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**MACROECONOMIC POLICIES AFTER THE 2008 FINANCIAL CRISIS:
LESSONS FROM BRAZILIAN AND CHINESE EXPERIENCES**

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**UNIVERSIDADE FEDERAL DE MINAS GERAIS
FACULDADE DE CIÊNCIAS ECONÔMICAS
CENTRO DE DESENVOLVIMENTO E PLANEJAMENTO REGIONAL**

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* This writing sample is part of my master thesis done with the orientation of Professor Gilberto de Assis Libânio. The detailed results, as well as the attachments, can be requested by email jfwmoreira@gmail.com

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ABSTRACT

During the 2008 crisis the mainstream macroeconomics was unable to provide an adequate set of tools to combat the economic recession, triggering a debate on the theoretical basis of the dominant macroeconomic thinking and consequently on the kind of macroeconomic policy that should be implemented during and after a crisis. This discussion may lead to a fundamental change in the general approach to the use of fiscal and monetary policies as a tool for economic recovery. In this sense, the objective of this dissertation is to support this debate through the empirical study of the Brazilian and Chinese experiences before, during and after 2008. Both countries used unconventional measures to face the crisis and obtained relative success. A Structural VAR (SVAR) is used to verify which type of macroeconomic policy most contributed to the GDP growth of each of the countries during the period between 2000 and 2016. The results show the importance of using both policies, but they indicate a greater relevance of interest rates and government revenue as macroeconomic tools in Brazil and China, respectively. The evaluation of the monetary and fiscal policies adopted by them shows the impossibility of maintaining macroeconomic stability aiming exclusively reasonable inflationary levels through the adjustment of interest rates. Rethinking the way macroeconomic policies are implemented is fundamental in order to adapt the mainstream macroeconomics to the current scenario of the world economy and to avoid the economic stagnation experienced by several developed economies today.

Keywords: macroeconomics, fiscal policy, monetary policy, financial crisis.

RESUMO

Durante a crise de 2008, a macroeconomia *mainstream* foi incapaz de fornecer um conjunto adequado de instrumentos para combater a recessão econômica, o que desencadeou um debate sobre as bases teóricas do pensamento macroeconômico dominante e, conseqüentemente, sobre o tipo de política macroeconômica que deve ser implementado durante e após uma crise. Essa discussão pode levar a uma mudança fundamental na abordagem geral do uso de políticas fiscais e monetárias como ferramenta de recuperação econômica. Nesse sentido, o objetivo desta dissertação é apoiar esse debate através do estudo empírico das experiências brasileira e chinesa antes, durante e após 2008. Ambos os países usaram medidas não convencionais para enfrentar a crise e obtiveram relativo sucesso. Utiliza-se um VAR Estrutural (SVAR) para verificar qual tipo de política macroeconômica mais contribuiu para o crescimento do PIB de cada um dos países durante o período entre 2000 e 2016. Os resultados mostram a importância do uso de ambas as políticas, mas evidenciam uma maior relevância da taxa de juros e das receitas governamentais como instrumentos macroeconômicos no Brasil e na China, respectivamente. A avaliação das políticas monetária e fiscal por eles adotadas evidencia a impossibilidade de se manter a estabilidade macroeconômica buscando exclusivamente alcançar razoáveis níveis inflacionários por meio do ajuste das taxas de juros. Repensar a maneira de se implementar políticas macroeconômicas é fundamental para adequar a macroeconomia *mainstream* ao atual cenário da economia mundial e evitar a estagnação econômica hoje vivida por diversas economias desenvolvidas.

Palavras-chave: macroeconomia, política fiscal, política monetária, crise financeira.

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INTRODUCTION

During the 2008 crisis, the adversities overpassed the financial and the real estate markets' boundaries, and the world economy experienced a robust drop in aggregate demand in just a few months. Actions to repair the financial system, to increment the demand, and to restore the market's reliability were necessary to "push output back toward its pre-2008 trend and minimize the long-term damage from the Great Recession" (Ball et al., 2014, p. 8). In this scenario, the most reliable approach was to use macroeconomic policies to boost demand. The procedures adopted varied between countries, which triggered discussions about the role of these measures in fostering growth and development.

According to Ball et al. (2014), before 2008 an economic stimulus would usually be made through the adoption of accommodative monetary policies to support aggregate demand. In other words, central banks would take actions to increase money supply in order to reduce interest rates, which would mean lower borrowing costs and a probable debt-funded business expansion. The greater the growth of the productive sector, the greater the positive effect on employment rate, which would directly stimulate consumption. However, most of the advanced economies found their interest rates near the zero bound at that time, and therefore there was little room for monetary maneuvers.

In light of this situation, another way of strengthening aggregate demand would be through an expansionary fiscal policy, which may take the form of increased public spending or reduced taxes. However, public debate has always viewed this type of macroeconomic policy with considerable mistrust because of what became known as the crowding out effect. According to this theory, an increase in public spending discourages private investment in areas where the government is investing. In this case, the government not only provides a good or a service that could be offered by the private sector, but also indirectly influences borrowing costs by increasing demand for loans and, consequently, allowing a rise in interest rates. If firms are not stimulated to invest, productive sector and labor market do not grow, that is, the effect on aggregate demand through consumption is practically non-existent. Furthermore, there are costs related to the increase in government spending, which shall have an even more expensive amortization due to higher interest rate. In other words, a fiscal stimulus would not only have little effect in the short run, but would also undermine the State's long-term financing capacity.

Yet, in 2008 many economies had their interest rates near the zero bound, which reduced a lot the risk of crowding out private investment through a fiscal expansion. Well-designed and well-implemented policies, such as public investment policies (Ball et al., 2014), could generate direct benefits in job creation and consequently stabilize the level of consumption and investment in the economy. In other words, an expansionary fiscal policy could prevent a negative shift in aggregate demand more directly than a monetary policy would do. Furthermore, concerning the debt problem, Ball et al. (2014) allege that:

"In the presence of hysteresis, a one-time temporary cut in net taxes increases output into the distant future. A persistent output increase creates a persistent rise in tax revenue. These long-term fiscal benefits can more than amortize the initial rise in the deficit if the real cost of financing government debt remains low enough." (Ball et al., 2014, p. 9).

Remembering that in economics hysteresis refers to prolonged effects of a current shock, what the author means above is that the results of a fiscal policy go beyond the short term because they influence not only current real GDP but also potential GDP. A tax cut today can be offset in the long run since there is a prospect of positive GDP growth. At the very least, this means that the current revenue loss will be financed at a low cost (as interest rates approach zero) due to the greater ability to pay taxes that the population will have in the future.

Considering also the fiscal multiplier effect, these benefits can be even greater. The fiscal multiplier measures the effect that a shift in government spending has on income level. According to Blanchard and Leigh (2013, apud Ball et al., 2014) these fiscal multipliers were larger than expected during 2009 and 2010 in advanced economies, which means that small changes in public spending created much larger changes in total output, whether negative or positive. That is, increases in spending led to even greater increases in GDP, just as reductions in spending led to even greater reductions in GDP. Therefore, contrary to what was imagined, fiscal austerity policies might be more damaging than beneficial to the economy in times of recession.

Indeed, during this last crisis “output fell short of IMF forecasts in countries that pursued fiscal austerity” (Ball et al., 2014, p. 8). By reducing public spending, governments contributed to economic slowdown because of further reduction in labor demand, prolonging the economic slump. Productivity is directly affected, and the problem of public indebtedness, the main reason for fiscal consolidation, becomes even worse. That is probably why Ball (2014) argues that for the hysteresis effects to be reversible, policymakers must create a strong economic expansion through procyclical investments.

Since 2008 it has become clear that expansionary fiscal policies have a place in macroeconomics. For the first time in decades the adoption of countercyclical policies became so necessary that even the conservative International Monetary Fund (IMF) acknowledged the positive effects of public spending on infrastructure (IMF, 2014), a fact that was at least neglected by the institution over the past few years given its focus on recessionary fiscal management. This was an important milestone in economics, since it is obvious that this recession was not the last one by which the world economy will pass and the adoption of fiscal policies will probably become more frequent, which means that studying and understanding these policies will help coping with economic adversity in a faster and more effective manner in the future.

In this context, this work intends to discuss the relation between macroeconomic policies and economic activity based on the recent experiences from Brazil and China. The aim here is to verify the effects of adopted economic policies over the country’s economic growth in terms of GDP, in order to foment debate about the ideal purposes of these economic measures.

LITERATURE

The policies adopted by many economies affected by the international financial crisis were first analyzed already in 2008, when some studies started to be published. According to Spilimbergo et al (2008), fiscal policies were the most recommendable at that time. The authors analyzed the historical use of fiscal policies in financial crisis to examine the economic problems faced by a major part of

countries in that moment, and advocate the adoption of a major, lasting, diversified, contingent, collective, and sustainable fiscal stimulus immediately.

Blanchard, Dell’Ariccia, and Mauro (2010) started to rethink macroeconomic policies since the most recent international financial crisis, and stated that the relation between inflation and growth has not been totally understood yet, which makes room for questioning the efficacy of inflation targeting policies and the necessity of controlling the volatility of capital flows. What seems to be obvious for them, though, is the limited effectiveness of monetary policy as an instrument for overcoming the crisis and upholding the weakened national economies.

In another publication, Blanchard et al (2012) reanalyze macroeconomic thoughts pre and post crisis. Before the 2008 economic crisis, policies were managed to reach one target – inflation – through one tool – interest rate. It was assumed that a stable inflation could maintain relatively constant the gap between potential and effective GDPs, but a weaker connection between this gap and inflationary stability was seen in practice. Blanchard et al (2012) assert that some policymakers finally agree that central banks should pursue not only maintain macroeconomic stability, but also financial stability, using macro prudential tools.

Cabestan, Di Meglio and Richet (2012) assert that China was one of the few countries that launched aggressive countercyclical fiscal measures without compromising its long-term fiscal sustainability. Still, the fiscal stimulus adopted by the Chinese government raised questions about its potential negative effects in terms of public debt in the following years. Notwithstanding, the Chinese experience confronted the usual thought which assigns an economically limited role to fiscal policies, and corroborates with the theory that monetary policies seems to have reached its limit (Blanchard, Dell’Ariccia and Mauro, 2010).

The performance of emerging countries was deeply studied, mainly because their economic recovery capacity surprised many academics and policymakers. Some authors even argued that the growth dynamics of these economies would have assumed considerable autonomy in relation to the developed economies. This hypothesis, known as decoupling, takes the financial crisis of 2007-2008 as a turning point, from which emerging economies acquire a greater role, characterizing a scenario of better equilibrium (Ferraz, 2013).

The Brazilian fiscal policy is discussed in the work of Márcio Holland published in 2015. He uses Brazilian data for the period between 1997 and 2014 to construct a VAR model aiming the identification of fiscal policy’s dynamic effects on GDP. A model is estimated for the full sample (1997-2014), another is estimated for the pre-crisis period (1997-2008), and one more for the remaining period (2008-2014). Fiscal stimuli via public spending have positive and statistically significant impact on product growth, regardless model specification (Holland, 2015, p.21). Causality tests points out that government spending Granger-causes benchmark interest rate, and rejects the hypothesis that the same expenditures do not Granger-cause GDP growth. According to the author, this means that fiscal policies seem to be very efficient in reviving growth in Brazil, although this is accompanied by tax increases and higher short-term interest rate (Holland, 2015, p.22).

Following the same line of studies, Celasun et al. (2015) examine the financial crisis’ lessons and legacies for fiscal policies in Latin America. The focus is on the experience of the six largest and most

financially integrated economies in the region: Brazil, Chile, Colombia, Mexico, Peru, and Uruguay. Expansionary fiscal policies implemented by the six countries already at the beginning of the crisis were essential to contain product losses, but they worsened public fiscal situations, increasing risks associated with institutional structures' erosion (Celasun et al., p.5). According to the authors, many of the countries analyzed have exhausted the space for fiscal policies and should now lead to rapid fiscal consolidation, even if economic growth is still below potential. Institutional reforms should not only restore the pre-crisis fiscal framework, but also build mechanisms that promote more symmetrical, rapid, and effective responses to external shocks – both positive and negative (Celasun et al., p.5).

It is important to note that there are also several publications empirically evaluating the effectiveness of these macroeconomic policies in promoting growth of many countries. One example is a paper from Sen and Kaya (2015), which presents the methodology on which the model developed in this thesis is based, as will be explained later. The authors use a SVAR model to empirically evaluate the relative efficacy of fiscal and monetary policies over growth using quarterly data from Turkey for the years between 2001 and 2014. The results show the importance of both policies, highlighting the greater effectiveness of monetary policy, since the interest rate figured as the most powerful tool to affect growth. As fiscal policy's instruments were also among the most powerful, the study concludes that both types of macroeconomic policies are important in promoting growth, so they should be used together.

Considering these studies, it is possible to state that the supposed consensus among economists about the ideal macroeconomic policy to promote development, which prevailed before 2008, is now under general reconsideration. On the monetary side, the relation between inflation, macroeconomic stability and growth does not seem to be as linear as it was thought to be, and many economists do not agree with the maintenance of a monetary policy totally focused on price stability. On the fiscal side, the use of countercyclical measures to overcome economic difficulties is for the first time widely defended.

The financial crisis has raised some important questions about these issues mainly because the analysis of each national case reveals that macroeconomic policies' adoption in times of crisis may have different results depending on where and when it was implemented. The distinct reactions from each of the economies are probably due to differences in design, application, and transmission mechanisms of policies. It is known that in Economics nothing is definitive and certainly there is no economic panacea, but the empirical analysis of different countries' experiences may help to at least delineate some paths for the development with greater assertiveness.

METODOLOGY

The analysis will be based on the most relevant macroeconomic data from Brazil and China since the beginning of the 21st century, which shall allow a comparison between pre and post crisis scenarios in each of the countries. Six variables were chosen: GDP growth, CPI inflation, Interest Rate, Real Effective Exchange Rate, Government Expenditure and Government Revenue.

Among these variables, monetary policies are represented by inflation, interest rate, and exchange rate. Since this kind of policy is enacted by central banks by manipulating money supply in an economy, the first variables to be affected are normally inflation and interest rates, thus the choice of the first two variables is well justified. Exchange rate is chosen as a third variable because of monetary policies' side effects. Changes in interest rate determine foreign exchange flow in the country, which ultimately represents the relationship between supply and demand that determines the domestic currency's price. It is also a tactic to ascertain the existence of some type of capital control in the economy.

The remaining variables represent fiscal policies, based on the assumption that this type of procedure occurs through changes in public consumption and taxation. In that sense, government's expenditure represents the first instrument and government's revenue represents the second one. Hence, the variables for fiscal policy represent the amount spent and collected by the government, respectively.

To evaluate macroeconomic policies' efficacy, both fiscal and monetary, a SVAR (Structural Vector Auto Regression) model is constructed inspired by studies from Sen and Kaya (2015) and Haug et al. (2013). The methodology is chosen due to its ability to make unnecessary the construction of a structural model to describe "the economy in general and the mechanisms of fiscal and monetary policy design and transmission in particular" (Sen and Kaya, 2015, p.8). Furthermore, the SVAR model provides analytical tools such as impulse-response functions and variance decompositions that contain a lot of "information with regard to the effect and transmission of macroeconomic shocks and policy innovations" (Aarle et al., 2003, apud Sen and Kaya, 2015, p.8). Variance decomposition indicates the amount of information each variable contributes to the other variables in the autoregression. It determines how much of the forecast error variance of each of the variables can be explained by exogenous shocks to the other variables and therefore can be very useful in this analysis.

The starting point is a VAR model based on Narayan et al. (2008, apud Sen and Kaya, 2015, p. 10) as the following:

$$Y_t = AY_{t-1} + \dots + A_p Y_{t-p} + \Psi Y_{t-p} + \Psi D_t + \mu_t$$

In which p is model's order, Y is an $n \times 1$ vector of endogenous variables, and μ_t is an $n \times 1$ vector of residuals in its reduced form. Sen and Kaya (2015) ignore the deterministic component since "it is unaffected by shocks to the system", and the model becomes:

$$AY_t = A_1 Y_{t-1} + \dots + A_p Y_{t-p} + B \varepsilon_t$$

Where ε_t stands for an $n \times 1$ vector of structural disturbances, and $VAR(t) = \Lambda^\varepsilon$, which is “a diagonal matrix with the variance of structural disturbances making up the diagonal elements” (Sen and Kaya, 2015, p.10). Thus, the relation between structural disturbances and residuals in its reduced form can be rewritten as:

$$A\mu_t = B\varepsilon_t$$

Since it is not possible to directly observe shocks, it is necessary to impose some restrictions. There are $\left[\frac{n(n+1)}{2}\right]$ free parameters and $2n^2$ parameters in A and B matrices. Therefore, the order condition for identification requires $\left[2n^2 - \frac{n(n+1)}{2}\right]$ restrictions to be placed on the elements of these matrices. Considering the six variables chosen to construct the model, the following contemporaneous zero-value restrictions are imposed in order to identify structural parameters:

$$\begin{matrix} \varepsilon_t^y \\ \mu_t^y \end{matrix} \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 \\ a_{21} & 1 & 0 & 0 & 0 & 0 \\ a_{31} & a_{32} & 1 & 0 & 0 & 0 \\ a_{41} & a_{42} & a_{43} & 1 & 0 & 0 \\ a_{51} & a_{52} & a_{53} & a_{54} & 1 & 0 \\ a_{61} & a_{62} & a_{63} & a_{64} & a_{65} & 1 \end{bmatrix} \begin{bmatrix} \varepsilon_t^{cpi} \\ \int \\ \varepsilon_t \quad \varepsilon_t^{exc} \\ \varepsilon_t \\ \varepsilon_t^{gr} \end{bmatrix} = \begin{bmatrix} b_{11} & 0 & 0 & 0 & 0 & 0 \\ 0 & b_{22} & 0 & 0 & 0 & 0 \\ 0 & 0 & b_{33} & 0 & 0 & 0 \\ 0 & 0 & 0 & b_{44} & 0 & 0 \\ 0 & 0 & 0 & 0 & b_{55} & 0 \\ 0 & 0 & 0 & 0 & 0 & b_{66} \end{bmatrix} \begin{bmatrix} \mu_t^{cpi} \\ \int \\ \mu_t \quad \mu_t^{exc} \\ \mu_t \\ \mu_t^{gr} \end{bmatrix}$$

The principal diagonal of A matrix was restricted to unity and the elements above it were set to zero, while the elements below the main diagonal were allowed to be estimated. Meanwhile, only the elements on the main diagonal of the B matrix were allowed to be estimated, since the remaining entries were restricted to zero. Those restrictions of zeroes in rows and columns of A and B are standard ones in the literature on monetary SVARs, and the diagonal elements of the matrix A are also usually set to 1 in the literature (Haug et al., 2013). This model is exactly identified; if we impose additional restrictions on the parameters, it would be an over identified model, and the over identifying restrictions could be tested.

The form of the A matrix imposes the recursive structure, while the diagonal B orthogonalizes the effects of innovations. In other words, A matrix represents structural disturbances, or shocks in GDP growth, CPI inflation, Interest Rate, Real Effective Exchange Rate, Government Expenditure and Government Revenue, respectively. They represent the contemporaneous response of real GDP growth to variables shocks (Sen and Kaya, 2015). On the other side of the equation, B matrix is composed by residues in reduced form, which represent unexpected disturbances from each of the variables (Sen and Kaya, 2015, p. 11).

The model was constructed over the recursiveness assumption, defined by Christiano et al (1999) as the orthogonality of policy's shocks to the information set available for the policymaker to observe

when taking any policy decision. The imposition of zeros in all the elements above the diagonal of A “is an implication of the uniqueness of the Cholesky factorization of a positive definite symmetric matrix” (Christiano et al, 1999, p.77). The assumption is sufficient to identify the response of Y_t to a macroeconomic policy shock.

Analyzing the estimations resulted from the SVAR model will help the identification of differences in design, application and transmission methods of macroeconomic policies in Brazil and China. It is going to contribute to the international literature claiming the requirement to rethink macroeconomic policies after the 2008 financial crisis.

DATA DESCRIPTION

Most data from both countries may be found at the OECD Main Economic Indicators (MEI) publication, which presents comparative statistics that provide an overview of recent international economic developments for OECD countries, the euro zone and a number of non-member economies, including Brazil and China. The database covers about fifty countries and areas for the whole period being analyzed here. According to its own definition, it includes information from balance of payments, business tendency and consumer opinion surveys, composite leading indicators, financial statistics, industry, international trade, labor market statistics, consumer price indices, producer price indices, purchasing power parities (PPP), comparative price level, and quarterly national accounts.

The public finance, however, will be analyzed using data extracted from other statistical databases. The Brazilian numbers are from its Secretariat of the National Treasury, which is part of the Ministry of Finance of Brazil. China’s data are from the Ministry of Finance of the People's Republic of China, provided by the Chinese National Bureau of Statistics.

The variables are converted into their natural logarithmic form before being analyzed. According to Wooldridge (2006), this procedure can alleviate or even eliminate problems of heteroscedasticity or concentration in conditional distributions from strictly positive variables. The heteroscedasticity occurs when errors’ variance is not constant, which provides non-BLUE (Best Linear Unbiased Estimators) estimators because their variance would not be the lowest of all other unbiased estimators. This would lead to suspected values of standard errors, and therefore inferences obtained from data analysis would not be reliable. Logarithmic estimators are less sensitive to extreme observations (outliers) because variable values’ amplitude narrows considerably (Wooldridge, 2006, p.181). The construction method for each variable is described below.

GDP growth is an index constructed using the seasonally adjusted variation of the quarterly amount of the expenditure-based gross domestic product, which is total final expenditures at purchasers’ prices (including the f.o.b. value of exports of goods and services), less the f.o.b. value of imports of goods and services. To avoid negative numbers, it is measured as an index, using 2010 as the base year.

CPI inflation variables are the OECD Consumer Price Indices presented as an index where the year 2010 is the base year. It measures the average changes in the prices of consumer goods and services purchased by households.

According to the OECD definition, the interest rate is the official discount rates and call-money rates presented in percentage. Both are directly connected to monetary policies. The official discount rate is the rate at which central banks make advances to, or discount eligible bills of exchange for, selected banks and other financial intermediaries. Call money refers to secured or unsecured ‘at-call’ loans made by banks to money market dealers. It plays a predominant role in interbank money dealings and between banks and money market dealers.

Real effective exchange rate is the competitiveness-weighted relative consumer prices and unit labor costs for the overall economy in dollar terms presented as an index where the year 2010 is the base year.

Government expenditure and government revenue are both measured as a percentage of each country’s GDP and then transformed into index using 2010 as base year, in order to avoid negative values. The definition of expenditure and revenue vary a little between Brazil and China, but it should not compromise the analysis.

The data cover the period between 2000 and 2016 for both countries and the model is run considering the whole period. A structural break was taken into consideration, and there was an attempt to run the SVAR for two different subsamples – before and after the crisis. The period was divided into a) 2000-2008; and b) 2009-2016. The results, however, are not consistent. The subsample for the period before the crisis present multicollinearity, and the one for the period after the crisis do not satisfy the stability condition. The problems happen for the data of both countries.

BRAZILIAN MACROECONOMIC POLICIES AFTER 2008

Brazilian crisis’ reaction is directly linked to measures adopted in the country some years before, especially those related to expenses’ containment. In 2007, for example, the Federal Executive Branch limited its administrative expenses and digitalized purchases and social security systems, which resulted in savings of around R\$ 675 million. The government also proposed a Bill of Complementary Law limiting the expenditure on servers to the amount settled in the previous year, adjusted by the accumulated variation of the IPCA, plus 1.5% per year for the years 2007 to 2016. At the same time, the Growth Acceleration Program (PAC) was implemented, which provided for investments in several infrastructure sectors in the country.

As a result of these set of policies, in 2008 the country had a wide margin to use the monetary policy instruments, which allowed the early adoption of a series of measures to mitigate the crisis’ effects. The government tried to recompose the volume of credit supply, provide liquidity to foreign exchange markets, and minimize the decline in economic activity and investment without undermining the commitment to the guidelines of macroeconomic policy.

In 2010, despite intensifying tax relief measures for the production of capital goods and creating a new credit line for machines and equipment, the government begun to phase out tax and liquidity incentives. The monetary authority raised SELIC in two percentage points during the year. Furthermore, the government announced a R\$ 50 billion fiscal consolidation package and measures to increase

efficiency and restructure public administration's expenses. Even so, the Federal government was able to recover public investment and the GDP grew satisfactorily keeping inflation within the target's limits.

Yet, the government adopted fiscal restrictions measures to reduce inflationary expectations and interest rate in 2011. During the first semester, the central bank raised interest rates, restated the IOF tax rate on consumer credit and instituted a compulsory non-interest-bearing deposit. Later the entity began to reduce SELIC and decided to withdraw part of the macro-prudential policies and reduce the daily rate of IOF on consumer credit operations. Despite the fiscal consolidation plan with an R\$ 50 billion cut, the government expanded its investments within the PAC program and increased Bolsa Família conditional cash transfer program along with the Brasil Sem Miséria program.

Starting in 2012, the government inaugurated what became known as the "new economic matrix". Among the policies, there were macro prudential measures of credit control to limit inflation, reductions in primary surplus targets to redirect money for public investments, and interventions in the foreign exchange market to hinder new currency's appreciations (Mello, 2015). The government promoted competitiveness in the industrial sector through payroll exemption for labor-intensive sectors heavily affected by external competition, cuts in interest rates and bank spreads, and reductions of Tax Rate on Industrialized Products (IPI). To encourage investments in infrastructure, three new financial tools were launched with attractive tax treatment, and to support production and consumption, the government reduced taxes and tariffs. GDP was growing slowly and inflation seemed to be under control.

Nonetheless, the new direction taken by the government in terms of economic policies did not please politicians, entrepreneurs and investors. At the same time, there was a severe worsening of the crisis internationally and the measures adopted in 2012 greatly affected the government's finances, because they were very concentrated on the collection side. The government tried to use measures known as creative accounting to make the regime more flexible and to obtain a minimum countercyclical power of action (Gobetti, 2014), but then decided to return to the liberal development strategies. However, the government continued to encourage private investment by reducing energy and tax costs. Government consumption also continued to positively contribute to domestic demand growth. Furthermore, the payroll tax was increased and the devaluation of the Real cheered the branches linked to the export of manufactured goods. The monetary authority established an upward path to interest rates to combat increasing inflation: IPCA rate closed the year slightly below six percent, but did not exceed the upper limit of the established range toward the target. At the end, the country registered slim growth of the national product.

The beginning of Dilma Rousseff's second term was marked by the redirection of the country's economic policy. Soon after the elections, the president announced Joaquim Vieira Ferreira Levy as Minister of the Economy, in an attempt to please the demands of the market. The new minister represented the convergence of politics to neoliberal ideals, since he explicitly advocated the conduction of an austerity policy based on immediate fiscal adjustments. He launched two Provisional Measures (MP 664 and MP 665), modifying the rules for the granting of labor and social security benefits, both approved by the National Congress. Levy, meanwhile, continued to receive criticism over the adoption of the contractionary measures envisaged in the fiscal adjustment, and became the subject of a manifesto signed by more than a thousand economists who claimed that austerity aggravated recession,

unemployment and inequality in countries that pursued this strategy, even when accompanied by extremely low interest rates and currency devaluation (Jornal GGN, 2015).

In addition to these social pressures, the Brazilian political environment was in an extremely unstable period with the impeachment request sent to the Chamber of Deputies at the end of October 2015, which culminated in the resignation of Levy and his replacement by Nelson Henrique Barbosa Filho, who would remain in charge of the ministry until May 12, 2016, just after Dilma's impeachment. The minister proposed the resumption of the increase in the supply of credit by public banks, but without increase of financial subsidies by the government. He also presented a proposal for fiscal policy reform, replacing the strategy of fiscal contraction with a combination of fiscal easing in the short term and long-term fiscal reforms. In this sense, he proposed the extension of state debt with the federal government to alleviate fiscal constraint in the short term, in exchange of the adoption of measures to control spending in the medium term by these same state governments (PLP 257/16).

The government adoption of measures of severe fiscal austerity did not result in greater growth rate, but economic policies were still restrictive during 2015. Interest rates were raised and the Central Bank of Brazil announced the interruption of the daily offer of US\$ 100 million in foreign exchange swaps. In the area of expenditure control, the following should be highlighted: (A) increase of interest rates in several credit lines to reduce the subsidies paid by the National Treasury; (B) rationalization of the expenses of several government programs, reviewing their goals; (C) end of the subsidy to CDE, in the amount of R\$ 9.0 billion; (D) revision of the pension rules for death and sickness; (E) revision of the unemployment insurance and salary bonus; (F) contingency of expenses, in the initial value of R\$ 69.9 billion and then more R\$ 8.5 billion, totaling R\$ 78.4 billion; (G) revision of the rules of the Student Financing Fund (FIES), with new limits of commitment, terms and interest rates with the objective of reducing the subsidy of this policy. Regarding revenue, the government resumed collection of IPI, PIS/Cofins, IOF, and CIDE. The government also readjusted public fees and regulated prices. Confident in the results of these measures, the government reduced from 2 to 1.5 percent the tolerance interval of the fiscal target to be reached in 2017. Yet they had to revisit the primary outcome target to be achieved by 2015. Despite the sluggish economy, inflation exceeded the target's upper limit by more than four percentage points and the country once again grew little in terms of GDP.

The year of 2016 continued to be political and economically unstable for Brazil. In May 2016, the Senate decided to install the impeachment process, which led to the removal of Dilma Rousseff from the position of president of the republic, and, consequently, to the replacement of Nelson Barbosa in the Ministry of the Economy. Vice-President Michel Temer was sworn in as interim president of Brazil on May 12, 2016. He appointed Henrique Meirelles to the Ministry of the Economy, who is more connected with orthodox neoliberal principles and promptly proposed a new Constitutional Amendment Proposal (PEC), limiting the growth of public spending by freezing primary spending in real terms for up to twenty years.

With the aim of reversing the country's poor fiscal situation, the government adopted even more restrictive measures. The year's fiscal target was changed when the government realized it was unable to save the promised amount. An adjustment of the public accounts was announced, which included the extinction of ministries and positions of the federal administration. The government also transferred for the private initiative much of its responsibility for investing in infrastructure, which may be evidenced

through the expansion and improvement of the Concession Program through the Investment Partnerships Program (PPI). On the monetary side, the SELIC rate was reduced in October and November after being unchanged for more than one year. The economy did not grow and inflation was close to its upper target band.

Meirelles argued that the crisis' origin was the new economic matrix and the fiscal expansion policy, responsible for the public primary deficits that resulted in the problem of debt unsustainability. According to him, this raised the country risk and collapsed industry confidence. Industry growth and national output would be resumed by withdrawing fiscal incentive policies and inflation control through contractionary measures such as the imposition of the government spending ceiling (PEC 241/16) and the Pension Reform (PEC 287/16).

The goal of PEC 241 was to limit public expenses' growth. Considered by the government Michel Temer as the first step to overcome the country's economic and financial crisis, the measure fixed an annual spending limit for the three political branches. According to the measure, the government, like the other spheres, would be able to spend the same amount that was spent in the previous year, adjusted only by inflation measured by the 12-month IPCA variation of the period ended in June of the previous year. The limits would last for twenty years and may be revised after ten years through a complementary law. With the approval of the spending limit, the trend is that in a few years public spending will have a smaller share in the economy and that resources that finance public services, such as education and health, will be limited. Thus, the use of counter-cyclical measures through productive investment, for example, would be narrowed. Few countries have adopted the limitation of public spending under these conditions and Brazil is one of the firsts to include the freezing of expenses rule in the Constitution – the practice has also been observed in some European nations.

PEC 287/16, known as the Pension Reform, was presented by the Temer administration as the only alternative to balance the public accounts. The proposal amends several articles of the Constitution to provide for social security. Changes include increased contribution time and minimum retirement age setting, which should affect all taxpayers. According to Meirelles, social security is the main reason for government spending to be increasing (Meirelles, 2016), and the minister's main goal is to promote fiscal adjustment, that is, to reduce these expenditures.

In the words of Minister Meirelles himself, the government is committed to reducing the state's role in the economy and creating a business-friendly environment (Meirelles, 2017). This became the definitive public economic policy as of August 31, 2016, when Senate approved impeachment and Temer definitively assumed the presidency of the country.

Econometric Results

First of all, none of the six variables seem stationary at level. Each of the series behaves in distinct ways, but all of them become stationary in first difference, according to the Augmented Dickey Fuller (ADF) test.

To identify the order of the SVAR model, it is used the Final Prediction Error (FPE), Akaike's Information Criterion (AIC), Schwarz's Bayesian Information Criterion (SBIC), and the Hannan and Quinn Information Criterion (HQIC), as well as the Likelihood-Ratio (LR) test statistics. The criteria FPE, AIC, SBIC and HQIC suggest a SVAR model of order three.

In order to verify if the SVAR satisfies stability condition, the AR Roots test is implemented and all the eigenvalues lie inside the unit circle, indicating that the model is stable.

The analysis is centered in the response of GDP under a shock in each of the selected variables: CPI inflation, Interest Rate, Real Effective Exchange Rate, Government Expenditure and Government Revenue. In other words, it is going to reveal the compound effect of monetary and fiscal policy shocks on GDP growth rate.

The forecast error variance decomposition is now presented. It was calculated for the basic SVAR model for a period of zero to ten quarters. As expected, periods zero and one have no effect on GDP, since restrictions over matrix A specified no contemporaneous relations between variables. Shocks to interest rate appeared to be the most effective variable in explaining the variation in GDP growth rate, accounting for 11.42 percent of it. Shocks to government's expenditure and revenue explain 1.25 and 2.29 percent of changes in GDP growth rate, respectively. Meanwhile, price level explains 3.75 percent and exchange rate explains 1.54 percent of it.

TABLE 1
Brazil: Forecast Error Variance Decomposition

Lag	CPI Inflation Impulse	Interest Rate Impulse	Real Effective Exchange Rate Impulse	Government Expenditure Impulse	Government Revenue Impulse
0	0	0	0	0	0
1	0	0	0	0	0
2	0.013073	0.000078	0.000184	0.004708	0.00243
3	0.012048	0.075772	0.005214	0.006077	0.014939
4	0.022891	0.102156	0.005293	0.006331	0.015184
5	0.037595	0.113764	0.005588	0.007012	0.016628
6	0.038028	0.11578	0.005654	0.011217	0.022085
7	0.038213	0.116096	0.006875	0.011297	0.023022
8	0.037906	0.115217	0.011823	0.011207	0.02285
9	0.037684	0.114602	0.015221	0.011808	0.022917
10	0.037585	0.114283	0.015442	0.012567	0.022913

Source: estimated using Stata.

It is interesting to note that apparently monetary policy affects GDP more effectively than fiscal and cambial policies, since interest rate is the variable explaining the biggest part of variations in the national product.

The shock in each of the variables seems to result in a GDP response that lasts at least ten quarters. In none of the cases the GDP appears to have returned to its previous level. This indicates the long-term effect of macroeconomic policies over the economy.

On the fiscal side, the GDP growth rate responds very discreetly to impulses on government expenditure and government revenue. The shock in spending peaks only in the tenth quarter, and yet accounts for a very small proportion of national income growth. Meanwhile, a sharp increase in government revenues today would produce its maximum effect after seven quarters, and then would continue to explain approximately the same share of GDP growth rate until the last quarter.

The monetary side, on the other hand, appears to have a more intense effect over the GDP growth rate. A shock in inflation is more powerful after the fifth quarter, and until the last quarter it explains a relatively constant percentage of GDP growth rate. Something similar happens when considering an impulse on interest rates: in the fifth quarter the variable explains 11% of national income growth, a rate that is sustained almost constant until the last quarter analyzed. Lastly, the shock to the real effective exchange rate results in the weaker and less durable response of the GDP growth rate.

Brief Analysis

According to Ferraz (2013), the high level of international reserves and the de-dollarization of public debt have, to some extent, shielded the Brazilian economy from the initial effects of the crisis. Gobetti (2014) argues that changes in adjusted primary surplus (result considering economic cycle and non-recurring events, which has gradually fallen since 2004 or 2005) gave the government space to implement countercyclical fiscal policies in the form of public investments' expansion until 2010, and tax relief policies between 2011 and 2013. Changing the policy's focus from expenditures to revenues, however, did not have the expected result: already in 2011 there was a clear slowdown in the economy. The policies adopted to encourage supply were basically centered on the producer's exemption.

It is interesting to notice that Brazil was able to maintain a relative stable path of household and general government consumptions as a percentage of GDP, with an upward trend after 2010. The expansion of income transfers programs and the expansion of the real credit volume contributed to prevent private consumption from dropping significantly, and government consumption also contributed positively to domestic demand growth. In this sense, the role of the PAC was an important factor, since it has received even greater volumes of resources to face the bottlenecks in the country's infrastructure.

Indeed, gross fixed capital formation maintained an upward trend during practically the whole period between 2004 and 2013. Gross fixed capital formation in terms of GDP falls only shortly after the crisis and recently after 2014. This pattern is maintained even in periods of lesser inflow of foreign direct investment. The downturns were probably the result of the international crisis (2008) and the domestic political crisis (after 2014). Actually, the last inflection point coincides with the government decision to redirect its economic policy towards austerity.

Even if fiscal austerity measures increase investor confidence, and therefore intensify foreign capital flows, it seems like that these are not the measures that will promote economic growth. Foreign capital may not be the main financier of the country's productive capacity: in the last years the gross fixed capital formation was more intense in periods of greater public participation in the economy.

It is also interesting to note that pursuing price stability was not enough to achieve low unemployment rates in the Brazilian case. The Phillips curve can obviously not be denied without considering the economic changes the country has undergone over the years, especially in the labor market. In fact, the Brazilian productive structure, like that of most other countries, is constantly changing. In this sense, the recent technological revolution is a great milestone. More technologically advanced sectors have become the focus of many public policies worldwide because of the high added value their products have, but at the same time these sectors are not labor-intensive. Therefore, these processes are certainly affecting the relationship between labor market and price level.

In Brazil, however, high-tech sectors still do not play an important role in the economy. As stated by Romero et al (2015), the primary sector remained in a position of great importance in the Brazilian exports' portfolio since the 1990's. The share of primary products and resource-based manufactures (agro-based and others) accounted for almost 70% of the country's total exports in 2008 and was still high in 2016.

This may indicate that, although the government has been struggling to increase public investments during the period under review, these actions were more directed towards low technology-intensive sectors. Indeed, many public investment programs focused essentially on infrastructure, that is, they were not concerned with increasing the value added of Brazilian production. The correlation between the two variables would have to be proven econometrically to assert such a relationship and one should also consider that those were internal – and not export – programs. Yet, focusing on investment relief measures in technology-intensive sectors may help reduce investment costs in these sectors vis-à-vis sectors in which the country has already high competitiveness (De Negri and Alvarenga, 2011).

CHINESE MACROECONOMIC POLICIES

The financial crisis' outbreak in 2008 made the CPC's (Communist Party of China) leadership "more determined to stick to its authoritarian, state-led and state-centered development strategy" (Cabestan, Di Meglio and Richet, 2012, p.4-5). The problems faced by the capitalist world, especially the United States and Europe, convinced the CPC that a nationalist and partially protectionist economy was more resistant to crisis (Cabestan, Di Meglio and Richet, 2012).

The government at first welcomed the moderation of domestic economic growth, but as the global financial crisis intensified, policy makers got worried about "the drag on China's growth caused by the sharp slowdown in global trade" (Lardy, 2012, p.7). Yet, China was definitely more prepared to face an economic downturn: the country "went into the crisis in a strong fiscal position supported by massive foreign currency reserves [...]" (Breslin, 2012, p.14). China accumulated a high volume of reserves in the early 2000s, which was very important to finance stimulus policies to face the crisis without putting the domestic system in danger (public land and business assets more than guaranteed government investments). The Chinese level of indebtedness right before the crisis' outbreak was much lower than that of other major economies, especially in the financial sector (Lardy, 2012). Unlike what happened

in the US and in Europe, “Chinese financial institutions [...] were in a strong position to increase the supply of credit to sustain growth” (Lardy, 2012, p.14).

Even with institutions little exposed to the lousy financial assets that triggered the bankruptcy of many firms in the western world, in 2008 the Chinese government quickly adopted large and well-designed anti-crisis policies, recognizing that its high dependence on exports could make the country vulnerable to a global economic recession (Lardy, 2012). Monetary easing begun in September 2008 by creating a great upsurge in bank lending, which contributed to keep the domestic market warm and softened the slowdown in economic growth caused by the crisis (Lardy, 2012).

The State Council rolled out a RMB 4 trillion stimulus program focusing on investment “expenditures on affordable housing, rural and other infrastructure (highways, railways, and airports), public health and education, environment, and technical innovation” (Lardy, 2012, p.5).

Unlike the stimulus package adopted in the U.S., for example, the Chinese program consisted overwhelmingly of increased expenditures, and no pure tax cuts at all (Lardy, 2012). According to Lardy (2012), it included only one tax expenditure component, in the form of tax cuts on certain durable goods.

In 2009 the central bank decided for the maintenance of a proactive fiscal policy and a moderately loose monetary policy. Credit, consumption and investment were encouraged through government policies such as tax exemptions, especially in the property market.

The PBC maintained a moderately loose monetary policy in 2010. The economy re-emerged and prices increased again, so that the consumer price index registered a slight increase in relation to the previous year. On the fiscal side, the State Council raised down payment for investment properties to fifty percent, reintroduced penalty interest rates for mortgages on investment property, limited property purchases by foreign investors, and suspended mortgage lending to nonresidents. The real estate market was overheated and these measures sought to stabilize it again.

In 2011 the monetary policy was prudent. It went from restrictive at the beginning of the year to slightly expansionary in its final months. The deposit reserve requirement ratio was raised six times, accumulating an increase of three percentage points. Furthermore, three rises in benchmark lending and deposit rates were promoted (cumulative increase of 0.75 percentage points). On the opposite direction, the issuance of three-year central bank bills was suspended, reducing government contracting capacity in money market. In addition, a 0.5 percentage points cut on deposit reserve requirement ratio was conducted.

The expansionist trend of monetary policy continued in 2012, and two cuts in reserve requirement ratio (0.5 percentage points each) as well as in benchmark lending/deposit rates were made. In the second half of the year the monetary authority conducted repo operations to help control short-term interest rate. RMB deposit rates’ ceiling offered by financial institutions to their clients was adjusted to 1.1 times benchmark rates, the floor of lending rates offered by financial institutions to their clients was adjusted to 0.7 times benchmark rates, and the floating bond of the US dollar to RMB exchange rate on inter-bank spot market was expanded from 0.5 percent to one percent.

According to the PBC, a sound monetary policy was executed during 2013. The financial system was strengthened through the enrollment of parameters of the dynamic adjustment mechanism of

differentiated required reserve ratio and improvement of self-regulatory apparatus for market interest-rate pricing by financial institutions. The government turned its attention to weaker sectors of the economy such as agriculture, which was benefited by rises in central bank lending and discounts. The government also guided financial institutions to beef up support to those same key and weak parts of the economy, including not only the agriculture sector, but also rural areas and farmers, small and micro enterprises, and so forth.

In 2014 the government introduced Medium-Term Lending (MLF) and Pledged Supplementary Lending (PSL) facilities to encourage financial institutions to provide low-cost financing for the real sector supported by national policies. Credit policy was a priority for the government, which introduced a new tool to support central bank lending and employed a mechanism for dynamic adjustment of the differentiated reserve ratio for counter-cyclical purposes and credit guidance. Furthermore, the upper limit of the floating range for deposit interest rates was raised to 1.2 times benchmark level, the floating band of the RMB against the US dollar on the inter-bank spot foreign-exchange market was enlarged from one percent to two percent, and the spread limit between RMB/USD buying and selling prices offered by designated foreign-exchange banks to their clients was removed.

During 2015 the PBC decided to cut not only the benchmark interest rates of RMB deposits and lending (in five occasions during the year), but also the interest rates of credit policy supporting central bank loans, medium-term facility, and PLS. The monetary authority also guided the downward movement of interest rates of open market repo operations on nine occasions and the quota for central bank lending and discounts was raised several times.

Once more, in 2016 the Chinese monetary policy was clearly expansionist. The PBC defined it as prudent and sound. Deposit reserve requirement ratio was cut by 0.5 percentage points, medium-term liquidity operations were conducted on a regular basis, and repo operations remained in use. The PBC continued to improve the RMB exchange rate regime, putting in place a USD/RMB central parity mechanism that features the movements of a basket of currencies. Exchange rate policies thus became more rules-based, transparent and market-based.

Econometric Results

Following the procedure adopted in the Brazilian econometric analysis, first of all, the stationarity of the six series are tested and it is not possible to reject the hypothesis of unit root in most of them. First differences are generated and the ADF test was run again. Based on its results, it is possible to reject the presence of unit root and consider all the series stationeries in first difference.

The SVAR model is going to be run using the number of lags selected using the following criteria: Final Prediction Error (FPE), Akaike's Information Criterion (AIC), Schwarz's Bayesian Information Criterion (SBIC), Hannan and Quinn Information Criterion (HQIC), and Likelihood-Ratio (LR). The LR, FPE, AIC, SBIC and HQIC statistics indicate a model of order four.

The SVAR's stability condition is checked using the AR Roots test., which indicates that the model is stable, since all the roots lie within the unit circle.

It is now possible to analyze the results from the estimated SVAR of order four. Following it is presented a table containing the forecast error variance decomposition calculated for a period of ten quarters. According to these results, the Chinese domestic product is more affected by macroeconomic policies than the Brazilian GDP. A great part of China's growth may be accounted for policies concerning price stability, interest rate, cambial management and government's finance.

A shock to real effect exchange rate or a shock to government's expenditure does not explain a big part of GDP's growth: only 1.93 percent and 2.69 percent respectively. On the other hand, a shock to interest rate explains 6.02 percent of GDP's growth and a shock to CPI inflation explains 11.37 percent of it. The greatest part of the GDP (almost 30 percent!) is explained by shocks to government revenue, which indicates a high sensibility of the domestic product on fiscal policies.

TABLE 2
China: Forecast Error Variance Decomposition

Lag	CPI Inflation Impulse	Interest Rate Impulse	Real Effective Exchange Rate Impulse	Government Expenditure Impulse	Government Revenue Impulse
0	0	0	0	0	0
1	0	0	0	0	0
2	0.015027	0.000837	0.009811	0.024454	0.177501
3	0.016553	0.051868	0.009309	0.023535	0.176616
4	0.053753	0.071984	0.022871	0.021531	0.162151
5	0.096884	0.070952	0.018257	0.019883	0.15375
6	0.08924	0.068916	0.018805	0.017817	0.237635
7	0.09142	0.069067	0.018923	0.017804	0.243382
8	0.109761	0.06673	0.022837	0.02284	0.234974
9	0.123305	0.066178	0.020653	0.029394	0.237567
10	0.113686	0.060282	0.019319	0.026957	0.28955

Source: estimated using Stata.

The results also reveal that the effect of a shock over the GDP does not disappear after ten quarters. The GDP does not return to its initial level, even if the change has been of small proportion, which corroborates with what was found in the Brazilian case and indicates that macroeconomic policies do impact the long term.

Government budget apparently have strong influence over the Chinese income growth, especially on the revenue side. An impulse in government revenue results in an increase in GDP growth in the first period analyzed, i.e. after two quarters. In addition, two other sudden increases in GDP growth are observed in the sixth and tenth quarters, that is, the shock spreads over the quarters.

GDP growth rate response to a shock in inflation becomes more intense after four quarters. After peaking in the ninth quarter, the effects on GDP begin to decline.

In the case of an impulse on interest rate, the GDP growth rate responds positively especially after the third quarter. The effect reaches the highest point in the fourth quarter and then seems to be maintained at a relatively constant level until the tenth quarter, the last analyzed.

A shock in the real effective exchange rate causes a minimum increase in the GDP growth rate. The effect is slightly more intense in the quarters four, eight and nine.

Brief Analysis

First of all, it is important to state that the Chinese economy was not directly exposed to the subprime mortgage problem, and, therefore, the global financial crisis had narrow effects in the country comparing to the overall damage that the event is still causing worldwide. According to Chow (2010), restrictions on capital flows imposed by the Chinese government limited “the ability of Chinese citizens to invest abroad, thereby compelling many Chinese citizens and private firms to invest their savings domestically [...]” (p.63). In other words, the negative effects on China could have been much larger if its citizens had greater access to foreign securities such as subprime mortgages. On the government side, it is safe to assume that its share of investments destined to speculative securities was small and insufficient to cause the country large financial losses, even though China was the second largest holder of US debt securities by mid-2008 (Chow, 2010).

Nonetheless, the subprime crisis was harmful for most of China’s trade partners, and the negative effects were inevitable for the Chinese economy. With a reduced budget, many countries stopped importing Chinese products, which culminated in a sharp decline in China’s exports as early as August 2008. The whole world was trading a lower merchandise volume and cutting their expenses. In China, a drop on FDI influx was soon observed. The country that had maintained an average growth rate of ten percent since 1978 saw its economy slowdown in 2009.

Chow (2010) states that the Chinese real estate market was also negatively affected: the construction sector pace of growth fell, and so did properties’ prices. The author reminds that the sharp decline in China’s main stock market was another “indication of the impact of the global financial crisis on the overall health of the economy” (Chow, 2010, p.65). The Shanghai Stock Exchange Composite Index lost two-thirds of its value in one year (Chow, 2010).

The Chinese labor market was damaged either, as the sector that employs most of the Chinese labor force is the one most affected by the crisis: the export-oriented sector (Fang, Yang and Meiyan, 2009). The employment shock was substantial; however, according to Cabestan, Di Meglio and Richet (2012) “the rise in unemployment triggered by the economic slowdown was temporary, coexisting with the scarcity of a cheap workforce, which has gradually overtaken it [...]” (p.3).

Although some Chinese economic indices have recovered, the country did not return to its pre-crisis double-digit growth level and even the government has lowered its growth expectations in recent years. This new Chinese economic behavior became known as “China’s New Normal”, indicating the trend of growth rates at levels lower than those registered before the crisis.

Some scholars argue that this new pattern of Chinese growth is a direct consequence of the economic policy adopted in the last decades, driven essentially by investments and with little focus on consumption. Moreover, with globalization, China has directed its economy to the export sector and as consequence has become very dependent on external demand. According to this theory, such

development program is heavily reliant on state funding, which is detrimental to the stability of the country's balance of payments, so China's rapid trajectory of economic growth in recent years would not be sustainable anymore.

Moura (2015) attributes part of the unsustainability of the Chinese economic expansionism to the mismatch between over-investment and under-consumption, which would have fueled restrictions on the diversification of the national productive regime. The author asserts the existence of an excess of productive capacity, which would be exacerbated by the relative lack of geographical and intersectorial mobility of domestic firms, increasing propensity to invest in sectors and localities often already saturated (p.96). In addition, low financial markets' development would hinder many companies to diversify their savings to invest in nascent sectors, thus restricting their choices to fixed asset investments in their own niches.

In relation to under-consumption, Moura (2015) compares China with the Asian Tigers, since these countries adopted a similar growth model in the past. According to the author, such nations managed to reduce income disparities and increase purchasing power of the poorer part of the population through distributive policies that allowed the transfer of positive results to the less well-off people. Therefore, despite knowing that these countries' success comes mainly from their export performance, domestic consumption played an indispensable role in the economic growth process. The same does not seem to happen in China. Despite the visible attenuation of extreme poverty, Chinese society is marked by social polarization and asymmetric income distribution, which hampers mass consumer market expansion in the country (Medeiros, 2010 apud Moura, 2015). The accumulation of over-investment and depressed consumption accentuates China's dependence on global market to export its capacity excess and pressures prices down (and, therefore, profit margins) in some major industrial sectors (Hung, 2009, pp. 194-5 apud Moura, 2015, p.97). The Chinese labor force valorization in recent years also contributes to this result, since the consolidation of China's economic growth demanded higher qualification and better payment, directly impacting one of the country's strategies to attract foreign investment – cheap workforce.

Taken together, these factors make it difficult for China to maintain its growth strategy and have prompted President Xi Jinping to redirect the economy to the "new normal." The latest Chinese five-year plan cites growth stabilization towards medium rates; living standards enhancement; environmental protection an national governance system improvements (Hong et al., 2015, p.6-7 apud Moura, 2015, p.102) as strategic points to restructure and rebalance the Chinese economy.

Lo (2016) defends that this might not be the best path to pursue. Since the 1990s China has been stimulating economic growth by means of debt-financed government investment in infrastructure with great success, because this strategy was able to increase national GDP more than proportionate of debt growth, thereby leading to decreases in the debt-to-GDP ratio (Lo, 2016). From 2008 onwards, Chinese public investments have focused on building high-speed rail lines, and this may have been one of the factors responsible for maintaining growth in those years (Lo, 2016).

Indeed, the government struggled to cope with the adverse effects of the crisis by increasing its spending mainly between 2008 and 2014, a period in which public account deficits were recorded, albeit in small proportions when compared to the size of the Chinese economy. According to Lo (2016),

however, China's fiscal expansion was much lower than that of the 2001 Asian crisis, for example. The author states that monetary and financial instruments played a more significant role this time around the country's economic performance. There was a large increase in the M2 money supply during this period, when a process of financial expansion and financial innovation were also observed. If the country was able to maintain its growth after the Asian crisis, when it was indebted to much greater proportions, there is no reason to doubt that this time will be different.

Additionally, in line with Lo (2016) and using international standards as a comparison, it is not possible to state that dependence on the external sector is a Chinese structural characteristic, since only in the period between 2004 and 2007 the country's trade surplus became really large as a proportion of its aggregate expenditure. In all other years China's economic growth was supported by domestic rather than external demand. Furthermore, in the course of the crisis, there was an increase in domestic demand to the detriment of external demand (Lo, 2016).

However, it is true that investment remained the main component of aggregate demand in China. According to Lo (2016) the ratio between consumption and aggregate demand has declined since 2008, but this does not justify the economic slowdown, since it only determines the type of growth, not its pace (the economy can grow rapidly without consumption). In addition, statistics do not indicate a state of under-consumption in the Chinese economy: as stated by Lo (2016), consumption grew an annual average of 9.2 percent in real terms between 1978 and 2013, a high level for international standards. This means that the investment growth rate increased fast enough to more than offset the relative slowdown in consumption growth.

FINAL REMARKS

The stimulus programs adopted by the central banks after the crisis sought to stimulate the economy and accelerate growth through an increase in the monetary base and an acceleration of inflation. The strategy is known as quantitative easing, unconventional monetary policy adopted in the face of the ineffectiveness of traditional monetary policy to control inflation levels and stimulate economic growth. An increase in the monetary base - through the purchase of public debt securities and other financial instruments - implies an increase in the amount of currency in circulation. This reduces its currency value and stimulates the rise in prices. The quantitative easing was adopted in the 1990s in Japan, at the end of 2008 in the United States, in 2011 and in several other occasions until today in the Eurozone, and in 2009 in England. The objective was to reduce long-term interest rates to stimulate aggregate demand and promote economic growth. Pass these expansive policies, the recessionary bias of the world economy has prolonged more than anticipated, generating social tensions and increasing the questioning of globalization and the traditional economic model (ECLAC, 2016).

The situation reawakened the interest of scholars in the Keynesian model, and China soon caught the attention of economists who praised the country “for boosting domestic growth and stabilizing the global economy by taking swift, exemplary Keynesian stimulus measures” (Jiang, 2015, p.360). In this thesis, the Chinese case is studied in comparison with the Brazilian situation through the examination of the relative effectiveness of monetary and fiscal policies using a SVAR model. National quarterly

data for the period between 2000 and 2016 were used with the intent to capture possible changes in the macroeconomic framework after the 2008 financial crises. The main findings show that the effectiveness of monetary and fiscal policies varies a lot across the two countries. However, both strategies seem to be effective in promoting economic growth, albeit with different intensities.

The Brazilian economic growth apparently responds more effectively to shocks in monetary policy. Analyzing the impulse response graphs, it is possible to observe that it was the changes promoted by the monetary authority in the interest rate that have most driven the economy during the period analyzed when considering just the six variables in the model. Although there was no disruption of the inflation-targeting regime, which remained one of the central pillars of the government's macroeconomic policy, there were significant changes in the operationalization of monetary policy and in the use of its main instrument, the SELIC target rate. These changes had two important consequences: they enabled the BCB to increase its degree of freedom of action in the face of fluctuations in economic activity and produced a better coordination of monetary policy with other macroeconomic policies (Cagnin et al., 2013).

On the fiscal side, Brazilian policies appear to be limited by fiscal rules established for more than ten years, which no longer fit the needs of the country's economy. The fiscal rules follow the parameters of the Fiscal Responsibility Law (FRL) and the primary surplus targets regime, which are simple but very rigid. Thus, in the face of extraordinary events such as the crisis of 2008, the capacity of governmental maneuvers on the fiscal side does not reach its full power. Although initially able to use countercyclical fiscal policies to stimulate economic growth, as early as 2009 the government faced limited funding capacity from fiscal targets. This may be one of the reasons why the SVAR model gives monetary policies most of the GDP growth over the period analyzed. Therefore, it is extremely important to review the paradigm of Brazilian fiscal policies, in order to make the primary surplus targets more flexible, at least in times of crisis.

As stated by Gobetti (2014), the transparency and credibility of public accounts must be restored, the fiscal goals of flexibility must be set over the economic cycle in order to avoid pro-cyclical policies, to stabilize current expenditure growth so as to reduce the tax burden and expand public investment without jeopardizing debt sustainability. With this objective the author proposes the adoption of a "structural" concept in the definition of surplus targets. According to Gobetti (2014), cyclical effects would be expurgated from the current account balance of the public accounts (i.e. the nominal result excluding the investments), giving the fiscal policy more flexibility and transparency. This would be a first step towards an economy more prepared to face adversities, but to make such a decision it is essential to first understand the significant role the state has in the economy. The path adopted by the current administration definitely does not recognize the importance that the central government has had in the economic growth of the country in the last decades and seeks to reduce the state's performance in this area. This seems not to be the solution, taking into account what has been presented in this thesis.

In China, it is the government revenue that played a central role in explaining the path of the country's GDP growth between 2000 and 2016. Since the 1990's the government's revenue has been increasing rapidly, especially because of fast economic growth, tax-for-fee reforms, reinforcement of tax laws, strengthened collection of tax and non-tax revenue (Lin, 2011). As a consequence, the

government revenue share in GDP has grown, which justifies its importance as a growth promotion factor in China.

Contrary to what many economists and scholars point out, Chinese exchange rate policies seem to have little effect on the country's GDP. Shocks in China's real effective exchange rate responds to the major part of its GDP growth between 2000 and 2016. Indeed, during this period the government implemented several measures to strengthen the exchange market, including the adoption of a managed floating exchange rate regime in 2005. Since then the Chinese exchange rate is based on market supply and demand with reference to a basket of currencies.

Both countries reacted promptly after the crisis, which they were able to do especially because of their relatively low debt ratios. Brazil and China were trying to manage their macroeconomic structure before 2008, when they endorsed measures to promote economic stability. Furthermore, they were adopting structural adjustment policies, which brought in “more foreign funding, [...] and this has a beneficial effect on short-term (Keynesian) growth” (Corden, 1990, p. 73). This has resulted in favorable fiscal and monetary positions when the crises broke out.

Indeed, Brazil and China used countercyclical measures to face the crisis. The main difference between the two experiences was the way through which each country attempted to promote fiscal expansion. The Chinese government's reserves were large enough to finance productive investments in infrastructure and foster economic growth. In Brazil, however, whether for lack of money or differences in the government economic vision, fiscal expansion was largely due to fiscal incentives. In practice this meant waiving public revenue, which may have complicated the balance of government accounts in the short and medium term.

Still, another affinity between the countries' experiences concerns the behavior of unemployment and inflation rates during the last twenty years. According to the Brazilian and Chinese experiences, it was not possible to affirm that inflation and unemployment are negatively correlated as predicted in theory by the Phillips curve. This is an important result because it signals the lesser importance of price stability. In other words, the pursuit of a low inflationary level may be less important to the real side of the economy than previously thought. However, one must consider the changes in the relationship between labor market and inflation introduced mainly with the advent of the recent technological revolution. The redirection of the economy to less labor-intensive sectors definitely affects the Phillips curve, especially in China, where there has been an increase in the production of technology-intensive products.

The similarities between Brazil and China are probably limited to these points. Differences between countries are natural considering that their policymakers not only had different tools and resources available, but they might also have had different objectives. It is also noted that the policies adopted by the Chinese government were much more microeconomic than those adopted by Brazil, since the former promoted more structural reforms in the economy. This may have influenced the effectiveness of economic policies, since the transmission of such measures to the real side of the economy is much clearer and more transparent in a well-structured environment.

Briefly summarizing, China was not afraid of hiking its government expenditure and issuing more debt to fund infrastructure projects, especially because it had been promoting those kinds of policies

since the Asian crisis in the late 1990's. On the other hand, the Brazilian government was more cautious in its countercyclical measures, perhaps because of its troubled history of fighting inflation and the limitations imposed by the model of fiscal rules adopted in the country. Brazil has also experienced a period of political instability that has not been experienced by China. Since mid-2014 the Brazilian political class has been very disjointed, which makes it difficult to adopt macroeconomic measures that require parliamentary authorization, for example. This has influenced the government to redirect the direction of economic policies in the country on several occasions. In practice, this means that it is very challenging to analyze the medium and long-term effects of the actions taken since the outbreak of the crisis. As evidenced by IRF charts, macroeconomic policies have long-lasting effects, and changing their steering so often can reduce their potentials. Unlike Brazil, China has maintained the ideology of its policies throughout the whole period under review, and perhaps this is why it has achieved better results.

In this sense, the crash revealed that there are limits to what even omniscient policymakers can do to stabilize the economy in the face of shocks with the levers at their disposal (Barwell, 2016, p. 457). Much of the growth trajectory of Brazilian and Chinese products was directly influenced by the international scenario, especially the European crisis, under which the two national governments being analyzed have no control.

One of the main consequences of the crisis has been to discredit Western views of development (Williamson, 2010 apud Breslin, 2012). The Chinese model gained notoriety after the crisis, because it represents an alternative to these visions.

“[...] the China model has become a standard bearer for what it is not; it is not big bank shock therapy liberalization, it is not economic liberalization accompanied by political democratization, and it is not doing what the international liberal global order wants—for example, liberalizing financial sectors and allowing free-floating market exchange rates.” (Breslin, 2011 apud Breslin 2012, p.18)

Of course, this does not mean that all developing countries are in a position to simply copy what China has done. But China's experiences through not just this crisis but also through the late Asian crisis have served to give succor to those who prefer various forms of stronger state controlled versions of capitalism over more neoliberal forms. (Wade, 2010; Stubbs, 2011 apud Breslin 2012, p.18).

For Brazil, this may be the signal that the exit from the crisis is not in the New Macroeconomic Consensus, based on inflation target regime and fiscal policy neutrality to ensure price stability and public debt solvency. In an economy with a state component directly involved in growth, it is reasonable to consider a discretionary monetary policy model, central bank as lender of last resort, countercyclical fiscal policy, floating (but managed) exchange rate, and capital flow control (Ferrari Filho, 2017). In sum, the idea is to recover the regulatory and stabilizing capacity of the state, implement structural and institutional reforms, and coordinate fiscal, monetary and exchange policies. This is the post-Keynesian solution proposed by Ferrari Filho (2017), which would be conditional to a situation of controlled inflation, sustainable growth, and fiscal and external equilibriums. The main challenge for Brazil is to

strengthen its own institutions, which is a determining factor for the political and economic prosperity of a country (Acemoglu and Robinson, 2012).

The use of macroeconomic policies in overcoming financial crises is an extensive topic that was only partially addressed in this thesis. It is necessary to analyze several other aspects such as the degree of influence of each of these policies on GDP growth through the calculation of monetary and fiscal multipliers. It is also possible to verify the effects of macroeconomic policies on other spheres of the economy, such as poverty and inequality, following the analysis of Ball et al. (2013). Finally, it is possible to analyze the economic sectors that most drive growth and, therefore, determine which of them should be the focus of public investments when adopting countercyclical fiscal policies. These studies can be of great help in determining a path towards economic development.

REFERENCES

- ABUBAKAR, Aisha Mohammed. 2016. “Inflation Targeting as a Monetary Policy Framework: A Critical Appraisal”. *Imperial Journal of Interdisciplinary Research (IJIR)*, vol.2, issue-6.
- ACEMOGLU, Daron, and ROBINSON, James A. 2012. *Why Nations Fail: The Origins of Power, Prosperity and Poverty*. 1st edition. New York: Crown.
- AIRAUDO, Marco; BUFFIE, Edward F.; and ZANNA, Luis-Felipe. 2016. “Inflation Targeting and Exchange Rate Management In Less Developed Countries”. *IMF Working Paper*. WP/16/55. Research Department, Strategy, Policy, and Review Department, and Institute for Capacity Development. Washington, March 2016.
- AKERLOF, George; BLANCHARD, Olivier J.; ROMER, David; and STIGLITZ, Joseph E. (Eds.). 2014. *What Have We Learned? Macroeconomic Policy after the Crisis*. MIT Press: Cambridge (MA). <http://www.jstor.org/stable/j.ctt9qf899>.
- BALL, Laurence; FURCERI, Davide; LEIGH, Daniel; and LOUNGANI, Prakash. 2013. “The Distributional Effects of Fiscal Consolidation”. *IMF Working Paper* 13/151. Washington: International Monetary Fund, June 2013.
- BALL, Laurence; DELONG, Brad; and SUMMERS, Larry. 2014. “Fiscal Policy and Full Employment”. *Full Employment Project*, Center for Budget and Policy Priorities.
- BALL, Laurence. 2014. “Long-term damage from the Great Recession in OECD countries”. *NBER Working Paper*, N° 20185.
- BARWELL, Richard. 2016. *Macroeconomic Policy After the Crash: Issues in Monetary and Fiscal Policy*. Palgrave Macmillan, Macmillan Publishers Ltd: London (United Kingdom).
- BLANCHARD, Olivier; DELL’ARICCIA, Giovanni; MAURO, Paolo. 2010. “Rethinking Macroeconomic Policy”. *IMF Staff Position Note*, SPN/10/03. International Monetary Fund: Washington D. C., 2010.
- BLANCHARD, Olivier J.; ROMER, David; SPENCE, A. Michael; and STIGLITZ, Joseph E. (Eds.). 2012 *In the Wake of the Crisis: Leading Economists Reassess Economic Policy*. MIT Press: Cambridge (MA). <http://www.jstor.org/stable/j.ctt5vj9h>.
- BLANCHARD, Olivier; DELL’ARICCIA, Giovanni; MAURO, Paolo. 2013. “Rethinking Macro Policy II: Getting Granular”. *IMF Staff Position Note*, SDN/13/03. International Monetary Fund: Washington D. C.
- BLANCHARD, Olivier; CERUTTI, Eugenio; and LAWRENCE, Summers. 2015. “Inflation and Activity – Two Explorations and Their Monetary Policy Implications”. *NBER Working Paper Series*. Working Paper 21726. National Bureau of Economic Research: Cambridge (MA).
- BRAMALL, Chris. 2009. *Chinese Economic Development*. Routledge, 2009.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2002: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2003: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2004: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2005: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.

- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2006: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2007: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2008: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2009: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2010: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2011: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2012: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2013: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2014: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2015: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2016: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brasil. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Orçamento Federal. Orçamentos da União exercício financeiro 2017: Mensagem Presidencial, Projeto de Lei Orçamentária. – Brasília: MP, SOF.
- Brazilian Central Bank. < <http://www.bcb.gov.br> >
- Brazilian Central Bank. 1999. “Programação Monetária 2000”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2000. “Programação Monetária 2001”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2001. “Programação Monetária 2002”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2002. “Programação Monetária 2003”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2003. “Programação Monetária 2004”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2004. “Programação Monetária 2005”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2005. Programação Monetária 2006. Diretoria Colegiada, Departamento Econômico – DEPEC.

- Brazilian Central Bank. 2006. *Programação Monetária 2007*. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2007. “Programação Monetária 2008”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2008. “Programação Monetária 2009”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2009. “Programação Monetária 2010”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2010. “Programação Monetária 2011”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2011. “Programação Monetária 2012”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2012. “Programação Monetária 2013”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2013. “Programação Monetária 2014”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2014. “Programação Monetária 2015”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2015. “Programação Monetária 2016”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- Brazilian Central Bank. 2016. “Programação Monetária 2017”. Diretoria Colegiada, Departamento Econômico – DEPEC.
- BRESLIN, Shaun. 2012. “Paradigm(s) shifting? Responding to China’s response to the global financial crisis” In *The consequences of the global financial crisis: the rhetoric of reform and regulation* edited by Wyn Grant and Graham K. Wilson. Oxford: Oxford University Press.
- BRESSER-PEREIRA, Luiz Carlos. 2010. “The global financial crisis, neoclassical economics, and the neoliberal years of capitalism”. *Revue de la régulation*, Numéro 7 - Institutions, régulation et développement, 1er semestre 2010.
- CABESTAN, Jean-Pierre; DI MEGLIO, Jean-François; RICHEL, Xavier. (Eds.) 2012. *China and the global financial crises: a comparison with Europe*. Oxon: Routledge.
- CAGNIN, Rafael Fagundes; PRATES, Daniela Magalhães; de FREITAS, Maria Cristina; NOVAIS, Luís Fernando. 2013. “A gestão macroeconômica do governo Dilma (2011 e 2012)”. *NOVOS ESTUDOS*, CEBRAP, n. 97, pp. 169-185.
- CELASUN, Oya et al. 2015. “Fiscal Policy in Latin America: Lessons and Legacies of the Global Financial Crisis”. *IMF Staff Discussion Note*. SDN/15/06. Washington, April 2015.
- CHOW, Daniel. 2010. “China’s Response to The Global Financial Crisis: Implications for the U.S.-China Economic Relations”. *Global Business Law Review* [Vol. 1: 47 2010].
- CHRISTIANO, Lawrence J., Martin Eichenbaum, Charles L. Evans. 1999. “Monetary policy shocks: What have we learned and to what end?” In *Handbook of Macroeconomics*. Elsevier, Volume 1, Part A, 1999, Pages 65-148, ISSN 1574-0048, ISBN 9780444501561, [https://doi.org/10.1016/S1574-0048\(99\)01005-8](https://doi.org/10.1016/S1574-0048(99)01005-8).

- CORDEN, W. Max. 1990. “Macroeconomic Policy and Growth: Some Lessons of Experience”. Proceedings of the World Bank Annual Conference on Development Economics.
- DE NEGRI, Fernanda; ALVARENGA, Gustavo Varela. 2011. “A primarização da pauta de exportações no Brasil: ainda um dilemma”. *Ipea*, Diretoria de Estudos e Políticas Setoriais, de Inovação, Regulação e Infraestrutura. Radar Tecnologia, Produção e Comércio Exterior n13, 04/2011.
- DUNAWAY, S. and FEDELINO, A. 2006. “Fiscal Policy in China” In *China and India: Learning from Each Other: Reforms and Policies for Sustained Growth* edited by J. Aziz, S. Dunaway, and E. Prasad. Washington, DC: The International Monetary Fund.
- ECLAC. 2016. “Panorama de la Inserción Internacional de América Latina y el Caribe 2016: la región frente a las tensiones de la globalización”. Autor(es) Institucional(es): NU. CEPAL. División de Comercio Internacional e Integración.
- FANG, Cai; YANG, Du; MEIYAN, Wang. 2009. “Crisis or Opportunities: China’s Response to The Global Financial Crisis”. *The Perspective of The World Review*, v.1, n.1, dec.2009, pp. 91-113. Brasília: IPEA.
- FERRARI FILHO, Fernando. 2017. “Recessão Brasileira: Origens, Determinantes e Condições de Saída”. Porto Alegre/RS: FCE/UFRGS.
- FERRAZ, Fernando Cardoso. 2013. “Crise Financeira Global: Impactos na Economia Brasileira, Política Econômica e Resultados.” Master diss., Programa de Pós-Graduação em Economia (PPGE), Universidade Federal do Rio de Janeiro.
- GOBETTI, Sérgio Wulff. 2014. “Regras Fiscais no Brasil e na Europa: Um Estudo Comparativo e Propositivo”. *Texto para discussão*. Rio de Janeiro : Ipea.
- HAILU, Degol; WEEKS, John. 2011. “Macroeconomic Policy for Growth and Poverty Reduction: An Application to Post-Conflict and Resource-Rich Countries”. *DESA Working Paper* No. 108. ST/ESA/2011/DWP/108. New York: UN/DESA Working Papers.
- HAUG, Alfred A.; JEDRZEJOWICZ, Tomasz; SZNAJDESKA, Anna. 2013. “Combining monetary and fiscal policy in an SVAR for a small open economy”. *NBP Working Paper* No. 168. Warsaw: Economic Institute.
- HAUSMANN, R. CA Hidalgo, S Bustos, M Coscia, S Chung, J Jimenez, A Simoes, M Yildirim. 2011. *The Atlas of Economic Complexity*. Puritan Press. Cambridge MA.
- HOLLAND, Márcio. 2015. “Fiscal Policy in Brazil: from counter-cyclical response to crisis”. *Escola de Economia de São Paulo da Fundação Getúlio Vargas*, Texto para Discussão 407.
- International Monetary Fund. 2016. *Global Financial Stability Report –Potent Policies for a Successful Normalization*. Washington, April 2016.
- JEREISSATI, Henrique Jose Leal. 1999. “The IMF Role in Financial Crises”. Instituto Cultural Minerva, Institute of Brazilian Issues, the George Washington University, Washington, DC.
- JIANG, Yang. 2015. “Vulgarization of Keynesianism in China’s response to the global financial crisis”. Danish Institute for International Studies, Copenhagen, Denmark. *Review of International Political Economy*, Vol. 22, No. 2, 360-390.
- LALL, Sanjaya. 2000. “The technological structure and performance of developing country manufactured exports, 1985-98”. *Oxford Development Studies*, vol. 28, n° 3.
- LARDY, Nicholas R. 2012. *Sustaining China’s Economic Growth after the Global Financial Crisis*. Peterson Institute for International Economics: 2012.

- LI, Linyue; WILLETT, Thomas D.; and ZHANG, Nan. 2012. “The Effects of the Global Financial Crisis on China’s Financial Market and Macro economy”. *Economics Research International*, Volume 2012, Article ID 961694, 6 pages. Hindawi Publishing Corporation.
- LIN, Shuanglin. 2011. “China’s Fiscal Policy and Fiscal Sustainability” In *Assessment on the Impact of Stimulus, Fiscal Transparency and Fiscal Risk* edited by Ito, T. and F. Parulian. ERIA Research Project Report 2010-01, pp.77-116. ERIA [online]. Available at: <www.eria.org/publications/research_project_reports/images/pdf/y2010/no1/ch3China_Fiscal_Sustainability_Shuanglin_Lin.pdf>
- LO, Dic. 2016. “China Confronts the Great Recession: ‘Rebalancing’ Neoliberalism, or Else?” SOAS, University of London, UK. Chapter in *International Papers in Political Economy 2016: Emerging Economies During and After the Great Recession* edited by P. Arestis and M.C. Sawyer. Basingstoke, Macmillan Palgrave, 2016.
- MANTEGA, Guido. 2014. “A Política Fiscal Brasileira em Tempos de Crise”. Apresentação do ministro Guido Mantega no evento Encontro de Política Fiscal, da Fundação Getúlio Vargas. Ministério da Fazenda, novembro de 2014. Available at <<http://www.fazenda.gov.br/centrais-de-conteudos/apresentacoes/2014/encontro-de-politica-fiscal-fgv>>
- MEDEIROS, Carlos Aguiar de; CINTRA, Maria Rita Vital Paganini. 2015. “Impacto da ascensão chinesa sobre os países latino-americanos”. *Revista de Economia Política*, vol. 35, nº 1 (138), pp. 28-42. São Paulo: janeiro-março de 2015.
- MEIRELLES, Henrique. 2016. “Ajuste Fiscal: Pré-Condição para o Crescimento Sustentado com Estabilidade de Preços”. Apresentação do ministro Henrique Meirelles durante Reunião do Conselho de Desenvolvimento Econômico e Social (CDES), no Palácio do Planalto. Ministério da Fazenda, novembro de 2016. Available at <<http://fazenda.gov.br/centrais-de-conteudos/apresentacoes/2016/hcm-cdes-21-nov-16-1.pdf>>
- MEIRELLES, Henrique. 2017. “Retomada do Crescimento e Reformas Estruturais”. Apresentação do ministro Henrique Meirelles durante almoço com diretores e conselheiros da Associação Nacional de Jornais (ANJ). Ministério da Fazenda, junho de 2017. Available at <http://www.fazenda.gov.br/centrais-de-conteudos/apresentacoes/2017/2017-06-01-apresentacao_henrique-meirelles_retomada-do-crescimento-e-reformas-estruturais.pdf>
- MELLO, Guilherme Santos. 2015. “Regimes macroeconômicos e o Brasil pós-crise”. Plataforma Política Social, March 9, 2015. Available at <<http://plataformapoliticasocial.com.br>>
- MOURA, Rafael. 2015. “A desaceleração chinesa e o ‘Novo Normal’: implicações estruturais para a economia e o setor financeiro doméstico”. *Desenvolvimento em Debate*, 3(2), pp. 79-109. Rio de Janeiro: 2015.
- NAUGHTON, Barry. 2007. *The Chinese economy: transitions and growth*. The MIT Press, Cambridge (MA), 2007.
- NONNENBERG, Marcelo José Braga. “China: estabilidade e crescimento econômico”. *Rev. Econ. Polit.* [online]. 2010, vol.30, n.2, pp.201-218. Available from: <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0101-31572010000200002&lng=en&nrm=iso>
- OECD. 2017. *Main Economic Indicators*, Volume 2017 Issue 2, OECD Publishing, Paris. DOI: <<http://dx.doi.org/10.1787/mei-v2017-2-en>>
- OLIVEIRA, Gesner; TUROLLA, Frederico. 2003. “Política econômica do segundo governo FHC: mudança em condições adversas”. *Tempo Social*, 15 (2): 195-217. FFLCH-USP: São Paulo, 2003.

- People's Bank of China. China Monetary Policy Report, Quarter Four, 2005. Monetary Policy Analysis Group of the People's Bank of China, 2006.
- People's Bank of China. China Monetary Policy Report, Quarter Four, 2006. Monetary Policy Analysis Group of the People's Bank of China, 2007.
- People's Bank of China. China Monetary Policy Report, Quarter Four, 2007. Monetary Policy Analysis Group of the People's Bank of China, 2008.
- People's Bank of China. China Monetary Policy Report, Quarter Four, 2008. Monetary Policy Analysis Group of the People's Bank of China, 2009.
- People's Bank of China. China Monetary Policy Report, Quarter Four, 2009. Monetary Policy Analysis Group of the People's Bank of China, 2010.
- People's Bank of China. China Monetary Policy Report, Quarter Four, 2010. Monetary Policy Analysis Group of the People's Bank of China, 2011.
- People's Bank of China. China Monetary Policy Report, Quarter Four, 2011. Monetary Policy Analysis Group of the People's Bank of China, 2012.
- People's Bank of China. China Monetary Policy Report, Quarter Four, 2012. Monetary Policy Analysis Group of the People's Bank of China, 2013.
- People's Bank of China. China Monetary Policy Report, Quarter Four, 2013. Monetary Policy Analysis Group of the People's Bank of China, 2014.
- People's Bank of China. China Monetary Policy Report, Quarter Four, 2014. Monetary Policy Analysis Group of the People's Bank of China, 2015.
- People's Bank of China. China Monetary Policy Report, Quarter Four, 2015. Monetary Policy Analysis Group of the People's Bank of China, 2016.
- People's Bank of China. China Monetary Policy Report, Quarter Four, 2016. Monetary Policy Analysis Group of the People's Bank of China, 2017.
- ROMERO, João P. et al. 2015. "The great divide: The Paths of Industrial Competitiveness in Brazil and South Korea". Belo Horizonte: UFMG/CEDEPLAR, 2015.
- SAGGU, Aman; and ANUKOONWATTAKA, Witada. 2015. "China's 'New Normal': Challenges Ahead for Asia-Pacific Trade". United Nations Economic and Social Commission for Asia and the Pacific, Trade Insights, Issue No. 11, July 2015.
- SEN, Huseyin; and KAYA, Ayse. "The relative effectiveness of Monetary and Fiscal Policies on growth: what does long-run SVAR model tell us?" *MPRA Paper No. 65903*, *Munich Personal RePEc Archive*, 2015. < <http://mpra.ub.uni-muenchen.de/65903/> >
- Secretaria do Tesouro Nacional. Ministério da Fazenda do Brasil. < <https://www.tesouro.fazenda.gov.br> >
- SPIILIMBERGO, Antonio; SYMANSKY, Steven; BLANCHARD, Olivier J.; and COTTARELLI, Carlo. 2008. "Fiscal Policy for the Crisis". *IMF Staff Position Note*, SPN/08/01. December 29, 2008. Available at SSRN: <http://ssrn.com/abstract=1339442> or <http://dx.doi.org/10.2139/ssrn.1339442>.
- STIGLITZ, Joseph. 2010. "To choose austerity is to bet it all on the confidence fairy". *The Guardian*, 19 October 2010. Available at <https://www.theguardian.com/commentisfree/cifamerica/2010/oct/19/no-confidence-fairy-for-austerity-britain>

The Central People's Government of the People's Republic of China. < <http://english1.english.gov.cn/index.htm> >

The National Audit Office of the People's Republic of China. < <http://www.audit.gov.cn/en/index.html> >

The People's Bank of China. < <http://www.pbc.gov.cn/english/130437/index.html> >

The State Council of the People's Republic of China. < <http://english.gov.cn> >

The World Bank. 2017. World Development Indicators. Washington, D.C.: The World Bank (producer and distributor). <<http://data.worldbank.org/data-catalog/world-development-indicators>>

“Um manifesto pela mudança na política econômica e contra o pacote Levy”. 2015. *Jornal GGN*, 20 de maio de 2015. Available at <<http://jornalggn.com.br/noticia/um-manifesto-pela-mudanca-na-politica-economica-e-contra-o-pacote-levy>>

VIANNA, Salvador T. Werneck; BRUNO, Miguel Antônio P.; MODENESI, André de Melo. 2011. “Macroeconomia para o Desenvolvimento: uma agenda de pesquisa”. *Ipea*, Texto para Discussão 1677. Rio de Janeiro, 2011.

WOOLDRIDGE, Jeffrey M. 2006. *Introdução à Econometria: uma abordagem moderna*. Thomson.