Yong people transitions for the labor market, first birth and the exit from school:the Brazilian case

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1. INTRODUCTION

The economic literature in Brazil and Latin America, basically, had concerned with the transition that involves the exit from school and entry in the labor market. However, these studies, despite point to gender differences in the school/work activities, overlook the importance of including family formation in the scene, as an important intermediary or simultaneous processe to the entry in the labor market and to the leaving school.

This paper explores these three main transitions: entry in the labor market, exit from school and first birth. The purpose is to examine the relationship, in Brazil, between the ages at each transition occur.

In order to achieve the goals in section two reviews the previous literature, in section three describes the methodology and data used. In section four presents a descriptive analysis of the dataset. While section five presents the results from the survival analysis and, finally, in section six discusses the main findings

2. THE LITERATURE REVIEW

The theoretical framework of this investigation remits to the three set of studies: first, the traditional relationships between school and work that constitute main focus of the Brazilian economists and demographers. Second, those explores the individuals attribute and household characteristics of the transitions determinants: entry in the labor market, leaving school and first birth.

Following these two approach, some Brazilian studies analyze how the young people allocate time between working and study activities. In general, the purppose is search evidences of the determinants on these choices. These studies reveal that the family characteristic and demographic atribute are important. It stresses yet, the importance of the parents education, once that parents' highest education determine largely youth's choice by school (CORSEIL, SANTOS E FOGUEL, 2001; LEME E WAJNMAN, 2000).

Studies for Italy and Spain explores the causal relation between the the events, in other words, in which measure, the permanence at school delays the transition for the first union, or yet, in which measure, the first union trigger the early end of education. They also are explored the causal relation between entry in the labor market and leaving school. Moreover, if the first union would trigger the transition from school for the labor market. The literature also discusses that there can be unobservable characteristics that simultaneously affect both processes, in this case that it necessary specific treatment for them to get unbiesed results. (COPPOLA 2002)

Also it stresses the hypothesis that is based in the human capital theory, for instance, the entry in the union or in the labor market, without completing the school career, would negative effect the individual human capital stock, what would decrease the lifetime earnings due to disadvantages in the labor market as much as in the marriage market.

In the Latin-American literature to stand out Stupp and Cáceres (2001) that examine the relationship between the age at first birth and woman's education taking into account the age at completion of schooling in El Salvador. It analyzed the relative risk of having a first birth, to control by several women's characteristic, using the Cox´s Proporcional hazard. The main finding was that the age when woman leave school, and not the highest reached level, is a more

3. DATA AND METHODS

Data comes from the Brazilian Household Survey (PPV). This data set was a special application of the World Bank Living Standard Survey, conducted in Brazil only once in the years 1996/97. The data set is rather unique with some type of questions never found in other Brazilian Household surveys that are similar to the American CPS.

The retrospective age at the transitions are the main precious variables in the data set, because they entail the application of hazard models and other longitudinal analysis. These variables will be independent and dependent in simultaneous transition models.

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The first union or first birth analysis will be based on women's experience that had between 10 and 49 years in the date in the interview. The age at leaving school will be based on men and women's experience among those who have attended or had already attended school at that time of the interview, this way, people who did not attend and never had attended school are left censored and were eliminated from the database. At this moment, the main estimation procedure will be the survival analysis.

All events are distributed along time, thus, time's scale origin is defined from the beginning of the observation that can vary between individuals of a group in study. In the case of age at entering the labor force, the time's scale origin was 5 years of age. For the school exit, the age at school entry was 6 years of age. For the age at first birth, it was considered the age related by the interview in the birth history, regardless the age bracket of the female reproductive cycle (15 and 49).

This first exploratory analysis of the data will apply nonparametric analysis.

Survival Function

For some non negative value of t, F(t) is the survival time probability be smaller than T. Time can describe the aleatory variable, T, in terms of the probability of time of survival be at least T. This is the called Survival Function:

$$S(t) = 1 - F(t) = \Pr[T \geq t] \, t \geq 0$$

4. SAMPLE DESCRIPTION

The following tables presents sample description and contingency tables of association between the transition in the study.

Table 1
Sample distribution by sex and age – Southeast and Northeast, Brazil, 1996 and 1997

Age	Male	Female	Total
20-24	747	832	1579
25-29	660	756	1416
30-34	642	697	1339
35-39	550	597	1147
40-44	455	559	1014
45-49	391	403	794
Total	3445	3844	7289

Source: Author elaborated with data from IBGE. Pesquisa de Padrão de Vida.

Table 2
Men proportion, by age of entry in labor market and age of exit from school– Southeast and Northeast, Brazil, 1996 and 1997

Age of exit from school / Age of entry in labor market	Don't exit	To 15 years	16 to 19 years	20 to 24 years	Up to 25 years	Total
Don't entry	1.04%	0.26%	0.26%	0.35%	0.00%	1.92%
To 15 years	3.60%	36.95%	16.55%	8.16%	3.63%	68.88%
16 to 19 years	2.29%	5.66%	7.40%	4.91%	1.83%	22.09%
20 to 24 years	1.19%	0.99%	1.63%	1.86%	0.64%	6.30%
Up to 25 years	0.12%	0.12%	0.03%	0.29%	0.26%	0.81%
Total	8.24%	43.98%	25.86%	15.56%	6.36%	100.00%

Source: Author elaborated with data from IBGE. Pesquisa de Padrão de Vida.

Table 3
Women proportion, by age of entry in labor market and age of exit from school– Southeast and Northeast, Brazil, 1996 and 1997

Age of entry in labor market \ Age of exit from school	Don't exit	To 15 years	16 to 19 years	20 to 24 years	Up to 25 years	Total
Don't entry	1.95%	5.62%	2.37%	1.14%	0.16%	11.24%
To 15 years	2.71%	25.39%	10.30%	5.62%	2.16%	46.18%
16 to 19 years	2.68%	5.98%	8.64%	6.09%	1.95%	25.34%
20 to 24 years	1.27%	2.19%	3.69%	3.75%	1.30%	12.20%
Up to 25 years	0.26%	1.93%	1.01%	1.09%	0.75%	5.05%
Total	8.87%	41.10%	26.01%	17.69%	6.32%	100.00%

Source: Author elaborated with data from IBGE. Pesquisa de Padrão de Vida.

Table 4
Women distribution, by age of entry in labor market and age at the first birth– Southeast and Northeast, Brazil, 1996 and 1997

Age of entry in labor market \ Age at first birth	Don't have	To 15 years	16 to 19 years	20 to 24 years	Up to 25 years	Total
Don't entry	3.56%	0.49%	3.04%	3.02%	1.12%	11.24%
To 15 years	9.52%	1.22%	11.86%	15.14%	8.43%	46.18%
16 to 19 years	8.61%	0.29%	3.59%	7.18%	5.67%	25.34%
20 to 24 years	5.75%	0.21%	1.30%	2.45%	2.50%	12.20%
Up to 25 years	1.12%	0.10%	1.20%	1.59%	1.04%	5.05%
Total	28.56%	2.32%	20.99%	29.37%	18.76%	100.00%

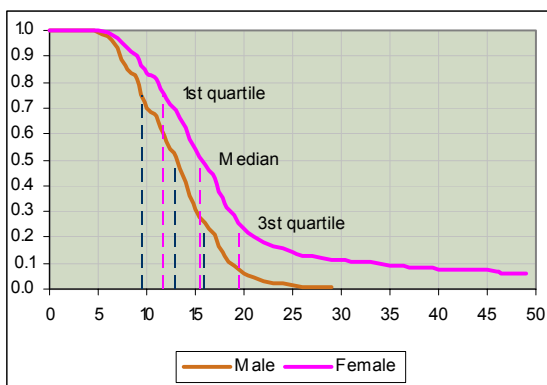Source: Author elaborated with data from IBGE. Pesquisa de Padrão de Vida.

Table 5
Women distribution, by age of exit from scholl and age at the first birth– Southeast and Northeast, Brazil, 1996 and 1997

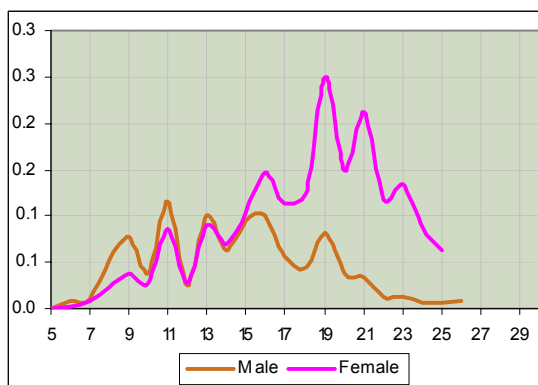| Age of exit from school \ Age at first birth	Don't have	To 15 years	16 to 19 years	20 to 24 years	Up to 25 years	Total
Don't exit	6.53%	0.18%	0.83%	0.81%	0.52%	8.87%
To 15 years	6.04%	1.77%	13.66%	13.66%	5.98%	41.10%
16 to 19 years	7.28%	0.16%	4.55%	8.69%	5.33%	26.01%
20 to 24 years	6.79%	0.21%	1.20%	4.73%	4.76%	17.69%
Up to 25 years	1.93%	0.00%	0.75%	1.48%	2.16%	6.32%
Total	28.56%	2.32%	20.99%	29.37%	18.76%	100.00%

Source: Author elaborated with data from IBGE. Pesquisa de Padrão de Vida.
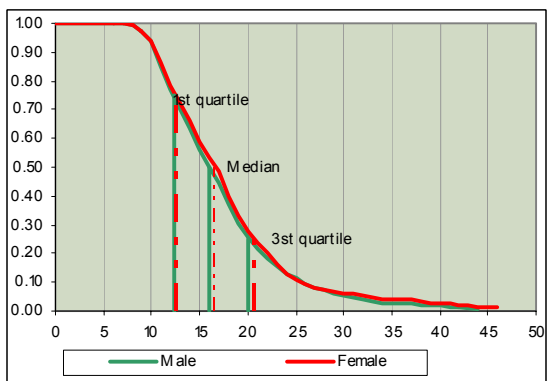
5. PRELIMINARY RESULTS

In secton was generating life tables by sex, cohort and household area of the young people until fifty years. It highlighted in the graphics position measure like median and quartiles.
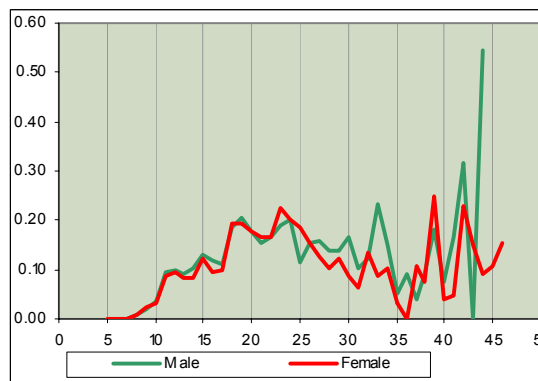
Graph 1: Survival function in the inactivity of the men and women, by age of entry in the labor market. Southeast and Northeast, Brazil, 1996 and 1997
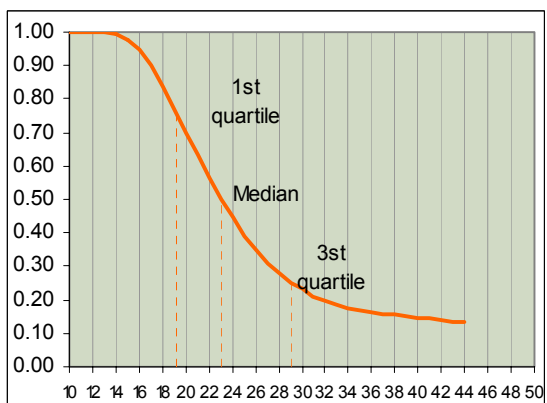

Graph 2: Hazard function from age of entry in the labor market, for men and women. Southeast and Northeast, Brazil, 1996 and 1997
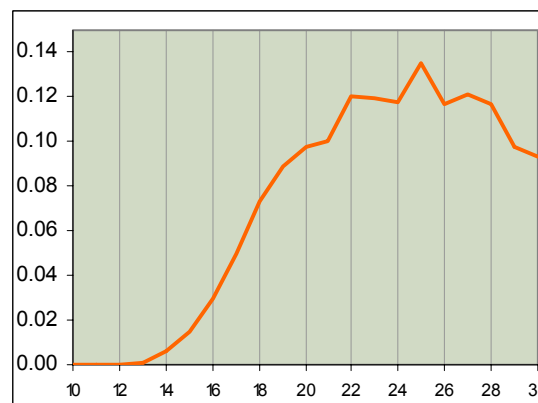

Graph 3: Survival function for men and women, by the age of exit form school. Southeast and Northeast, Brazil, 1996 and 1997
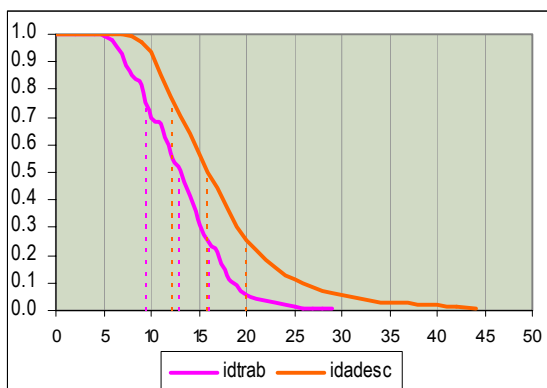

Graph 8: Harzard function for men and women, by the age of exit form school. Southeast and Northeast, Brazil, 1996 and 1997
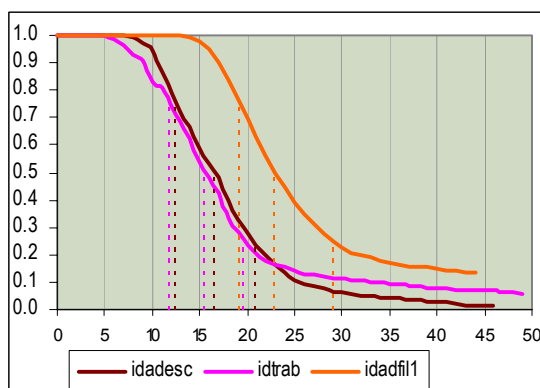

Graph 13: Survival function, by the age at first birth. Southeast and Northeast, Brazil, 1996 and 1997

Graph 4: Harzard function, by the age at first birth. Southeast and Northeast, Brazil, 1996 and 1997

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Graph 17: Survival function for men, by the age of entry in the labor market and age of exit from school. Southeast and Northeast, Brazil, 1996 and 1997.

Graph 59: Survival function for women, by the age of entry in the labor market, age at first birth and age of exit from school. Southeast and Northeast, Brazil, 1996 and 1997

Source: Author elaborated with data from IBGE. Pesquisa de Padrão de Vida.

What can conclude with base in the data and in the used methodology is that, in the women's young case, the transition for the labor market precedes the exit from school and these transition precede for the first birth transition. Even without any causal inference, there are evidences that in Brazil the woman decides to work, almost simultaneously, leaves the school and, some time after to decides having the first birth. In the men case, the age at entry in the labor market precedes the age at exit from school and suggests a possible simultaneity between school and the work activities.

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