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THE IMPACT OF AN ECONOMIC CRISIS ON PUBLIC SECTOR REVENUES, POLICIES AND DEVELOPMENT

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INTRODUCTION

To investigate the appropriate measures to face the impact of an economic crisis on public sector revenues, policies and development is the main purpose of this final research paper of the Minerva Program participant.

Brazil is a continental country[1] with many differences to be compared with the United States of America that requires such a comprehensive and accurate view of both unequal[2] economic, social, and political evolution. But many policies may be conceivable and one dozen should be able to diminish the effects of the constraints imposed by the international crisis.

Throughout its history, the world has seen that The United States exercises global economic, political, and military influence and enjoys strong ties with other developed countries. An economic crisis that evolves USA could influence the world and cause several impacts depending on the level or intensity of the economic relations with this country.

The impact caused in Brazil because of the recent crisis faced by The United States of America is the object of analysis. An approach to the following points: inflation, government expenditures, government revenue, fiscal imbalances, main corporate taxes, tax burden and social security contributions with a graphic evolution demonstration during the years especially the period of the international crisis that imposed several restrictions to the world economic community.

Exploring this subject, the aim of the participant is to point solutions to combat the effects of the economic retraction and to unemployment in the country, combined with an intelligent macroeconomic policy action to improve revenue, stability,

[1] The Brazilian economy is the world's eighth largest economy by nominal GDP and the ninth largest by purchasing power parity. World Bank data reveals that Brazil is one of the world's fastest growing major economies. Government economic reforms have given the country new international recognition.

[2] After a correlated analysis of the macroeconomic aspects and varies along the period from 2007 to 2010 it is possible to perceive that both countries are example of inequalities in the world.

without stopping economy with more regulations promoting economic growth and sustainability.

After the introduction, the Minerva participant applies his theoretical studies into current policy issues in the Brazilian case, so that in the second section introduces macroeconomic theoretical aspects as GDP, its composition, Inflation, interest rates and Unemployment.

In the third section, the international crisis is going to analyzed focusing the American case and the recent strategies undertaken by FED (Federal Reserve Bank) and China government and its consequence to the world economy from the point of view of the Brazilian economy.

In the fourth section, the Brazilian public sector revenues, expenditures and the macroeconomic policy to face crisis are going to be presented, illustrated by graphics and data from official sources of economic information.

Tax analysis and approach to fiscal federalism in Brazil combined with the main corporate taxes, government expenditures and revenues are going to be analyzed in the fifth section.

Brazilian counter cyclical measures as fiscal policy for the crisis, fiscal stimulus to improve the national economy and monetary policy are supposed to be explained in the sixth section.

In seventh section, foreign sector and the impact of the international crisis in Brazil is going to be showed by graphics demonstration. Graphic demonstration is going to be provided with source in the Ministry of Finance and other institutions.

Long run economic growth strategies exposed in the Solow model is the last part of this economic analysis, suggesting that a country might improve its levels of education, human capital and technology by providing investment.

The conclusion consists in a table of recommendation to Brazilian government to achieve the real sustainable growth and to face international crisis with more resilience, by executing fiscal policies correctly and previously.

2.0 MACROECONOMIC THEORETICAL ASPECTS

To understand international economics policy makers must achieve the goal and improve the situation of the society and the nation as a whole.

The concepts of GDP, inflation, unemployment, interest rates and exchange rates are going to be shown to facilitate the discussion of those subjects. The final paper doesn't have any pretension to make a profound analysis on each of those variables that evolves macroeconomics, but to be pragmatic on observing the causes and the consequences of the recent international financial crisis.

2.1 Inflation and Unemployment on Economic Crisis Period

Unemployment[3] and inflation are two concepts in macroeconomics that have inverse correlation. Two analyses can be done, one in the short term and another in the long term. When the inflation is in the high part of the curve, unemployment gets in the low. To interpret the relationship between the concepts is a government task to face international crisis also.

In the long term the concepts of unemployment and inflation are not related, so that in the short term the Phillips curve is one declining curve and in the long term it has to be observed separately.

Inflation is known as the increase in the level of the prices. According to the classical economists there is a natural rate of unemployment, which may also be called the equilibrium level of unemployment in a particular economy.

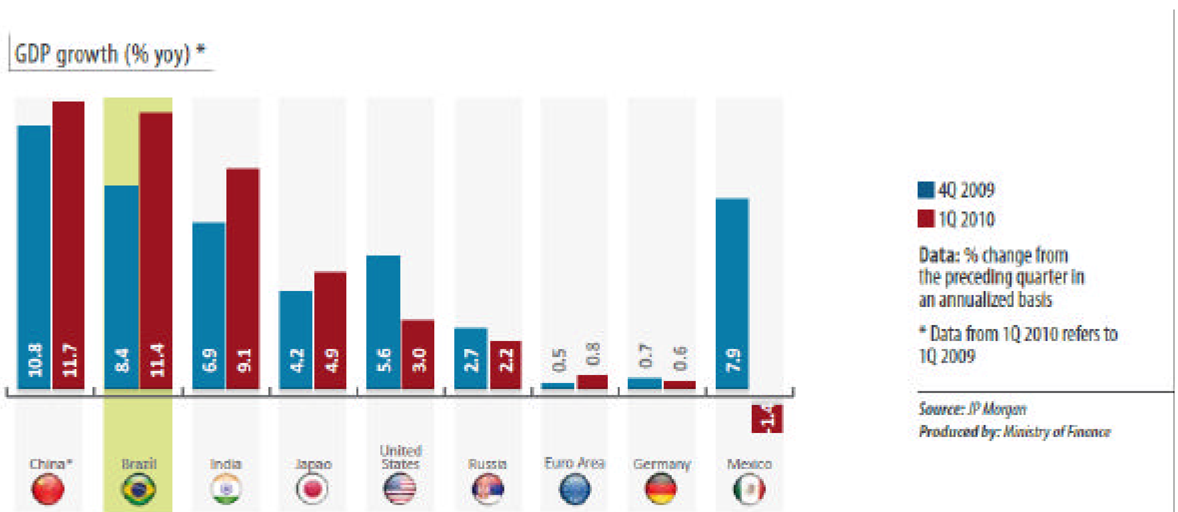
[3] While the United States of America maintain an unemployment rate of 9.5% by June 2010, public debt of about U$ 13.24 trillion dollars and a CPI Inflation about 1.1% in comparison of the same month of the year before: June 2009. Brazilian Economy demonstrates more resilience with ability to sustain the crisis period with lower unemployment rate and controlled inflation than the last crisis.

The long term Phillips curve is basically vertical as inflation is not meant to have any relationship with unemployment in the long term.

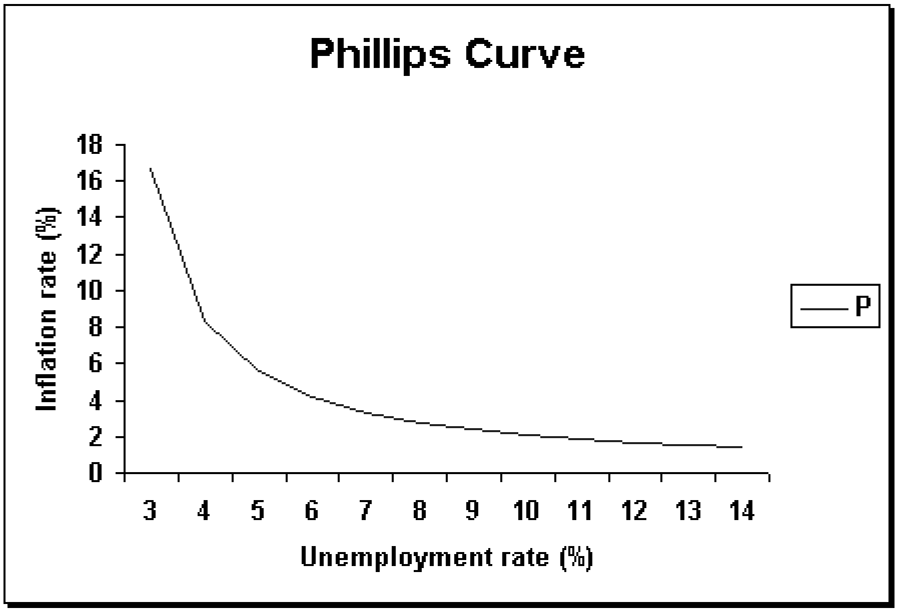
When the rate of unemployment is lower than natural rate, the inflation is supposed to exceed the limits of expectation and in case of the unemployment rate is higher than what is the permissible limit then the rate of inflation would be lower than expected rates.

The Keynesians deal primarily with the institutional crises that are encountered by people when they increase their price levels. As per their argument the owners of the companies keep on increasing the salaries of their employees in order to appease them.

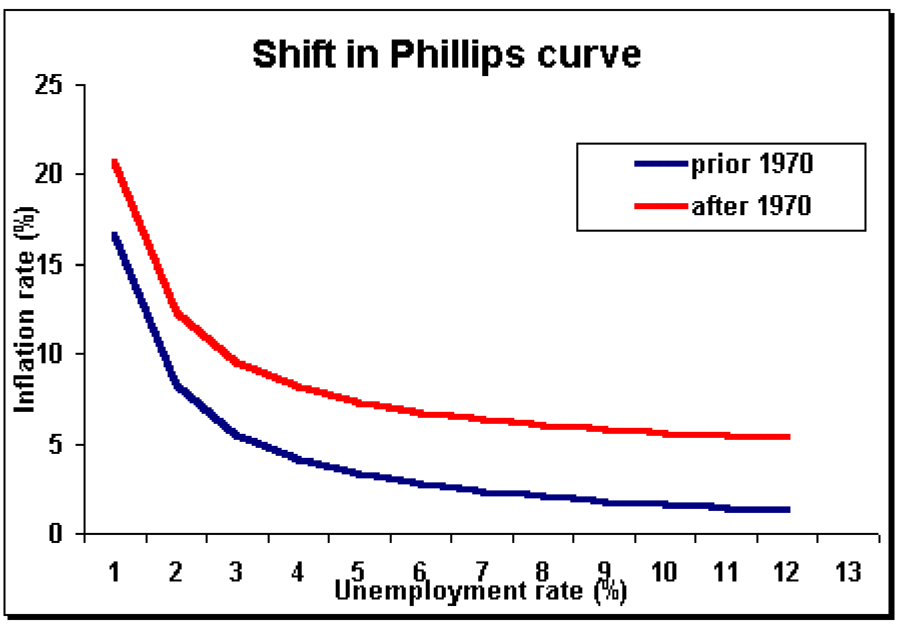
Keynesians make their profit by increasing the prices of the services that are provided by them. This means there has to be an increase in the money supply so that the economy may keep on functioning. In order to meet this demand the government keeps on providing more money so that it can keep up with the rate of inflation. The Keynesians regard inflation to be an aftermath of money supply that increases too much.



In the graphic below it's possible to observe that Brazil in the first quarter of 2010 had a GDP growth percentage of 11.4 compared with the fourth quarter of 2009



PHILLIPS CURVE[4]



PHILLIPS CURVE SHIFT[5]

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[4] The Phillips curve shows that historically a trade-off has existed between a high rate of inflation and a high rate of unemployment. The trade-off has been used for policy purpose in the 1960's to seek an acceptable combination.

[5] The observations for the 1970's did not conform to the trade-off shown in previous Phillips curve statistics. This suggests that the Phillips curve had shifted.

In the graphic G20 Economy it's possible to observe that unemployment rate (April 2010) in the U.S. is around 9.9 % while in Brazil 7.6%. Inflation in the U.S. 2.2% while in Brazil 5.3%

G20 Economy [1]

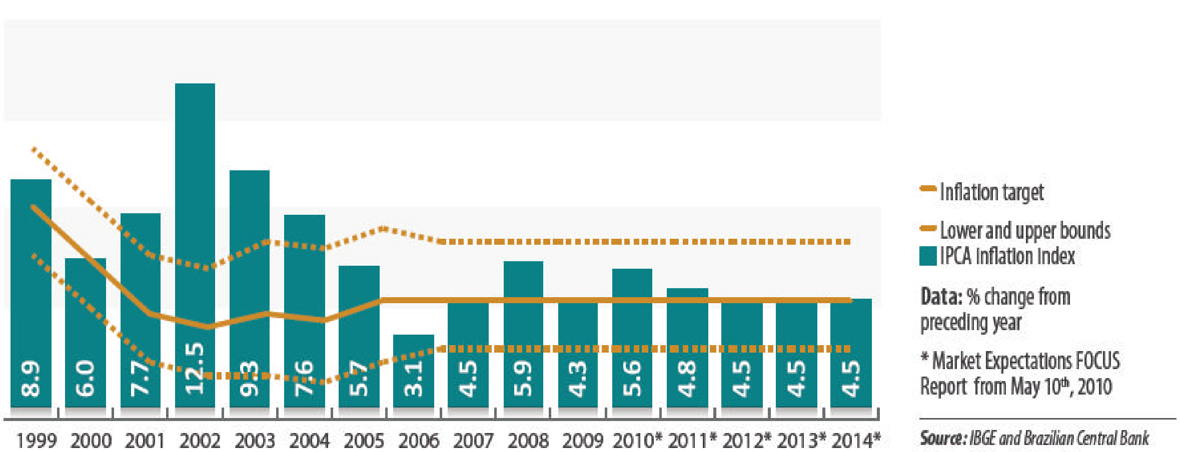
(%month of the preceding yearr)	GDP (% a.a.) [2]		Industrial Production		Inflation (annualized)		Unemployment Rate [3], %	
	2010	2011		Position		Position		Position
United States	3.1	2.8	5.2	Apr	2.2	Apr	9.9	Apr
Japan	2.1	1.7	31.8	Mar	-1.1	Mar	5	Mar
China	9.9	8.1	17.8	Apr	2.8	Apr	9.6	2009
United Kingdom	1.3	2.1	2	Mar	3.7	Apr	8	Feb [4]
Canada	3.1	3.0	-0.7	Feb	1.4	Mar	8.1	Apr
Euro Zone	1.1	1.5	6.9	Mar	1.5	Apr	10	Mar
France	1.5	1.7	6.2	Mar	1.7	Apr	10.1	Mar
Germany	1.6	1.7	8.6	Mar	1	Apr	7.8	Apr
Italy	0.7	1.2	6.4	Mar	1.5	Apr	8.3	4Q 09
Russia	4.5	4.2	10.4	Apr	6.1	Apr	8.6	Mar
Turkey	14.8	14	21.1	Mar	10.2	Apr	14.4	Feb [4]
Australia	3.1	3.4	0.9	4Q 09	2.9	1Q 10	5.4	Apr
India	7.7	8	13.5	Mar	14.5	Mar	10.7	2009
Indonesia	5.6	5.9	2.7	Feb	3.9	Apr	7.9	Aug
South Korea	5	4	22.1	Mar	2.6	Apr	3.7	Apr
Argentina	4.2	2.9	7.6	Mar	10.2	Apr	8.4	4Q 09
Brazil	6.3	4.5	19.7	Mar	5.3	Apr	7.6	Mar
Mexico	4.2	2.6	7.6	Mar	4.3	Apr	4.8	Mar
Saudi Arabia	3.3	3.5	na	na	4.7	Mar	na	na
South Africa	2.8	3.7	6.3	Mar	5.1	Mar	25.2	Mar

1 The Economist edition as of April 29th, 2010
2 The Economist/EIU Forecasts
3 National definition
4 Latest 3 months
5 None seasonal adjustment
na = not available
Data: % month of the preceding year

Source: *The Economist*
Produced by: *Ministry of Finance*

In the graphic below it's possible to perceive the evolution of the inflation targeting from 2010 to the past ten years and a forecast to the next four years, limited by lower and upper bounds.

IPCA Inflation Index (% yoy)



Data: % change from preceding year

* Market Expectations FOCUS Report from May 10th, 2010

Source: *IBGE and Brazilian Central Bank*
Produced by: *Ministry of Finance*

2.2 Gross Domestic Product (GDP):

Economic growth is measured in terms of an increase in the size of a nation's economy. A broad measure of an economy's size is its output. The most widely-used measure of economic output is the **Gross Domestic Product**[6].

GDP generally is defined as the market value of the goods and services produced by a country. One way to calculate a nation's GDP is to sum all expenditures in the country. This method is known as the expenditure approach.

2.2.1 Expenditure Approach to Calculating GDP

The expenditure approach calculates GDP by summing the four possible types of expenditures as follows:

GDP = Consumption
+ Investment
+ Government Purchases
+ Net Exports

Consumption is the largest component of the GDP. In the U.S., the largest and most stable component of consumption is services. Consumption is calculated by adding durable and non-durable goods and services expenditures. It is unaffected by the estimated value of imported goods.

Investment includes investment in fixed assets and increases in inventory.

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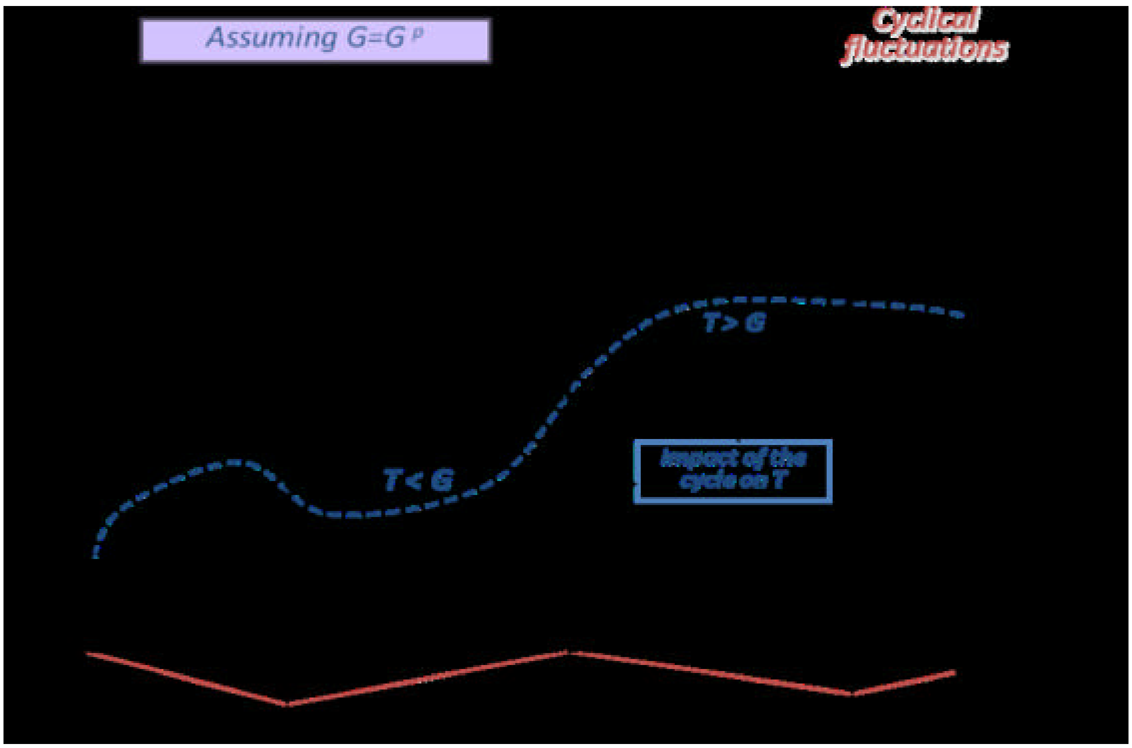
[6] GDP measures the output of goods and services within the borders of the country. Gross National Product (GNP) measures the output of a nation's factors of production, regardless of whether the factors are located within the country's borders. For example, the output of workers located in another country would be included in the workers' home country GNP but not its GDP. The Gross National Product can be either larger or smaller than the country's GDP depending on the number of its citizens working outside its borders and the number of other country's citizens working within its borders.

In the United States, the *Gross National Product* (GNP) was used until the early 1990's, when it was changed to GDP in order to be consistent with other nations.

Government purchases are equal to the government expenditures less government transfer payments (welfare, unemployment payouts, etc.)

Net exports are exports minus imports. Imports are subtracted since GDP is defined as the output of the domestic economy.



2.2.2 Alternative Approaches to Calculating GDP[7]

There are three approaches to calculating GDP:

- **expenditure approach** - described above; calculates the final spending on goods and services.
- **product approach** - calculates the market value of goods and services produced.
- **income approach** - sums the income received by all producers in the country.

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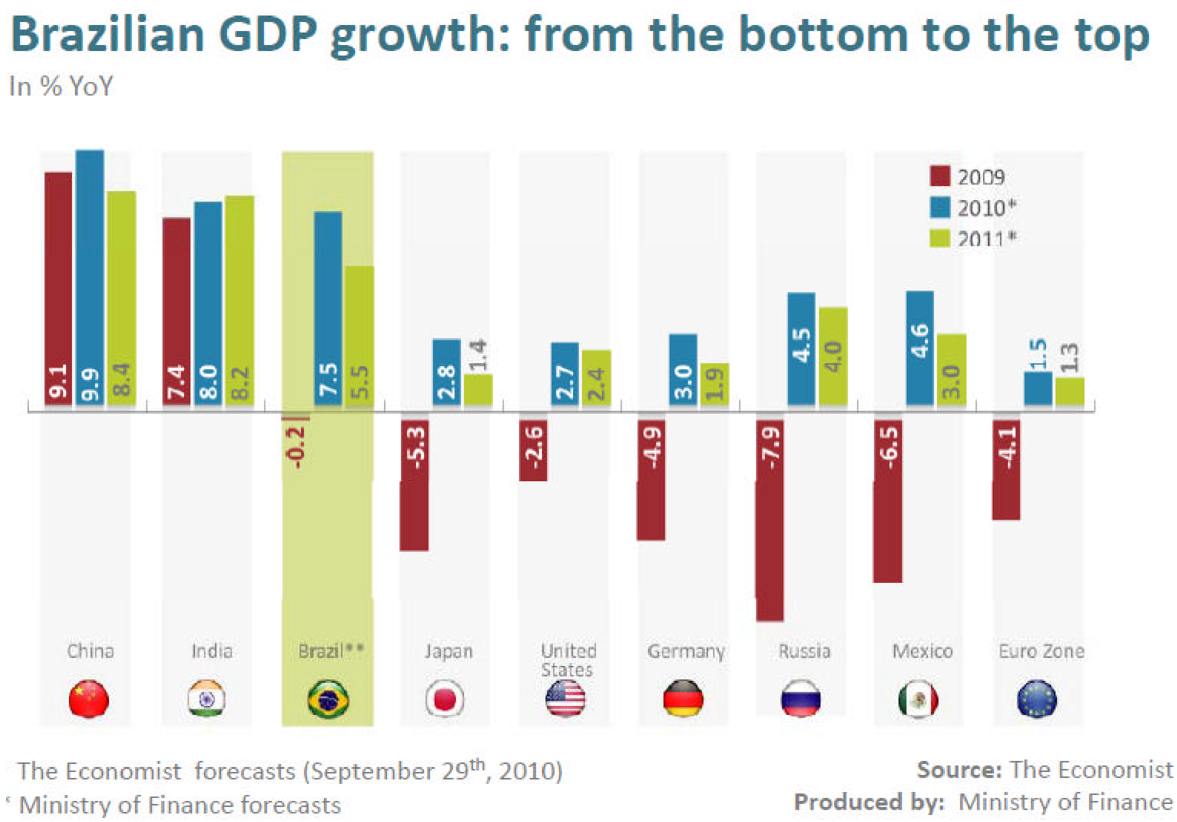
[7] ***GDP Growth: Countries seek to increase their GDP in order to increase their standard of living. Note that growth in GDP does not result in increased purchasing power if the growth is due to inflation or population increase. For purchasing power, it is the real, per capita GDP that is important.While investment is an important factor in a nation's GDP growth, even more important is greater respect for laws and contracts.***

These three approaches are equivalent, with each rendering the same result.



2.2.3 Nominal GDP and Real GDP

Without any adjustment, the GDP calculation is distorted by inflation. This unadjusted GDP is known as the *nominal GDP*. In practice, GDP is adjusted by dividing the nominal GDP by a price deflator to arrive at the *real GDP*.

In an inflationary environment, the nominal GDP is greater than the real GDP. If the price deflator is not known, an implicit price deflator can be calculated by dividing the nominal GDP by the real GDP:

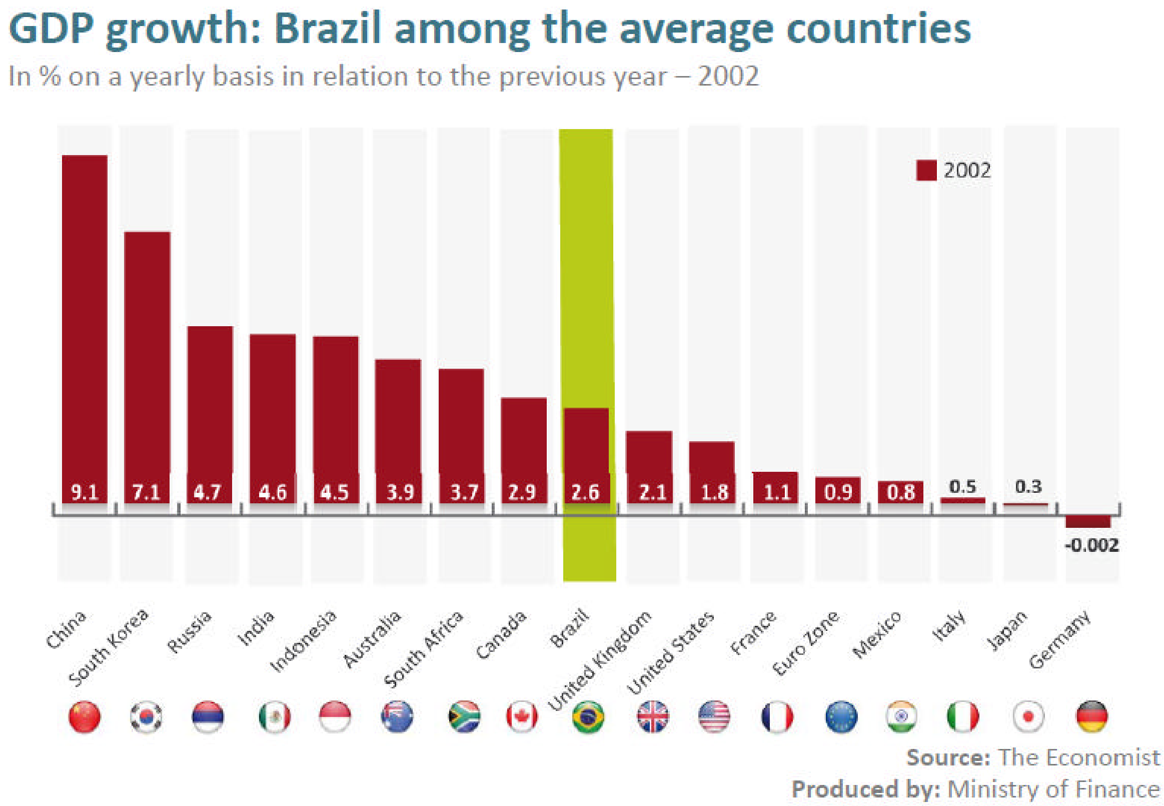
Implicit Price Deflator = Nominal GDP / Real GDP

The composition of this deflator is different from that of the consumer price index in that the GDP deflator includes government goods, investment goods, and exports rather than the traditional consumer-oriented basket of goods.

GDP usually is reported each quarter on a seasonally adjusted annualized basis.

Final Sales as a GDP Predictor

Note that an increase in inventory will increase the GDP but possibly result in a lower future GDP as the excess inventory is depleted. To eliminate this effect, the final sales can be calculated by subtracting the increase in inventory from GDP. The final sales can be either larger or smaller than GDP. The change in inventory is an important signal of the next period's GDP.



- Notation

i: Domestic Interest rate

G: Public Expenditure (Cg+Ig)

Tx: Taxes (if there are expenditure transfers or subsidies, Tx is net of them)

e: Real exchange rate, e = EP*/P

E: Nominal exchange rate, P*: foreign prices; P: domestic prices

M^s: Money supply. If E is flexible, the Central Bank may have impact on M^s => monetary policy

i*: Foreign interest rate

DD: Domestic demand

ED: External demand

2.3 Interest Rate and Exchange Rate

Interest rate is relevant for the analysis of consumption because it determines its distribution through time and demonstrates how real interest rate has a negative impact on today's consumption

The nominal exchange rate and real exchange rate will play central roles in this analysis. The nominal exchange rate , e nominal , between two currencies is the number of units of foreign currency that can be purchased with one unit of the domestic currency. The real exchange rate, e real, is the number of foreign goods that can be obtained in exchange for one unit of the domestic good.

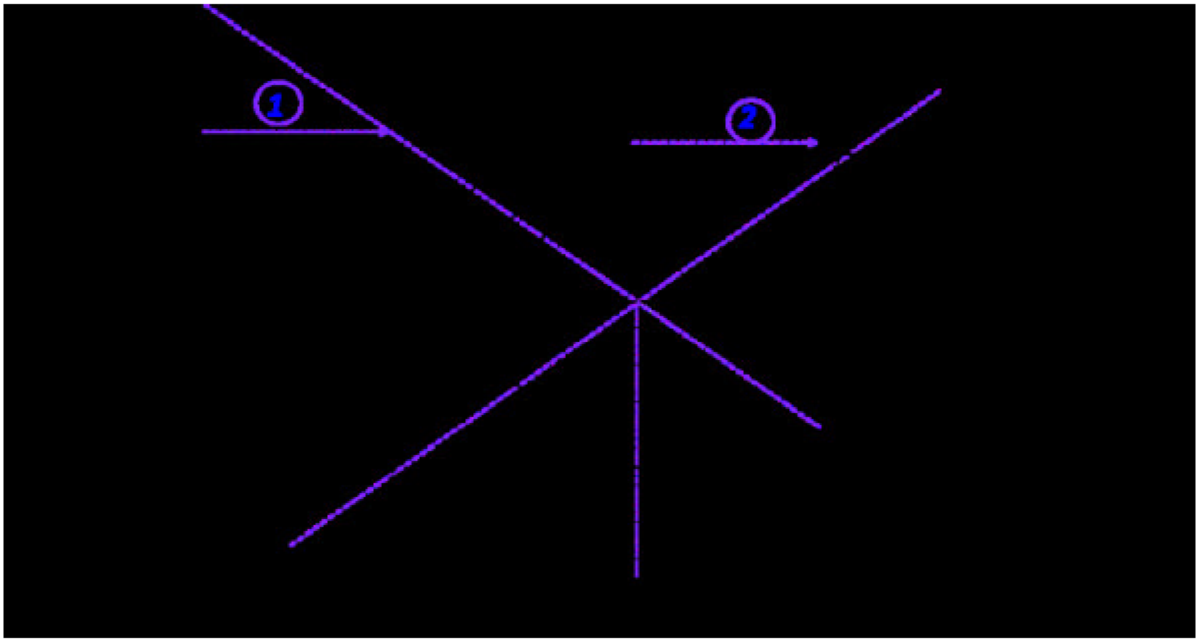
In countries with an inflation targeting monetary regime, the policy rate becomes the key policy variable, while the monetary[8] aggregates become monitoring variables

2.3.1 IS-LM-BP Model Analysis: Impact of the exchange rate system

2.3.1.1 Fixed or highly managed exchange rate

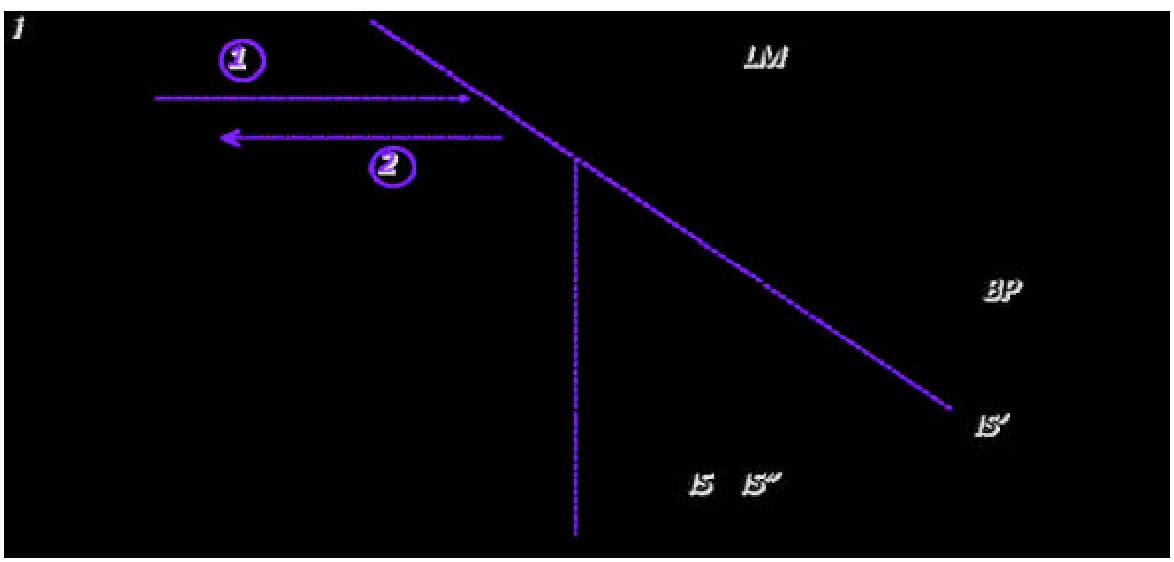
Capital inflows cause an increase in money supply through the central bank intervention in the foreign exchange market ↴ may cause some appreciation of the real exchange rate via prices ↴ it is possible to increase output using fiscal policy (Efixed)

[8] http://www.bcb.gov.br/pec/sdds/port/sddsp.htm?perfil=1
http://www.bcb.gov.br/?INDECO



2.3.1.2 *Flexible exchange rate*

Capital inflows cause an appreciation of the nominal exchange rate that together with the increase in domestic prices cause an appreciation of the real exchange ↴ fall in net external demand ↴ fall in GDP ↴ <u>crowding-out via exchange rate</u> (Eflex.)



3.0 THE IMPACT OF THE RECENT INTERNATIONAL CRISIS

The US economy suffered a great crisis since 2007, influencing other countries around the world that have gotten hurt and have begun to operate their economic policies with caution. There is evidence of impact in the government revenue, net exports, unemployment rate, GDP, interest rate and more recently in the exchange rate.

3.1 Impact in the world and the “currency war”

The crisis was considered the most serious, since the Great Depression of 1929 and had produced several counter measures and a intense injection of public investment in the private sector and in the financial market. The world repercussion and influence of the economic problems faced by the USA is explained partially by the fact that the GDP is a quarter of the GDP of the planet in conjunct. The world economic growth is downward sloping, so that all affected countries have to promote coordinated measures.

China and the United States of America are depreciating their currency against the world currency, so that the effects in trade and in the economy as a whole are the increasing unemployment and inflation. Competitiveness of their products around the world increases because of the exchange rate relation to the net exports and the effects of the recent and announced injection of U$ 600 billion by the federal reserve FED reflect and very aggressive monetary expansionist policy undertaken by the US causing the other currencies appreciation, reducing their international trade competition considering that their goods and services are getting more expensive in relation with US and CHINA.

Brazilian Ministry of Finance considers that a currency war is going on, and the effects are very dangerous to world economy. Brazilian Ministry criticized the American and Chinese policies and had already taken measures to refrain the effects the negative in Brazil, but world action have to be taken to refrain it. G20 vows to avoid currency war, and finance ministers from the Group of 20 nations have promised to refrain from “competitive devaluation” of their currencies, heading off the prospect of a currency war.

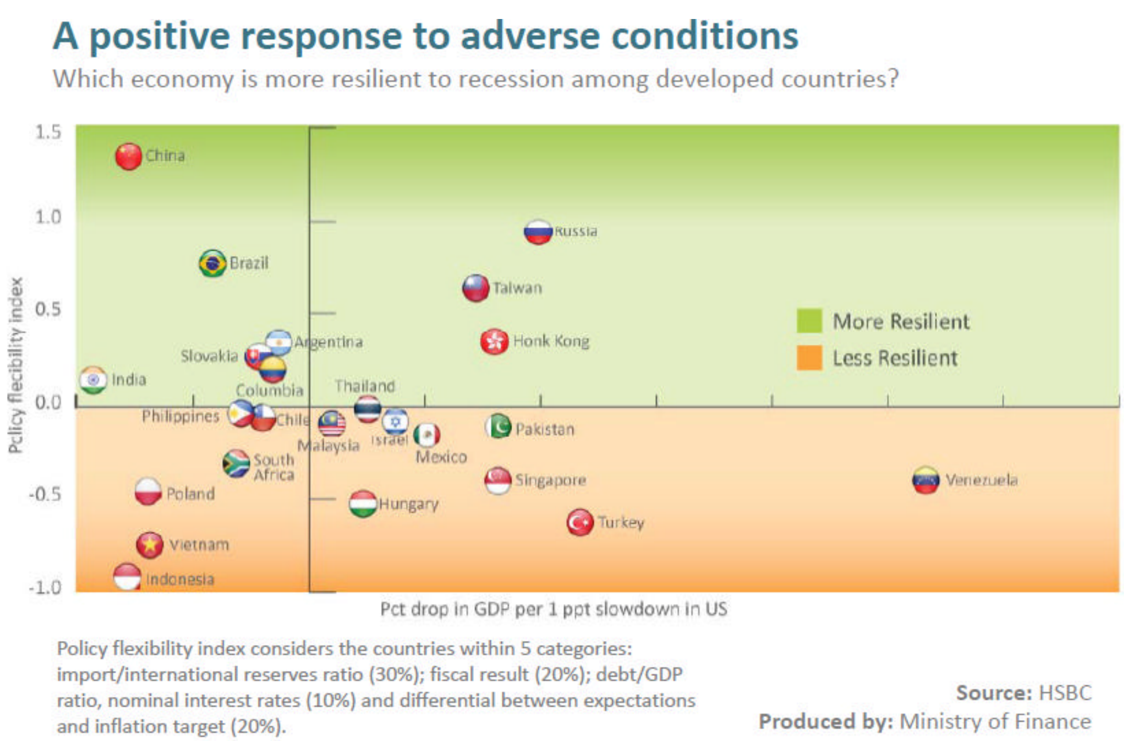
3.2 Impact in Brazilian macroeconomic varies

Despite the different approaches because of the level of development of each country, it became clear to the scientists that Brazil occupy a relevant place in South America and the United States of America in the North, and both in the world.

The structure of both countries are similar with agencies to regulate some specialized sector and to control the public and the private ones: several differences could be pointed on the structure of state, but the most relevant is the seriousness that the American people create their expectation to the public services to be offered with excellence.

The recession affects negatively the economy and increases unemployment rate, reduces exports and more recently appreciates the Brazilian currency strengthening the deficits in the current account. Less investment and high deficits and supposed to reduce the life quality of a nation by reducing consumption and constraining the GDP.

US-Brazil relations have got more intense and can be improved by changing the experiences and by recognizing each point as a challenge to face when defending their interests respecting other nations. Narcotrafic and corruption of the representatives to



Brazil and violence from terrorism to the US people are characteristics that mark their presence in the international scenery.

United States of America rank a large distance from Brazil that lags far behind when the subject is technology, infrastructure and poverty eradication or education and human development. But the situation is better than 20 twenty years before.

Although both countries maintain a multilateral policy of international trade and development, Brazil still depends on great part of the imports of the United States of America and Brazil can't produce technology with the same structure or capital.

These analysis of US and Brazil economic characteristics is supposed to demonstrate that together with a serious purpose to develop a partnership without a total control it may become a prolific measure to a future with several profits to each one, and consequently to the whole world.

From several years the American economy is sustained by an enormous public debt. Since 2002 country register deficits, government expenditure is greater than revenue.

On the American Budget of 2009 deficit reach the value of 1.41 trillion dollars, more than three times of the year before that was 455 billion dollars. Public money in financial market as a counter measure to combat the recession due to crisis and furthermore, the war in Afghanistan, and in Iraqi were the essential elements to create the depression Government accounts.

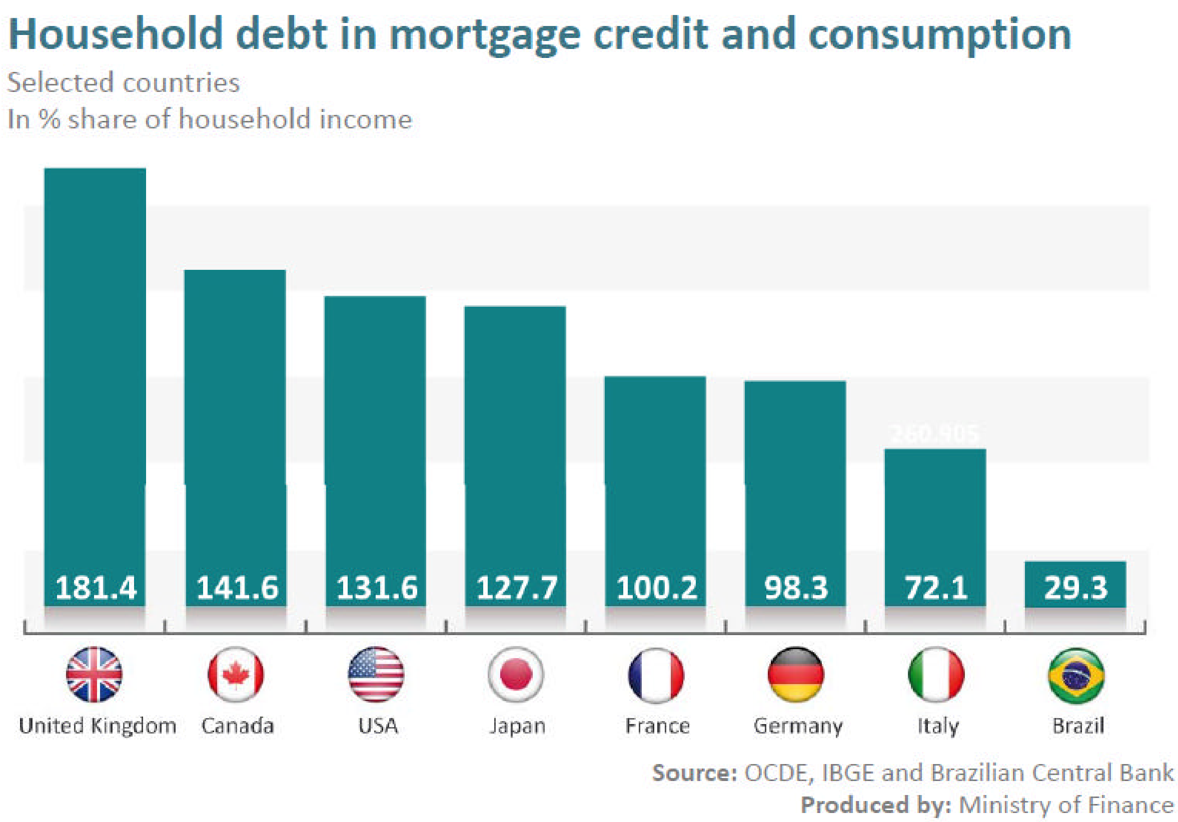
Another deficit that worried the American economy was the registered imbalances on trade.

To make the economy accelerate the USA had imported services and products from other countries that were responsible for more debt and negative results: in 2008 approximately 696 billion dollars.

3.3 Property bonds and the bubble crisis

The context of the bubble crisis maintain a close relation to the intense and turbulent crisis from 2007 due to subprime mortgages that evolved a high risk of operation in the market of house and building properties.

With the increase of the interest rate, since 2004 many buyers were not able to pay the financed monthly stipends of their house properties.



As the American economy increased until 2001 supported by the subprime bonds and the high risk mortgages, happened a series reaction that fall down those titles of the financial markets.

Million of buyers had lost their homes or became threatened by losing them. Bank and finance services that didn't receive their payments became unable to give new concessions of money. House buildings have suffered a brutal fall down. All the economy felt the impact of the subprime bubble.

To avoid a general bankruptcy in the world stock exchange market, the Federal Reserve (FED) and the central banks of others developed countries applied from august 2007 to the beginning 2008, a trillion dollars into the financial institutions.

The situation has become worst in September of 2008. The USA Treasury has made another intervention in values of 200 billion dollars, to rescue the enormous enterprises Fannie Mae and Freddie Mac. The following days other giants of the financial system fall down: The Lehman Brothers declare bankruptcy and Meryl Lynch has been embodied by bank of America. FED made an injection of 85 billion dollars in AIG, a very big money injection in the world.

US Government had provided to Congress an ambitious project of financial rescue.

The main car enterprises – the industry of vehicles and motors- announce mass demission and ask federal and governmental support to avoid own destruction. In November another package of 800 billion dollars is announced to population with the objective of credit reactivation. In the beginning of December the National Economic Research Bureau affirm that the USA are in recession since December 2007.

4.0 PUBLIC SECTOR AND MACROECONOMIC POLICIES TO ECONOMIC CRISIS

A country's public sector is arguably the most important component in the successful implementation of its national development programs. This final research paper is supposed to make a macroeconomic policy analysis that may be applied in Brazilian economy to the period of international crisis.

The public sector is subject to an inter-temporal budget constraint (R = G through time so debt is not a problem)

An increase in expenditure must be matched sooner or later by an increase in taxes

Reductions in taxes cannot be permanent unless they are accompanied by reductions in expenditures: a reduction in taxes today increases debt that has to be paid tomorrow => need to increase taxes (reverse the reduction)

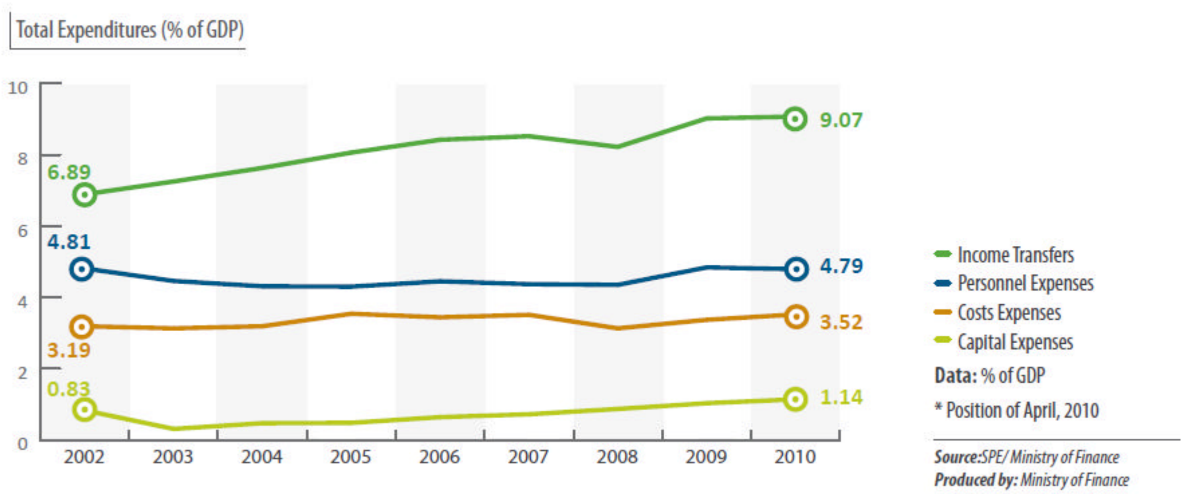
Brazil is a federation composed of twenty-six States, one federal district, which contains the capital city, Brasília and municipalities. States have autonomous administrations, collect their own taxes and receive a share of taxes collected by the Federal government.

4.1 Current Expenditures

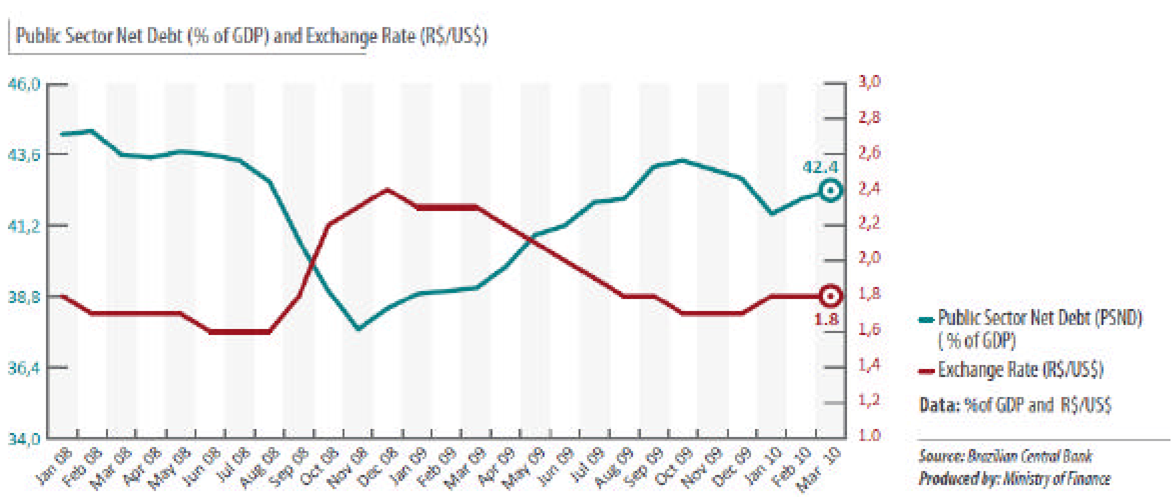
Excepting interest payments, Brazil's current expenditures in public administration are reasonably stable. The exception is only apparent. When inflation rises, nominal interest rates follow. Public bond holders are aware that the greater part of the interest received is solely a replenishment of the purchasing power of their savings. What really matters is real interest. Computed in this manner, that during the peak four digit inflation period , between 1988 and 1994, reached almost 50% of GDP. Nevertheless, total expenditures would still systematically surpass the 30% range of the GDP, an excessive figure for a country with Brazil's per capita income.

In the Brazilian public expenditure framework, it is possible to divide Federal primary expenditures. Since 2002, Cash Transfers growth has guaranteed to classes more vulnerable to shocks the conditions for coping with moments of volatility. In contrast, current expenditures called Public Operating System such as operating general services, as well as Personnel and Social Charges remain constant over the past years.

Graphic of total expenditures trends in percentage of GDP throughout years:



In the graphic below, the public net debt increases since may 2009 and the exchange rate level decreased since the same month, may 2009.

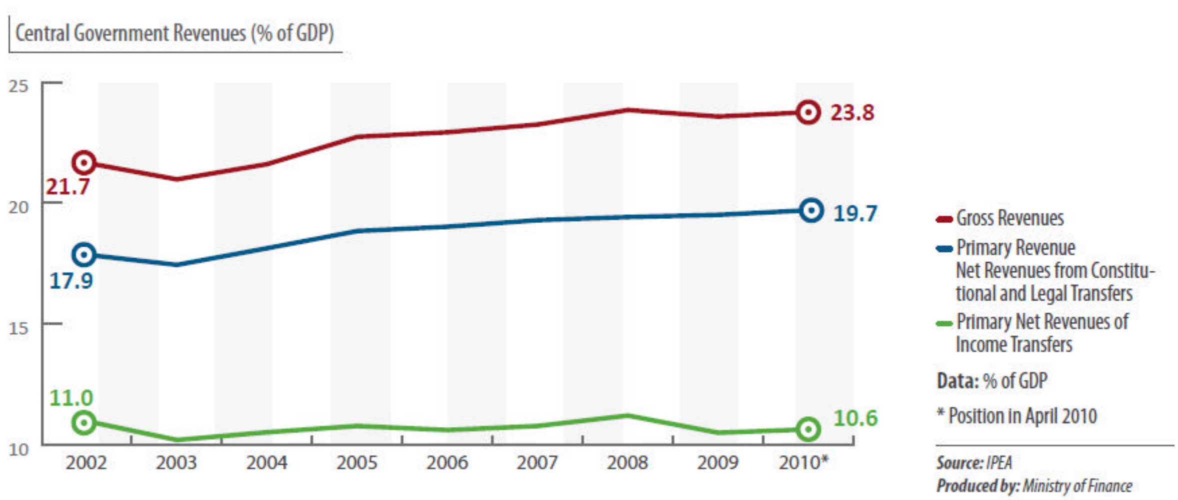


4.2 Government Revenue

The main sources of federal tax revenue in Brazil are still social security contribution and income tax paid by individuals and companies. The main source for state governments is the sales tax (ICMS) levied on goods at the point of shipment, on imports, on imports, and on certain services like transportation, telephony and electricity. Municipal governments raise revenue directly from the property tax (IPTU) charged on the rateable value of urban land and buildings, and the service tax(ISS)levied as a percentage of service providers' gross sales. A number of measures designed to overhaul the tax system have been brought forward and debated in Brazilian Congress, but only social security reform has made significant progress. The next federal administration is expected to win congressional approval for a tax reform that will reduce the number of taxes, broaden the tax base, cut rates and raise the cost of evasion, thus at least maintaining tax revenue at its present level.

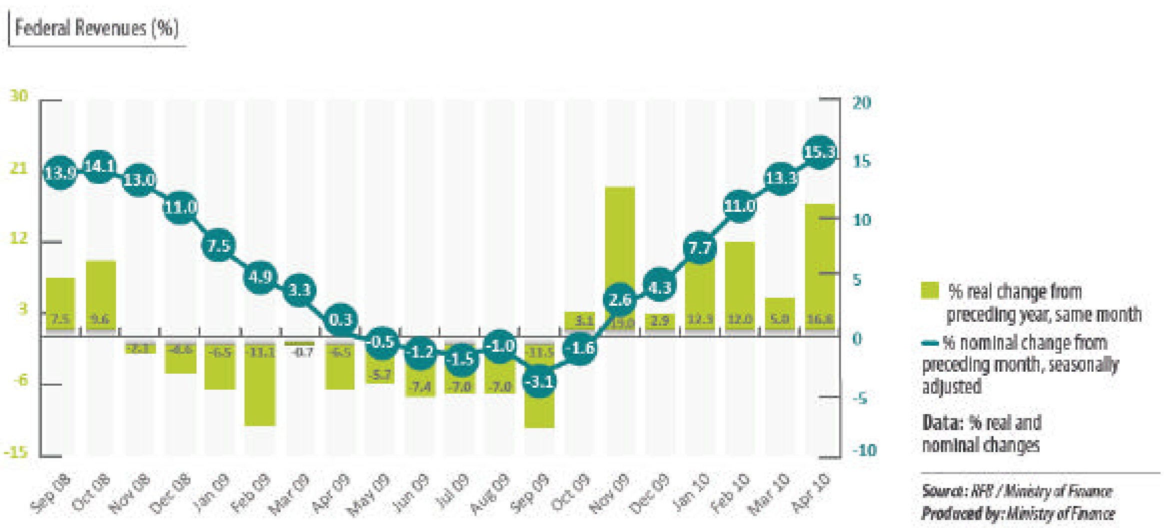
The level of Primary Revenue depends on the Constitutional and Legal Transfers, and Income Transfers. Both transfers have showed increases of 3.9 percentage points of GDP over the period 2002-2009, while the Net Primary Revenue decreased by 0.4 pp of GDP.

In the graphic below, it's possible to perceive an upward slope of the Gross and Primary revenues, but a decrease since July 2008 in Primary Net revenues.



The formalization of labor market and increased business profitability, coupled with increases in industrial output and sales volume, have increased Federal Revenues due to tax collection more directly related to the expansion of economic activity.

Graphic showing trends of the federal revenues over time and after the valley of September 2009 it's possible to observe an increasingly upward slope.



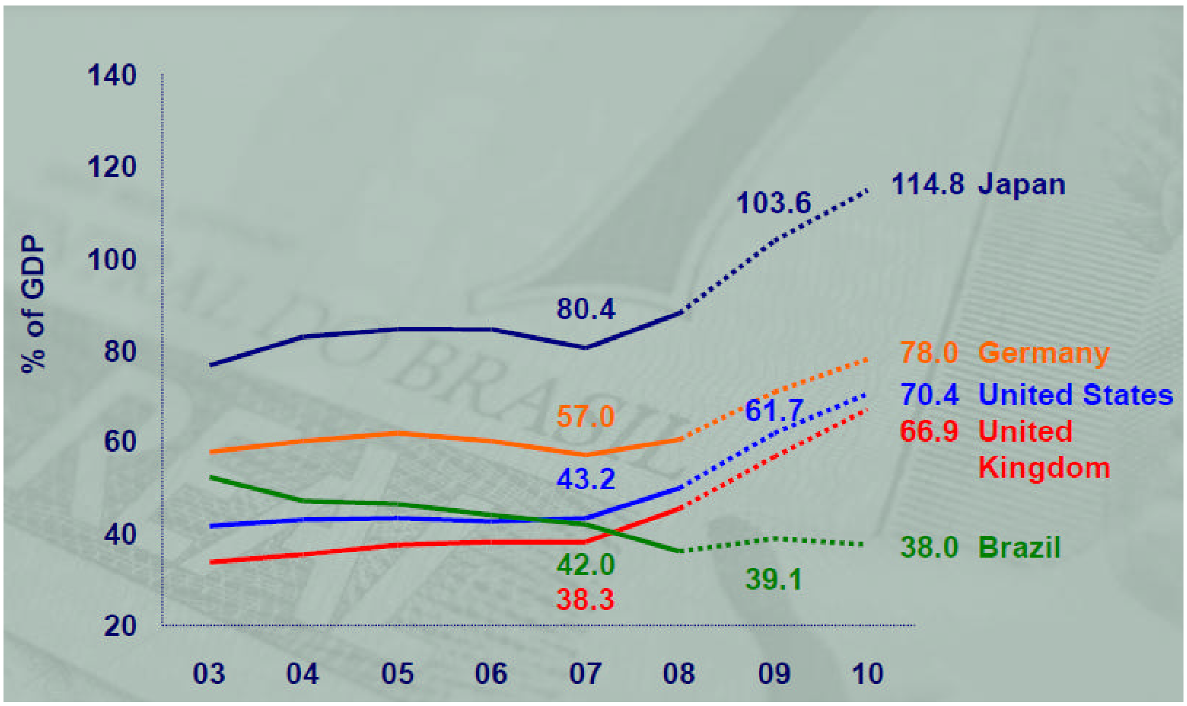
4.3 Government Expenditures

The structure of government spending in any country is seen as a reflection of the priorities chosen by society in a given period. Depending on the circumstances, tax revenue is shared out in unequal proportions between the promotion of economic growth and the traditional functions of government – defense, health, education and social security.

The structure of expenditure in Brazil still reflects the priorities of the growth model adopted in the second half of the 1960s and sustained throughout the following decades. This model allotted a lower priority to the traditional governmental functions than to the promotion of economic growth through massive intervention by the state, acting as producer of private goods and services. There was – in Brazil- an effort to invert priorities with a sweeping program of privatization. Most state-owned enterprises are scheduled to be transferred to private ownership by the turn of the century, allowing all tiers of government to devote more resources to the essential areas mentioned above.

Graphic about public net debt (% GDP) over time among developed nations and Brazil

Public Net Debt



Source: IMF focus BCB

4.4 Fiscal Indicators from IMF

Fiscal policy is one of the tools used by authorities to change domestic demand together with monetary policy. Fiscal policy consists on policy actions aimed at affecting domestic demand, and restoring fiscal sustainability by changing the fiscal balance controlling expenditure management and revenue measures, usually through changes in taxes.

Table of compared data of Brazil over years showing public accounts and the impact of the recent crisis on Primary balance and overall balance.

Source: IMF, Public Information Notice, July 2009.

[1/] Includes the central government, central bank, and social security system.?

[2/] Transfers to the sovereign wealth fund are excluded from expenditure. Prior to 2005, include Petrobras.?

[3/] Includes Petrobras.

Fiscal policy may have different impacts on economic activity depending on the instruments used and the different channels. Empirical analysis and theoretical model can be useful to provide immediate action that have to be taken by government.

The possible impact of the different fiscal policy instruments and its effectiveness limitations imposed by the financial situation of the government and by structural and institutional constraints.

The more vulnerable the country is, the more difficult to have margin for action. In countries that have sustainable levels of public and foreign debt, the authorities can have the flexibility needed to implement counter-cyclical measures.

A high level of debt and the ability of controlling its evolution in comparison with the GDP reflects the fiscal policy power to change and improve the country situation regarding sustainability. Variables like consumption, taxes and investment depends on the fiscal policy undertaken by government.

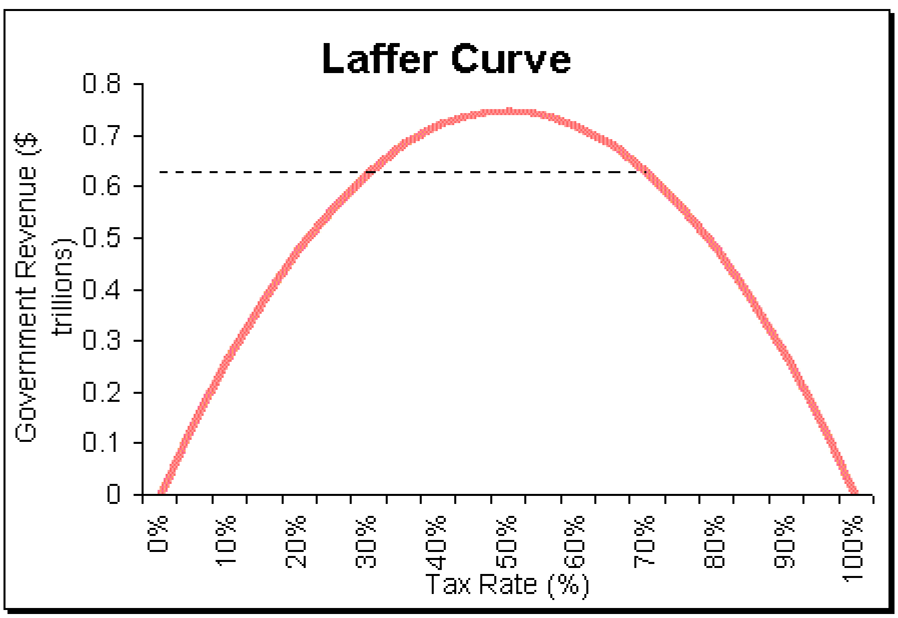
Macroeconomic stabilization plus reform of the State should encourage the decision to save. After all, lower public expenditures and greater efficiency in governmental institutions, such as social security, are more effective.

In the past, in Brazilian case, the currency crisis materialized in the depreciation of domestic currency had profoundly negative impacts on the public debt, preventing the Government to adopt counter cyclical fiscal policies. Today, by contrast, the exchange rate has negative relationship with debt, since the high level of international reserves represents buffers against shocks.

The structure of government spending in any country is seen as reflection of the priorities chosen by society and in mobilization of domestic savings than the interest rate. And the options that governments do for the basic necessities of their citizens are the most important procedure to develop a country with social responsibility.

5.0 TAX ANALYSIS AND FISCAL FEDERALISM

In 1995, tax burden in Brazil surpassed an unprecedented mark of 30% of GDP. This quantitative feat brings Brazil close to countries such as Australia, United States and Japan in the world tax burden ranking, but does not compensate some of the qualitative deficiencies evidenced by the breakdown of receipts. Most notorious is the weight of parafiscal contributions in relation to total collections. Many of these contributions, introduced in the '80s are linked to social objectives but represent a backward step because their incidence, tax on tax, has for long been censured by good tax practice. Unless an overhaul of the system is carried out, the Brazil cost, an expression that sums up a series of inefficiencies that drain the nation's competitiveness will remain high.



5.1 Laffer Curve

The observation of the Laffer curve shows that government revenues increase if tax rates are either increased from 0% or reduced from 100%. A hypothetical reduction of tax rates from very high rates may result in increased revenues. Thus, the tax cut of supply side economics was defended. The increasing budget deficits do not seem to have fully verified the Laffer curve proposition.

5.2 Main Corporate Taxes

The Brazilian Federal Constitution of 1988 empowers the federal, state and municipal governments to raise a large number of taxes, duties, rates, parafiscal levies and betterment charges. Each tier of government may institute the taxes stipulated in the Constitution for its sphere of jurisdiction, but new taxes may be introduced only by the federal government and must be approved by Congress. Taxes, in Brazil, must be levied by law, there must be equal treatment for tax payers in identical situations, no tax law may be retroactive, collection of new taxes must start in the year following that in which the law comes into force and no tax may be confiscatory. All those are constitutionals principles that must be respected by Public Administration, especially the Federal Revenue Service.

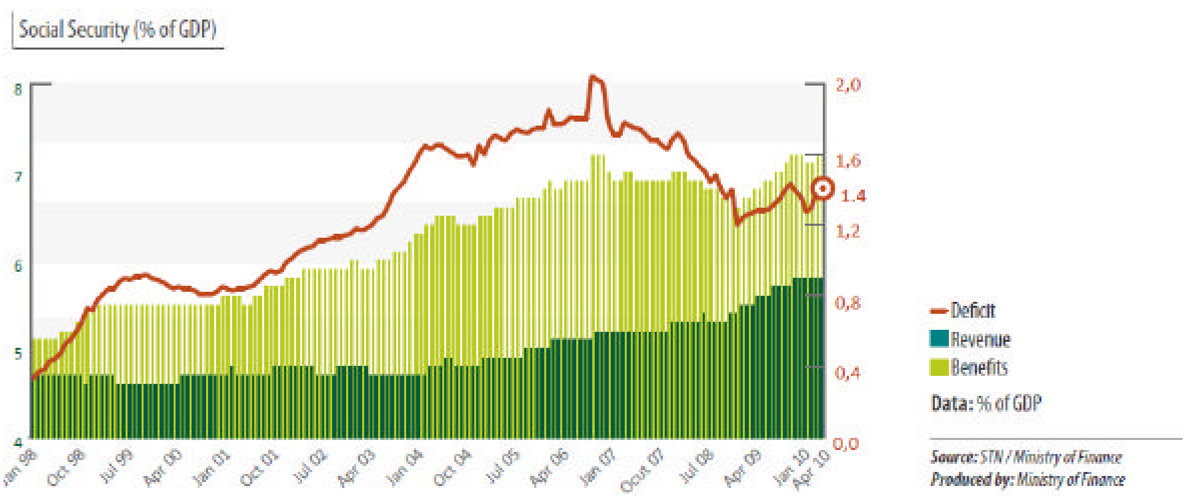
5.3 Social Security Contributions[9]

Estimates relating to the ‘80s show that Brazil, at one time, dedicated 18% of its GDP to social programs, a percentage that nears that of the industrialized nations. However, the evaluations are point blank: the state not only spends little but spends poorly.

[9] In recent years, the Social Security deficit shrank to the equivalent of 1.4% of GDP. The reversal in the trend growth of the deficit is due in part of the formal labor market and growth in revenues. Additionally, the downward trend shows the improvement of management actions focused on social security, the rules for granting pensions, the criteria used in evaluations of medical expertise for grant of sickness benefit and the allowance of continuous activity of beneficiaries who are already entitled the full pension.

Forecasts for early in the 21st century caution to the possibility of deficits as great as 5% of GDP in the social security budget, which encompasses health, retirement and social welfare benefits. Ageing of the population, the size of the informal economy and the relative generosity of benefits point towards the system's unfeasibility. As the effects of these structural imbalances are projections into the future, the proposals for reforms have been treated within undue parsimony.

Social Security trend and Deficits (% GDP):



5.4 Fiscal Federalism

An equitable assignment of duties between its three levels has been an ongoing challenge for Brazilian Governments. Dictatorial regimes and strong regional income disparities historically favored fiscal centralization. The 1988 Constitution, to strengthen the federation, increased, respectively, by 80% and 50% the incidence of automatic transfers to state and municipal governments of the two main federal taxes, Tax on Manufactured Products and Income Tax. In this breakdown, fractions corresponding to each state lack strong economic basis. The percentages due municipalities, wich increase with population, reserve a minimum coefficient for those having 10,000 or less inhabitants. This is one of the reasons for Brazil's present municipal fragmentation.

6.0 BRAZILIAN COUNTER CYCLICAL MEASURES TO FACE THE INTERNATIONAL CRISIS

The Brazilian case could be used as an exemple to achieve macroeconomic stability with a short-run objective and, at the same time, as a long run objective of sustainable growth, efficient resource allocation and equitable distribution of income and poverty reduction.

6.1 Fiscal Policy for the Crisis:

Fiscal policy may have an impact on macroeconomic stability, efficient allocation of resources, income distribution and poverty reduction. Stable prices with full employment of factors of production like capital or labor. Relative prices of goods and services, and factors of production that allow for full utilization of resources and thus output at maximum possible.

The recent crisis[10] drive policies to two measures: repair the financial system and to increase restoring confidence. The focus of this final paper is on the impact of an economic crisis on public sector, so that fiscal policies, monetary policies and exchange rate are going to be analyzed by the author.

A fiscal package should be timely because the need for immediate action, and sustainable because of the necessity of controlling the debt explosion and adverse reactions of financial market.

Taking in consideration that a decrease in the private demand will be large, due to crisis, a large package have to be put in practice. The current crisis, which started in the housing and financial sectors, has led to a strong decline in the aggregate demand.

[10] The impact of the crisis was shorter in Brazil, India e China and the Brazilian economy started showing its first signs of recovering early (after 2Q 09), 3Q 09 started with growth of 4%, finally Foreign and domestic flows of capital resumed.

Economic stabilization requires policy actions able to achieve an immediate impact, so that measures that affect aggregate demand, particularly domestic demand and thus help to achieve the targets for real GDP, inflation and current account.

Despite the financial crisis that challenged the Brazilian economy, the country showed resilience facing this "stress test". Brazil implemented countercyclical policies, and in the past crisis, actions were pro-cyclical. Now, there is space for expansionist monetary policy, as well as for countercyclical fiscal policy.

Brazil implemented countercyclical[11] measures as tax exemptions from 2008-09, in order to diminish unemployment and the concentration of income distribution. Both social and economic diseases that must be combated by government public and fiscal policies to avoid stagnation and to promote development of the society constituted by their citizens.

Economists believe that this fall in the aggregate demand could be larger than any period since the Great Depression. Increasing the aggregate demand and getting the financial system back to health are the main objectives of a successful policy package. Aggregate demand and financial system should be the main objectives to surpass crisis and to get sustainability.

6.2 Fiscal Stimulus to Face Crisis

A fiscal stimulus should be timely as there is an urgent need for action. The action must be large because the drop in demand is large, lasting as the recession will likely last for some time, diversified as there is uncertainty regarding which measures will be most effective, contingent to indicate that further action will be taken if needed.

Coordinated action have to be undertaken by countries that have fiscal space should use it given the severity and global nature of the downturn, and sustainable to avoid debt explosion in the long run and adverse effects in the short run.

[11] With an active fiscal policy Brazil implemented an unprecedented expansion of investments from the "Growth Acceleration Program" –PAC, a Housing Program : R$ 28 billion in subsidies and R$ 60 billion in investments; an Agricultural Plan 2009/2010: R$ 107 bi (2009-10); Petroleum program : Pre Sal and from Petrobras an investiment of than US$ 180 billion (2009/2013).

The challenge is to provide the right balance between these sometimes competing goals, particularly, large and lasting actions versus fiscal sustainability.

Governments have to define the appropriate composition of fiscal stimulus, considering that the recent crisis will last for several more quarters and so implement spending measures to face the current risk of a prolonged downturn.

In Brazil, expenditure measures had advantages over tax cuts or increases in transfers. Those measures undertaken were supposed to raise the purchasing power of households and firms in the economy and to support demand by diversifying policies and not relying on a single tool. So that a diversification of fiscal stimulus is part of the strategy consisting on public spending on goods and services, fiscal stimulus aimed at consumers and fiscal stimulus aimed at firms to a long term sustainability.

The consumption of the families are affected by the decrease in wealth, credit constraints and uncertainty, leading consumers to cut consumption because of the influence in the marginal propensity to consume.

Policies to increase the level of consumption[12] could be undertaken as tax cuts or transfers towards those consumers who are most likely to be credit constrained.

A commitment[13] of the policy makers to take whatever action may be necessary to avoid the risk of a depression and furthermore the credibility necessary to change expectation of society.

In 2010, on account of cyclical and corrective measures, emerging economies are expected to be at the forefront of the world economic development. Within this perspective, the Brazilian economy is expected to grow at a 6.0% to 6.5% range.

[12] The recent tax exemptions adopted by the Brazilian government were implemented like reduction in the individuals' income tax (R$ 5 bi) and temporary tax exemptions (IPI) for motorvehicles, kitchen appliances and building construction materials. Temporary zero tax (PIS/COFINS) for motorcycles, wheat, flour and bread. Tax reduction (IPI) for capital goods. (Ministry of Finance)

[13] In general, due to effective government interventions, emerging markets have had a positive performance in 2009. Regardless the small decrease in GDP, the Brazilian economic performance has been well above other emerging economies like Russia, South Africa and Mexico.

6.3 Monetary Policy for the Crisis

There are interactions that have to be observed between aggregate demand and financial system, but the measures taken by government to face crisis will be the focus. The solution to the current financial and macroeconomic crisis requires bold initiatives aimed at rescuing the financial sector and increasing demand.

To the USA Government this economic crisis obliged unprecedented interventionist action into public and private sectors, as financial markets and industry to save them from bankruptcy and to change the dramatic situation into a profitable scenery.

The Federal Reserve escalated its efforts to get the U.S. economic recovery back on track late in 2010.

The plan to pump $600 billion into the financial system is designed to stimulate the economy in large part by lowering mortgage and other interest rates.

Although the approach carries significant risks for both the economy and the central bank's credibility, the steps announced by Fed policymakers could represent the nation's best hope for breaking free of sluggish growth, especially with bold initiatives unlikely from a newly divided Congress.

Many countries have already used monetary expansion and the central bank policy power is limited because the financial nature of the crisis weakens the traditional monetary transmission mechanism and furthermore, an export led recovery is not a option to the whole world.

Monetary policy consists on policy actions aimed at controlling indirectly the expansion of credit, or affecting the cost of resources to influence domestic demand and expectations. Brazil opted to apply monetary targets with inflation targeting using indirect instruments for monetary control.

Monetary policy is supposed to support fiscal stimulus by controlling the interest rate to provide the output recovery. A fiscal response may be needed, not all countries are able to take those measures in this time. And, implementation of expansionary fiscal actions may threaten sustainability of fiscal finances for some countries.

6.4 Inflation and Monetary Policy

Throughout the last two decades, Brazil's fiscal and monetary policies have focused primarily on inflation control. Brazilian Government has maintained restrained economic policies, even surpassing the IMF's fiscal and monetary targets. As a result, Brazil began to experience some benefits, including lower inflation and a better credit risk rating.

Introduced in 1964, aiming at the viability of long term contracts that high inflation inhibited, monetary correction soon spilled over to the labor and foreign exchange markets, institutionalizing the inflationary inertia phenomenon.

In the following twenty years, fed by crises, such as oil price hikes, accomodated by the monetary authorities, inflation increased in plateaus until reaching 200% per year.

Prospects of an uncontrolled increase in the price level led, therefore the Cruzado, in 1986, to the Real, in 1994, the focus for corrective actions gradually shifted from indexation to fiscal adjustment. With the change in diagnosis, the results also changed.

High real interest rates, although persistently criticized, have proven to be an effective tool in controlling inflation. Their high level, however, was not only due to the short term environment. Throughout the years, savers faced ever growing risk as, for example, the course of monetary correction.

After years, this instrument, an indexing system introduced by the government to protect the purchasing power of financial assets, lost almost 90% of its initial value, as a result of a combination of unrealistically pre-fixed inflation rates and a continuous inflationary spiral.

Brazil adopted a mass market policy with enhancement of the population consumption capacity, expansion of employment and income, valuation of the minimum salary wage, accompanied of credit revolution, expansion of social programs, inflation under control, emerging new middle class.

7.0 FOREIGN SECTOR AND THE IMPACT OF THE INTERNATIONAL CRISIS

There are two primary aspects of the interdependence of world economies. The first is the international trade in goods and services which has increased steadily in volume since the World War II. And expanded trade for a national country implies that they are more dependent of what happens to other countries. The second is the worldwide integration of financial markets which allows borrowers to obtain funds and savings anywhere in the world.

Macroeconomic policies that change the real interest rate in one country may affect real interest rates and economic activity in other countries. This part of the paper will be concerned in how economic openness affects fiscal and monetary policies and the influence in the economies of countries trading partners.

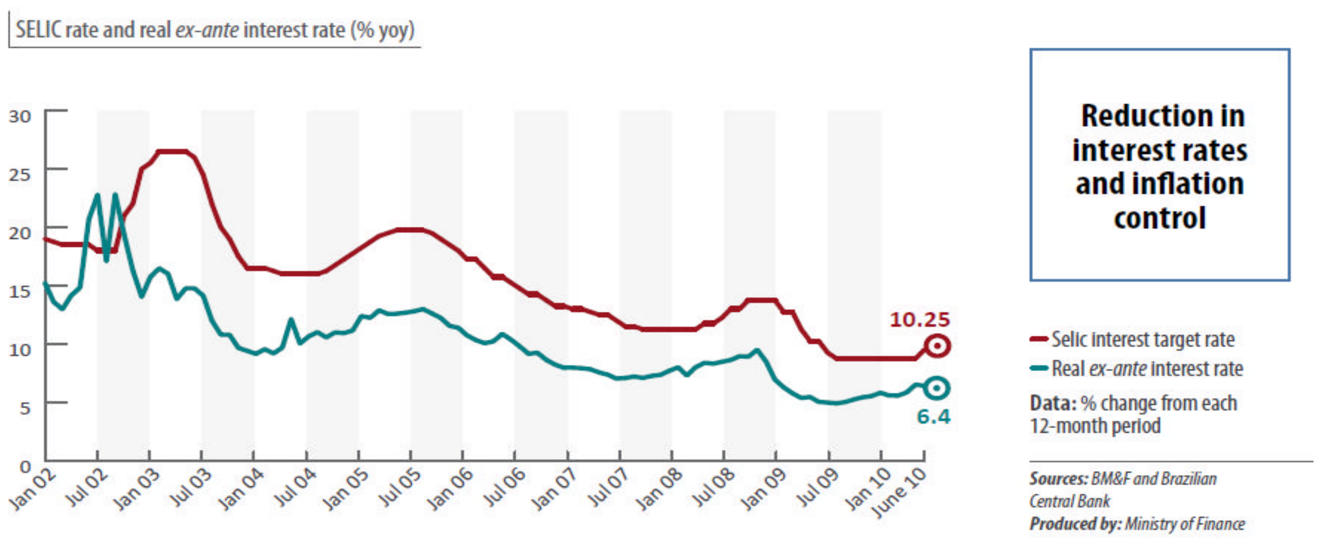
The massive influx of new foreign capital in the 1990s reflects Brazil's integration into economic globalization process, price stability and national privatization program. If these trends continue, the annual inflow of foreign capital is set to increase, showing an extraordinary economic development. Furthermore, the profile of foreign holdings changed, above all, as a result of investment in the privatized telecoms, transportation, sanitation and electric power sectors, and in bank mergers. Thus the importance of the service sector is approaching that of industry, while other countries are increasing their shares of overall foreign investment.

7.1 International Capital Flows

For decades Brazilian authorities imposed restrictions on the purchase of foreign currency by the general public. This repressed demand was always supplied by the parallel markets. In moments of greater uncertainty, the spread over the official quotation would soar. In the ‘90s, the high interest rates policy and a great sanctioning of foreign currency transactions through the nullification of previous dispositions quelled the parallel markets. Consenquently, the spread ceased to be a gauge of the spirit of the economic agents.

In the ‘90s, the capital flows, that historically supplemented domestic savings, returned to developing nations.

The graphic below is showing a trend reduction in the interest rates and inflation control by targeting inflation in Brazil.



The ongoing intensification of economic relations on a world scale has been made possible by progressive removal of national obstacles to international trade and investment. Like many other countries, Brazil decided to participate more intensely in this process at the start of the last decade lowering a number of tariff and non tariff barriers.

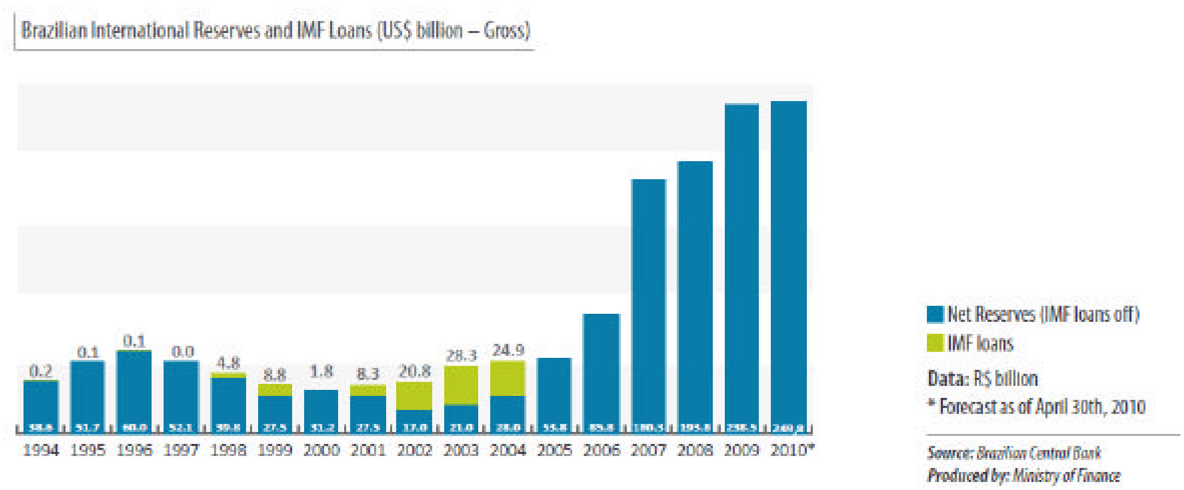
The main foreign investors continue to trust in Brazil’s economic growth and keep their investments, even with the recent financial crisis. The United States remains as the main country for investments in Brazil.

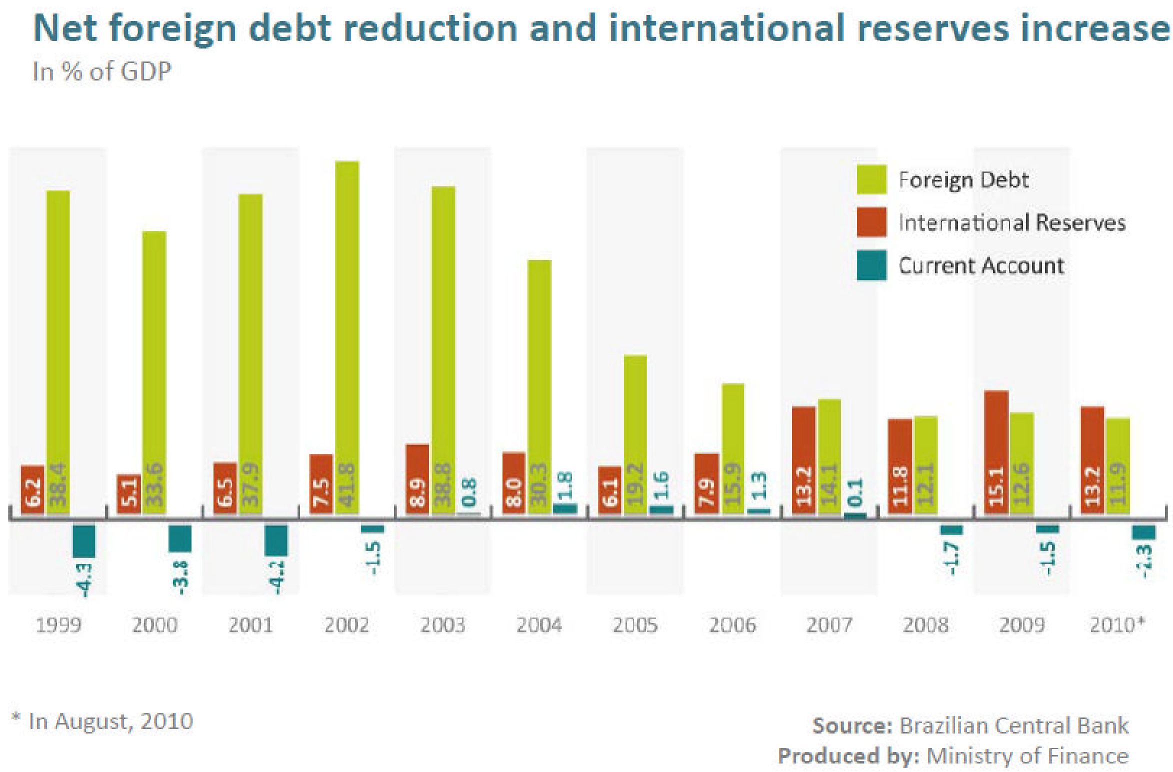
Nevertheless, a decrease in the flow of foreign investments from Europe is expected as it faces turbulent times.

7.2 International liquidity in the Central Bank reserves

A positive performance of the Brazilian Central bank in the FX markets has resulted in significant increase in foreign exchange reserves since 2006. The increase has played a pivotal role to properly face the crisis.

The graphic below shows that the net reserves increased and loans decreased over years. Those measures were able to bring resilience to Brazil when facing financial crisis.

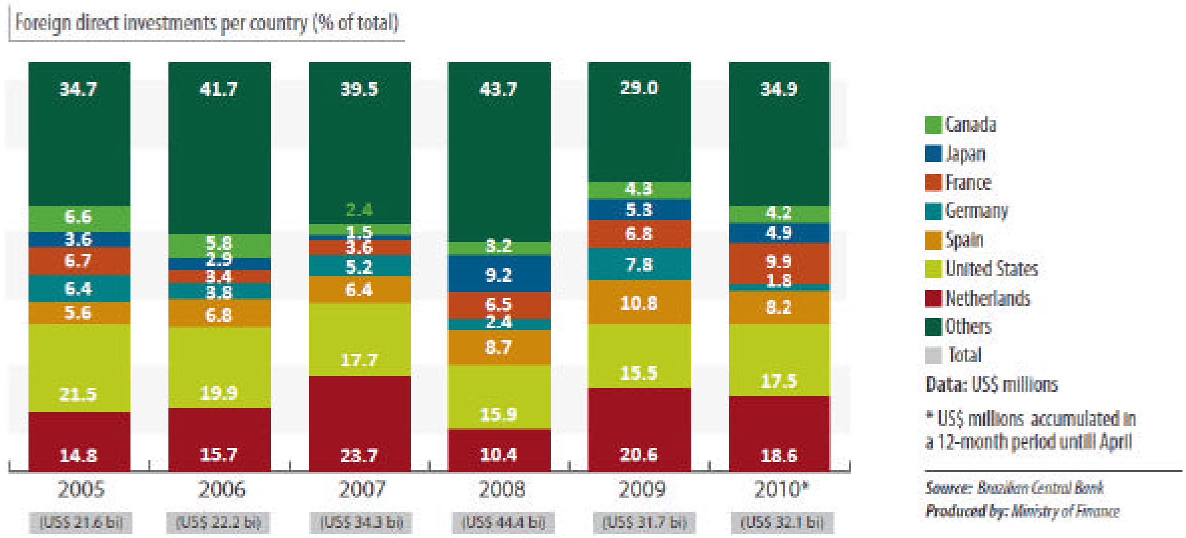




7.3 Foreign direct investments per country

The main foreign investors continue to trust in Brazil's economic growth and keep their investments, even with the recent financial crisis. The United States remains as the main country for investments in Brazil.

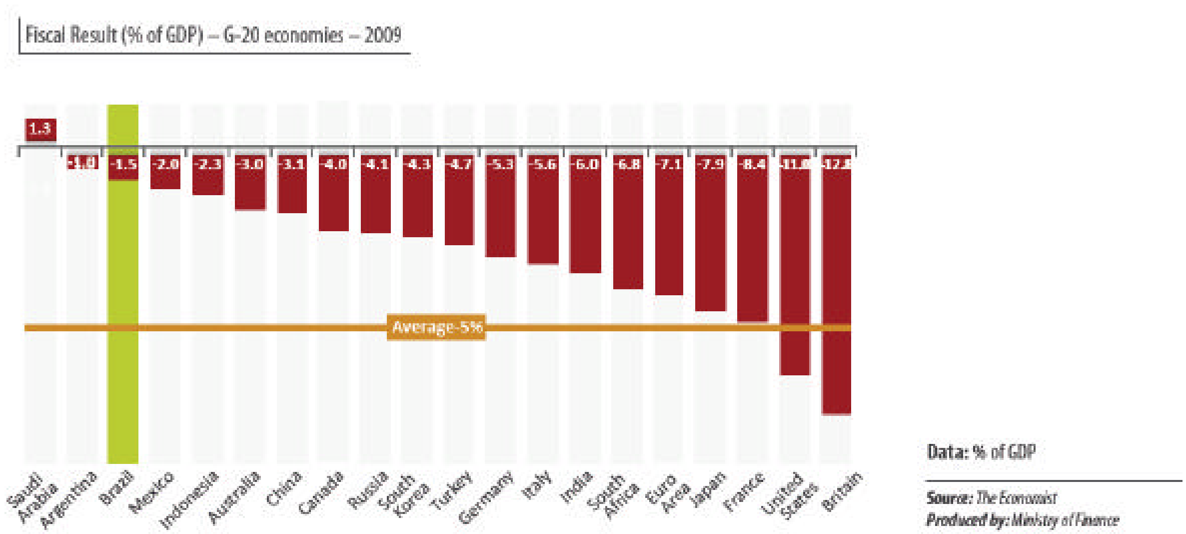
Nevertheless, a decrease in the flow of foreign investments from Europe is expected as it faces turbulent times.

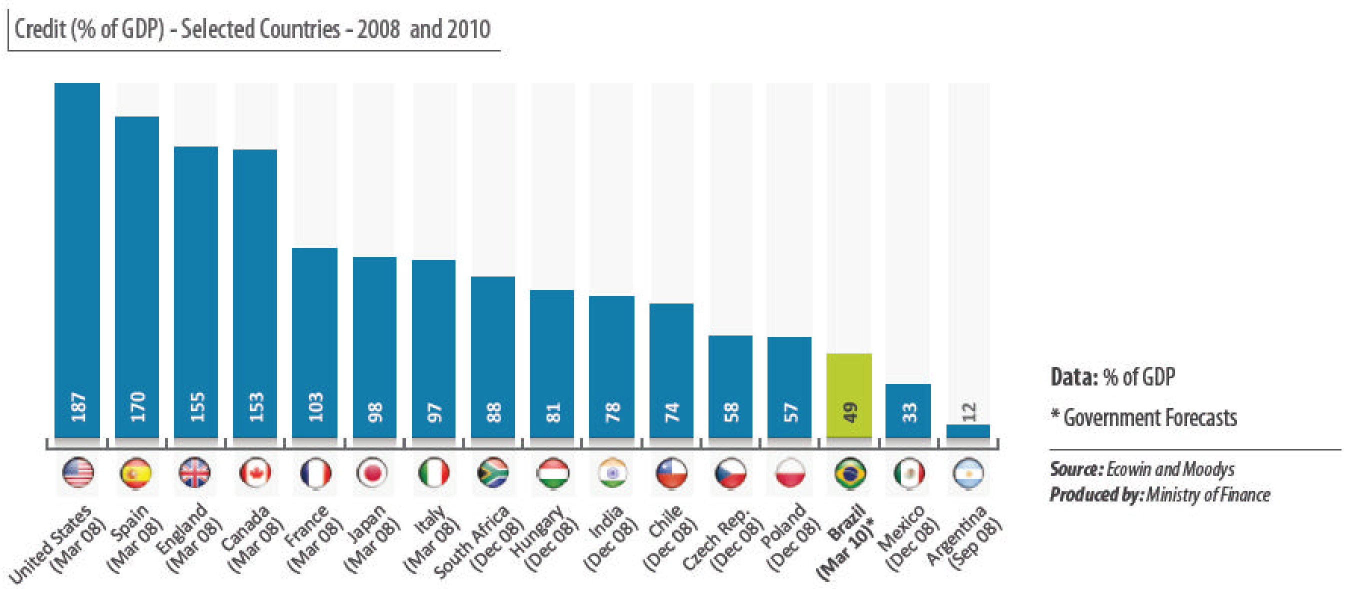


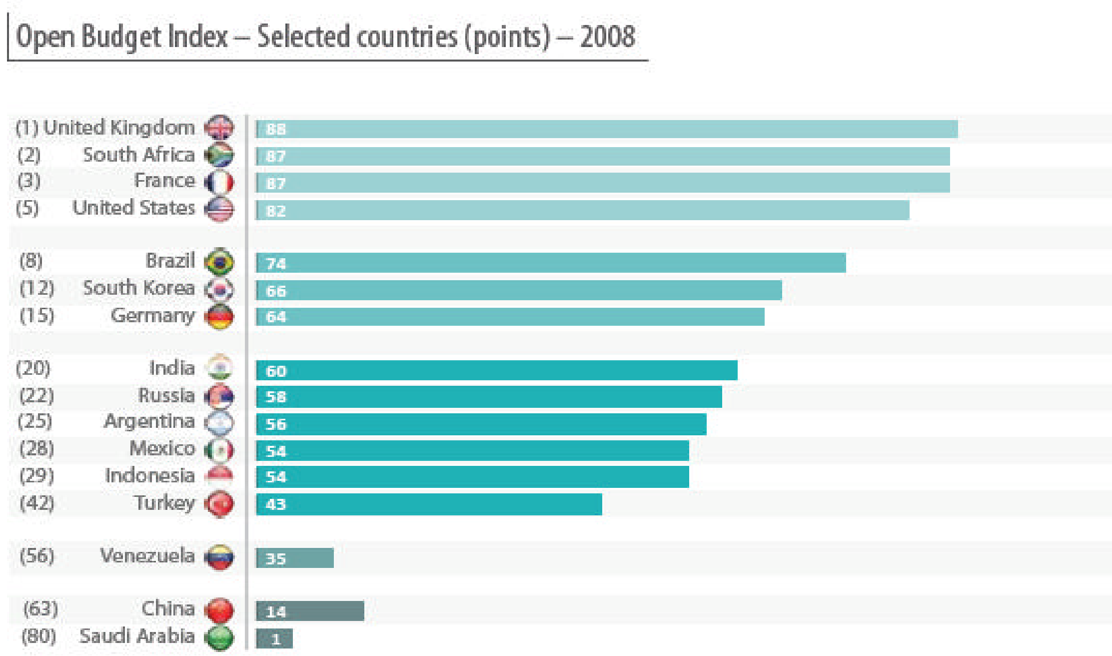
In 2010, The US oversaw the enactment of major health care and financial system reform.

Compared analysis between United States and Brazil in crisis recovering

The graphic below shows the fiscal result in Brazil and other countries during this recent financial crisis:







In the first graph it's possible to have a notion of the credit (% GDP) among countries, while in the second one observe open the budget index.

8.0 LONG RUN ECONOMIC GROWTH STRATEGIES AND THE SOLOW MODEL ANALYSIS

A nation's ability to provide improving standards of living for its people depends crucially on its long run rate of economic growth. Over a long period of time, even an apparently small difference in the rate of economic growth can translate into a large difference in the income of the average person.

8.1 The Solow Model

The Solow model of economic growth examines the interaction of growth, saving, and capital accumulation over time. It predicts that the absence of productivity growth the economy will reach a steady state in which output, consumption, and capital per worker are constant.

According to the Solow model, each of the following leads to higher output, consumption and capital per worker in the long run: an increase in the saving rate, a decline in the population growth rate and an increase in productivity. The fundamental determinants of long- run living standards are the saving rates (s), the rate of population growth (n) and productivity.

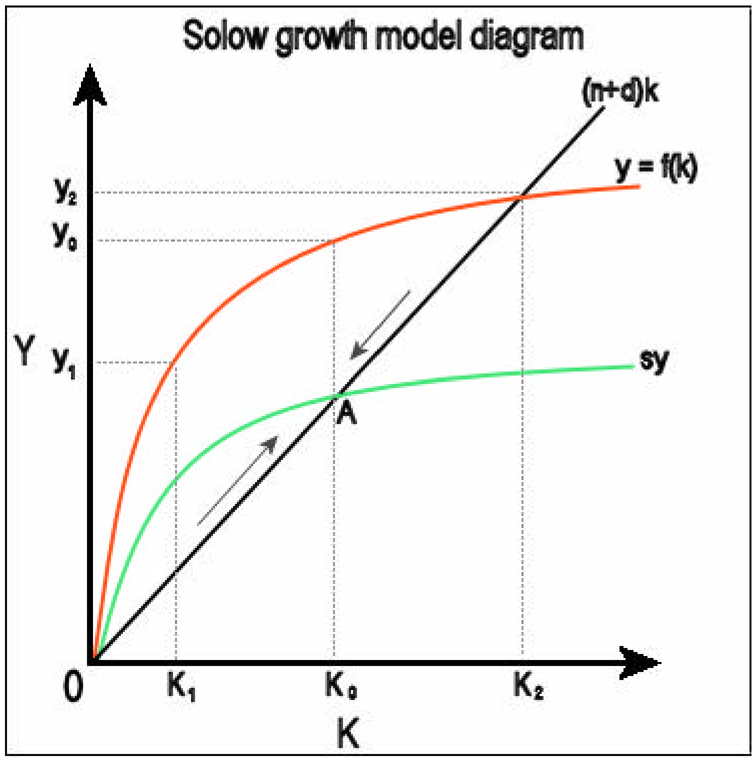
Higher saving allows for more investment and a larger capital stock. An increase in the saving rate, (s) causes the long–run output to rise.

With higher population growth more output must be used to equip new workers with capital, leaving less output available for consumption or to increase capital per worker, causing a fall in the long run output.

An increase in productivity directly increases output, by raising incomes, it also raises saving and capital stock.

Saving and investment decisions play a central role in the analysis. Important factors in determining standards living that Brazilian government can attain are the change in productivity, the rates that a nation saves and invests and thus the rate of accumulation capital goods. Insights in this economic theory can be useful to settle Brazilian long run strategy to a substantial productivity growth.

8.2 Graphic Analysis and effects



The model starts with the production function Y/L = F(K/L), rearranged to y = f(k), which is the red curve on the graph. From the production function; output per worker is a function of capital per worker. The production function assumes diminishing returns to capital in this model, as denoted by the slope of the production function.

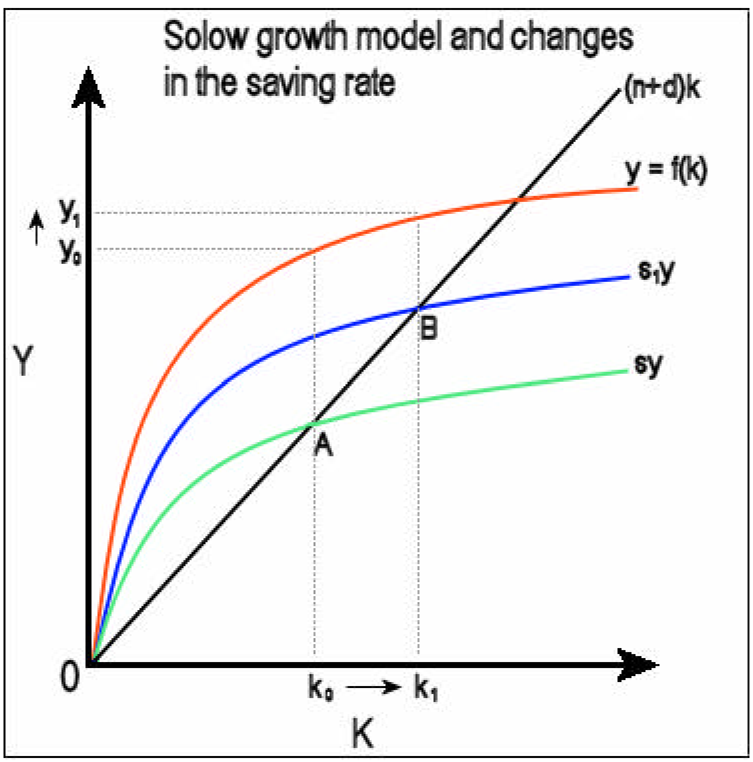
n = population growth rate
d = depreciation
k = capital per worker
y = output/income per worker
L = labor force
s = saving rate

Capital per worker change is determined by three variables:

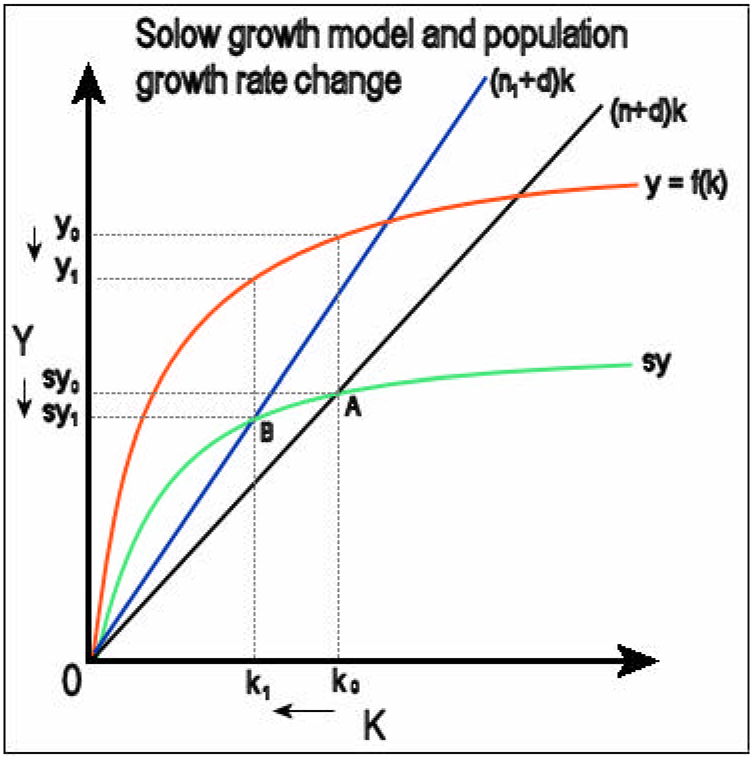
- ? Investment (saving) per worker
- ? Population growth, increasing population decreases the level of capital per worker.
- ? Depreciation – capital stock declines as it depreciates.

An improvement in productivity shifts the per worker production function upward from the initial production function to the new production function. After the productivity improvement, more output per worker, y can be produced at any capital level.

The effect of an increased saving rate on the steady state capital labor ratio increases the saving curve from s1f(k) to s2f(k). The point where saving per worker equals steady state investment per worker moves from point A to point B and the corresponding capital labor ratio rises from k1 to k2. Thus a higher saving rate raises the steady state capital labor ratio.



An increase in the population growth rate from n1 to n2 increases steady state investment per worker from (n1 + d)k to (n2 + d)k. the steady state investment line pivots up and to the left as its slope rises from n1+d to n2+d. A higher population growth rate therefore causes the steady state capital labor ratio fall.



8.3 Equations and macro-production function

$$Y = AK^aL^{1-a}$$

This is a Cobb–Douglas function where *Y* represents the total production in an economy.

A represents multifactor productivity (often generalized as technology), *K* is capital and *L* is labor.

An important relation in the macro-production function:

$$Y = AK^aL^{1-a} \Leftrightarrow y = Ak^a$$

which is the macro-production function divided by *L* to give total production per capita *y* and the capital intensity '*k*.

Savings function

$$I = sY$$

This function depicts savings, *I* as a portion *s* of the total production *Y*.

Change in capital

$$\Delta K = sY - Kd$$

The d is depreciation.

Change in workforce

$$L_{t+1} = L_t(1+g)$$

'g' is the rate of growth. e.g. g=0.02 would mean $L_{t+1} = 1.02L_t$ or a 2% rise in L_t

Brazilian policymakers are really worried about economic development and growth of the country, but it's a government decision how to allocate resources and it's priorities. This Final Paper contain a table of recommendation and the points that Brazilian government should prioritize to reach a sustainable growth as follows:

CONCLUSION: A TABLE OF RECOMMENDATION TO BRAZILIAN GOVERNMENT

The right choice of the policy instruments depends on nature, size, financing and likely duration of the imbalance regarding that internal imbalances requires adjustment in fiscal and monetary policies, avoiding excessive use of only one policy but recognizing that fiscal adjustment is often a key element.

Brazilian government need to know effectiveness of fiscal and monetary policy, including transmission mechanisms possible lags and institutional constraints. Effectiveness of policies depends on exchange rate system, expectations, credibility and institutional capacity.

Both the US and Brazil know that access to information and efficient communications are important drivers of the ongoing process of globalization which refers to the intensification of economic, political and social relations on a world scale.

Brazilian policies to raise the rate of productivity could be improving infrastructure, building human capital and encouraging research and development. Investment in technology and research in the country seems to be powerful policies.

Throughout the analysis of the Solow Model, Brazilian government has to perceive that a change in the rate of the economic growth can have important effects over even a decade or two. Action has to be taken now to provide a real economic growth in the long term.

There is a strong connection between productivity growth and human capital and the Brazilian government can affect human capital development through educational policies, worker training or relocation program, health programs. Specific programs should be examined carefully to see whether benefits exceed costs, but a case may be made for greater commitment to human capital formation as a way to boost productivity growth.

Brazilian government may stimulate productivity growth by affecting rates of scientific and technical progress. From society point of view a basic scientific research may be a good investment. Government could give incentives to those people whom detain entrepreneurial skills and use those skills productively.

Further improvement will depend on faster economic growth, higher productivity, more rational public spending, less regressive taxation, rising educational standards and continuing price stability. These factors are usually considered critical to any effort to distribute a nation’s income more evenly.

Credibility and reputation of the institutions to influence investors expectations. Thus will support increasingly direct investment and reduce the Brazilian risk. For the government to improve its credibility and develop reputation is to carry through its promises and then it announced a disinflation program, people would likely take this announcement seriously.

Another strategy is to organize policy making institution and public administration reform to provide final and correct decisions in the short term and public services with high quality reducing quantity of public servants. Therefore restructuring careers and optimizing costs is fundamental. Furthermore, a profound review in regulation and trial procedures to become the judiciary and the public administration as a whole more effective and fast.

Brazilian government recognizes that the new opportunities created by globalization, the information revolution and democratization have dramatically affected the state and how it functions. Managing the public sector in an environment of unremitting change has become a demanding challenge for national decision-makers, policy developers and public administrators to both countries.

The solution to the current financial and macroeconomic crisis requires bold initiatives aimed at rescuing the financial sector and increasing demand and the most recent data are pointing to a worldwide growth slowdown.

The international dimension of the crisis calls for a collective approach to provide a fiscal stimulus requiring a collective international effort and stricter coordination among countries with closer economic and industrial ties: a real concerted effort by the international community. Brazil gathers the conditions to a long term growth cycle and to become one of the most dynamic world economies.

BRAZILIAN GOVERNMENT MUST PRIORITIZE THE FOLLOWING ACTIONS:

Intensive education with high investment actions to long term and prepare future generations increasing Brazilian opportunities and reducing the structural unemployment. Human capital according to the economic growth model of Solow is essential to provide.

Infrastructure for transportation and trade reducing costs to operate in harbor and airports and increasing the train complex to exports. A significant link between productivity and the quality of a nation’s infrastructure like highways, bridges, utilities, dams, airports and other publicly owned capital. Congress decisions have to promote economic efficiency and not favors to powerful member of Congress.

Tax reform to become a competitive country and to provide income distribution reducing its concentration. Brazilian economic growth and development policy requires facing immediate challenges by the Federal Government as tax reform, reduction of the tax burden, social security reform, political reform, positive credit bureau, investment grade, targeting inflation control, debt to GDP ratio sustainability in the long term, interest rate reductions, current expenditure control, energy strategy and increase in infra-structure investments – PAC.(Economic Growth Acceleration Program).

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