Demographic discontinuities: youth waves and labour market structure in Brazil

Alicia Bercovich
Instituto Brasileiro de Geografia e Estatística, Population Census Committee
Avenida República do Chile 500, 10º andar
Rio de Janeiro, Brazil
E-mail Address: alicia@ibge.gov.br

Introduction

Forecasting the issues to be dealt with by demography in the Nineties, Berquó (1991) emphasized the importance of incorporating into the analyses the notion of *demographic metabolism* (Ryder, 1964). This process of renovation or replacement through increases and decreases whereby a population modifies with time, in size and structure, was dealt with in papers chapters. As the authoress said, "the changes in the levels of fertility and mortality effect population growth and as a result the sizes of the different cohorts. These, in turn, can directly or indirectly influence the future birth and death rates, thus affecting population growth".

This text was divided into four parts, as follows: 1. age structures and demographic discontinuities, where, based on observations of the shape of the age pyramids for Brazil, the consequences of the changes in mortality and fertility on the sizes of the successive age cohorts can be observed; 2. variations in the size of the cohorts - from which the movement, in time, of the birth cohorts can be detected; 3. the youth waves; and 4. the youth waves and their relationship with the labour market.

Methodological Remarks

To reconstruct cohort growth we combined two methods that permit to place the focus on discontinuities and their progress through the various age brackets: one of these proposals is by Keyfitz (1988) and directly examines intercohort increase, while the other is by Horiuchi (1991) and deals with calculation of the number of equivalent births to obtain a standardized measure of cohort size. We combined both methodologies and used to follow the progress of a specific age group, in our case we have followed the increase of the 15-19 and 20-24 age groups, considered together as the youth population. As far as we know these methodologies are seldom used in Brazil, and they were developed in close association with public policies projects, particularly those designed for specific age groups.

The data used were the life tables for Brazil (IBGE, 2003), the 1999 and 2001 National Household Surveys and 1960, 1970, 1980, 1991 and 2000 Population Censuses of Brazil.

Age structures and demographic discontinuities – 1960-2000

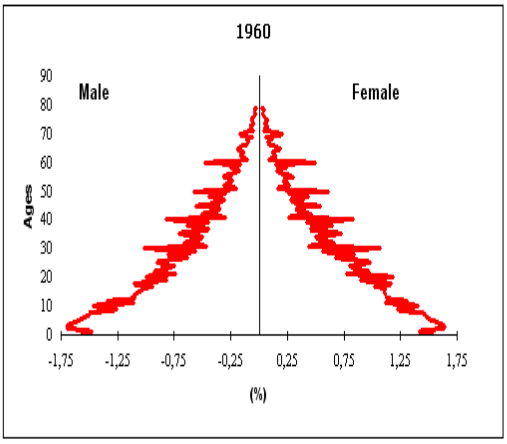
The age -sex pyramids of the Brazilian population since 1960 were revisited, considering separately the age structure of the total, urban and rural population. As can be seen from graphs 1 to 6, the changes in the age and sex structure become evident when observing the sequence of pyramids throughout the period considered; in 1960 the shape is typical of a young population, with a very wide base; on the other hand in 1970, a narrowing of the base can be noticed; in 1980 the pyramid base widens once again, showing a new increase in the birth rate; in the 1991 Census, the pyramid base once again narrows, reflecting the decline in fertility and, finally, in the 2000 Census, the pyramid base appears even narrower.

Graphs 7, 8 and 9 show that the successive widening and narrowing of the sides of the pyramids is more pronounced in the urban zones; in graphs 10, 11 and 12, it can be observed that in the rural zones, the pyramid base remains wide in 1980, narrowing in the 1991 and 2000 Censuses. The combined observation of the urban and rural pyramids allows the conclusion to be drawn that the phenomenon of demographic discontinuities, initially, was a predominantly urban phenomenon. Subsequently, also in the rural zones, the changes in mortality and fertility, later and less intense than in the urban zones, led to the configuration observed.

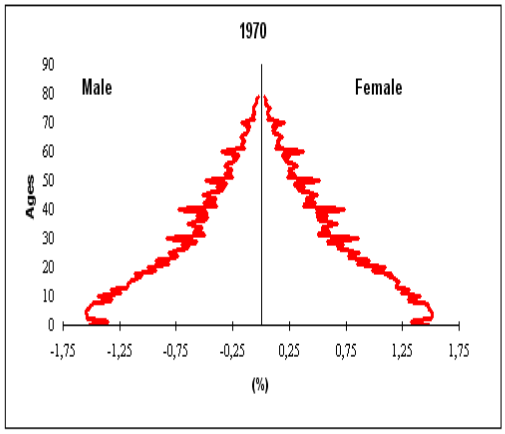
The observation of these variations of age structures in Brazil led to the application of a method where, by measuring the increase between the successive cohorts, it was possible to observe how these discontinuities occurred with time. In fact, the concept of demographic discontinuities emphasizes the processes related with specific age groups: as an effect of the influence of the variations in the components of demographic dynamics - fertility, mortality, migrations - the age pyramid can become narrower or wider as a result of the increase or decrease in the number of births; therefore the discontinuity refers precisely to the sudden variation in the size of successive cohorts.

AGE AND SEX DISTRIBUITION
BRAZIL
1960-1980

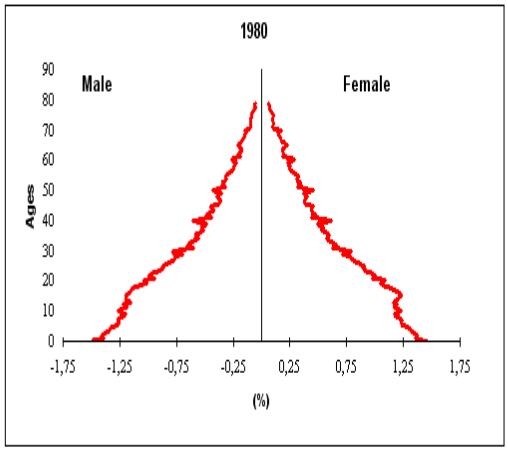
GRAPH 1



GRAPH 2



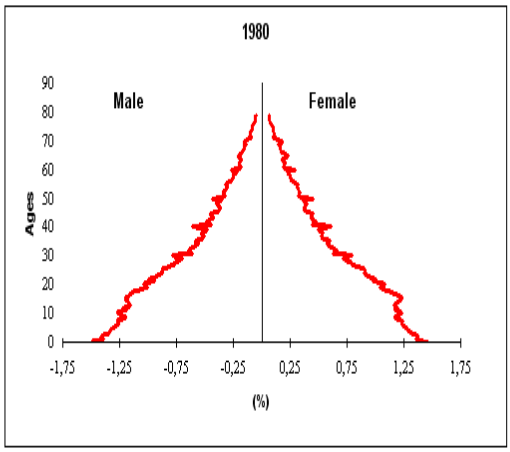
GRAPH 3



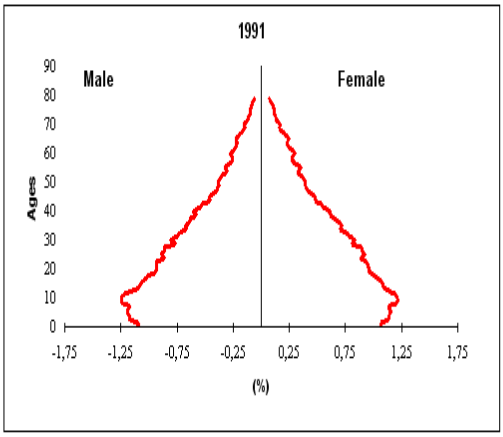
Source: IBGE. 1960, 1970 and 1980 Population Censuses.

AGE AND SEX DISTRIBUITION
BRAZIL
1980-2000

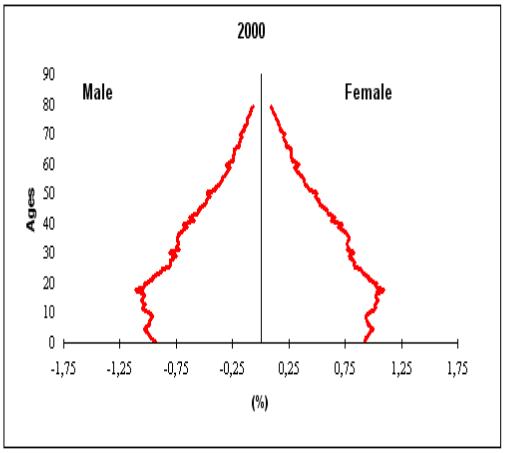
GRAPH 4



GRAPH 5



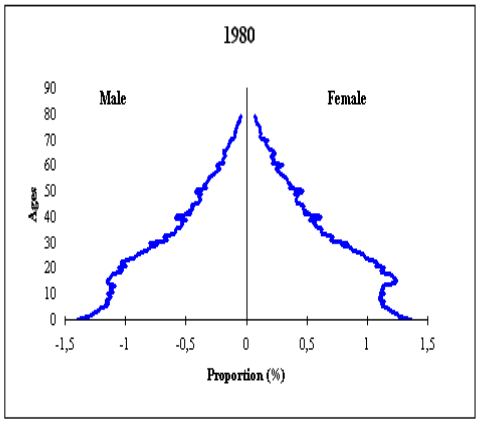
GRAPH 6



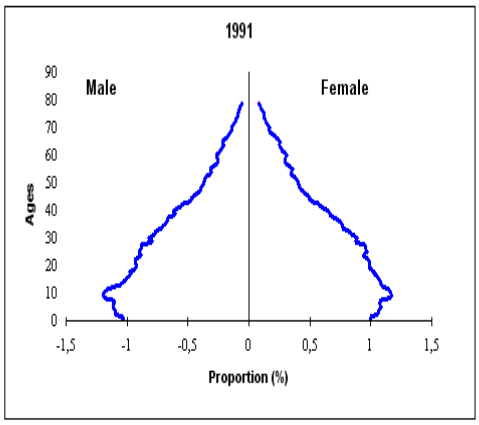
Source: IBGE. 1980, 1991 and 2000 Population Censuses.

AGE AND SEX DISTRIBUITION
URBAN POPULATION - BRAZIL
1980-2000

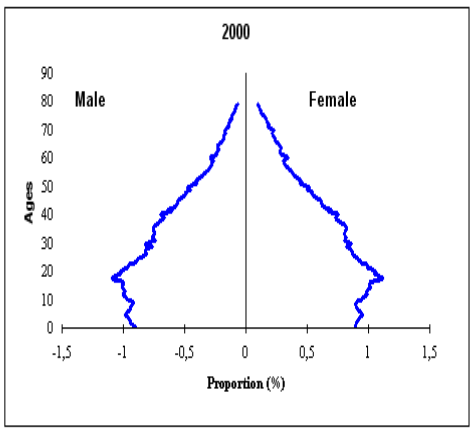
GRAPH 7



GRAPH 8



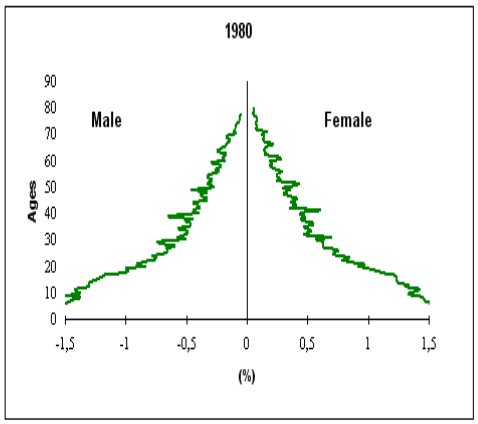
GRAPH 9



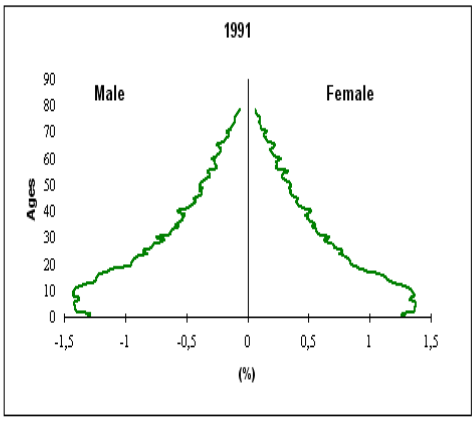
Source: IBGE. 1980, 1991 and 2000 Population and Housing Censuses.

AGE AND SEX DISTRIBUITION
RURAL POPULATION - BRAZIL
1980-2000

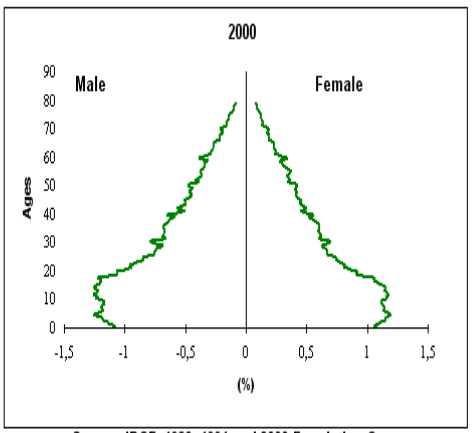
GRAPH 10



GRAPH 11



GRAPH 12



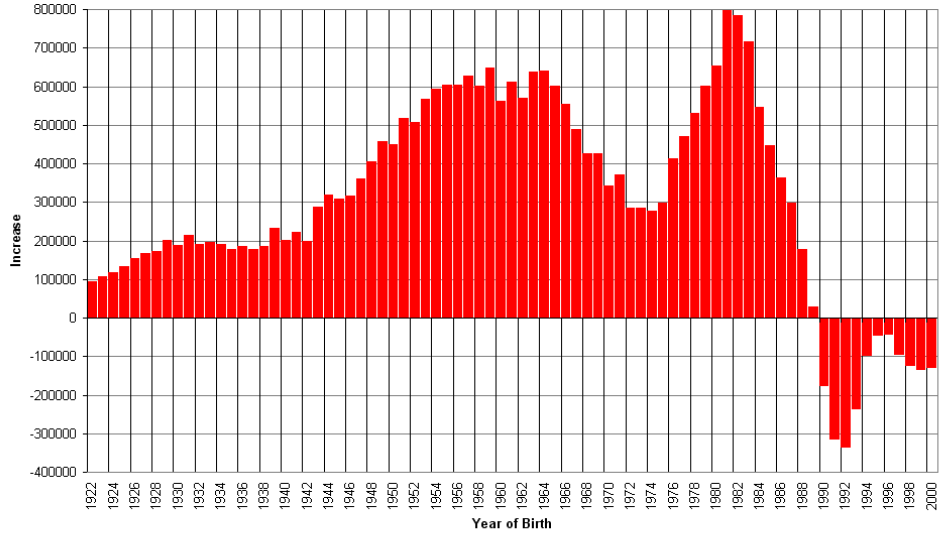
Source: IBGE. 1980, 1991 and 2000 Population Censuses.

Variations in the size of the cohorts

The method put forward by Keyfitz (1988) allows locating demographic discontinuities, i.e. sharp changes in the size of successive cohorts. These discontinuities in fact correspond to changes in the shape (peaks and gaps) in the age pyramid slopes. This method presents at least two advantages: (1) the discontinuities become more visible with regard to timing, volume and intensity; (2) evolution of cohort size and intercohort increase can be estimated, even in periods for which no direct data are available.

Graph 13 shows the increases in the birth cohorts from 1922 to 2000. In this case ten-year periods were used based on the observation of the structures derived from the 1991 and 2000 Censuses. To ensure that these observations were coherent with those made previously, based on five-year intervals - as the method proposed by Keifitz (1988) was originally designed - it was necessary to estimate the population in 1990 using 1991 data and survival ratios, calculated based on the IBGE life tables (2003).

GRAPH 13
Birth cohort increase
Brazil 1922-2000



Source: IBGE. 1991 and 2000 Population Censuses.

The first large discontinuity occurs as from the second half of the Forties; this increase due to the significant decline in mortality related with the introduction of antibiotics, vaccination campaigns and other factors. At that time, a large number of infant deaths was avoided, initiating an important population increase. As Keyfitz (1987) mentions, the technique used gives information on the beginning of the so-called *population explosion*. In the entire world this beginning was especially sudden due to the coincidence of the baby-boom in the countries involved directly in the II World War with the fall in mortality related with the introduction of efficient vaccines and antibiotics in the others countries.

As from the second half of the Sixties, a reduction in the size of the cohorts can be observed. This period coincides with the introduction, in Brazil, of more effective contraceptives such as, for example, the contraceptive pill, which

certainly provoked a reduction in the number of births, a phenomenon that is reflected in the smaller size of the cohorts during the period.

This reduction in the increase between cohorts continued until the first half of the Seventies. As from the second half of this decade, a considerable increase was once again observed in the number of births. This increase occurred, not because of an increase in fertility, but rather due to an increase in the birth rate; this was the echo of the great population wave described previously. In effect, the large cohort of women born in the postwar period reached childbearing age, generating a large cohort of babies.

The increase in the size of the cohorts fell suddenly as from the second half of the Eighties. The aspect to be highlighted is that the movement detected by the thirty-year sequence results in a negative increase in the size of the cohorts in Brazil in the Nineties, as can be observed in graph 13. Not only did the increment in the number of children born fall successively, but there is an absolute reduction in the size of the cohorts. This phenomenon can be expected to occur again, as an echo, in the future.

The Youth Wave

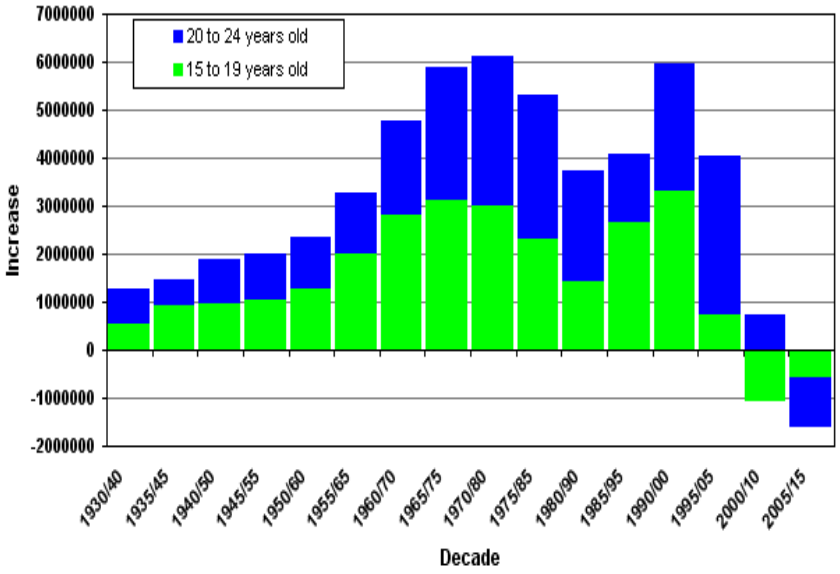
What has been done to date was to characterize the unequal size of the different cohorts with time. A derivative of the method is to monitor a given group of ages and see how the increase or reduction in the number of births is reflected in the size of the cohorts of young people.

This approach to the transformations in the age structures led to the detection of the phenomenon of "youth waves", that is to say the effect of the waves of births on the variation in the number of young people.

It was also necessary to evaluate the effects of the arrival of these contingents of young people on the labour market. What would happen to the labour market as a result of this pressure from the young contingent?

Graph 14 shows the variation in the number of youths between 15 and 24 years of age with time, using a derivative of the technique previously presented. The objective was to characterize the unequal growth of the different age groups. The variations in the number of births described above were transformed, as time passed, into an increase in the number of young people. A considerable increase in the size of these groups can be observed at the end of the Sixties and beginning of the Seventies. At that time the economy was passing through a phase of expansion and dynamism, and therefore there was a high possibility of absorbing

GRAPH 14
Variation in the number of youths between
15 - 19 and 20 - 24 years old
Brazil - 1930-2015



Source: IBGE. 1991 and 2000 Population Censuses.

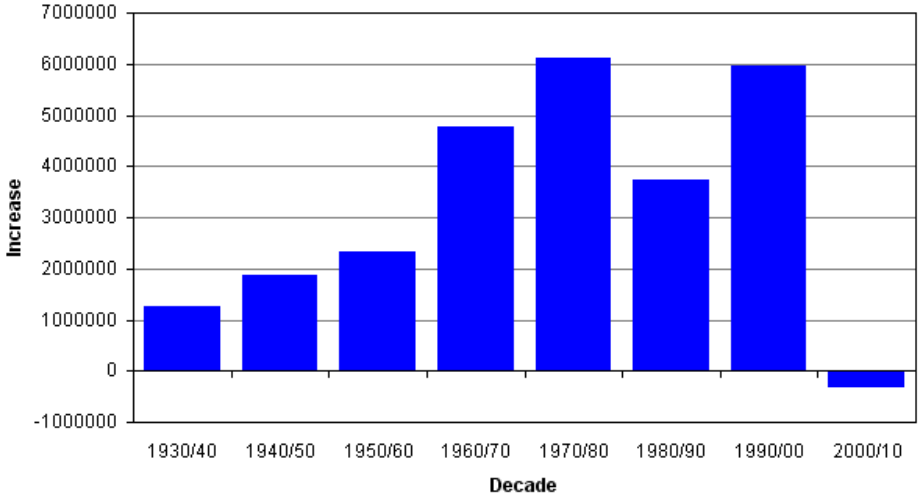
this contingent of young people into the labour market.

It can be observed that the volume of the young population increases during the Seventies by more than 6 million people but recedes as from the Eighties. The wave once again widens in the Nineties, a natural consequence of the wave of births observed in the previous graphs. With the aging of the population, it can also be anticipated that, in the decade from 2000 to 2010, the increase in the age range from 15 to 19 is already negative, in other words the cohort from 15 to 19 years of age has approximately 1 million people less. In the following period, 2005 to 2015, the increases in the two age groups considered are negative. It can therefore be said that from a demographic point of view, the two decades of the new century are witnessing reduced pressure from the entry of young people into the workforce.

Graph 15 shows, for successive decades, the evolution of the group of young people from 15 to 24 years of age, from which it can be observed that in the Seventies, there was an increase of more than 6 million young people, and

reduction in the growth, in the Eighties, to 3.7 million, increasing once again to around 6 million in the Nineties. For the period from 2000 to 2010, a reduction of approximately 300 thousand young people is expected in relation to the previous

GRAPH 15
Variation in the number of youths aged
15 - 24 years old
Brazil - 1930-2010



Source: IBGE. 1991 and 2000 Population Censuses.

decade.

The third age wave

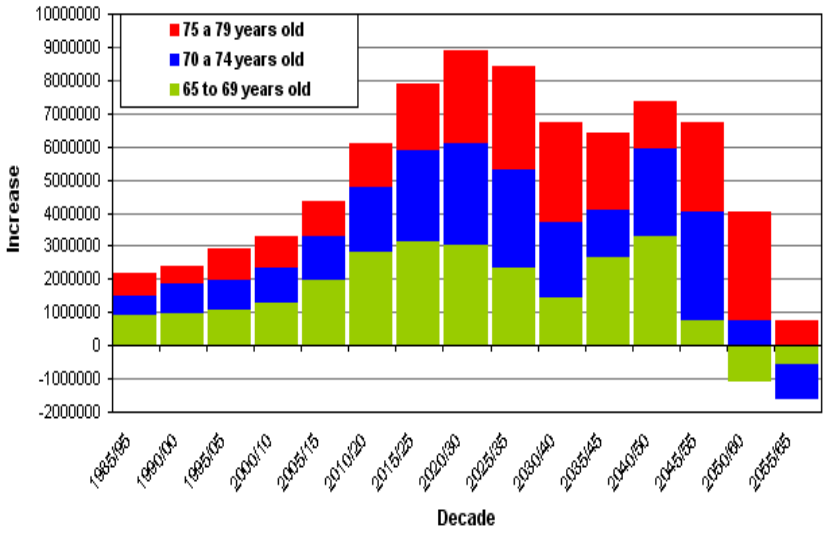
The same procedure used to detect the movements of the youth wave, as the cohorts age, contributes also to the study of population aging. Graphs 16 and 17 show the increase in the number of people between 65 and 79 years of age in Brazil for the period 1985/2065. The period that we are using is determined by the methodological constraint for the respective cohorts to have been born at the time of the 2000 Census. As can be seen, the youth wave will turn into a wave of third age people. It can be observed that the increase in these cohorts of 65 to 79 years of age will occur approximately from 2015 to 2020, but at some time after 2050, the demographic pressure, in the case of older people, will ease. The youth wave will be transformed into a wave of third age people. As Keyfitz (1988) has already pointed, the wave of the elderly population will grow with similar timing as in the USA, leading the author to doubt the possibility of that country being able to honor retirement payments after 2015.

In the case of Brazil, there is a confluence of two processes: the projection, in time, of the youth wave from previous decades and the increase in life expectancy, generating the prospect of an even greater wave.

Measurement of the phenomenon is fundamental to the study of the system of transfers, to promote financial equality between generations.

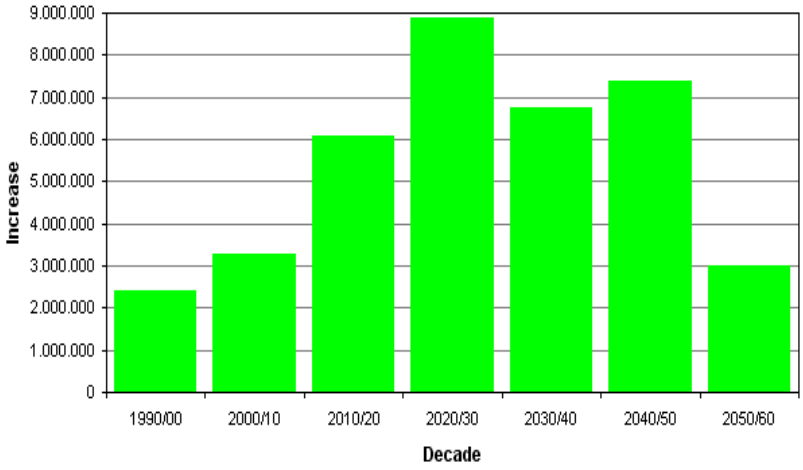
Several authors, including Carvalho (1997), have warned that the issues of population aging and pension reform from a demographic point of view should be considered very carefully, taking into account the possible transfers between generations.

GRAPH 16
Variation in the number of elderly aged 65 - 79 years old
Brazil



Source: IBGE. 1991 and 2000 Population Censuses.

GRAPH 17
Variation in the number of elderly aged 65 and 79 years old
Brazil

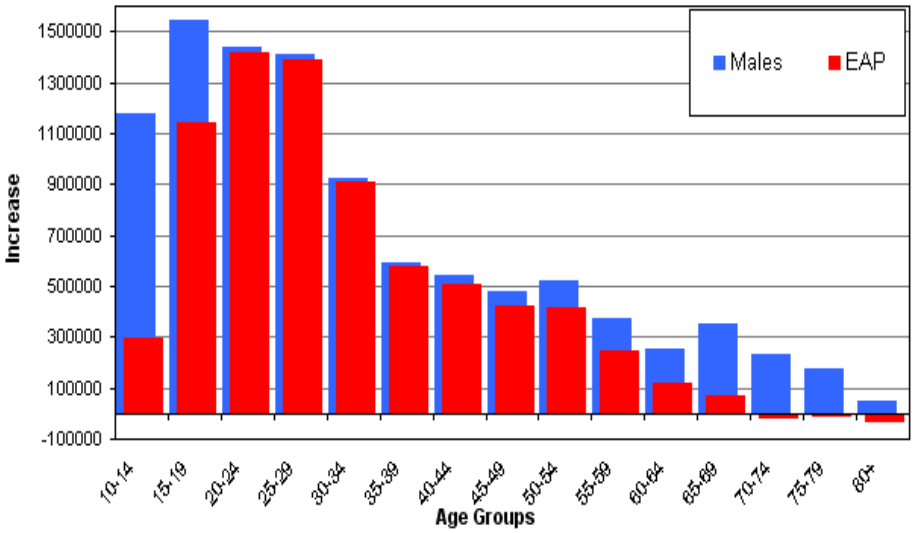


Source: IBGE. 1991 and 2000 Population Censuses.

The Youth Wave and the Labour Market

The relationship between the youth wave and the labour market can be observed in graph 18, which shows the increase in the number of people by age group and the increase in the number of economically active population (EAP). From this point on separation by sex is important, since insertion into the labour force is differentiated by sex and age.

GRAPH 18
Change in the total male population and the male labour force by age groups
Brazil - 1970-1980



Source: IBGE. 1970 and 1980 Population Censuses.
Note: EAP - Labuor force

What can be observed in this graph, referring to the Seventies, is the increase in the male population and in parallel an increase in the number of economically active males. In the 10 to 14 age range, obviously, the population growth considered exceeds the growth in EAP. However the latter is positive, showing children trying to enter in the labour market.

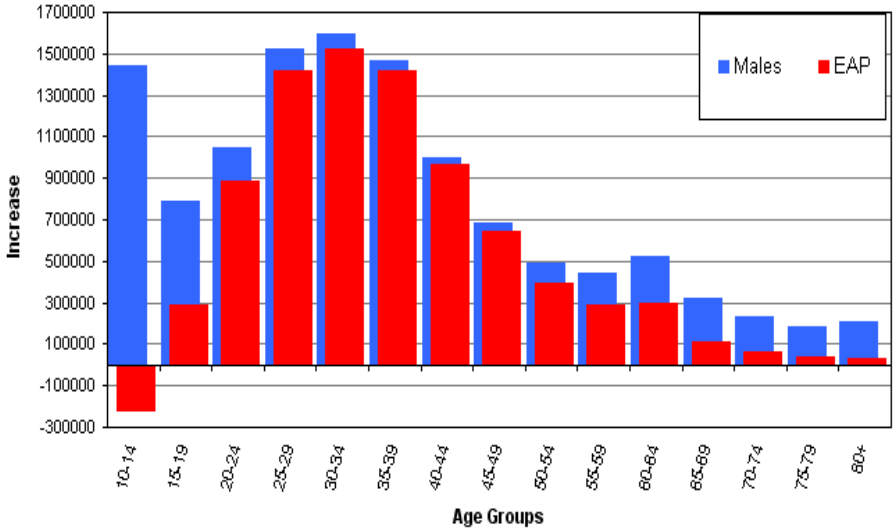
As from 15 years of age, the population distribution and the EAP distribution can be observed jointly. The distributions converge almost absolutely for the age ranges from 20 to 39 from this level upwards, an increasing gap can be observed between the population contingents and the contingents of economically active people. It can be deduced from this joint distribution that an increase occurred both in population and EAP in the age groups mentioned. This reaffirms the observation explained previously: in this decade, the contingent of young people was large but the employment market was able to absorb the entry of the economically active population. It is worth stressing that this does not necessarily signify that the level of unemployment fell and much less the level of hidden unemployment. It simply shows that the increase in the number of

economically active men followed, as from the age of 20, the natural increase in the male population.

The gap observed between the growth of both groups, as from the age of 40, enables the hypothesis to be considered that part of these adults above 40 years of age was expelled from the labour market. The challenge to young people was great in the Seventies, since in addition to being numerous, they probably had qualifications that were more compatible with the economic development needs of the time. We addressed this issue in previous paper (Madeira and Bercovich, 1992).

If in the Seventies a wave of young men found vacancies in the labour market, the same was not observed in the Eighties. Although the increase in the number of young people was much less, as indicated in graph 19, the growth in the economically active population was even lower for the same ranges from 15 to 24 years of age.

GRAPH 19
Change in the total male population and the male labour force by age groups
Brasil - 1980-1991

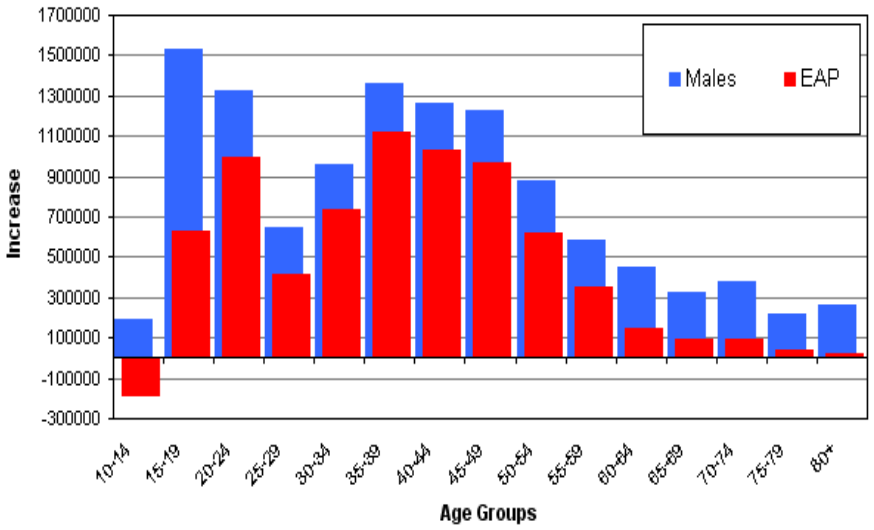


Source: IBGE. 1980 and 1991 Population Censuses.
Note: EAP - Labour force

Graph 20 shows this phenomenon again, in the Nineties, when the increase in the economically active population did not follow the natural population growth in each range.

This type of analysis, for the Nineties, is hampered by the comparability between the definitions of the economically active population in the 1991 and 2000 Censuses. In the 1991 Census, the employed population was defined as being those who had worked during some period in the year prior to the reference date. On the other hand, in the 2000 Census, the occupied population was defined as those who had worked in the week prior to the reference date (IBGE, 2000). Since the occupied population is an important proportion of the economically active population, we can observe that the growth in EAP between 1991 and 2000 would always be less than the result obtained if the definitions had been

GRAPH 20
Change in the total male population and the male labour force by age groups
Brasil - 1991-2000



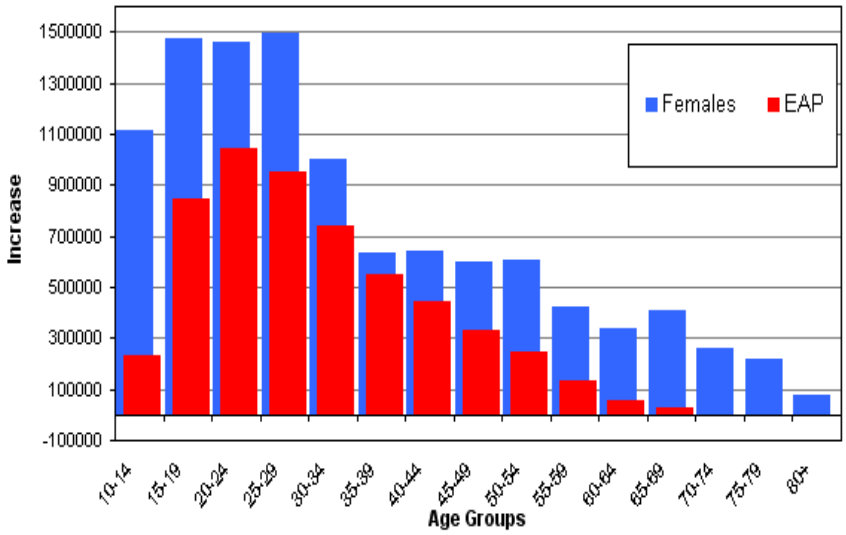
Source: IBGE. 1991 and 2000 Population Censuses.
Note: EAP - Labour force

made comparable for both Censuses.

A comparison between both contingents for the 1999 and National Household Survey (PNAD) can be observed in the text by DEDECCA (2003). It is shown that, in the PNAD for both 1999 and 2001, the difference between the economically active population defined by the one year criterion and the EAP defined using the same criterion as the 2000 Census, is approximately 200 thousand people, out of a total of 75.5 million economically active people. Even supposing that these 200 thousand people were concentrated in the groups of young men, the conclusion would not change: the growth in the number of economically active men in the 15 to 24 age range did not keep up with the natural growth curve of the male population in the Nineties.

Graph 21, which represents the situation of women, enables a very different sequence to be perceived. In the Seventies, a large increase in the absolute number of young women can be observed. This growth is not followed by a significant insertion of the female population in the job market, since in this period the entry of women into the market was just beginning.

GRAPH 21
Change in the total female population and the female labour force by age groups
Brazil - 1970-1980



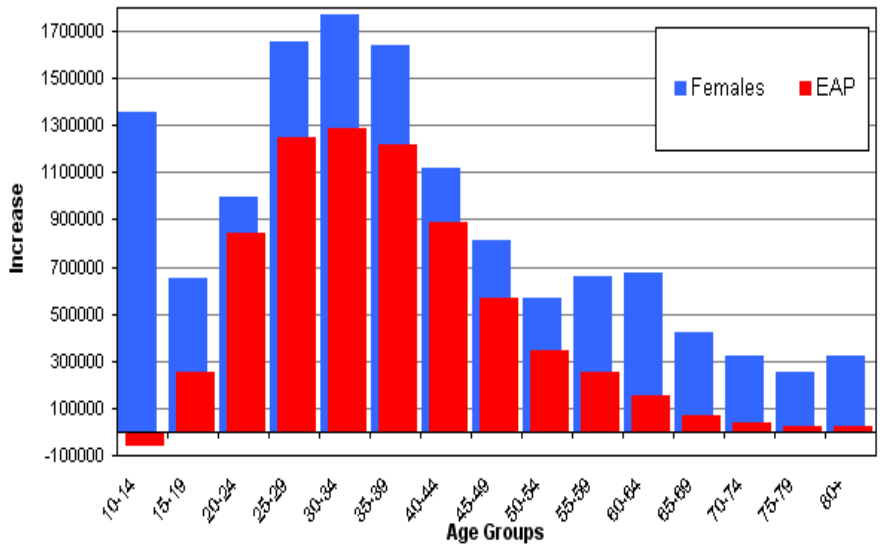
Source: IBGE. 1970 and 1980 Population Censuses.
Note: EAP - Labour force

In the Eighties, shown in graph 22, it can be observed that there was an increase in the population of economically active women, therefore following a little more closely the increase in the female population of the corresponding age,

but never at the same level as observed for men.

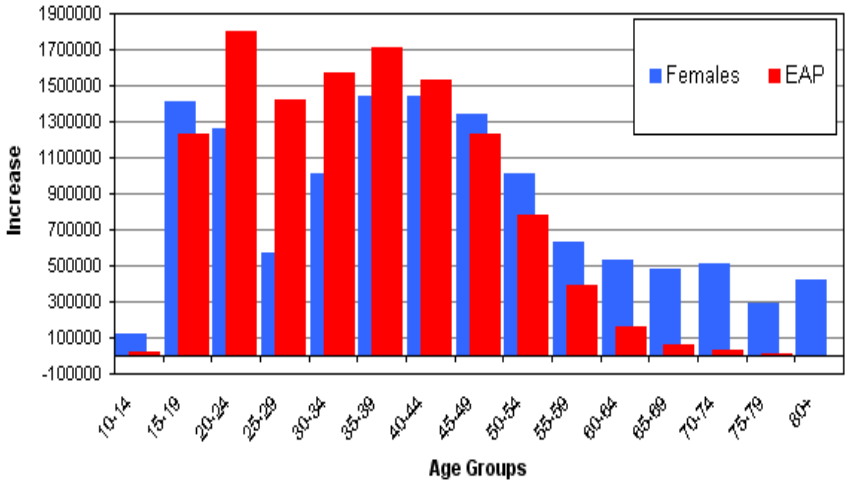
Graph 23 shows, for the Nineties, the emergence of the female participation in the labour market. The entry of the group of women between 20 and 44 into the EAP is notably higher than the natural increase of each cohort. This decade definitively marks the increasing entry of women into the labour market in Brazil. If we consider that the definition used for the economically active population in 2000 is more restricted than that adopted in 1991, the penetration into the labour market would be even greater than calculated. This paradox, however, is only apparent because the female share of the workforce was historically lower and, therefore, there was space for the growth observed.

GRAPH 22
Change in the total female population and the female labour force by age groups
Brazil - 1980-1991



Source: IBGE. 1980 and 1991 Population Censuses.
Note: EAP - Labour force

GRAPH 23
Change in the total female population and the female labour force by age groups
Brazil - 1991-2000



Source: IBGE. 1991 and 2000 Population Censuses.
Note: EAP - Labour force

Table 1 completes the previous data and shows the rate of activity of the male population and the increase in this population. With reference to men, it can be observed that in 1970, the participation of young men, between 15 and 19 years of age, in the labour market was 62%, increasing to 65% in 1980. As a consequence the participation in the labour market of the increase of the male population of the age group in the job market would be to be greater than the corresponding to the respective groups. In effect, the participation increased to

TABLE 1

Brazil - 1970 - 2000

Participation in the labor force rate for male population and for the increase of the male population, by age groups

Age Groups	Activity Rate						
	1970	Increase 70/80	1980	Increase 80/91	1991	Increase 91/00	2000
Total	71,8	74,2	72,4	68,1	71,5	60,8	69,6
10 a 14	19,2	25,4	20,2	-15,2	14,3	-96,4	11,9
15 a 19	61,9	73,4	64,8	37,0	61,9	41,3	58,4
20 a 24	87,5	96,6	90,0	85,1	89,3	74,8	86,9
25 a 29	95,2	97,7	96,1	93,0	95,3	63,7	92,3
30 a 34	96,3	98,3	96,9	95,3	96,4	76,5	93,4
35 a 39	96,1	96,3	96,1	96,7	96,3	82,4	93,1
40 a 44	94,8	93,0	94,5	97,0	95,1	81,5	91,8
45 a 49	92,7	87,6	91,5	94,1	92,1	78,5	88,2
50 a 54	87,9	79,8	85,7	79,6	84,5	70,1	80,8
55 a 59	81,9	66,0	77,9	64,8	75,0	59,7	71,5
60 a 64	72,6	48,1	67,0	55,9	63,6	31,8	57,0
65 a 69	61,3	20,1	46,0	35,4	43,4	28,2	40,3
70 a 74	47,6	-6,1	28,1	26,6	27,7	24,8	26,8
75 a 79	38,5	-3,2	19,0	20,0	19,4	17,0	18,7
80 +	26,7	-60,2	9,4	13,3	11,2	7,8	9,9

Source: IBGE. 1970, 1980, 1991 and 2000 Population Censuses.

73.4%.

The same phenomenon occurs with the population of young men between 20 and 24 years of age. In 1970, this group showed a participation rate of 87.5%, and to reach the 90% shown in 1980, it can be observed that the increment reaches a participation rate of 96.6%.

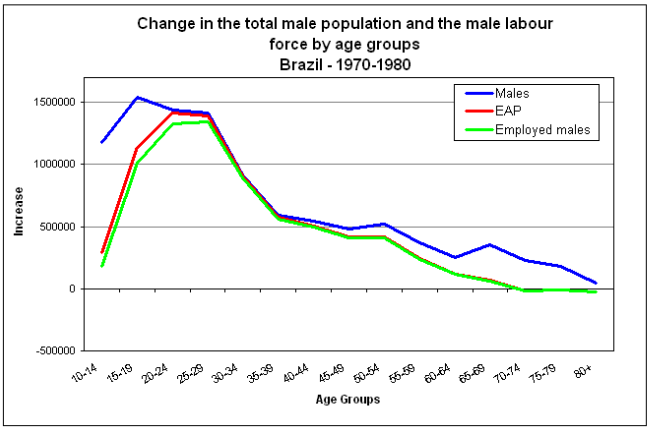
To the Eighties, as the labour market during this period had different characteristics, it can be observed that although the vegetative increase in the contingent of young men was lower than in the past, they experienced great difficulties in entering the labour market. In effect, the participation rate of the increment of the male population between 15 and 19 years of age, between 1980 and 1991, was 37%, which means that, of the surplus youths, only 37% entered the economically active population. This is because the share of young people between 15 and 19 fell from 64.8% in 1980 to 61.9% in 1991.

From 1980 to 1991, the increment in the male population between 20 and 24 years of age had a participation rate of only 85%. In the age group with the greatest activity, between 25 and 29, only 93% of the vegetative male growth rate was in the EAP.

When comparing the workforce of 1991 and 2000, two problems arise: the more restricted definition of the EAP on the one hand, and on the other, a large contingent of young people. The increase in the male population between 15 and 19, showed a participation rate of only 41%.

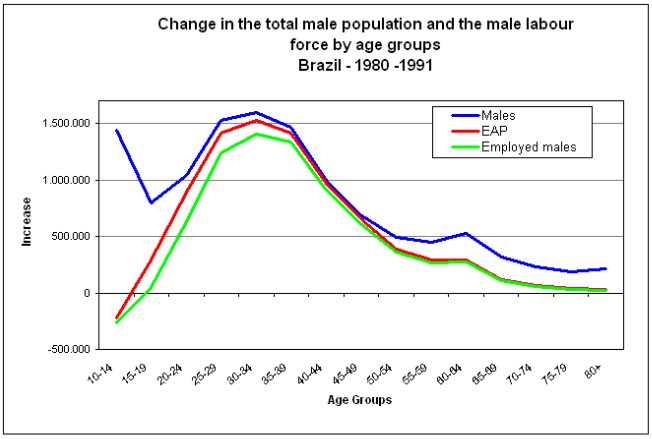
Graphs 24, 25 and 26 show the variation in the number of employed males, the economically active males and the male population throughout the decades of 70, 80 and 90 respectively. It can be clearly seen that, in the Seventies, the increase in the number of working people follows that of the economically active people and the male population. However in the Eighties, a separation can be observed for the age groups between 15 and 34. The economically active population does not follow the population increase and the number of occupied people does not keep up with the increase in the EAP. Therefore the labour market did not absorb the demographic pressure even when it was, in the case of young people, of a low magnitude.

GRAPH 24



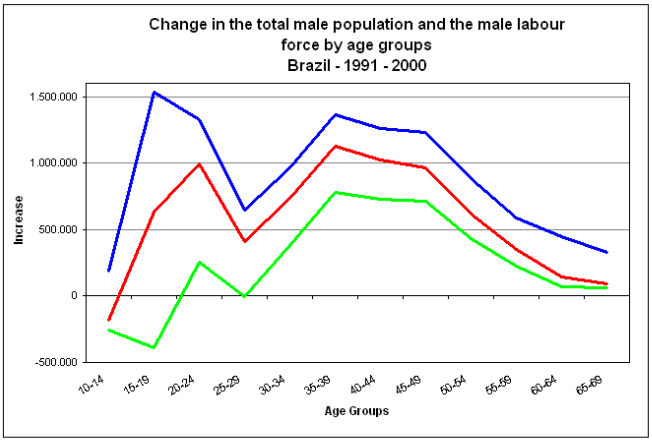
Source: IBGE. 1970 and 1980 Population Censuses.

GRAPH 25



Source: IBGE. 1980 and 1991 Population Censuses.

GRAPH 26



Source: IBGE. 1991 and 2000 Population Censuses.
Note: EAP - Labour force

The situation is even more complex in the Nineties when, clearly, the increase in the number of young men is not accompanied by the economically active population or the number of working men.

Table 2 shows the share of the age groups in the labour market. The 1980 Census indicates that 30% of the men in the EAP were between 15 and 24 years old, thus reflecting the expansion of the Seventies. In 1991, this proportion had decreased to 27%, and in 2000 continued to fall, now at 26%, showing that a large contingent of young man was out of the labour market.

TABLE 2
Age distribuition of the labor force by age groups
Brazil 1970 - 2000

Age Groups	Age distribuition of the labor force and gender							
	Males				Females			
	1970	1980	1991	2000	1970	1980	1991	2000
15-24	28,6	30,2	26,9	26,3	40,7	37,4	29,1	27,6
25-34	24,4	26,0	28,1	26,3	22,2	26,0	29,6	27,8
35-44	19,4	18,2	20,5	22,0	16,0	16,8	21,6	23,7
45-54	12,7	12,3	12,4	13,9	9,2	9,7	10,9	13,2
55-64	7,0	6,4	6,6	6,6	4,2	3,8	4,5	4,5

Source: IBGE. 1970, 1980, 1991 and 2000 Population Censuses.

Subsequently the situation of the population of economically active women can be observed: in the year 1970, 40.7% of the EAP was composed of the age group between 15 and 24; in the year 1980, the 25 to 34 age group began to record a more significant share of the job market, and in 1991, reached 30% in the first two groups. In 2000, despite the youth wave, for the first-time more than 41% of the female EAP was composed of women of between 35 and 64 years old.

Table 3 shows the distribution of the working population, by economic sector - primary, secondary and tertiary. In the 1980 Census, the distribution of men was 30% in industry and 36% in agriculture. In the 1991 Census, the result shows that the proportion of men in agriculture fell, and also in industry, increasing in the commerce and services sector, to 40.6% of the total number of working men. When the result for women is verified, in the 1980 Census, a large proportion of women can be found, 70%, in commerce and services. On the other hand in 1991, this proportion increases to 73%, and in 2000 shows 77%. This confirms the fact that women are increasingly present in the sector. Men also recorded an important share in the sector in 2000 of 49%.

Once again graphs 27 and 28 show, for Brazil, the economically active male and female population by age group. It can be observed that the year of 1970 shows a peak in the 20 to 24 age group. In 1980, which represents what happened throughout the Seventies, there is high growth in the 15 to 24 age range. The shape of the distribution observed changes as less young people enter the labour market.

A large contingent of young women from 15 to 24 years of age appears in the 1980 Census in the economically active population, as a consequence of the

combination of two phenomena: the entry of women into the job market and the youth wave from the Seventies.

The 1980 Census shows the entry into the job market of a large contingent of young people in the 15 to 24 age range, affecting even the share of people over 40, as seen previously. The 1991 Census shows the same contingent of young people as the previous decade, now more mature, remaining in the job market. As a result, the curve for the economically active population in the 91 Census appears more dilated in the older age groups, such as the group between 25 and 34.

On the other hand it can be seen that the groups of younger ages are unable to enter the job market irrespective of pressure.

The data referring to women shows entirely different results. A new feature is observed, a large entry of women into the market in the Nineties, clearly demonstrated in the 2000 Census. In the 1970 Census the volume is lower, reflecting the decade of the Sixties, when the share of women was not large. The line is sharp in relation to the male population and moderate for the female.

Graph 29 shows the distribution by age and sex of the population working in industry, commerce and services respectively. The effect of the factors of demographic dynamics can be observed on the pyramids of the population working in industry. The great industrialization in the 1970s is reflected in the 1980 pyramid, which shows a widening for the 15 to 24 age groups. The big increase in the male working population in the Seventies privileged young people between 15 and 24 years of age. The shape of the pyramid for the 1991 Census for the same business sector shows the aging effect of this age structure. Finally, in 2000, we find a reduction in the absolute number of people working in industry in the 15 to 34 age range.

If on the one hand this result could be the effect of the more restricted interpretation of the definition of the working population, on the other it reflects the migration of part of this labour to other sectors of the economy. With respect to women, the increase in labour in industry has been moderate, observing a larger increase especially in the number of young people, once again in the Seventies.

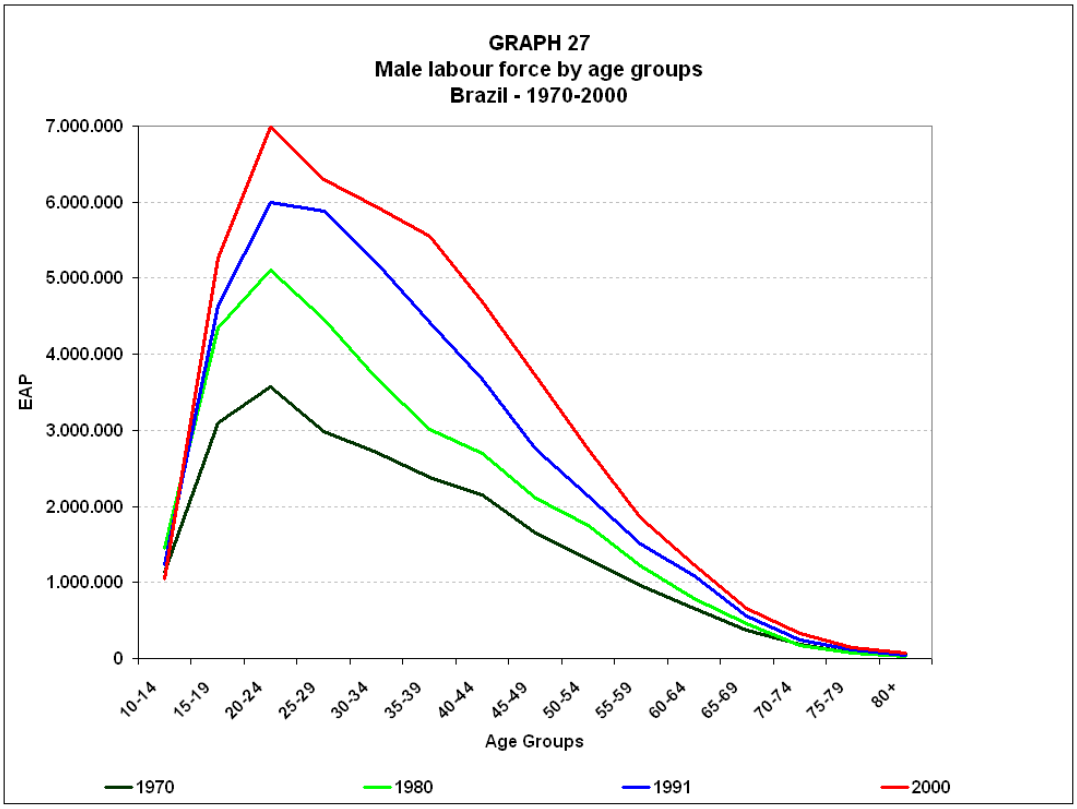
In the case of commerce and services, the situation is different, and there is an increase in the volume of the services sectors fundamentally for the female sex, especially aged above 25.

The services sector shows a greater insertion of female labour, exceeding the male share over recent decades.

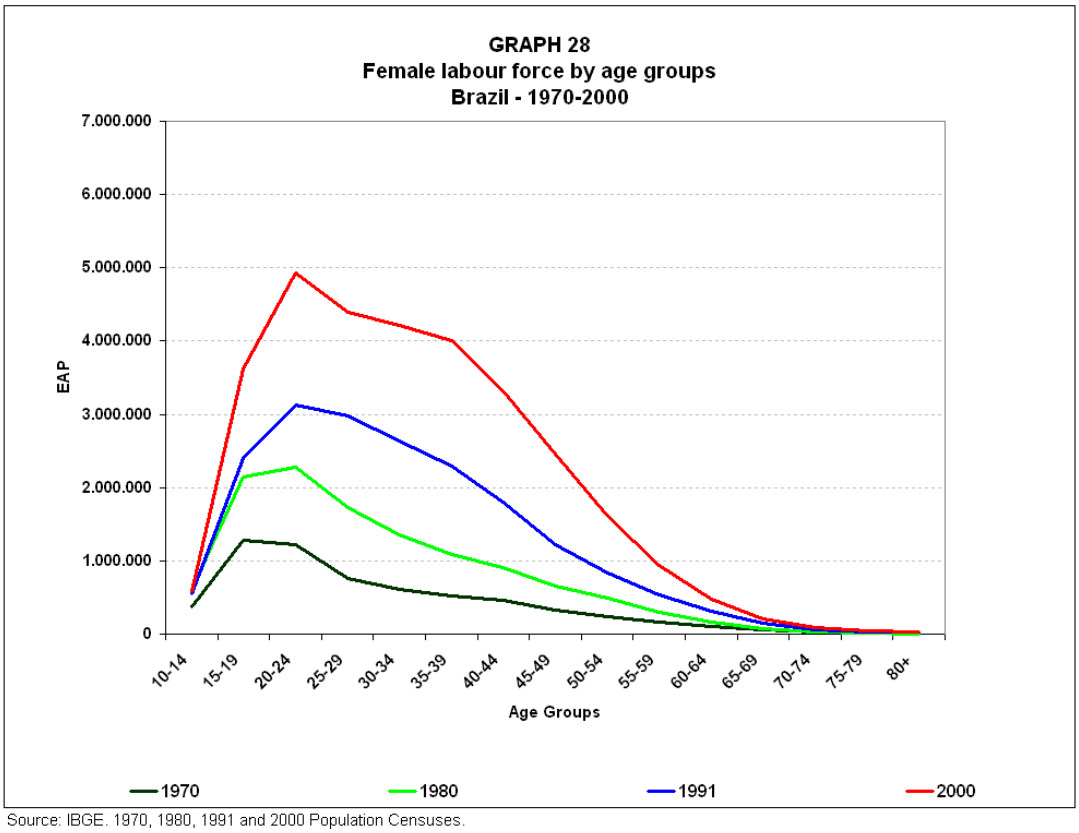
TABLE 3
Distribuition of employed population by industry
Brazil - 1980 - 2000

Industry	1980		1991		2000	
	Males	Females	Males	Females	Males	Females
Total	100,0	100,0	100,0	100,0	100,0	100,0
Agriculture	35,9	14,0	28,9	9,5	22,0	9,8
Manufacturing	29,0	15,4	28,0	14,1	27,5	12,7
Services	34,4	69,9	40,6	73,3	49,3	76,5

Source: IBGE. 1970, 1980, 1991 and 2000 Population Censuses.

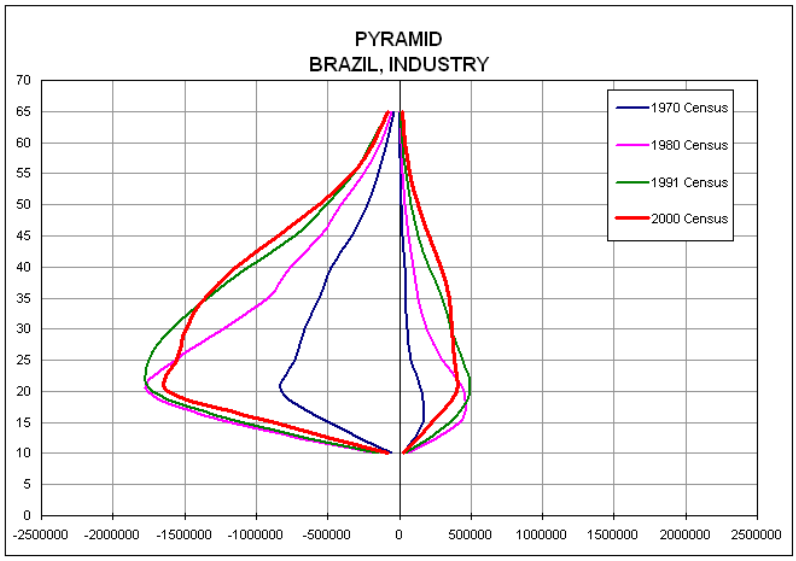


Source: IBGE. 1970, 1980, 1991 and 2000 Population Censuses.

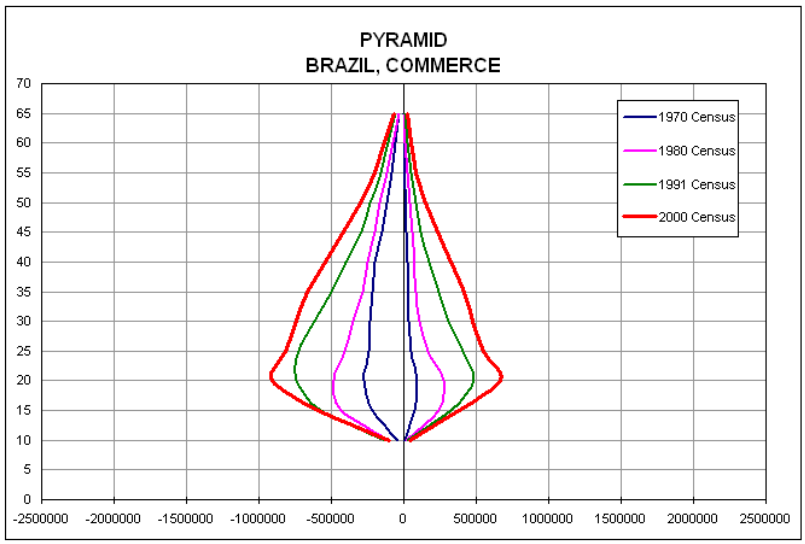


Source: IBGE. 1970, 1980, 1991 and 2000 Population Censuses.

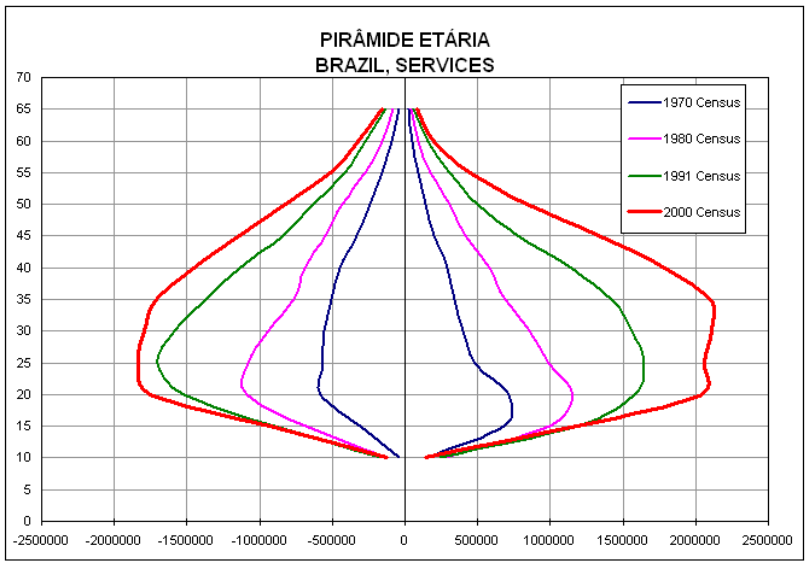
GRAPH 29



GRAPH 30



GRAPH 31



Source: IBGE. 1970, 1980, 1991 and 2000 Population Censuses.

Final Remarks

The effects of the fertility decline in Brazil, combined with the previous reduction in the mortality rate, raises fresh challenges for public policy, basically owing to the changes these two phenomena will effect in the Brazilian age structure. Concern has been expressed by demographers about increase of cohorts in the older age groups and the expected explosion of demands from them in the medium and long term. The paper also is concerned with these changes in the age structure and its impact on diagnoses and policies. However, we are considering specially an aspect, which has drawn little attention of those people who intend to contribute to the formulation of public policy: the phenomenon of successive variations in cohort size.

In other words, as a wide cohort rises up the pyramid, it creates new needs, thus requiring differentiated responses from the social system.

The analysis of this phenomenon also contributes to clarify the behavior of the age structure of the labour force in the last two decades, and allows hypotheses to be constructed about future trends.

In the 90's, the youth wave was strong, as the echo of the 70's. But the youth wave of the seventies became older enlarging the group of 35 and over. Then the 90's presented two discontinuities: the young group pressing for an early entrance in the labour market, and the second in the age group, already in the labour force, that suffered this pressure, eventually leaving precociously the labour market.

There were no reasons to presume that the young group would release the pressure to enter into the labour market. Factors feeding this pressure continued to be present and even to increase: the number of years at school for teenagers was higher than a decade before, they worked to stay at school at night; and the pressure for consumption continued strong, under influence of the media.

The circumstances of the 90's were completely different that those of the seventies. Along the 70's, industrial development was at a rapid pace, as were introduced new kind of processes. The completely different circumstances of the 90's giving diminishing opportunities for the young people had a strong negative impact on their social situation. The increase of drugs consumption and violence was probably a consequence.

It can be anticipated that strong demographic pressure will come from the age ranges between 25 and 34, since the previous cohorts are declining in this decade.

The same factors that hindered the possibility of the youth wave being absorbed into the labour market are present in relation to this age group of young adults between 25 and 34: the reduced dynamism of the labour market; the aging of the employed population; the strong pressure resulting from the entry of women of all ages, into the labour market, which represents additional competition.

Another product of the paper has been to remark the advantage of focusing on the increase in the absolute number of individuals in each cohort when the purpose is to contribute to public policy making.

Bibliography

ARIAS, A.R. CORDEIRO, J.H.T. de C. 1990. "Uma discussão sobre a produção e uso dos dados sobre o mercado de trabalho". S.n.t. Draft. Paper presented at the VII Encontro Nacional de Estudos Populacionais, Caxambu, MG.

BARROS, R.; MENDONÇA, R. e VELAZCO,T. 1994. "A pobreza é a principal causa do trabalho infantil no Brasil urbano?". Rio de Janeiro, IPEA, mimeo.

BERCOVICH, A. 1988. "Age-sex structure in Brazil". Paper delivered at the Conference Future Changes in Population Age Structure. IIASA, Sopron, Hungria.

BERCOVICH, A., MADEIRA, F. 1990. "Descontinuidades Demográficas no Brasil e no Estado de São Paulo". In: Anais do VII Encontro Nacional de Estudos Populacionais. Caxambú, v. 2, p. 595-632.

_____. 1993. "Demographic Discontinuities in Brazil". Paper presented at the XXIInd General Population Conference, Session 21, Population in the XXIst Century: Demographic Prospects. Montreal.

BERCOVICH, A. MADEIRA, F e TORRES, H. 1997. "Mapeando a situação do adolescente no Brasil". Paper delivered at the Fórum Nacional Adolescência, Educação e Trabalho. Belo Horizonte, Ministério do Trabalho.

BERCOVICH, A., VELLÔZO, H.C. 1985. "Notas Sobre Aparentes Contradições na Estrutura por Idade e Sexo no Censo Demográfico de 1980". Revista Brasileira de Estatística, Fundação Instituto Brasileiro de Geografia e Estatística, Rio de Janeiro, RJ, v.46, n. 181/182, pp 53-121.

BERCOVICH, A. 2004. PhD Dissertation "Onda Jovem, Mercado de Trabalho e Violência: Um enfoque demográfico". Universidade Estadual de Campinas, Instituto de Filosofia e Ciências Humanas. Campinas, São Paulo.

BERQUÓ, E. 1991. "Algumas questões para a demografia dos anos noventa". Revista Brasileira de Estudos de População, Vol. 8, No. 1-2, Jan./Dez. pp. 55-60. São Paulo, Brasil.

BOURDIEU, P.A. 1983. "Juventude" é apenas uma palavra: questões de sociologia". Rio de Janeiro: Marco Zero.

BRUSCHINI, C. 1989. "Tendências da força de trabalho feminina brasileira nos anos setenta e oitenta: algumas comparações regionais". São Paulo, Fundação Carlos Chagas.

CARVALHO, José A. M. de. 1997. "Demographic dynamics in Brazil: recent trends and perspectives". Brazilian Journal of Population Studies, Vol. 1, 5-23 pp. São Paulo, Brazil.

CARVALHO, José A. M. de. WONG, Laura R. 1995. "A window of opportunity: some demographic and socioeconomic implications of the rapid fertility decline in Brazil". Texto para Discussão, No. 91, 36 pp. Universidade Federal de Minas Gerais: Belo Horizonte, Brazil.

CENTERFOR/OIT. 1997. "El empleo y la capacitación para el empleo de jóvenes en América Latina". OIJ/OIT.

DEDDECA, S. C e ROSANDISKI, E. 2003. "Sensos e Dissensos: as inovações metodológicas do Censo Demográfico 2000".

DEUTSCHMAN, A. 1990. "What 25-years-old want". Fortune, Aug. 27th.

GOUVEIA, A. T. 1983. "O trabalho do menor: necessidade transfigurada em virtude". Cadernos de Pesquisa, n. 44, pp 55-62.

HENRIQUES, M.H. SILVA, N. do V.; SINGH, S. E WULF, D. 1989. "Adolescentes de Hoje, Pais de Amanhã: Brasil". The Alan Gumacher Institute, New York.

HORIUCHI, S. 1988. "Measurement of Cohort Size Variations". Paper delivered at the Conference Future Changes in Population and Age Structure. Sopron, Hungary.

_____. 1991. "Measurement and analysis of cohort-size variations". Population Bulletin of the United Nations, No. 30, pp. 106-24. New York, New York.

_____. 1995. "The cohort approach to population growth: a retrospective decomposition of growth rates for Sweden". Population Studies, Vol. 49, No. 1, Mar 1995, pp. 147-63. London, England.

HORIUCHI, S. e PRESTON, S.H. 1988. "Age-Specific growth Rates: The legacy of Past Population". Dynamics Demography, v. 25, n.3.

IBGE. 2000. Life Tables (Brazil). IBGE Web site <http://www.ibge.gov.br>. Access January 21, 2003.

_____. 2000. Population Census Long Form

_____. 1960/1970/1980/1991/2000. Population Censuses.

_____. Tabulações Especiais da PNAD, 1999 - 2001.

JATOBÁ, J. 1990. "Ciclo econômico e força de trabalho no Brasil urbano: 1987/1987". Brasília, IPEA, Cadernos de Economia, 1, 190 pp.

JORGE, A. et allii. 1984. "Categorias sócio-ocupacionais: uma perspectiva para análise da força de trabalho e da distribuição de rendimentos no Brasil". Anais do IV Encontro Nacional de Estudos Populacionais. ABEP, Águas de São Pedro, SP.

KEYFITZ, N. 1986. "The twentieth century acceleration of population growth: dating the onset". In: POPNET, Population Network Newsletter, IIASA, Luxenburg, Austria.

_____. 1987. "The demographic discontinuity of the 1940s". IIASA Working Paper, No. WP-87-92, Sep 1987. 27 pp. International Institute for Applied Systems Analysis [IIASA]: Laxenburg, Austria.

_____. 1988. "The profile of inter-cohort increase". Mimeo. IIASA, Luxenburg, Austria.

_____. 1989. "Decomposition and reassembly of the age-time distribution". NUPRI Research Paper Series, No. 49, Feb 1989. vi, 21 pp. Nihon University, Population Research Institute: Tokyo, Japan.

_____. 1990 "The profile of intercohort increase". Mathematical Population Studies, Vol. 2, No. 2,. 105-17, 161 pp. New York, New York/London, England.

_____. 1994. "Beyond stable theory: intercohort changes in USSR, U.S.A., and Europe". In: Demographic trends and patterns in the Soviet Union before 1991, edited by Wolfgang Lutz, Sergei Scherbov, and Andrei Volkov, pp. 461-75. Routledge: New York, New York/London, England; International Institute for Applied Systems Analysis [IIASA]: Laxenburg, Austria.

MADEIRA, F. R. 1984. "Integração trabalho/escola no cotidiano de jovens de setores populares paulistanos". Relatório de Pesquisa para o CNPq. São Paulo.

_____. 1986. "Los jóvenes en el Brasil: antiguos supuestos y nuevos derroteros". Revista de la CEPAL nº 29, p.57-81. Santiago de Chile.

_____. 1992. "Evolução dos índices de escolaridade em São Paulo: década de 80". São Paulo, Fundação SEADE.

_____. 1993. "Pobreza, escola e trabalho: convicções virtuosas, conexões viciosas". São Paulo em Perspectiva. São Paulo, Fundação SEADE, v.7, n.1,1993, pp.70-83.

MADEIRA, F.R., BERCOVICH, A.M. 1992. "A 'onda jovem' e seu impacto na população economicamente ativa de São Paulo". Planejamento e Políticas Públicas. Brasília, IPEA, v.1, n.8, 1992, p.1-28.

MERRICK T.W. e BERQUÓ, E. 1983. "The Determinants of Brazil's Recent Rapid Decline in Fertility. Committee on Population and Demography". Report No.23.

NANJO, Z. e KOBAYASHI, K. 1991. "Measuring the demographic discontinuity". NUPRI Research Paper Series, No. 57, Mar 1991. vi, 25 pp. Nihon University, Population Research Institute: Tokyo, Japan.

RODRIGUES, E. 1997. "Los jóvenes latinoamericanos frente a las transformaciones del mundo del trabajo". Paper presented at the Fórum Internacional sobre Protagonismo Juvenil: La Construción del Futuro en América Latina. São Paulo.

RYDER, N. 1964. "The cohort as a concept in the study of social change". American Sociological Review, New York, 6(6); dez.

SABÓIA, J. 1991. "Emprego nos anos oitenta: uma década perdida". Paper delivered at the Seminário Modelos de Organização Industrial e Trabalho, São Paulo.

SPINDEL, C.R. 1985. "O menor assalariado registrado: condições de trabalho em áreas metropolitanas". São Paulo, IDESP.

_____. 1987. "A mulher frente à crise econômica dos anos 80". São Paulo, IDESP.

THOMPSON, E. 1920. "Ratio of Children to Women". Washington, U.S., Bureau of Census.

WRIGGINS, W.R. 1988. "Youth Cohorts, Population Change, and Politics Five Intervening Variables". Paper presented at the Conference of Future Changes in Population and Age Structure. Sopron, Hungary.

YAZAKI, L.M. e ORTIZ, L.P. 1988. "Mortalidade infanto-juvenil". In: O Jovem na Grande São Paulo. SEADE, Coleção realidade Paulista, v.2, São Paulo.