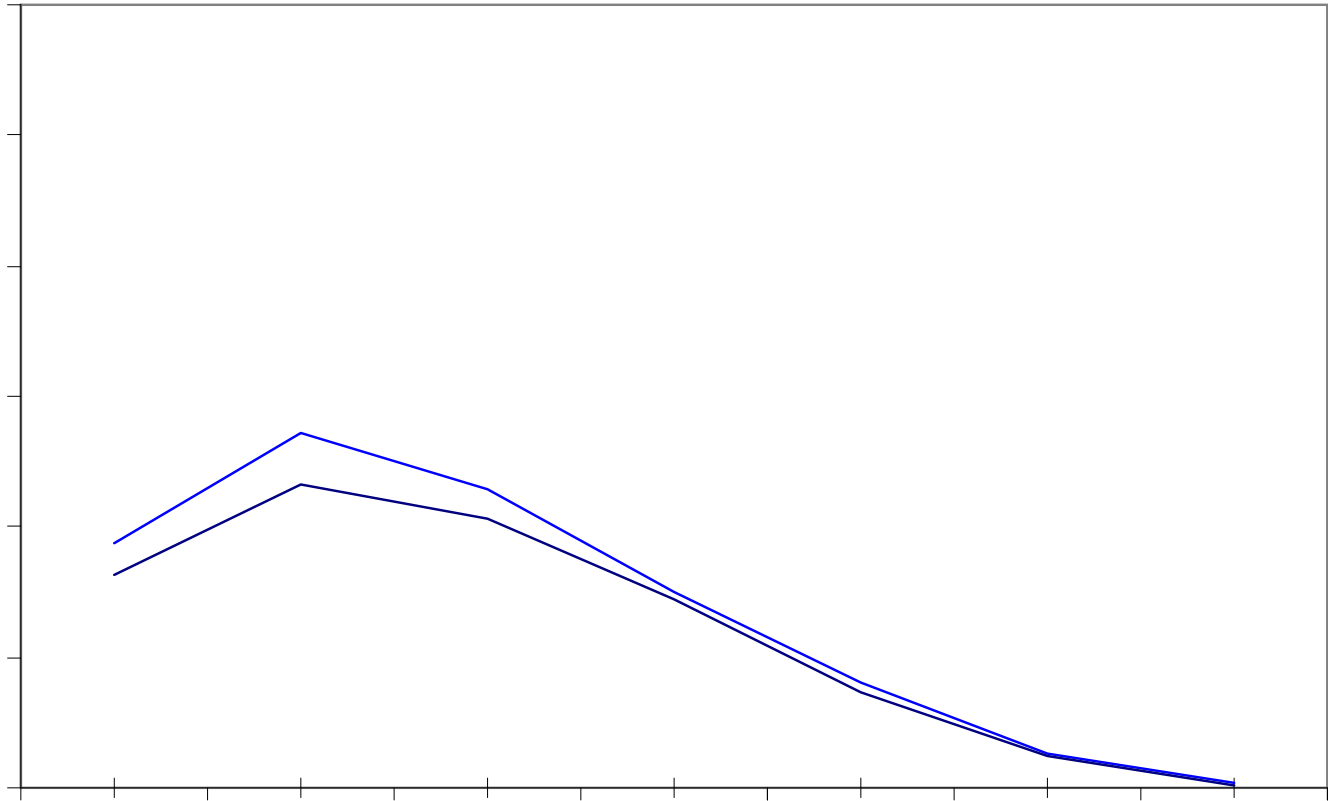


Sources: Brazilian Demographic Censuses of 1980, 1991 & 2000; National Annual Household Surveys (PNAD) of 2004 & 2007.

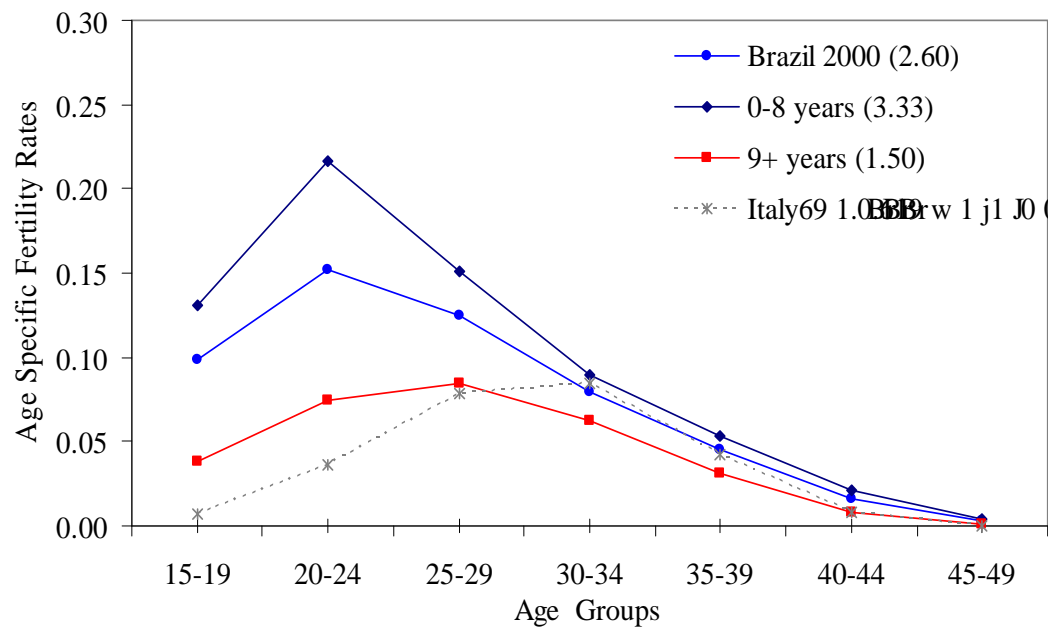
**Note:** Comparison on Census and PNAD data must be taken with care.

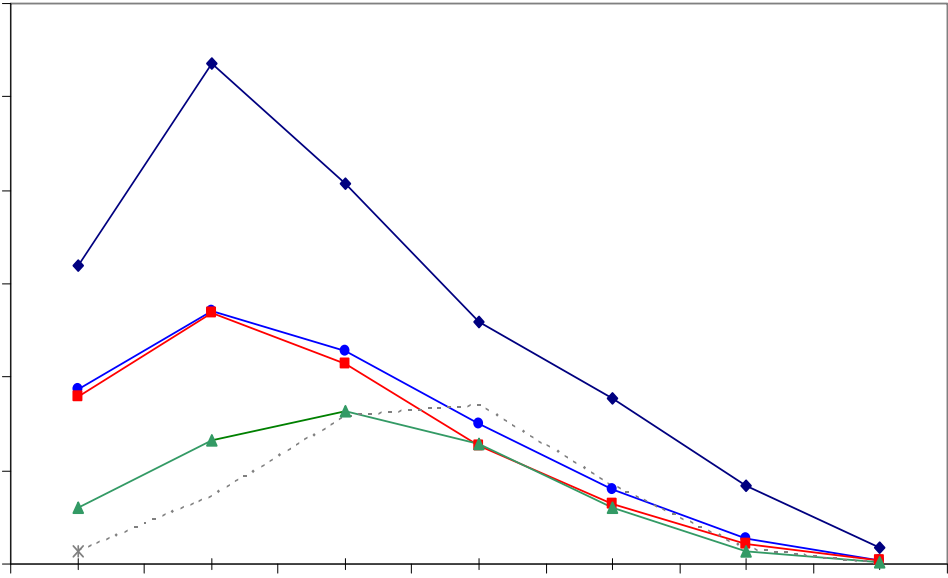
# ASFR (and TFR between parenthesis) in selected countries, circa 2000-2007.

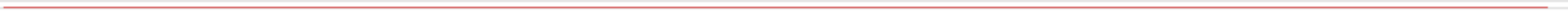
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# ASFR by women's education, Brazil, 2000 and 2007.







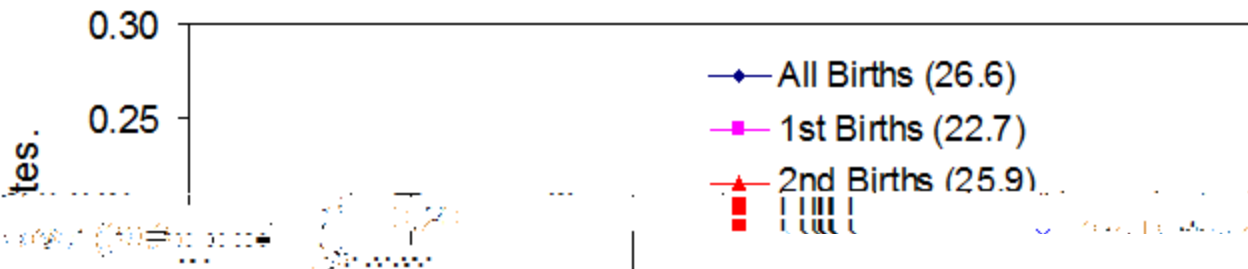
# Selected indicators (TFR, Average age of fertility and postponement index), Brazil 2000 and 2007.

	2000				2007			
	Women 15-49		Index		Women 15-49		Index	
	26.4	0.52	1.96	52,908,370 (100.0)	26.5	0.57	1.96	46,242,336 (100.0)
Lower income group	26.8	0.57	3.10	17,118,824 (32.4)	26.0	0.43	4.50	17,425,994 (26.9)
Middle income group	25.9	0.45	1.72	25,223,139 (47.7)	26.7	0.59	2.22	28,390,356 (50.5)
Upper income group	27.9	0.69	1.10	10,566,417 (20.0)	29.7	1.18	1.11	10,485,986 (22.7)
0-8 years of education	26.0	0.46	3.07	25,006,852 (47.5)	25.3	0.37	3.33	30,292,406 (65.5)
9 or more years of education	27.5	0.64	1.48	22,585,489 (52.5)	27.2	0.79	1.50	15,475,326 (33.5)
Lower income	26.7	0.56	3.20	16,984,664 (32.1)	26.7	0.59	3.20	16,984,664 (36.7)
Middle income	26.7	0.56	1.72	25,223,139 (47.7)	26.7	0.59	2.22	28,390,356 (61.3)
Upper income	27.9	0.69	1.10	10,566,417 (20.0)	29.7	1.18	1.11	10,485,986 (22.7)
Lower income group	26.7	0.56	3.20	16,984,664 (32.1)	27.2	0.57	2.44	1,112,189 (2.4)
Middle income group	26.7	0.56	1.72	25,223,139 (47.7)	27.3	0.60	1.67	7,012,744 (15.3)
Upper income group	27.9	0.69	1.10	10,566,417 (20.0)	29.7	0.79	1.11	2,359,403 (5.1)
Portugal / 2004	1.40				29.2	0.96		
Italy / 2003	1.28				30.3	1.18		
Spain / 2002	1.27				30.8	1.63		
France / 2003	1.87				30.0	1.01		

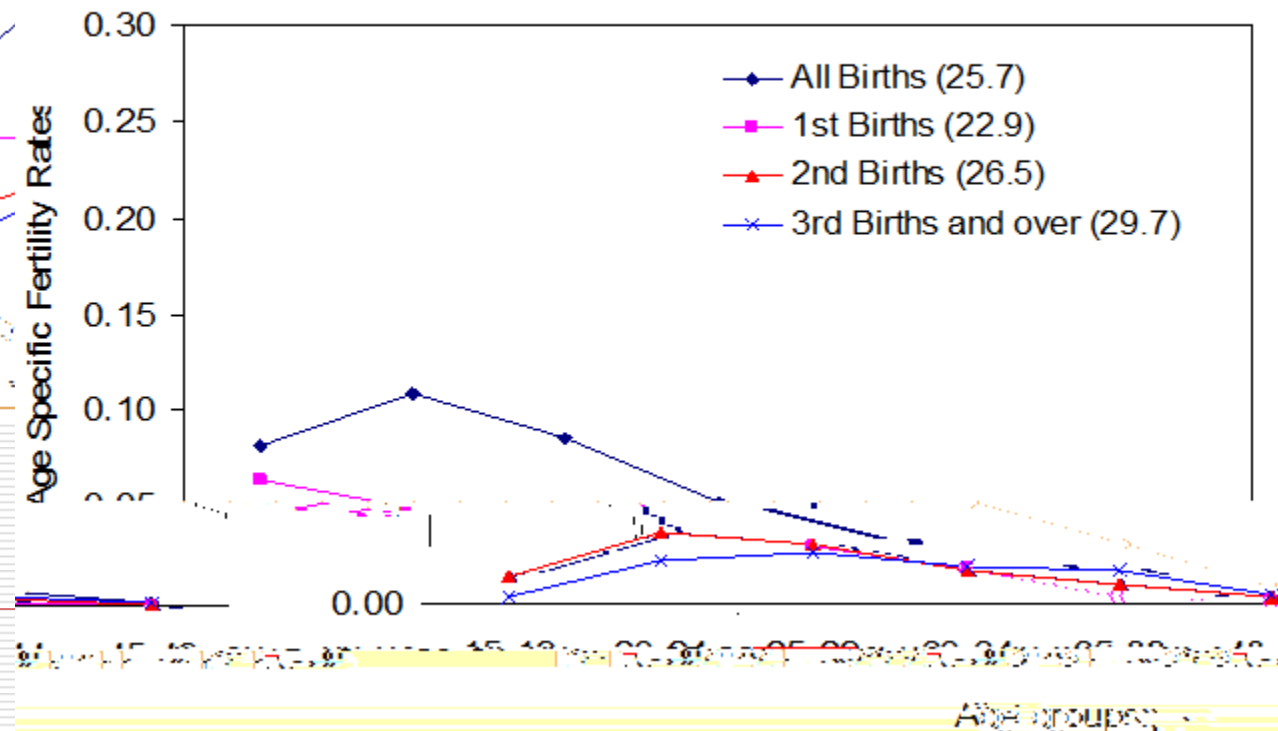
PPB World Sources: 2000 Brazilian Demographic Census, 2007 National Annual Household Survey (PNAD), and

# ASFR by birth order and education, Brazil, 1996 and 2006.

A- All women, 1996



B- All women, 2006

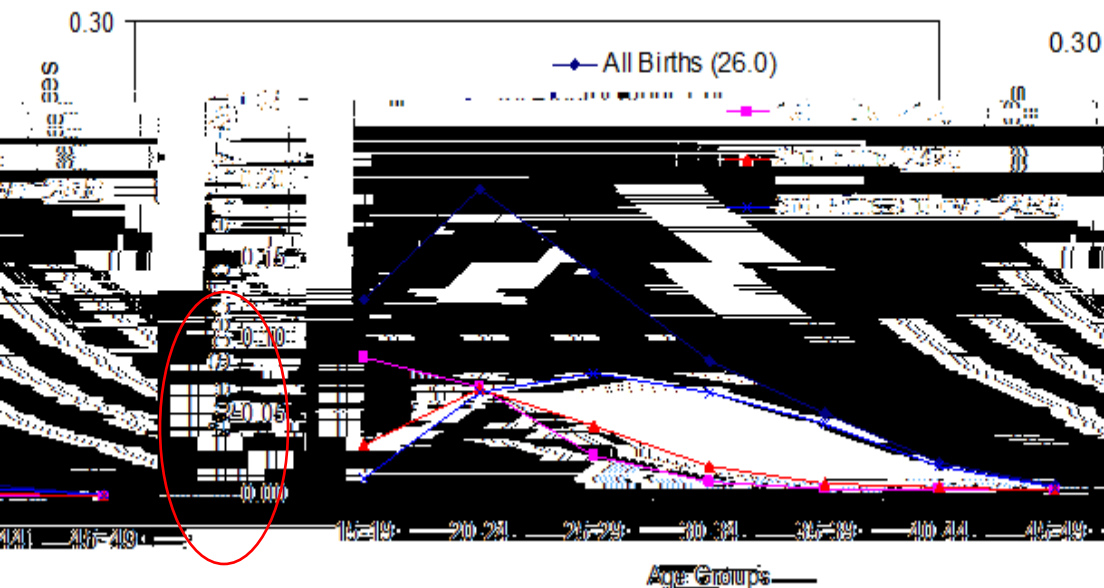


Source: PNDS 1996 & 2006.

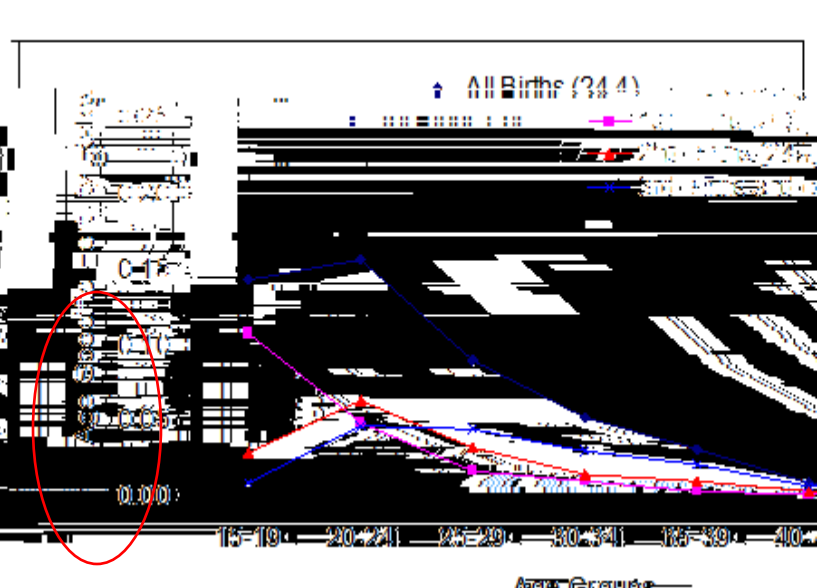


# ASFR by birth order and education, Brazil, 1996 and 2006.

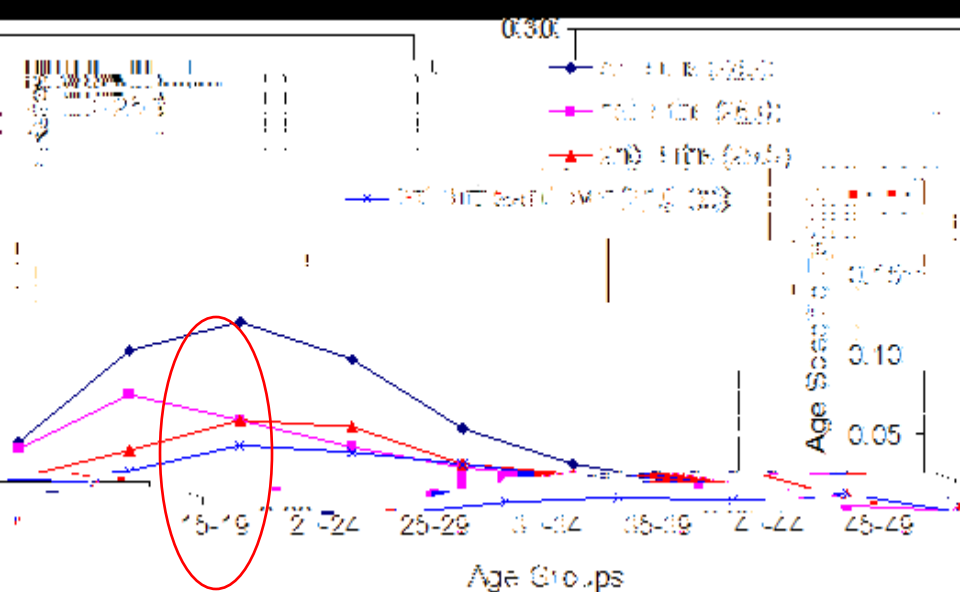
C- 0-8 years of schooling, 1996



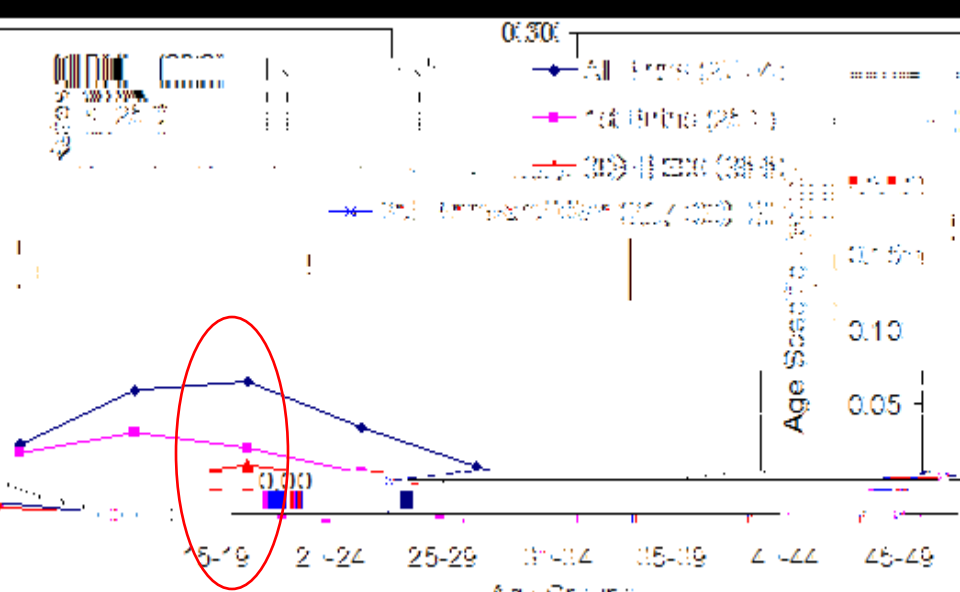
D- 0-8 years of schooling, 2006



A- 9 or more years of complete schooling, 1996



B- 9 or more years of complete schooling, 2006



Summary statistics on ages at sexual intercourse initiation, union, first birth (first contraceptive use and first pregnancy), Brazil, 1996 and 2006.

**1996**

Variable	N	Mean	Std Dev	Min	Max	25th	50th	75th
Age at sexual intercourse initiation	10,150	17.5	1.2	15	20	16	18	19
Age at union	10,150	19.5	1.5	17	22	18	20	21
Age at first birth	10,150	21.5	1.8	19	24	20	22	23
Age at first contraceptive use	10,150	18.5	1.3	16	21	17	19	20
Age at first pregnancy	10,150	20.5	1.6	18	23	19	21	22

**2006**

Variable	N	Mean	Std Dev	Min	Max	25th	50th	75th
Age at sexual intercourse initiation	10,150	18.5	1.3	16	21	17	19	20
Age at union	10,150	20.5	1.6	18	23	19	21	22
Age at first birth	10,150	22.5	1.9	20	25	21	23	24
Age at first contraceptive use	10,150	19.5	1.4	17	22	18	20	21
Age at first pregnancy	10,150	21.5	1.7	19	24	20	22	23

Summary statistics on ages at sexual intercourse initiation, union, first birth (first contraceptive use and first pregnancy) for women aged 25-49 with 0-8 years of schooling, Brazil, 1996 and 2006.

## 1996

0-8 years of schooling	N	Mean	Std. Dev.	Min.	Max.	25th	50th	75th
A- Age at first sexual intercourse	5293	18.7	4.0	8	47	16	18	21
C- Age at first union	5326	20.0	4.4	10	47	17	19	22
B- Age at first birth	5265	21.0	4.2	10	47	18	20	23

## 2006

0-8 years of schooling	N	Mean	Std. Dev.	Min.	Max.	25th	50th	75th
A- Age at first sexual intercourse	5966	17.7	3.5	7	46	15	17	19
B- Age at first contraceptive use	5555	19.9	4.5	10	48	17	19	22

# Is there still room for fertility decline?

Looking at estimates of unwanted (or wanted) fertility, the answer is YES... it will continue to decline next years.

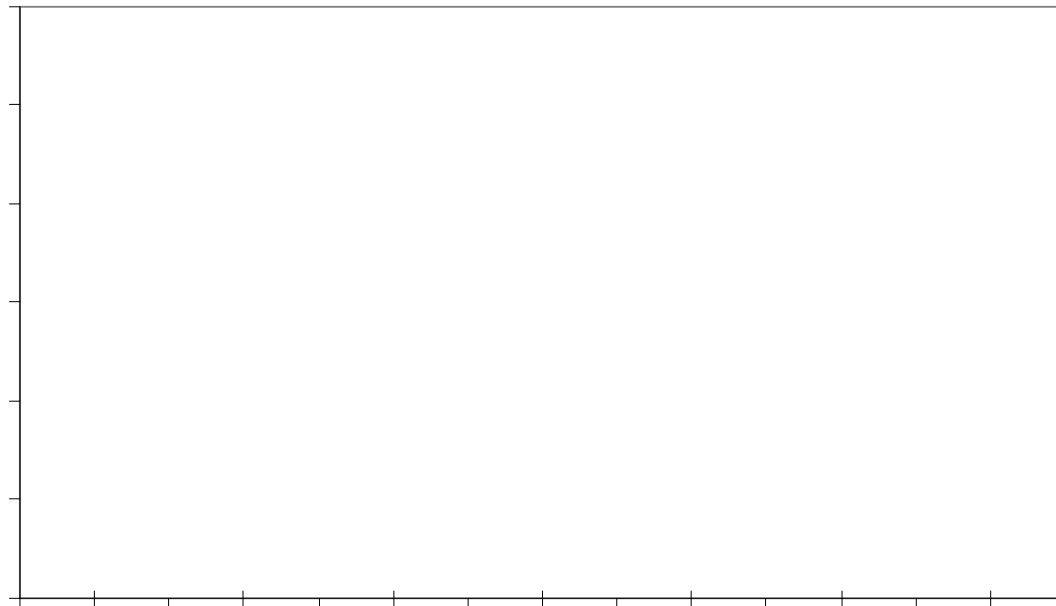
*UNWANTED FERTILITY ESTIMATES FROM DIFFERENT METHODS, BRAZIL, 1996 AND 2006.*

Percent of Births				Total Fertility Rates			
Wanted		Unwanted		Overall		Unwanted	
1996	2006	1996	2006	1996	2006	1996	2006
3.42	1.15	1.37	1.60	1.92	1.96	29.2	43.1
0.54	0.75	1.07	1.16	1.37	1.96	28.7	44.4
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: Casterline and Mendonza (2009).

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Lets see again some of the current patterns of fertility and levels...



# Closing: TFR and ASFR model for Brazil

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Brazilian future fertility has three more probable path to follow:

1. Mediterranean country  
Lowest-low fertility levels  
Later on timing of childbearing
2. American Model (and some Northern Europe countries)  
TFR around replacement level  
Young timing of childbearing (ages 20-24 and 25-29)
3. A mixture of both  
Lowest-low fertility levels  
Young timing of childbearing (ages 20-24 and 25-29)

Our take to where Brazilian Fertility will go: Model 3

Lowest-low fertility levels

Young timing of childbearing, but at **ages 15-19 and 20-24** in the short and medium period (next 10 to 15 years) ... then some postponement will take place bringing TFR even lower.

# The future of population in Brazil will depend on both:

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1. The lowest-low levels of TFR
  2. Young fertility schedules regimes

Future work: The impacts of lowest-low levels of TFR on a rejuvenated schedule of fertility in the **population growth and age structure.**

# Thanks!

