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A Brazilian Keynesian Review é um periódico científico criado e mantido pela Associação Keynesiana Brasileira (AKB).

The Brazilian Keynesian Review (BKR) is a scientific journal created and maintained by the Brazilian Keynesian Association (AKB).

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EXPEDIENTE

A Brazilian Keynesian Review (BKR) é um periódico científico criado e mantido pela Associação Keynesiana Brasileira (AKB) e tem como objetivo publicar e divulgar estudos inéditos, teóricos e aplicados, sobre Economia Keynesiana e áreas afins. Os artigos devem ser submetidos à apreciação da revista por iniciativa de seus autores ou a convite do Editor. As deliberações editoriais serão pautadas exclusivamente por critérios de excelência acadêmica, tendo por base pareceres emitidos por especialistas, isto é, os artigos submetidos seguem avaliação cega pelos pares e, uma vez aprovados, serão publicados segundo sua ordem de aprovação.

A BKR adota uma orientação editorial pluralista, abrindo-se às diferentes orientações de pesquisa, desde que as contribuições apresentem interface com a Economia Keynesiana, tais como as abordagens Institucionalista, Estruturalista ou Evolucionária. A BKR tem periodicidade semestral e acesso irrestrito, sendo online. Os trabalhos são publicados em português ou em inglês. A revista está estruturada em três partes. A primeira contém artigos acadêmicos na forma tradicional. A segunda parte contempla artigos mais curtos que tratam da conjuntura econômica brasileira ou mundial. Por fim, a partir desse número, a BKR também passa a incorporar uma seção com resenhas de livros recentemente publicados.

O Corpo Editorial da revista é composto por um Editor, dois Coeditores, um Comitê Editorial e um Conselho Editorial. O Comitê Editorial é presidido pelo Editor e composto pelos Coeditores e por outros seis membros, a saber, Fábio Henrique Terra; Fabrício José Missio (coeditor); Gilberto Tadeu Lima; Giuliano Contento de Oliveira; Igor Rocha; Lauro Mattei, Luiz Fernando Rodrigues de Paula e Marco Flávio da Cunha Resende (coeditor).

O Conselho Editorial é composto por até 30 (trinta) membros indicados pela Diretoria da AKB entre professores e pesquisadores brasileiros ou estrangeiros de reconhecida qualificação científica.

Associação Keynesiana Brasileira - www.akb.org.br

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EDITORIAL

A editoria da Brazilian Keynesian Review (BKR) tem a satisfação de comunicar que o Número 2 do seu Volume 2 se encontra disponível na página eletrônica da revista. A BKR é uma iniciativa da Associação Keynesiana Brasileira (AKB) e tem como objetivo publicar e divulgar estudos inéditos, teóricos e aplicados, sobre Economia Keynesiana e áreas afins. A revista adota uma orientação editorial pluralista, abrindo-se às diferentes orientações de pesquisa, desde que as contribuições apresentem interface com a Economia Keynesiana, tais como as abordagens Institucionalista, Estruturalista ou Evolucionária. A BKR tem periodicidade semestral e acesso irrestrito, sendo online. Os trabalhos são publicados em português ou em inglês. A revista está estruturada em três partes. A primeira contém artigos acadêmicos na forma tradicional. A segunda parte contempla pequenos artigos que tratam da conjuntura econômica brasileira ou mundial. A terceira parte contempla resenhas de livros.

A seção de artigos acadêmicos tradicionais deste número é composta por quatro trabalhos. No primeiro, ***Framing Financial Markets: a Methodological Account,*** a partir do conceito de enquadramento (*framing*), Sheila Dow discute a forma como o conhecimento sobre os mercados financeiros é interpretado e construído e o papel que diferentes entendimentos desempenham na teoria e na prática. Dow analisa o *mainstream* econômico destacando sua construção a partir da metodologia positivista. O positivismo lógico exige que as declarações científicas sejam testáveis contra os fatos, e o julgamento convencional é que apenas as afirmações matemáticas são precisas o suficiente para testes robustos. Em seguida, a autora argumenta que as proposições dessa literatura são a base adotada por formuladores de políticas monetárias e reguladores para desenhar políticas relativas aos mercados financeiros. Porém, os modelos empregados no passado recente revelaram-se insuficientes, levando a discussão pelos gestores sobre políticas alternativas. Algumas experiências, assim, passaram a considerar as implicações da incerteza em torno do conhecimento econômico. Mas, segundo Dow, a incerteza é considerada de acordo com o que é requerido pela abordagem positivista lógica, que encoraja a formulação de um modelo matemático adequado para testes empíricos. É com base nesse arcabouço que, atualmente, os bancos centrais têm procurado influenciar as expectativas como uma ferramenta chave da política monetária.

A autora discute, ainda, as contribuições de outras disciplinas, tais como a sociologia, a psicologia e a retórica, para a compreensão do enquadramento teórico acerca da atuação dos *players* no mercado. Considerando os usuários (menores) dos mercados financeiros (empresas e famílias), que interpretam a informação e tomam decisões financeiras em um ambiente financeiro complexo e, sob incerteza acerca do futuro, o que ilumina melhor esse enquadramento é a "velha economia comportamental". Em síntese, o artigo mostra que os mercados financeiros são enquadrados diferentemente por distintas disciplinas, mas a maior diferença está entre a abordagem teórica dominante e a experiência prática na economia. Nesse caso, a autora conclui que a incorporação de ideias e novos tipos de evidências, de outras disciplinas, notavelmente a psicologia e sociologia, enriqueceriam o substrato teórico.

No segundo artigo, intitulado ***Rethinking Monetary Theory in Light of Keynes and the Crisis***, Marc Lavoie argumenta que a crise financeira iniciada em 2008 colocou em cheque aqueles que sustentaram que os mercados financeiros eram eficientes e que poderiam evoluir com segurança por conta própria. Nesse sentido, o objetivo do artigo é examinar o que parece ter sido alterado ou questionado como consequência do que aconteceu durante a crise monetária à luz dos escritos de Keynes.

Lavoie analisa o regime de metas de inflação (RMI) e a importância de o Banco Central (BC) buscar objetivos alternativos, como a estabilidade financeira e o pleno emprego. O autor mostra as críticas e questionamentos recentes sobre o RMI e constata que, após 2008, esse

regime foi incapaz de manter a estabilidade financeira, tendo sido acompanhada por bolhas de ativos financeiros, além de excessiva tomada de dívidas por parte de agentes privados, em particular de famílias e instituições financeiras. Esse comportamento imprudente teve um impacto negativo sobre a atividade real. Portanto, a estabilidade do sistema financeiro pode ser um objetivo de política mais importante do que a estabilidade de preços. Nesse contexto, o autor argumenta que há poucas dúvidas de que Keynes concordaria com aqueles que hoje enfatizam que a estabilidade de preços não trouxe a estabilidade financeira e que esta deveria estar na vanguarda dos objetivos dos bancos centrais. Em seguida, o autor discute outras questões envolvendo a atuação do BC. Entre elas, argumenta que, em relação à discussão sobre regras e discricionariedade para Bancos Centrais, a crise realçou a impossibilidade de total independência do BC, pois há um grau de cooperação deste com o governo que vai muito além das operações técnicas diárias. Lavoie também discute a endogeneidade da moeda, argumentando que em um sistema onde a taxa de juros de curto prazo é um elemento exógeno, a demanda por reservas causa e determina o suprimento de reservas. Assim, a história *mainstream* baseada no multiplicador monetário não se sustenta, embora permaneça nos livros textos. Sob esse contexto, Lavoie conclui que muitos dos eventos ou consequências da crise financeira global são difíceis de entender se alguém se atém à teoria econômica dominante. Tal dificuldade força a reconsideração, por um lado, da teoria monetária, especialmente no que se refere à discussão acerca dos limites de política em períodos de recessão ou estagnação; e, por outro, propõe o resgate da política fiscal enquanto ferramenta necessária para impulsionar a economia.

No terceiro artigo, ***Economic Growth from a Kaldorian Perspective: Theory, Evidence and Agenda***, João Prates Romero oferece uma resenha da literatura Kaldoriana que identifica três importantes lacunas (ou agenda de pesquisa) dentro desta abordagem. As duas primeiras referem-se ao fato de que tanto na Lei de Kaldor-Verdoorn como na Lei de Thirlwall, os parâmetros-chave do modelo não foram totalmente compreendidos. Dessa forma, no artigo são apresentadas diferentes formulações da primeira lei,incluindo os trabalhos recentes que endogenizam o coeficiente de Verdoorn, e adiciona-se uma síntese dos trabalhos que testam sua validade. Em seguida, a partir de uma discussão sobre o crescimento de longo prazo restrito pela condição de equilíbrio intertemporal do balanço de pagamentos, sintetizados na lei de Thirlwall e na sua versão multissetorial, o trabalho aponta para a necessidade de se testar quais são os determinantes da magnitude das elasticidades-renda do comércio internacional. Ademais, em termos setoriais, é preciso avançar nos testes econométricos que determinam as elasticidades-renda associadas a diferentes setores e, mais, nos testes que avaliam se a estrutura econômica de cada país influencia suas elasticidades-renda agregadas. A terceira lacuna remete a uma discussão sobre as limitações dos modelos em que o mecanismo de causalidade cumulativa opera via competitividade preço. O autor destaca que o desafio é incorporar nessa abordagem um mecanismo que opere por meio da competitividade não preço. Como possibilidade de avançar nesse constructo teórico, Romero chama atenção para a construção de análises que levem em consideração a combinação de *insights* kaldorianos e schumpeterianos para além daqueles já elaborados, a fim de que se possa sanar alguns dos problemas apontados.

No artigo seguinte, ***Capital Flows to BRICS Countries during 2000-2010***, Vanessa da Costa Val Munhoz analisa a dinâmica dos fluxos financeiros nos países que compõem os BRICS. Para tanto, examina o impacto dos controles de capitais adotados em cada economia sobre os movimentos dos tipos específicos de capitais registrados em suas contas financeiras visando identificar se os recursos direcionados a essas economias são especulativos – capitais com viés de curto prazo. A hipótese é de que levando em consideração a dinâmica financeira, as economias dos BRICS apresentam características peculiares que devem ser levadas em conta na formulação de estratégias de regulação financeira global. Os resultados das estimações

através de um modelo Autoregressivo de Heterocedasticidade Condicional (GARCH), para cada um dos países, corroboram o argumento de que os momentos-chave dos fortes fluxos financeiros seguem de perto a dinâmica da liquidez internacional e mostram ainda que: i) o aumento do fluxo de capitais de curto prazo elevou a dependência dessas economias a eventos externos, especialmente no período recente de crise financeira internacional; ii) essa dependência medida em termos do impacto e da volatilidade dos fluxos de capitais é menor nos países que adotaram controles de capitais; iii) o caso Chinês se sobressai, uma vez que o país adota uma estratégia de desenvolvimento muito singular e tem uma inserção externa extremamente favorável, incluindo controle de capitais regulamentados por um conjunto detalhado de regras que são administradas por uma complexa rede de instituições e de supervisão das decisões privadas, orientadas a minimizar a dependência de fundos de curto prazo. Por fim, a autora argumenta que as regulamentações dos mercados financeiros devem ser dinâmicas e abrangentes, sendo necessário escolher os tipos apropriados de controles de capitais mais adequados a cada circunstância e país.

Na segunda parte da revista que reúne contribuições sobre conjuntura econômica brasileira e mundial, o primeiro artigo, ***An Appraisal of Floating Exchange Rate Regimes in Latin América***, de Roberto Frenkel, avalia o desempenho do regime de taxas de câmbio flutuantes nas principais economias latino-americanas e mostra que a adoção deste contribuiu para evitar crises de balanço de pagamentos, recorrentes na América Latina (AL) nas décadas anteriores. Não obstante, o autor aponta que a combinação de taxas de câmbio flutuantes e livre mobilidade de capitais prejudica o crescimento econômico devido à apreciação cambial e seus efeitos deletérios sobre o investimento no setor de bens comerciáveis, conforme observado na AL na década de 2000. Em seguida, Frenkel argumenta que o trilema associado à impossibilidade de preservar a livre mobilidade de capitais e controlar a taxa de juros doméstica e a taxa de câmbio não funciona quando há excesso de entrada de capitais e tendência de apreciação cambial. O autor mostra que, não sendo as taxas de juros domésticas muito elevadas, é possível impedir a apreciação cambial sem perder autonomia de política monetária, no contexto de livre mobilidade de capitais. Mas, na ausência destas condições, a solução para se ter uma taxa de câmbio estável e competitiva seria a adoção de câmbio flutuante e controles de capitais durante as fases de forte influxo de capitais e tendência de apreciação cambial. Contudo, controles de capitais adotados unilateralmente seriam um fraco remédio, segundo o autor, sendo necessário um acordo internacional sobre tais controles que beneficiaria países em desenvolvimento e desenvolvidos.

Manoel Carlos de Castro Pires, em ***Política Econômica e Estabilização: uma Breve Análise da Recessão Brasileira***, apresenta uma interpretação da crise brasileira com algumas reflexões para a política econômica e a retomada do crescimento. O autor argumenta que o quadro recessivo grave pelo qual passa a economia brasileira é fruto da exaustão de algumas políticas que contaminaram os instrumentos de política econômica e de uma combinação rara de choques negativos. Segundo sua interpretação, o biênio 2012/2013 foi marcado por um conjunto de políticas insuficientes para sustentar o crescimento econômico. Somado a esse fator um grande conjunto de choques negativos ocorreu, como choques endógenos (realinhamento de preços monitorados, revisão parcial das desonerações tributárias e a redução de subsídios fiscais e parafiscais, aumento da TJLP e o fim do Programa de Sustentação do Investimento do BNDES e da redução do crédito público) e choques exógenos (queda nos termos de troca, crise hídrica, desinvestimentos da Petrobrás e depreciações da taxa de câmbio). Esses choques atingiram a economia brasileira gerando, por um lado, a aceleração da inflação, o que impediu a adequação da política monetária ao ciclo recessivo e, por outro, a elevação dos prêmios de risco e a deterioração das expectativas do setor privado, em consonância também com o acirramento político e a incerteza sobre o equacionamento da situação fiscal. Segundo Pires, o grande desafio da economia brasileira para a retomada do

crescimento está na política fiscal. Ao mesmo tempo em que é necessário estabilizar o crescimento da dívida pública e reduzir os prêmios de risco, o autor argumenta em favor da importância de se manter uma política fiscal de curto prazo flexível. Apresenta, portanto, certo ceticismo quanto a proposta de limite para o gasto público e defende que um ciclo de reformas estruturais de longo prazo é o caminho mais adequado para manter de forma crível a sustentabilidade fiscal sem contrair a economia no curto prazo.

Por fim, no artigo **Componentes Macroeconômicos e Estruturais da Crise Brasileira: o Subdesenvolvimento Revisitado**, Pedro Rossi e Guilherme Mello elaboram um diagnóstico da desaceleração e crise da economia brasileira a partir dos seus elementos macroeconômicos e estruturais. Para tanto, iniciam a análise resgatando alguns dos principais diagnósticos presentes no debate público e acadêmico acerca da desaceleração e crise, identificando quatro linhas interpretativas (interpretação *ortodoxa*, abordagem *novo desenvolvimentista,* estratégia de *desaceleração rudimentar*, estratégia *industrialista*). Os autores argumentam, em linha com a última interpretação, que os erros na condução da política econômica, presentes na maioria dos diagnósticos sobre a desaceleração, devem ser considerados no âmbito de condicionantes estruturais que caracterizaram o ciclo de crescimento recente da economia brasileira. Esse ciclo amenizou características típicas do subdesenvolvimento ao modernizar, por exemplo, os padrões de consumo de uma parcela importante da população e ao melhorar qualitativamente o mercado de trabalho reduzindo o desemprego e a informalidade. Não obstante, segundo os autores, a contradição desse modelo de desenvolvimento é que vários dos fatores que contribuíram positivamente para constituição do mercado de consumo de massas também impactaram negativamente a estrutura produtiva, dentre eles a melhora nos termos de troca e a valorização cambial. Nesse sentido, o ciclo de crescimento que marcou os governos dos partidos dos trabalhadores não superou entraves estruturais, apenas reconfigurou alguns aspectos do subdesenvolvimento brasileiro. Rossi e Mello concluem que a compatibilização de um projeto redistributivo precisa considerar as mudanças necessárias para superação dos entraves estruturais presentes na economia nacional, como o alto nível de desigualdade de renda, a precariedade do mercado de trabalho e a estrutura produtiva de baixa produtividade.

Por fim, a terceira seção da revista apresenta resenha do livro ***Keynes: Ensaios Sobre os 80 Anos da Teoria Geral***, organizado por Fernando Ferrari Filho e Fábio Henrique Bittes Terra. Em uma análise crítica, Leandro Vieira Lima Araújo e Lívia Nalesso Baptista destacam que ao longo dos 11 ensaios que compõem o livro, são discutidos não só aspectos teóricos da Teoria Geral, mas também temas que dialogam com outras abordagens, como as teorias pós-keynesiana, neo-Schumpeteriana e kaleckiana. Ademais, excepcionalmente nessa edição, a revista também oferece uma seção especial comemorativa aos 80 anos da *Teoria Geral* contendo um dossiê com entrevistas junto a renomados autores que contribuíram para a disseminação e o avanço da agenda de pesquisa keynesiana no Brasil e no mundo.

Tenham todos uma agradável leitura!

Anderson Tadeu Marques Cavalcante, editor

Fabrício José Missio, coeditor

Marco Flávio da Cunha Resende, coeditor

EDITORIAL

The Brazilian Keynesian Review (BKR) is pleased to announce that its new issue (volume 2 of its number 2) is available on the journal's website. BKR is an initiative of the Brazilian Keynesian Association (AKB) which aims at publishing and disseminating theoretical and applied studies on Keynesian Economics and related areas. The journal adopts a pluralistic editorial orientation, covering different research themes, as long as the contributions present an interface with Keynesian Economics, such as Institutionalist, Structuralist or Evolutionary approaches. The BKR has a semiannual periodicity and unrestricted online access. The papers are published in Portuguese or English. The magazine is structured in three parts. The first contains traditional academic articles. The second part includes small articles that deal with the Brazilian or world economic situation. The third part contemplates book reviews.

The first section of this BKR issue is composed by four papers. In the first, ***Framing Financial Markets: A Methodological Account***, Sheila Dow discusses how knowledge over financial markets is interpreted and constructed and the role that different understandings play in theory and practice. It is argued that different disciplines frame a particular "subject" in its own characteristic forms. Even in a given discipline, there may be significant differences, ranging from the lack of agreement on the meaning of terms, through theoretical differences to differences in policy recommendations. Dow argues that the way that meaning is linked to the concepts and terms in which framed objects of study are represented (in which questions are posed and answered) depends on the methodology employed. It analyzes, from that point on, the economic mainstream, emphasizing its construction from the positivist methodology. The author draws attention to the fact that this methodology or even what is considered "conventional judgment" is rarely discussed explicitly. Nevertheless, the propositions in this literature are the basis used by policymakers and regulators to design policies in relation to financial markets. However, this academic framework has proved to be insufficient, which led policymakers to discuss alternative ways of formulating such policies. Some experiences thus began to consider the implications of knowledge uncertainty and the adoption of a more pluralistic approach. According to Dow, the greatest contribution has come from the economic sociology literature, which focuses on the process of judgment formation in a market society. Moreover, Dow emphasizes that a somewhat different way of framing the market processes and the staff employed in these processes emerged from the literature on economic rhetoric. From this perspective, a high proportion of all economic activity ends up involving persuasion. More specifically in the financial sector, such view includes the work of financial advisors and advertising of financial instruments. In sum, the article shows that financial markets are framed differently by distinct disciplines, but the greatest difference is undoubtedly between the dominant theoretical approach and the practice in economics. In this case, the author concludes that the incorporation of ideas and new types of evidence from other disciplines could enrich the theoretical framework.

In the second paper, ***Rethinking Monetary Theory in Keynes and the Crisis***, Marc Lavoie argues that the 2008 financial crisis has been a shock to those who argued that financial markets were efficient and could evolve safely on their own. According to Lavoie, pragmatism led to the reconsideration of several mainstream macroeconomic theory principles. In this sense, the purpose of the article is to examine, using Keynes' writings as reference, what seems to have changed in the aftermath of the monetary crisis. For instance, by analyzing the inflation targeting regime, it is argued that some authors have questioned, in line with the results of some recent empirical studies, whether the success in reaching the proposed target is actually due to policy procedures or whether it was due to pure luck. During the crisis, the efforts in achieving such target implied a slightly negative real interest rate, which was considered insufficient as a monetary response to the fall in economic activity. The author also

highlights that several economists have argued that there are better alternatives to inflation targeting, such as price level or nominal GDP targets. The paper also points to the need of alternative objectives, such as financial stability and full employment. It should be noted that, in addition to the fact that excessively restrictive monetary policies designed to reduce inflation may decelerate economy activity and reduce productivity (the Kaldor-Verdoorn effect), it is now known (post 2008) that the Inflation targeting regime is completely unable to sustain financial stability and that it has been accompanied by financial and real estate asset bubbles, as well as excessive debt-taking by private agents, particularly from households and financial institutions. This reckless behavior eventually had a negative impact on real activity. In this context, the author further argues that there is little doubt that Keynes would agree with those who emphasize that price stability has not brought financial stability and that such should be at the forefront of central bank objectives.

Lavoie then discusses other issues related to the performance of Central Banks. First, he argues that the literature on Central Bank operation, which is based on "rules and discretionary action", have placed substantial pressure on governments to adopt rules of governance that make Central Banks independent of political influence. However, the crisis highlighted the fact that a Central Bank cannot be totally independent. There is always a degree of cooperation between the government and Central Banks that goes well beyond the latter's daily technical operations. This need for collaboration had already been pointed out by Keynes. In addition, Lavoie also discusses the endogeneity of money, arguing that in a system where the short-term interest rate is exogenous, the demand for reserves causes and determines the supply of reserves. Thus, the mainstream story based on the monetary multiplier does not hold, although it remains in economics textbooks. The author concludes that many of the events and effects of the global financial crisis are difficult to understand if one sticks to the dominant theoretical framework. Such adherence eventually has led to the reconsideration of, on one hand, monetary theory, especially regarding the discussion of policy limits in times of recession; and, on the other hand, it has also stressed fiscal policy as a necessary tool to boost the economy.

In the third paper in the section, ***Economic Growth from a Kaldorian Perspective: Theory, Evidence and Agenda***, João Prates Romero reviews the Kaldorian literature and identifies important gaps within such approach. It is first argued that, in both Kaldor-Verdoorn's and Thirlwall's Laws, the key parameters of the models were not fully understood. Different formulations of the Kaldor-Verdoorn law are thus presented and a synthesis of the studies that test their validity is made. The paper also emphasizes that it is not clear what determines the differences in the degree of returns to scale between countries and sectors. Then, from a discussion of long-term growth constrained by the balance of payments intertemporal equilibrium condition (synthesized by the Thirlwall law and its multisectoral version), it is necessary to test which are the determinants of the size of international trade income elasticities. Additionally, more empirical evidence on the income inequalities in different sectors is needed. Romero also points out that another gap in the literature can be identified in models' limitations associated to cumulative causality mechanisms that operate through price competitiveness. The author stresses that the challenge is to incorporate a mechanism that operates through non-price competitiveness. Romero stresses the need to advance in analytical terms, especially through the ones that take into account the combination of Kaldorian and Schumpeterian insights.

In ***Capital Flows to BRICS Countries during 2000-2010***, Vanessa da Costa Val Munhoz analyzes the dynamics of financial flows in the BRICS countries, evaluating the impacts of specific types of capital controls in each economy. Munhoz thus seeks to identify whether the resources directed to these economies are speculative, that is, if the inflows of capital had a short-term

bias. The hypothesis is that, by taking into account the financial dynamics, the BRICS economies present peculiar characteristics that must be taken into account for the formulation of global financial regulation strategies. Econometric evidence for each of the analysed countries corroborates the argument that the key moments of intense financial flows closely follow the dynamics of international liquidity. Moreover, the increase in short-term capital flows has raised the dependence of these economies to external events. It is also argued that such dependence is lower for countries that have adopted capital controls, with China being a special case: the country adopts a very unique development strategy on top of its extremely favorable external insertion, including capital control regulation through a detailed set of rules that are administered and supervised by a complex network of institutions. The author then argues that not only financial market regulations must be dynamic and comprehensive, but it is also necessary to choose appropriate types of capital controls which are tailored to each specific circumstance and country.

In the second part of this BKR issue, which brings contributions that analyzes the Brazilian and World economic outlook, the first article by Roberto Frenkel, ***An Appraisal of Floating Exchange Rate Regimes in Latin America***, evaluates the performance of the floating exchange rate regime in main Latin American economies. The paper shows that the adoption of such regime in the 2000s contributed to avoid recurrent balance of payments crises. Nevertheless, the author points out that the combination of floating exchange rates and free capital mobility undermines economic growth due to exchange appreciation and its deleterious effects on investment in the tradables sector. Frenkel also argues that the trilemma associated with the impossibility to preserve the free mobility of capital and control interest and exchange rates does not work when there is an excess of capital inflows and an appreciation tendency for the exchange rate. The author shows that, given that domestic interest rates are not very high, it is possible to prevent exchange rate appreciation without losing autonomy of monetary policy in the context of free capital mobility. However, in the absence of such conditions, the solution to attain stable and competitive exchange rates would be the adoption of a floating exchange rate and capital controls during phases of larger inflows of capital and exchange appreciation. However, according to the author, capital controls adopted unilaterally would be a poor remedy and an international agreement on such controls would be needed in order to benefit both developing and developed countries.

In the following paper, ***Política Econômica e Estabilização: uma Breve Análise da Recessão Brasileira***, Manoel Carlos de Castro Pires presents a brief account of the Brazilian crisis. The author argues that the severe recession experienced by the Brazilian economy is due to the exhaustion of some policies that have contaminated the instruments of economic policy and to a rare combination of negative shocks. According to the author's interpretation, the biennium 2012/2013 was marked by a set of policies that proved insufficient to sustain the economic growth presented in the period before 2011. Moreover, from 2014 onwards, the Brazilian economy suffered significant negative impacts, such as endogenous shocks (realignment of monitored prices, partial revision of tax exemptions and reduction of fiscal and para-tax subsidies, increase in long-term interest rate (TJLP), the end of the national development bank (BNDES) investment support program and the reduction of public credit; and also exogenous shocks (falling terms of trade, water supply crisis, Petrobrás disinvestments and exchange rate depreciation). These shocks affected the Brazilian economy causing, on the one hand, the acceleration of inflation, which prevented the adjustment of the monetary policy to the recessive cycle and, on the other hand, prompted the increase of the risk premia and the deterioration of private sector expectations, in tandem with the political aggravation and uncertainty about the fiscal situation. Therefore, according to Pires, the Brazilian economy's greatest challenge in resuming growth lies on the fiscal policy. While it is necessary to stabilize public debt growth and reduce risk premia, the author argues that maintaining a flexible short-

term fiscal policy would be paramount. Nonetheless, some skepticism about the new federal proposal for public spending limits still remains. Pires argues that a cycle of long-term structural reforms is the most appropriate way to credibly maintain fiscal sustainability without contracting the economy in the short term.

In the last article of the section, ***Componentes macroeconômicos e Estruturais da Crise Brasileira: o Subdesenvolvimento Revisitado,*** Pedro Rossi and Guilherme Mello also present a diagnosis of the deceleration of the Brazilian economy from the perspective of its macroeconomic and structural elements. The authors analyze some of the main diagnoses presented in the public and academic debate, mainly the orthodox interpretation, the new developmentalist approach, the rudimentary deceleration strategy, and the industrialist strategy. The authors argue, in line with the latter framework, that errors in economic policy must be considered within the framework of structural constraints that characterized the recent cycle of the Brazilian economy growth. This cycle has slightly altered the typical characteristics of the countriy's underdevelopment through the modernization, for instance, of consumption patterns for a significant portion of the population and also through the qualitative improvement of the labor market by reducing unemployment and informality. Nevertheless, according to the authors, the contradiction of such development model is that several of the factors that contributed positively to the constitution of a mass consumer market also negatively affected its productive structure. Among those factors, it can listed the improvement in terms of trade and the appreciation of the exchange rate. In this sense, the growth cycle that marked the Workers' Party governments was not able to overcome structural difficulties. It only reconfigured some aspects of Brazilian underdevelopment. Rossi and Mello conclude that the compatibility of a redistributive project must consider necessary changes to overcome the structural obstacles of the national economy, such as the high level of income inequality, the precariousness of the labor market, and the low productivity of its economic structure.

Finally, the third and last section of BKR presents a review of the book ***Keynes: Ensaios Sobre os 80 Anos da Teoria Geral*** organized by Fernando Ferrari Filho and Fábio Henrique Bittes Terra. In a critical essay, Leandro Vieira Lima Araújo and Lívia Nalesso Baptista point out that, throughout the 11 essays that compose the book, not only theoretical aspects of the General Theory are discussed, but other related topics are also considered, such as post-keynesian, neo-Schumpeterian, and Kaleckian theoretical frameworks.

Lastly, in order to celebrate the General Theory 80th anniversary, BKR offers a special section containing brief interviews with renowned authors who contributed to the dissemination and advancement of the Keynesian research agenda in Brazil and in the world.

We hope you all have a pleasant read.

Anderson Tadeu Marques Cavalcante, editor

Fabrício José Missio, coeditor

Marco Flávio da Cunha Resende, coeditor

SUMÁRIO/SUMMARY

Framing Financial Markets: A Methodological Account[*]

Sheila Dow[†]

Abstract

The way in which financial markets are framed depends on who is doing the framing, although there are reflexive interdependencies between these framings. The underlying argument of the paper is that the way in which financial markets are framed in theory should reflect the different framings in the economy, and that this may benefit from input from other disciplines. Mainstream economics frames financial markets as archetypical competitive markets, focusing on prices as the key information on which to base analysis. This follows from traditional positivist methodology where computability is the key to theory appraisal. Central banks draw on this analysis for their own framing, but modify it significantly in the face of the requirement to take decisions under palpable uncertainty; some understanding is perceived to be necessary for prediction. Increasingly their role is seen as manipulating expectations in order to achieve inflation targets. Participants in financial markets in turn employ quantitative models for forming their expectations; in conditions of market turbulence the limits to these models become evident, and indeed material to prices themselves. Further, for these participants, markets are a social phenomenon. Finally the households whose experience of financial markets enables or constrains spending frame financial markets in yet another way. Understanding of these various framings would benefit from recourse to other disciplines, notably psychology, sociology and rhetoric. But methodological approach is critical for how these inputs can enhance theorising, as exemplified by the difference between the old and new behavioural economics.

Keywords: Financial Markets, Framing, Methodology

JEL Classification: A11, B41, G18

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1. Introduction

This paper is concerned with the way in which knowledge about financial markets is construed and constructed, and the role that different understandings play in theory policy and practice. We approach this through the concept of 'framing'.

The general meaning of the term 'framing' refers to the way in which something is presented and thus perceived. In discourse analysis it refers more specifically to what is included and what is excluded. The concept therefore fits well with an analysis of economics and the economy in terms of open and closed systems. A closed system is one where what is included and what excluded is predetermined, and has fixed meaning. A system is open if it fails to satisfy any one of the conditions for a closed system (Chick and Dow, 2005). An open system is not a complete free-for-all – otherwise it would not be a system. Arguably reality is completely open at the ontological level, but there is no scope for accessing this reality without some framing. Rather, some boundaries are required to frame knowledge; but in an open system these boundaries (or frames) are provisional and permeable (ie they can evolve, and are not absolute). As soon as we conceptualise experience, and even more as soon as we employ words and ascribe them meaning in relation to concepts and experience, we are invoking some frame or other.

Framing is a necessary feature of discourse and, in turn is generated and transmitted by discourse. Reality is also framed in another sense, by the institutional arrangements, conventions and habits which put some (normally provisional, permeable) boundaries around the scope for acting on knowledge. Indeed there is scope for interdependence between framing at the level of society (or groups within society), and the framing embodied in social arrangements, i.e. social framing. Thus framing in general is not a matter of choice. At a deep level, we frame our understanding of the world on the basis of what Searle (1995, 1999) calls background, of which we are largely unconscious. Framing further depends on our role in society (and thus on power relations). This role takes on a special character for theorising. Different disciplines frame the subject matter in their own characteristic ways for example. But even within disciplines there can be framing differences, ranging from differences in meaning of terms, through theoretical differences, to differences in policy recommendations. As we will see, this involves differences in meaning of key terms, such as 'rationality' and 'social'.

In economics, the usual application of the framing concept is to the presentation of rational choice problems, and has been applied particularly to financial markets within the new behavioural finance, following the lead of Kahneman and Tversky (1979). But the term has a wider application to questions of knowledge more generally, and thus to the knowledge of analysts as well as the analysed. This is the more common use of the term in sociology. Indeed there is scope for different framings on the part of analysts and those who are analysed. We will consider these different framings in the context of financial markets, but the discussion could be applied similarly to other areas.

We start by considering the way in which mainstream economists frame financial markets. The way in which meaning is attached to concepts and terms, in which the objects of study's frames are represented, and in which questions are posed and answered, depends on the methodology employed. In the next section we explore the positivist methodology which is employed in mainstream economics in order to understand how financial markets are framed for analysis. The new behavioural finance is considered as a case study of how this methodology has been adapted in order to change the frame (allowing for a change in the way in which agents frame their choices), but nevertheless retain its essential elements. This follows from the central framing concept of rationality.

Monetary policy makers and regulators increasingly draw on this academic literature in order to formulate policy with respect to financial markets. However the policy tool of manipulating expectations poses a reflexivity issue, whereby the authorities attempt to provide the frame for financial markets. Unquantifiable uncertainty, which evades the mainstream frame, must also be addressed in this exercise. We therefore consider the different framing of financial markets by the authorities in the following section.

The players in financial markets in turn frame these markets in a yet different way, requiring even more attention to the market process itself, rather than simply prices. The analysis of this framing involves recourse to sociology and rhetoric as well as psychology. These financial market players can be distinguished from non-financial corporations and households, for whom changes in asset prices, interest rates and availability of credit, and expectations as to future changes, have real consequences for production, consumption, real investment and employment – either enabling or constraining them. Their framing of financial markets is different again, conditioned by limitations on knowledge about financial markets, and the mechanisms for generating experience with finance. Studying this framing by businesses and households is the focus of the old behavioural economics (with its links to institutional and evolutionary economics), drawing also on sociology and rhetoric. The core method, which involves study of framing in the economy, is the case study. We also consider Minsky's financial instability hypothesis as another example of a theoretical framework built on a particular study of framing by businesses, banks and households.

We conclude by reviewing this discussion in relation to the framing by different groups, and the methodological issues involved in theoretical framing in relation to framing in the economy.

2. The mainstream economics frame

The traditional mainstream way of framing an object of analysis in economics is in terms of a set of facts against which theories arrived at deductively can be tested. In financial markets, the core facts are prices (of financial assets), and the price of borrowing and lending money (interest rates). There are also values of trades, but pricing can occur independently of trades. The one stock to attract significant attention is the stock of money, which has significance for the monetary theory of inflation. Framing of these facts is not regarded as an issue.

This method of framing follows from logical positivism, which has been the dominant methodological influence on mainstream economics, as expressed for example in introductory textbooks. However, methodology is only rarely discussed explicitly, though it plays a powerful role in defining economics, as far as mainstream economics is concerned. Logical positivism requires that scientific statements must be testable against facts (in principle, if not in practice), and the conventional judgement (again rarely discussed) is that only mathematical statements are precise enough for robust testing. So the framing of mainstream economics in general has become one of formal mathematical representation. This has led to an uncomfortable methodological bifurcation between theory which puts a high priority on internal mathematical consistency (though the resulting propositions are generally taken to be testable 'in principle') on the one hand, and theory whose formulation is designed for empirical testing on the other hand. (The two are often used together, where theory is derived on the basis of the axioms of rational individual behaviour, but then expressed in reduced form for empirical testing.) This bifurcation, as we shall see, has become evident in debates over the implications of experimental evidence on individual behaviour.

Theories are derived from the axioms of rational individual behaviour, which presume that agents are utility maximisers; in financial markets this is taken to mean profit maximisers (subject to given preferences with respect to taking on or avoiding risk). Rationality is given formal meaning by the axioms (complete preferences, for example, where preferences themselves are framed in a particular way). This does not preclude a transition into a different, broader understanding of rationality as in ordinary discourse for purposes of persuasion beyond the axiomatic framework. The framework has traditionally presumed perfectly competitive markets (although, as we shall see, a limited form of market imperfection is now also analysed). This is particularly appealing since it makes the required mathematical representation more tractable. And financial markets have generally been regarded as the markets which come closest to the idealised perfectly competitive market. These markets are normally highly active, information flows are good, and the profitability of arbitrage ensures that mispricing is arbitraged away.

Equilibrium plays a key role in mainstream analysis (again framed in a particular, formal, way); Weintraub (1985) notes it as a Lakatosian positive heuristic to conduct analysis in terms of equilibrium. Thus a core model is the capital asset pricing model (CAPM), which demonstrates how arbitrage between financial assets (as perfect substitutes) drives all asset prices to their equilibrium level (taking account of probabilistic risk and return). But it imbues the analysis more fully in focusing attention on equilibrium as the expected end-state of market processes. Thus for example, market turbulence is seen as a 'correction' back to equilibrium (given some market distortions which had created a disequilibrium).

The notion of 'facts' also is taken to be unproblematic given the huge sets of price and trading data. Much of finance theory developed without reference to data. But the profit potential from using finance models to predict market prices encouraged a huge growth of empirical financial analysis, exemplified by the Nobel award winning work of Merton and Scholes (and Black), which was actually used in practice in LTCM. A further impetus was provided by the Basel framework which encourages financial institutions to model, and quantify, their own risk profile. This development has privileged prediction over explanation in appraising theories. Following Friedman (1953), if predictive success is the primary goal of theory, then the content of the theory and in particular the realism of assumptions are of secondary importance. A particular consequence was a justification for treating economic behaviour (expressed in terms of rational economic man) as separable from other aspects of behaviour. But given the conflicting desires to build theory on realistic assumptions, for theory to be formally internally consistent, and the difficulty of separating out actual economic behaviour from non-economic behaviour when examining evidence, a divide has built up, as elsewhere in economics, between applied work judged by predictive success on the one hand, and pure theory judged by internal consistency (given the rationality axioms) on the other. Neither in practice can be consistent with logical positivism (ignoring the deductive process or empirical testing, respectively). But the way in which financial markets are analysed employs essentially the same general frame. Further, since pure theory is abstract and not directly tested, and since applied work either adopts this theory or purports to avoid theory (letting 'the data speak for themselves') framing issues are not thought to arise.

But the mainstream frame has itself evolved from the 1980s to take on board a much wider range of evidence than was previously the case. Thus for example the New Keynesian approach (sparked off by Stiglitz and Weiss, 1981) takes on board the idea (derived from experience) that financial assets are not all perfect substitutes; in particular, small and medium-sized enterprises have limited access to capital markets and are therefore potentially constrained by lack of availability of bank finance. The analysis focuses on a particular way of framing credit allocation under asymmetric information. However, while the resulting theory

was prompted by a real-world problem which had been ruled out by the perfect substitutability assumption, and by a new way of framing bank behaviour, the actual theory development conforms to the mainstream approach in the framing of the problem and seeing banks' framing in relation to the benchmark of abstract rational fully-informed behaviour. The source is identified as asymmetric information as to default risk, ie a market imperfection which produces a sub-optimal equilibrium outcome of credit rationing. The rationality axioms remain intact (extended to rational expectations, except in the one area of default risk on the part of individual borrowers), and the empirical testing is done by simulations rather than by 'real' data.

It was not always the case, but mainstream economics evolved to be a 'separate' science (Hausman, 1992), such that rational optimising behaviour applied to market behaviour, while other motivations and practices are relevant to non-economic behaviour. Indeed other disciplines supported this divide by focusing on non-market behaviour. But in the last few decades psychologists and sociologists in particular have been studying market behaviour and have influenced economic analysis of market behaviour. This was appealing in offering what was seen as greater realism, it offered new explanations for apparent anomalies with the standard subjective expected utility (SEU) approach to rational behaviour, and it offered solutions to the sticking point of multiple equilibria arrived at in areas such as evolutionary game theory and rational expectations theory (Sent, 2004).

Thus another type of evidence, derived from experiments and drawing on psychology, opened up yet another fruitful line of enquiry, known now as behavioural economics. We refer to it here as the 'new behavioural economics' to distinguish it from the different pre-existing approach of the same name (Sent 2004; Earl, 1988, 2005). The laboratory evidence attracted attention because it seemed to contradict the rationality axioms, ie it seemed to strike at the core of the mainstream frame. Kahnemann and Tversky (1974, 1979) have drawn on the field of psychology to suggest that agents are not rational in the way that is assumed by the SEU approach, introducing heuristics and biases in the exercise of judgement where cognition is limited (or rationality bounded). In particular, they demonstrated that agents choose according to how a question is (psychologically) framed. Choice is then not a matter of simple classical logic, but brings with it the preconceptions and preferences of the chooser, apparently generating 'irrational' choices. The psychic frame of the chooser is by implication different from the (rational) frame of the analyst, and the analysis of this framing starts from psychology.

While there is reference in behavioural economics to social framing, as in the conditioning of choice by social norms, there is little exploration of this, although sociology might well have provided insights. Because of the axiomatic focus on atomic individuals, the influence of society is limited to the introduction of social norms as exogenous constraints on rational individual behaviour, without explanation for the emergence of these norms or the reasons that rational individuals accept them. Indeed the examples of framing remain very limited. There has been an increasing tendency to cite Adam Smith's (1759) *Theory of Moral Sentiments*, where he develops a theory of human nature in terms of man as a social being, i.e. where self-interest is fundamentally conditioned by the social nature of being. But again the way in which this is framed by the theorist derives from traditional mainstream theory. Thus Ashraf, Camerer and Loewenstein (2005) for example refer to Smith's impartial spectator as a encouraging rational choice with respect to the individual's long-term interest (a curb on short-sighted sentiment, which encourages irrational choice in the short run). While this interpretation introduces a richer conception of human nature than traditional rational economic man, it remains anchored by rational pursuit of self-interest as the reference point, to which modifications of specification may be added. This interpretation differs markedly

from the conventional history of thought interpretation of the impartial spectator being, among other things, a moral reference point with whom the individual has sympathy, in the Smithian sense of the word, through imagination.

The new behavioural economics addresses a wide range of framing factors which had earlier been raised in the old behavioural economics literature (as we shall discuss below). But the goal is to conform with the traditional methodological approach. As Hong and Stein (2007, p. 126) put it:

> *"The enduring appeal of classical asset-pricing theory over the last several decades owes much to its success in forging a consensus around a foundational modelling platform. This platform consists of a core set of assumptions that have been widely-accepted by researchers working in the field as reasonable first-order descriptions of investor behaviour, and that – just as importantly – lend themselves to elegant, powerful, and tractable theorizing.*
>
> *If behavioural finance is ever to approach the stature of classical asset pricing, it will have to move beyond a large collection of empirical facts and competing one-off models, and ultimately reach a similar sort of consensus."*

Indeed it could be argued that the approach to framing analysis of financial markets has therefore not fundamentally changed, and has determined how the economics literature has developed this new importing of ideas from psychology. Thus, for example, efforts are made to explain diversity of framing as differences in Bayesian priors due to information limitations (Hong and Stein, 2007). As Kahneman (2003, p. 1469) put it, 'theories in behavioural economics have generally retained the basic architecture of the rational model, adding assumptions about cognitive limitations designed to account for specific anomalies'. The unit of analysis is still the individual actor, and the framing by the individual is still construed in terms of constraints (social norms, bounded rationality etc) which impede the perfect functioning of markets (Klaes, 2006), with rationality the reference point. For many the goal is the logical positivist one of refining the rationality axioms in order to generate theory which accords better with the evidence.

There are tensions between the normative and the descriptive (with respect to rational behaviour) and between the theoretical and the empirical. But this is nothing new, and can be traced back at least as far as Mill. The end result has been fierce debate between the rational choice theorists and the new behavioural economists as to which conforms better to logical positivist principles. Rational choice theorists claim to generate clear hypotheses which are testable, using sophisticated mathematics, and which do not employ *ad hoc* reasoning. New behavioural economists argue that their theory is more empirically applicable, being consistent with actual choices made under experimental conditions, as well as explaining aggregative empirical phenomena which are anomalous in relation to classical asset-pricing models (Brav, Heaton and Rosenberg, 2004).

3. The policy maker's frame

The goal of the policy-maker in building up knowledge of the financial sector is not necessarily the same as the academic economist, although policy-makers draw significantly on academic expertise. Policy-makers are required to act, regardless of the status of their knowledge, so that the emphasis has been on prediction of the state of financial markets, and of the effects of policy action. There is inevitably also more of a focus on the process by which policy is put into practice, and whether and how that process affects the outcome. This is particularly relevant to the effect on expectations, and thus requires a focus on cognition, learning and social norms.

Policy-making covers a range of activities, including the regulation and supervision of financial institutions, monetary policy and management of the national debt. Increasingly these functions have become institutionally separated; indeed such separation has been a condition for participation in European Monetary Union. So each authority builds knowledge relevant to its own area of responsibility, which then provides the relevant frame. These institutional arrangements then become significant where interdependencies emerge, as in the turmoil of the financial crisis, and communication is required across different frames of reference. New institutional arrangements have in fact arisen in the UK from the evident need for cooperation across different functions (particularly monetary policy and bank regulation). However we will focus here on monetary policy as if it were an isolated activity which can function within its own framing.

The focus of policy-making on activist monetary policy dates from the late 1970s with the emergence of global monetarism as a means of addressing inflation. This approach rested on an empirical relationship between monetary aggregates and the price level, such that anti-inflationary policy should be directed at controlling the money supply and thereby aggregate demand. Large macroeconomic models (built in the logical positivist tradition) were then employed to predict trends in aggregate demand and the required rate of growth in the money supply to produce the required rate of inflation. But the academic framing of this approach to policy required a specification of variables as endogenous or exogenous, and had made the money supply exogenous. This framing however proved inadequate, as it became apparent that the money supply could not be directly controlled, and policy shifted to the interest rate as the instrument rather than the money supply. For many academic models however, the money supply remains exogenous for reasons of internal coherence (and indeed with the mainstream approach to framing financial markets, the two can indeed be treated as interchangeable), driving a wedge between academic and policy framing (Dow, 1997).

More generally, the failure of the models to predict well reduced their usefulness and policy-makers started to discuss publicly how better to frame their policy-making. The Bank of England (1999) in particular has explored the implications of the uncertainty surrounding their knowledge of the economy and the likely effects of policy actions. The Bank has advocated a pluralist approach in the sense of drawing on a range of models rather than one core model alone, and the importance of supplementing model-based knowledge with judgement. Similar discussions within the US Fed and the ECB have encouraged an exploration of model uncertainty (uncertainty as to which is the best model to use) in the academic literature (see for example Hansen and Sargent, 2004). But the framing of model uncertainty in the academic literature reflects the presumption that there is one best model of the economy waiting to be identified, and that error in identifying it can be captured in a probability distribution. This way of handling uncertainty is required by the logical positivist approach, which encourages the formulation of a mathematical model suitable for empirical testing (although in practice the testing is by simulation, which involves representing facts in accordance with the frame of the model) (Dow, 2004).

This literature continues to represent expectations in the economy as conforming to the rational expectations hypothesis (something required by internal coherence within a logical positivist framework; see Sent, 1998). Central banks increasingly see influencing expectations as a key tool of monetary policy. This can be seen as consistent with rational expectations, ensuring that the public form expectations on the same basis as the central bank. This tool of monetary policy has been extended now to 'forward guidance' in an effort to embed expectations of a particular monetary policy stance. This framing of central bank communication follows the academic literature, with its focus on the framing of the economy in terms of one best model (Walsh, 2007; Dow, Klaes and Montagnoli, 2007). But the

awareness of variety of opinion among policy-makers, the judgement involved in policy-making and the range of uncertainties facing the central bank make central banks very sensitive to the way in which they communicate. This implies that there is an awareness that the formation of expectations does not conform in practice to the frame of rational individual choice on the basis of a given set of facts. Even if there were a given set of facts to communicate, there is clearly awareness of signal uncertainty (Dow, Klaes and Montagnoli, 2007) or what Walsh (2007) calls 'communicating uncertainty'. Yet Walsh, like others in the mainstream literature, conveys a sense of monetary policy framing and theoretical framing converging.

Framing issues are central to communication. In judging how the public interpret their communications, the central bank needs some understanding of the framing of finance by the different groups. In communicating monetary policy, the central bank is simultaneously addressing a range of constituencies, each of which may frame finance differently. Thus for example, in communicating to an audience attuned to the framing of mainstream theory, it is appropriate to refer to 'the interest rate' in the abstract. But for financial markets and in particular for individual businesses and households, there is a complex structure of rates with variable relationships with the policy rate. So some signal uncertainty may arise simply from confusion between framings. But within the mainstream the different ways of communicating refer to a common monetary-policy-theoretic frame.

While media headlines may be addressed to the household and business sectors, the detail of policy announcements is addressed primarily to players in financial markets (arguably the sector with the most power over financial outcomes for households and non-financial business). Thus for example, when the Bank of England refers to market expectations of inflation, the data are derived from the inflation expectation implicit in the pricing of financial assets. Communications in turn generally involve the technical language employed by market players. We turn now to consider how financial markets are framed by those who are active in these markets.

4. The market player's frame

We have already encountered a theoretical approach, new behavioural economics, which takes seriously the consequence of framing in financial markets, but does not explore the framing itself. Here we will explore a variety of frames, and the contributions of other disciplines to our understanding of them.

The conventional theoretical account of market players in economics is framed by the rationality axioms, and market players do employ models which presume this basis for behaviour. One of the key features of this logical positivist approach to building knowledge within financial markets is to price assets in terms of risk, based on historical data. This presumes that the future distribution of an asset price is knowable, continuing patterns derived from past experience, i.e. that the basis for value is an ergodic process (Davidson, 1982-83). The key to asset-pricing is estimation of risk, but there is no accommodation in these models for uncertainty as unquantifiable risk. The implication is that it is simply a matter of skill to identify correct pricing and then to identify deviations which would allow profits from arbitrage. The highest profits go to the companies with the greatest skill, and we have seen the increasing reliance on quantitative models in financial markets as a way of making profits in derivatives markets. Since there are differences in profitability within the financial sector, the situation does not conform to the strong rational expectations hypothesis, whereby all players share the same (correct) model. But the logical implication of framing the situation in this way

is that learning will erode profits, and it is only through innovation in new products and random shocks, both of which require new learning, that profits can still be made.

But sociologists who have explored the actual practices within financial markets (e.g. using interview evidence) cast doubt on this way of understanding framing within financial markets, and indeed see quantitative models only as partial contributors to framing. Thus MacKenzie (2005) demonstrates in the context of LTCM that judgement (which cannot be formalised) is required in addition to modelling. This explains why LTCM could continue for a long time to make much higher profits than others who were copying their models. This finding is also consistent with the view now expressed by central banks that they require to exercise (non-formalisable) judgement to supplement modelling. So the important question, in shifting the framing to focus on judgement, is how judgement is framed and formed.

The greatest illumination of this question comes again from the economic sociology literature, which focuses on the process of judgement formation within the society of market traders. Traditionally, even within sociology, market behaviour was seen as 'economistic' (i.e. based on rational individual behaviour), and contrasted with non-market behaviour, which was the province of sociology. For Pareto, the distinction was between 'logical' and 'non-logical' behaviour, respectively (Klaes, 2006). But efforts are increasingly being made to re-embed markets as ideas and practices of social co-ordination within their political, social and cultural contexts (Bevir and Trentmann, 2007).

Information itself ('the facts') is seen in sociology as including social interactions as well as the more conventional forms, notably prices. But even prices are understood in social terms rather than in the abstract (as in conventional economics). Preda (2007) classifies the sociological analysis of financial markets, and in particular how market information is conceptualised, as falling within three, complementary, categories. In sociology, as in economics, there is a range of methodological approaches associated with different framings. First, there is the 'new economic sociology' study of markets as social networks and as groups, analysed in terms of formal models. The argument is that these networks shape, not only 'the dynamics of financial transactions', but also 'how they influence price, volume and volatility' (Preda, 2007, p. 508). Second, there is the 'neo-institutionalism' which explores the institutions within which networks operate, and their political dimension. This approach draws more on quantitative and qualitative evidence, but focuses more on power relations than the processes by which knowledge is produced.

Power relations are more the province of the third, social studies, approach, which rests on detailed field information rather than formal modeling or theory testing. One of the outcomes of this approach is the argument that technology is not neutral with respect either to the understanding of 'facts' or to the organisation of markets. Financial cognition is seen as 'a set of complex, interlocked processes, ranging from perception and memorization to classification and the calculation of trading operations, and implying not isolated individuals, but group work, actors as well as technologies' (Preda, 2007, p. 521). A key concept (developed in this context by MacKenzie, 2006) is performativity – the effect of the framing of financial markets in the academic literature on the actual behaviour of financial markets. MacKenzie (2005) demonstrates how competitors of LTCM copied their market strategy, such that there were no counterparties with whom to trade when the financial crisis broke in the late 1990s. (This crisis, just as the banking crisis which started in 2007, occurred because framing risk as historical variance proved inadequate when there were structural shifts in markets, i.e. the markets were non-ergodic.) Performativity is also evident in monetary policy-making, where inflation forecasts are contingent on market expectations about inflation and about the policy rate.

A somewhat different way of framing market processes, and the frames employed in these processes, has emerged from the economic rhetoric literature, which analyses them in terms of 'conversation' (McCloskey, 2007). McCloskey more generally demonstrates that a high proportion (around a quarter) of all economic activity involves persuasion. Within the financial sector this includes the work of financial advisors, and the advertising of financial instruments. But more fundamentally it includes the communication between market players which encourages the buying of one class of asset, the selling of another, a lack of confidence in predictions and so on. It also includes the cementing of social conventions (to accept this asset in payment but not that) and the spreading of the idea to make a run on a bank, for example. The central bank is continually engaged in conversation with market players to encourage them to hold a particular view. New frames are adopted as a result of successful persuasion.

5. The market user's frame

The term 'financial markets' calls to mind the big players: financial institutions and governments, and the specialists who act on behalf of small businesses and households. (Increasingly big businesses have their own treasury departments, which simultaneously borrow and lend.) For them the activity of financial markets is a real social experience, and this is what sociologists study. But for the smaller users of financial markets, there is a different type of real experience which frames their knowledge of these markets. This is the experience of investing, employing, producing, consuming, working, or not. The availability of finance, or not, and its cost, and the realising of capital gains or losses, are potential enablers of spending or constraints on spending. The resulting framing differs from abstract theoretical framing and the framing of market players, yet is confronted with these other framings in the behaviour of remote financial markets, or large impersonal financial institutions, and in the pronouncements of central bankers. We can see here reflexivity (in that central bankers in turn take on board the framing at this level (as for example in the reports to the Bank of England by regional Agents on local economic conditions). But there is also performativity. Media headlines about changing financial conditions formulated within one frame (e.g. 'the central bank raises its interest rate') may change household and business borrowing plans even though banks do not pass on the increase for one reason or another.

In order to interpret information and make financial decisions in a complex financial environment, and under uncertainty about the future, businesses and households need to apply some framing. The approach which best illuminates this framing is 'old behavioural economics', which has always drawn on other disciplines, notably psychology and sociology. The core method of case studies is designed to promote understanding of the way in which economic actors frame problems and derive strategies to deal with them. This represents an attempt to understand framing in real contexts, where separability (e.g. along disciplinary lines) is limited. This contrasts with the abstract separability involved in the gathering of experimental evidence. (It is not the only possible approach to identifying framing in the economy; discourse analysis is an alternative method.)

As Earl (2005, p. 1) puts it, old behavioural economics 'sees everyday life as a process in which humans with limited cognitive capacity try to cope with both information overload and the absence of relevant information and knowledge by evolving targets for what seems feasible and systems of rules for trying to find ways for meeting these targets'. Cognition is not limited by the kind of rationality which is a core element of mainstream framing. Nor is limited information understood in terms of the benchmark of full information (as in the SEU approach). Rather it is understood as the normal condition of open-system knowledge in an

open-system environment, where framing is an essential feature of knowledge in order to make it manageable as a basis for action.

A key figure within this approach is Herbert Simon (1982), who explored the nature and implications of cognitive limitations within his theory of bounded rationality (see Sent, 2004). While the new behavioural economics draws on the concept of bounded rationality, we have seen that the methodological framing comes from mainstream economics, with perfect rationality and full information providing the benchmark. Within mainstream economics, Simon's contribution is understood as introducing a cognitive constraint on full information. Old behavioural economics rather focuses on the strategies by which individuals and businesses cope with both too much and too little information, and how decisions therefore are framed. From this follows a different framing of behaviour as satisficing rather than optimising. The emphasis is on understanding framing by businesses and households as being context-dependent manifestations of some general framings (bounded rationality, satisficing etc). This contrasts with the new behavioural economics focus on framing by agents in terms of deviations from the framing of abstract rational economic man.

Earl (1990) provides a full account of how old behavioural economics may be developed with respect to financial systems. More recently, he provides an example of the application of old behavioural economics to finance, when he considers financial regulation (Earl, 2005). This analysis addresses household financial behaviour, where there is poor understanding of financial deals and therefore the need for regulatory protection. It also addresses the behaviour of financial institutions where rules of thumb are employed for credit risk assessment in the absence of the basis for reliable numerical estimation of risk, and the type of regulation which would therefore be appropriate.

Another approach to considering how economic actors frame their financial experience is provided by Minsky's (1982) financial instability hypothesis (which Earl incorporates into his behavioural approach; see also Dow and Earl, 1983). The emphasis here is on the changing and sometimes differing perception of risk among borrowers and lenders as the business cycle proceeds. The emphasis is on the psychological propensity, in the absence (in a non-ergodic world) of any basis for definitive risk calculation, for risk to be perceived to fall as a boom progresses, and to increase as a downturn progresses. There is reflexivity in that different sectors reinforce each others' expectations. Further, the role of market sentiment is integral to this approach, inevitably in the general absence of the conditions for complete quantitative risk assessment. This contrasts with the new behavioural economics approach, where sentiment is defined with reference to the rationality benchmark, as lack of rational justification (Baker and Wurgler, 2007).

The psychological element in Minsky's theory is most clear when it comes to turning points as a reversal in optimism or pessimism. Minsky explains how and why financial structure becomes more and more fragile as the boom progresses. It is vulnerable to a psychological shock, but it is impossible to predict when this shock will occur and what it will be; only the increasing vulnerability can be identified *ex ante*. The analysis is conducted without recourse to optimising behaviour, or equilibrium – indeed the theory concerns the inherent absence of equilibrium in market economies. It rests on an understanding of how changing conditions are framed and the financial behaviour which follows. While the theory generates general statements, each cycle requires detailed analysis given the inevitability of the particularity of whatever sparks off turnarounds.

6. Framing, methodology and the contribution of other disciplines

We have seen in the previous discussion that financial markets are framed differently by different groups, but the greatest difference arguably is between the mainstream theoretical approach and the experience in the economy. The importation of ideas, and new types of evidence, from other disciplines, notably psychology, has enriched the theoretical account. And it has done so by suggesting that actual framing in the economy is different from what is conventionally assumed by the abstract conception of rational economic man. It does so by introducing alternative ways of framing this framing in the economy. But the extent to which these new avenues can be pursued has been constrained where there is insistence on retaining rational economic man as the benchmark, and formal equilibrium models as the method. Much of what has traditionally been understood to be non-economic remains outside the discussion, while real experience seems to involve a fundamental influence of the 'non-economic' on market behaviour.

The choice as to how to frame theory is a methodological question. There is no absolute standard by which to judge any methodology; each has its benefits and costs relative to the others. But critical realists (notably Lawson, 1997, 2003) argue that the benefits of designing the theoretical frame to reflect the nature of the subject matter outweigh any costs in terms of lack of elegance, or indeed of definitive predictions. Of course how the nature of the subject matter is understood is itself a matter of framing. Critical realists share with others (such as old behavioural economists) the view that the economy is an open system, in the sense that it does not satisfy the conditions for internal closure (no evolution in internal relations between elements of the system) or external closure (no evolution in the designation of endogenous and exogenous variables) (see Chick and Dow, 2005, for a more general set of conditions for closed and open systems). It is argued that an open social system is best understood by an open system of knowledge. Further it is argued that these conditions mean that knowledge in the economy conforms to an open system. While some of that system may be captured by formal mathematical techniques, other methods can add further knowledge. Also, since much of the forces for change in social relations and in external forces are the traditional subject matter of other disciplines, it is natural to anticipate knowledge benefiting from interdisciplinary exchange.

We have attempted to show here a contrast between the way in which contributions from other disciplines to our understanding of framing in financial markets results in very different theoretical framing. It depends on whether incorporating this broader view of framing in the economy is seen as a modification of mainstream theory (applied as it were from the 'top down' from theory to experience) on the one hand, or as input to the framing of real experience which influences the nature of open systems theorising by economists (from the 'bottom up') on the other. Nevertheless, any 'bottom up' approach, which takes the framing in the economy seriously, must itself employ some framing or other. Thus, for example, old behavioural economics has observed the use of routines as a guide to behaviour, which encouraged the development of the framing concept of satisficing. New behavioural economics, on the other hand, employing a top-down approach, understands satisficing in terms of rational choice constrained by limited information.

Different disciplines employ different general frames, which can shed new light on each other's analysis, including the analysis of framing itself. Input from psychology and sociology for example suggests that framing is the manifestation of discourses which differ for good reason (in the broadest sense of the term). If knowledge is framed by social convention, by institutional arrangements, and by sentiment, and conditioned by uncertainty resulting from the nature of social systems, and by cognitive limitations, then we are far removed from a world of 'facts'. Inevitably there will be different framings. Social interactions, and

particularly power relations, mean that there will be reflexivity – one group's framing will impact on the framing of other groups. Indeed there is likely to be performativity – one group's framing altering the subject of the framing.

The overall conclusion then is that, if theory is to reflect its subject matter, it should be formulated to reflect the framings in society. For economists to understand these framings better, other disciplines have much to offer, since each offers a different way of framing this framing in society. (There is therefore no one correct account of framing.) But the necessary first step is to acknowledge the role of framing, a reflexive application of the open-systems approach to knowledge. Only then can we learn most effectively from each other's disciplines.

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Rethinking monetary theory in light of Keynes and the crisis*

Marc Lavoie†

Abstract

The purpose of the present paper is to examine the main changes that have occurred or that need to occur in monetary economics, and to do this in light of what Keynes told us 80 years ago in his General Theory, or even more than 85 years ago when he wrote the Treatise on Money. Inflation targeting and central bank independence are re-examined, as are the standard views of the money multiplier and of the fractional-reserve system. Unconventional monetary policies, although previously suggested by Keynes, appear to be a disguised return to Monetarism and the actual impact of quantitative easing must be understood in light of a theory of endogenous money with monetary implementation occurring within a framework where the target interest rate is set at the floor of the corridor.

Keywords: Inflation Targeting, Endogenous Money, Quantitative Easing, Money Multiplier, Potential Output

JEL Classification: E31, E51, E52, E58.

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1. Introduction

The purpose of this paper is rather simple. The financial crisis that erupted in 2008 has been a shock to those who held that financial markets were efficient and who thought that markets could be safely left to evolve on their own. Pragmatism had led to the reconsideration of several tenets of macroeconomic theory as seen by the mainstream. The purpose of the present paper is to examine the main changes that have occurred or that need to occur in monetary economics, and to do this in light of what Keynes told us 80 years ago in his *General Theory*, or even more than 85 years ago when he wrote the *Treatise on Money*.

The paper is devoted to current monetary theory and policy, examining what seems to have been changed or been questioned as a consequence of what has happened during the crisis. I will deal with the following points: the current goal of central banks, that is, inflation targeting, as well as alternative objectives, that is, financial stability and full employment; the concept of central bank independence when government intervention has been necessary; the relevance of endogenous money and its critique of the money multiplier and of the fractional-reserve banking system; the controversy over the use and usefulness of unconventional policies and quantitative easing. I conclude by recalling that Keynes himself, more than 80 years ago, when faced with a large recession, abandoned monetary policy and switched over to advocate expansionary fiscal policies.

2. Inflation targeting

Ever since the early 1990s, explicit inflation targeting has been progressively adopted by a large number of central banks, at least among fully industrialized countries. The USA was a late comer, but ultimately, in 2012, the Federal Reserve moved from an implicit to an explicit target. In most countries, including the Eurozone, the target has been set at or below two per cent or within a corridor with the center set at two per cent. A number of authors wonder whether the success in achieving the inflation target is really due to the new procedures or whether it was due to some degree to sheer luck, made possible for instance by the cheap exports of consumer goods coming from China, as a number of empirical studies have shown that countries without inflation targeting did just as well in reducing and maintaining inflation rates (Seccareccia and Lavoie, 2010).

Another question has been whether the two per cent inflation target is too low a target. The question has arisen in the context of the crisis, when it was found that with nominal interest rates at zero, at best the real interest rate could not be any lower than minus two per cent. This slightly negative real rate was thought to be insufficiently negative to allow for a strong monetary response to a large slowdown – an argument which is no different from the one that was offered by Don Patinkin (1948) to explain how economies could deviate from full employment. Patinkin thought that in some circumstances the full employment saving and investment curves crossed each other at a negative real rate of interest. Thus several economists have argued in favour of a four per cent inflation target so as to lower the probability of getting into this zero-bound constraint (Ball, 2014). By contrast, central bankers who have managed to get inflation down to around two per cent, sometimes at a high cost for the economy, are rather reluctant to make the change. They argue that moderate inflation at that higher level is likely to creep up, so that such a proposition would be counterproductive and useless, since severe crises are a rare event.

A number of economists have argued that a better alternative to inflation targeting is *price-level* targeting. A central bank would target a given level of the consumer price index. A variant of this would be to target a consumer price path. Assuming forward-looking and

rational expectations, price targeting is said to be more efficient than inflation targeting, thus inducing a few central banks to seriously consider such an alternative. In the straight price-targeting variant, an increase in the price level would generate a response from the central bank so as to achieve a *decrease* in the price level in the following periods, so as to regain the target price target. In other words, such a central bank would be orchestrating a *deflation*. In the summer and fall of 2007, just as some interbank markets were freezing and the financial system was on the verge of collapsing, deputy governors at the Bank of Canada were making speeches about the advantages of price-level targeting. Indeed, even as late as 2011, the Bank of Canada (2011) still seemed to consider as a worthwhile idea the notion of a consumer price path target, going so far as to give credence to a Bank's study that 'demonstrated' that the optimal path target would be a *deflation* rate of approximately two per cent per year, that is, roughly the growth rate of labour productivity. Older readers will see the similitudes with the negative inflation rule that was advocated by Milton Friedman in his *Optimal Quantity of Money* back in the 1950s. Inspection of the Bank of Canada's study shows that the model utilized to arrive at such a conclusion is a New Keynesian model with no money, no other financial asset, no credit, no debt and no risk of default! What else needs to be said?

The fear of debt deflation – the fear that lower wages and prices with debts fixed in nominal terms would lead to a depression, as a result of higher real debt burdens, debt defaults by the private sector, thus putting banks in jeopardy – seems to have removed price-level or price-path targeting and its imaginary benefits from the agenda, along with a lower inflation target. The new fad, or so it seems, is nominal GDP targeting. Nominal income is then the target. This is simply a return to Monetarism, in new clothes. Monetarists of the 1970s and 1980s, as is well known, used to advocate growth targets in the money supply. Their arguments then were that such monetary targets would stabilize the growth rate of nominal GDP, and hence would stabilize the growth rate of prices since they assumed that real output would roughly grow at its exogenously-given potential growth rate. Nominal GDP targeting is thus Monetarism in new clothes: old wine in a new bottle.

What about Keynes? In the *Treatise on Money*, Keynes was mainly concerned with the control of the price level, the variations of which he mainly attributed to a discrepancy between saving and investment, which he called profit inflation, with the latter being heavily influenced by the long-term interest rate. At the time this part of Keynes's writings sounded very much like a modified Wicksellian proposal, and it is doubtful that the Keynes of 1930 would have objected to the inflation targeting policies pursued by modern central banks. With the advent of the economic crisis of the 1930s – The Great Depression – Keynes's focus changed completely. In his *General Theory* of 1936, Keynes became preoccupied instead with the level of employment. As such the Keynes of 1936 would agree with the concerns of most heterodox economists, that is, he would also most certainly have wondered whether inflation targeting is the best thing a central bank can do.

3. Financial stability and full employment as targets?

Since the mid-1980s, the mantra of most central bankers is that 'low, stable and predictable inflation is the best contribution that monetary policy can make to the economy'. This claim used to be based on the assertion that lower inflation would generate higher growth rates of productivity. While the 1973 to 1982 period did generate such a negative relationship, as the oil shocks led to increases in inflation rates and a simultaneous decrease in productivity growth, empirical research on this topic seems to have entirely vanished, no doubt because the relationship could not be replicated for later periods. But the mantra has subsided regardless. Besides the fact that overly restrictive monetary policies designed to lower inflation

may slow down the economy, and, through the Kaldor-Verdoorn effect, are likely to slow down productivity growth, we now know that inflation targeting is quite unable on its own to achieve financial stability, having been accompanied by financial asset bubbles and real estate bubbles, along with excessive debt-taking by private agents, in particular households and financial institutions. This reckless behaviour ended up having a destructive impact on real activity, an impact from which many economies have not yet fully recovered. Thus the stability of the financial system may be a much more important objective than price stability for a central banker.

There is little doubt that Keynes would agree with those who today emphasize that price stability did not bring about financial stability as a side effect, and who would put financial stability to the forefront of central bank objectives. Keynes, both in 1930 and 1936, clearly thought that the banking and financial systems left on their own would tend towards instability. Keynes is well known for having argued in Chapter 12 of the *General Theory* that the financial system, notably the stock market, was akin to a casino. When commenting on the role of animal spirits and speculation in the investment decisions on Wall Street, Chapter 12 of the *General Theory*, Keynes (1936, p. 159) famously wrote that 'when the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done'.

There is little doubt that this describes precisely what has happened to our modern financial systems, with their numerous derivatives, as we all found out in 2008. Whereas a few fund managers were warning about the dangers arising from these highly risky activities, they were not listened to, as bankers and financiers had to keep dancing as long as the music played. As Keynes (1936, p. 158) also said, 'worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally'. Indeed, in the earlier *Treatise on Money*, Keynes (1930b, p. 361) had made the same claim, arguing that financial markets were likely to purposefully act in a disrupting way, writing that 'so long as the crowd can be relied on to act in a certain way, even if it is misguided, it will be to the advantage of the better informed professional to act in the same way'.

Thus while Keynes thought that financial actors were rational, he also thought that financial markets did not in any way respond to the efficient market hypothesis. He did not believe that financial markets generated proper information or the right price, and he certainly did not believe that financial markets left on their own promoted public interest. But even leaving speculation aside, Keynes was quite aware that modern banking systems were prone to over-expansion. This was already the case in the 1920s, and there is no reason to think that it is any different today. As Keynes said, in a monetary system where all payments are made by cheques, credit cards, or electronically, and where there is no need for cash reserves, the system 'would possess an inherent instability' (Keynes 1930a, p. 27).

Besides financial stability, it can certainly be argued that the objective of full employment is a much more relevant and useful objective than price stability for most of the population. The Federal Reserve in the US has this dual objective of full employment and price stability. But many other central banks do not, although it must be recognized that during the Global Financial Crisis, some central banks took expansionary measures under the pretext that they intended to bring back a falling inflation rate towards its target, while a naïve observer would have thought that these had been taken to stop the economy from falling into a depression and reaching double-digit unemployment rates. A pragmatic proposal, taking into account the fact that most central bankers would be reluctant to give up inflation targeting would be to say that central banks ought to continue to target inflation, while seeking 'the maximum levels of output and employment consistent with this target' (Clinton 2006, p. 20).

There is substantial empirical evidence now that Phillips curves have a long mid-segment which is completely flat, meaning that there is a large range of unemployment rates or of rates of capacity utilization such that increases or decreases in these rates will not lead to a deceleration or acceleration of the inflation rate (Peach et al., 2011). Whether this is due to the fact that most firms face constant marginal costs, that expected inflation is well anchored at the target rate set by central bank, or that potential output reacts positively to higher actual output, does not really matter. The lesson is that a central bank overly concerned with inflation is likely to engineer pre-emptive strikes against forecasted inflation that unnecessarily reduce output and employment. Since there is no evidence that achieving low inflation is the best thing that a central bank can do for the welfare of its citizens, as the speculative frenzy of the Great Moderation and the Global Financial Crisis that followed has shown, full employment ought to be a an explicit part of the mandate of all central bankers.

4. Central bank independence

Scholars in the rules and discretion literature as well as international organizations have put substantial pressures on governments to force them to adopt rules of governance that would make as much as possible central banks independent from political influence. This has culminated in the rules of governance that were adopted by the European Central Bank (ECB) , with in addition the ECB being forbidden to purchase government securities on primary markets and with the ECB denying itself (until the Eurozone crisis had reached full scale), by convention, the possibility of proceeding to outright purchases of sovereign bonds on secondary markets.

The crisis has highlighted the fact that a central bank cannot be fully independent. Those of us who are concerned with the actual operations of central banks already knew this. In order to tame the movements of interest rates on overnight markets the central bank needs to know the daily amounts that the government plans to spend and the daily amounts that the government expects to receive in the form of taxes. In many countries the central bank moves government deposits from or towards their accounts at the central bank or at commercial banks in order to achieve a better control over the amount of reserves or high powered money in the system.

But the financial crisis revealed a degree of cooperation between the central bank and the government that went much beyond these technical daily operations. After the Lehman Brothers default, a number of central banks purchased private assets from commercial banks, selling to them Treasury bills in exchange, thus swapping doubtful assets for highly secure ones. These swaps allowed central banks to pursue credit easing without expanding the size of their balance sheet and thus the amount of free reserves. However, after a while, due to the unusual size of these operations, these central banks started to run out of Treasury bills. They were then forced to ask the Treasury to issue new government securities, even when the government was not running any deficit, thus increasing the gross public debt without modifying its net amount. The central bank would then purchase the newly-issued Treasury bills, with the proceeds of the sale being held as government deposits at the central bank. As a consequence of such an operation, the size of the balance sheet of the central bank would grow, but the amount of reserves in the system would stay put, and central bankers would keep control of the overnight interest rate. The central bank would then be able to resume its credit easing operations, easing off downward pressures on private assets by purchasing them in exchange for the safe Treasury bills that the commercial banks longed for.

It is interesting to note that Keynes was fully aware of the danger, for a central bank, of running out of T-bills, for as Keynes (1930b, p. 259) wrote in the *Treatise on Money*, 'For the

success of open-market policy depends on the Central Bank always having in hand adequate ammunition in the shape of open-market securities available for sale'. Thus Keynes was concerned by the possibility that the central bank may run out of T-bills that it can sell, either to make swaps with long-term securities or to sterilize the inflow of gold or foreign currency in the context of an open economy and a balance-of-payment surplus. Keynes was thus aware that collaboration might be needed between the central bank and the government.

The financial crisis has clearly shown that central bank independence is illusory and should not be a goal on itself. There is also something undemocratic in asserting that central bankers alone should remain clear of political and popular pressures.[1]

5. Endogenous money

Post-Keynesians such as Nicholas Kaldor (1982) and Basil Moore (1988) have been arguing for decades that the money supply is endogenous and demand-determined (Lavoie, 2014, ch. 4). There is nothing new here, as Knut Wicksell was already making the same claims more than a hundred years ago when dealing with his pure credit economy. Indeed the idea that central bankers have little control over money goes back to Thornton and Tooke in the 19th century. As my former co-author Wynne Godley (1997 (2012, p. 91)) has put it in ironical terms, 'governments can no more "control" stocks of either bank money or cash than a gardener can control the direction of a hosepipe by grabbing at the water jet'. For a long time central bankers recognized the same, at the Fed or even at the Bundesbank, arguing that they were subjected to a reverse causality between reserves and money. This all changed for a while, under the frontal attack of the Monetarists and of textbook writers, when central bankers in the 1980s tried to persuade the public that they were not responsible for the high interest rates that had been brought about to fight the inflation of the 1970s that had been caused by two large oil shocks.

Unfortunately, Keynes was not of much help here. While one can certainly find passages in the *Treatise on Money* where Keynes does seem to provide support to an endogenous money view, as argued for instance by Basil Moore (1988) and Cardim de Carvalho (2013), this is not the case of the *General Theory*. For instance, when Keynes sums up his main arguments in Chapter 18, he indicates that there are three 'ultimate independent variables' in his system, the third one being 'the quantity of money as determined by the action of the central bank' (Keynes 1936, p. 246-7). The statement that money must be conceived as some exogenous variable is repeated a number of times, notably when Keynes (1936, p. 274) asserts that 'the quantity of money is not determined by the public' or when he says that 'in the case of money … the supply is fixed' (1936, p. 230). This led authors like Kaldor to complain that Keynes assumed an exogenous money supply, as did the Monetarists.

Geoff Tily strongly disagrees with this Kaldorian interpretation of an 'exogenous-money Keynes'. He writes that 'those who explicitly charge that Keynes took money as exogenous are grossly misrepresenting his whole economics' (Tily 2007, p. 218). Tily and a few other post-Keynesian authors say that a distinction must be made between a constant variable and a given variable, but these semantic pirouettes cannot hide the fact that Keynes used to be a staunch defender of the Quantity of Money in his earlier works, and that this gets reflected many years later in the *General Theory*. A possible explanation for this is that

[1] Indeed, some authors, for instance T.K. Rymes (1991), who was a teacher of mine, has gone so far as to argue that just as there is a Department of Finance, responsible for the budget and for fiscal policies, there should be an elected Minister, the Minister of Monetary Affairs, who would be responsible for monetary policy.

Keynes's views were heavily influenced by his perception of the British economy. While Keynes admitted that Continental banking systems showed some elasticity, Keynes (1930b, p. 231) was persuaded that in the case of the British system 'it is not an exaggeration to say that the individual Member banks have virtually no power to influence the aggregate volume of bank-money'.

The clock was however turned around once more with the advent of New Consensus models (the New Neoclassical synthesis), which also implicitly endorsed the notion of a demand-led endogenous money supply and which brought back Wicksellian features in their monetary analysis. The advent of the New Consensus view, it seems to me, was brought about by the realization that central bankers, through a pragmatic approach, had put in place an inflation-targeting regime, accompanied by the introduction of the short-term interest rate as the explicit operational target to achieve the inflation target. Interest rates had always been an operational target of sort, but before the 1990s it was an implicit target, known only to the central bank and hence a target that was subjected to a lot of guesswork on the part of the financial market participants.

The explicit move away from the money supply targeting rule of the Monetarists, back towards interest rate targeting, as had been defended by the Radcliffe commission in the 1950s, has sometimes been explained through some elementary IS/LM model, by claiming that the move had been necessitated by the rising instability in the demand for money (Poole, 1970). But the necessity to have interest rate targeting is not due to these macroeconomic reasons: it has to do with the nitty-gritty of central banking; it is related to the daily or even hourly operations of a central bank and it is related to the fact that any transaction involving the central bank or the government account at the central bank, be it to manage the exchange rate by buying or selling foreign currency, to pay civil servants and other government expenditures or to collect taxes, will have an impact on the amount of reserves available to the banking system. Until the financial crisis, it was understood by only a few scholars that central banks cannot but just pursue defensive operations, in order to counteract the impact of the transactions going through the clearinghouse and involving the government, as central banks do their best to adjust the supply of reserves to the demand for reserves, compensating for what is now called autonomous factors (Eichner, 1986, ch. 5; Fullwiler, 2003; Bindseil, 2004).

This post-Keynesian view is best exemplified in the corridor system that has been put in place in many countries, where the target rate of interest is set in the middle of a corridor, where the bottom of the corridor is the interest rate paid on the reserves deposited by banks at the central bank, while the ceiling of the corridor is given by the interest rate that banks must pay when they borrow reserves from the central bank. Borio and Disyatat (2010) then say that reserves are *decoupled* from interest rates, in the sense that the interbank interest rate, that is, the overnight rate or the federal funds rate in the US, can be changed without having to change the amount of reserves in the system, simply by moving the whole corridor up or down. However, to achieve the target within the corridor, the central bank must provide the amount of reserves which is being demanded by the banking system at the target rate of interest. Thus, central banks must pursue the defensive operations mentioned in the above paragraph. Reserves are only partly decoupled from interest rates in the corridor system.

With the short-term rate of interest as the exogenous element, the causality is reversed: the demand for reserves causes and determines the supply of reserves. Thus, the mainstream money-multiplier story associated with a fractional-reserve system does not hold water any more, and in fact never did. The difference now is that the irrelevance of the story is obvious, or should be obvious to all. Even when they refer to a corridor system, textbooks are still filled with money-multiplier stories, where the amount of reserves created by the central bank allows banks to make loans and to proceed to a multiple expansion of money deposits,

thus being totally incoherent with the rest of the story based on target interest rates. What banking systems have instead is a case of reverse causation. At best, one could speak of a credit divisor, where an expansion of bank credit eventually leads to an increase in the amount of reserves and cash supplied by the central bank.

Keynes approved of the money multiplier story, which is not surprising given his support of the exogenous money view. In fact, in the *Treatise on Money*, Keynes (1930a, p. 25, fn. 1) gives his full approval to the money multiplier analysis of Crick and C.A. Phillips, which at the time, was far from being an established theory. This is not an accident, as Keynes repeatedly provides support for the argument that the supply of money is some multiple of the amount of reserves being provided by the monetary authorities, arguing from the very beginning of his treatise that 'the pace [of credit creation] common to all the Member Banks is governed by the aggregate of their reserve-resources' (Keynes 1930a, p. 30). A nearly similar statement is made much further in the book, when Keynes (1930b, p. 225) says that 'the total volume of bank-money created is determined, either rigidly or within certain defined limits, the amount of the Member Banks' reserve resources'. Indeed, Keynes seems quite optimistic about the ability of the central bank to control credit creation through open-market operations when he states that 'certainly there can be no doubt that a progressive series of small inflationary open-market purchases by the Central Bank are potently, and almost invariably, effective in inducing member banks to follow suit.' (1930b, p. 254-5).

However, Keynes shows glimpses of understanding of what French central bankers in the 1970s have called the compensation thesis (Lavoie 2014, ch. 7). Keynes is aware that central banks will sterilize, as much as they can, foreign outflows or inflows, by conducting open-market operations. He is aware of the importance of the 'defensive' operations that I mentioned earlier. He is also aware that expansionary open-market operations may fail if banks are in debt vis-à-vis the central bank, as in the US case that he describes in contrast to the British system (Keynes 1930b, p. 257); hence, in that case, the amount of reserves is demand-determined and not really under the control of the central bank. This is recognized by Keynes (1930b, p. 251) when he writes that 'the Central Bank cannot vary the volume of its "investments" without tending to produce an opposite and compensating variation in the volume of its "advances", unless it accompanies its action with an appropriate change of Bank rate'. Thus, with these passages, his views of the monetary and banking systems are much closer to those of modern post-Keynesians.

6. Quantitative easing

The Global Financial Crisis has clearly shown that the money multiplier is false: it is so meaningless that one could say ironically that it is not even wrong! In addition to a number of Fed officials, as recalled in Lavoie (2010), officials at the Bank of England recently felt obliged to dismiss this money-multiplier story by recalling that 'another misconception is that the central bank determines the quantity of loans and deposits in the economy by controlling the quantity of central bank money – the so-called "money multiplier" approach' (McLeay et al. 2014, p. 15). This is not to say that central banks have no power: central bankers can certainly induce a recession by raising nominal and real interest rates; in my view however, and as it has been verified since 2008, this power is asymmetric: central banks have much less ability to kick-start the economy

How false the money multiplier and the fractional-reserve system stories are was revealed to a larger public when central banks in the US or the UK started pursuing credit easing or quantitative easing operations, by purchasing private assets or government bonds on secondary markets without taking compensating measures to sterilize these operations, thus

leading to large increases in the size of their balance sheet. Mainstream economists expressed their fears that this would lead to a multiple expansion in the money supply, followed by large increases in inflation rates. But none of this has yet happened. In the UK in particular, the rise in the money supply for a while even happened to be smaller than the increase in bank reserves; and in the US, stunned analysts realized that the so-called money multiplier had fallen below unity. The response of mainstream economists has been that the money multiplier has collapsed temporarily, and that when it will recover its normal value in the future, when normal conditions are back, the massive amount of excess reserves will allow banks to fund excessive amounts of loans, thus finally generating the inflation or even the hyper-inflation that they had long predicted.

Fortunately, there are analysts out there who understand the money creation process. Paul Sheard (2013), a chief economist at Standard and Poor's, has written a research note that explains that 'banks cannot and do not lend out reserves'. Sheard points out that banks taken as a group cannot lend out the reserves that they hold at the central bank. Bank loans are not created out of reserves, or out of deposits. 'Credit is created literally out of thin air' (Sheard, 2013, p. 6). The causality is reversed. 'Loans create deposits, not the other way around' *(ibid*). For the global amount of reserves to be reduced, there has to be some transaction involving the central bank, such as the sale of an asset to the private sector by the central bank, a tax payment that goes to the account of the government at the central bank, or if banks acquire banknotes from the central bank. As a parody of an expression that Keynes once used, we can say that while banks can lend until they are blue in the face, this will in no way reduce the amount of bank reserves at the central bank. It should be pointed out that Keynes, to his credit and in contrast to several mainstream economists today, did not envisage a direct transmission mechanism going from the creation of excess reserves through QE operations to the creation of additional loans. For Keynes, the possible positive effects of QE would occur through lower interest rates, as will be shown below.

This is perfectly compatible with the post-Keynesian analysis of endogenous money. Since banks grant loans to credit-worthy borrowers and search for reserves later, the fact that banks are now flush with reserves does not mean that they will make more loans and create more deposits in the process (Fullwiler 2013). In the UK case, because the Bank of England was purchasing financial assets from non-banking agents, these agents used the proceeds of their sales to deleverage and reduce their debt, thus destroying the bank deposits that had been created when they had sold their assets to the Bank of England. This thus explains why the money supply barely increased, despite the huge increase in bank reserves.

It has been pointed out by Jan Kregel (2014) that Keynes had quite a lot to say about monetary policy in recession times and about quantitative easing and other extraordinary methods. As is well-known, before the Great Depression Keynes advocated the use of monetary policy to get the economy out of the slump, as he proposed that in 'conditions of acute slump or boom… more extreme measures will have to be involved' (Keynes 1930b, p. 369). For Keynes, these more extreme measures were simply an upgraded version of standard open-market operations: 'These extra-ordinary methods are, in fact, no more than an intensification of the normal procedures of open-market operations. I do not know of any case in which the method of open-market operations has been carried out *à outrance*' (Keynes 1930b, p. 370). Keynes thought that if these extraordinary measures were pursued with sufficient determination, the central bank would be able to lower long-term interest rates and hence reduce the Wicksellian gap between investment and saving:

> *"My remedy in the event of the obstinate persistence of a slump would consist, therefore, in the purchase of securities by the Central Bank until the long-term market-rate of interest has been brought down to the limiting point…. It should not be beyond the power of a*

> *Central Bank … to bring down the long-term market-rate of interest to any figure at which it is itself prepared to buy long-term securities." (Keynes 1930b, p. 371).*

This is what a number of central banks have attempted to achieve. An alternative to this kind of extraordinary monetary policy could have been instead to set an explicit target for the long-term interest rate on government bonds. This alternative was suggested by Keynes himself in the *General Theory*: 'Perhaps a complex offer by the central bank to buy and sell at stated prices gilt-edged bonds of all maturities, in place of the single bank rate for short-term bills, is the most practical improvement which can be made to the technique of monetary management' (Keynes 1936, p. 206). Indeed this is what some central banks did during WW2, in particular in the US until 1951, where such an explicit long-term interest rate target was set.

Keynes was also aware that a QE policy would have an impact on overnight rates. With QE and the creation of excess reserves, overnight rates would tend to fall, as argued by modern economists who have a proper understanding of the clearing and settlement system: 'If the Central Bank supplies the member banks with more funds than they can lend at short-term, in the first place the short-term rate of interest will decline to zero' (Keynes 1930b, p. 371).

Thus for Keynes, the main transmission mechanism of QE operations was through the change in interest rates. Another possible transmission mechanism would operate through the positive impact of QE on stock market prices, as was indeed observed during the Great Recession:

> *"If the effect of such measures is to raise the price of "equities" (e.g. ordinary shares) more than the price of bonds, no harm in a time of slump will result from this; for investment can be stimulated by its being unusually easy to raise resources by the sale of ordinary shares…. Thus I see small reasons to doubt that the Central Bank can produce a large effect on the cost of raising new resources for long term investment." (Keynes 1930b, p. 372).*

Thus Keynes was a partisan of some zero-interest rate policy before it was advocated in 2008 or 2009, when he argued that central banks should 'maintain a very low level of the short-term rate of interest, and buy long-dated securities either against an expansion of Central Bank money or against the sale of short-dated securities' (1930b, p. 386). This, he thought could be achieved either by QE operations ('an expansion of central bank money'), or through credit easing operations ('against the sale of short-dated securities'), which is what a number of central banks did initially, in 2007 and 2008, as they swapped liquid short-term public assets for illiquid public or private long-term assets.

One could argue that Keynes also had in mind the 'expectations channel' that many mainstream economists relied upon during the financial crisis, as central bankers promised to keep short-term rates at low or zero levels for a determinate amount of time – the so-called *forward guidance*. The expectations channel appears when Keynes (1930b, p. 386) writes that 'It might be sufficient merely to produce a general belief in the long continuance of a very low rate of short-term interest'. The expectations channel is also present in the *General Theory* when Keynes (1936, p. 202) notes that 'the long-term rate market-rate of interest will depend, not only on the current policy of the monetary authority, but on also on market expectations concerning its future policy'.

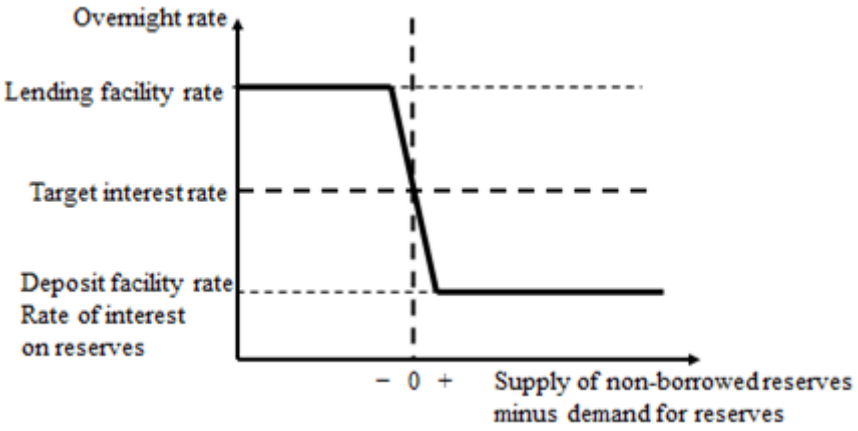
7. The floor system and its impact on post-Keynesian monetary theory

Some readers may notice that there now seems to be some inconsistency between the claim, made earlier, that the supply of reserves is demand-led and the observation that central banks, through quantitative easing, were able to create large amounts of unwanted reserves.

This discrepancy between post-Keynesian theory and actual facts can be explained by the adoption by some central banks of a modified form of the corridor system – the floor system. Checking Figure 1 below, we can say that the floor system corresponds to the case where the target interest rate set by central bank is equal to the rate of interest on reserves (the interest rate on the deposit facility at the central bank), found at the bottom of the corridor.

This floor system was adopted in the US at the end of 2008, when the Fed realized that it no longer was able to sterilize its credit easing operations, so that the only way to insure that the target interest rate would be realized was to set that target interest rate at the bottom of the corridor.[2] With the banking system being overall in a position of excess reserves, that is, on the far right of Figure 1, the overnight rate will tend towards the deposit rate – the interest rate on reserves – as a bank with excess reserves will lend to a bank lacking reserves only if the interest rate is as high as the one it could obtain at no risk from the central bank. Thus, with a floor system, the central bank has the ability to *fully disconnect* the interest rate from the amount of reserves. The central bank can keep control of the overnight rate whatever is the amount of reserves in the economy, provided the supply of reserves is much larger than the amount being demanded by banks at the target rate of interest.

Figure 1: The corridor system



The mechanics of monetary creation and those of the floor system are not well understood by most economists. Many economists or financial observers believe that commercial banks refuse to make loans because they are getting interest payments on their reserves at the central bank. These economists don't seem to realize that in a floor system the central bank is able to set the amount of excess reserves at whatever level that it desires. Because the supply of reserves exceeds the demand for reserves, the overnight rate tends to fall, and it will drop until it hits the floor of the corridor, that is, the interest rate paid on reserves. But this is not a problem for a central bank operating within a floor system because the floor rate is the overnight rate targeted by the central bank. In such a case, the central bank has the ability to set reserves at the level of its choice because it still keeps control over the overnight interest rate. The reserves are *fully decoupled* from interest rates, in the sense that the central bank can change the amount of reserves without having any impact on the overnight interest rate that it is targeting, in contrast to the situation of a corridor system. The following statement by another official of the Bank of England is particularly telling:

[2] The floor system was in fact adopted by the Bank of Japan as early as 1996, and it happened to be put in place in New Zealand and in Norway before the Global Financial Crisis. One could also argue that the US were under a floor regime from the World War II until 1951.

> *"The level of commercial banks' reserves in aggregate is determined by the way we have funded the asset purchases, not by the commercial banks' own decisions. The size of banks' reserves cannot, as is frequently claimed, be a sign that they are "sitting on them". No matter how rapidly or how slowly the economy is growing, or how fast or slow the money is circulating, the aggregate amount of reserves will be exactly the same. So it should be clear that the quantity of central bank reserves held by the commercial banks is useless as an indicator of the effectiveness of Quantitative Easing." (Bean 2009, p. 4).*

Speaking of the effectiveness of quantitative easing, one may wish to assess how effective it is. Quantitative easing carries with it an inherent contradiction. On the one hand those who advocate quantitative easing policies do so under the pretext that QE will induce economic agents to increase their expected rate of inflation, thus eventually raising realized rates of inflation and lowering the real rate of interest, in the hope of generating higher levels of economic activity. On the other hand, central bankers are at the same time trying to persuade financial markets that quantitative easing can be reversed in the future, so that an inflated central bank balance sheet does not mean high future inflation rates, so as to keep long-term interest rates from rising. It is not clear how these two objectives can be attained at the same time. At best, quantitative easing, as pursued, helps to sustain security prices and stock market prices, and may help to depreciate the domestic currency. At worse, quantitative easing has no effect on output and employment. Those who sell their assets to the central bank use the money to deleverage, paying down their loans.

There is a further problem with quantitative easing, one that has been noted by Keynes. With such low rates of interest, banks can run into difficulty as interest rates on their liabilities are already at zero or very close to zero already in normal times. Thus a decrease in interest yields on their assets can hurt the profitability of banks. This was pointed out in the *Treatise on Money* when Keynes (1930b, p. 359) argued that 'it is evident, therefore, that there is not much room for much fall in their average interest earnings without a serious reaction on their profits [those of banks]'. The warning was again repeated in the *General Theory*: 'Thus the rate of interest which the typical borrower has to pay may decline more slowly than the pure rate of interest, and may be incapable of being brought … below a certain minimum figure' (1936, p. 208).

The world of monetary policy seems to be upside down. What is called conventional monetary policy is now interest-rate targeting, as it was at the time of Wicksell and of the Radcliffe committee in the late 1950s in England, and before the advent of Monetarism and the rise of Milton Friedman in the mainstream of the economic profession. Unconventional monetary policy is now quantitative targets, expressed in asset purchases or increases in the size of bank reserves. Monetary targeting in the 1970s and 1980s was used as a tool to reduce the inflation rate; now it is used in an attempt to increase the inflation rate or the expected inflation rate!

8. Conclusion

We have seen that many of the events or the consequences of the Global Financial Crisis were difficult to understand if one were to stick to mainstream economics. What has occurred since 2007 has forced a reconsideration of monetary theory. Some ideas that had been discarded have gone back into fashion. It is well known to students of the history of economic thought that economics is infested by fashions and fads. We have noted that many of *unconventional* policies pursued by central bankers could already be found in Keynes's *Treatise on Money*. As A.B. Cramp (1971, p. 62), a colleague of Kaldor, recalled: 'Economic ideas, the Cambridge economist D.H. Henderson once remarked, move in circles: stand in one place long enough,

and you will see discarded ideas come round again […]. And nowhere is this more true than in respect to monetary theory and the associated theory of monetary policy'.

Macroeconomic theory also is in need of a reinterpretation. A number of firmly-held beliefs are now being questioned. One such belief is the claim that monetary policy is the main tool of stabilization and that fiscal policy should only play a very minor role. There is a realization among economists, although much less so among politicians, that there are severe limits to how much monetary policy can achieve in periods of recession or stagnation, and that expansionary fiscal policy is a necessary tool to boost the economy. Monetary policy has limits. The role and power of monetary policy have been exaggerated while those of fiscal policy have been overly minimized (Arestis 2015; Nevile and Kriesler 2014). There needs to be a new emphasis on fiscal policy.

The irony is that Keynes himself had made the transition, 80 years ago. Whereas in the *Treatise on Money* Keynes was still confident about the clout of expansionary monetary policy, as we have seen with our discussion of the extreme open-market operations that Keynes was advocating, by the time he had finished writing *the General Theory* Keynes was much enthusiastic, recognizing that 'if, however, we are tempted to assert that money is the drink that stimulates the system to activity, we must remind ourselves that there may be several slips before the cup and the lip' (1936, p. 173). This led him to conclude that 'for my own part, I am now somewhat sceptical of the success of a merely monetary policy directed towards influencing the rate of interest. I expect to see the State … taking ever greater responsibility for directly organising investment' (1936, p. 164).

Keynes (1936, p. 164) thought that the negative animal spirits generated by an economic crisis would 'be too great to be offset by any practicable changes in the rate of interest'. In a sense this corresponds to the liquidity trap as understood by Krugman (1998), meaning that nominal rates of interest would need to fall way below zero to get the economy back on track – an impossible solution. Thus the only way out which is left is fiscal policy and public works, as Keynes (1936, p. 129) emphasized, for otherwise society accepts to waste existing capital and labour resources, and even future ones if there are hysteresis and super-hysteresis effects, a possibility that post-Keynesians have always underlined and that is now accepted by a number of New Keynesians.

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Economic Growth from a Kaldorian Perspective: Theory, Evidence and Agenda[*]

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Abstract

This paper presents a literature review of the Kaldorian literature, which identifies three important gaps, or areas for future research. Firstly, the determinants of the magnitude of the key parameters of Kaldor-Verdoorn's Law (the Verdoorn coefficient) and of Thirlwall's Law (the income elasticities) have not been fully understood. Secondly, the fact that cumulative causation works through price competitiveness in the Kaldor-Dixon-Thirlwall model represents an important limitation of the model, which has not yet been solved. Thirdly, sectoral differences have not been fully explored in Kaldorian theory. The review indicates that, in the first two research areas, exploring the effects of additional variables could help clarify what determines the magnitudes of the parameters, as have been sought by the works that combine Kaldorian and Schumpeterian insights, indicating also new channels through which cumulative causation could work. Finally, the last issue requires more attention to similarities and differences between manufacturing sectors, as well as exploring more carefully how sectoral dynamics work.

Keywords: Kaldorian growth models; Economic growth; Thirlwall's law; Verdoorn's law.

JEL Classification: O14; O41; E12**.**

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1. Introduction

Nicholas Kaldor's works cover a number of different subjects in economic theory, such as cumulative causation, regional policy, taxation, income distribution, economic growth, balance-of-payments, and technical progress. Nonetheless, three of Kaldor's ideas were particular influential (McCombie, 2002: 64-5).

The most influential of Kaldor's contributions to economic theory relates to the importance of increasing returns to scale for productivity growth. Kaldor (1966) strongly emphasized that the main source of productivity growth is technical progress. According to him, technical progress is determined by demand growth, which fosters increases in division of labour. Hence, following Keynes' (1936) demand-led approach to economic growth, Kaldor's ideas contribute to understanding how demand growth influences technical progress.

Kaldor's second influential contribution to growth theory relates to the importance of exports for long-term growth. Keynesian economics emphasizes the importance of investment for economic growth. Kaldor, however, stressed that exports is the most important component of autonomous demand in open economies, given that long-term growth is constrained by balance-of-payments disequilibria, provided that growing debt cannot be indefinitely financed. Thus, again Kaldor extrapolates the Keynesian demand-led approach by stressing the importance of external demand for long-term growth.

Finally, Kaldor's third influential contribution to growth theory relates to the importance of cumulative causation in the process of economic growth. In contrast with the neoclassical growth theory, which focuses on the role of mechanisms that lead economies to converge, Kaldor (like Myrdal, 1957) emphasized the importance of cumulative mechanisms that slow down convergence or make economies diverge. This argument is closely linked to his emphasis on increasing returns, since the interplay between demand growth and productivity growth forms a cumulative circuit of growth.

The objective of this paper is to discuss the models derived from the three main Kaldorian insights, identifying the main shortcomings of the existing literature, while presenting the most recent contributions and pointing out promising venues for future development. The general objective of this paper, therefore, is to present a broad and up to date revision of the Kaldorian literature, that could serve as guide for future research in the field. More specifically, the objectives are threefold: (i) emphasize the relevance of testing the determinants of the magnitude of returns to scale; (ii) highlight the importance of testing what determines the magnitude of income elasticities of trade; and (iii) discuss the shortcomings and possibilities of expansion of the canonical Kaldor-Dixon-Thirlwall model of cumulative growth.

The paper is organized as follows. Section 2 analyses the Kaldorian literature that studies the importance of increasing returns and technical progress for productivity growth. Section 3 discusses the literature that explores the determinants of the long-term growth under the balance-of-payments equilibrium constraint. Section 4 discusses the canonical model of cumulative causation that sought to bring together Kaldor's ideas discussed in sections 2 and 3. Section 5 concludes the paper.

2. Increasing returns to scale and technical progress

2.1. Kaldor-Verdoorn's Law

Kaldor's ideas about the role of demand growth in generating technical progress, productivity growth, and increasing returns are summarized in Kaldor-Verdoorn's Law.[1] As McCombie (2002) showed, this law can be expressed in a variety of forms.

Verdoorn (1949) used the simple relationship between output growth and productivity growth to assess the importance of demand growth for technical progress:

$$\hat{Q} = \rho + \lambda \hat{Y} \quad (1)$$

where *Q* and *Y* are manufacturing productivity and output, respectively, and the circumflex over the variables indicates growth rates. Moreover, ρ is autonomous productivity growth and λ is the elasticity of productivity with respect to demand growth, or the Verdoorn coefficient.

Kaldor (1966), in turn, proposed an alternative but equivalent formulation of the law, by substituting the identity $\hat{Q} \equiv \hat{Y} - \hat{L}$ into equation (1) to find:

$$\hat{L} = -\rho + (1-\lambda)\hat{Y} \quad (2)$$

According to Kaldor (1966), this specification is preferable to Verdoorn's (1949), given that it avoids spurious correlation resulting from the fact that output growth is used to calculate productivity growth. As Kaldor (1966) stressed, however, as a Verdoorn coefficient positive and significantly different from zero in equation (1) indicates the existence of increasing returns to scale (i.e. $\lambda > 0$), an elasticity of employment growth with respect to demand growth statistically different from unity in equation (2) indicates the existence of increasing returns to scale as well (i.e. $0 < (1-\lambda) \neq 1$). This implies that the law represents a technical relationship derived from Kaldor's (1957) technical progress function (see Dixon and Thirlwall, 1975).

Several years after Kaldor's seminal work on Kaldor-Verdoorn's Law, however, McCombie (2002) observed that the law could be derived from a production function framework.[2] Following Angeriz *et al.* (2009), the starting point of the model is a production function like:

$$Y = AK^{\alpha}L^{\beta} \quad (3)$$

where *Y* is total value added, *K* is the stock of capital, *L* is labour, and *A* is the level of technology. Moreover, a and b are respectively the output elasticities of capital and labour, so that $(\alpha+\beta) = \gamma[\alpha'+(1-\alpha')]$, where g is a measure of the degree of static returns to scale and a' is the share of capital in total value added.

Assuming the existence of external increasing returns to scale, the growth of weighted factor inputs determines the rate of technical progress (g_A):

[1] See McCombie (2002) for detailed discussions of Kaldor-Verdoorn's Law in its different specifications and of types of returns to scale.

[2] McCombie and Spreafico (2016) have shown that the Kaldor-Verdoorn Law represents a meaningful behavioural relationship. Hence, the law does not result from the value added accounting identity (see Felipe *et al.*, 2008).

$$g_A \equiv \dot{A}/A = \phi + \eta T\hat{F}I \quad (4)$$

where ϕ is the exogenous technical progress, η is the elasticity of induced technological progress, and $T\hat{F}I \equiv \alpha'\hat{K} + (1-\alpha')\hat{L}$ is the growth rate of total factor inputs (TFI). In contrast with the endogenous growth models developed by Romer (1990), Grossman and Helpman (1991), Aghion and Howitt (1992), *inter alia*, in the Kaldorian approach it is demand growth that determines technological progress, given that the growth of inputs is driven by the growth of demand in a Keynesian perspective, i.e. $T\hat{F}I = f(\hat{Y})$. Consequently, this means that the rate of induced technical change is ultimately a function of the growth of demand.

Hence, substituting equation (4) into the production function (3), taking logarithms, differentiating with respect to time, and rearranging gives the dynamic *demand-side* Kaldor-Verdoorn's Law:

$$T\hat{F}P = \left(\frac{\phi}{\nu}\right) + \left(1 - \frac{1}{\nu}\right)\hat{Y} \quad (5)$$

where $\nu = \gamma + \eta$. The growth rate of total factor productivity (TFP) is defined as $T\hat{F}P \equiv \hat{Y} - T\hat{F}I$.

Equation (5), therefore, indicates that productivity growth is determined by the growth rate of value added, which is driven by the growth of demand in Kaldor's approach. Thus, if $\gamma > 1$ (i.e. $\beta > 1-\alpha$) there are *static* increasing returns to scale, while if $\eta > 0$ there are *dynamic* increasing returns to scale, i.e. induced technical progress. The parameter *v*, therefore, indicates the degree of encompassing returns to scale, so that if $\nu > 1$ the second term between parentheses in equation (5) is above zero, which indicates the existence of increasing returns to scale. Furthermore, the TFP specification of Kaldor-Verdoorn's Law given by equation (5) is preferable to Verdoorn (1949) and Kaldor's (1966) versions of the law due to the fact it takes capital accumulation into account.

2.2. Empirical evidence

After the seminal empirical evidence found by Verdoorn (1949) and Kaldor (1966) suggesting the existence of increasing returns in manufacturing, Kaldor-Verdoorn's Law was tested in a large number of works both for developed and developing countries (e.g. Hansen and Zhang, 1996; Harris and Liu, 1999; Oliveira *et al.*, 2006), across different sectors (e.g. McCombie and De Ridder, 1983; León-Ledesma, 2000; Angeriz *et al.*, 2009), and using different econometric techniques (e.g. McCombie and De Ridder, 1984; León-Ledesma, 2000; Angeriz *et al.*, 2008; Britto and McCombie, 2015). In addition, a number of critiques directed to the law have been dismissed over time (see McCombie, 2002; McCombie and Roberts, 2007).

Table 1 summarizes the results of some of the works that have tested Kaldor-Verdoorn's Law. This table shows that almost 50 years after Kaldor's 1966 inaugural lecture, there is still some controversy about the validity of the law. While earlier studies found that the law holds for its dynamic demand-side (Kaldor, 1966) and supply-side (Rowthorn, 1975) versions, but not for the static specifications (e.g. McCombie and De Ridder, 1983, 1984; León-Ledesma, 1999, 2000), recent studies have found that the law only holds for the demand-side version in its dynamic and static forms, but not for the supply-side specifications (Angeriz *et al.*, 2008; 2009). Thus, it seems that further work is still necessary to reconcile all its specification.

Table 1: Estimates of Kaldor-Verdoorn's Law

Study	Spatial Coverage	Method	Dynamic law		Static law	
			Demand-side	Supply-side	Demand-side	Supply-side
Kaldor (1966)	12 OECD	OLS	IRS	-	-	-
McCombie (1982)	12 OECD	OLS	IRS	-	CRS	-
McCombie and Rider (1983)	US	VECM	IRS	IRS	-	-
McCombie and Rider (1984)	US regions	OLS, IV with regional dummies	IRS	IRS	CRS	CRS
Hansen and Zang (1996)	China regions	OLS	IRS	-	-	-
Bernat (1996)	US regions	OLS, SEM, SAR	IRS	-	-	-
Fingleton and McCombie (1998)	EU regions	OLS, SAR	IRS	-	CRS	-
Harris and Liu (1999)	60 countries	VECM	IRS	-	-	-
León-Ledesma (1999)	Spain regions	OLS, FE, RE	IRS	IRS	-	-
León-Ledesma (2000)	Spain regions	OLS, FE, RE	IRS	IRS	IRS	CRS
León-Ledesma (2002)	17 OECD	3SLS, 2SLS	IRS	-	-	-
Oliveira *et al.* (2006)	Brazil	VECM	IRS	-	-	-
Angeriz *et al.* (2008)	EU regions	OLS, SAR, SEM, SHM, FGS2SLS, FE	IRS	CRS	IRS	CRS
Angeriz *et al.* (2009)	EU regions	SHM, IV, FE	IRS	CRS	IRS	-

Note: IRS = Increasing Returns to Scale; CRS = Constant Returns to Scale.
Source: Author's elaboration.

Yet, in spite of the large number of works that have investigated Kaldor-Verdoorn's Law, not much is known about the specific factors that determine differences in the degrees of returns to scale across countries, sectors or through time. Pieper (2003) has provided evidence that the law is non-linear, suggesting that increasing returns to scale reduce at higher rates of output growth for agriculture and increase at higher rates of output growth for manufacturing. In contrast, Alexiadis and Tsagidis (2010) found evidence that output growth exerts a negative impact on subsequent productivity growth, i.e. reduces the future degree of returns to scale, even when controlling for technological diffusion. In addition, in a regional analysis, using firm-level data from Brazil, Britto and McCombie (2015) provided evidence that that higher urbanization economies (proxied by service density) lead to higher returns to scale even when controlling for technology gap and human capital. Most recently, Romero and McCombie (2016a) have found evidence that high-tech industries present higher increasing returns than low-tech industries, while the magnitude of the returns to scale has increased in the high-tech industries from the period 1976-1991 to the period 1992-2006. In addition, in a subsequent study, Romero and Britto (2016) have found evidence that higher research intensity (measured as patents per hours worked or R&D per output) research intensity increases the response of technical progress to output growth, influencing the magnitude of returns to scale. The Verdoorn coefficient is a measure of encompassing returns to scale, including induced technical progress, internal economies of scale and the division of labour broadly defined. Thus, a higher value of the coefficient reflects a greater effect of the growth of output in raising (inducing) the growth of productivity. Consequently, assuming that research intensity makes the industry's productivity growth more responsive to demand growth, the Verdoorn coefficient becomes positively related to the degree of research intensity. Formally, this means that the Verdoorn coefficient ($\alpha = (1 - 1/\nu)$ in equation (5)) becomes partially endogenous, given by: $\delta = \rho + \varepsilon T$.

Hence, productivity growth becomes dependent not only on output growth, but also on the interaction between output growth and research intensity. This means that countries with higher levels of research intensity benefit from higher increasing returns when output grows. In this model, therefore, research intensity is assumed to be an exogenous variable.

Schmookler (1966) has found evidence of a strong relationship between investment in capital goods user industries and patent applications by capital goods producing industries, which suggests that patenting is a function of effective demand ("demand pull" hypothesis). However, this finding is not free from problems. For example, in a re-examination of Schmookler's findings using data from the Dutch economy, Kleinknecth and Verspagen (1990: 394) found evidence of a mutual dependence between demand and innovations, which suggests that not only demand may favour innovation, but also innovation may induce extra demand. Moreover, in León-Ledemsma's (2002) tests, demand has no significant contemporaneous impact on research intensity. Consequently, although the relationship between demand and research intensity deserves further investigation, it is reasonable to consider that research intensity has an exogenous impact on the magnitude of returns to scale.

Most importantly, the form of endogenising the Verdoorn Coefficient proposed by Romero and Britto (2016) creates the possibility of testing the impact of new variables on the determinants of returns to scale, opening an promising area for subsequent research.

3. Export-led growth and balance-of-payments constrained growth models

3.1. Thirlwall's Law

In a Keynesian perspective, demand growth drives economic growth. Consequently, differences in output growth rates between countries reflect differences in the rates of growth of demand for each country's production. As McCombie and Thirlwall (1994, p. 88) stressed, however, in Kaldor's (1970) view, "it is not investment, as Keynes argues, that is the key element of exogenous demand, but, in an open economy, the growth of demand for a country's exports".

The role of exports in the Kaldorian theory of economic growth is twofold. Firstly, export growth, as a component of aggregate demand, has a direct impact on output growth. Secondly, export growth has also an indirect impact on output growth, given that exports generate the foreign currency that allows other components of demand to grow, provided that increasing consumption and investment often require higher imports, and a growing foreign debt cannot be financed indefinitely.[3] This theory implies that, in the long-term, the requirement of balance-of-payments equilibrium is the main constraint determining differences in demand growth across countries, given that aggregate demand must adjust to solve balance-of-payments disequilibria.

Kaldor's (1970) ideas on the importance of exports for long-term growth were extrapolated and formalised by Thirlwall (1979), who put together a balance-of-payments constrained growth model composed of three equations: an export function, an import function, and a balance-of-payments equilibrium condition, respectively:

$$X = a\left(\frac{P}{P_f E}\right)^{\eta} Z^{\varepsilon} \tag{6}$$

$$M = b\left(\frac{P_f E}{P}\right)^{\psi} Y^{\pi} \tag{7}$$

[3] See McCombie (1985) for a formal demonstration that Harrod's (1933) foreign trade multiplier is a component of Hick's (1950) super-multiplier.

$$PX = P_f ME \quad (8)$$

where *E* is the exchange rate, *M* is imports, *X* is exports, and *P* and P_f are the domestic and the foreign price levels, respectively. Moreover, *Z* and *Y* are the foreign and domestic income levels, $\eta < 0$ and $\psi < 0$ are the price elasticities of demand for exports and imports, $\varepsilon > 0$ and $\pi > 0$ are the income-elasticities of demand for exports and imports, respectively. Finally, *a* and *b* are constants.

Hence, taking logarithms and differentiating each of these equations with respect to time yields:

$$\hat{X} = \eta(\hat{P} - \hat{P}_f - \hat{E}) + \varepsilon\hat{Z} \quad (9)$$

$$\hat{M} = \psi(\hat{P}_f - \hat{P} + \hat{E}) + \pi\hat{Y} \quad (10)$$

$$\hat{P} + \hat{X} = \hat{P}_f + \hat{E} + \hat{M} \quad (11)$$

Thus, substituting equations (9) and (10) into equation (11) yields the long-term rate of growth of domestic income compatible with balance-of-payments equilibrium:

$$\hat{Y}_{BOPl} = \frac{(1+\eta+\psi)(\hat{P} - \hat{P}_f - \hat{E}) + \varepsilon\hat{Z}}{\pi} \quad (12)$$

Equation (12) has several implications. First, domestic inflation higher than foreign inflation, *ceteris paribus*, decreases the balance-of-payments equilibrium growth (provided the Marshall-Lerner condition $|\psi + \eta| > 1$ holds). Second, exchange-rate depreciations ($\hat{E} > 0$), *ceteris paribus*, raise the balance-of-payments equilibrium growth rate (provided $|\psi + \eta| > 1$). Third, a higher rate of growth of world income ($\hat{Z}$), *ceteris paribus*, raises the balance-of-payments equilibrium growth rate. And fourth, the higher the income-elasticity of demand for exports (ε) is, and the lower the income-elasticity of demand for imports (π) is, *ceteris paribus*, the higher is the balance-of-payments equilibrium growth rate.

Nonetheless, if relative prices are assumed to be constant in the long run, i.e. $\hat{P} - \hat{P}_f - \hat{E} = 0$, then equation (12) is reduced to Thirlwall's Law:[4]

$$\hat{Y}_{BOPl} = \frac{\varepsilon\hat{Z}}{\pi} \quad (13)$$

or

$$\hat{Y}_{BOPl} = \frac{\hat{X}}{\pi} \quad (14)$$

Equation (13) is Thirlwall's Law in its "strong form", while equation (14) is the "weak form" of the law. These equations highlight the importance of the income elasticities for long-term growth.[5]

[4] This equation is equivalent to Harrod's (1933) foreign trade multiplier in its dynamic version (see McCombie, 1985).

[5] A number of works have expanded the original balance-of-payments constrained growth model presented in this section to incorporate the effects of capital flows on growth, debt accumulation and interest payments into the model (e.g. Thirlwall and Hussain, 1982; McCombie and Thirlwall, 1997; Moreno-Brid, 2003; Barbosa-Filho, 2001). Still, it is reasonable to assume that such factors are not relevant for long-term growth.

3.2. The Multi-Sectoral Thirlwall's Law

Although it has been always clear that the overall price and income elasticities of demand are weighted averages of sectoral income elasticities, Araújo and Lima (2007) were the first to develop a formal model that takes sectoral differences in the elasticities into account. Their model, however, is derived from a Pasinetian framework. Still, it is simple to obtain similar results using the standard balance-of-payments constrained growth model.

Assuming an economy composed of *i* sectors, each one subject to different price and income elasticities of demand, the overall export and import equations (9) and (10) become:

$$\hat{X} = \sum_{i=1}^{k} [\varphi_i \eta_i (\hat{P}_i - \hat{P}_{fi} - \hat{E}) + \varphi_i \varepsilon_i \hat{Z}] \quad (15)$$

$$\hat{M} = \sum_{i=1}^{k} [\theta_i \psi_i (\hat{P}_{fi} - \hat{P}_i + \hat{E}) + \theta_i \pi_i \hat{Y}] \quad (16)$$

where ϕ_i and θ_i θiare each sector's share in total exports and imports, respectively, with $\sum_{i=1}^{k} \varphi_i = 1$ and $\sum_{i=1}^{k} \theta_i = 1$. From |equations (15) and (16), since $\varepsilon = \sum_{i=1}^{k} \varphi_i \varepsilon_i$, $\pi = \sum_{i=1}^{k} \theta_i \pi_i$, $h = \sum_{i=1}^{k} f_i h_i$, and $\psi = \sum_{i=1}^{k} \theta_i \psi_i$, the overall elasticities shift according to changes in the sectoral composition of the economy.

Hence, substituting equations (15) and (16) into the balance-of-payments equilibrium condition given by equation (8) yields:

$$\hat{Y}_{MSBOP} = \frac{\left(\sum_{i=1}^{k} [(1 + \sigma_i \eta_i + \omega_i \psi_i)(\hat{P}_i - \hat{P}_{fi} - \hat{E}) + \varphi_i \varepsilon_i \hat{Z}] \right)}{\left(\sum_{i=1}^{k} \theta_i \pi_i \right)} \quad (17)$$

Equation (17) is the Multi-Sectoral version of equation (12). Thus, assuming that relative prices are constant in the long-term, equation (17) becomes:

$$\hat{Y}_{MSBOP} = \frac{\left(\sum_{i=1}^{k} \varphi_i \varepsilon_i \right) \hat{Z}}{\left(\sum_{i=1}^{k} \theta_i \pi_i \right)} \quad (18)$$

Equation (18) is equivalent to what Araújo and Lima (2007) called the Multi-Sectoral Thirlwall's Law (MSTL). This equation indicates that shifts in the productive structure (i.e. sectoral shares) affect the long-term growth rate compatible with balance-of-payments equilibrium. Hence, a country's growth rate can increase even if the rest of the world continues to grow at the same pace (i.e. a constant $\hat{Z}$), as long as the composition of exports and imports is favourably altered. In sum, equation (18) stresses that the equilibrium growth rate depends on the sectoral structure of the economy. In particular, structural changes toward sectors with higher income elasticities of demand for exports will raise the economy's long-term growth rate, *ceteris paribus*.

3.3. Empirical evidence

Thirlwall's Law has been tested for a large number of countries using a variety of estimation techniques (e.g. Bairam, 1988; Bairam and Dempster, 1991; Atesoglu, 1993a; 1993b; Andersen, 1993; Alonso and Garcimartín, 1998; Perraton, 2003; Jayme Jr., 2003; Britto and McCombie, 2009; Garcimartín *et al.*, 2010). In addition, a number of works have tested the extended balance-of-payments constrained growth model that take into account capital flows, debt accumulation and debt payments, and in most cases the original Thirlwall's Law is found to hold (e.g. Thirlwall and Hussain, 1982; Barbosa-Filho, 2001; Moreno-Brid, 2003; Britto and McCombie, 2009). As happens with Kaldor-Verdoorn's Law, several critiques directed to Thirlwall's Law have been dismissed over time (see McCombie, 2011).

Table 2 summarizes the results found by some of the works that have tested Thirlwall's Law. This table shows that the empirical works that assess Thirlwall's Law strongly suggest its validity for a diverse sample of countries, over different periods, using different estimation techniques, and adopting different specifications. This implies that only by increasing a country's income-elasticity of exports and/or by decreasing its income-elasticity of imports a country can consistently overcome the balance-of-payments constraint and raise its long-term growth rate.

In spite of the large literature on Thirlwwall's Law, however, as happens with the literature on increasing returns to scale, not much is known about the determinants of the income elasticities of demand. Most recently, following the contribution of Araújo and Lima (2007), who elaborated a multi-sectoral version of Thirlwall's Law, some works have been exploring the connection between the sectoral composition of trade and the magnitudes of aggregate income elasticities. Gouvea and Lima (2010) and Romero *et al.* (2011) have estimated export and import demand functions for different technological sectors, and found that goods with high technological content present higher income elasticities, which implies higher shares of these goods in trade increase the aggregate income elasticity of exports. Similarly, Tharnpanich and McCombie (2013) have estimated export and import functions for manufacturing and primary sectors, and found that manufacturing goods face higher income elasticities. Gouvea and Lima (2013) have also estimated export and import functions adopting a sectoral classification that follows categories of use, and found that capital goods have higher income elasticities than consumption and intermediary goods. Finally, Romero and McCombie (2016b) reported estimates of import and export functions for five technological sectors in 14 developed European countries. The results indicated once again that the income elasticities of exports and imports are higher for medium- and high-tech manufactures. The paper provided also an important contribution in terms of the method of estimation of export and import functions. Comparing the results found using Vector Error Correction Models (adopting aggregate price indexes as deflators and measures of relative prices) with the results found using cross-product panels (adopting product-level quality-adjusted price indexes as deflators and measures of relative prices) revealed that the latter estimation strategy generates more reliable and less volatile results. Moreover, the investigation indicated that the Multi-Sectoral Thirlwall's Law holds for the countries investigated. However, moving exports (imports) from (to) low-tech sectors to (from) high-tech sectors seems to be a necessary but not sufficient condition to increase long-term growth, given that countries with similar sectoral compositions of trade present different equilibrium growth rates.

Table 2: Estimates of Thirlwall's Law

Studies	Spatial Coverage	Estimation Method	Specification	Period	Relative Price Measure	Test
Houthakker and Magee (1969)	40 Countries	OLS	Basic	1951-66	Import price deflator to the country's wholesale price index; export price deflator to the average export price deflator of 26 countries.	-
Thirlwall (1979)	14 Developed Countries	-	-	1951-66	-	Cor.*
Thirlwall and Hussain (1982)	16 Developing Countries	-	-	1951-66	-	Cor.*
Bairam (1988)	19 Developed Countries	2SLS	Basic	1970-85	Unit Value Price Indexes in US dollars	Reg.*
Bairam and Dempster (1991)	11 Asian Countries	OLS, VECM	Basic	1970-96	Unit Value Price Indexes in US dollars	Reg.*; Elast.*
Atesoglu (1993a)	US	OLS, 2SLS	Basic	1955-90	GNP deflator to the implicit import deflator	Reg.*
Atesoglu (1993b)	Canada	OLS	Including capital flows	1961-91	GNP deflator to the implicit import deflator	-
Andersen (1993)	16 Developed Countries	VECM	Basic	1960-90	Domestic demand deflator to import price deflator; and relative unit labour costs	Reg.*
Heike (1997)	US	OLS	Basic	1950-90	Real Exchange Rate.	-
McCombie (1997)	US, UK, Japan	VECM	Basic	1952-93	Import price deflator to export price deflator.	Elast.**
Alonso and Garcimartín (1998)	Spain	VECM	Includes technology index	1965-94	Import price deflator to export price deflator.	Reg.****; Coint.****; Adj.****
Ansari *et al.* (2000)	4 Asian Countries	OLS, VECM	Basic	1970-96	Difference between the growth rate of foreign and domestic prices.	t-test***
Jayme Jr. (2003)	Brazil	VECM	Basic	1955-1998	-	Cor.*
Perraton (2003)	27 Developing Countries	VECM	Basic	1960-93	Unit Value Price Indexes in US dollars.	Elast.***; Reg.****
Moreno-Brid (2003)	Mexico	VECM	Includes tariff protection	1967-99	Import price deflator to export price deflator.	Elast.****
Britto and McCombie (2009)	Brazil	VECM	Basic	1951-2006	Real Exchange Rate.	Elast.****; Coint.****
Garcimartín *et al.* (2010)	Portugal and Spain	ML	Modified version	1975-2007	Difference between the growth rates of foreign and domestic prices, and the exchange rate.	Adj.****
Gouvea and Lima (2010)	4 Latin American and 4 Asian Countries	VECM	Multi-Sectoral Version	1962-2006	Real Exchange Rate.	t-test*
Romero *et al.* (2011)	Brazil	VECM	Multi-Sectoral Version	1962-2006	Real Exchange Rate.	-
Tharnpanich and McCombie (2013)	Thailand	VECM	Multi-Sectoral Version	1962-2006	Producer and Unit Value Price Indexes in US dollars	-
Gouvea and Lima (2013)	92 Countries	FE	Multi-Sectoral Version	1962-2006	1/PPP	Reg.*
Romero and McCombie (2016b)	14 EU Countries	VECM, SYS-GMM Product-panel	Multi-Sectoral Version	1984-2007	Relative product-level quality-adjusted price indexes	Reg.*

Note: * = the law holds in the period as a whole; ** = the law holds for some sub-periods; *** = the law holds for most countries, but not all; **** = the law holds for the extended version of the law. Cor. = correlation; Reg. = regression of yb on y; Elast. = McCombie's procedure; Coint. = cointegration between y and yb; Adj. = test of the adjustment of income.
Source: Author's elaboration.

Hence, the discussion presented in this section suggests that it is crucial to carry out further research on the determinants of the magnitude of income elasticities. In spite of the contributions discussed above, more work is necessary to identify more precisely the determinants of differences in income elasticities of different products.

4. Cumulative causation

4.1. The Kaldor-Dixon-Thirlwall model

In contrast with neoclassical growth theory, which puts more emphasis on the role of mechanisms that generate convergence, Kaldor (1970) emphasised the importance of cumulative mechanisms that slow down convergence or make economies diverge.

The Kaldor-Dixon-Thirlwall model is the canonical model of growth from a Kaldorian perspective. As the name indicates, the model was developed by Dixon and Thirlwall (1975) in an attempt to formally describe Kaldor's (1966, 1970) ideas about increasing returns, export-led growth, and cumulative causation. Although this model preceded the balance-of-payments constrained growth model, it seems more appropriate to present it last, given that the Kaldor-Dixon-Thirlwall model and its expansions seek to encompass the main ideas of the Kaldorian approach. In the model, productivity growth leads to a reduction in prices (*ceteris paribus*), which leads to an increase in export growth, which generates output growth through Hick's super-multiplier. Finally, output growth generates productivity growth through Kaldor-Verdoorn's Law, restarting the process.

The model is composed of four equations: Kaldor-Verdoorn's Law; the standard export demand function; Hicks' (1950) super-multiplier;[6] and a dynamic price function, in which changes in prices depend on changes in wages, productivity, and mark-up.[7] Formally, the model is described as follows:

$$\hat{Q} = \rho + \lambda \hat{Y} \tag{1}$$

$$\hat{X} = \eta(\hat{P} - \hat{P}_f - \hat{E}) + \varepsilon \hat{Z} \tag{9}$$

$$\hat{Y} = \gamma \hat{X} \tag{19}$$

$$\hat{P} = \hat{W} - \hat{Q} - \hat{V} \tag{20}$$

where γ is elasticity of output growth in relation to export growth, *W* is the wage rate, and *V* is the rate of mark-up (*1+%*) on unit labour costs.

Thus, combining equations (19), (20), (9) and (1) gives the model's equilibrium growth rate:

$$\hat{Y}^* = \gamma \left[\frac{\eta[(\hat{W} - \rho + \hat{V}) - \hat{P}_f)] + \varepsilon \hat{Z}}{1 + \gamma \eta \lambda} \right] \tag{21}$$

Three aspects of the model are worth noting. First, since $\eta < 0$, the output growth rate varies positively with increases in $\hat{Q}$, $\hat{P}_f$, $\hat{E}$, ε, $\hat{Z}$ and λ; and negatively with increases in *w*

[6] Thirlwall (1983) identifies seven laws in Kaldor's thinking. According to him, the central role of exports on income growth is Kaldor's sixth law.

[7] In levels, the mark-up pricing rule is given by $P = (W/Q)V$.

and *v*. Second, it is the impact of the Verdoorn coefficient on productivity that makes the model cumulative. An initial shock, e.g. an exogenous increase in the growth rate of world income ($\hat{Z}$), leads to higher export and income growth, which impacts the economy's productivity through the Verdoorn coefficient, generating a fall in export prices, leading to a new increase in exports. The magnitude of the equilibrium output growth rate, therefore, depends directly on the magnitude of the Verdoorn coefficient and the other parameters of the model. And third, a growth advantage resulting from an autonomous shock will only be sustained if the initial shock affects the parameters of the model. Otherwise, the model will converge back to the initial equilibrium (Dixon and Thirlwall, 1975, p. 206-7). In sum, differences in output growth rates between countries or regions in this model depend on the levels of the Verdoorn coefficient and the other parameters of the model.

Hence, to assess the adjustment process in this model, Dixon and Thirlwall (1975) take into account a lagged exports function:

$$\hat{X}_t = \eta(\hat{P}_{t-1} - \hat{P}_{ft-1} - \hat{E}_{t-1}) + \varepsilon\hat{Z}_{t-1} \tag{22}$$

Then, combining equation (22) with equations (19), (20) and (1), and rearranging its terms gives the lagged general solution:

$$\hat{Y}_t = A(-\gamma\eta\lambda)^t + \gamma\left[\frac{\eta[(\hat{W}_{t-1} - \rho + \hat{V}_{t-1}) - \hat{P}_{ft-1})] + \varepsilon\hat{Z}_{t-1}}{1+\gamma\eta\lambda}\right] \tag{23}$$

where *A* is the initial condition.

Equation (23) indicates that the model's stability depends on the magnitude of the term $\gamma\eta\lambda$. Keeping in mind that $\eta < 0$, so that $(-\gamma\eta\lambda) > 0$, for divergence to take place it is necessary that $(-\gamma\eta\lambda) > 1$. As Dixon and Thirlwall (1975, p. 208) argue, taking realistic values of the parameters, divergence is unlikely. In contrast, if $(-\gamma\eta\lambda) < 1$ differences in growth rates between countries or regions are constant over time. Hence, for divergence to occur the parameters must change through time, so that the equilibrium growth rates keep changing. As Roberts (2002) argues, however, it is important to note that there are actually two cumulative causation mechanisms in the model. On the one hand, differences in the Verdoorn coefficient work to sustain disparities in productivity growth rates. On the other hand, when a region is out of its equilibrium rate of productivity growth, the impact of the Verdoorn coefficient on price competitiveness accelerates export growth, pushing the productivity growth rate towards its equilibrium.

As Thirlwall and Dixon (1979) have demonstrated, a balance-of-payments constraint can be easily incorporated into the Kaldor-Dixon-Thirlwall model by replacing equation (19) with the balance-of-payments equilibrium condition given by equation (11), and introducing into the model the standard import demand function given by equation (10). Thus, as Blecker (2013) argued, introducing a balance-of-payments constraint into the Kaldor-Dixon-Thirlwall model does not necessarily change the implications of the model.[8] As long as relative prices are not constant and the Marshal-Lerner condition does hold, cumulative causation can affect the equilibrium growth rate represented in equation (12), and the main ideas in the Kaldor-Dixon-Thirlwall model are sustained.

[8] See Blecker (2013) for a version of this model that includes capital flows and debt accumulation.

4.2. The Kaldor-Dixon-Thirlwall model with balance-of-payments constraint and cumulative causation via non-price competition

The Kaldor-Dixon-Thirlwall model described in the previous sections has been critised due the fact that cumulative causation in model works through price competitiveness. A vast literature provides evidence that, in the long run, price elasticities of demand do not have a significant effect on export growth, either because relative prices are constant in the long-term, or because the Marshal-Lerner condition is not satisfied (Blecker, 2013). In these cases, the model's cumulative causation ceases to exist, given that productivity gains generated by increasing returns feed back on growth only via price competitiveness. Moreover, the more prominent role of price competitiveness in relation to non-price competitiveness in the Kaldor-Dixon-Thirlwall model is conflicting with the emphasis put into this type of competition in the balance-of-payments constrained growth models (see McCombie and Thirlwall, 1994).

Setterfield (2011) proposed a simple solution to this critique, changing the channel through which cumulative causation operates in model.[9] According to Setterfield (2011, p. 415), "the basic hypothesis here is that the higher is the level of productivity, the higher is the quality of goods produced in a particular region, and so the larger will be the increase in demand for the region's output associated with any given increase in income (*ceteris paribus*)".[10] If productivity impacts on non-price competitiveness, then cumulative growth occurs in spite of the insignificance of the long-term effects of price competitiveness on export growth.[11] This non-price competitiveness version of the Kaldor-Dixon-Thirlwall model is obtained substituting the effect of productivity on prices with two equation that associate levels of income elasticities of exports and imports with levels of productivity, while assuming that Kaldor-Verdoorn's Law is valid for both the domestic and the foreign economies. In this model, the equilibrium growth rate is given by Thirlwall's Law (equation (13)), which assumes either that relative prices are constant or that the Marshal-Lerner condition is not fulfilled.

$$\hat{Q} = \rho + \lambda \hat{Y} \tag{1}$$

$$\hat{Y} = \frac{\varepsilon}{\pi} \hat{Z} \tag{13}$$

$$\varepsilon = \delta Q \tag{24}$$

$$\pi = \phi Q_f \tag{25}$$

$$\hat{Q}_f = \rho + \lambda \hat{Z} \tag{26}$$

where Q_f denotes productivity in the foreign economy.

Equations (24) and (25) imply that:

[9] A similar solution was proposed by Roberts (2002).

[10] In a similar fashion, Oreiro, Missio e Jayme Jr. (2015) proposed that the magnitude of income elasticities of demand are partially endogenous to the real exchange rate. However, although there is considerable evidence that under-valued exchange rates have a positive impact on growth rates (e.g. Rodrik, 2008; Rapetti, Skott and Razmi, 2013; Missio *et al.*, 2015), no empirical works to date has yet found evidence that income elasticities of demand for export and imports are endogenous to the real exchange rate.

[11] In a slightly different approach, Raposo and Resende (2011) argue that trade balance depends on the level of development of National Innovation Systems, so that the external constraint on growth is less binding in countries with more developed systems. Nonetheless, it is possible to argue that countries with mature National Innovation Systems tend to have higher levels of productivity. Hence, this would be a second-order explanation following Setterfield's (2011) approach.

$$\dot{\kappa} = \kappa(\hat{Q} - \hat{Q}_f) \quad (27)$$

where $\kappa = \varepsilon / \pi$.

Then, it follows from (1), (26) and (13) that:

$$\dot{\kappa} = \kappa[\lambda(\kappa - 1)\hat{Z}] \quad (28)$$

Several implications follow from this model (Setterfield, 2011, p. 416-17). First, if $\kappa = 1$, then the domestic and foreign growth rates ($\hat{Y}$ and $\hat{Z}$, respectively) will be equal, which means there will be balanced growth. Furthermore, this implies that $\dot{\kappa} = 0$, so that balanced growth is self-perpetuating. Second, if $\kappa > 1$, then the local economy will grow faster than the rest of the world. In this case, $\dot{\kappa} > 0$, and domestic growth will be self-reinforcing, which means cumulative growth will lead to ongoing divergence between the two growth rates. Third, if $\kappa < 1$, then $\dot{\kappa} < 0$, and there will be a self-reinforcing vicious cycle of reduction in growth rates. Hence, the prediction of unbounded increases or reductions in growth rates represents an important limitation of this model.

Taking into account Setterfield's (2011) approach, Romero and McCombie (2016c) sought to combine the Kaldorian and Schumpeterian approaches on trade and test the impact of domestic and frontier productivity growth (used as a proxy for quality improvements) on export and import growth. Using disaggregated data for a group of OECD countries to test these expanded export and import functions, the authors find evidence that introducing domestic and frontier productivity growth impacts the magnitude of the estimated income elasticities of demand. These results indicate that excluding these variables from the regressions creates an omitted variable bias in the income elasticities, which suggests their endogeneity in relation to productivity, as Setterfield (2011) argues.

4.3. León-Ledesma's expanded Kaldor-Dixon-Thirlwall growth model

A number of works have sought to combine Kaldorian and Schumpeterian insights into models of cumulative growth, addressing one or more of the critiques directed to the Kaldor-Dixon-Thirlwall model. Still, none of these seminal works has managed to construct a model that satisfactorily encompasses the contributions of both traditions. Amable (1993), for instance, put together a model that takes into account the importance of both research intensity and technology transfer for productivity growth. Nonetheless, the model does not specify how productivity growth impacts on output growth nor considers the role of exports in long-term growth. Furthermore, the cumulative mechanism of the model works via investment and not via output growth, as in Kaldor-Verdoorn's Law. This reduces the explanatory power of the model, given that an extensive literature stresses the importance of output growth instead of capital accumulation for productivity growth. Targetti and Foti (1997), in turn, elaborated a model that stresses the importance of technology transfer for productivity growth, but that does not account for the role of research intensity nor explicitly consider the effect of non-price competitiveness on exports. In addition, the model does not account for the balance-of-payments constraint. Hence, these two influential models combine Kaldorian and Schumpeterian insights in an incomplete manner.

León-Ledesma's (2002) model represents the most complete formalization of Kaldorian and Schumpeterian insights. The author expanded the Kaldor-Dixon-Thirlwall model to incorporate the key Schumpeterian insights on growth, introducing the technology gap, research intensity and technological competitiveness into the Kaldorian model. This model is composed of the five following equations:

$$\hat{Y} = \gamma\hat{X} \tag{19}$$

$$\hat{P} = \hat{W} - \hat{Q} \tag{20}$$

$$\hat{Q} = \rho + \lambda\hat{Y} + \alpha T + \sigma G + \beta(I/Y) \tag{29}$$

$$\hat{X} = \eta(\hat{P} - \hat{P}_f) + \varepsilon\hat{Z} + \chi T + \delta(I/Y) \tag{30}$$

$$T = \mu\hat{Y} + \varpi\hat{D} + \omega S - \varsigma G \tag{31}$$

where $T=R/Y$ is research intensity, with R denoting R&D expenditure, I is investment, S is the average level of education, D (for disembodied technical progress) is cumulative output, and $G = [1 - (Q/Q_f)]$ is the technology gap.

The five equations of the model incorporate the central aspects of the Kaldorian and the Schumpeterian traditions. Equations (19) and (20) are the same as the original model, while equation (29) is an expanded version of Kaldor-Verdoorn's Law, which introduces the effects of technological absorption (via the technology gap), capital accumulation, and research intensity on productivity growth. The Schumpeterian literature emphasises the importance of technological transfer for productivity growth, arguing that due to technological absorption, the higher the technology gap is, the higher the potential for rapid productivity growth is (e.g. Griffith *et al.*, 2004). Indeed, it is now common practice to take into account the technology gap when estimating Kaldor-Verdoorn's Law. As McCombie (1983) has shown, not taking into account differences in technology between countries or regions can bias the estimates. In addition, introducing the technology gap generates a connection between the level and the growth rate of productivity, making conditional convergence explicitly accounted for in the model.[12] Furthermore, the Schumpeterian literature stresses the importance of research intensity for productivity growth, underlining that a firm's effort to innovate influences the pace of technological progress (e.g. Ha and Howitt, 2007; Madsen, 2008). Thus, the expanded Kaldor-Verdoorn's Law takes into account the effect of the determinants of productivity growth from a Schumpeterian perspective. Similarly, equation (30) is an expanded version of the standard export function used in the Kaldor-Dixon-Thirlwall model, incorporating the effects of productive capacity (via capital accumulation) and technological competitiveness (via research intensity) on export growth. Thus, once again factors that are considered relevant determinants of trade in the Schumpeterian tradition (e.g. Fagerberg, 1988; Amable and Verspagen, 1995) are introduced into the Kaldorian approach to trade. Finally, equation (31) suggests that the level of research intensity depends on demand growth ($\hat{Y}$), on learning-by-doing ($\hat{D}$), on the average level of education (S) and on the proximity to the technological frontier, i.e. the technology gap. The gap has a negative sign, therefore, to indicate that the higher it is, the lower are the resources available to research.

According to the model, convergence or divergence depends on the magnitudes of the gap and of the models' parameters. It is interesting to note that the gap has an ambiguous effect. On the one side, the impact of technological transfer (which depends on the technology gap) on productivity is the main force leading to convergence. On the other side, the negative impact of the technology gap on innovation induces divergence. León-Ledesma's (2002) extended Kaldor-Dixon-Thirlwall model, therefore, not only explains convergence and divergence in a Kaldorian framework, but it also takes into account the cumulative dynamics

[12] Although Roberts (2007) has shown that the Kaldor-Dixon-Thirlwall model is compatible with condition convergence, this convergence occurs due to the transitional dynamics of the model. Introducing the technology gap into the model, however, provides a better explanation for conditional convergence.

that work via non-price competitiveness, incorporating the key variables used in Schumpeterian growth models.

León-Ledesma (2002) tested the model using pooled data between 1965-94 for 17 OECD countries and found that all the variables in the model are significant in each specific equation, apart from output growth in equation (31), and capital accumulation and research intensity in equation (29). Furthermore, it is crucial to note that learning-by-doing ($\hat{D}$) is only significant at the 15% level in equation (31).

In spite of the interesting dynamics depicted in León-Ledesma's (2002) model, it still presents some shortcomings. First, the model disregards the importance of the balance-of-payments constraint for long-term growth, as occurs with Amable's (1993) and Targetti and Foti's (1997) models, *inter alia*. Second, the model does not take sectoral differences into account, disregarding the importance of differences in the parameters between sectors. Indeed, most models that have attempted to combine Kaldorian and Schumpeterian insights did not consider sectoral differences.[13] Third, if the balance-of-payments constraint is introduced into the model and relative prices are assumed to be constant in the long run, then the model's cumulative causation ceases to exist, as happens with the Kaldor-Dixon-Thirlwall model. In this case, productivity growth becomes irrelevant, while research intensity keeps its role in long-term growth due to its impact on exports. Thus, supply-side factors become more prominent, given that demand factors are not significant determinants of research intensity. Fourth, in León-Ledesma's (2002) tests, research intensity is not a significant determinant of productivity growth, which goes against one of the core ideas of the Schumpeterian literature. Hence, this discussion illustrates the issues involved in combining Kaldorian and Schumpeterian insights on growth.

4.5. Empirical evidence

There is little empirical research focused on testing the canonical Kaldor-Dixon-Thirlwall model. There is considerable evidence for the relationship between exports and output growth, while it is a consensus that productivity growth induces price reductions. Consequently, the controversies that surround the Kaldor-Dixon-Thirlwall model regard the validity of Kaldor-Verdoorn's Law and of Thirlwall's Law. Thus, most of the empirical works in the Kaldorian literature have focused on testing these two laws, as discussed in the previous sections. Yet, a noteworthy exception is Atesoglu's (1994) study, which tested the Kaldor-Dixon-Thirlwall model to the US economy between 1970 and 1990. The author not only found that the relationships of the model are significant and with the expected signs, but he also found that the model predicts extremely well the growth path of the US economy in the period under investigation.

Still, the Kaldor-Dixon-Thirlwall model has received three important critiques. First, the original model places little emphasis on the importance of non-price competitiveness, focusing on price competitiveness instead. This is an important critique, given that this makes the model inconsistent with empirical evidence on the neutrality of price competition in the long-term, making the model lose its cumulative mechanism. Moreover, attempts to solve this limitation, as Setterfield's (2011) model, have not been empirically tested to date. Second, the central parameters of the model are not explained. The price elasticity of exports, the Verdoorn coefficient, and the elasticity of output with respect to exports are the parameters that determine the magnitude of the equilibrium growth rate. Nonetheless, the model does

[13] Cimoli and Porcile's (2014) model is an exception. However, the model is inspired in a structuralist framework that is very different from Schumpeterian and Kaldorian models.

not provide any explanation for what determines the magnitude of these parameters between countries (or regions) and through time. Furthermore, not much research has focused on explaining the determinants of these parameters, as the reviews presented in the previous sections have demonstrated. Third, the model does not take into account differences between sectors.[14] Recent evidence has also shown that income elasticities of demand for exports are also different between sectors, reaffirming the importance of taking sectoral differences into account.

Most of the works that explore the dynamics of the Kaldor-Dixon-Thirlwall model have tried to elaborate and test expanded versions of the model (e.g. Amable, 1993; Setterfield, 1997; Targetti and Foti, 1997; León-Ledesma, 2002). Interestingly, most of the efforts have been focused on incorporating elements from Schumpeterian theory into the Kaldor-Dixon-Thirlwall model. In the last decades the Schumpeterian approach to technological transfer and technical progress has gained a prominent place in growth theory (see Aghion and Howitt, 1992; Fagerberg, 2005). In Kaldorian theory, it is now common to introduce measures of technology gap to capture technological transfer when estimating Kaldor-Verdoorn's Law (e.g. Angeriz *et al.*, 2008; 2009), while technological classifications that emphasise the importance of research have been used to assess the importance of the technological content of goods for export performance and long-term growth according to Thirlwall's Law (e.g. Gouvea and Lima, 2010; Romero *et al.*, 2011). Still, there is more to explore in combining Kaldorian and Schumpeterian insights.

5. Concluding remarks

This paper sought to demonstrate that Kaldor's ideas form a sound basis for understanding long-term growth. The literature review presented in this paper identified three important gaps in the Kaldorian literature, each one constituting an important area for future research. Firstly, both in Kaldor-Verdoorn's Law and in Thirlwall's Law, the key parameters of the model have not been fully understood. In the former, it is still not clear what determines differences in the degree of returns to scale across countries, sectors and through time. In the latter, it is also not clear what are the specific determinants of the magnitudes of income elasticities of demand for exports and imports. In both cases, exploring the effects of additional variables could help clarify what determines the magnitudes of these parameters, as have been sought by the works that combine Kaldorian and Schumpeterian insights. Secondly, the fact that cumulative causation works through price competitiveness in the Kaldor-Dixon-Thirlwall model represents an important limitation of the model. A vast literature provides evidence that, in the long run, changes in relative price do not have a significant effect on export growth, either because relative prices are constant in the long-term, or because the Marshal-Lerner condition is not satisfied. In these cases, the model loses its mechanism of cumulative causation, given that productivity gains generated by increasing returns feed back on growth only through price competition. Thirdly, sectoral differences have not been fully explored in Kaldorian theory. Although several works have investigated the validity of Kaldor-Verdoorn's Law for different sectors, only recently has the relationship between increasing returns and the technological content of goods been tested. Similarly, only recently has Thirlwall's Law been disaggregated to test the differences in the income elasticities across different sectors to assess whether the economic structure of each country influences its aggregate income elasticities. Hence, further

[14] Araújo (2013) has sought to address this limitation developing a multi-sectoral version of the Kaldor-Dixon-Thirlwall inspired in the Pasinettian Structural Economic Dynamics framework. Although the model incorporates the classic insights of the Kaldor-Dixon-Thirlwall model, its Pasinettian form makes the model considerably different.

work is still necessary to properly assess the relationship between structural change and economic growth from a Kaldorian perspective.

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Capital Flows to BRICS Countries During 2000-2010

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Abstract

The objective of this paper is to analyze the dynamics of financial flows towards the BRICS in the period 2000-2010. Particularly, the paper examines the impacts of the capital controls adopted by each economy on the movements of specific types of capital registered in their financial accounts. The idea is to show that, regarding financial dynamics, the economies of the BRICS present peculiar characteristics that should be taken into account in the formulation of strategies for global financial regulation. To accomplish this goal, Minsky's theoretical framework is used as background; and the methodology adopted is the case study of the volatility of financial accounts of each country through Generalized Autoregressive Conditional Heteroskedasticity models (GARCH). The empirical findings connected to the capital account regulations of each country analyzed suggest that the lower volatility of financial flows can be associated with the adoption of different strategies to manage capital flows.

Key-words: BRICS, Financial Flows, Capital Controls.

JEL classification: F32, F34, F36**.**

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1. Introduction

Although the movement of international capital has been a subject of great importance and very much a part of the debate among economists for decades, recently the interest in the negative impacts of unregulated capital flows in developing countries was strongly rekindled. The discussion took place especially in academia, after the outbreak of the *subprime* crisis in the United States, which developed into a global crisis in 2008. After the systemic sudden stop resulting from the crisis, there has been a strong recovery in capital inflows to emerging market economies. As a consequence, there has also been a reassessment of capital controls.

Control or management of capital flows may be needed in order to avoid reversions in financial flows - the famous sudden stops. For Forbes (2007a, 2007b), capital controls could potentially lower the costs of free capital movement, such as the appreciation of domestic currency, the decline in export competitiveness, the Dutch disease and the inefficiency of investments due to market distortions. Moreover, following Klein (2012), there is a recent theory that highlights the prudential role of capital controls whereby temporary, pro-cyclical, well targeted controls contribute to financial stability[1]. Therefore, evolving practices and prescriptions make this an opportune time to reconsider the role of capital controls.

Given the justified use of capital controls and the current boom of capital inflows to emerging economies, it is important to discuss the behavior of the financial flows to these economies and their destabilizing potential. The strong foreign capital inflows have brought about macroeconomic imbalances and high financial fragility to several receiving economies. Some of the countries that compose the BRICS have suffered such experiences. Brazil, India and South Africa have gone through recurring current account deficits and strong exchange rates appreciations as a consequence. In such cases, foreign capital is essential to finance the growing current account deficits. At the same time, Russia and China, which maintain strong Balance of Payments positions without suffering from the deficits mentioned, also faced asset bubbles during the financial crisis in 2008. Therefore, it is relevant to examine the dynamics of financial flows to these economies, in order to show where they stand in terms of external vulnerability and to understand the role of the capital controls adopted.

The study of the BRICS economies is justified by their economic potential, which results from the size of their GDPs, geographical territories and populations, despite the problems that arise from social differences. Besides, these countries have presented a faster economic recovery from the Financial Crisis of 2008 than developed countries. However, it is important to highlight a critical perspective relative to the creation of this group of countries. Indeed, the four original countries are different in many ways, especially with regard to their financial structures, as we will see in section 3. For Kregel (2009), this category is also an invention of developed countries' financial institutions, such as Goldman Sachs (O'Neill, 2001), seeking intermediation profits.

It should also be noted that some studies investigate the relationship between exchange rate regime, capital account convertibility and economic performance (such as Paula and Barcelos, 2011 and Ferrari Filho and Paula, 2006). Therefore, there is plenty of room for discussion of the dynamics of capital flows to BRICS countries, a topic which has been little explored in the economics literature.

The present study aims to help fill this gap, analyzing the capital flows registered in the Balance of Payments of the BRICS from 2000 to 2010 (a period that includes the years prior to the 2008 crisis and the subsequent recovery), in order to understand the dynamics of capital flows directed towards emerging economies. Focusing on the data for the financial accounts of

[1]See Jeanne (2012).

each country, we intend to examine the categories of capital inflows and verify whether the resources directed to these economies are speculative, that is, *capital inflows* with a *short-term bias.*

The methodology adopted is the case study of the financial accounts of each country. The analysis will be based on detailed examinations of the financial accounts and sub-accounts of the Balance of Payments, with the main focus on the composition and nature of the capital flows. Moreover, we will use Generalized Autoregressive Conditional Heteroskedasticity models (GARCH) to analyze the volatility of the financial accounts, in order to detect the times when there are peaks of volatile capitals in these economies. It must be noted that these accounts will be examined in detail, so that direct foreign investment, portfolio investments, other investments and derivatives can all be investigated from both the asset and the liability side.

To accomplish its objective, the paper is divided into three sections besides this introduction. Section 2 is dedicated to the analysis of the recent financial dynamics in emerging countries, considering the theory of Hyman Minsky. Section 3, which analyzes the recent experience of each of the BRICS in the selected period, is divided into three parts. The first part briefly presents the external insertion of the countries, the second shows a detailed examination of the financial flows to the BRICS, and the third presents capital account regulations in BRICS, including a review of the literature on the importance of capital control policies and the capital control measures adopted by the BRICS. In the final remarks we briefly compare these experiences and draw some conclusions.

2. The recent financial dynamics in emerging countries based on Minsky's Theory

In recent years, especially from the 1990s onward, emerging economies have adopted financial liberalization measures. Financial liberalization is generally characterized by the free movement of capital among several countries, by the predominance of financial relations over productive relations in the economy, by financial innovations that facilitate the attraction and application of funds for several purposes, by the deregulation of the financial sector and by the appearance of institutional investors. Altogether, such measures establish the integration of a country's domestic financial market to the global financial market.

Financial liberalization measures bring along the question of the instability that nowadays undermines international financial and monetary relations. Plihon (1995) points out that such instability is directly related to the process of financial globalization, which strengthens the speculative logic.

The theory of financial resources in a fragile financial environment was particularly developed by Hyman Minsky. The author's contributions can be considered for the analysis of the cyclical fluctuations of financial conditions that endogenously generate instability and fragility in a context of financial liberalization. At present, many researchers (Kregel, 2004 and 2014; Wolfson, 2014; among others) indicate the Minskyan analysis as the most appropriate to explain the current international crisis. Minsky (1982, 1986) clarifies the hypothesis of capitalism's financial fragility[2] by showing how crises are endogenously generated in monetary economies and how they originate from the expansion phase of the economies' own business

[2]Here it is important to differentiate financial fragility from financial instability as stated by Minsky. Financial fragility is a prerequisite for financial instability. Minsky's financial instability hypothesis is part of an endogenous dynamic involving increased financial fragility during the upward phase of the cycle. Fragility increases in periods of prosperity due to a financial structure dominated by Speculative and Ponzi finance in relation to Hedge finance.

cycle. Thus, the keynote of the Minskyan approach is that the financial side is emphasized at the expense of the productive side, so periods of financial market instability are inherent to the operation of the capitalist economy.

With the intent to describe the dynamics of the financial cycles, the above mentioned author shows how, at moments of expansion, there is a diversification of the financial instruments available, as a result of the favorable market conditions, facilitating households', companies' and governments' access to financing. As a consequence, economic agents move from a stable economic behavior, which Minsky calls *Hedge* positions (when the cash flows arising from the liability structure can be fully met out of the prospective income flows from assets), to adopt *Speculative* positions (when it is possible to meet interest payments, but the principal has to be rolled-over until some date in the future, at which time income flows are expected to rise). These positions may later turn into ultra-speculative behavior (*Ponzi* positions), creating a potential risk of instability.

Besides increasing the indebtedness of economic agents, and thus expanding the potential fragility of the economies, the current financial innovations are capable of extending the expansive cycle and, eventually, delaying the crises. But, at the same time, they increase potential fragility, especially of peripheral economies whose access to loans in local currency is limited[3].

At this point it is worth mentioning the monetary asymmetry that characterizes the international financial and monetary system, as pointed out by Prates (2005)[4]. In this sense, the author indicates that there is a key currency in the international monetary system, the dollar, which is the safest asset, with the highest convertibility and liquidity in the economy. The so-called convertible currencies are the currencies of the remaining central countries, which are used to denominate contracts and are demanded as an international store of value (though to a lesser extent than the dollar). However, the currencies of peripheral countries are not convertible, "(...) these countries, in general, are incapable of issuing foreign debt denominated in their own currency[5]". (Prates, 2005, p.274).

The Minskyan approach can be used to analyze the increase in capital flows to peripheral countries, mainly after the process of trade and financial opening which started at the beginning of the 1990s. Some of these flows are direct investments, which are a more stable type of capital flow, and the remaining flows belong to equity investors who seek more profitable applications, especially at times of high international liquidity. One of the main aspects of this process is that, at these moments, the volume of short-term inflows may be greater than the needs of the Balance of Payments of these economies.

Along with the massive capital inflows comes the illusion of financial prosperity among agents in peripheral economies. However, these inflows result in local currency appreciation, which has a negative impact on economic growth. Furthermore, all transactions rely on the agents' expectations in such a way that, if those expectations change, there may be an abrupt reversal in the capital flows attracted to these economies. The result is a climate of distrust and uncertainty among investors and soon the economy is caught in a vicious circle brought about by speculation (PLIHON, 1995).

[3]According to Fritz, Prates and Paula (2014), the currencies of peripheral emerging economies have a lower liquidity premium than the currencies of advanced economies.
[4]Prates (2005) also defines the asymmetry of the international financial and monetary, which refers to the determinants of capital flows directed to emerging economies and the size of these flows.
[5]Translated by the author.

Indeed, a significant part of the investors that seek alternative applications tend to be speculators and, as such, are willing to buy riskier assets. However, at the same time, these investors demand extra yield to compensate for the risk. Thus, at times of favorable expectations these capitals are attracted to peripheral economies because they offer much higher interest rates than those observed in central countries. The easy access to international capital accelerates indebtedness in foreign currency; it also increases the risk of financial fragility of countries with a fast-growing demand for strong currency to make future financial payments (interest and amortization). On the other hand, at moments of negative expectations there is a sharp drop in resources, which is evidence of the financial fragility and has instant negative impacts on the Balance of Payments. Furthermore, it can be noted that the more flexible the debt instruments, the faster the reversal. According to Minsky's approach (1986)[6], the speed of the sudden reversal of capital flows, to which peripheral countries are subject, depends on how many *Ponzi*-scheme investors there are in the economy.

Another point worth mentioning is that funds destined to riskier assets are only a small part of the total; most investors seek assets that offer more stability. In other words, capital flows to peripheral economies represent only a small fraction of global financial assets**.** To a large extent, the flow of resources toward peripheral economies follows the rapid expansion of liquidity in major central countries.

Therefore, the decisions made by the economic agents are related to the monetary policy of these countries, especially the US, and to the actions of the main asset buyers, facts that are beyond the control of peripheral economies. Akyüz (2011) points out that one of the common characteristics of the historical boom and bust cycles of capital flows to emerging economies is that they all started at moments of rapid expansion of international liquidity and low interest rates in major reserve-issuing countries, notably the US.

Following this line of analysis, the underlying argument of this paper is that in the case of peripheral countries, in times of high liquidity the attraction of foreign capital with a short-term bias increases the potential for financial instability, as the demand for strong currency grows. Another fundamental aspect is that what matters for the analysis of financial fragility is the debt profile. The greater the need for continuous renegotiation, the higher the instability potential, as financial conditions may have changed at each debt rollover. The higher the weight of short term capitals on the Balance of Payments, the greater the instability risk faced by the country, as these resources may leave at any change of events related to the dynamics of the global financial market, which is beyond the control of the country receiving these resources. Because part of this capital directed to peripheral countries searches for speculative profits, the flows' volatility itself may have a negative impact on agents' expectations, which in turn may result in abrupt reductions in the availability of resources, with impacts on interest and exchange rates.

Therefore, when expanded to the country level, the Minskyan idea that crises are inherent to capitalist economies could gain strength with the analysis of the free flows of international capital that are typical of the current integrated financial markets. According to

[6]Minsky's analysis was basically associated with closed economies; however, some studies have tried to expand the same analysis to exchange rate crises in several economies, especially peripheral ones (e.g. Akyüz, 1998; Kregel, 1998; Dymski, 1999; Paula and Alves Jr., 1999; Arestis and Glickman, 2002; Foley, 2003; Tonveronachi, 2006, among others). These papers treat countries as economic units, which is close to the categorization of vulnerability developed by the author. They also create measures for vulnerability and show how, through the recent economic cycles, these economies can suffer an exchange rate crisis. Paula and Alves Jr. (1999), for example, describe an external financial fragility index, which is built on the concept of financial fragility developed by Hyman Minsky, expanding his financial fragility hypothesis to the country level, as if it were a large firm.

Grabel (2003), financial integration poses several risks to emerging economies: the monetary risk, the risk of capital flight, the risk of financial fragility, the risk of contagion and the sovereign risk. In an attempt to mitigate these risks, many nations have adopted capital control measures to regulate the negative effects of cross border capital volatility. Based on the Minskyan theory, which indirectly deals with these risks faced by the economies, and on the observations made in the present section, the behavior of the capital flows to the BRICS will be analyzed next.

3. The BRICS

The term BRIC was created by the economist Jim O'Neill, analyst of the Goldman Sachs group, in the report entitled *Building Better Global Economic BRICs* (O' Neill, 2001). The original idea was to contemplate the four biggest emerging economies in the world, which are Brazil, Russia, India and China. In 2003, another report by the Goldman Sachs group pointed out that in the next fifty years the combined gross domestic product of the BRIC countries would surpass the combined gross domestic product of the G-6 nations (The United States of America, England, Japan, France, Germany and Italy).

Therefore, the idea of the creator of the acronym BRIC was that those countries had similar features, as they presented higher economic growth rates in comparison to other emerging countries. At present, Brazil, Russia, India and China represent about 40% of the expansion of the Global Gross Domestic Product, according to a report by the *BRICS Policy Center* (2011). In April 2011, during the III BRIC Summit, South Africa was admitted to this group of countries, aiming to increase its influence on global governance. Thus the group was renamed BRICS.

There are many differences among BRICS countries. But, in terms of macroeconomic policy, an important characteristic is that China, India and Russia have managed exchange rate regimes, with limited capital account convertibility. Brazil and South Africa, on the other hand, follow a less interventionist exchange rate policy and have very open capital accounts, which has resulted in higher exchange rate volatility and a poorer economic performance. In spite of these differences and the critical perspective relatively to the creation of this group, as pointed out in the introduction, a common characteristic of the BRICS is the strong attraction of foreign direct investment (FDI). According to Sobeet (2012), the BRICS economies are the preferred destination of FDI, with a 21.1% increase in inflows in 2011.

Regarding the main focus of this paper – the financial side – we can divide the group into two subsets. Firstly, we have China and India, which have relatively closed state-controlled capital markets; followed by Brazil, Russia and South Africa, which are more open to foreign trade and financial flows and have a mixture of state and private sector control of capital markets, according to Kregel (2009). In fact, China is an extreme case in the group, as in terms of capital account management it is a typical example of strong regulations, whereas India would be classified as moderate.

China and India adopted a development strategy based on domestic industrialization (manufacturing and services) oriented towards exports, whereas Brazil, Russia and South Africa follow export strategies aimed at productive structures that are guided by international comparative advantages. The latter subset has experienced exchange rate crises and financial crises that are usually accompanied by high inflation, unlike the first group. Finally, the latter subset has borrowed from the International Monetary Fund (IMF) and employed structural adjustment policies to guarantee access to IMF funding, whereas the first subset has not adopted such measures (Kregel, 2009).

3.1. A brief panorama of the external position of the countries

The external position of China is totally different from the other countries'. Unlike Brazil, Russia, India and South Africa, the Chinese International Investment Position (IIP)[7] is extremely favorable. In the case of China, this indicator is dominated by international assets belonging to the residents of the Chinese economy. Besides that, this economy has accumulated a large stockpile of foreign exchange reserves, which are the main components of the IIP. Foreign liabilities do add up to huge amounts, but they are mainly composed of FDI, which in China is destined to technology intensive sectors and is mainly comprised by long term capital. On the other hand, Russia is a distinct case among the BRICS countries with regard to its external position, as it neither presents the Chinese performance as measured by the IIP, nor the problematic stock of foreign assets and liabilities, as we will see below for the three remaining countries of the group.

Table 1 shows a positive Russian IIP during the first ten years of the millennium; however there were periods of negative balance, which meant an increase in the stock of foreign liabilities. Yet, the current account balance (CC) in relation to the gross domestic product (GDP) is favorable in the Russian economy, where at the beginning of the 2000 decade the CC surplus represented 10% of the GDP. Brazil, India and South Africa have shown different scenarios of recurrent deficits in current transactions during the last years.

Furthermore, the different external insertion of these three countries can also be observed by means of the IIP, which is extremely negative in these economies. It means that, despite their international reserves, these countries are receiving such strong foreign inflows that the external liabilities exceeded the asset reserves between 2000 and 2010. It can be said that the financial openness of these countries is very high in terms of capital flows towards their financial markets.

Thus, based on the similarities and differences in terms of external macroeconomic performance among the BRICS economies, we will separately examine the dynamics of financial flows towards these countries during the period 2000-2010, which includes the favorable period of the international liquidity cycles (between 2002 and 2007), the period of the international financial crisis as well as the subsequent recovery.

[7]The International Investment Position (IIP) shows the external assets and liabilities of the reporting country. The assets are broken down into five items: direct investment abroad, portfolio investment, financial derivatives, other investment and reserve assets; the liabilities are broken down into four items: direct investment in the reporting economy, portfolio investment, financial derivatives and other investment. It is a comprehensive way to measure the net external liabilities of an economy.

Table 1 - BRICS and financial openness in terms of Current Account Balance and International Investment Position

Year	Brazil		China		India		Russia		South Africa	
	CC (%GDP)	PII (net)	CC (%GDP)	PII (net)	CC (%GDP)	PII (net)	CC (%GDP)	PII (net)	CC (%GDP)	PII (net)
2000	-3,77	n.a	4,13	221.850	-0,96	-75.953	18,03	64.545	-0,12	-6.789
2001	-4,19	-264.966	5,87	265.221	0,28	-70.018	11,06	43.911	0,28	-11.061
2002	-1,52	-230.552	7,57	343.337	1,38	-59.869	8,43	37.179	0,82	-9.893
2003	0,75	-272.555	10,38	394.159	1,48	-46.241	8,22	3.924	-0,99	-12.094
2004	1,75	-297.693	9,48	424.752	0,11	-43.246	10,06	-10.635	-3,03	-20.959
2005	1,57	-316.593	11,35	439.360	-1,27	-47.436	11,05	-31.567	-3,46	-33.955
2006	1,24	-368.861	12,07	518.330	-1,02	-59.682	9,53	-38.793	-5,3	-41.069
2007	0,11	-547.548	12,33	483.700	-0,7	-74.766	5,92	-150.600	-6,97	-68.380
2008	-1,7	-283.614	13,69	622.750	-1,98	-85.880	6,24	254.794	-7,11	-11.294
2009	-1,51	-600.795	8,58	720.060	-2,82	-122.901	4,05	103.431	-4,05	-40.208
2010	-2,26	-700.789	6,21	693.800	-2,62	n.a	4,8	15.680	-2,78	n.a

Source: *World Economic Outlook Database* (IMF) and *International Financial Statistics* (IMF) – 2011
Notes: CC = Current Account Balance (% of GDP); PII (Net) = International Investment Position (millions of dollars); the data of China correspond only to Hong Kong because of data availability.

3.2. The dynamics of financial flows to the BRICS

The aim of this section is to show that the BRICS economies present peculiar characteristics regarding financial dynamics. We will observe that the performance of each country's capital account follows the movement of the international liquidity cycles. The hypothesis underlying the analysis of the dynamics of financial flows to these countries is that external volatility and the implementation of macroeconomic policies depend on the effectiveness of the measures to manage financial flows. Thus, in order to reduce external vulnerability it is necessary to contain short-term financial flows. This vulnerability can be analyzed using Minsky's analysis of financial fragility. As proposed by Kregel (2004), countries that borrow in international financial markets to supplement the resources necessary for their development can be classified according to the different financing profiles presented in section 2 (*Hedge* position, *Speculative* position and *Ponzi* position). Developing countries have a high propensity to require short-term funding associated with a speculative financing profile, which is highly likely to turn into a Ponzi financing profile. Therefore, free financial flows can exacerbate financial instability, in line with Minsky's framework.

It is not an objective of this paper to focus on detailed measures for managing capital controls, but it is important to discuss why capital controls are desirable. Controls or capital flow management may be needed in order to avoid reversion of financial flows - the famous *sudden stop*, among other reasons. Focusing on the effectiveness of capital controls, Magud and Reinhart (2006) argue that they may have the following benefits: 1) limit capital inflows, 2) change the composition of flows (especially towards long-term liabilities), 3) relieve pressures

on the real exchange rate and 4) create greater autonomy for monetary policy through the proximity between the domestic and international interest rates.

According to Carvalho and Sicsú (2006), the theoretical argument often stressed to support the imposition of controls is the existence of externalities and the absence of perfect and complete markets that generate inefficient markets situations. In addition to this theoretical *rationale*, the authors mention reasons concerning the fundamental and radical uncertainty that surround transactions with financial and capital assets. Thus, the isolation of an economy in the face of external shocks and the autonomy for domestic economic policy would be the main goals to be achieved via the existence of capital controls.

Another important point regarding capital control is that there important changes in the ideas of academic economists and among IMF staff in such a way that a new institutional view[8] was endorsed by the IMF with respect to the regulation of capital inflows.

To achieve the empirical objectives, we will examine the dynamics of the financial flows directed towards this set of economies. The analysis will be based on the detailed examination of the financial accounts of the Balance of Payments of each country and their sub-accounts, focusing on the composition and profile of the financial flows. Moreover, we will use the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) method to examine the volatility of the financial accounts in order to detect the times when there are peaks of volatile capitals, and to associate (or not) these peaks with the cycles of international liquidity.

It should be noted that these accounts will be examined in detail to allow the analysis of direct investment, portfolio investment, other investments and derivatives both in their asset and liability forms. We will refer to these sub-accounts as *the first level of openness of the financial accounts* and their asset and liabilities will be referred to as *the second level of openness*. The source of all the data used in the study is the International Financial Statistics database of the IMF.

For the use of GARCH modeling, many steps are necessary before the volatility of each series can be measured. The results of unit roots tests and of ARCH tests are presented in Tables I to V of Annex 1 and in Tables VI to X of Annex 2, respectively. The series of data on capital flows utilized in the model are presented in Annex 3.

In the following section, each component will be examined in terms of the volatilities of financial flows.

Brazil

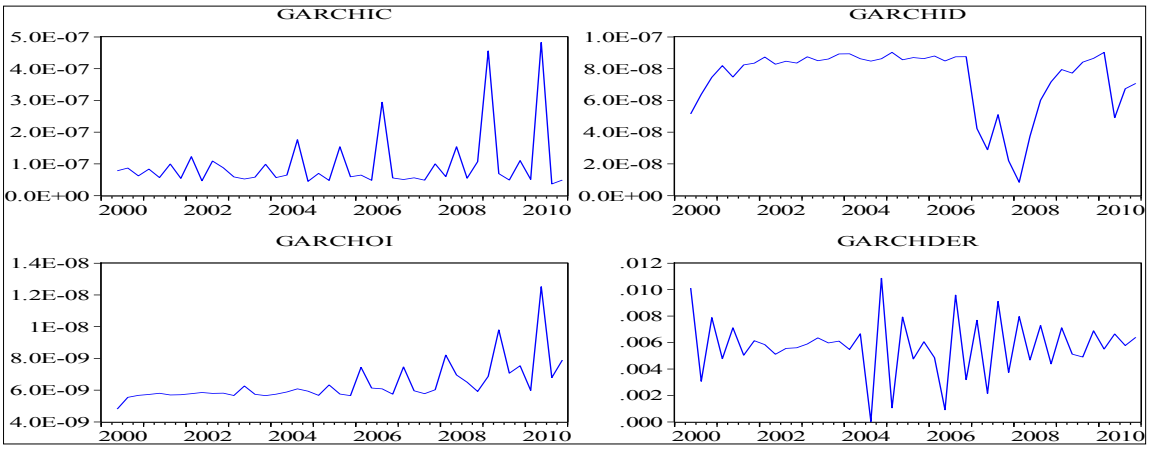
The GARCH model identifies a high volatility in the financial sub-accounts of Brazil's balance of payments during the period analyzed. Graph 2 shows that in the recent period (between 2000 and 2010) the highest volatility levels were seen in portfolio investment accounts and other accounts that aggregate short term flows. Even so, we can note a strong volatility in the direct investment account between 2007 and 2008 that requires qualification. This volatility was due to the big leap in foreign direct investments (FDI) that year. Indeed, total FDI made by transnational companies amounted to the record level of US$ 1,8 trillion in 2007, representing a 30% increase in relation to the previous year according to UNCTAD (2008).

In the Brazilian case, the increase was even higher that year, reaching an 83% growth rate. In other words, in that year there was an upward shift in the FDI series. In 2008 the

[8] See IMF (2012b).

inflows continued, but a reversal started in the fourth quarter of the year. This reversal continued during 2009, when there was a 42% decline in flows. However, in 2012, while developed countries received little FDI, developing countries once again strongly attracted direct investments. For the first time in history, they surpassed developed countries in terms of FDI attraction. Brazil, once more, received expressive inflows, with a yearly increase of 87% leading to another shift in the trajectory. It can be observed that the 2008 crisis brought about a reversal in FDI flows, but there was a rapid recovery of the trajectory of attraction.

Graph 2 - GARCH Volatilities for the series of the first level of openness of the Brazilian financial account – 2000 to 2010

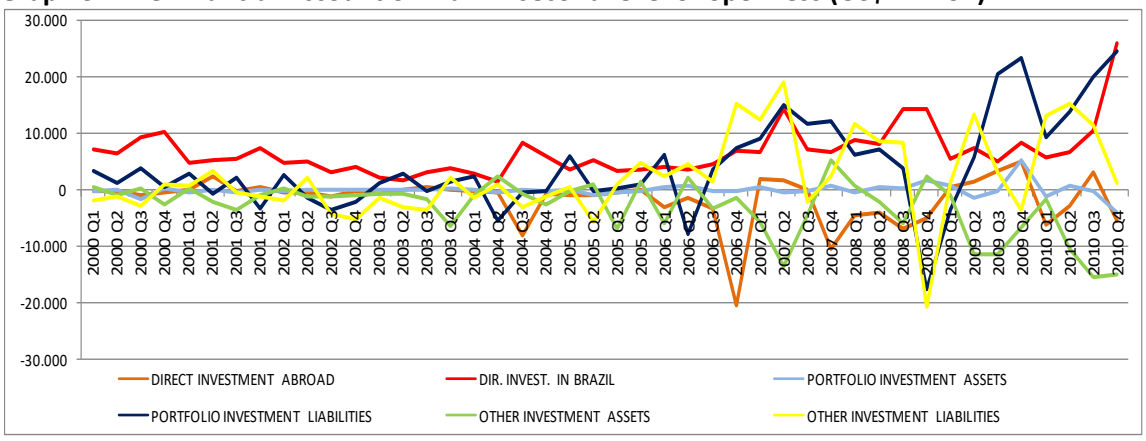


Source: Own elaboration from IMF data and using Eviews 7.0. Notes: GARCHIC = Portfolio Investment Variance; GARCHID = Direct Investment Variance; GARCHOI = Other Investment Variance; GARCHDER = Derivatives Variance.

When the financial account of Brazil's balance of payments is disaggregated by the second level of openness, the increase in volatility during the period under analysis becomes even clearer. Graph 3 shows that during the first half of the 2000 decade there was an uniform trajectory of the financial sub-accounts of the balance of payments while, mainly from 2007, such sub-accounts started to present a more irregular movement.

The strong outflow of Direct Investment Abroad during the fourth quarter of 2006 deserves attention. Such fact corresponds to the purchase of the Canadian Mining Company Inco by the company Vale do Rio Doce, after a process of growing internationalization of Brazilian companies, according to reports by the National Bank for Economic and Social Development, BNDES (2007).

Graph 3 - The Financial Account of Brazil – second level of openness (US$ million)



Source: IMF, International Financial Statistics.

It must be noted that due to the rapid recovery from the subprime crisis that started in 2007, Brazil became more attractive to foreign capitals. This can be proved through the analysis of the direct investment (IDE) sub-account, which ends 2010 with approximately US$ 25,000,000. Besides the large IDE inflow, the country has strongly attracted short-term capital in the form of portfolio investments.

These capital inflows produced an appreciation of the domestic currency, and thus encouraged the taking of short-term positions in foreign currency. In this way, it caused economic units to become more reckless in the risks they undertake, and resort to greater speculative financing, in line with Minskyan perspective. The consequence is that Brazil became more speculative, endogenously, within the period under analysis.

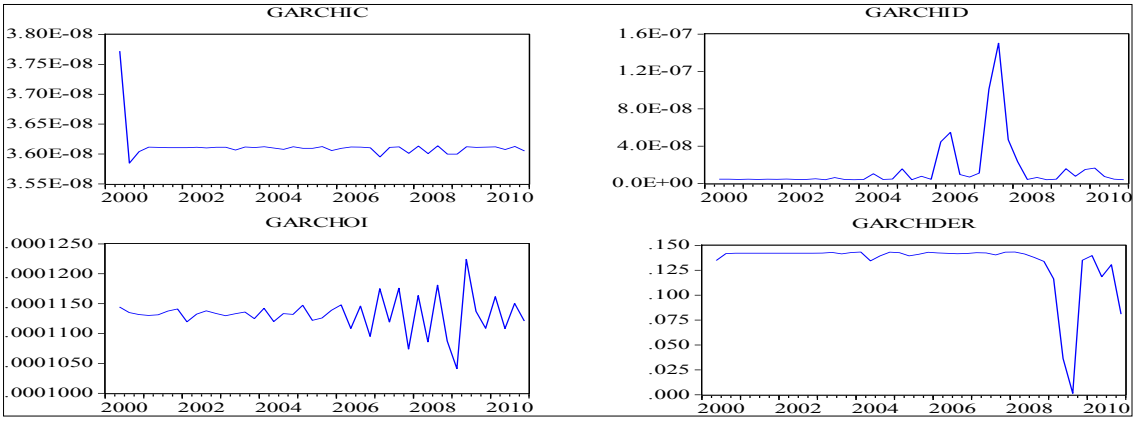
Finally, we cannot forget to mention that, in the case of Brazil, much of the exchange rate appreciation seen in recent years – in 2010 only, the Real appreciated 30% against the dollar – is associated with carry trade operations. Thus, the instrument used by the government, the IOF tax, has not achieved the desired efficiency, and should not, from the point of view of this paper, remain as the main strategy to control the speculation plaguing Brazilian financial account.

Russia

Observing the GARCH volatilities of the series for the first level of openness of the Russian financial account (Graph 4), we can clearly see that the peaks of volatility happened only more recently, as a result of the international financial crisis.

These peaks of volatility in the recent period may also be related to the fact that, lately, Russia has been liberalizing several financial transactions (Paula and Barcelos 2011). The differentiated unremunerated reserve requirements (URRs) were lifted in 2006. Capital flows reverted in 2008, especially in the other investment account. Therefore, inward and outward capital flows were facilitated, increasing the weight of speculative flows in this economy. This occurred because Russia is the most financially open in BRICS countries.

Graph 4 - GARCH Volatilities for the series of the first level of openness of the Russian financial account – 2000 to 2010



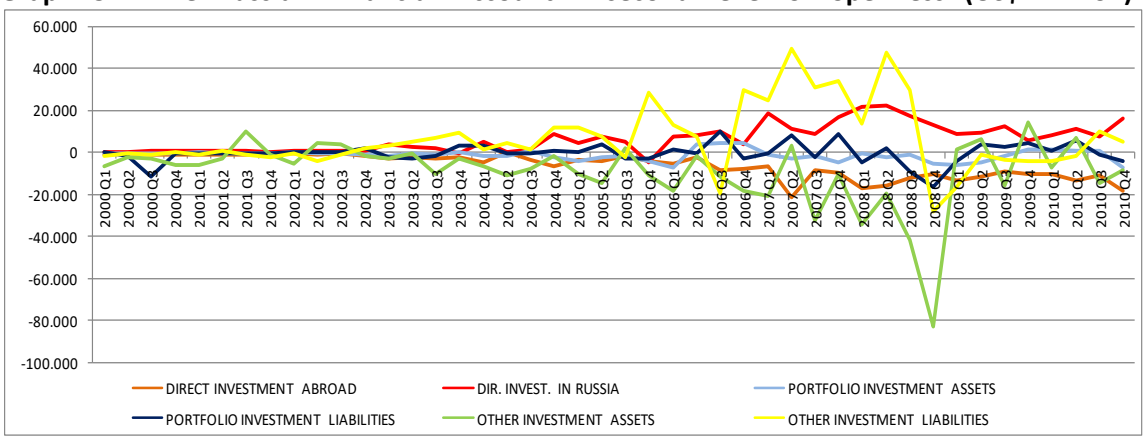
Source: Own elaboration from IMF data and using Eviews 7.0. Notes: GARCHIC = Portfolio Investment Variance; GARCHID = Direct Investment Variance; GARCHOI = Other Investment Variance; GARCHDER = Derivatives Variance.

Graph 5 presents the sub-accounts for the second level of openness of the Russian balance of payments. It can be noted that, during the second half of the 2000 decade, the financial sub-accounts showed greater volatility. Therefore, the oscillation of the Other

Investments (asset and liabilities) sub-accounts becomes evident, indicating the short-term character of these flows. Moreover, these sub-accounts registered a much higher volume of financial resources when compared to the accounts of Brazil, India and South Africa. It must be emphasized that, like the other analyzed countries, Russia received a large inflow of capital through Direct Investment as from the mid-2007. Buoyed by ever increasing oil prices, gross private capital inflows increased from around $70 billion in 2005 to $100 billion in 2006 to over $200 billion in 2007, especially in terms of other investments and direct investment. These huge inflows have affected the volatility of these sub-accounts.

Due to the international financial crisis, other investments reversed in such a way that the total financial account reached 8% of GDP in the fourth quarter of 2008. Portfolio flows also reacted to the crisis. However, this cannot be seen on Graph 4 (which shows the GARCH volatilities) due to a strong variation in these flows at the beginning of the period under analysis, which distorted the values for the volatility in the subsequent years. This massive capital flight in 2008-2009 led to a significant devaluation of the ruble between 2008 and January 2009. However, the domestic authorities did not resort to capital controls in those years.

Graph 5 - The Russian Financial Account – second level of openness (US$ million)



Source: IMF, International Financial Statistics.

Thus, we believe that the capital controls introduced by Russia are successful examples of restrictions on capital outflows, especially when we consider this economy's rapid recovery in terms of attracting capital flows in recent years. Among emerging countries, a report by the IIF (2011) shows that Russia and Turkey were the countries that saw increases in capital flows. “In Russia, the rebound in private inflows was due mainly to the cessation of net repayments to foreign banks" (IIF, 2011, p.16). Analyzing the Russia case from a Minskyan point of view we can state that the capital control regulation made the country less fragile from the external perspective.

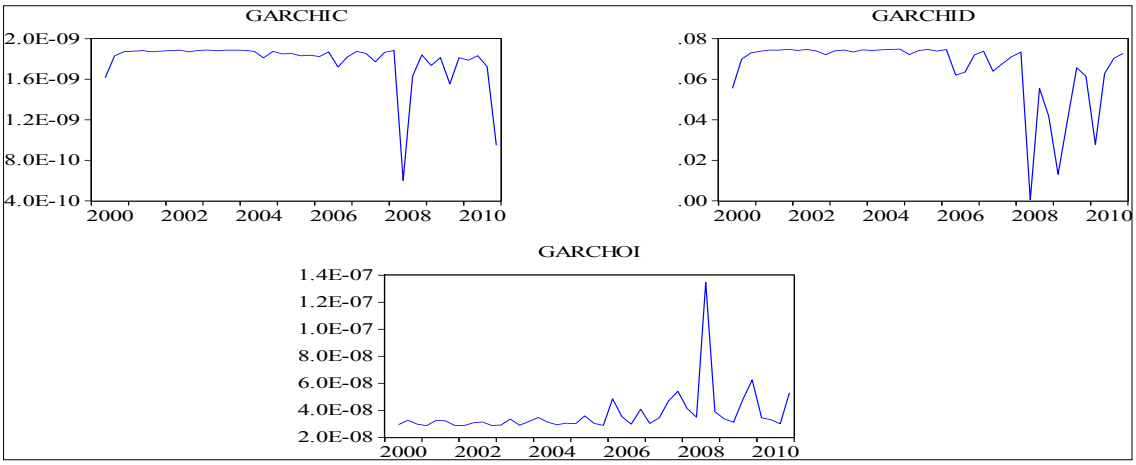
India

The capital flows towards India do not suffer volatility peaks as in the case of the other BRICS countries. Among the quantitative capital controls, there is a prevalence of controls on outflows. We can observe in Graph 6 that it was only in the recent period, at the height of the financial crisis of 2008, that the GARCH volatilities displayed peaks. In response to the international financial crisis, the amount of short-term bonds that could be sold to foreign investors was limited (while the overall ceiling for FII investment in debt was raised in September 2011). Hence, the sub-accounts Portfolio Investment, Direct Investment and Other Investments only show high peaks of volatility in the recent period.

Such fact indicates the distinct dynamics of the financial flows directed to emerging economies, which follow the flows of international liquidity. At times of slow global growth and international liquidity shortage, as during the height of the financial crisis of 2008, there is a significant flight of these capitals from emerging economies.

The analysis of the second level of openness of the India's financial account (Graph 7) shows a marked volatility in financial flows from 2006 onwards and a change in the volume of inward resources. The first half of the decade presented lower average volumes of capital inflows than the second, which means that the economy only started to receive larger amounts of financial resources during the recent global liquidity cycle.

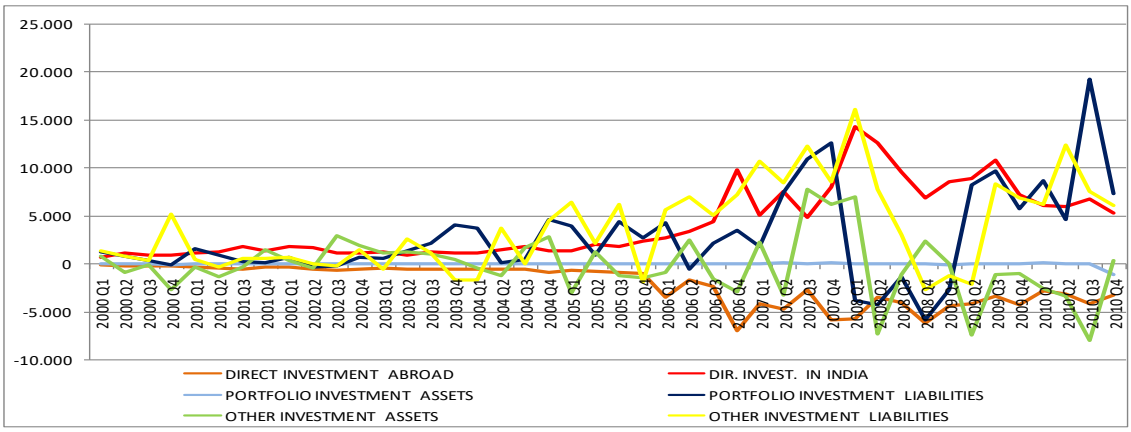
Graph 6 - GARCH Volatilities for the series of the first level of openness of the financial account of India – 2000 o 2010



Source: Own elaboration from IMF data and using Eviews 7.0. Notes: GARCHIC = Portfolio Investment Variance; GARCHID = Direct Investment Variance; GARCHOI = Other Investment Variance.

The sub-accounts that showed the least stability were other investments and portfolio investments, which are characterized by short-term transactions. Regarding the attraction of capitals via FDI, India follows the tendency of the other countries under study, receiving large inflows as from 2006. The FDI sub-account presents greater instability than the others.

Graph 7: Financial Account of India – second level of openness (US$ million)



Source: IMF, International Financial Statistics.

As a result, we can say that, in general, the Indian authorities combine greater reliance on non-investment inflows (FDI) with greater flexibility of the exchange rate, which can be seen by the strong appreciation of the Rupee in recent years. This increase in the value of domestic currency is cause for some concern, leading to government interventions in the currency market, as was the case in 2010. But the strategy of accumulation of international

reserves and the use of capital controls play an important role in the country, as is evident from the control measures outlined above. The tolerable increase in the current account deficit, from 2005 onwards (see Table 1), led the government to raise the limits on foreign commercial loans for purposes of investment in infrastructure and a minimum maturity of five years.

India has less difficulty controlling capital inflows due to comprehensive strategies to manage the potentially destabilizing capital flows. So, the country's external position is less speculative from a Minskyan perspective.

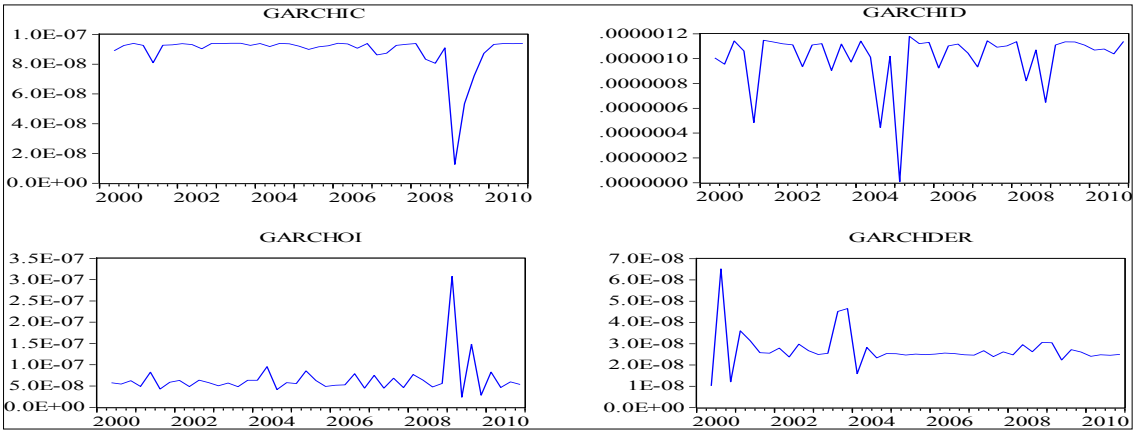
China

China has an extensive and lasting experience with the use of controls on international capital flows. Because of the capital controls adopted, long-term inflows (especially FDI) are favored over short-term inflows. We observe on China's financial account a high share of FDI inflows and a lower participation of portfolio investment liabilities over the period 2000-2010. In addition, FDI reaches much larger volumes compared to the other BRICS countries. It is believed that this was achieved through requirements stipulated in administrative measures and quantitative restrictions on capital flows.

The measures of capital controls in China aimed at preventing illegal capital outflows and maintaining a stable exchange rate. While the measures have reduced illegal activities, there were widespread reports, according to Ariyoshi et al (2000), that legitimate transactions have also been adversely affected. Moreover, Zhang (2011) point out that China's capital controls strategy has a counter-cyclical style, which demonstrates the government's effort to avoid vast capital outflow or inflows.

The analysis of the GARCH model for China clearly shows these effects of crisis on this economy (Graph 8). Financial volatility increased in the sub-accounts Portfolio Investment and Other Investments, which are composed of flows of a more speculative nature. In the case of the Direct Investment account, it can be noted that the highest peak of volatility did not occur during the height of the 2008 financial crisis, but in mid-2004. The Derivatives sub-account, which represents a small share of the Chinese financial account, showed a more regular trajectory, with volatility peaks happening only at the beginning of the decade.

Graph 8 - GARCH Volatilities for the series of the first level of openness of the Chinese Financial Account – 2000 to 2010

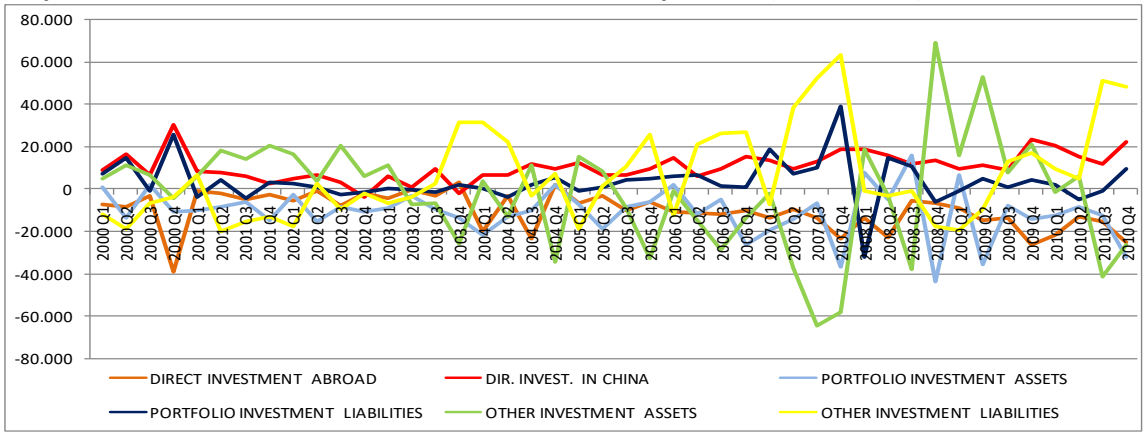


Source: Own elaboration from IMF data and using Eviews 7.0. Notes: GARCHIC = Portfolio Investment Variance; GARCHID = Direct Investment Variance; GARCHOI = Other Investment Variance; GARCHDER = Derivatives Variance.

The analysis of the second level of openness of the Chinese financial account during the 2000 decade (Graph 9) shows great volatility of financial flows, mainly from 2007. The sub-accounts that best represent this instability are Other Investments (asset and liabilities), which comprise short-term transactions. The behavior of this sub-account resembles that of Russia, another large recipient of financial flows - as seen on the graphs for the financial accounts, which show high values for both countries.

Once again, it should be mentioned that during most part of the analyzed period China has presented itself as an attractive country for Direct Investment. For this country, the Portfolio Investment sub-account does not show strong levels of volatility, except for the capital flight experienced at the height of the 2008 financial crisis, showing the effectiveness of the Chinese capital controls.

Graph 9: Financial account of China – second level of openness (US$ million)



Source: IMF, International Financial Statistics.

Thus, our analysis is consistent with Bibow's (2011), for whom China's regime for the management of capital flows can be considered a model for other BRICS countries, especially because of portfolio investment and short-term debt[9] are still regulated tightly through quantitative measures.

South Africa

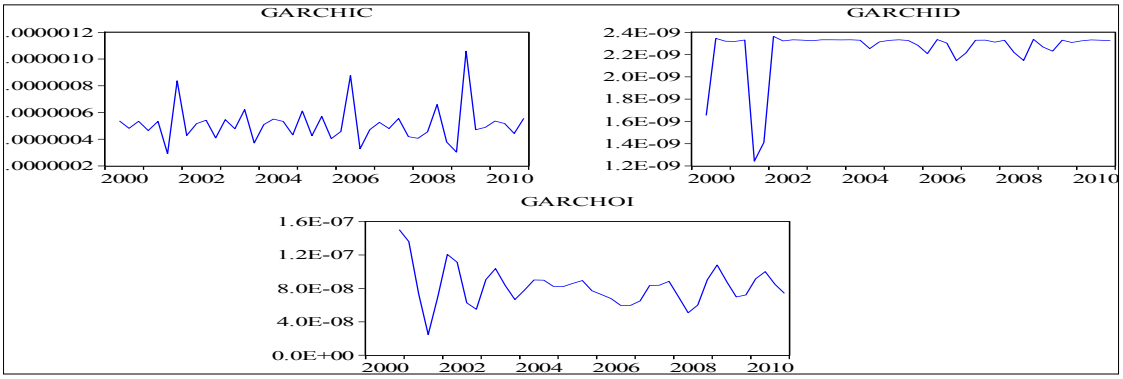
On examining the GARCH volatilities, through Graph 10, it can be observed that the flows of the first level of openness of the South African financial account presented instability during the entire period under analysis. In 2001, when the country suffered a monetary crisis, outward capital flows in the form of Portfolio Investment brought about a significant peak of volatility. More recently, as a result of the international financial crisis, capital reversals of the same type have also led to expressive peaks.

However, according to Habermeier, Kokayne and Bamba (2011), the country adopted prudential measures to curb the asset price boom and the currency appreciation. Domestic lending rules were tightened in June 2007. In addition, rules on haircuts applied to eligible collateral were introduced, and banks were made subject to an additional capital charge to take into account concentration risk and interconnectedness in 2008. Long-term insurers' policy underwriting business was increased to 20 percent, and the investment-linked business

[9] Portfolio investment is controlled by quotas and short-term debt is subject to a ceiling. More specifically, Portfolio investments are under the Qualified Foreign Institutional Investors scheme (QFII) for inflows and Qualified Domestic Institutional Investors scheme (QDII) for outflows, respectively. External borrowing by eligible entities remains subject to quotas.

was set at 30 percent of total retail assets under management in 2008. In March 2010, South African banks were allowed to acquire direct and indirect foreign exposure up to 25% of their total liabilities.

Graph 10 - GARCH volatilities for the series if the first level of openness of the South African financial account – 2000 to 2010

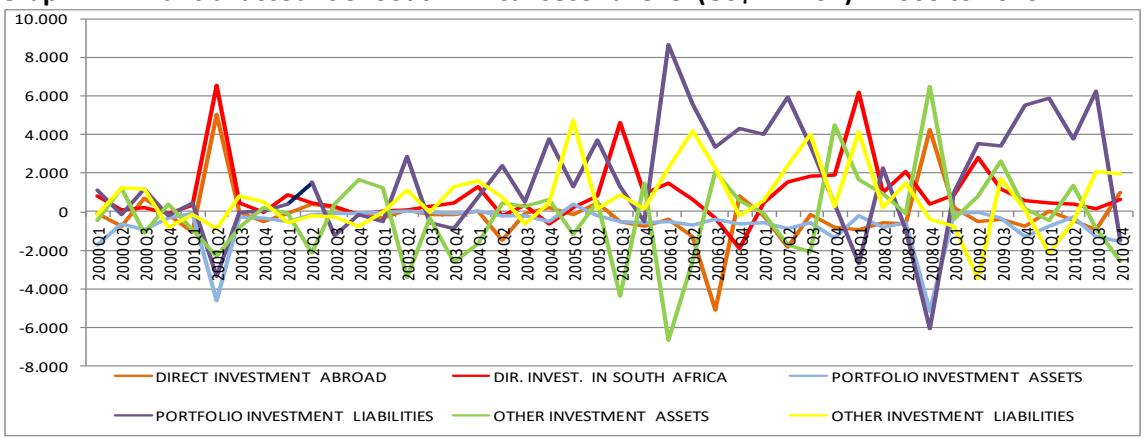


Source: Own elaboration from IMF data and using Eviews 7.0. Notes: GARCHIC = Portfolio Investment Variance; GARCHID = Direct Investment Variance; GARCHOI = Other Investment Variance.

The analysis of the second level of openness of the South African financial account (Graph 11) indicates some volatility in the sub-accounts examined at the beginning of the 2000 decade, which gains strength in the second half of the decade. It is worth highlighting the volatility peaks in 2001, when the country faced a monetary crisis.

The sub-accounts that show the greatest instability, with the most inflow and outflow peaks during the whole period, are Portfolio Investment (liability), Other Investments (asset) and Direct Investment in South Africa. Regarding the last sub-account, it can be noted that the country received capitals even during the financial crisis that started in 2007, with a small decline in these inflows in 2010. At the height of the crisis, during the fourth quarter of 2008, the sub-account that suffered the largest impact was Portfolio Investment, precisely the one with a speculative profile. This shows the vulnerability of the South African economy in the face of external events. Moreover, it can be noted, through Graphs 10 and 11, that this sub-account easily recovers during the post-crisis period, which shows that South Africa is one of the emerging economies that has strongly attracted foreign investors.

Graph 11: Financial account of South Africa- second level (US$ million) – 2000 to 2010



Source: IMF, International Financial Statistics.

However, according to the IMF (2011), the possibility of controls on inflows permanently expelling capital flows is a concern of both domestic authorities and market participants. Thus, we once more stress that the absence of comprehensive capital controls, as

was observed for the Brazilian case, can lead BRICS countries and other emerging economies to increasingly unfavorable situations. For Mohamed (2006), the surges have not contributed to investment in productive capacity that will lead to future growth in the economy.

3.3 Capital account regulation in BRICS

3.3.1 The defense of restrictions on (unfettered) capital flows

There is a vast literature analyzing the negative impact of a capital account operating freely across borders, even among the various theoretical approaches. Although the pro-liberalization bias remains, the IMF and authors typically from the orthodox field had begun to "flirt", indirectly and partially, with the Chilean-type of capital controls (on capital inflows). In fact, the Fund generally admits that limited and temporary controls deserve further study and attention.

Generally, controls or capital flows management may be needed in order to avoid reversion of financial flows - the famous *sudden stop*. For Magud and Reinhart (2006) capital controls are imposed on four basic fears: fear of appreciation, fear of hot money, fear of large inflows, and fear of loss of monetary autonomy [10].

Through an analysis of 30 empirical studies on this topic and constructing two indicators of capital controls, Magud and Reinhart (2006) found the following results: the area where capital controls have greater success is in providing greater autonomy to monetary policy and changing the composition of capital inflows, while success in reducing the volume of inflows and the pressure in exchange rate had mixed result.

Capital controls have been found to stabilize short-term volatile capital flows; and can give policymakers additional policy instruments that allow them more effective and less costly macroeconomic stabilization measures; can promote growth and increase economic efficiency by reducing the volatility of financing and of real macroeconomic performance; and can discourage long-term capital outflows (Ostry et al., 2010).

Another point frequently and sometimes more intensely addressed by advocates of controls is the relationship between capital movements and exchange rates. The free movement of capital increases exchange rate volatility under floating exchange rates. During a crisis, herd behavior can cause an exchange rate *overshooting*. The sudden reversal of capital flows results in large depreciation of the nominal exchange rate, which tends to increase financial problems of domestic borrowers and to generate inflationary pressures. Thus, exchange rates can reach excessive levels in times of crisis, as it was the case in Brazil in 2002, deteriorating market expectations.

Grabel (2003) argues that “regulation of IPCFs is a central component of what can be thought of as a ‘developmentalist financial architecture’, by which I mean a financial system that promotes equitable, stable and sustainable economic development”. (Grabel, 2003, p. 342).

Other arguments also raised by the advocates of restrictions on capital flows suggest the possibility to tax the capital income, enabling the adoption of distributive tax policy - when preventing domestic agents to transfer resources to countries with lower taxes; and the possibility of being used as instruments of industrial policy to shape the structure of domestic supply – when encouraging inflows of foreign direct investment in specific sectors.

[10] Ocampo and Palma (2008) add a fifth fear to justify the capital controls: the fear of asset bubble.

Epstein, Grabel and Jomo (2005, p. 6) propose capital management techniques (*henceforth* CMTS) "to refer to two types of complementary financial policies: policies that govern international private capital flows, called 'capital controls', and those that enforce prudential management of domestic financial institutions". From these, the authors suggest seven lessons listed below: i) CMTS can promote financial and monetary stability, macro and microeconomic autonomy policy, stable long-term investment and sound current account performance; ii) the successful implementation of controls over a significant period of time depends on the presence of a sound policy environment and strong fundamentals (relative low debt ratio, moderate rates of inflation, sustainable fiscal balances and current account, consistent exchange rate policies), iii) there is synergy between CMTS and economic fundamentals, iv) nimble and flexible capital is very desirable; v) CMTS work better when they are coherent and consistent with the overall aims of the economic policy regime coherent and consistent with overall purposes of the economic policy regime, or better yet, when they are an integral part of a national economic vision; vi) prudent regulations are generally an important complement to capital controls and vice versa; and vii) there is not a type of CMT that works better for all countries, once there are a variety of strategies.

Gallagher (2011) examine the role that capital flows have played in the global financial crisis, trace the political economy of capital controls from the Bretton Woods era to their resurgence during the financial crisis, and conduct a preliminary analysis to evaluate the effectiveness of the controls thus far deployed. The author points to the need for more concerted global and national efforts to manage global capital flows for stability and growth.

In spite of the importance of the policies of control of capital raised here, we will concentrate in the relation between capital controls and the stabilization of short-term volatile capital flows in BRICS.

3.3.2 Some capital control measures adopted by the BRICS

In Brazil capital controls have been adopted since 2008. In order to counter large capital inflows after the global crisis, the Brazilian government imposed a temporary tax on inflows of short-term capital (IOF – *Imposto sobre operações financeiras*), as a response to the massive upswing in inflows in 2009. The IOF tax on the entry of foreign funds and prudential measures are also adopted. Over the following two years, Brazil adopted a series of other measures to discourage inflows[11], starting gradually to dismantle them in 2012. Following the main results of the capital flows volatility study, in section 3.2, the IOF was unable to contain the volume of speculative flows. Portfolio investments and other investment are the most volatile sub-accounts between 2000-2010.

Russia started its financial liberalization process in the early 1990s, while reforming its banking system and foreign exchange and securities markets. After relaxing restrictions on portfolio investments by non-residents, Russia experienced increasing foreign exchange market pressures. As a consequence, in 1998, a series of emergency measures was introduced, including a reintensification of capital controls and the announcement of a selective debt moratorium (Ariyoshi et al., 2000). However, capital controls implemented after the 1998

[11] October 2010: (i) IOF increased from 2% to 4% for fixed income investments and equity funds. (ii) IOF increased to 6% for fixed income investments (iii) Limitations were also introduced on the ability of foreign investors to shift investment from equity to fixed income investment (iv) IOF on margin requirements on derivatives transactions increased from 0.38% to 6% (v) Some loopholes for IOF on margin requirements were closed.

crisis[12], despite being comprehensive, were not fully effective. The capital account was re-liberalized during 2004–06. Heavy capital inflows culminate in a sudden stop during 2008–09 due to international financial crisis.

Russia also imposed unremunerated reserve requirements (URR) on specific transactions, as well as Colombia and Chile, between 2004 and 2006. Specifically, differentiated URRs were adopted from August 2004 to July 2006, and focused on 20 % of non-residents' investment reserves in government securities and 3% on non-residents' Other Portfolio investments and lending to residents. Thus, it highlights the importance of the latest controls adopted in Russia. Other investments (asset and liabilities) are the most volatile sub-accounts, and registered much larger volumes when compared to the accounts of Brazil, India and South Africa.

Prior to the balance of payments crisis, that India suffered in 1991, official and private debt inflows were the main sources of external finance. Since this crisis, India has blocked debt inflows, especially short-term ones. By contrast, India has gradually opened up to equity inflows, both FDI and Portfolio investments. Portfolio inflows are managed through a "Foreign Institutional Investment" framework that requires registry of eligible foreign investors (Bibow, 2011). Thus, according Shah and Patnaik (2005), Indian capital controls consist of an intricate web of a large number of quantitative restrictions, operated by a substantial bureaucratic apparatus.

An important element of capital controls in India consists in barriers to arbitrage on the currency forward market through the banking regulation. The prudential regulation and supervision of the banking system strengthened in accordance with international standards. The regulation of the securities market has been modernized, the government's reliance on financing from the central bank was broken and the monetary authority made greater use of indirect monetary policy instruments. The central bank controls the interest rate that banks lend to foreigners through the deposits of non-residents. It is also used a broad set of tools to influence conditions in the foreign exchange market by interventions in the spot market, using future transactions and foreign exchange swaps, and accumulating foreign reserves. The cash reserve ratio was gradually increased from January 2004 through November 2007 as an important strategy of accumulation of international reserves and capital controls. As a result, the level of foreign exchange reserves rose from $ 32.4 billion in 1998 to US $ 75.4 billion in 2002, according to IMF data.

Portfolio Investment, Direct Investment and Other Investments show high peaks of volatility only in the recent period, since 2008. So, the capital flows towards India do not suffer volatility peaks as in the case of the other BRICS countries. Among the quantitative capital controls, there is a prevalence of controls on outflows.

In China, capital controls involve a detail of rules, managed by a complex of net of institutions and supervision of private decisions, which are oriented to minimize dependence on short-term funds. The aim, in this case, is to encourage the long-term inflow, particularly the foreign direct investment, what can be effective due to the amount of international reserves accumulated over the 1990s in this country. Ma and McCauley (2008) indicate that, in light of tight controls, Chinese authorities retain some degree of short-term monetary autonomy, despite the regime of fixed exchange rate to July 2005.Capital Account management through reserve requirements in China can be considered a model for other countries of BRICS. Some important measures were: September 2003 – December 2008: Raising reserve requirements 20 times; and eased restrictions on foreign banks' investments in yuan-

[12] In particular, IMF (2012a) refers to the trading of short-term treasury bills that was suspended, the maturity of domestic debt compulsorily lengthened, and transfers abroad by non-residents restricted.

denominated Chinese bonds held offshore. As a consequence, there is no strong volatility of Portfolio Investment, except for the capital flight at the height of the financial crisis in 2008. The highest volatility peak of Direct investments (the largest volume when compared to others countries of BRICS) did not occur during the height of the financial crisis in 2008, but in mid-2004.

South Africa is a country that implemented an important liberalization of capital outflows. In 2001, the limit for foreign investments made by institutional investors was increased to 15 percent of all assets and foreign currency transfers were allowed up to 10 percent of the net inflow of funds. The limit for foreign investments was gradually increased in 2008. It also became significantly easier for South African residents to withdraw capital from the economy. Free movement of capital into and out of the economy is allowed for nonresidents. According to Mohamed (2006, p.2), "the government hopes that a large share of the capital required for domestic investment, employment creation and development of the economy will come from foreigners".

Within this approach, government policies on capital controls do not differentiate FDI and long-term flows of short-term capital flows. So, the lesson of the increase in capital inflows of the early 1990s and of the 2001 currency crisis is that uncontrolled capital flows have been very damaging to the South African economy. As a consequence, the exchange rate appreciated in late 2001, when the portfolio investments fled from the country and the Rand fell 35% against the dollar. More recently the country suffered strong appreciation of the exchange rate at the height of the financial crisis in 2008. In addition, the African country suffers from deficits in current account, like Brazil, which enhances the problem faced.

The results of the Capital flows volatility study show a huge impact on Portfolio Investment at the height of the financial crisis in 2008 and volatility peaks of Portfolio Investment (liability), Other Investments (asset) and Direct Investment between 2000 and 2010.

The empirical findings connected to the capital account regulations of each country analyzed suggest that the lower volatility of financial flows can be associated with the adoption of different strategies to manage capital flows. The extended Minskian perspective suggest that financial fragility is increased by the ability of investors to cross national borders and by the ability to foreign investments in domestic markets. So, we can conclude that opening up countries to foreign capital or countries less regulated in terms of capital accounts has likely led to increased financial crises and external vulnerability.

In other words, different policies in the different countries analyzed affected them differently, making Brazil and South Africa more fragile from the external perspective. These countries became more endogenously speculative in comparison to Russia, China and India within the period under analysis.

4. Final Remarks

After the financial deregulation and external liberalization processes that the BRICS countries started in the 1990s, there has been a surge of international capital flows towards these countries and the dynamics of such flows have been extremely unstable. This study showed that, if the weight of short-term capital flows in the balance of payments increases, dependence on external events grows. In fact, we noticed that potentially volatile capital flows are strongly influenced by current factors, mainly linked to the international financial crisis. The key moments of strong inflows follow closely the dynamics of international liquidity.

In this way, this paper showed that such behavior deepened during the international financial crisis of 2007-2008. The empirical analysis showed that a significant reversal of capital flows was observed in all countries studied. But the analysis also demonstrated that this impact and the capital flows volatility are lower in countries that adopted capital controls. Thus, our hypothesis is corroborated: capital controls can help the economy to protect against destabilizing aspects of capital flows.

In Brazil, important measures were adopted in times of strong inflows, like the increase in the IOF tax on foreign capital and the tax on currency derivative operations. However, we can say that these measures were not sufficient given the challenges facing the economy. In turn, in Russia the need for permission from the central bank to make portfolio investments abroad and the requirement that the Russian credit institutions must have reserves for transactions with non-residents, as well as the implementation of URRs, were essential to protect the economy from the most severe impacts of the international crisis.

India, like China, is characterized by extensive and lasting capital controls. Thus, these economies present lower peaks of capital inflows and outflows. Following Paula and Barcelos' (2011) conclusions, we find that these countries adopted effective policies for the reduction of external vulnerability. However, India's potential for external vulnerability has increased in recent years due to financial liberalization and tolerance with recurring current account deficits. Recently, restrictions on capital outflows have been relaxed to allow increased investments abroad from both individuals and national companies. Thus, we see that the Indian economy has received strong inflows of capital of a short-term nature. The Chinese case is the most peculiar among the BRICS, since the country adopts a very unique development strategy and has an extremely favorable external insertion. We believe that the Chinese strategy to manage capital flows is effective and strongly contributes to the country's resilience to external events such as the global financial crisis, being a model for other BRICS countries.

Finally, South Africa is, like Brazil, an important destination for the surges of volatile capital flows. The country does not adopt more comprehensive capital controls, which increases the potential for external vulnerability. As a consequence, there are negative impacts on exchange rate volatility. At the height of the crisis, the South African economy suffered the second largest exchange rate appreciation among the BRICS. It is believed, therefore, that more extensive measures are necessary in this economy. Moreover, the country should aim at attracting long-term financial flows, able to contribute to output growth.

It must be noted that, as a result of inadequate restrictions on inward and outward financial flows, these economies are having to deal with progressively less freedom to conduct their economic policies. Moreover, they are also facing problems such as instability and financial vulnerability, as pointed out by Minsky (1986), because it is difficult for them to escape from the trap of a Ponzi financing profile and from the necessity of financial capital.

Therefore, we believe that financial market regulations must be dynamic and comprehensive, and that it is necessary to choose the appropriate types of capital controls, the ones most adequate for each circumstance and country. To accomplish this, it is essential to analyze the profile of new inward flows. Finally, we also believe that not only emerging countries should adopt capital control measures, but that developed countries should support the implementation of these measures by the capital recipient economies. For instance, local banks should play no role in facilitating the entry of speculative short-term flows. Mitchell (2010) presents some important strategies for banks in this process:

> *"First, they should only be permitted to lend directly to borrowers. All loans would have to be shown and kept on their balance sheets. (…) Second, banks should not be allowed to*

accept any financial asset as collateral to support loans. The collateral should be the estimated value of the income stream on the asset for which the loan is being advanced. This will force banks to appraise the credit risk more fully. Third, banks should be prevented from having "off-balance sheet" assets, such as finance company arms which can evade regulation. Fourth, banks should never be allowed to trade in credit default insurance. This is related to whom should price risk. Fifth, banks should be restricted to the facilitation of loans and not engage in any other commercial activity".

In sum, the capital control policy should be introduced on a multi-lateral basis spanning all nations.

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ANNEX 1 - Unit Root Test: ADF test (*Augmented Dickey-Fuller*)

Table I: Unit root test for financial sub-accounts of

Brazil – 2000 to 2010

Variable	Lag	Constant	Trend	**t-ADF**	t-probit
Portfolio Investment	0	yes	yes	-3.841490	0.0237
Direct Investment	1	yes	yes	-4.114853	0.0122
Derivatives	0	yes	yes	-4.280017	0.0078
Other Investment	0	yes	yes	-5.229331	0.0006

China (Hong Kong) – 2000 to 2010

Variable	Lag	Constant	Trend	**t-ADF**	t-probit
Portfolio Investment	0	yes	yes	-8.268014	0.0000
Direct Investment	0	yes	yes	-7.875031	0.0000
Derivatives	0	yes	yes	-10.24336	0.0000
Other Investment	0	yes	yes	-7.054478	0.0000

India – 2000 to 2010

Variable	Lag	Constant	Trend	**t-ADF**	t-probit
Portfolio Investment	0	yes	yes	-4.462485	0.0048
Direct Investment	0	yes	yes	-3.804173	0.0259
Derivatives	-	-	-	-	-
Other Investment	0	yes	yes	-4.650564	0.0029

Russia – 2000 to 2010

Variable	Lag	Constant	Trend	**t-ADF**	t-probit
Portfolio Investment	0	yes	yes	-4.125163	0.0117
Direct Investment	0	yes	yes	-7.177858	0.0000
Derivatives	0	yes	yes	-4.868612	0.0016
Other Investment	0	yes	yes	-6.278179	0.0000

South Africa – 2000 to 2010

Variable	Lag	Constant	Trend	**t-ADF**	t-probit
Portfolio Investment	0	yes	yes	-4.760630	0.0021
Direct Investment	0	yes	yes	-6.034128	0.0001
Derivatives	-	-	-	-	-
Other Investment	0	yes	yes	-6.069938	0.0000

Source: own elaboration.

ANNEX 2 - ARCH test: conditional heteroskedasticity

Table II: ARCH test for financial sub-accounts of

Brazil – 2000 to 2010		
Variable	F-statistic	t-probit
Portfolio Investment	6.246848	0.0165
Direct Investment	42.04613	0.0000
Derivatives	4.452874	0.0410
Other Investment	3688.959	0.0000
China (Hong Kong) – 2000 to 2010		
Variable	F-statistic	t-probit
Portfolio Investment	100.2567	0.0000
Direct Investment	121452.5	0.0000
Derivatives	39.52695	0.0000
Other Investment	640.2960	0.0000
India – 2000 to 2010		
Variable	F-statistic	t-probit
Portfolio Investment	14.62467	0.0004
Direct Investment	33.89904	0.0345
Derivatives	-	-
Other Investment	43.55594	0.0000
Russia – 2000 to 2010		
Variable	F-statistic	t-probit
Portfolio Investment	4.193784	0.0470
Direct Investment	3938.465	0.0000
Derivatives	4.155990	0.0480
Other Investment	1234.032	0.0000
South Africa – 2000 to 2010		
Variable	F-statistic	t-probit
Portfolio Investment	825.1906	0.0000
Direct Investment	105.1531	0.0000
Derivatives	-	-
Other Investment	1971.755	0.0000

Source: own elaboration.

ANNEX 3 – Series of data on capital flows

Table 3 - Data

	Brazil				China				India				Russia				South Africa			
Period	DI	PI	Der	OI	DI	PI	Der	OI	DI	PI	Der	OI	DI	PI	Der	OI	DI	PI	Der	OI
2000Q1	6643,622	3209,238	-39,0722	-1504,64	1179,42	7891,406	-4873,92	-7181,72	642,6607	1328,23	0	2201,019	-155,605	620,5204	0	-8288,71	688,1636	-642,78	-46,8085	-645,322
2000Q2	6034,389	1135,298	6,1068	-2026,01	7457,69	841,5	2251,703	-7545,3	924,263	789,113	0	-90,023	2,81	-1521,25	0	-3190,75	-616,65	-859,723	33,39152	2452,75
2000Q3	8235,78	2138,51	-108,01	-2801,27	3041,3	1070,07	-145,44	-145,32	803,908	396,0138	0	312,631	-287,5	-11749,2	0	-3340,48	902,148	212,006	-52,7146	40,57
2000Q4	9583,862	472,006	-56,411	-1547,22	-9106,7	14682,3	2972,939	-8224,61	703,856	-168,137	0	2495,67	-22,25	-569,79	0	-5792,42	-282,009	-573,887	-75,7989	-460,057
2001Q1	4617,465	2483,982	-110,433	847,7832	7082,83	-14289	-918,83	12526,74	840,208	1573,035	0	258,807	-226,406	193,316	0	-7237,61	-714,436	368,2709	0	-1134,59
2001Q2	7465,46	-716,326	-189,764	1181,69	5160,68	-4530,01	1645,3	-1744	808,055	934,9115	0	-1615,26	16,899	-14,331	0	-1693,94	11616,37	-8005,69	0	-3207,13
2001Q3	5068,019	1678,136	-40,835	-3914,57	947,85	-10562,7	3248,76	-1186,8	1292,894	215,8348	0	358,738	16,276	-300,669	0	9033,63	436,7246	-330,233	0	0,717
2001Q4	7563,991	-3368,79	-129,988	-2104,55	-760,07	-11911,9	1108,04	7556,8	1132,807	129,0169	0	2066,14	408,939	-531,369	0	-3396,97	-553,586	-334,053	0	669,379
2002Q1	4192,327	2447,308	-275,187	-1669,67	-1654,06	-531,6	355,04	-1228,1	1500,136	671,9646	0	1054,974	179,319	589,3054	-0,985	-5601,87	792,396	-146,714	0	-715,437
2002Q2	4415,537	-1542,83	-92,623	871,18	5088,98	-14510,2	3130,15	6151,17	1239,984	-262,866	0	-318,013	-110,859	-140,263	-0,938	585,29	882,069	1351,036	0	-2434,35
2002Q3	1784,53	-3778,21	52,114	-5608,55	-4763,43	-11260,3	827,28	11190,51	532,12	-131,075	0	2761,209	487,673	663,1265	2,734	2861,95	515,856	-1310,63	0	77,896
2002Q4	3715,71	-2244,83	-40,501	-6135,21	-6452,51	-12483,5	2299,24	4090,83	675,657	744,399	0	3515,97	-627,649	1848,274	12,104	174,04	-308,255	-310,922	0	899,824
2003Q1	1281,195	999,144	-18,744	-2084,17	1155,71	-8471,58	1251,24	4586,97	769,079	593,031	0	717,167	848,39	-3208,91	107,493	485,39	-306,695	-578,861	0	1200,763
2003Q2	1562,894	2901,901	-52,228	-3892,82	470,485	-3288,91	6848,64	-11359,4	386,108	1375,92	0	3920,79	777,64	-2670,12	47,36	4610,438	149,7505	2904,309	0	-2360,76
2003Q3	3399,434	-252,471	-108,938	-5126,99	6077,11	-10972	447,93	-4219,96	701,907	2136,16	0	2205,94	-717,23	-2235,64	123,187	-3047,8	89,643	-611,728	0	-390,923
2003Q4	3650,707	1658,958	28,913	-4103,32	429,07	-11267,6	1499,29	5860,4	587,046	4111,08	0	-1083,32	-2677,79	3605,809	362,352	6613,36	297,895	-990,306	0	-1364,46
2004Q1	2387,254	2385,118	50,597	-2330,67	-13798,1	-21506,6	1635,72	35248,83	713,185	3732,98	0	-2052,02	595,1	2478,69	-36,616	-5176,08	1305,072	720,3147	0	-144,83
2004Q2	838,057	-6085,86	-290,665	3418,51	3058,23	-16765,7	1152	9015,6	963,112	155,915	0	2545,43	486,507	-1626,61	-186,455	-6219,64	-1722,95	2164,346	0	1175,205
2004Q3	330,14	-526,9	-294,385	-3834,48	-11914,4	-8067	761,6	8229,56	1334,082	464,046	0	1750,026	-2117,26	696,794	34,53	-6438,78	254,9818	259,996	0	-428,313
2004Q4	5139,453	-522,492	-142,964	-3853,7	10971,16	7006,85	2143,53	-27264,8	581,822	4684,137	0	7356,14	2698	-925,995	88,933	10520,83	-441,111	3214,158	0	1038,51
2005Q1	2545,849	5816,894	91,6764	230,151	4756,71	-7948,02	1569,06	-3904,3	834,391	3982,998	0	3369,84	1399,71	-3203,25	-89,703	1801,2	99,586	1650,605	0	3499,89
2005Q2	4186,419	-1315,75	97,863	-4841,59	2733,69	-18124,1	857,21	9545,58	1350,546	972,146	0	3451,24	3598,3	2073,55	-153,976	-6823,56	1246,073	3460,035	0	676,306

2005Q3	2539,407	-153,361	-28,2	-5810,22	-4055,01	-4051,7	183,29	1558,81	1075,943	4441,1	0	5026,34	3663,18	-3712,2	-6,273	-654,41	4075,699	809,513	0	-3543,71
2005Q4	3277,904	536,755	-201,294	6171,6	2981,43	-1342,87	1310,88	-7518,4	1367,767	2747,87	0	-3336,25	-8542,86	-6537,16	16,99	18195,2	191,33	-1112,8	0	1561,832
2006Q1	826,45	6639,498	174,1799	-3607,83	3316,9	7858,83	159,46	-13109,8	-759,87	4333,11	0	4801,101	2798,04	-4730,9	4,053	-5111,6	1104,014	8107,995	0	-4415,9
2006Q2	2056,64	-7358,61	44,3334	6562,2	-5306,01	-5400,75	1625,75	6052,3	1738,26	-506,039	0	9493,33	5898,69	3683,36	-41,764	6033,24	-658,629	4899,981	0	1593,52
2006Q3	1217,38	3215,012	17,4816	-1993,21	-2407,81	-3697,25	898,63	-2939,7	2115,79	2149,86	0	3594,32	1802,8	14933,2	-62,205	-31508,9	-5454,34	2924,329	0	4321,09
2006Q4	-13520,71	7077,327	147,1816	13615,73	4472,2	-25473,3	653,95	12675,3	2898,12	3568,791	0	4347,94	-3949,1	1816,74	0,511	11504,6	-1103,48	3695,103	0	321,972
2007Q1	8501,76	9447,914	-111,185	6696,97	-838,1	-617,2	2541,98	-9511,42	941,31	1847,087	0	13014,76	12093,72	-1086,45	22,179	4149,2	234,433	3366,831	0	484,2169
2007Q2	15776,31	14679,72	-136,708	5482,2	-419,67	-7048,89	2100,78	1052,1	2874,06	7542,008	0	5280,54	-10147,3	5795,93	-99,609	52913,15	-247,79	5027,337	0	646,63
2007Q3	7002,634	11454,79	-217,208	-6525,27	-544,7	3174,63	917,76	-12253,4	2265,76	10900,43	0	20057,74	302,95	-3550,58	79,405	-1365,2	1672,371	2795,406	0	1865,15
2007Q4	-3762,5	12808,01	-245,16	7477,46	-4951,2	1758,6	13,38	4770,3	2120,5	12726,74	0	14792,55	6908,28	4393,81	329,69	23991,2	1095,808	-947,157	0	4716,961
2008Q1	4346,07	5651,845	-195,088	12383,09	4730,8	-24273,9	2830,22	17632,69	8632,66	-3735,98	0	23126,87	4612	-5079,62	252,68	-20246,3	5264,829	-2937,22	0	5771,25
2008Q2	3785,09	7640,427	-185,159	6398,54	-7628,4	10051,98	698,6	-6421,82	9196,75	-4206,85	0	452,27	6230,6	399,24	-5,19	28325,2	441,138	1402,765	0	1133,585
2008Q3	7316,78	3794,324	-21,206	2485,7	5706,29	26191,9	3940	-39288,1	5610,14	-1311,11	0	2042,5	5505,1	-9659,38	-401,23	-11457,1	1436,242	-1532,37	0	1327,523
2008Q4	9153,15	-15953,5	89,101	-18392,7	6256,77	-50121,3	657,6	51175,9	710,15	-5820,84	0	-259,82	3061,2	-21097	-1216,22	-110898	4622,206	-11235,8	0	6060,964
2009Q1	5734,821	-2919,34	203,8806	199,38	271,07	5221,72	250,4	-3993,1	4299,79	-2692,14	0	-1250,84	-4011,6	-9897,44	-3051,67	-15547,7	1091,202	886,8669	0	-1215,64
2009Q2	8728,76	4315,91	8,4035	1838	-4031,7	-30655	1944,2	43015,39	4827,31	8268,03	0	-9437,15	-1726,25	-383,79	-314,04	5601,51	2348,432	3469,195	0	-2662,11
2009Q3	8376,98	20156,02	-42,9868	-8110,95	-4805,89	-7137,07	179,59	20154,75	7502,66	9676,885	0	7274,04	2932,8	1662,64	134,82	-19243,4	783,724	3049,67	0	4284,4
2009Q4	13192,25	28730,52	-13,0651	-10238,4	-3032,5	-10318,9	794,35	38289,3	3039,02	5684,602	0	5903,943	-4360,3	6439,17	-12,9	10129,99	-180,971	4216,23	0	205,2602
2010Q1	-586,7	8212,79	-25,5389	11585,82	-1598,4	-11023,9	995,41	7945,86	3402,49	8766,101	0	3637	-2249,48	2333,376	-805,08	-11187,3	430,0566	5121,133	0	-2585,8
2010Q2	3801,74	14577,27	8,5284	4882,5	1658,9	-12992,7	1385,39	10719,11	2916,59	4605,356	0	9029,26	-2048,8	6782,71	-1246,14	5095,55	-60,169	3468,473	0	797,841
2010Q3	13413,27	19745,64	-18,8041	-3901,6	-3873,4	-13595	812,6	9760,9	2582,42	19192,48	0	-472,39	-3181,34	438,99	641,03	-4551,1	-803,34	4938,51	0	1186,355
2010Q4	20290,6	20475,2	-76,3332	-13840,9	-3365,5	-23261	558,7	22099,5	2106,66	6297,92	0	6473,562	-2127,9	-10953,6	-363,1	-3226,14	1617,214	-3057,75	0	-676,93

Source: own elaboration.

Note: DI = direct investment, PI = portfolio investment, DER = derivatives and OI = other investment.

An Appraisal of Floating Exchange Rate Regimes in Latin America*

Roberto Frenkel+

The exchange rate regime is a crucial variable in international economic relations. This presentation attempts to evaluate the performance of floating exchange rate regimes in the major Latin American countries.

Every balance of payments-financial crisis experienced by developing economies during the recent period of financial globalization occurred in the context of fixed or predetermined exchanges rates. This was the case, for example, of the so-called "Latin American debt crisis" endured by the countries of the region in 1981-1982, and also of the crises suffered by Mexico in 1995, Argentina in 1995 and 2001 and Uruguay in 2002. The crises underwent by five East Asia economies during 1997-1998, the one suffered by Russia in 1998 and the crisis in Turkey in 2000 also came about with fixed exchange rate regimes.

On the other hand, the balance of payments-financial crises experienced by Greece, Ireland, Italy, Portugal and Spain since 2008 took place in the context of the Eurozone monetary unification. The common currency, in the case of the Eurozone, and the fixed exchange rates, in the case of developing economies, played analogous roles in the financial boom phases that precede crises, as has been shown by some of those here present.

During the first 30 years of financial globalization (between the beginning of the 1970s and the end of the 1990s), developing economies that began taking part in the financial globalization (with the exception of China) did so as recipients of net capital inflows that financed current account deficits. In each of these cases, the countries had a fixed exchange rate regime. This began to change during the last years of the 1990s. The Asian and Russian crises of 1997-98 had large negative real and financial impacts on developing economies; these impacts triggered other national crises experimented later, during the end of the 1990s. The critical episodes of the last years of the 1990s had a great influence in the evaluation of fixed exchange rate regimes because they clearly showed the incompatibility between fixed exchange rates, free capital mobility and the volatility of capital movements. By the end of the 1990s the opinion of influential players at the international level and the IMF's position had turned in favour of the adoption of floating exchange rate regimes in developing economies, preserving free international capital mobility and taking the volatility of international capital movements as an unavoidable component of financial globalization.

During the first years of the 2000s, most Latin American countries had already implemented floating exchange rate regimes. Mexico adopted this type of regime following its 1995 crisis. Brazil, Colombia and Chile began floating in 1999. Argentina and Uruguay maintained their fixed exchange rates until their end-of-decade crises and recover from these crises with floating exchange rates in 2002. Peru had had a managed floating exchange rate regime since the 1990s and formally adopted an inflation targeting regime in 2002.

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During these years the IMF stood strongly behind its bipolar view, emphasizing the free floating of exchange rates. Central banks' interventions in foreign exchange markets were discouraged, either because there were destined to fail in their intents to affect real exchange rates or because the effects would be distortive. A frequent argument was that governments do not have any information advantage over the private sector in their goal of determining the equilibrium real exchange rate, and that therefore this relative price would have to be set by the market through the free floating of the currency.

Nevertheless, Latin American countries, which did not have at the time a need for IMF resources and which were not subject to its conditionality, did not strictly follow its recommendations. While exchange rates were left to be set in foreign exchange markets, central banks have reserved for themselves the faculty to intervene discretionally in these markets. These are the so called 'managed floating regimes'. Some central banks have intervened in fewer occasions, as has been the case in Chile and Mexico. Others have intervened more intensively, like Argentina, Brazil, Colombia and Peru. Compared to fixed exchange rate regimes, managed floating has the advantage of flexibility. At the same time, in managed floating regimes the central bank retains the ability to intervene in the market to restrain or to smooth unwanted appreciation or depreciation trends. The central bank's capacity to intervene as a seller in foreign exchange markets in order to smooth depreciations depends on the amount of its international reserves. Many countries in the region took advantage of the period of high commodity prices and large capital inflows to accumulate reserves. The Chilean government, which intervened less in its foreign exchange market and accumulated less reserves, accumulated foreign currency-denominated assets in an important sovereign fund.

There is a visible correlation between these innovations and the fact that there have not been new crises in the region. It is striking that Latin America has not experienced new balance of payments and financial crises since the beginning of the 2000s. It is also striking that the 2008 global crisis did not trigger crises in Latin American economies, in spite of the capital inflows boom the region underwent between 2003 and 2007 (econometrics shows that these booms are good predictors of crisis) and also despite the fact that the negative impacts of the global crisis, both in financial and real terms, were of similar magnitudes than those caused by the Asian and Russian crises of 1997-98.

t is clear, however, that the modification in exchange rate regimes was not the only novelty of the 2000s. The commodity price boom that began in 2003-4 generated current account surpluses in almost every South American country (with the exception of Colombia), so that external financial fragility was relatively subdued when the 2008 negative shock impacted the region. However, the new exchange rate flexibility allowed these countries to use the foreign exchange market as a buffer, depreciating the local currencies at the end of 2008. The Mexican case is particularly interesting because its economy had not previously benefited from improved terms of trade. Moreover, Mexico had a significant current account deficit in 2008 and it was fully impacted by the crisis in the US, its main trading partner. But this time Mexico did not suffer a crisis.

It seems clear that the greater resilience shown by these economies was related to the flexibility in their exchange rates. The evidence suggests that exchange rate flexibility is a good vaccine to avoid the balance of payments-financial crises that were frequent in developing economies during the first thirty years of globalization.

Is it possible, however, to conclude that these countries have found the optimum way to integrate themselves in the financial globalization? Is the combination of free capital mobility and exchange rate flexibility the best that macroeconomics has to offer to developing

countries? I don't think so. To have avoided the crises that hit developing economies during the first thirty years of financial globalization is a great virtue, but the difficult situation that Latin America is currently facing makes me think we are far from having found the optimum way of international financial integration. In developing economies, macroeconomics, in addition to ensuring stability, must focus in economic growth. It has to be a macroeconomics for development.

To find more precise answers we have to take the analysis a little further and examine the macroeconomic policies that have been implemented by the countries that chose these innovative exchange rate regimes.

The *trilemma* says that a country inserted in the financial globalization cannot simultaneously reach the following three objectives: preserving free capital mobility, controlling the local interest rate and determining the exchange rate by intervening in the foreign exchange market. In a context of free capital mobility, the *trilemma* argues that if a government chooses to determine the exchange rate it loses the ability to control the interest rate (it loses the control of monetary policy). The *trilemma* is the main argument behind pure floating exchange rate regimes.

But the *trilemma* is not valid in every circumstance. It is not valid when the central bank intervenes in a context of abundant supply of foreign currency that pushes the exchange rate towards appreciation. Latin America experienced this circumstance in the 2000s, until recently. In this situation, it is possible to control the exchange rate without losing the control of the monetary policy.

Such is the conclusion I arrived at in a couple of papers I wrote a few years ago, trying to draw lessons from the 2000s experience. In those papers I showed that – under certain circumstances – it is possible and sustainable to maintain control over the local interest rate while at the same time having a central bank that intervenes as a buyer in the foreign exchange market to avoid the appreciation of the local currency. I showed that the central bank can sterilize the monetary base expansion that results from the buyer interventions in the forex market. By doing this, the central bank preserves its policy interest rate. The key issue at this point is the possibility to sustain sterilization operations over time, a possibility that depends on the financial cost incurred by the central bank through its foreign exchange interventions and sterilization efforts.

The conditions that make this policy possible and sustainable are: i) at the nominal exchange rate that the central bank has targeted there is an excess supply in the foreign exchange market (that is, the central bank's intervention is aimed at avoiding currency appreciation); ii) the local interest rate is moderate. This means that there is a maximum rate that allows the sustainability of sterilized interventions. Interest rates higher than this threshold would lead to an unsustainable increase in the central bank's financial deficit. Under these conditions the trilemma is not valid: the exchange rate and the interest rate can be jointly controlled while free capital mobility is maintained.

The *trilemma* is valid, on the contrary, under circumstances in which there is an excess demand for foreign currency at the exchange rate that the central bank wishes to defend (that is, when the central bank wants to avoid the depreciation of the local currency). In this case the exchange rate policy faces the limit imposed by the availability of international reserves and an increase of the local interest rate becomes essential to halt the loss of reserves.

Until recently, in Latin America, particularly in South America, many countries had balance of payments conditions that invalidated the trilemma and that would have allowed central banks to control the exchange rate without losing control over monetary policy. Many

countries simultaneously experienced current account surpluses and important net capital inflows (until the global crisis, every South American country except Colombia did so). In the countries that had current account deficits (Colombia and Mexico, for example), capital inflows were – until recently – larger than the absolute value of current account deficits, in a way that also these economies experienced balance of payments surpluses that would have permitted them to defend real exchange rates from appreciation.

Some of the Latin American countries had, in addition, domestic financial conditions able to make central banks' buying interventions sustainable. Such is the case of low-inflation countries such as Chile, Colombia and Peru. In Chile's case, it seems clear that the central bank took the explicit decision not to intervene: it undertook few buying interventions in the forex market and let the currency suffer a persistent appreciation trend. This tendency was also present in Colombia, despite the fact that this country's central bank intervened more intensely than Chile, without being nevertheless able to revert the trend. On the contrary, Peru's central bank was the most successful in its defence of the country's real exchange rate stability, systematically operating in the foreign exchange market. As a result, Peru shows the most stable real exchange rate in the region. In Argentina's case, the central bank intervened successfully to preserve a competitive and stable real effective exchange rate between 2003 and 2007 (aided by a tendency towards real appreciation in Brazil, Argentina's main trading partner). However, later on, local authorities took a clear decision to let the real exchange rate systematically to appreciate as part of the shift to populism that the Argentine economic policy underwent since 2010.

Some countries, even with adequate balance of payments conditions, did not have the domestic financial conditions that would have allowed them to undertake sustainable buying interventions in foreign exchange market. Brazil, for example, maintained policy interest rates higher than the ones that would have permitted a sustainable sterilization policy. The Brazilian central bank bought foreign currency for years without being able to stop the tendency towards appreciation. It sterilized its currency purchases issuing bonds at the high real interest rates that the central bank thought necessary to control inflation. As a consequence, the central bank's financial deficit made a significant contribution to the increase of the Brazilian public debt/ GDP ratio. The reduction of this ratio is presently the main objective of the Brazilian macroeconomic policy in the context of the difficult situation that the country is suffering.

In short, the brief analysis of the exchange rate and monetary policies implemented by Latin American countries in recent years shows a varied panorama. Some countries, even when they had the financial and balance of payments conditions to control nominal interest rates and preserve competitive and stable real exchange rates, chose not to do so. Instead, they allowed a strong real exchange rate appreciation to be imposed by the markets. Other countries decided to intervene more intensely in forex markets with the goal of mitigating the tendency towards appreciation; they nevertheless refrained from making this objective explicit to avoid being accused of manipulating the exchange rate. These buying interventions did not succeed in curbing real exchange rate appreciations. Some governments took advantage of the short-term expansionary properties of exchange rate appreciations to kick-start populist economic policies. Peru looks like the only country that succeeded in maintaining a relatively stable real exchange rate. But Peru's is quite a particular case, because the degree of dollarization of its financial system is a great incentive for the domestic central bank to keep the real exchange rate stable, while at the same time limiting its ability to devaluate the local currency in the face of a negative shock like the one the country is currently undergoing together with its Latin American peers.

In a few words, some countries did not want to, other countries did not know how to and other countries did not succeed. So what is the verdict on Latin America's experience in the 2000s now that terms of trade have fallen and international capitals are leaving the region? Latin American economies need to cut the current account deficits they incurred during the boom period and grew larger when commodity prices dropped. Foreign exchange markets are home to large depreciations. Growth has stalled across the region and some economies have entered into recession.

To the contractionary effect of a decrease in export values, one has to add that – in the short term - depreciations also have contractionary effects on aggregate demand and accelerate inflation. It has been observed that the pass-through ratio (a coefficient that measures the proportion of the depreciation rate that is reflected in a rise in the inflation rate) is larger the larger the inflation rate at the time the currency is devalued. Consequently, it is to be expected that countries with the higher inflation rates see their inflations accelerate the most, experience the largest drops in real wages and suffer the largest contractionary effects caused by the devaluation. In countries with low inflation, such effects are of a smaller magnitude. However, current account adjustments throughout devaluations have inflationary effects as well as real and distributive costs in every circumstance. They also have negative financial implications, which might currently not be a cause of crises but that nevertheless contribute to the contraction in GDP.

If a country succeeds at stabilizing inflation and the financial system, readjusting its fiscal situation to the new circumstances, and preserving a new set of relative prices that includes a more competitive real exchange rate, this country would have succeeded at generating the necessary conditions to recover growth. For some of the countries in Latin America (Argentina and Brazil, for example) these goals seem very difficult to secure, risking a rise in social and political unrest. Other countries are bearing the adjustment costs with less difficulties. However, in every case, the new growth process will have to be based on the production of tradable goods and services that allow a country to increase its exports or to reduce its imports, taking on the role played by commodities production in the preceding growth pattern.

A more competitive exchange rate can have the potential to foster growth through the incentive it provides to the production of tradable goods and complex services (goods and services that can be exported or replace imports). However, this depends on the presence and relative weight of tradable activities in each country's economic structure. This potential is currently smaller than it used to be in Latin America, because such tradable activities have been victims of a *Dutch disease* generated by a long period of appreciated real exchange rates. The region has experienced a reduction in its capacity to produce tradable goods different than commodities, because the appreciated real exchange rate (the persistent increase in foreign currency-denominated unit labour costs) reduced or eliminated these activities' profitability. The share of complex tradable activities in GDP and employment generation dropped in favour of a rise in the importance of commodities, construction and non-tradable services. The region was de-industrialized. To revert this *Dutch disease* will take time.

We Argentines have a saying: *el que se quema con leche ve una vaca y llora (chi si brucia con latte vede una vaca e piange.)* I quote the saying to point to the hysteresis effects of Dutch Disease on investment decisions in tradable activities. The activities that were discouraged by a long period of real exchange rate appreciation need new investments to grow. Investment is mainly dependent on expected profitability, and is therefore tied to the expectations that the real exchange rate will be maintained at a competitive and stable level in the future. Real exchange rates have depreciated substantially (although not in every Latin

American country), but it will be difficult to convince people to invest in tradable industries after the 'cold shower' of the commodities boom years.

Who is to blame? Obviously, the region's governments and central banks, particularly in those countries that gathered the best conditions to preserve competitive and stable real exchange rates. To better understand why they chose not to we examine the incentives they faced.

On one hand, they had political incentives. The tendency towards currency appreciation is popular, as it is well-known by people attending this conference. It facilitates and incites an increase in the consumption of tradable goods and services, while allowing real wages to grow more than productivity without generating inflationary pressures. Such political incentive is the main cause for real exchange rate appreciation in countries with populist governments, but it is also present to some degree in every case.

We also need to take into account the forces driving central banks in inflation targeting regimes. A mandate that is exclusively focused on inflation biases interest rate policy in favour of real exchange rate appreciation.

This time we don't have IMF conditionality to blame for our mistakes, given that most Latin American economies did not need its assistance. But the IMF has a share of responsibility. Independent central banks – and even those that are not legally independent, such as the Brazilian central bank – believe it is important not to conflict with IMF's orientation, as they don't want to be seen as heterodox by the national and international financial community. Even when they are applying measures that do not belong to the orthodox book of the moment (as was the case with Chile's currency policy at the beginning of the 1990s), they are always trying to dress them up in Washington clothes.

When floating exchange rate regimes were adopted at the end of the 1990s the IMF was emphatically in favour of free floating. In the following years, the IMF doctrine allowed for currency interventions intended to soften tendencies towards appreciation or depreciation and to reduce foreign exchange market volatility. But the IMF doctrine is still based upon the diffuse notion of "equilibrium real exchange rate" and the presumption that market players, empowered with rational expectations, know this equilibrium rate with relative precision. As a consequence, the nominal exchange rate must be left to be determined by a free foreign exchange market, given that central bank interventions would be fruitless (for some) or distortive (for others).

In several papers written during the 2000s different economists drew attention to the effects of the *Dutch disease*. We demanded that the real effects of a lengthy currency appreciation were taken into account and avoided through exchange rate policies. This was fruitless. Some economists at the IMF believe the *Dutch disease* to be an optimum restructuring of production and employment in the face of new international conditions (high commodity export prices and abundant capital inflows). Now that export prices have fallen and capital is leaving, it is said, it is evident that the new equilibrium real exchange rate is higher than the preceding one. I have heard important economists from multilateral organisms argue that the problem is that equilibrium real exchange rates are volatile. What sort of equilibrium is this one? What use can we give to the concept of a "volatile equilibrium"?

Beyond the theoretical discussion about equilibrium exchange rates and rational expectations in foreign exchange markets there is a common sense question regarding foreign exchange policy management. We economists unanimously accept that policy reaction in the face of a new economic circumstance must differ depending the transitory or permanent nature of the change. And many of us grant that generally it is impossible to know. The IMF

accepts this, but its orientation has been equivalent to considering the recent positive shocks experienced by Latin American economies to be permanent.

Dutch disease effects are irreversible in the short term (I hope they are reversible in a longer scope of time). On the other hand, balance of payments adjustments through devaluations have inflationary, real and financial costs. It would have sufficed to show a little prudence in the design of economic policies to avoid falling into *Dutch disease*s and to avoid the need for abrupt balance of payments adjustments, precisely because the future is uncertain. If you don't want to devaluate your currency, you shouldn't allow your real exchange rate to appreciate excessively. I repeat: in the face of uncertainty regarding the permanence of the very favourable commercial and financial conditions that the region experienced until recently, prudence called for the avoidance of large appreciations. And many countries had the necessary conditions to do so.

An assessment of the contribution made by exchange rate flexibility to macroeconomic performance turns out to be ambiguous. On the positive side, one must acknowledge its help in avoiding the balance of payments-financial crises that had been so frequent and intense in the thirty previous years. On a negative note, the destruction of firms, employment and human capital in the manufacturing sector and other tradable sectors has great weight, and will have hysteresis effects in the future. The favourable conditions – which we now know were exceptional – that were experienced by Latin American countries in 2003-2013 led to a rarely prolonged period of currency appreciation and consequently to a profound *Dutch disease*. In previous experiences of strong appreciations (the ones that led to crises) the lapse of appreciated real exchange rates was never so lengthy, except for the Argentine experience in 1991-2001.

It is of course clear that these results should not be attributed to the managed floating regimes, but rather to the way in which exchange rate policies were designed in those regimes, particularly in the cases that had the necessary conditions to preserve competitive and stable real exchange rates. Not every country, however, had such qualifications, and certainly there were countries that even if they had tried could not have succeeded in maintaining a competitive and stable real exchange rate (to my knowledge, Brazil is the most relevant example). This comment points toward the need to control capital inflows during booming phases.

A central bank's ability to sterilize in a sustained manner its buying interventions depends on the magnitude of the purchases it has to make: difficulties are larger the larger the necessary purchases to avoid appreciation. The problem does not lie on the current account surplus but on the amount of capital inflows.

The main driver for financial capital inflows is the foreign-currency profitability of domestic currency assets. This profitability depends on the local interest rate and on future nominal exchange rate expectations. When the local interest rate is high, sterilization efforts are not sustainable and lots of capital are attracted, multiplying the difficulties associated to the goal of defending an exchange rate target (such is Brazil's case). Capital inflows are also larger when the market has firm expectations of currency appreciation, because the expected profitability measured in foreign currency becomes bigger. This is why central bank interventions must fulfil another role, apart from setting the spot nominal exchange rate: central bank interventions must have an effect in currency expectations, inducing the market to project a stable tendency instead of a tendency towards appreciation. In this, Latin American economies have clearly failed.

If the central bank succeeds in generating expectations of a stable real exchange rate, the estimated profitability of foreign financial investments will be smaller and capital inflows

will decrease in magnitude. In spite of this, there are countries (or particular economic circumstances in some countries) with interest rates that would be attractive for international financial capital even if stable real exchange rates were expected. This comment points towards the need to control capital inflows, in order to reduce them in booming stages and make it easier for the central bank to stabilize the real exchange rate. The IMF now believes that placing controls to limit capital inflows is a legitimate policy. This comes a little late, because the IMF is supposed to advise governments by anticipating their problems, not limiting itself to learn from their bad experiences.

The Bretton Woods founding fathers had a clear view of the volatility and pro-cyclical character of international capital movements. They aspired to establish an international cooperative system for the control of capital flows. This proposal did not survive due to political considerations, but Bretton Woods did include an agreement to ensure member countries' freedom to impose capital controls. Developed countries started progressively lifting their capital controls since the 1960s, and developing economies did the same during the 1970s, in order to join the second process of financial globalization.

The Eurozone is a good example of the harm that can be caused by free capital mobility in an international system of fixed exchange rates. The design of the Euro kept the main deficiencies of the gold standard – the ones that the Bretton Woods founding fathers had wanted to fix and ended up failing to repair. The design of the Euro overlooked Bretton Woods's discussions and experience, reviving the gold standard's propensity to crisis without a change.

Foreign exchange flexibility helps to avoid crises but, as we have tried to show, does not offer a solution to every problem generated by free capital mobility. Capital controls as individual initiatives taken by specific countries are a weak remedy. Real exchange rate stability and capital controls that allow this goal to be achieved should not be some countries' heterodox adventure but rather the main ingredient in an international agreement that would result beneficial for developed and developing economies alike. It is nevertheless clear, in light of the difficulties faced in the discussion of remedial measures for the Euro's faults – even when it only involves 19 countries – that there is not much optimism to be had on the potentiality of a global accord.

Política econômica e estabilização: uma breve análise da recessão brasileira

Manoel C. C. Pires*

Resumo

A economia brasileira atravessa um grave quadro recessivo fruto da exaustão de algumas políticas que contaminaram os instrumentos de política econômica e de uma combinação rara de choques negativos. Esse artigo apresenta uma breve interpretação da crise brasileira com algumas reflexões para a política econômica e a retomada do crescimento.

Abstract

The Brazilian economy is in its deepest recession in decades caused by the need to revert some ineffective policies that caused a contractionary economic policy and by a rare combination of negative shocks. This paper presents a brief interpretation of Brazilian crisis with thoughts on economic policy and conditions to recovery.

JEL Classification: E32, E63, H63.

1. Introdução

A economia brasileira passa em 2016 pelo segundo ano de forte queda da atividade econômica. Uma concentração não usual de choques atingiu o país nesse período, comprometendo seu crescimento. Parte desses choques dificultou a operacionalização dos instrumentos clássicos de política econômica que pudessem reverter esse quadro recessivo.

Na medida em que a economia perdeu seus instrumentos de política econômica, o quadro recessivo se agravou, as expectativas se desestabilizaram e os prêmios de risco se elevaram. Nesse sentido, a recuperação da economia passa, necessariamente, pela recuperação dos instrumentos clássicos de política econômica.

Esse artigo tem por objetivo explicar as principais causas da recessão brasileira e como a atuação de curto prazo da política econômica ficou comprometida inviabilizando a estabilização da atividade. Por fim, o artigo conclui com algumas reflexões e desafios para a recuperação do crescimento.

2. A recessão brasileira

A economia brasileira passa por uma recessão bastante profunda cujo início se deu ao longo de 2014 quando o PIB cresceu apenas 0,5%. Em 2015 a situação se agravou e o PIB caiu 3,8%. Para 2016, as expectativas são de que ocorra uma nova queda do PIB superior a 3%. Dessa forma, esse triênio terá escrito a história da mais grave recessão que atingiu o Brasil

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É possível afirmar que essa crise teve dois grandes períodos. O primeiro período foi marcado por um conjunto de políticas que não se mostraram suficientes para sustentar o crescimento econômico que a economia havia apresentado até 2011[1]. O segundo período se refere ao enorme conjunto de choques negativos que começam a atingir o país a partir de 2014. Durante a ocorrência desses choques, a política econômica teve muito pouco espaço para ser utilizada.

Parte importante desses choques se refere à reversão de algumas políticas aplicadas entre 2012 e 2013 que não podiam ser continuadas, como o necessário realinhamento de preços monitorados, a revisão parcial das desonerações tributárias (por exemplo, desoneração da folha e a cide) e a redução de subsídios fiscais e parafiscais tais como o fim das transferências para a Conta de Desenvolvimento Energético (CDE), aumento da TJLP e o fim do Programa de Sustentação do Investimento no BNDES e da redução do crédito público[2].

Essa reversão produzia um impacto contracionista no curto prazo e gerava uma combinação de política econômica que impedia uma acomodação do ciclo, pois a aceleração da inflação demandava a elevação da taxa de juros. Por outro lado, a redução das desonerações e dos subsídios por si só já causavam uma contração fiscal moderada.

Outra parte desses choques negativos se refere a questões exógenas à política econômica que agravaram a situação da atividade econômica tanto pelos seus efeitos de primeira ordem, quanto pelos efeitos produzidos ao serem combinados com o processo de reversão das políticas aplicadas em anos anteriores.

Dentre os choques negativos que atingiram a economia é importante citar:

1) Termos de troca: queda de 17% entre julho de 2014 e dezembro de 2015 que foi reflexo da redução do crescimento mundial e, portanto, refletiu a queda da demanda pelos produtos brasileiros no mercado internacional.
2) Crise hídrica: capacidade de geração de energia atingiu um patamar próximo ao do racionamento de 2001 concentrado em São Paulo e no Rio de Janeiro. Nesse cenário, setores industriais tinham dificuldade de implantar projetos de investimento porque não tinham certeza de que haveria insumo disponível para ampliar a produção no curto prazo.
3) Realinhamento de preços monitorados: crescimento de 20,15% entre dez/14 a dez/15, percentual superior ao crescimento observado nos quatro anos anteriores. Esse movimento elevou a inflação temporariamente causando aumento dos juros e reduzindo a renda disponível do setor privado, particularmente das famílias, com forte impacto sobre o consumo e a oferta de crédito.
4) Desinvestimentos da Petrobrás: queda dos investimentos de 0,7 p.p. do PIB entre 2013 e 2015. Estimativas feitas à época indicam que o efeito na cadeia de petróleo e gás pode ter chegado a até 2,5 p.p. do PIB[3].
5) Depreciação da taxa de câmbio: Entre agosto de 2014 e dezembro de 2015, a taxa de câmbio depreciou em termos nominais 70%. No curto prazo, esse efeito é contracionista porque muitas empresas que possuem acesso ao financiamento externo têm seus encargos financeiros elevados. Isso leva à revisão do plano de negócios para readequar a situação das empresas brasileiras. Esse processo é

[1] Para uma análise dessas políticas, ver De Paula, Modenesi e Pires (2015).

[2] Para um detalhamento do desafio fiscal tal como era possível ser visto à época em 2014, ver Barbosa (2015).

[3] Para considerações sobre a cadeia de petróleo e construção ver Borges (2016). Várias dessas estimativas feitas por analistas econômicos foram divulgadas amplamente pela mídia na época.

conhecido como *balance sheet recession*. Também encarece a aquisição de bens de capital importado, reduzindo o investimento[4].

Na sequência desses choques, vários outros efeitos secundários aprofundaram a recessão como o aumento da taxa de juros, aumento do desemprego, a queda da renda, a contração do mercado de crédito e a redução dos investimentos públicos.

Com a dissipação dos choques mencionados, a expectativa é que a economia possa se estabilizar em 2017. Uma possível recuperação irá depender da agenda de política econômica a ser implementada e como ela combinará a administração das expectativas e a percepção de risco com os estímulos macroeconômicos de curto prazo necessários à retomada.

3. Política Econômica e Estabilização

O ajuste macroeconômico e os choques que atingiram a economia brasileira contaminaram os instrumentos de política econômica que não puderam atuar para estabilizar a economia. Qualquer estratégia de recuperação do crescimento requer a recuperação dos instrumentos clássicos de política econômica.

O crescimento dos preços monitorados elevou a inflação, medida pelo IPCA, a 10,7% em 2015. Nesse cenário, o Banco Central elevou a taxa de juros gradualmente até 14,25%. A aceleração da inflação impediu a política monetária de se adequar ao ciclo recessivo que estava se estabelecendo. Na medida em que esse choque se dissipar completamente, o Banco Central poderá estabelecer a flexibilização da política monetária de forma a estimular uma recuperação cíclica da economia. A velocidade em que fará isso ditará parte da intensidade da recuperação.

A outra parte vem da política fiscal que é um capítulo à parte. Após fechar o ano de 2014 com um déficit primário de 0,57% do PIB, o Governo Federal anunciou um programa de consolidação fiscal estabelecendo uma meta de resultado primário de 1,2% do PIB para 2015 e 2% do PIB para 2016 com o objetivo de estabilizar a dívida pública.

Na época do anúncio, a expectativa era de que a economia poderia se expandir em 0,8% em 2015. Na medida em que a situação econômica foi se deteriorando e o desempenho das receitas decepcionava, o Governo Federal começou a reduzir suas despesas para atender a legislação fiscal. Em julho, o governo anunciou a revisão da meta fiscal em um montante que se mostrou insuficiente para acomodar a queda adicional de receitas, mantendo parcialmente a contração. De acordo com a Secretaria de Política Econômica (2016), a política fiscal em 2015 foi contracionista em 1,1 p.p. do PIB[5].

Por conta dos vários choques sobre a atividade, de um ambiente político que se acirrava e dificultava a aprovação de medidas importantes e em função da incerteza sobre o equacionamento da situação fiscal, os prêmios de risco se elevaram, contaminando as expectativas no setor privado[6]. Assim, um ajuste que significava uma revisão de políticas com pouco resultado, significou uma contração significativa sobre o crescimento da economia.

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[4] Sobre os efeitos de uma recessão de balanços, ver Koo (2008). O efeito negativo do câmbio sobre a economia no curto prazo é um fato estilizado importante da economia brasileira. Com o crescimento do crédito nos últimos anos é possível que esse efeito seja menor, o que precisa ser investigado. Agradeço a um referee anônimo sobre esse comentário.

[5] Apesar de todo o esforço, o Setor Público encerrou o ano de 2015 com um déficit primário de 1,88% do PIB e a dívida bruta se acelerou de 53,9% do PIB para 62,1% do PIB em 2015, e deve encerrar 2016 próximo de 70% do PIB.

[6] Sobre o impacto dos prêmios de risco no setor privado, ver Panizza et. al (2009).

Dessa forma, a contração fiscal de 2015 acabou por concentrar os dois efeitos negativos da política fiscal sobre a atividade econômica reduzindo o impacto sobre a demanda agregada no curto prazo e contaminando a percepção de risco de *default*, encarecendo, assim, o custo de capital do setor privado.

Conhecer esses dois canais de transmissão e considerar a dinâmica da dívida é importante para entender plenamente os efeitos da política fiscal, como bem destacou Tobin

> *"In my introductory remarks before the first lecture I referred to charges that standard macro models neglect "the budget government constraint" and therefore come to incorrect conclusions on the effects of fiscal policy. True enough, no equation for the government budget appears in a standard IS/LM model; whether it's omission is a source of error is another question" (1982, p. 74).*

Para ajudar a recuperar a economia, a política fiscal precisa atuar de forma expansionista no curto prazo, e ao mesmo tempo, iniciar um processo de consolidação que permita estabilizar a dívida e as expectativas bem como reduzir os prêmios de risco. Se conseguir realizar essa tarefa, a política fiscal irá concentrar seus efeitos positivos e contribuir para recuperar a economia.

Assim, o governo atual ampliou a meta de déficit primário, o que trará fôlego de curto prazo para a economia. No outro extremo, o governo introduziu um limite para o crescimento da despesa dado pela inflação do ano anterior. Essa combinação de medidas possibilitou a rápida redução dos prêmios de risco, o que também poderá ajudar na recuperação da economia.

Por outro lado, o limite de gastos como proposto produzirá relevante perda de graus de liberdade necessários à recuperação da economia. Além disso, dependerá de uma série de reformas para não comprometer os investimentos públicos e outros itens importantes no orçamento[7]. Esse processo de ajuste fiscal, portanto, requer parcimônia para que seja possível criar espaço no curto prazo para a economia se recuperar.

Se o ajuste fiscal não conseguir combinar adequadamente as medidas de curto prazo com as medidas estruturais de longo prazo, o esforço de recuperação do crescimento pode exigir muito da política monetária.

Nesse sentido, limitar excessivamente o manejo adequado dos instrumentos de política econômica pode dificultar uma recuperação econômica mais célere, principalmente se outros choques negativos ocorrerem ao longo dos próximos anos, como é comum observar na economia brasileira.

4. Conclusões

A recessão brasileira foi causada por uma sucessão de choques negativos que se abateram sobre a economia a partir de 2014. Alguns desses choques contaminaram a política econômica e impediram uma atuação estabilizadora por parte do governo.

Ao longo de 2016 muitos desses choques começaram a se dissipar, o que abre uma perspectiva de recuperação cíclica para a economia. A velocidade e a intensidade dessa recuperação dependerão da atuação da política econômica. Nesse sentido, a contribuição mais imediata deverá vir da política monetária.

O grande desafio está na política fiscal. Ao passo em que é necessário estabilizar o crescimento da dívida pública e reduzir os prêmios de risco, também é importante manter

[7] Ver Pires (2016).

uma política fiscal de curto prazo flexível. Assim, um ciclo de reformas estruturais de longo prazo é o caminho mais adequado para manter de forma crível a sustentabilidade fiscal sem contrair a economia no curto prazo.

A proposta de limite para o gasto propõe esse véu entre o curto e o longo prazo. No entanto, é difícil que ela compatibilize as necessidades da economia para se recuperar no curto prazo com uma agenda crível de reformas estruturais que recupere o resultado primário e estabilize a dívida pública por ser dura demais por um lado e pouco factível de ser cumprida pelo outro.

O ponto de partida da recuperação econômica deve ser a manutenção dos instrumentos de política econômica à disposição para utilização com equilíbrio e parcimônia de forma a coordenar corretamente as expectativas econômicas e gerar os estímulos de curto prazo necessários, sem comprometer a estabilidade econômica ou a percepção de sustentabilidade do país.

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Componentes Macroeconômicos e Estruturais da Crise Brasileira: o Subdesenvolvimento Revisitado

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Resumo

O objetivo desse ensaio é elaborar um diagnóstico sobre a desaceleração da economia brasileira a partir dos seus elementos macroeconômicos e estruturais. Argumenta-se que os erros na condução da política econômica, presentes na maioria dos diagnósticos sobre a desaceleração, devem ser considerados no âmbito de condicionantes estruturais que caracterizaram o ciclo de crescimento da economia brasileira nos anos recentes. Esse ciclo amenizou características típicas do subdesenvolvimento apontadas por Furtado: i) ao modernizar os padrões de consumo de uma parcela importante da população; e, ii) ao melhorar qualitativamente o mercado de trabalho, reduzindo o desemprego e a informalidade. No entanto, o modelo de crescimento não logrou: i) modernizar a estrutura produtiva de forma a sustentar as transformações do lado da demanda; e, ii) incluir a mão de obra em setores de maior produtividade. Nesse sentido, o ciclo de crescimento que marcou os governos do Partido dos Trabalhadores (PT) não superou entraves estruturais, apenas reconfigurou alguns aspectos do nosso subdesenvolvimento.

Palavras-chave: Furtado, estruturalismo, consumo de massa, Dilma, Lula

JEL Classification: N16, O11, O20

1. Apresentação

Os governos do Partido dos Trabalhadores (PT) se encerram de forma dramática, com forte retração da atividade econômica em 2015 após alguns anos de desaceleração. Em um contexto de crise política e institucional, os diagnósticos em torno da desaceleração e da queda do PIB nos anos recentes ainda são prejudicados pela falta de distanciamento histórico e por uma acirrada disputa política pela narrativa econômica. Reconhecendo essas limitações, esse ensaio busca contribuir para o debate sobre os diagnósticos da desaceleração econômica no Brasil, incorporando elementos da literatura estruturalista do desenvolvimento ao debate macroeconômico.

Para isso, este trabalho se divide em duas partes, além desta apresentação. A primeira busca resgatar alguns dos principais diagnósticos presentes no debate público e acadêmico acerca da desaceleração que, em geral, enfatizam os erros na condução da política macroeconômica. A segunda parte resgata elementos da literatura estruturalista do desenvolvimento, introduzindo uma análise acerca das mudanças nas estruturas de demanda e produtiva ocorridas no período, que ajudam a explicar as dificuldades de manutenção do crescimento econômico. Por fim, as considerações finais buscam articular as relações entre a macroeconomia e os desafios estruturais, e argumentar que a economia brasileira mantem características típicas do subdesenvolvimento.

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2. A desaceleração econômica: a política macro no centro do diagnóstico

O governo Dilma foi alvo de diferentes diagnósticos que buscam explicar a desaceleração econômica verificada no período de seu primeiro mandato, assim como a recessão a partir de 2015. Esses diagnósticos refletem posições teóricas diversas, além de ênfases variadas acerca da importância das políticas econômicas. Em linhas gerais, identificamos quatro ênfases interpretativas sobre o período em questão.

A primeira atribui a desaceleração econômica no primeiro governo Dilma às políticas econômicas "heterodoxas"[1]. Nesta interpretação, a base da política econômica teria sofrido uma inflexão em seu eixo orientador anterior, o chamado tripé-macroeconômico, passando a adotar políticas macro voltadas para a promoção do crescimento da demanda doméstica. Esta nova forma de conduzir a política econômica foi denominada de "***nova matriz econômica***" (NME) que constituiu uma nova forma de gestão da política econômica, incompatível com as regras que orientam o tripé tradicional (Barbosa, 2015; Mesquita, 2014)[2].

Segundo estes autores, a desaceleração e posterior retração da economia brasileira seria o resultado da adoção da NME, que se mostrou incapaz de promover o crescimento e a melhoria da produtividade, gerando apenas pressões inflacionárias e deterioração fiscal. Sua reversão e a retomada da velha gestão do chamado "tripé", que ocorre de fato a partir de 2015 - assim como o forte ajuste fiscal - é defendida pelos autores desta corrente como forma de trazer a inflação para o centro da meta, retomar a confiança[3] e o crescimento da produtividade abalada pela adoção de políticas intervencionistas[4].

Na contramão desse diagnostico, diversos autores buscam enfatizar outros fatores para explicar a situação econômica do período. Estas interpretações também apontam problemas na condução da política macroeconômica doméstica, mas de natureza bastante distinta. Alguns apontam a sobrevalorização cambial como elemento central que explica a deterioração da estrutura produtiva brasileira e a consequente desaceleração econômica[5]. Embasada na abordagem *novo desenvolvimentista,* essa interpretação também aponta a valorização salarial acima dos ganhos de produtividade como um problema a ser enfrentado, defendendo uma regra de crescimento salarial em linha com o aumento da produtividade, não

[1] "Parte da desaceleração recente pode ser atribuída à alteração do regime de política econômica adotado a partir de 2009. A alteração não ocorreu em função de haver na sociedade forte apoio por este curso de política econômica. As políticas foram adotadas por que os *policy makers* do momento acreditam que estas são as políticas mais adequadas para acelerar o crescimento. Podem, portanto, serem revertidas" (Barbosa e Pessoa, 2014, p. 1)

[2] "A NME caracterizou-se por uma política fiscal expansionista, pelo abandono do Banco Central do protocolo do regime de metas de inflação fixando taxas de juros baixas incompatíveis com a meta de inflação, expansão do crédito pelos bancos estatais, intervenção sistemática do Banco Central (Bacen) no mercado de câmbio deixando de lado o sistema de câmbio flexível. Ademais, introduziu-se controle de preços nos produtos derivados do petróleo e com a renovação dos contratos de concessão de energia elétrica desejava-se reduzir as tarifas de eletricidade" (Barbosa, 2015)

[3] "(...) A destruição do tripé macroeconômico tirou a capacidade dos agentes em construir cenários futuros para a economia" (Barbosa e Pessoa, 2014, p. 4).

[4] "Uma possível conjectura é que o enorme intervencionismo do setor público que se iniciou de forma mais pesada em 2009 tenha reduzido muito a produtividade incremental do capital em função, provavelmente de má alocação do recurso" (Barbosa e Pessoa, 2014, p. 4).

[5] "(...) a principal causa do fracasso do período desenvolvimentista social não foram os déficits públicos elevados (o governo errou nesse ponto apenas em 2013 e 2014), mas o câmbio apreciado no longo prazo - uma política igualmente populista. Durante o governo Lula a apreciação do real foi brutal, e inviabilizou o governo Dilma" (Bresser, 2016)

pressionando dessa forma as margens de rentabilidade do setor industrial (Bresser, Oreiro e Marconi, 2016).

Outra interpretação enfatiza a contração fiscal e monetária como fator chave para a desaceleração. Para Serrano e Summa (2012, 2014 e 2015), o governo Dilma I se inicia com uma estratégia de política econômica ao promover a desaceleração econômica por meio de políticas fiscais e monetárias restritivas. Esta estratégia, que os autores denominam "**desaceleração rudimentar**", teria provocado efeitos recessivos e se configurou como a principal causa da desaceleração posterior, uma vez que se desarticula uma série de investimentos que estavam programados antes da imposição deste "freio" na economia[6].

Já outros autores enfatizam o fracasso de uma agenda de políticas econômicas voltadas a estimular a oferta agregada, chamada de estratégia "industrialista"[7], que constitui uma tentativa de responder à deterioração estrutural do complexo industrial brasileiro e às pressões políticas das entidades empresariais (Rossi e Biancarelli, 2015). Essa estratégia teria tido início já no final de 2011, quando o governo percebe que a desaceleração econômica começava a prejudicar as perspectivas de crescimento[8].

No centro das políticas industrialistas está a queda de rentabilidade das empresas industriais como problema a ser enfrentado[9]. Desta forma, a agenda central do governo passa a ser a de garantir condições de competitividade para a indústria nacional em meio a um cenário internacional adverso, reduzindo custos de insumos (como os custos de energia elétrica e combustível), de crédito (ao reduzir os juros – em um primeiro momento - e o spread bancário), desvalorizando a taxa de câmbio e com uma ampla política de subsídios e desonerações fiscais.

No entanto, ao invés de estimular a atividade econômica, a maior parte das medidas pode ter servido apenas para proteger as empresas da queda na taxa de rentabilidade que vinham experimentando, mitigando os efeitos de aumento de custos e da concorrência externa[10]. Além do aumento da concorrência externa causada pela crise internacional, as

[6] "A análise dos dados da economia brasileira mostra que a política macroeconômica interna tanto monetária quanto fiscal, foi responsável por uma boa parte da forte desaceleração do crescimento do produto no Brasil a partir de 2011" (Serrano e Summa, 2012).

[7] Importante ressaltar que a agenda "industrialista" não é necessariamente industrializante. Apesar de seu objetivo ser este, o termo industrialista diz respeito aos interesses dos industriais ao redor da construção e implementação desta agenda, não de seus efeitos reais.

[8] Aqui cabe um debate sobre se a estratégia da "desaceleração rudimentar" não era já um prenúncio, uma preparação para a posterior estratégia industrialista posterior. Ao abrir "espaço fiscal" (aumentando o primário), o governo estaria tanto colaborando para a redução mais veloz dos juros (Mello e Chilliatto-Leite, 2011), quanto ganhando margem de manobra para realizar as desonerações fiscais, marcas posteriores da estratégia industrialista.

[9] " Dilma's first term was marked by a policy shift aiming precisely at raising profit margins, which happened through the reduction of the policy rate and the interest rate spreads, the devaluation of the exchange rate, and cuts in payroll taxes and energy prices" (Carvalho e Rugitski, 2015, p. 14).

[10] Para Hiratuka e Sarti (2015), a partir da crise internacional de 2008, com o lento crescimento da demanda global e o aumento da capacidade ociosa, cria-se um ambiente de concorrência acirrada onde a indústria brasileira tem dificuldade de enfrentar uma competição em custo bastante acirrada, liderada pela produção chinesa, mas que envolve outros produtores asiáticos e outras empresas líderes dos oligopólios globais.

empresas brasileiras se viam diante da desaceleração da demanda doméstica e da redução de sua rentabilidade[11].

Neste cenário, a queda cíclica da demanda interna e a redução do investimento público apenas colaboraram para reduzir ainda mais as perspectivas de crescimento destas empresas, que se utilizaram dos benefícios fiscais do governo para recompor parcialmente suas margens de rentabilidade (Bastos, 2015)[12]. O fracasso do industrialismo como estratégia de desenvolvimento econômico pode ser explicado, portanto, tanto por fatores conjunturais (como a crise política a partir de junho de 2013 e mudanças nas condições da economia global), como por fatores estruturais, abordados na sessão II deste artigo.

Em síntese esses diagnósticos sobre a desaceleração ressaltam os equívocos da política econômica; seja a flexibilização da matriz macroeconômica e o excesso de intervencionismo Estatal, seja o desalinhamento cambial, seja a contração da demanda pública ou as políticas de oferta voltadas para a indústria. Contudo, para além da gestão macroeconômica pode-se apontar que a crise brasileira é reflexo de entraves estruturais típicos do subdesenvolvimento que não foram superados. Em certo sentido, a condução errática da política macro nos governos Dilma Rousseff deve ser contextualizada como uma tentativa (fracassada) de contornar os efeitos desses entraves estruturais que permeiam e condicionam o desenvolvimento brasileiro. Nesse contexto, a próxima seção busca mostrar que nos governos do PT a economia brasileira passou por um processo de modernização e massificação dos padrões de consumo sem, contudo, modernizar a estrutura produtiva, a ponto de dar sustentabilidade ao processo de desenvolvimento.

2. Componentes estruturais da desaceleração econômica: o subdesenvolvimento revisitado

2.1 Furtado e o subdesenvolvimento

Para Furtado (1971), o subdesenvolvimento é a manifestação de uma inserção subordinada no capitalismo internacional, que tende a se perpetuar sobre formas cambiantes, produzindo má distribuição de renda e a coexistência de setores modernos da economia com setores de baixa produtividade, que abrigam o subemprego e a informalidade[13]. Ainda segundo Furtado, uma das principais características responsáveis pelo subdesenvolvimento é a modernização dos padrões de consumo restrita a uma parcela mais rica da população (Furtado, 1992). Ou seja, a assimilação do progresso técnico pelo lado da demanda de bens finais de consumo por uma parcela ínfima da demanda agregada conduz a uma conformação estrutural que bloqueia a passagem do crescimento ao desenvolvimento:

> *"Subdesenvolvimento é um desequilíbrio na assimilação dos avanços tecnológicos produzidos pelo capitalismo industrial a favor das inovações que incidem diretamente*

[11] Sobre a saúde financeira das empresas brasileiras, ver Almeida *et. ali* (2016) e Rezende (2016). Em uma análise minskiana, Rezende trata a deterioração do balanço das empresas no Brasil como parte da causa da desaceleração e crise da economia.

[12] "(...) a mudança de preços relativos pode ter aumentado margens de lucro (ou, pelo menos, mitigado a pressão sobre as margens em virtude do encarecimento de insumos importados), mas claramente não teve sucesso em induzir, em termos agregados, a produção e o investimento privado na indústria de transformação." (Bastos, 2015, p. 279)

[13] Segundo Bielchowsky (2007), Furtado recupera a discussão de Lewis (1954) e introduz no arcabouço analítico estruturalista a discussão sobre a dificuldade que os setores urbanos modernos têm para absorver a força de trabalho subempregada. Dada essa dificuldade, a persistência do subemprego explica a coexistência de aumentos de produtividade e salários em baixos níveis no longo prazo.

> *sobre o estilo de vida. Essa proclividade à absorção de inovações nos padrões de consumo tem como contrapartida atraso na adoção de métodos produtivos mais eficazes. É que os dois processos de penetração de novas técnicas se apoiam no mesmo vetor que é a acumulação. Nas economias desenvolvidas existe um paralelismo entre a acumulação nas forcas produtivas e diretamente nos objetos de consumo. O crescimento de uma requer o avanço de outra. A raiz do subdesenvolvimento reside na desarticulação entre esses dois processos causada pela modernização".* (Furtado, 1992, p. 8)

Nesse contexto, Furtado (1992) argumenta que a concentração de renda e a estreiteza do mercado de consumo doméstico são fatores que limitam a escala das empresas e o desenvolvimento da estrutura produtiva. Apesar das criticas aos desdobramentos dessa tese[14], Furtado inspirou o debate em torno da distribuição de renda como elemento fundamental de um modelo de desenvolvimento.

2.2. Mercado de consumo de massa no centro do modelo econômico

Segundo Bielschowsky (2014), a constituição de um mercado de consumo de massas era uma estratégia econômica deliberada dos governos do Partido de Trabalhadores e foi explicitada no programa de governo do partido em 2002 e nos planos plurianuais (PPA) elaborados ao longo do governo Lula. Nessa estratégia, a formação do mercado de consumo de massa se sustenta em dois pilares: o primeiro é a distribuição de renda que, por sua vez, é promovida por políticas de transferências e aumento de salários; já o segundo pilar é o estímulo à inclusão bancária e ao crédito para as famílias. Uma vez constituído, esse mercado teria a capacidade de estimular a estrutura produtiva doméstica de forma a atender a ampliação da demanda e, por meio de ganhos de escala das empresas domésticas, proporcionar aumentos produtividade e crescimento econômico (Bielschowsky, 2014).

Como pôde ser observado, a estratégia de desenvolvimento de um mercado de consumo de massa não ficou apenas no papel. Houve uma intencionalidade política que se verificou:

1) Na política de aumento do salário mínimo, que apresentou crescimento real de 70% ao longo dos governos petistas, elevando os rendimentos do trabalho e contribuindo para a redução da desigualdade[15].
2) Nas políticas de transferências de renda, tanto com o aumento do valor dos benefícios da previdência e seguridade social (em grande medida vinculados ao salário mínimo), quanto com a criação de programas de transferência como bolsa família[16].

[14] Tavares e Serra (1973) criticam a tese de Furtado de que a má distribuição estrutural de renda gera uma tendência à estagnação do crescimento econômico. Esses argumentam que a acumulação capitalista pode acontecer a despeito de um mercado consumidor limitado e de um grande contingente da população marginalizado.

[15] De acordo com Hoffman (2013), por representar a maior parte da renda declarada, a melhoria salarial foi o fator mais importante para explicar a redução do GINI no período, respondendo por aproximadamente 40% da melhoria do indicador.

[16] O programa bolsa família contemplou 14 milhões de famílias em 2012, segundo o Relatório de Informações Sociais, Ministério do Desenvolvimento Social e Combate à Fome, e contribuiu com 16% da melhoria do GINI entre 2001 e 2011 (Hoffman, 2013), mesmo representando menos de 1% da renda total declarada.

3) Nas políticas de facilitação do credito às famílias e empresas, dentre as quais se destacam o crédito consignado, o crédito habitacional e a expansão do crédito dos bancos públicos em particular após a crise de 2008[17].
4) No aumento do volume de despesas públicas na área social, que passaram de 21,9% em 2005 para 25,2% do PIB em 2010, que possuem um elevado multiplicador e contribuem para geração de empregos formais e informais (Castro, 2012).

2.3. Transformações na demanda e no mercado de trabalho

O impacto destas políticas se concretizou na redução da pobreza e da miséria, além da desigualdade de renda medida pelo índice de GINI, que passou de 0,593 para 0,526 entre 2001 e 2012[18]. De acordo com Castro (2012), a proporção da população que vive com menos de meio salário mínimo por mês passou de 46,6% em 2003 para 29,2% em 2009. Segundo Quadros (2015), entre os anos de 2002 e 2013 observou-se uma queda expressiva no número de miseráveis, saindo de 45 para 16 milhões de pessoas, com um aumento expressivo dos extratos médio (a baixa classe média, por exemplo, passou de 54 milhões de pessoas em 2002 para 89 milhões em 2013). Para além do aumento da renda da população mais pobre, o mercado de crédito também incluiu uma parte importante da população. O crédito para pessoas físicas cresceu a taxas elevadas entre 2008 e 2013, ampliando-se de R$ 712 milhões para R$ 1,464 bilhões em 2013 (Dieese, 2014).

Com o aumento da renda e do crédito, o consumo de bens duráveis saltou, fazendo com que a parcela da população com acesso a um conjunto de bens duráveis (telefone, televisão, fogão, geladeira, rádio e máquina de lavar) subisse de 28,2% em 2003 para 44,4% em 2012 (IPEA, 2013). Dessa forma, nesse período verificou-se uma democratização do acesso aos bens de consumo duráveis e uma ampla modernização do padrão de consumo da população brasileira. Essa nova configuração da demanda teve grande impacto no mercado de trabalho, no qual se observa uma atenuação das características clássicas do subdesenvolvimento apontadas por Furtado.

Observou-se também uma queda significativa na taxa de desemprego e aumento do emprego formal. A taxa de desemprego caiu de 12% em 2002 para próxima de 5% em 2014 (segundo dados da antiga PME-IBGE), o que juntamente ao crescimento do emprego formal (que cresceu dez pontos percentuais, alcançando 63% da força de trabalho) e ao aumento do salário médio real (crescimento de 17% no mesmo período) ajuda a explicar a melhoria nos indicadores sociais (Komatsu e Menezes Filho, 2015). No entanto, essa reconfiguração do mercado de trabalho beneficiou principalmente o emprego no setor de serviços, que cresceu

[17] Essas medidas, em conjunto com o aumento da renda e do emprego, foram responsáveis pelo aumento da relação crédito/PIB de 23,8% em 2003 para 55,8% em 2014, com destaque para o crescimento do crédito direcionado (que passa de 32% de participação relativa no saldo total de crédito em 2008 para 44% em 2013), em particular o crédito consignado (crescimento de 128,9% entre janeiro de 2008 e dezembro de 2013) e o crédito imobiliário total (crescimento de 474,8% no mesmo período). (Dieese, 2014)

[18] É importante ressaltar, no entanto, que recentes estudos com bases da declaração de Impostos de Renda tendem a minimizar a distribuição de renda no período, confirmando uma melhoria na distribuição de renda do trabalho, mas apontando certa estabilidade na distribuição da renda total, como fruto dos elevados rendimentos do capital (Medeiros et. al., 2015). Da mesma forma, Dedecca (2014) mostra que a participação dos 1% mais ricos na renda total permaneceu inalterada, havendo apenas redistribuição entre as camadas intermediárias. Essa melhoria na estratificação social, tampouco significou uma melhor distribuição da riqueza, conforme apontam Carvalho e Rugitsky (2015), indicando a necessidade de maiores estudos sobre o tema.

41,5 % entre 2004 e 2013, representando 79,6% das oportunidades ocupacionais não agrícolas criadas no período (Baltar e Leone, 2015).

2.4. Transformações na estrutura produtiva

Concomitantemente, as profundas mudanças na estrutura de demanda e no mercado de trabalho também foram acompanhadas de transformações do lado da oferta. No entanto, essas transformações não promoveram mudanças que pudessem superar entraves estruturais ao desenvolvimento. Segundo Bielschowsky *et. al.* (2014b), o investimento, medido pela formação bruta de capital fixo, em setores ligados ao mercado de consumo de massa teve forte alta nos anos de mais forte expansão da economia brasileira (2005-2008), com média de expansão de 13,2% ao ano, superior à taxa media de crescimento do investimento agregado, de 12,4% ao ano. No entanto, essa expansão ocorreu principalmente no setor de serviços (14,4% ao ano) e no setor de consumo de não duráveis (12,9% ao ano), enquanto que o investimento no setor de bens de consumo de duráveis foi próximo de zero (-0,1% ao ano).

Segundo os autores, no triênio 2006-2008 a produção interna cobriu apenas 50,6% da variação da demanda de consumo de bens duráveis, sendo 36,1% atendida por aumento de importações e 13,3% por queda nas exportações. Nesses mesmos setores industriais, o coeficiente importado aumenta de 8,1% em 2005 para 17,3% em 2008 e o coeficiente exportado, de 12,8% para 9,3% (Bielschowsky *et. al*, 2014). Nesse sentido, no que se refere ao setor de produção de bens duráveis, o consumo de massas no Brasil não gerou o dinamismo esperado na oferta de produtos domésticos.

Portanto, o ciclo de crescimento dos governos Lula foi caracterizado pela ampla modernização da estrutura de demanda sem uma equivalente modernização na estrutura produtiva capaz de supri-la. Como apontado por Nogueira, Infante e Mussi (2014), a partir da analise da produtividade dos setores de atividade entre 2000 e 2009, a estrutura produtiva se manteve praticamente tão heterogênea quanto, historicamente, sempre foi no país.

2.5. Relaxamento da restrição externa e contradições no modelo

Como destacado por Medeiros (2015), o ciclo de crescimento brasileiro foi viabilizado graças ao relaxamento da restrição externa por conta de dois fatores principais: a melhora expressiva dos termos de troca e a forte entrada de capitais estrangeiros no âmbito de uma expansão da liquidez global antes e depois da crise de 2008[19].

Em relação ao primeiro fator, a melhora nos termos de troca jogou um papel duplo e contraditório no desenvolvimento brasileiro recente: por um lado, contribui para a formação do mercado de consumo de massa por meio do barateamento dos bens industriais e da disponibilidade de divisas para importação dos mesmos, por outro lado, essa melhora nos termos de troca reforçou a reprimarizacão da pauta exportadora. Entre 2007 e 2010, a participação dos produtos primários saltou 10 pontos percentuais, alcançando 51% das exportações brasileiras (De Negri e Alvarenga, 2011) enquanto que a pauta importadora mostrou uma composição relativamente estável no mesmo período, no qual a parcela dos

[19] "Na última década, o relaxamento da restrição externa decorrente da demanda de commodities, da mudança nos termos de troca e da liquidez internacional viabilizou no país – como em geral nos países exportadores de commodities – maior crescimento e redução da pobreza e das desigualdades da renda. Com a elevação do salário mínimo, das transferências de renda e da expansão do crédito houve grande massificação dos padrões de consumo e forte penetração das importações." (Medeiros, 2015, p. 168)

bens industriais correspondeu em torno de 40% das importações, a despeito da queda relativa dos preços de bens industriais e do aumento relativo do *quantum* de produtos industriais importados (Dos Santos, *et. al. 2015*). Nesse sentido, não houve uma melhora na composição do comércio externo, considerada como elemento central por Furtado (1971) e Pinto (1979), pelo contrário, a assimetria entre a pauta importadora e exportadora é reforçada.

Disso, destaca-se uma contradição importante do modelo: o barateamento dos bens industriais importados e o excedente produtivo do setor primário foram funcionais à sustentação do mercado de consumo de massa, mas, ao mesmo tempo, contribuíram para a deterioração na pauta de comércio externo e na estrutura produtiva.

2.6. Abertura financeira e instabilidade macroeconômica.

O movimento das moedas periféricas diante do ciclo de liquidez pode ser apontado como um fenômeno contemporâneo do subdesenvolvimento, adequado ao contexto de liberalização e abertura financeira. No capitalismo contemporâneo, países com moedas periféricas e ampla abertura financeira estão sujeitos à uma instabilidade macroeconômica que se transmite da volatilidade dos fluxos capitais financeiros para os preços-chave da economia, como as taxas de câmbio e de juros (De Conti, Biancarelli e Rossi, 2013).

Em particular, a forte correlação negativa entre essas moedas com os preços de commodities, que também são condicionados pelo ciclo de liquidez, por um lado ameniza o impacto inflacionário da flutuação desses preços, mas, por outro lado, reforça a inserção dessas economias na velha divisão internacional do trabalho. Ou seja, enquanto a taxa de câmbio absorve os choques de preços de commodities, funcionando como um amortecedor de choques de preços para a economia doméstica, essa também se apresenta como um fator de aumento da incerteza para o empresário industrial, que tem dificuldade em formar expectativas de preço, risco e retorno.

Nesse contexto, a entrada de capitais externos estimulada pelos altos juros praticados no Brasil contribuiu para uma forte valorização cambial da taxa real-dólar[20] que, por sua vez, contribuiu de forma importante para o funcionamento do mercado de consumo de massas ao reduzir os preços dos bens transacionáveis e amenizar as pressões inflacionarias decorrentes do processo redistributivo[21]. Concomitantemente aos efeitos positivos sobre o ciclo de consumo, a entrada de capitais externos, por meio da valorização cambial, produz efeitos sobre a estrutura industrial. Dentre eles a desconstrução de cadeias produtivas e o aumento do coeficiente de penetração das importações, que na indústria de transformação, por exemplo, passou de 10,2% em 2003 para 17,6% em 2014, com destaque para o crescimento da importação de insumos industriais, que passou de 16,5% em 2003 para 25,8% em 2014[22].

Adicionalmente, a expressiva entrada de capitais estrangeiros possibilitou uma maior absorção de produtos importados, além de provocar efeitos diretos e indiretos sobre a estrutura produtiva. Em particular, o aumento dos investimentos diretos estrangeiros no Brasil foi expressivo, passando de US$ 108 bilhões em março de 2003 para US$ 660 bilhões em

[20] Em realidade, os ciclos de valorização cambial ocorrem menos por conta de fluxos de capitais e mais por causa da especulação com derivativos de câmbio, como mostra Rossi (2016).

[21] Entre 2004 e 2009, o aumento de preços de serviços pressionou o índice de inflação, mas foi compensado por uma baixa inflação de bens transacionáveis. Como mostra Summa (2014), a média nesse período da inflação de alimentos e industrializados foi respectivamente 4,9 e 3,9%, e esteve abaixo do IPCA médio (5,2%) e bastante inferior à inflação de serviços (6,5%).

[22] Dados a preços constantes da CNI, disponível em Indicadores CNI – Estatísticas – Coeficiente de abertura comercial.

março de 2015[23]. Se por um lado, esses investimentos podem propiciar transferências tecnológicas e modernização da estrutura produtiva doméstica, por outro, a desnacionalização crescente da estrutura produtiva condiciona as decisões de investimento às estratégias globais das multinacionais. Como assinalado por Pinto (1971), uma entrada excessiva de capitais externos provoca a "estrangeirização" e dependência tecnológica além "da alienação dos centros de decisão".

Nesse sentido, a contradição desse modelo de desenvolvimento é que vários dos fatores que contribuíram positivamente para constituição do mercado de consumo de massas também impactaram negativamente a estrutura produtiva, dentre eles a melhora nos termos de troca e a valorização cambial. Esses fatores davam sustentação ao ciclo de consumo e ao mesmo tempo mascaravam os desequilíbrios entre demanda e oferta doméstica.

3. Considerações finais

Nesse ensaio argumentou-se que, nos governos do Partido dos Trabalhadores, o ciclo de crescimento amenizou características típicas do subdesenvolvimento: (i) ao modernizar os padrões de consumo de uma parcela importante da população; e, (ii) ao melhorar qualitativamente o mercado de trabalho reduzindo o desemprego e a informalidade, em condições de relaxamento da restrição externa. No entanto, o modelo de crescimento não logrou: (i) modernizar a estrutura produtiva de forma a sustentar as transformações do lado da demanda; e, (ii) incluir a mão de obra em setores de maior produtividade. Nesse sentido, esse ciclo de crescimento não superou entraves estruturais, apenas reconfigurou alguns aspectos do subdesenvolvimento brasileiro.

No primeiro governo Dilma, com os efeitos da crise internacional, desmontam-se mecanismos de sustentação do ciclo de consumo, com a reversão dos termos de troca e a desvalorização cambial. Esperava-se que essa reversão, associadas às políticas industrialistas do governo, pudessem dar sustentação a um processo de melhora na estrutura produtiva. No entanto, não foi o que ocorreu. Ao contrário, à desaceleração do crescimento dos componentes da demanda somou-se uma deterioração da estrutura produtiva, impulsionada pelo aumento da concorrência externa e por uma disputa por mercados mais acirrada.

Portanto, para além dos erros na condução da política econômica, a desaceleração da economia brasileira deve ser entendida a partir dos elementos estruturais que constituíram a formação do mercado de consumo e da dificuldade da estrutura produtiva em acompanhar as transformações na demanda. Nesse sentido, a compatibilização de um projeto redistributivo precisa considerar as mudanças necessárias na estrutura produtiva para logra a superação dos entraves estruturais que condicionam o subdesenvolvimento brasileiro.

Por fim, nem os entraves estruturais tampouco os erros de política econômica no primeiro governo Dilma explicam a intensidade da queda da atividade econômica em 2015 e 2016. Essa crise deve ser entendida no contexto de uma crise política e de uma mudança radical na condução da política econômica, que promoveu uma forte contração fiscal e monetária, uma desvalorização cambial e um choque de preços administrados[24].

[23] Segundo dados do Banco Central do Brasil.

[24] Para uma crítica às políticas do segundo governo Dilma ver Belluzzo e Bastos (2015) e Forum21, Plataforma Política Social, GT de Macro SEP (2016).

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Fernando Ferrari Filho e Fábio Henrique Bittes Terra (orgs.), *Keynes: Ensaios sobre os 80 anos da Teoria Geral*, Editora Tomo, 2016.

Embora seja uma obra que não instaura um ponto de partida às contribuições de Keynes à teoria econômica, a *Teoria Geral do Emprego, do Juro e da Moeda* (TG) define, sobretudo, uma concepção claramente inovadora em âmbito tanto teórico quanto operacional para a ciência econômica. Já em seus primeiros capítulos, o aspecto revolucionário da TG é revelado: a apresentação da inconsistência lógica dos pressupostos da teoria clássica (na definição de que envolve também a vertente neoclássica), predominante à época de sua publicação. Feita a crítica à economia clássica nos primeiros capítulos, no restante da obra Keynes lança um novo modelo teórico: eis a Teoria Geral. Nela, Keynes inverteu a causalidade da Lei de Say, retirando da oferta e passando para a demanda o lado dinâmico da economia, tendo o investimento como seu *driver*; prevalecem as forças da incerteza sob as quais os indivíduos tomam suas decisões e nada mais podem fazer do que criar expectativas sobre o futuro; a moeda é um atributo especial de análise, pois afeta diretamente os rumos da economia; o desemprego é, em geral, involuntário e os momentos de equilíbrio do sistema não são em pleno emprego; o Estado é requerido a atuar, para socializar os riscos do investimento. Estava feita a "revolução keynesiana", que não somente fundou-se em críticas à teórica clássica, mas também em Keynes lançar um novo arcabouço teórico para superá-la.

O livro *Keynes: Ensaios sobre os 80 anos da Teoria Geral*, organizado por Fernando Ferrari Filho e Fábio Henrique Bittes Terra, celebra os 80 anos da TG ao congregar ensaios que exploram temas relevantes nesta e em outras obras de Keynes. Os assuntos abordados por autores brasileiros e estrangeiros tratam dos aspectos teóricos da TG, permeiam a teoria pós-keynesiana e dialogam com outras perspectivas da heterodoxia econômica, como as teorias neo-schumpeteriana e kaleckiana. É um livro que buscar elucidar o aspecto revolucionário da TG, e a sua importância, na atualidade.

A seção de apresentação do livro destaca como a TG prossegue em um exercício contínuo, já totalizando oito décadas, de contribuir à ciência econômica sob diversos aspectos. O esforço despendido pelos organizadores traz o aspecto revolucionário da TG, cujo sistema teórico remete ao *modus operandi* sumariamente apresentado nos parágrafos anteriores. O funcionamento da economia é necessariamente causador de instabilidades e, sob este diagnóstico, a TG propõe uma necessidade de reação política a fim de minorar o caráter cíclico dos níveis de emprego e renda. A relevância da TG prevalece no tempo, o que faz da interpretação de vários de seus conteúdos pelos ensaios que trazem temas importantes para uma homenagem de uma das publicações mais reconhecidas da teoria econômica – temas que incluem fenômenos cíclicos da economia, questões metodológicas, prescrições de políticas, as aproximações e embates teóricos posteriores à TG, entre outros.

Os ensaios iniciais buscam ressaltar as contribuições teóricas da TG. Em o *Retorno de Keynes,* o primeiro ensaio do livro, Fernando Cardim de Carvalho reúne os princípios primordiais que definem o eixo para a economia monetária de produção. Eles são descritos de forma a tornar leal às interpretações contemporâneas – heterodoxas e ortodoxas – aspectos da teoria keynesiana que não devem ser negligenciados: (i) a não-neutralidade da moeda; (ii) a

elucidação do conceito de liquidez; (iii) os aspectos cruciais da teoria da precificação dos ativos expressos no capítulo 17 da TG; (iv) o estado de confiança e a intenção não irracional que define o ímpeto da decisão em um ambiente incerto; (v) a demanda efetiva, assim como o emprego e renda, como dependentes da articulação do estado de confiança *versus a* preferência pela liquidez; (vi) o Estado como agente externo às decisões individuais, compensador de quedas conjunturais de demanda agregada; e; (vii) a instabilidade imanente do sistema, que depende de interesses individuais, os quais são definidos por atributos subjetivos e convencionais que podem causar efeitos que não podem ser antecipados.

A explicitação destes princípios torna clara a intenção de Keynes ao descrever uma abordagem teórica que rompeu com a linha teórica predominante ao seu tempo, assim como também se sustentou sob diretrizes pragmáticas, conforme destaca Pedro Cezar Dutra Fonseca, em *Keynes: o liberalismo econômico como mito* – segundo ensaio. O autor faz jus a Keynes quando ele se posicionou criticamente ao liberalismo, ainda que isso não significasse uma posição contrária ao capitalismo. Fonseca argumenta que a teoria de Keynes se substanciou sobretudo em uma economia que revela o papel fundamental do investidor, a importância da propriedade privada e da livre iniciativa, o que pode colocar uma articulação delicada – mas não contraditória – entre o Estado e negócios. As conclusões do autor apontam que Keynes propiciou um legado teórico particular, mesmo motivado pela descrença ao *laissez-faire*, o autor propôs pragmatismo às suas recomendações intervencionistas via política econômica, tornando dissociável capitalismo e liberalismo econômico.

Ao descrever um mundo em que há incerteza, a obra de Keynes gerou dissenso quanto ao método que aplicou em suas obras. Ao colocar esse tema em pauta de pesquisa, o terceiro ensaio, *Induction as Keynes's method*, por Fernando Ferrari Filho e Fábio Terra, resgata a discussão sobre método em Keynes em suas obras, negando a neoclássica dedução axiomática e teleológica. Os autores advogam a tese de que Keynes usufruiu da indução como método de suas principais obras, e o fazem partindo de uma investigação bibliográfica do pensamento de Keynes em suas publicações, observando que a indução manifestada no *Treatise on Probability* (1921) refletiu-se em suas obras posteriores – *Tract on Monetary Reform* (1923), *Treatise on Money* (1930) e TG (1936). Os autores tomam a indução como um aspecto adicional da discutida "revolução keynesiana". Dentre as principais percepções desse ensaio, uma é a expressão por Keynes, numa ótica epistemológica, do papel da probabilidade, cujo significado difere de cálculos e antecipações, por ser basear no grau de confiança do indivíduo, portanto subjetiva e qualitativa, sobre um determinado evento.

Em linha com o ensaio anterior, o que se pode descrever como não-ergodicidade dos eventos e resultados futuros de uma economia monetária de produção forma argumentos para Rafael Galvão de Almeida, o quarto ensaio, *O debate Keynes-Tibergen: relato histórico de uma controvérsia sobre a origem da econometria*. O autor coloca em pauta a utilização da econometria como ferramenta metodológica à investigação dos ciclos econômicos. Almeida parte de um resgate bibliográfico do posicionamento de Keynes a respeito do instrumental econométrico, identificando que a captura dos ciclos por este recurso pode causar distorções às formulações de políticas econômicas. O ensaio, como descrito no título, percorre sob a apresentação de um debate entre Keynes e Jan Tibergen, com contrapartidas de críticas metodológicas. O que permanece ao fim do debate é que, a despeito dos pontos negativos expostos, a econometria, segundo Tibergen, é uma ferramenta fundamental à teoria

econômica, enquanto que Keynes permanece negando-a como ciência, sob o argumento de que a economia é uma ciência moral e não natural. Contudo, Keynes defende esta tese sem negligenciar a existência de utilidade da econometria para a teoria econômica.

Estes quatro primeiros ensaios do livro discutem noções específicas e fundamentais do escopo teórico de Keynes. Deles se extraem a base para que decorrências pós-keynesianas, que buscam reler e evoluir a obra de Keynes, ocorram. Nesse sentido, Bruno Paim em *Oferta de Moeda em Keynes* – quinto ensaio – investiga, à luz do arcabouço keynesiano sobre a moeda, as origens teóricas da repercussão da endogeneidade da moeda nas teorias pós-keynesianas. Paim parte de uma metodologia de longa revisão bibliográfica, colocando no eixo de sua discussão a questão da endogeneidade da moeda em diversas teorias. O autor identifica que embora este tema seja controverso entre os próprios escritos de Keynes, vários aspectos desses escritos influenciaram a concepção de uma teoria da moeda endógena pelos pós-keynesianos.

O sexto ensaio do livro, *A coherent macroeconomic approach to macroeconomics with enviornmental aspects* por Phillip Arestis e Ana Rosa González-Martinez, propõe um avanço a Keynes em um tema ainda incipiente às discussões pós-keynesianas. A abordagem dos autores possui a pretensão de suplementar aspectos do desenvolvimento econômico via proposta de um modelo macroeconômico que incorpore variáveis ambientais na perspectiva keynesiana. Os autores o fazem mediante a construção de um modelo que consiste no tratamento dos ciclos e da demanda agregada, considerando efeitos distributivos e ambientais relacionados à atividade econômica, juntamente com outros condicionantes já comuns à teoria pós-keynesiana, como as finanças e a atuação do governo.

Em *Post Keynesian macroeconomic policy regime*, Philip Arestis, Fernando Ferrari Filho e Fábio Henrique Bittes Terra enfatizam a relevância da política econômica pós-keynesiana – políticas fiscal, cambial e monetária – para se alcançar uma tendência estável de crescimento econômico com pleno emprego e menor desigualdade de renda. Isso ocorre porque o investimento, variável chave da economia na teoria pós-keynesiana, depende de fatores subjetivos e, diante da incerteza, ele pode não se realizar, gerando uma demanda efetiva insuficiente e reduzindo, por sua vez, o emprego e a produção – cenário provável quando somente as forças de mercado conduzem a economia. Para Keynes, a participação do governo via política econômica se faz necessária, portanto, para criar um bom ambiente institucional e manter as expectativas dos empresários confiantes, estimulando investimentos. O ensaio apresenta a proposição de um regime de política econômica que estabeleça os papeis, as ferramentas e lógicas de operação de cada política, bem como a coordenação adequada delas de forma discricionária. A importância de uma política econômica coordenada – em oposição às linhas propostas por economistas *mainstream* – para se tratarem os diversos problemas do sistema econômico se torna evidente quando os autores fornecem vários exemplos interessantes de interação entre as políticas macroeconômicas analisadas ao longo do ensaio.

As recomendações pós-keynesianas de política econômica bem como a necessidade de coordenação entre as políticas monetária, cambial, fiscal, de renda e setoriais a fim de se obter crescimento econômico sustentável, emprego e estabilidade monetária e financeira também são analisadas por Bárbara Fritz, Luiz Fernando de Paula e Daniela Magalhães Prates no ensaio 8, *Hierarquia de moedas e redução da autonomia de política econômica em*

economias periféricas emergentes: uma análise keynesiano-estruturalista. Já expresso pelo título, o ensaio tem por objetivo reunir a perspectiva estruturalista e a abordagem pós-keynesiana ao analisar a estrutura hierárquica do sistema monetário internacional – que também pode ser ilustrada pelo termo centro-periferia da literatura estruturalista do desenvolvimento – na qual a moeda-chave desempenha as três funções da moeda internacionalmente, várias outras moedas de países desenvolvidos exercem parcialmente essas funções, e as moedas de países emergentes, por sua vez, não são capazes de exercer nenhuma dessas funções na economia mundial. Essa assimetria implica redução da autonomia dos países periféricos para a implementação de políticas econômicas que os coloquem em uma trajetória de crescimento do produto e do emprego com melhor distribuição de renda e estabilidade. É de demasiada importância, então, a análise de como políticas econômicas pós-keynesianas devem ser adaptadas à realidade desses países – que se encontram na base da hierarquia do sistema monetário internacional – para que os objetivos descritos sejam alcançados.

Enquanto a teoria pós-keynesiana ressalta a importância do investimento para gerar emprego, produto e renda, a teoria neo-schumpeteriana enfatiza a importância do progresso tecnológico na determinação deles. João Prates Romero, no ensaio 9, *Mr. Keynes and the Neo-Schumpeterians: contributions to the analysis of the determinants of innovation from a Post-Keynesian perspective*, conecta ambas as teorias ao analisar a importância do conhecimento tácito e codificado na formação de um estado forte e animado das expectativas de longo prazo, que são as que influenciam as decisões das firmas de inovar e, portanto, investir em P&D. Este incentivo se faz presente via fortalecimento da confiança nas expectativas de logo prazo e na criação de um estado de convenções favoráveis à decisão de inovar. Romero observa que tanto o conhecimento tácito – enfatizado pela teoria pós-keynesiana –, quanto o conhecimento codificado – tido como mais relevante pela teoria neo-schumpeteriana –, são importantes para a formação de expectativas, e que a acumulação do conhecimento contribui para a introdução constante de inovações, o que culmina na criação de uma convenção de inovar, permitindo emergir uma cultura inovadora que fomenta o gasto com P&D. As conclusões deste ensaio destacam a importância de um Sistema Nacional de Inovação maduro, que influencie o estado das expectativas de longo prazo por meio do seu efeito sobre a acumulação de conhecimento e que impulsione, por sua vez, a inovação e o investimento.

No ensaio 10, *Demanda efetiva, investimento e dinâmica: a atualidade de Kalecki para a teoria econômica*, Mario Luiz Possas se propõe a rever três contribuições primordiais – embora esquecidas por tantos economistas na atualidade – de Kalecki para a teoria macroeconômica, que influenciam também a política econômica, frequentemente dialogando ou confrontando as exposições desse autor às de Keynes. O ensaio trata, inicialmente, do princípio da demanda efetiva, cuja formulação exposta por Kalecki independe da noção de equilíbrio e é mais simples e geral que a keynesiana ao expor a determinação unilateral das receitas pelo gasto. Em seguida, Possas analisa a relação poupança-investimento e então, mais uma vez o autor aponta que Kalecki, em comparação a Keynes, expõe mais simples e diretamente que a poupança, ao contrário da crença de algumas correntes econômicas, não possui relevância econômica alguma e é determinada pelo investimento somado ao déficit público e ao saldo da balança comercial; prevalecendo, portanto, a relação de determinação unilateral do gasto para a renda. À guisa de conclusão, o ensaio apresenta que, para Kalecki, a

dinâmica da economia capitalista é uma variável-chave de seu funcionamento, principalmente em relação às flutuações e instabilidade, e chama a atenção para dois resultados cruciais alcançados pela teoria kaleckiana do ciclo econômico, quais sejam, o de que a economia capitalista é instável e, por isso, não tende a um estado estacionário ou de equilíbrio geral, mas a flutuações; e de que o crescimento a longo prazo depende principalmente do investimento autônomo. Após a leitura do ensaio, torna-se explícita a importância dessas contribuições para o desenvolvimento de um senso crítico e para o resgate dessas teorias na macroeconomia contemporânea, e também para que sejam delineadas novas linhas de políticas públicas a partir dessas conclusões.

O último ensaio do livro, *Princípio da demanda efetiva: notas sobre as controvérsias entre Keynes e Kalecki*, de Heitor Victor Silva Brinhosa e Lauro Mattei, também relaciona as obras de Keynes e Kalecki acerca dos determinantes da demanda efetiva e suas implicações sobre a produção e o emprego. Enquanto que em Keynes o princípio da demanda efetiva é fruto de uma teoria do ciclo produtivo, na qual os volumes de produção e emprego são determinados pelas decisões de gastos dos empresários relacionados a uma demanda futura expectacional, em Kalecki a análise dos determinantes da demanda é fruto do resgate dos estudos de Marx acerca das reproduções simples e ampliadas do capital, com o propósito de explicar os determinantes do lucro de uma economia capitalista. Embora apresente várias controvérsias entre Keynes e Kalecki que emergem a partir do postulado de decisões autônomas de gastos, o ensaio permite identificar também pontos de convergência entre estes autores: i) ambos buscavam responder e questionar as teorias clássica e neoclássica, centradas nos pressupostos da Lei de Say; ii) ambos dispensam a noção de equilíbrio como variável-chave para explicar as relações macroeconômicas; e iii) para ambos, os níveis de produção e emprego dependem das decisões autônomas do gasto.

Finalmente, vale ressaltar que o livro *Keynes: Ensaios sobre os 80 anos da Teoria Geral* é afortunado em abordar temas importantes para uma homenagem de uma das publicações mais reconhecidas da teoria econômica e em reunir não apenas ensaios que enfatizam e exploram a importância, o aspecto revolucionário e a atualidade da TG e das demais obras de Keynes, mas também que abordam amplamente a teoria pós-keynesiana e dialogam com outras áreas da heterodoxia econômica, como a teoria neo-schumpeteriana e as contribuições de Mikael Kalecki. As análises apresentadas são de extrema importância para a economia mundial e, particularmente, para a brasileira, por trazerem *insights* sobre a globalização financeira e suas implicações para os países em desenvolvimento e por oferecerem também diversas recomendações de política econômica que busquem tornar os ciclos menos abruptos e duradouros, impedindo recessões violentas e estagnação e proporcionando crescimento do produto sinérgico a uma trajetória ao pleno emprego com melhor distribuição de renda. Tais recomendações chamam atenção a um grande entrave que deve ser evitado: a sobreposição da dinâmica financeira em detrimento da real, o que aprofunda o grau de instabilidade inerente do capitalismo, como Keynes realçou.

Dado o amplo escopo da teoria keynesiana, que permite aos pós-keynesianos desenvolver uma agenda de pesquisa complementar, o livro deixa questões ainda remanescentes à discussão. Apontam-se duas delas: i) a institucionalidade em Keynes, uma vez que a economia possui um aspecto expectacional e é dominada pela incerteza, é de extrema importância para que que políticas keynesianas tenham um corpo institucional bem delineado,

de forma que sejam compreendidas e efetivadas; e ii) muito embora a oferta de moeda, em específico, seja explorada em *Oferta de Moeda em Keynes*, o lado da oferta, em geral, permanece pouco explorado tanto no livro quanto na teoria pós-keynesiana. Claramente, a finalidade de *Keynes: ensaios sobre 80 anos da Teoria Geral* não foi exaurir a agenda de pesquisa em potencial, mas reunir tópicos de uma pauta importante relativos à obra de Keynes em contrapartida para as questões da economia e da teoria econômica de hoje.

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Entrevistas/Interviews

Associação Keynesiana Brasileira

Nos oitenta anos da Teoria Geral do Emprego, do Juro e da Moeda, a Associação Keynesiana Brasileira homenageou o mais importante livro de John Maynard Keynes de duas formas. Por um lado, como tema central do IX Encontro Internacional da AKB; por outro lado, com uma série especial de entrevistas em seu boletim mensal, em que quatorze especialistas em Keynes, estrangeiros e brasileiros, responderam a duas questões: "Quando você teve seu primeiro contato com a Teoria Geral e como ela te impressionou?" e "Aos 80 anos, qual a importância atual da Teoria Geral?". As variadas respostas dos entrevistados deixam clara a relevância da obra-prima de Keynes. Para ser mais fiel ao que o leitor perceberá a seguir, melhor usar o plural: os entrevistados deixam claras as relevâncias da Teoria Geral, pois são diversos os pontos destacados por diferentes pesquisadores sobre uma só obra. Assim, embora octagenária, a Teoria Geral está bastante longe de estar se encaminhando para qualquer forma de aposentadoria, ainda que seja naquela estante pouco ocupada dos clássicos da economia. Tal qual a Teoria Geral para nossos entrevistados, o Comitê Editorial da Brazilian Keynesian Review deseja a todos os leitores das entrevistas abaixo muitas novas formas de se enxergar o livro marco da revolução keynesiana. Em tempo, a Revista e a Associação Keynesiana Brasileira agradecem a Fernando Ferrari Filho, Philip Arestis, Luiz Fernando de Paula, Jan Kregel, Maria de Lourdes Mollo, Robert Skydelski, Mário Possas, Marc Lavoie, Gilberto Tadeu Lima, Mark Setterfield, Daniela Prates, Anthony Thirlwall, Sheila Dow e Fernando Cardim de Carvalho a gentileza de contribuírem com esta série especial de entrevistas sobre os 80 anos da Teoria Geral, republicadas pela Brazilian Keynesian Review a seguir.

Professor Philip Arestis (Universidade de Cambridge, Reino Unido)

When have you first got in touch with The General Theory and how have it impressed you?

I first came across Keynes's General Theory as an undergraduate but it was rather difficult to fully understand it at the time. As a postgraduate, the General Theory became a great deal clearer and made a great deal more sense to me, especially so in the late 1960s when students were very much looking for alternatives to neoclassical economics. It was then that the General Theory did impress me most greatly and subsequently became very important in my teaching of macroeconomics and my research. We initiated a number of seminars, conferences, study groups (funded by national funding organizations), concentrating on the General Theory and Keynesian Economics more generally, which became very popular.

At its 80th anniversary, what is Keynes' General Theory relevance today?

Keynes's General Theory is very relevant to-day, especially so in view of the 'great financial crisis', although it has always been so. The General Theory is a very rich contribution but the notion of aggregate demand and fiscal policy that should be manipulated to influence it to achieve full employment in the economy is most important. Fiscal policy can contribute to curing unemployment via its influence on aggregate demand. This is particularly effective when coordinated closely not only with monetary policy but also with financial stability

policies. Also such coordination should be geared towards reducing income inequality, an important issue in terms of the General Theory.

Professor Fernando José Cardim de Carvalho (Professor Emérito da UFRJ, Professor do Levy Institute of Economics do Bard College, Estados Unidos da América e Patrono da AKB)

Quando você teve seu primeiro contato com a Teoria Geral e como ela lhe impressinou?

Eu estava na faculdade, na Universidade de São Paulo (USP). Eu havia tido um curso muito convencional de macroeconomia, utilizando o manual do Shapiro, que era bastante popular à época. No meu terceiro ano na Faculdade, eu resolvi ler a Teoria Geral, na edição brasileira publicada pelo Fundo de Cultura. Eu senti que algo muito importante estava contido no livro, mas era difícil pegar exatamente o que poderia ser. Posteriormente, no meu primeiro ano na Unicamp, eu li On Keynesian Economics and the Economics of Keynes, de Leijonhufvd, que me fez ainda mais curioso sobre a Teoria Geral e, assim, eu a li novamente. Desde então eu já a li algumas vezes mais, na língua original, e até hoje eu sempre aprendo alguma coisa que eu não sabia ou vejo algo que eu havia perdido. Contrário à lenda, a Teoria Geral é um livro muito bem escrito e é fascinante, se você sabe alguma coisa sobre como as ideias de Keynes evoluíram, para ver como seus argumentos centrais tomaram forma.

Em seu octagésimo aniversário, qual a importância da Teoria Geral atualmente?

Pois bem, a TG é um livro sobre como a moderna economia empresarial funciona e como sua característica essencialmente monetária explica sua dinâmica. Ela não é um livro sobre os anos 1930, como é comumente sugerido por aqueles que nunca a leram. É tão moderna como sempre, embora não seja um completo retrato das dinâmicas capitalistas como, de fato, nenhum livro pode ser. Keynes era um economista monetário. Toda sua carreira foi dedicada aos problemas monetários e seus impactos sobre o lado "real" da economia, a se usar uma antiga, mas ainda sugestiva dicotomia. Na TG, entretanto, Keynes não explorou tanto o funcionamento do sistema financeiro (ele havia feito isso no Tratado da Moeda) quanto, e ainda menos, questões financeiras (que foram deixadas para alguns de seus seguidores, como Hyman Minsky, explorarem). É relevante, como todo texto fundamental é, para a formação do economista moderno. Aqueles que pensaram que ela era uma peça de museu descobriram como era boba sua visão quando a Grande Recessão começou em 2007.

Professor Lord Robert Skidelsky (Universidade de Warwick, Reino Unido)

When have you first got in touch with The General Theory and how have it impressed you?

I first read the GT in the mid 1960s when I was working on my first book Politicians and the Slump – an account of the politics of the Great Depression. But I only started reading it thoroughly when I began my biography of Keynes in the 1970s. Since then I have read the whole book at least twice, and keep dipping into bits of it, each time learning something new. He had the most fertile mind of any economist, and passages of the book are stylistically and intellectually unforgettable. I particularly direct your attention to the passage on p. 173, English version, about the slip between cup and lip, especially apposite to the faith quantitative easing.

At its 80th anniversary, what is Keynes's General Theory relevance today?

The key concepts of 'a monetary theory of production', 'a theory of output as a whole', 'fallacy of composition', 'uncertainty' and 'money as a store of value' form part of an interconnected argument, breaking away from theorizing in terms of a real-exchange economy and its underpinning in methodological individualism. The audacity of this overthrow has yet to be fully grasped, so contrary to his ow famous aphorism, run Keynes is very much alive.

Professor Fernando Ferrari Filho (Professor Titular da UFRGS, Pesquisador do CNPq e Ex-Presidente da AKB)

Quando você teve seu primeiro contato com a Teoria Geral e como ela lhe impressionou?

Meu primeiro contato com a Teoria Geral (TG) foi na disciplina Análise Macroeconômica em meu curso de graduação na UERJ, em 1978. Na ocasião, confesso que meu interesse pela teoria keynesiana foi superficial. Mais tarde, tanto no mestrado (UFRGS), quanto no doutorado (USP), debrucei-me não somente na TG, mas também nas obras de Keynes. É importante ressaltar que meu período sabático com Paul Davidson na University of Tennesse foi fundamental para minha compreensão analítica sobre a Economia de Keynes e a revolução keynesiana.

Em seu octagésimo aniversário, qual a importância da Teoria Geral atualmente?

Para compreender a lógica e a dinâmica da globalização financeira, bem como analisar as origens e os desdobramentos das recentes crises capitalistas, entre as quais a do subprime e a "grande recessão", a teoria keynesiana é imprescindível. Keynes, na TG, mostra como as crises de demanda efetiva e, por conseguinte, desemprego são inerentes ao modus operandi de uma economia monetária. Ademais, as políticas contracíclicas propostas por Keynes no capítulo 24 da TG são fundamentais para mitigar as referidas crises. Nesse particular, como desde os anos da globalização financeira as crises capitalistas têm sido recorrentes, as proposições keynesianas de políticas fiscal, monetária e de rendas, além de intervenções estratégicas do Estado, continuam atuais e relevantes.

Professor Jan Kregel (Institute of Economics do Bard College, Estados Unidos da América)

When have you first got in touch with The General Theory and how have it impressed you?

As a graduate student at Rutgers I was taught hydraulic Keynesianism by Kenneth Kurihara, in which we saw multiple multiplier equations from one of his books, but did not read the General Theory. The following semester as a member of a graduate seminar on monetary theory taught by Paul Davidson we were taught from the General Theory and read the book. My real introduction came when I was teaching the advanced lecture course in Macro at the University of Southampton and used the General Theory as the assigned reading.

At its 80th anniversary, what is Keynes's General Theory relevance today?

The whole point of the book was that the capitalist economy could reach a stable position of low employment and low growth – precisely what mainstream economists have rediscovered as the "new normal" or "secular stagnation', but without remembering that Keynes explained how this occurs and how to emerge from this situation. They just have to read the book.

Professor Marios Possas (Professor Emérito da UFRJ e Patrono da AKB)

Quando você teve seu primeiro contato com a Teoria Geral e como ela lhe impressionou?

Comecei a ler a Teoria Geral (TG) por curiosidade intelectual, antes de migrar da Engenharia para a Economia formalmente (i.e. cursando pós-graduação). Admito que não entendi grande coisa, o que só veio a acontecer no Mestrado e, principalmente, no Doutorado na Unicamp. A leitura de Minsky também me ajudou a entender a mensagem central, que é ao mesmo tempo real e monetário-financeira, desembocando na ideia de instabilidade, o que só uma leitura cuidadosa do cap.17 permite perceber.

Em seu octagésimo aniversário, qual a importância da Teoria Geral atualmente?

Como toda boa teoria, a de Keynes na TG tem implicações concretas muito relevantes e de interesse permanente para entender - e, assim, poder atuar com maior eficácia - as economias capitalistas. O livro não é um compêndio de políticas econômicas; o terreno para controvérsias é bem espaçoso, mas as principais diretrizes estão lá.

Professor Marc Lavoie (Universidade de Ottawa, Canadá)

When have you first got in touch with The General Theory and how have it impressed you?

I first read large sections of the *General Theory*, on my own, when I was in fourth-year university. I found it extremely difficult to understand, as the English was nothing like the American English that we were used to read when studying economics textbooks. In my Master's year, in Paris, I picked up the French translation, but that did not help very much. Only after having studied various post-Keynesian works by Kaldor, Robinson, Kregel, Davidson and Minsky, did I come back and enjoyed reading Keynes's *General Theory* and his *Treatise on Money*.

At its 80th anniversary, what is Keynes's General Theory relevance today?

Three things come to mind. First, along with Kalecki, Keynes underlined the importance of aggregate demand (or effective demand) for determining economic activity. Second, Keynes, like Minsky after him, described financial markets as being driven by euphoria and pessimism, as well as mimetic behavior, not by fundamentals. Third, perhaps related to this, he emphasized that there could be involuntary unemployment, and that this unemployment was not caused by frictions or wages that were rigid downwards, as falling wages and prices would make things worse, something central bankers today are fully aware of.

Professor Luiz Fernando de Paula (Professor Titular da FCE/UERJ e Pesquisador do CNPq, é ex-Presidente da AKB)

Quando você teve seu primeiro contato com a Teoria Geral e como ela lhe impressionou?

Meu contato mais aprofundado com a Teoria Geral ocorreu no curso de Economia Política, ministrado pela Conceição Tavares e Mario Possas em 1992, no doutorado em Economia da UNICAMP. Interessante é que lemos antes o "Caminho da Servidão" do Hayek, que pode ser contrastado com Keynes. Na época lemos também alguns trabalhos do Kalecki – e assim já podia notar semelhanças e diferenças entre os dois grandes autores. Teoria Geral é um livro abrangente, profundo e complexo, no qual Keynes busca claramente revolucionar a teoria econômica, de forma bem sucedida. Voltei a ler com cuidado a TG quando estava escrevendo

o livro Economia Monetária e Financeira no final dos anos 1990. É sem duvida um livro inspirador, ao qual a cada nova leitura sempre se tem uma percepção de algo novo.

Em seu octagésimo aniversário, qual a importância da Teoria Geral atualmente?

Teoria Geral, a meu juízo, é uma dessas obras clássicas que nunca perde o frescor da novidade, e permanece atual. A concepção de que os agregados macroeconômicos não são uma mera agregação de comportamentos individuais dos agentes (falácia da composição) é revolucionária, e é incrível que a visão convencional não dê conta disto. O mundo atual de globalização financeira é um "grande cassino mundial", que agora envolve países e não apenas mercado doméstico. Problemas de demanda efetiva, crises geradas por fatores monetários e financeiros, expectativas empresariais deterioradas, comportamentos especulativos dos agentes, etc., são questões presentes na atualidade no qual a TG continua inspiradora.

Professor Anthony Thirlwall (Universidade de Kent)

When have you first got in touch with The General Theory and how have it impressed you?

I bought my first copy of Keynes's General Theory in 1960. I studied it in depth as a graduate student in the United States. I realized for the first time that all the key concepts in macroeconomics that are found in undergraduate textbooks come from Keynes's work: the concept of effective demand; the consumption function; the multiplier; the marginal efficiency of investment; liquidity preference, and that money is different from other goods – its zero elasticity of production and zero elasticity of substitution.

At its 80th anniversary, what is Keynes's General Theory relevance today?

Keynes's General Theory is as relevant today as it ever was for an understanding of capitalist, monetary economies at the aggregate level. For the first time Keynes provided a theory of the determination of output as a whole with the possibility of an underemployment equilibrium which could not necessarily be remedied by wage and price flexibility. The State has a role to play in offsetting fluctuations in private investment for the maintenance of full employment.

Professora Maria de Lourdes Mollo (Professora Titular da UnB e Patronesse da AKB)

Quando você teve seu primeiro contato com a Teoria Geral e como ela lhe impressionou?

Meu primeiro contato com a Teoria Geral foi no mestrado, mas só no doutorado pude, de fato, aproveitar melhor a sua leitura, porque nos anos 1970, quando fiz o mestrado, as leituras que eram feitas da Teoria Geral ainda tinham uma orientação muito ortodoxa. Provavelmente para isso muito contribuiu o fato dos *Collected Writings,* que difundiram a produção de Keynes pós 1937, só tivessem saído ao longo dessa década. Penso que só depois da Teoria Geral há, de fato, uma ruptura grande de Keynes com a ortodoxia, e só depois que os artigos posteriores a ela foram sendo publicados e conhecidos podia-se perceber melhor todo o caráter inovador que ela continha.

Em seu octagésimo aniversário, qual a importância da Teoria Geral atualmente?

A Teoria Geral marca, como eu já disse, a grande ruptura de Keynes com a ortodoxia, oferecendo uma visão de economia completamente diferente em termos de realismo das hipóteses e, por isso, permitindo contestar as prescrições de política econômica dominantes,

assim como propor alternativas. Em particular, destaca-se nela a importância que a moeda tem na economia capitalista, e que então deve ter na análise econômica, algo que Marx já mostrara mas com outros argumentos, enquanto que a ortodoxia neoclássica na época de Keynes e os ortodoxos de hoje, novos clássicos mas também novos keynesianos, não conseguem apreender.

Professor Mark Setterfield (The New School of Social Research)

When have you first got in touch with The General Theory and how have it impressed you*?*

I was first exposed to "Keynesian" economics at school, but I was first exposed to *The General Theory* when it appeared on the reading list I was given before going up to Cambridge in 1985. I bought a copy from a bookstore in Birmingham that I still own and that still contains my (frequently perplexed) penciled-in margin notes. I've re-read this copy many times. I hope I've understood a bit more of it over time. It has certainly impressed me more and more as I've re-read it – and my original margin notes are still good value as a source of added amusement!

At its 80th anniversary, what is Keynes's General Theory relevance today?

Macroeconomic policies that have already ruined lives, and that are based on a flawed model that only recently suffered massive predictive failure, are still being instituted worldwide. Indeed, recent global political developments – nowhere more evident than in South America – threaten to reinforce this trend. Alternative policies can only be based on a truly alternative theory of how the economy works. This, in a nutshell, is the contemporary importance of the *General Theory*.

Professor Gilberto Tadeu Lima (FEA-USP)

Quando você teve o primeiro contato com a Teoria Geral e como ela lhe impressionou?

Meu primeiro contato com *Teoria Geral* ocorreu ainda durante a graduação, através da leitura de alguns capítulos (entre eles os três primeiros). Porém, foi apenas durante o mestrado que fiz uma primeira leitura (que incluiu vários escritos do próprio Keynes que gravitam em torno da *Teoria Geral*) de maneira integral e sistemática. Desde então foram várias releituras, usualmente com a apuração de várias percepções e reflexões anteriores e a realização de novas destas. Daí, portanto, sempre me impressionar, desde a primeira leitura, a perspicácia e engenhosidade analíticas com que a *Teoria Geral* aborda a determinação do produto e emprego agregados a curto prazo em economias monetárias.

Em seu aniversário de 80 anos, qual a importância atual da Teoria Geral?

Creio que permanece significativamente atual aquela que me parece ser a concepção essencial da *Teoria Geral*: a atividade produtiva para fins de comercialização lucrativa da produção resultante, quando realizada em uma economia monetária, na qual a moeda afeta motivos e decisões, defronta-se inescapavelmente com uma incerteza em relação à demanda com que essa produção efetivamente contará. Ou seja, o devir imediato com que se deparam as decisões correntes de produção já é incerto. E isso ocorre, em grande medida, pois certas decisões correntes em relação à produção futura, e o investimento corrente daí derivado, ele próprio um elemento da demanda efetiva corrente, defrontam-se com um devir ainda mais longínquo e, portanto, peculiarmente incerto.

Professora Sheila Dow (Universide de Stirling, Reino Unido)

When have you first got in touch with The General Theory and how have it impressed you*?*

When I was an undergraduate in the 1960s, I was taught a hydraulic Keynesian interpretation of *The General Theory* as conventional wisdom. I remember being shocked in 1969 when I first came across a monetarist who challenged *The General Theory*. But I only really came to appreciate it properly from the late 1970s once I learned more about the underpinnings of *The General Theory* in Keynes's philosophy. This helped me better understand his method, and the meaning and significance of his theories of money and of expectations. But the fact is that I learn new things from *The General Theory* all the time – the sign of a great book.

At its 80th anniversary, what is Keynes's General Theory relevance today?

As in the 1930s, Keynes's principle of effective demand has direct relevance today for the role of fiscal policy, the merits of socialization of investment, the limitations on the effectiveness of monetary policy and the damaging macroeconomic effects of wage restraint. But further Keynes's methodological approach helps us develop theory to reflect changing circumstances and address new policy challenges, which today include maldistribution of income and environmental threats. Keynes advocated the use of multiple partial arguments to build theory, rather than reliance on any one formal model, and adapting theory to context rather than seeking universal application.

Professora Daniela Magalhães Prates (IE-UNICAMP)

Quando teve seu primeiro contato com a Teoria Geral e como ela lhe impressionou?

Tive meu primeiro contato com a TG na graduação de economia na FEA/USP, no início dos anos 1990. A TG já tinha sido excluída do curriculum obrigatório. Eu e alguns colegas conseguimos convencer um professor a dar um curso optativo sobre Keynes. Até então, no âmbito da macroeconomia, tínhamos tido contato somente com os manuais do *mainstream*. O que mais me impressionou foi a explicação da dinâmica das economias capitalistas como economias monetárias de produção, na qual as dimensões produtiva e monetária/financeira estão imbricadas, ou seja, não existe a dicotomia entre os chamados "lados real e monetário" como defende a teoria neoclássica.

Em seu aniversário de 80 anos, qual a importância atual da Teoria Geral?

A TG nunca deixará de ser importante para a análise das economias capitalistas, mas ganha ainda mais relevância em alguns momentos históricos Embora seja preciso algumas adaptações para economias abertas, gostaria de destacar dois aspectos inter-relacionados da dinâmica atual da economia internacional que nos remetem aos ensinamentos da TG: (i) 8 anos após a crise financeira global, o baixo dinamismo nos países desenvolvidos está associado à insuficiência de demanda efetiva; (ii) que decorre do recurso, praticamente exclusivo, à política monetária, ou seja, da não utilização da política fiscal como instrumento de estímulo da demanda, sobretudo na área do euro.