FOR AGENDA

SM/12/155
Correction 1

July 6, 2012

To: Members of the Executive Board

From: The Acting Secretary

Subject: **Brazil—Selected Issues**

The attached corrections to SM/12/155 (6/26/12) have been provided by the staff:

The Secretary's note of transmittal is being reissued to amend the publication intentions in the first paragraph.

Typographical Errors

Page 1, Table of Contents, Chapter IV: Section Title C was missing from document (at the top of page 60). Should read "C. Lending Products: Penetration and Debt Service". Consecutive titles and letters have been updated.

Page 7, line 6: for "On net terms, the authorities expect an improvement in the balance of the RPPS from 2033 onwards, with gains rising to 0.2 percent of GDP per year in the long run." read "On net terms, the authorities expect an improvement in the balance of the RPPS from 2033 onwards, with gains rising to 0.4 percent of GDP per year in the long run."

Page 35, reference "Galstyan...": added reference that was previously omitted from the reference section but mentioned in the text of the document.

Page 59, Figure 3: The section title at the bottom of figure 3 has been deleted and moved to the top of page 60.

Page 60, Chapter IV: Section title added at the top of the page, before paragraph 9. Should read "C. Lending Products: Penetration and Debt Service".

Page 66, Figure 7: replaced figure to show the legend on the first chart entitled "Indebtedness and debt-service of households."

Questions may be referred to Mr. Haksar (ext. 37157), Ms. Garcia-Escribano (ext. 37573), and Mr. Roache (ext. 38207) in WHD.

This document will shortly be posted on the extranet, a secure website for Executive Directors and member country authorities.

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DOCUMENT OF INTERNATIONAL MONETARY FUND AND FOR OFFICIAL USE ONLY

FOR AGENDA

SM/12/155
Corrected: 7/5/12

June 26, 2012

To: Members of the Executive Board

From: The Secretary

Subject: **Brazil—Selected Issues**

This paper provides background information to the staff report on the 2012 Article IV consultation discussions with Brazil (SM/12/154, 6/26/12), which is tentatively scheduled for discussion on **Monday, July 9, 2012.** The Secretary's Department has been notified by the authorities of Brazil that their explicit consent is required prior to the publication of Board documents on Brazil. At the time of circulation of this paper to the Board, the Secretary's Department has not received a communication from the authorities indicating that they consent to the Fund's publication of this paper; such communication may be received after the authorities have had an opportunity to read the paper. Any requests for modifications for publication are expected to be received two days before the Board concludes its consideration.

Questions may be referred to Mr. Haksar (ext. 37157), Ms. Garcia-Escribano (ext. 37573), and Mr. Roache (ext. 38207) in WHD.

Unless the Documents Section (ext. 36760) is otherwise notified, the document will be transmitted, in accordance with the procedures approved by the Executive Board and with the appropriate deletions, to the WTO Secretariat on Thursday, July 5, 2012; and to the European Investment Bank, the Food and Agriculture Organization, the Inter-American Development Bank, the United Nations Development Programme, and the World Food Programme, following its consideration by the Executive Board.

This document will shortly be posted on the extranet, a secure website for Executive Directors and member country authorities.

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Corrected: 7/5/12

INTERNATIONAL MONETARY FUND

BRAZIL

Selected Issues

Prepared by Mercedes García-Escribano, Joana Pereira, and Karlye Dilts (all WHD), Marialuz Moreno Badía, Alex Segura-Ubiergo (FAD), and Joonkyu Park (MCM).

Approved by Western Hemisphere Department

June 22, 2012

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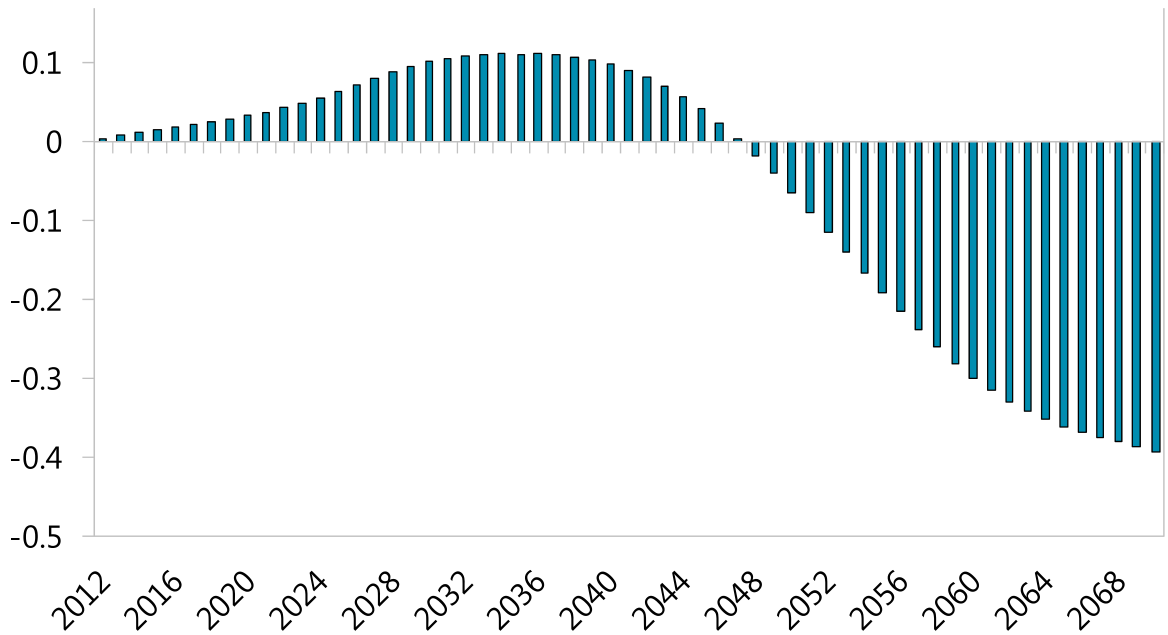
relatively high—only 1/3 of servants earn beyond the correspondent salary base—, the transition cost is expected to be contained (about 0.1 percent of GDP).

8. **As the new generations of civil servants retire and disbursements will be lower, the government will reap the benefits of the 2012 reform**. On net terms, the authorities expect an improvement in the balance of the RPPS from 2033 onwards, with gains rising to 0.4 percent of GDP per year in the long run. Staff estimates point to an overall impact of around 10 percent of GDP in NPV terms up in the long run.

Figure 2. Estimated Fiscal Impact of the 2012 Reform

(Percent of GDP)



Source: Ministry of Finance.

9. **The introduction of a funded pillar into the RPPS is welcome.** By reducing replacement rates for higher earners, it is expected to encourage long-term private savings and thereby support the development of financial markets. Progressiveness within RPPS system is also enhanced, as well as equity *vis-à-vis* private sector workers. Finally, the relatively small transition cost is an important consideration for sustainability of the reform—especially given that the fiscal framework in Brazil is anchored by a primary surplus target—in light of international experience where costly pension transitions have at times lead to some unwinding of the pension reform. The reform may thus be a stepping stone for further improvements to the system down the road.

B. Macroeconomic Implications of the 2012 reform

10. **We now assess the broader macroeconomic implications of the recent reform**. The analysis uses the IMF's Global Integrated Fiscal and Monetary (GIMF) model parameterized on data for the Brazilian economy.[11] The GIMF is a non-Ricardian, dynamic stochastic general equilibrium model which features–overlapping generations, finite horizons (myopia), and endogenous labor and capital markets–allowing for a meaningful discussion of the short and medium run impact of pension reforms.

11. **Our baseline is an economic environment reflecting pre-Lehman fiscal trends**. In particular, data as of 2007 was used to parameterize initial levels of government spending, revenue decomposition and transfers (including pensions), thereby abstracting from cyclical impact of the recent crisis on these variables. Net public debt is assumed at 40 percent of GDP in the initial steady state, close to 2011 levels.

12. **The 2012 reform is introduced as a shock, first to contribution rates and later to pension benefits**. By capping mandatory contributions to the PAYG pillar, the government will effectively be lowering average (mandatory) contribution rates for public servants. Based on the estimated transition cost shown in Figure 2, we proxy that change by the shift in labor taxes that, in the model, would produce such a cost (up to its peak in 2035). In other words, we assume that contributions to defined benefit schemes are generally perceived by participants as a tax, unlike what would happen in an optional defined contribution plan.[12] After 2035, the average contribution rate is kept fixed and the fiscal trajectory thereafter is dictated by the reduction in pension benefits for new entrants.[13] As will be shown, the quantitative impact of the reform is small in broad macroeconomic terms; but this is only a consequence of the circumscribed scope of the reform in terms of affected beneficiaries. The results do suggest a high elasticity of private savings and growth rates to the implied fiscal savings in the context of this particular reform.

Macroeconomic impact when the reform is financed by public debt

13. **For illustrative purposes, we analyze first the effects of the 2012 reform under the assumption that it is financed by public debt**. The resulting path of the relevant fiscal

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[11] A detailed outline of the GIMF model can be found in Kumhof et al (2010). For calculations in this paper, the model features three regions: Brazil, Emerging Asia, and Rest of the World.

[12] We are also assuming that the co-payments by public employers to the optional pension savings accounts are perceived as part of the tax-rate reduction, and participants would take it into account when targeting a desired pension savings amount.

[13] The GIMF features two types of agents: a group of liquidity constrained households (LIQ agents), who do not have access to capital markets, and intertemporal optimizers (OLG agents), who can borrow and save. In this section, we assume that reductions in PAYG benefits affect OLG agents only because in reality only the highest earners will be affected.

References

Abbas, S.M. Ali, Bouhga-Hagbe, Jacques, Fatas, Antonio, Mauro, Paulo, and Ricardo C. Velloso, 2011, "Fiscal Policy and the Current Account," *IMF Economic Review*, Vol. 59, No.4, pp. 603–629.

Abhyankar, Abhay, Sarno, Lucio and Giorgio Valente, 2005, "Exchange Rates and Fundamentals: Evidence on the Economic Value of Predictability," *Journal of International Economics*, vol. 66(2), pp. 325–348, July.

Backus, David, K., Kehoe, Patrick J., and Finn E. Kydland, 1994, "Dynamics of the Trade Balance and the Terms of Trade: The J-Curve?," *American Economic Review*, Vol. 84, No.1, pp. 84–103.

Balassa, Bela, 1964, "The Purchasing Power Parity Doctrine: A Reappraisal," *Journal of Political Economy,* No. 72, pp. 584–96.

Benelli, R., Segura-Ubiergo, A., and C. Walker, 2011, "Brazil's Experience Managing Capital Inflows: The Role of Capital Flow Capital Flow Management Measures," Selected Issues Paper(SM/11/153), (Washington: International Monetary Fund).

Bergstrand, Jeffrey, 1991, "Structural Determinants of Real Exchange Rates and National Price Levels: Some Empirical Evidence," American Economic Review, NO. 81, pp. 325–34.

Cardarelli, Roberto, Selim Elekdag, and Ayhan Kose, 2007, "Managing Large Capital Inflows,"Chapter 3, *World Economic Outlook*, October (Washington: International Monetary Fund).

Engel, Charles, and Kenneth D. West, 2005, "Exchange Rates and Fundamentals," *Journal of Political Economy*, Vol. 113, No. 3, pp. 485–517.

Fleming, Marcus J., 1962, "Domestic Financial Policies Under Fixed and Under Floating Exchange Rates," *International Monetary Fund Staff Papers*, Vol. 9, pp. 369–79.

Galstyan V., and P. R. Lane, 2009, "The Composition of Government Spending and the Real Exchange Rate," Journal of Money, Credit and Banking, Vol. 41, No.6 pp. 1233-1249.

Guajardo, Jaime, Leigh, Daniel, and Andrea Pescatori, 2011, "Expansionary Austerity: New International Evidence," IMF Working Paper 11/158 (Washington: International Monetary Fund).

International Monetary Fund, 2008, *Exchange Rate Assessments: CGER Methodologies*, IMF Occasional Paper No. 261 (Washington: International Monetary Fund).

Kim Soyoung and Nouriel Roubini, 2008, “Twin Deficit or Twin divergence? Fiscal policy, Current Account and the Real Exchange Rate in the U.S.,” *Journal of International Economics* 74, pp. 362–383.

Kollmann, R., 2010, "Government Purchases and the Real Exchange Rate," *Open Economies Review*, Springer, vol. 21(1), pages 49–64, February.

Mark, Nelson C., 1995, “Exchange Rates and Fundamentals: Evidence on Long-Horizon Predictability,” *American Economic Review*, Vol. 85, No. 1, pp. 201–18.

Monacelli, Tommaso and Roberto Perotti, 2008, “Fiscal Policy, the Trade Balance, and the Real Exchange Rate: Implications for International Risk Sharing”. IGIER, Working Paper.

Mundell, Robert A., 1963, “Capital Mobility and Stabilizing Policy Under Fixed and Flexible Exchange Rates,” *Canadian Journal of Economics and Political Science*, Vol. 29, pp. 475–85.

OECD, 2011, *Economic Survey of Brazil,* (Paris: Organization for Economic Cooperation and Development).

Ostry, Jonathan D., Atish Ghosh, Karl Habermeier, Marcos Chamon, Mahvash S. Qureshi, and Dennis B.S. Reinhardt, 2010, “Capital Inflows: The Role of Controls,” IMF Staff Position Note10/04 (Washington: International Monetary Fund).

Rime, Dagfinn, Sarno, Lucio and Sojli, Elvira, Exchange Rate Forecasting, Order Flow and Macroeconomic Information (March 2009). CEPR Discussion Paper No. DP7225.

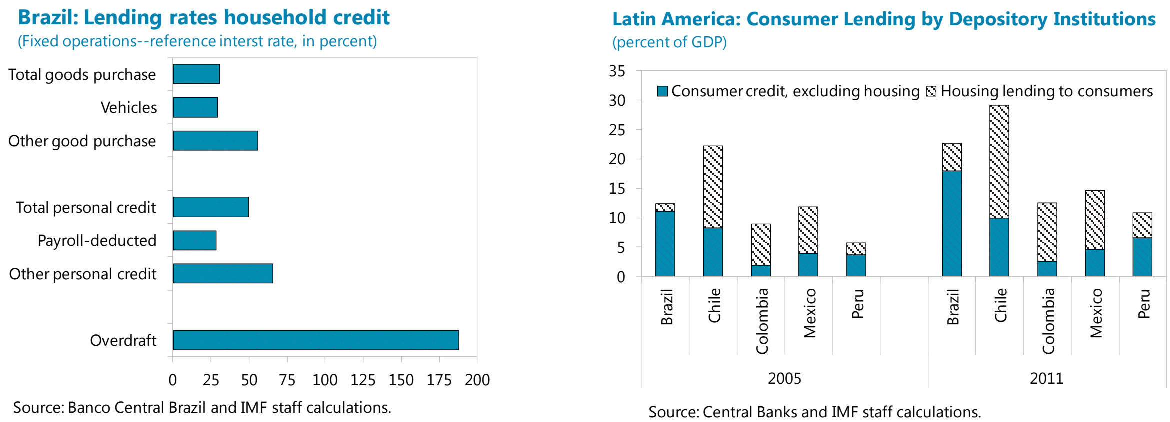
Ricci, Luca A., Gian Maria Milessi-Ferreti, and Jaewoo Lee, 2008, “Real Exchange Rates and Fundamentals: A Cross-Country Perspective,” IMF Working Paper 08/13 (Washington: International Monetary Fund).

Romer, Christina D., and David H. Romer, 2010, “The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks,” *American Economic Review*, Vol. 100, No. 3, pp. 763–801.

Segura-Ubiergo, Alex, 2012, “The Puzzle of Brazil’s High Interest Rate,” IMF Working Paper 12/62 (Washington: International Monetary Fund).

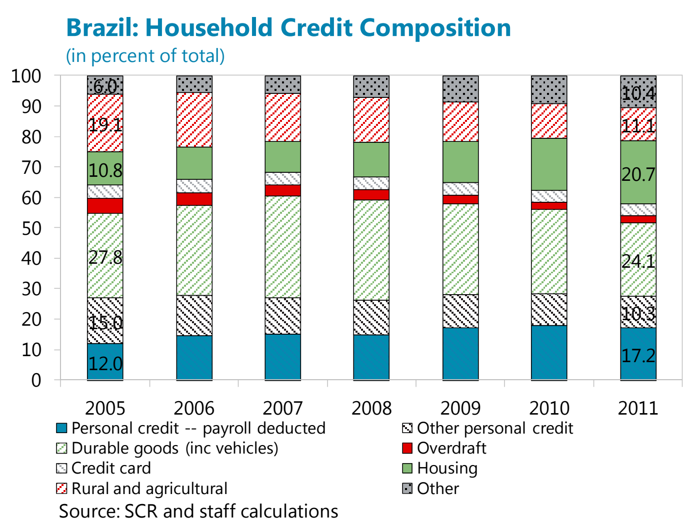
Samuelson, Paul, 1964, “Theoretical Notes on Trade Problems,” *Review of Economics and Statistics,* No. 46, pp. 145–54.

Figure 2. Brazil: Interest Rates and Consumer Credit Portfolio as Determinants of High Debt Service in Brazil



8. **While all types of consumer loan products have expanded rapidly, mortgages have been the fastest growing**. Housing (which is mostly directed lending) has expanded at robust rates during the past years, including during the 2008–2009 crisis. During 2010–11, housing credit increased by 50 percent per year, and now accounts for about 20 percent of consumer credit compared to around 11 percent in 2005.[1] Other types of consumer credit, comprising personal credit (two thirds of which is payroll deducted loans), durables credit (including vehicles loans), credit cards and overdraft accounts, have also exhibited strong growth rates during the period. Unlike housing credit, consumer lending has been slightly more sensitive to cyclical conditions. On average, about 20 percent of consumer debt is secured with housing collateral, while an additional 40 percent are secured by a durable good or payroll deduction.

Figure 3. Brazil: Consumer Credit Composition



[1] The housing credit expansion has been accompanied by an asset price appreciation, indicating there may be signs of overvaluation in this market. Real house prices in Brazil—with the caveat of data limitations—have increased almost 20 percent during August 2010 to June 2011 (Igan, 2011).

C. Lending Products: Penetration and Debt Service

9. **This section examines household data to assess the penetration of lending products and the distribution of the debt service—to income in the population.** The last two rounds of the Household Budget Surveys (*Pesquisa de Orçamentos Familiares*), which correspond to the period 2003–04 and 2008–09, respectively, are used to analyze the distribution of credit across income groups. Thus, the consumer credit expansion during the period 2010–2011, when consumer credit growth averaged 21 percent per year, is not reflected in the analysis presented in this section, but discussed later in the paper. The Household Budget Survey provides information on household total income, financial expenditures (including loan payments, mortgage payment, and banking fees such as those for credit card and "cheque especial," a type of overdraft account), modalities for purchasing durables (including installments (in Portuguese, "a prazo") and credit cards), and house ownership (with information on characteristics of the dwelling, if it was completely paid, and if it was financed in installments. Information on payments in installments, for the acquisition of housing and durables is important as it would capture non-bank lending such as financing extended by retailers. Importantly, the survey does not contain information on outstanding debt, which is an important data gap that the authorities may address in new surveys. Household groups are defined as follows according to the monthly income percentiles (Table 1).

Table 1. Average monthly household monetary income (R$) 1/

percentile	5	10	25	50	75	90	95
2003	133	231	348	596	1,102	2,191	7,068
2009	243	433	641	1,051	1,809	3,305	9,366
% increase	82.7	87.9	84.1	76.5	64.1	50.8	32.5

1/ Includes monetary and nonmonetary income.

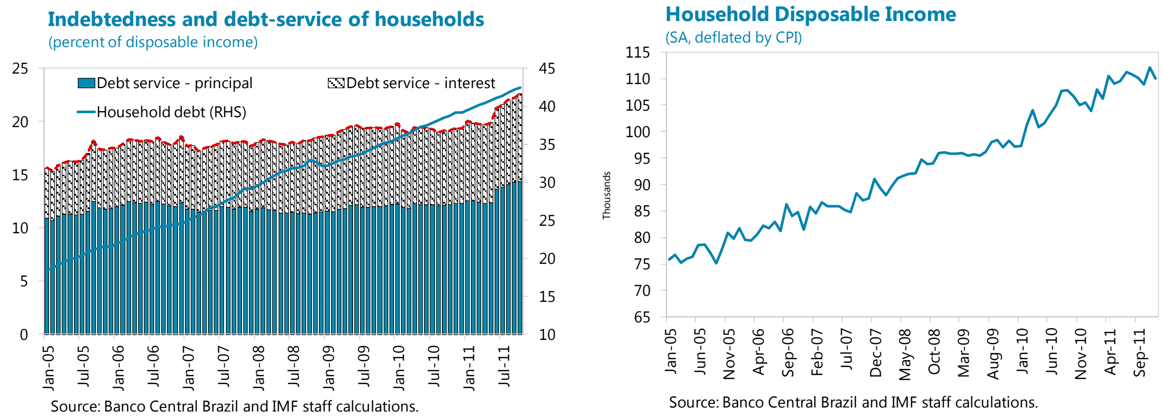
Source. Staff calculations using Pesquisa de Orçamentos Familiares.

10. **Lending penetration differs across products and across income groups**. Despite the recent increase in mortgage lending, mortgage penetration is still very low (Table 2).[1] Less than 1 percent of the low income households have accessed mortgage financing, and this situation has not changed significantly during the period 2003–2009.[2] Unlike mortgages, credit cards and overdraft accounts are widespread: about 25 percent of households are credit card holders and around 15 percent have overdraft accounts. Credit cards have experienced a robust expansion among all income groups (in particular, for the middle income) during the last years and their use for purchasing durables has become more common, especially for high income households—who use credit cards to purchase an array of products. Loans for the purchase of durables are very common, including their use to purchase an array of durable items—on average, 70 percent of the households use installments when purchasing durables. A more strict definition of loan, which refers to financial loan, has less penetration—16 percent and is concentrated among mid and high income groups.

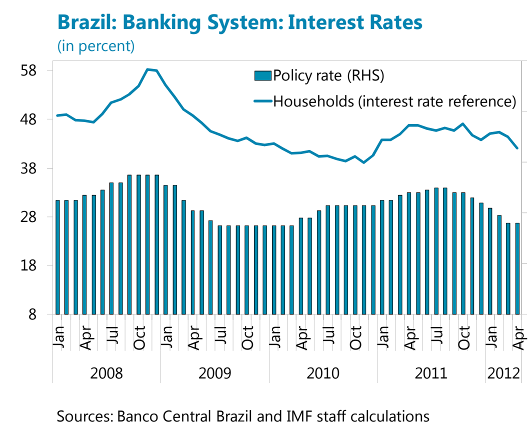
[1] "Penetration" of a financial product refers to the share of low income households with access to this product.

[2] In more recent years, the "Minha Casa Minha Vida" program has addressed this issue by directing mortgage loans to lower income households.

Figure 7. Recent Evolution of Households' Debt and Debt-Service to Income



- *Tighter financial conditions.* Since mid-2010 through mid-2011, the central bank hiked policy rates. In addition, in response to the rapid increase of certain types of consumer loans and loosening lending standards (such as lack of down-payment or excessive loan tenors), the central bank tightened macroprudential measures in specific lending products since late 2010.[1] In December 2010, the central bank announced an increase of the minimum payment for credit card bills (effective in June 2011) and increased capital requirements for long term consumer loans (Annex 2). In April 2011, the IOF on consumer credit operations was increased to 3 percent (previously 1.5 percent).



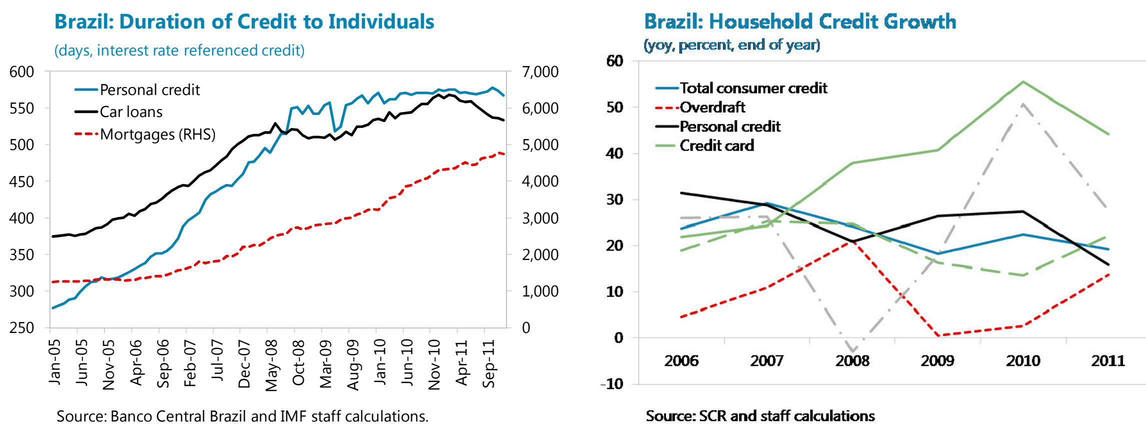
- *Credit continued expanding albeit at a decelerating rate.* Following the tightening of financial conditions, new credit concessions decelerated in 2011. The stock of credit to consumers decelerated slightly during 2011 growing by 20.7 during compared to 22.4 during 2010, with new credit decelerating to 13 percent in 2011 from 22 percent in 2010.

- *Credit portfolio changes*. While the macroprudential measures resulted in a decline in the duration and volume of new concessions of loans for durables, consumers increased usage of credit cards and overdraft borrowing. The surge in the use of these

[1] The maturity of car loans had been increasing very strongly, and by end-2011, about 55 percent of the car loans had maturities exceeded 5 years (compared to about 20 percent by end-2008). The term of the payroll-deduced loans exceeding 60 months also increased.

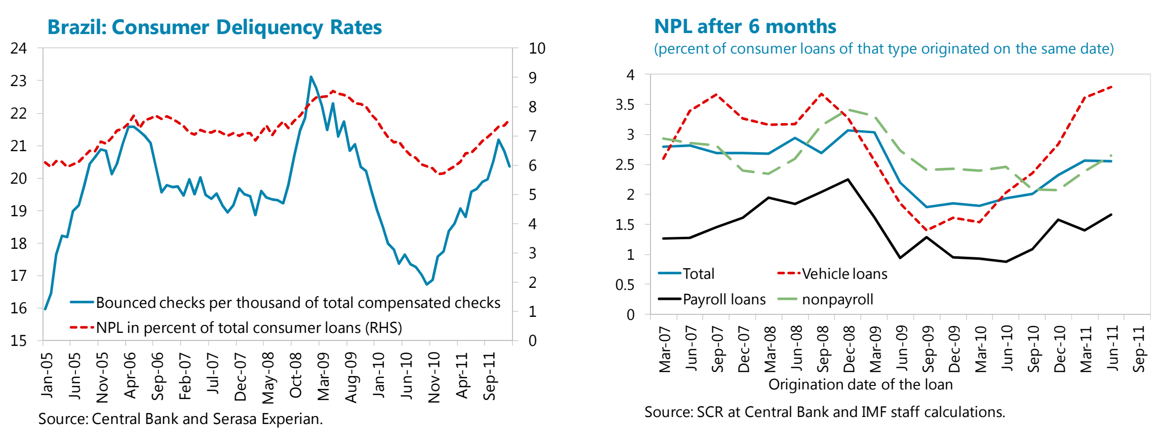
two expensive lending products, coincident with the financial tightening, while disposable income has continued growing strongly, may reflect that some households were under financial distress.

Figure 8. Recent Evolution of Vehicle, Credit Cards and Overdraft Accounts



18. **At the same time, since late 2010, delinquency rates have increased**. By early 2012, the non-performing loans ratio for unearmarked consumer credit reached 7.6 percent (up by 1.9 since December 2010 and only slightly below the 8½ percent ratio achieved in mid-2009). The surge in non-performing loan rates is common across all categories of consumer credit, and it is particularly sharp for loans for durables, overdraft accounts and credit cards. While the denominator of the NPL ratio (and hence, the ratio) is affected by credit dynamics, there are other indications of increased household distress: (i) bounced checks picked up, and (ii) delinquency rates by origination of the loans increased in particular for vehicle loans.

Figure 9. Indicators of Underlying Households' Financial Distress



E. Conclusion

19. **Brazil has experienced a robust expansion in consumer credit during the last decade which raises concerns about the build-up of vulnerabilities for the household**