Transformações e tendências nos mercados de trabalho do Brasil e Estados Unidos[*]

Changes and trends in the labor market Brazil and the United States

Alexandre Gori Maia[**]

Abstract

The turn of the last century witnessed an expressive increase in prosperity and wealthy of the richest countries of world, while several developing countries were hit by successive domestic and international crises. Such a relevant economic context, the main purpose of this paper is to analyze the contradictory dynamics of labor market and wage distribution in Brazil and the US (United States) between 1981 and 2006. The central hypothesis is that global economy did not witness distributive effects between these two main economies of the America in the end of the 20th century and rough disparities between them increased substantially.

Key-words: labor market; labor force; labor productivity;

JEL: J21, J31, J24

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[**] Professor at Institute of Economics - University of Campinas – Brazil.

Introduction

The turn of the last century witnessed an expressive increase in prosperity and wealthy of the richest countries of the world, while several developing countries were hit by successive domestic and international crises (Nayar, 2006; Reinert, 2003). This behavior occurred in parallel to a new trend of international economic integration, which has been basically characterized by liberalization of the international trade, investment and finance (Ocampo, 2002). In 2007, subprime crisis in the US triggered a new period in the world economics, affecting especially the most developed economies (IMF, 2010).

Such a relevant economic context, the main purpose of this paper is to analyze the contradictory dynamics of labor market and wage distribution in Brazil and the US between 1981 and 2006. The central hypothesis is that, in this period of higher economic growth in developed countries, global economy did not witness distributive effects between these two main developing and developed economies of America and rough disparities between them increased substantially.

In order to reach such purposes, this paper has been divided in three main parts: i) a historical perspective of the structural changes and economic growth in Brazil and the US during the last quarter of the 20th century; ii) the labor market dynamics, identifying some trends in the economic growth, unemployment, underemployment, labor productivity and the dynamics of the wage inequality in this countries; iii) the dynamics of the economic activities, analyzing the evolution of employment, gross add value and real wages according to major economic activities. First of all, it will be present a brief methodological description.

1. Material and methods

In order to compare the Brazilian and American labor force dynamics, results are based on micro-data from PNAD (*Pesquisa Nacional por Amostra de Domicílios*), sponsored by IBGE (*Instituto Brasileiro de Geografia e Estatística*) and from CPS (Current Population Survey), sponsored by BLS (Bureau of Labor Statistics). In both surveys, employed has been considered that with 16 years of age or older who, during the reference week (a) did any work at all (for at least 1 hour) as paid employee; worked in his own businesses, profession, or on his own farm; or worked 15 hours or more as unpaid worker in an enterprise operated by a family member or (b) was not working, but who had a job or business from which he was temporarily absent (BLS, 2002). Unemployed has been considered that who was not employed during the reference week and had made specific efforts to find an employment some time during the 4-week period ending with the reference week.

Brazilian wages have been deflated according to INPC (*Índice Natcional de Preços ao Consumidor*) - IBGE and converted to dollars from 2004 considering the Purchasing Parity Power (PPP) proposed by United Nations (UN). American wages have been deflated using the Consumer Price Index (CPI) - BLS.

Economic activities were classified according to the main groups suggested by the United Nation Statistic Division: i) Agriculture, hunting, forestry and fishing; ii) mining, manufacturing and utilities (electricity, gas and water supply); iii) construction; iv) wholesale, retail trade, restaurants and hotels; v) transport, storage and communication; vi) other activities (financial intermediation, real state, renting, business activities, public administration, defense, education, health, social work, social services, personal activities, private households and others services).

2. Historical perspective

During the last quarter of the twentieth century, the world economics witnessed an increasing process of international economic integration. The principal features of this

process of globalization were an increasing liberalization of international trade, investment and financial market, which occurred in parallel to the dismantlement of barriers to international economic transaction, development of new technologies, emerging forms of industrial organization and political hegemony (Nayar, 2006).

Following the thought that international trade and foreign direct investment would lead developing economies to a sustainable economic growth, most Latin American countries abandoned the idea that late industrialization requires a significant State intervention in order to achieve economic development and turned into the liberalization process in the beginnings of the ‘90s (Ocampo, 2002). These strategies were presented to developing countries as a way out of inefficient politics of trade protection and high levels of state intervention. But failures due, largely, to ineffective or misguided implementation and conduction of economic reforms resulted in unsatisfactory economic growth and maintenance of huge socioeconomic differences between richest and poorest countries of the America.

It must be highlight that before economic liberalization severe inflation had also frightened away domestic and foreign investment in developing economics of the America, and, thus, destroyed their potential for economic growth. But, the object of managing inflation was transformed into a near-obsession by the sensitivity of international financial markets, leading governments to adopt restrictive deflationary macroeconomic policies which also played an important role in the negative performance of economy and labor force dynamics (Nayar, 2006).

Brazil is the major developing country of America and one of the countries where economic reforms have been most intensively implemented in the beginnings of the ‘90s. Although Brazil reached success controlling hyperinflation, it was not been able to maintain a sustainable economic growth nor to improve its precarious socioeconomic indicators during the whole decade, especially in its labor market. After a period experiencing high economic growth in ‘70s, debt crisis in beginnings of the ‘80s introduced a long period of low and unsteady economic growth in Brazil, which continued even after the implementation of economic reforms in the ‘90s. In the ‘70s, Brazilian GDP (Gross Domestic Product) grew 8.4 percent per year and, from 1980-2006, Brazilian GDP grew by an average of just 2.2 percent per year (Figure 1).

In turn, the US witnessed a long period of sustainable economic growth. The most instable period in the US occurred in the ‘70s, when the sharp oil price increases of 1973 and 1979 was responsible for two severe recession (Eichengreen, 2004). In this decade, American GDP growth was meaningfully lower than in Brazil: 3.7 percent per year. Since then, the US maintained an steady economic growth (3.1 percent per year), besides periods of economic crises such as savings and loan crisis in the early 1990s and dot com crisis in 2001 (Caldentey *et al*., 2009).

Beside financial and economic liberalization, diverse restrictive policies were also applied in order to reach economic stabilization in Brazil, which produced additional difficulties to the Brazilian labor market. Among them, fixed exchange rate for a long period of time, privatization and constrainable monetary policy can be highlighted.

Several international crisis, such as the Mexican crisis in 1994, Asian in 1997 and Russian in 1998 showed the vulnerability by cyclical capital flows and macroeconomic policies in such developing countries and also contributed to the unsatisfactory Brazilian economic growth in this period (Galbraith, 2008). In 90’s, Brazilian economic growth had been the worst of post-crisis period, just 1.7 percent per year, while the US maintained an average of 3.1 percent per year of economic growth.

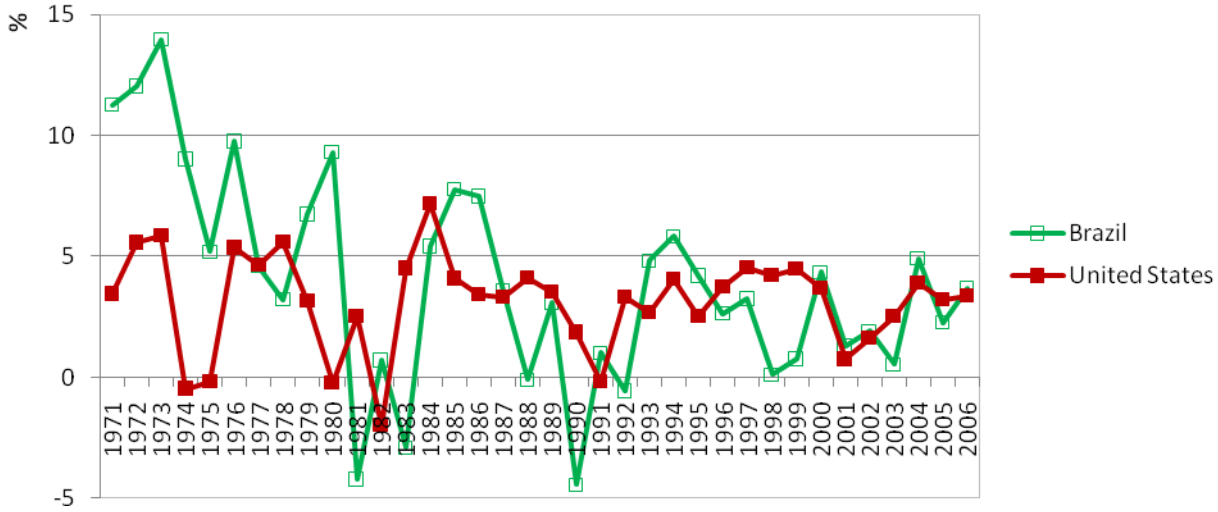

Figure 1 – Annual GDP(1) growth (%) – Brazil and the US, 1971 to 2006

(1) GDP at constant prices – US dollars
Source: United Nations Statistics Division. Available in <http://unstats.un.org/unsd/default.htm> . Accessed in oct 2007.

In order to examine how these divergent economic trends affected labor market performances in Brazil and the US, next topics will present the evolution of some relevant economic and labor market indicators. The aim is to evaluate the dynamics of the employment, productivity, wages and sectoral structure trends in such countries.

3. Results

3.1. Labor market dynamics

The unsatisfactory and unsteady economic performance in Brazil resulted in severe restrictions to its labor market dynamics and huge differences between the Brazilian an American labor markets increased substantially. From 1981 to 2006, the cumulative economic growth in Brazil was just 83 percent, 33 percentage points lower than the American (Figure 2).

Besides lower economic growth, divergent demographic trends contributed to increase inequalities between the Brazilian and American labor markets. The share of young population is substantially higher in Brazil than in the US (IDB, 2010)[1], which imposed serious pressure in the demand for labor in Brazil. Higher growth of the women participation in Brazil also contributed for such pressure in the labor market, in such a way that huge differences Brazilian and American women participation rates from 1980 almost disappeared in the 2000s[2].

As a result, between 1981 and 2006, Economically Active Population (EAP) in Brazil increased 110 percent, 27 percentage points more than its cumulative economic growth. In the US it increased just 39 percent. It means that, whereas US witnessed a respectful productivity improvement, with high economic and low labor force growth, Brazil fought against a restricted economy growth for respectful increasing in its labor force.

[1] For instance, in 2000 the share of persons younger than 15 years old was 29.3 percent in Brazil and, in the US, just 21.4 percent (IDB, 2010).
[2] Between 1980 and 2007, the women participation rate rose from 51.5 to 59.3 in the US. In Brazil it rose from 30.1 to 58.0 (KILM, 2009).

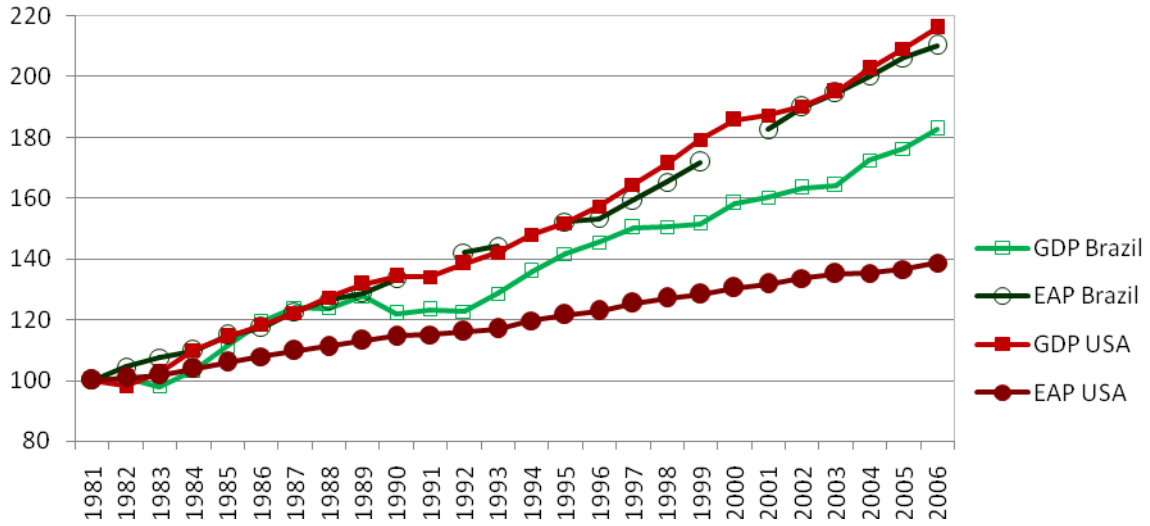

Figure 2 – Percent cumulative GDP(1) and EAP growth (1981=100) – Brazil and the US, 1981 to 2006

(1) GDP at constant prices – US dollars
Source: United Nations Statistics Division. Available in <http://unstats.un.org/unsd/default.htm>. Accessed in oct 2007. CPS (March supplement) – LBS and PNAD - IBGE.

Thus, extreme differences between economic and labor force growth in Brazil can be pointed as one of the major causes of blowing unemployment, underemployment and other precarious forms of insertion in the Brazilian labor market. In such difficult context, huge differences between Brazilian and American labor market increased expressively in this period.

For instance, Figure 3 shows that Brazilian unemployment rate rose from 5.4 percent in 1981 to 9.9 percent in 2006, whereas in the US it fell from 7.0 percent to 4.6 percent. In both countries, a positive relation between economic crises and growth in unemployment can be observed, although this relation seems slightly stronger in the American case. In Brazil, growth in unemployment occurred especially in the '90s, when economic reforms affected strongly the capacity of the economy to maintain and generate employment. On the other hand, gains from, particularly, growth in exports of commodities carried out by world economic growth in the 2000s, played important roles reducing unemployment rate in the Brazilian labor market since 2002 (MAIA, 2009). But, unemployment rate in Brazil still remained close to 10 percent and it represented more than 9 million of Brazilians in 2006[3]. Overall, besides American EAP being 64 percent higher than Brazilian EAP, Brazil has 2.5 million more unemployed than the US.

[3] This number doesn't include long time unemployment (those who were looking for a job in a period further than 1 month), which represented 19 percent of Brazilian unemployed population in 2006 (MAIA, 2007) and could increase the number of unemployed to more than 11 million of Brazilian.

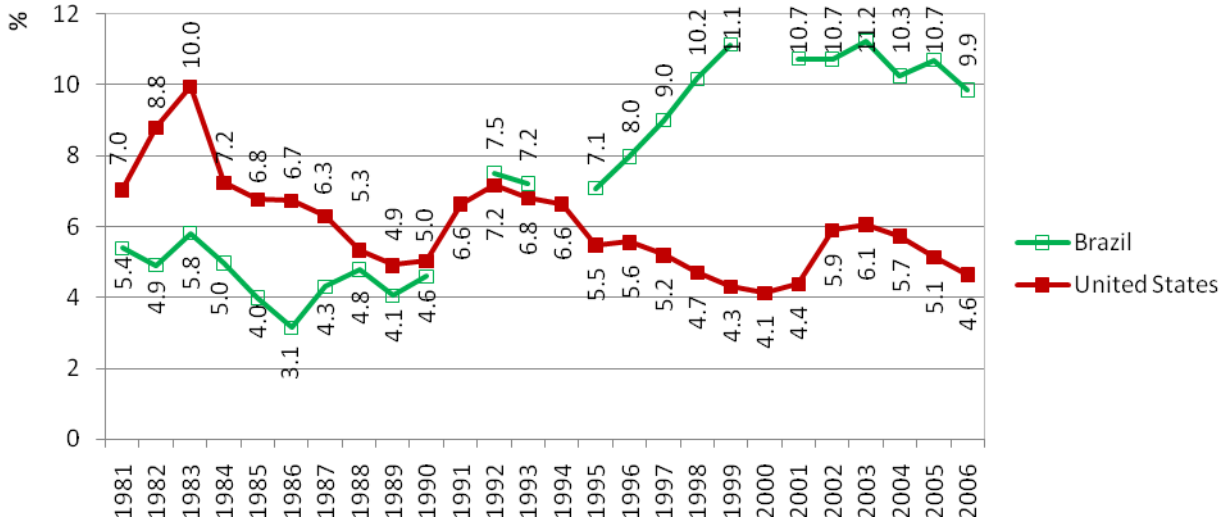

Figure 3 – Unemployment rate (% of PEA) – Brazil and the US, 1981 to 2006

Source: CPS - March supplement – (LBS) and PNAD (IBGE).

Beside unemployment, underemployment also rose substantially in Brazil. Although there is no common and effective way to measure simultaneously underemployment in Brazilian and American household surveys, one approach can be done using the percent of the employed population working less than 35 hours per week. It must be stressed that employed in part-time are not necessarily underemployed because they could not be willing to work additional hours. Especially in the US, where higher wages can afford partial jobs for a significative share of the employed population. For instance, 64 percent of the American working less than 35 hours per week did not wanted to work additional hours in 2006. But, in Brazil, besides the absence of specific question concerning the willingness to work additional hours in the questionnaire, low average wage for most of partial workers suggest that these jobs and especially related to precarious socio-occupational positions.

In Brazil, the share of part-time workers rose almost continuously from 15.7 percent in 1981 to 24.5 in 2006 (Figure 4). In US it stayed close to 4 percent all period long. Rural-urban migration must be highlighted as one of the major factors affecting the structure of the labor market and the dynamics of underemployment. A sharp increase in the supply of low skilled workers in urban areas compels these workers to incur high risks of underemployment in the urban informal sector (Rauch, 1991). This phenomenon is more recent in Brazil, where farm mechanization and the huge inequality between urban and rural socioeconomic conditions attracted huge number of rural workers in the last decades[4].

[4] For instance, between 1981 and 2006, the share of agricultural workers in Brazil fell from 29.3 percent to 19.3 percent. In US, they are less relevant and fell from 3.5 to 1.5 percent (KILM, 2009).

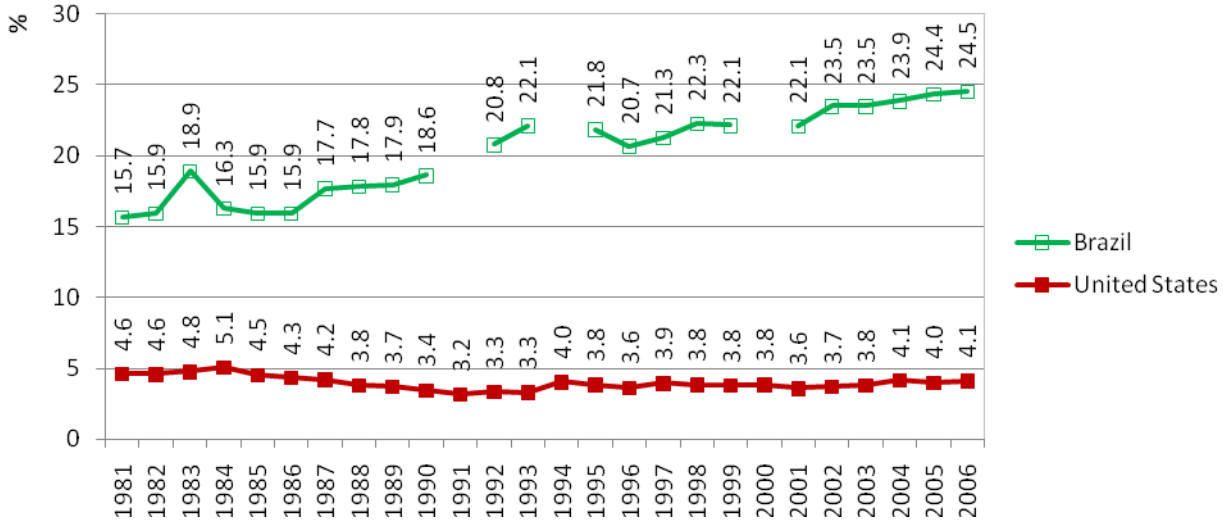

Figure 4 – % of employees who work less than 35 h per week – Brazil and the US, 1981 to 2006

Source: CPS (March supplement) and PNAD.

Labor productivity is another important measure of the economic growth, competitiveness and living standard in an economy (Rebecca, 2008). Besides different indicators for the labor productivity, an approach was given in this work by the ratio between Gross Value Added (GVA) and labor hours. Figure 5 shows the dynamics of labor productivity in Brazil and the US and highlight an expressive rise in the US and a stationary state in Brazil. Labor productivity in US grew 44 percent between 1981 and 2006, whereas it fell 6 percent in Brazil.

These results suggest that the significant economic growth reached by the US with low labor force supply was achieved with substantial improvement of labor productivity. In this country, technological progress could be achieved as a result of the development and better use of information technologies, form computers to faster communication networks. In turn, Brazil seemed remaining specialist in labor intensive activities in a such way that, in the whole period, the ratio between American and Brazilian labor productivity shifted from 4.9 to 7.4.

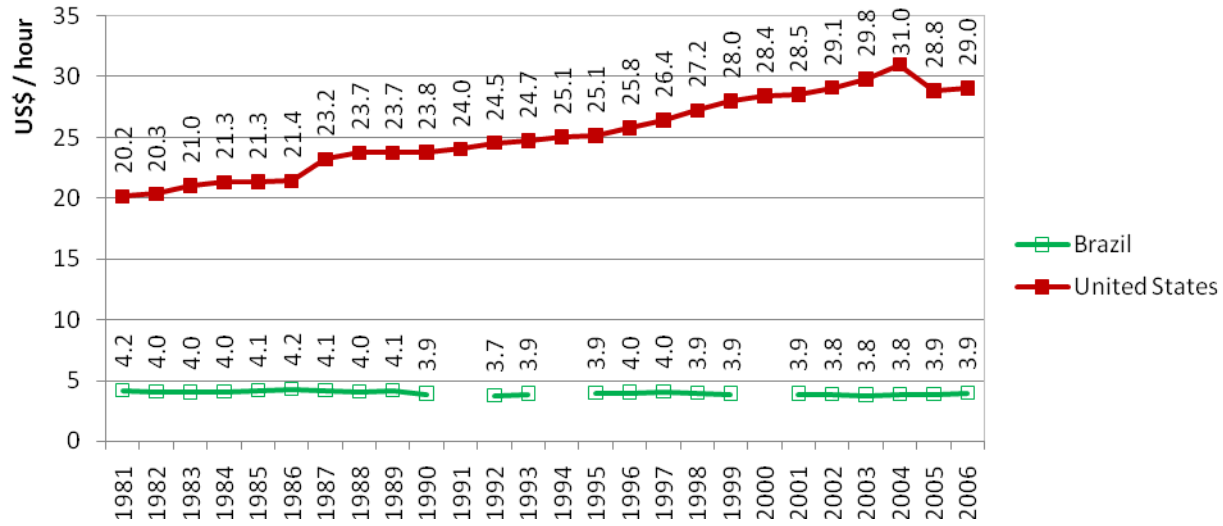

Figure 5 – Labor productivity (GVA US$ / labor hour) – Brazil and the US, 1981 to 2006

Source: CPS (March supplement), PNAD, and United Nation Statistics.

The gain of labor productivity in the US gave opportunity to a increase of real wages in such a way that, between 1981 and 2006, average wage in US grew 38 percent. This means that the benefits of the productivity improvement in the US were not only spread on the producer surplus or on the market as lower prices, but also in terms of higher wages to the working population. In turn, average wage in Brazil decreased 13 percent also as a result of the decrease in labor productivity in this country. Overall, the ratio between American and Brazilian average wages rose from 3.3 in 1981 to 5.3 in 2006.

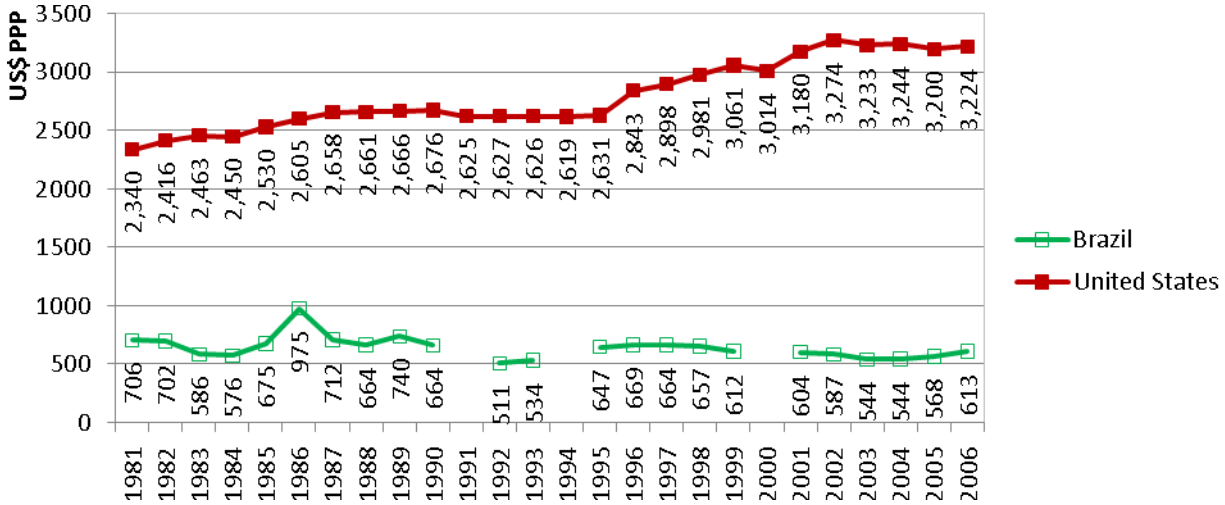

Figure 6 – Average monthly wage (US$ PPP) – Brazil and the US, 1981 to 2006

Source: CPS (March supplement), PNAD, and United Nation Statistics.

3.2. Industry structure

Besides economic liberalization, the adoption of new technologies can also be pointed as one of the major determinants of the important changes occurred in the Brazilian industry structure, and was not done with enough care in order to avoid unemployment and underemployment. In Brazil, such changes affected more expressively agricultural and manufacturing industries in such a way that, between 1981 and 2006, theses activities maintained the share of total GVA and reduced reasonably theirs share of the total labor force (Table 1). This premature reduction of manufacturing labor force suggests that Brazil pulled down the ladder of development. In other words, Brazil did not reach and equivalent stage of development and competitiveness of the richest nations and, suddenly, blocked up the road of development, which has been followed by all industrialized countries up until now.

On the other hand, the expressive reduction of manufacturing labor force in US, from 24 to 12 percent between 1981 and 2006, is related to the new development process in industrialized countries. According to Yotopoulus (1999), although comparative advantage in commodities still remains an important part in the twentieth century globalization, trade in services (from transportation and communications to insurance and financial services) grew substantially and already represents more than 20 percent of total international trade. Relative advantages related to reputation, customization, trust and infra-structure give special advantage to developed countries in this trade competition. Services exported for US are not

easily accessible to developing countries because public infrastructure that has made such export specialization possible usually comes at great cost to the countries involved concerned to: technical education infrastructure in the form of technology and biotechnology parks, high speed fiber optics communication, networks that make the instantaneous transmission of data possible, and specially an army of well trained engineers.

Table 1 – Industry structure - Brazil and the US, 1981 and 2006

	Economic Activity	1981			2006		
		People		%	People		%
		N (1.000)	%	GVA	N (1.000)	%	GVA
Brazil	Agriculture, hunting, forestry, fishing	11.021	26,7	6,0	12.656	15,3	7,4
	Mining, manufacturing, utilities	7.036	17,0	28,8	12.791	15,5	28,5
	Construction	3.503	8,5	8,2	5.608	6,8	5,4
	Wholesale, retail trade, restaurants and hotels	6.089	14,7	8,7	18.454	22,3	8,1
	Transport, storage and communication	1.719	4,2	2,8	3.999	4,8	6,5
	other activities	11.951	28,9	45,5	29.229	35,3	44,2
	Total	**41.319**	**100,0**	**100,0**	**82.738**	**100,0**	**100,0**
US	Agriculture, hunting, forestry, fishing	3.012	3,0	2,3	1.976	1,4	2,2
	Mining, manufacturing, utilities	23.892	23,9	24,7	17.869	12,3	22,5
	Construction	5.682	5,7	4,8	11.353	7,8	3,7
	Wholesale, retail trade, restaurants and hotels	21.284	21,3	13,8	29.475	20,3	18,8
	Transport, storage and communication	4.882	4,9	4,9	8.101	5,6	6,7
	other activities	41.364	41,3	49,4	76.573	52,7	46,1
	Total	**100.116**	**100,0**	**100,0**	**145.347**	**100,0**	**100,0**

Source: CPS, PNAD and United Nation Statistics.

The industries more affected by productivity improvement in the US were agricultural and manufacturing activities, meanwhile Brazil continued specialized in low add value production (Table 2). Differences between American and Brazilian labor productivity rose in most sector (exception for wholesale and related activities), this means, huge inequalities between these countries were still higher in 2006. For instance, in 2006, productivity in American agriculture was 21 times higher than in Brazil and 7 times higher in mining, manufacturing and utilities services. In 1981 these ratios were equals to 14.4 and 2.9, respectively.

As argues Reinert (2003), these results suggest that US is specializing in producing continuous flows of innovations that give opportunity to raise their real wage, whereas Brazil is specializing either in economic activities where there is very little or no technological change, or where technological changes take the form of process innovations (in which technical change is taken out in the form of lower prices to the consumer rather than in higher wages to the workers, who are typically unskilled). As a result, labor market rewards people in similar activities very differently in Brazil and the US, and these differences rose in all industries between 1981 and 2006. For instance, an agricultural worker in US enjoyed, in 2006, an average wage 5 times higher than in Brazil.

Table 2 – Labor productivity (GVA US$/h) and average monthly wage (US$) - Brazil and the US, 1981 and 2006

	Economic Activity	1981		2006	
		GVA US$/h	Wage US$	GVA US$/h	Wage US$
Brazil	Agriculture, hunting, forestry, fishing	0.9	406.8	2.0	260.8
	Mining, manufacturing, utilities	6.9	958.1	6.9	689.0
	Construction	3.9	557.5	2.9	515.1
	Wholesale, retail trade, restaurants and hotels	2.3	721.1	1.3	586.0
	Transport, storage and communication	2.5	983.4	4.6	770.8
	other activities	7.3	770.9	5.3	748.9
	Total	**4.2**	**706.1**	**3.9**	**613.4**
US	Agriculture, hunting, forestry, fishing	13.1	779.5	41.7	1,421.1
	Mining, manufacturing, utilities	19.8	2,873.3	48.6	3,793.7
	Construction	16.4	2,627.1	13.4	3,025.5
	Wholesale, retail trade, restaurants and hotels	13.8	1,828.6	27.5	2,306.5
	Transport, storage and communication	19.1	3,070.9	32.2	3,603.6
	other activities	25.0	2,278.8	26.2	3,508.7
	Total	**20.2**	**2,339.9**	**29.0**	**3,223.9**

Source: PNAD – IBGE – and United Nations Statistics Division.

Conclusion

This paper attempted to illustrate how structural changes witnessed in the turn of the 20th century produced opposite effects in the Brazilian and American labor markets, the two main economies of the America. Instead of a convergence of wages (towards factor-price equalization), inequalities between Brazilian and American labor market increased substantially. These results suggest in such a way the assertion that poorest countries were specially affected by instabilities in the global economy in this period.

The results also showed that this period delivered especial benefits to the US, the most developed country of the world, whereas significant costs arose in the Brazilian labor market. After a period of high economic growth in the ‘70s, debt crisis in the beginnings of the ‘80s introduced a long period of low and unsteady economic growth in Brazil, which was prolonged with economic liberalization in the ‘90s. As a result, unemployment and underemployment grew and low wages remained almost constant. Meanwhile, US witnessed an expressive growth of productivity and real wages, maintaining low rates of unemployment and underemployment.

There are huge differences between labor markets in Brazil and US, and higher economic growth is a necessary condition to improve the precarious condition of development and reduce disparities between these countries. But economics dynamics witnessed in last periods are far from expected. Recently, US were hit by a huge economic crisis while Brazil seems to show a new trend of sustainable economic growth. But the real impacts of such new trend of development in their labor market will just be known in a close future.

References

BLS (2002). **Current population survey - design and methodology**. Bureau of Labor Statistics, USA.

Caldentey, E. P.; Titelman, D.; Pineda, R. (2009) **The current global financial crisis**: what was really 'purely prime'?. Santiago, ECLAC.

Eichengreen, B. J. (2004). **Capital flows and crises**. MIT Press, 377 p.

Freeman, R. (2008). **Labour productivity indicators**: comparison of two OECD databases productivity differentials & the Ballassa_Samuelson effect. Organisation for Economic Co-operation and Development.

Galbraith, J. (2008). **Inequality and Economic and Political Changes.** UTIP Working Paper, n. 51, University of Texas, Austin.

Galbraith, J.; Kum, H. (2002). **Inequality and Economic Growth: Data Comparisons and Econometric Tests.** UTIP Working Paper, n. 21, University of Texas, Austin.

IDB (2010). International Data Base. U.S. Census Bureau. Available in < http://www.census.gov/ipc/www/idb/>. Accessed in August 2010.

IMF (2010). **Financial Crisis**: key issues. International Monetary Fund. Available at <http://www.imf.org/external/np/exr/key/finstab.htm>. Accessed on August 2010.

KILM (2009). **Key Indicators of the Labor Market**, 6th Edition. International Labour Organization.

Maia, A. G. (2009). Features and dynamics of unemployment in Brazil in the 2000s. **Pesquisa & Debate**, v. 20, n. 2 (36), pp. 259-273.

Nayyar, D. (2006). Globalisation, history and development: a tale of two centuries. **Cambridge Journal of Economics**, 30, pp. 137-159, 2006.

Ocampo, J. A. (2003). **Development and the global order**. In Chang, H. J. (Org). Rethinking development economics. Anthem Press, London.

Prebisch, R. (1985). **The Latin American periphery in the global system of capitalism**. CEPAL Review, n. 26, August 1985, p. 63-88.

Rauch, J. E. (1991). Economic development, urban underemployment and income inequality. **NBER Working Papers Series**, n. 3758, National Bureau of Economic Research.

Reinert, E. (2003). **Increasing proverty in a globalized world:** Marshal Plans and Morgenthau Plans as mechanisms of polarization of world incomes. In Chang, H. J. (Org). Rethinking development economics. Anthem Press, London.

Yotopoulus, P. (1999). **Free currency markets, financial crises and the growth debacle: is there a causal relationship?** The Macrodynamics of Economic Inequality, Levy Institute, October 1999.