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May 22, 2013

To: Members of the Executive Board

From: The Secretary

Subject: **Brazil—Publication of Financial Sector Assessment Program Documentation—Technical Note on Consumer Credit Growth and Household Financial Stress**

Attached for the **information** of Executive Directors is a technical note on consumer credit growth and household financial stress that was completed in connection with the Financial Sector Assessment Program (FSAP) for Brazil.

It is intended that this paper will be published on the Fund's external website after Thursday, May 30, 2013.

Questions may be referred to Mr. Demekas, MCM (ext. 36755).

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

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FINANCIAL SECTOR ASSESSMENT PROGRAM

BRAZIL

CONSUMER CREDIT GROWTH AND HOUSEHOLD FINANCIAL STRESS

TECHNICAL NOTE

DECEMBER 2012

INTERNATIONAL MONETARY FUND
MONETARY AND FINANCIAL SYSTEMS DEPARTMENT

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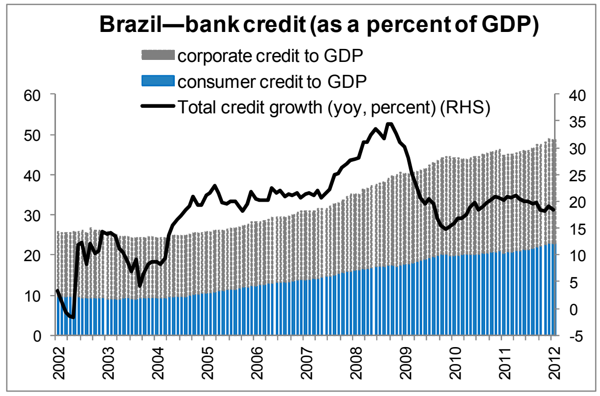
I. INTRODUCTION[1]

1. **Credit in Brazil has been growing very rapidly in recent years.** Total credit to GDP has risen significantly in the last decade, by almost 25 percentage points of GDP—to about 49 percent of GDP. All credit categories have experienced strong growth rates but especially so consumer credit, which now represents 46 percent of total credit (compared to 43 percent in 2005 and 23 percent in 2002). Consumer credit, albeit decelerating slightly during 2011 with an annual growth rate of 20.7 percent compared to 22.4 percent during 2010, continues to expand at a strong rate. A structural transformation has helped raise the supply and demand of credit. Capital inflows providing liquidity to banks, and the development of the domestic capital market, have fueled the supply of credit. Economic stability, associated to a better business environment, strengthening labor markets and social mobility, have also raised the demand for credit by corporates and consumers.



Source: Banco Central Brazil and IMF staff calculations.

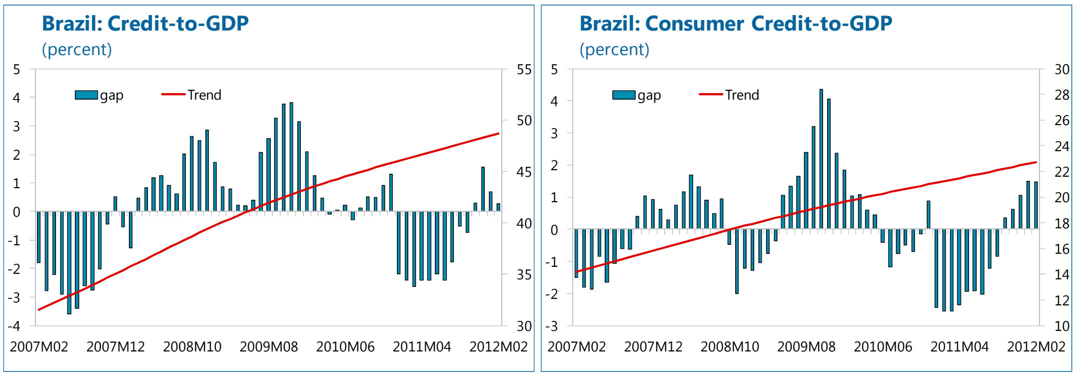
2. **International experience shows that periods of rapid credit expansion have often been associated with increased fragilities.** The growth of credit relative to GDP in Brazil has moderated during the past years, shrinking the credit-to-GDP gap that had emerged during 2008–09. However, trend credit growth remains strong. International experience points out that credit booms often end in busts. Expanding too fast may lead to vulnerabilities through looser lending standards, excessive leverage, and asset price bubbles. Dell'Ariccia et al. (2012) find that about one in three booms have been followed by a period of sub-par growth or a banking crisis. While recognizing that unhealthy booms are difficult to separate from healthy ones, these authors identify that duration and size of booms and the level of financial development are key early warning signals of the likelihood that a credit boom would end up badly. Larger and persistent booms, as well as those that start at a high credit-to-GDP ratio, are more likely to pose financial stability risks.

3. **The credit expansion in Brazil has been large and for a long duration but, banking sector risks appear well contained.** The size and duration of the credit expansion in Brazil are at the higher end of the international experience documented in Dell'Ariccia et al (2012). However, credit deepening in Brazil started at a relatively low level (credit to GDP stood at about 20 percent in 2004), and despite a decade of strong growth, credit-to-GDP (at the current level of 49 percent of GDP) remains relatively low by international standards. Further, as demonstrated in the recent Financial Sector Assessment Program (FSAP), the vast

[1] Prepared by Mercedes García-Escribano (WHD).

majority of Brazilian banks are in a position to withstand substantial levels of stress including sizable credit shocks.

Figure 1. Brazil: Credit-to-GDP Trend and Gap



4. **Nonetheless, some pressure points could be emerging amongst indebted consumers.** The expansion of credit has resulted in an increase in leverage and associated debt servicing costs at the aggregate household level. Signs of strain include increases in nonperforming loans on consumer credits as well as that, for example, the number of bounced checks has started to pick up. This raises an underlying concern about developments within the aggregate—that is, how are individual households in different economic circumstances faring?

5. **Accordingly, this paper focuses instead on the evolution and distribution of debt related pressures across households.** A novel feature of the analysis here is that it uses household survey data to develop a snapshot of the financial structure of Brazilian households at different levels in income in two distinct periods, 2003 and 2008. Use of this granular data helps glean a better understanding of how financial deepening has evolved and the attendant strains at the household level. However, an important caveat to this analysis is that the last observation of the data is effectively 2008–09 since when consumer credit has continued to growth rapidly and aggregate indicators point to somewhat increased pressures.

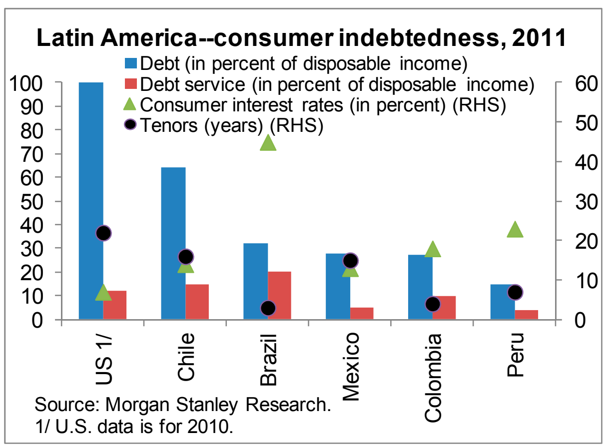
6. **The rest of the paper is outlined as follows.** Section II provides a more detailed description of consumer credit developments, in Brazil. Section III explores, using household data, the distribution of lending products in the population and the extent to which credit growth reflects financial deepening or additional borrowing by a few households. Information on the penetration and accumulation of lending products would help us to assess the extent to which households are financially distressed. Section IV analyzes recent indicators of household financial distress associated with the credit expansion that has taken place in the last couple of years. Section V concludes.

II. Consumer Credit in Brazil—Stylized Facts

7. **In Brazil, the consumer credit boom has led to an accumulation of debt and high debt service ratios in the household sector**. Consumer indebtedness (as a percentage of disposable income) has steadily increased and currently exceeds 40 percent of income—according to Brazil Central Bank estimates.[2] Thought this estimate of household leverage is in line with the levels observed in Mexico and Colombia, the consumer debt service ratio on Brazil (at 23 percent of disposable income) is significantly larger than in the other countries in the region. Higher interest rates and shorter loan tenors help explain the differences in debt service structure between Brazil and the other countries in the region:

- The interest rates levied on unearmarked loans are sizable and average around 50 percent, ranging from 30 percent for loans on durables to 175 percent for overdrafts.[3] On the contrary, housing credit carries lower interest rates.[4]

- Regarding the portfolio composition, mortgages are a small share of the consumer portfolio (about 20 percent of the total), compared to more than 60 percent in Mexico, Chile and Colombia.



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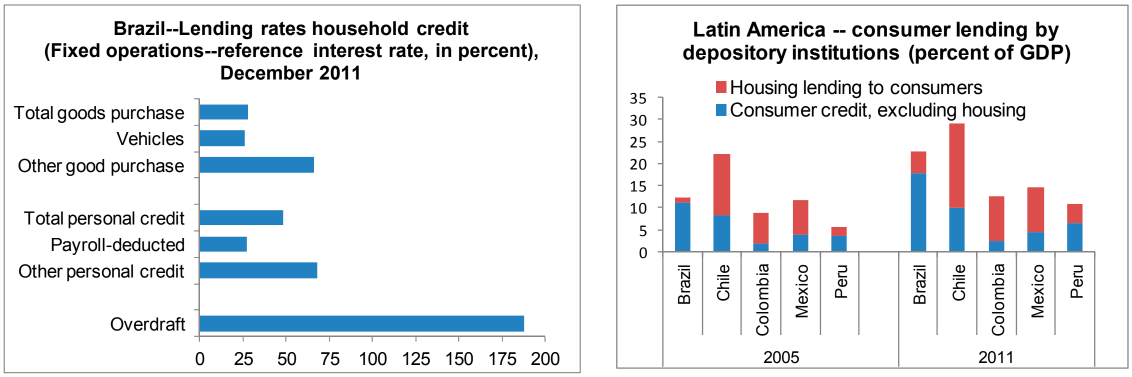
[2] The estimates for debt and indebtedness for Brazil are a lower bound. The Brazil central bank calculates debt and debt-service ratios associated to the lending products of the financial system, including through retail financing if these retailers offer the financing through a financial institution (this is the case for 85 percent of the retailers). However, other retail financing as well as direct financing extended by real estate developers, which at the moment is low, is not captured in the central bank estimates.

[3] The majority of consumer loans in Brazil are contracted at fixed-rates, hence, households are not vulnerable to fluctuations in the interest rates.

[4] Banks have to allocate 65 percent of the liquidity from *caderneta de poupança* to housing loans, of which, 52 percent are extended at subsidized rates (carrying interest rates between 4 and 12 percent) and 13 percent at a free rate (which at the moment ranges between 13–14 percent).

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

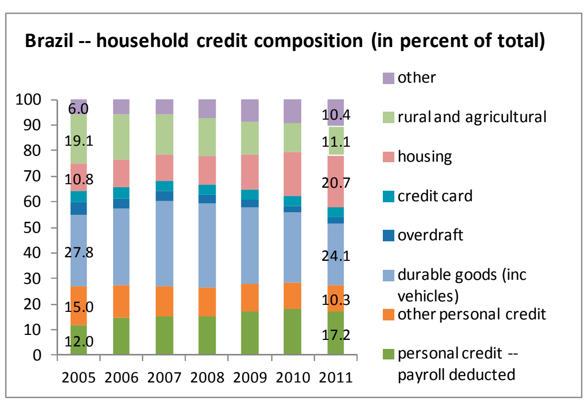


Source: Banco Central Brazil and IMF staff calculations.

Source: Central Banks and IMF staff calculations.

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.[5] 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



Source: SCR and staff calculations

[5] 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).

III. 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 nonbank 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).[6] 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.[7] 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

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

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

penetration—16 percent and is concentrated among mid and high income groups. Acquisitions of automobiles are still concentrated in the higher income groups, but reliance on automobile financing is similar across groups of households.

Table 2. Lending penetration (financial and other forms of lending)

percentile	5	10	25	50	75	90	95	Total
2009 survey								
mortgage 1/	0.9	0.9	1.3	1.9	3.6	6.1	7.4	**3.3**
mortgage 2/	0.5	0.4	0.8	1.1	1.8	2.6	2.9	**1.8**
Credit card holder 3/	4.8	6.3	10.6	17.5	28.8	44.2	64.4	**26.8**
Cheque especial holder	1.2	1.4	2.0	4.2	11.6	28.3	57.6	**14.4**
Loan (financial) 4/	2.7	4.6	8.2	13.1	18.0	23.3	27.1	**15.6**
Loan (some form of loan) 5/	49.4	52.6	60.7	68.1	75.9	79.8	78.9	**69.8**
2003 Survey								
mortgage 1/	0.7	0.9	1.6	3.0	4.8	7.8	9.9	**4.4**
Credit card holder 3/	1.9	3.3	4.5	8.6	19.7	36.6	59.9	**19.5**
Cheque especial holder	0.7	0.7	0.9	2.5	9.6	30.3	61.9	**14.0**
Loan (financial) 4/	1.6	2.4	3.6	6.1	11.8	20.0	23.5	**10.6**
Loan (some form of loan) 6/	29.2	36.1	41.9	50.3	58.0	60.8	59.9	**51.5**
Changes 2003-2009								
mortgage 1/	0.2	0.0	-0.2	-1.1	-1.2	-1.7	-2.5	**-1.1**
Credit card holder 3/	2.8	2.9	6.1	8.9	9.1	7.6	4.5	**7.3**
Cheque especial holder	0.4	0.8	1.1	1.7	1.9	-2.0	-4.2	**0.4**
Loan (financial) 4/	1.0	2.3	4.6	7.0	6.2	3.4	3.6	**5.0**
Loan (some form of loan) 6/	20.2	16.5	18.8	17.7	17.9	19.0	18.9	**18.3**

Source. Staff calculations using Pesquisa de Orçamentos Familiares.
1/ Home ownership and not yet fully paid
2/ Reporting housing payments and acquisition "monetaria a prazo"
3/ Credit card holder but not necessarily with credit card expenses.
4/ Reporting loan payments.
5/ Reporting buying durables during 2006-09 with acquisition "monetary a prazo"
6/ Reporting buying durables during 2003-05 with acquisition "monetary a prazo"

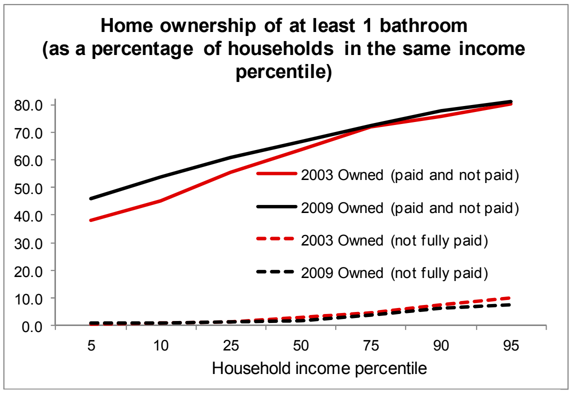
11. **Lending penetration was widespread during 2008–09 but more limited when considering only banking products**. On average, about 28 percent of households had some type of financial debt service obligations, ranging from 5 percent of households in the low income groups to 60 percent in the higher income groups. Including other forms of borrowing (for example, purchasing in installments through retailers), lending penetration increases to 63 percent and is more evenly spread in the population.

Table 3. Lending penetration (percentage of the total income percentile with a loan)

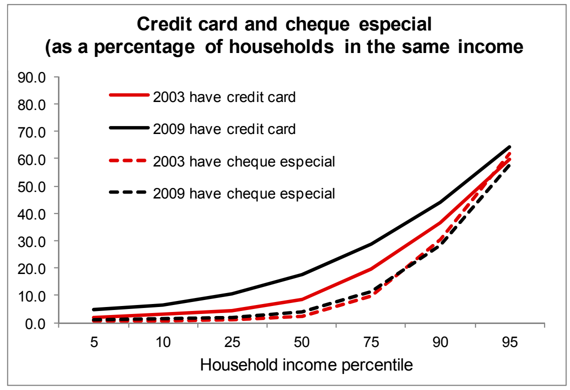
Income percentile	Banking products	Including other lending products
5.0	4.8	39.4
10.0	6.3	42.0
25.0	12.1	49.9
50.0	20.2	58.3
75.0	31.9	69.2
90.0	46.7	77.6
95.0	59.8	83.0
Total	**28.5**	**63.4**

Source. Staff calculations using Pesquisa de Orçamentos Familiares, 2008-2009 survey.

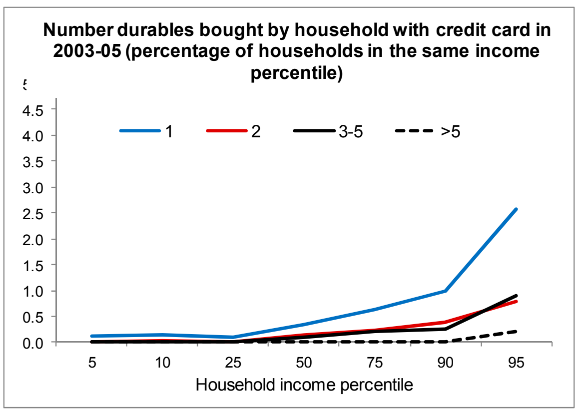
Figure 4. Penetration of Lending Products: 2003–2009



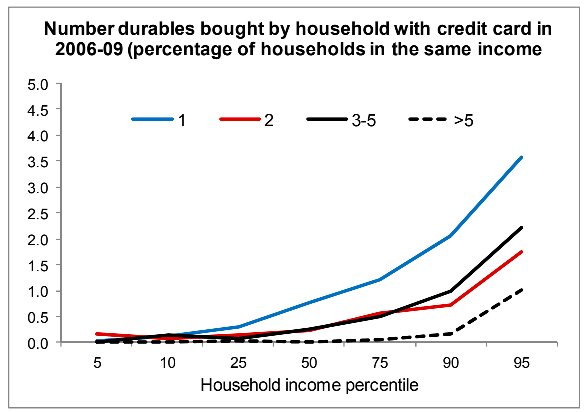
Source. Staff calculations using Pesquisa de Orçamentos Familiares.



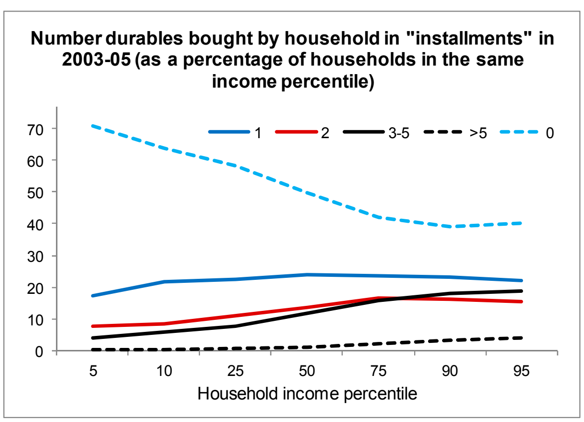
Source. Staff calculations using Pesquisa de Orçamentos Familiares.



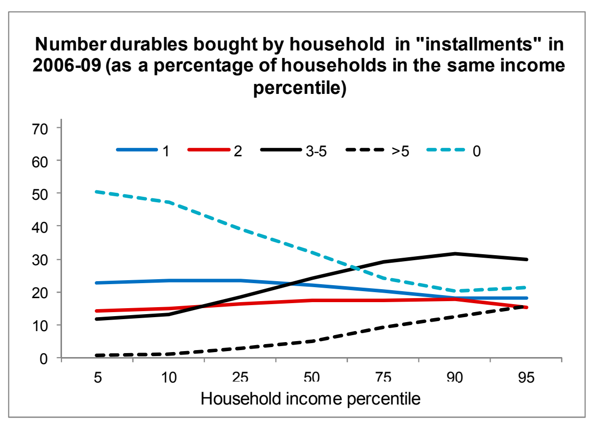
Source. Staff calculations using Pesquisa de Orçamentos Familiares.



Source. Staff calculations using Pesquisa de Orçamentos Familiares.



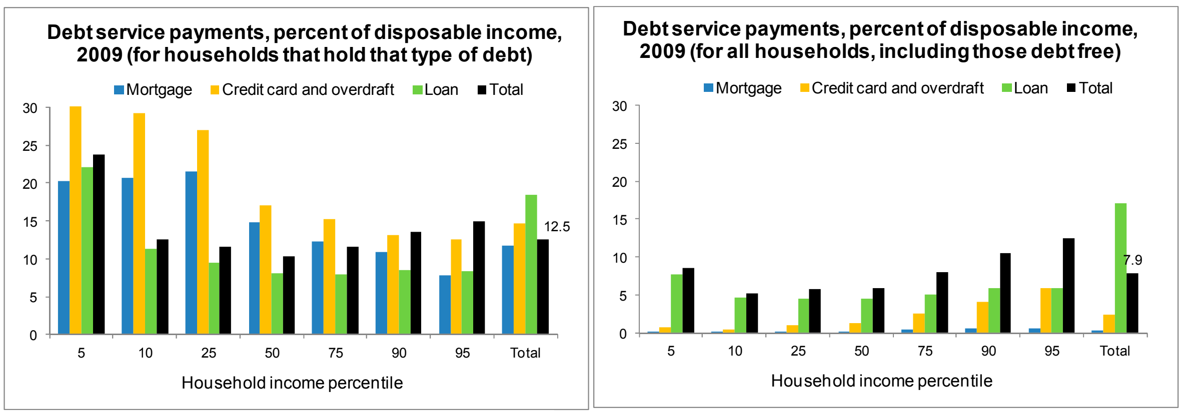
Source. Staff calculations using Pesquisa de Orçamentos Familiares.



Source. Staff calculations using Pesquisa de Orçamentos Familiares.

12. **Financial inclusion and accumulation of loan products by households has resulted in an increase in the share of households' disposable income earmarked for servicing debt payments.** Among those with some form of leverage in the sample survey, total debt service to income ratio averages about 12 percent (compared to the central bank's estimate of about 16 percent during 2008–09).[8] Mortgages and loans (financial costs and payments) weight heavily as a percentage of disposable income, and the later is important given that the access to loans is more widespread. Financial costs for the use of credit cards and overdraft accounts are also elevated for those households that use these lending products.

Figure 5. Distribution of Debt Service Commitments in the Population, 2008–2009.



Source. Staff calculations using Pesquisa de Orçamentos Familiares.

Source. Staff calculations using Pesquisa de Orçamentos Familiares.

13. **Household level data provides valuable information on the distribution of financially distressed households in the population as well as the distribution across income groups.** Table 4 shows that at the time of the survey, in 2008–09, about 4.5 percent of the households holding some form of debt had debt-service commitments above 40 percent of their disposable income. Several studies use a threshold of debt service to income of 40 percent to determine when households are financially distressed.[9] Since household wealth and social safety nets are more limited in emerging than in advanced

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[8] Note the methodology used by the Central Bank to calculate the average debt service to income ratio differs from that used in this paper. While this paper estimates the debt-service to income ratio for each household, and then, calculates the unweighted average for those households with some form of leverage, the Central Bank's figure is calculated as a ratio of an estimate of aggregate debt service divided by aggregate disposable income which would correspond more closely to a weighted average concept using household survey data. See "Box: Endividamento e Comprometimento de Renda das Famiílias com Dívidas Bancárias," in Brazil Central Bank Relatório de Estabilidade Financeira, September 2011, for a detailed explanation on the Central Bank methodology.

[9] For the United Kingdom, Ruiz-Arranz (2011) uses a stress threshold of 40 percent with the objective of identifying those households that are truly vulnerable. Karasulu (2008) uses a 40 percent threshold for Korea, while a study on Chile by Fuenzalida and Ruiz-Tagle (2010) uses 50 percent. Other papers, such as May and Tudela (2005) find that a ratio of debt-service to income exceeding 20 percent is associated with higher probabilities of facing mortgage payment difficulties in the United Kingdom.

economies, the threshold for financial stress in Brazil may be lower. Also, a lower threshold could be supported by the fact that the percentage of household borrowing that is secured with housing collateral in Brazil is lower than in advanced economies and other emerging markets, where a large share of household bank debt is mortgages. Table 4 shows that 16 percent of households had debt-service-to income exceeding 20 percent, and these are concentrated in the middle and mid-high income percentiles as these groups benefit from high loan penetration levels and accumulate several loan products, as well as among lower income groups. Moreover, it is important to keep in mind that with high interest rates prevailing in Brazil, small changes in the duration of lending can quickly transform into sizable increases in debt-service.

Table 4. Household debt-service to disposable income

Income percentile	Percentage with some type of loan	Debt service to household disposable income (in percent of disposable income)				
		>0-10	10-20	20-40	>40	Total
5	39.4	52.1	21.8	14.6	11.5	100.0
10	42.0	64.3	20.3	10.6	4.8	100.0
25	49.9	66.8	20.3	9.5	3.4	100.0
50	58.3	66.8	21.8	8.3	3.0	100.0
75	69.2	60.4	24.8	10.5	4.3	100.0
90	77.6	48.2	32.6	13.8	5.4	100.0
95	83.0	37.5	40.7	16.2	5.6	100.0
Total	**63.4**	**57.3**	**26.9**	**11.4**	**4.5**	**100.0**

Source. Staff calculations using Pesquisa de Orçamentos Familiares. 2008-2009 Survey.

14. **The sensitivity of households' debt servicing capacity across income groups is analyzed**. As households are very sensitive to employment conditions, we undertake a simple stress test of the impact of a 30 percent drop in income on their debt servicing capacity. The number of households with debt-service to disposable income ratio exceeding 40 percent would increase by 4 percent. If we used the tighter threshold to determine when a household is financially stressed, the number of households at risk would increase by nearly 12 percent, bringing the total number at risk at about 28 percent of the total households with a loan. One caveat of this analysis—given the data limitations—is that ignores if households could use some of their assets to pay-off some of their debt.

Table 5. Change in debt-service: shock of 30 percent drop in disposable income

Income percentile	Debt service (in percent of disposable income)			
	>0-10	10-20	20-40	>40
5	-12.5	1.5	5.0	6.0
10	-11.1	2.8	4.7	3.5
25	-10.3	0.3	6.9	3.2
50	-9.7	0.0	6.8	2.9
75	-8.2	-3.6	8.2	3.6
90	-6.6	-8.4	9.9	5.1
95	-4.9	-11.5	9.4	7.0
Total	**-8.3**	**-3.9**	**8.0**	**4.2**

Source. Staff calculations using Pesquisa de Orçamentos Familiares. 2008-2009 Survey

IV. Recent Consumer Credit Developments

15. **Recent information on credit developments complements the findings of the survey data and helps us assess how household financial distress has evolved during the past years**. As mentioned above, since the last household survey data available is 2008–09, the credit expansion that re-started in 2010 is not captured in the results shown above.

16. **More recent data on credit growth reflects the extension of credit to new households as well as the accumulation of loans by others.** Data from the *Nova Central de Risco* shows that during 2010 the number of new individuals borrowing from the banking sector increased, with the rate of increase decelerating during 2011 (Figure 6).[10,11] The increase in credit during 2009–11 also reflects an increase in the number of borrowers holding several lending products. According to the data in *Nova Central de Risco,* the average number of lending products per borrower with loans exceeding R$5,000 was 3.4 by December 2011. Data from Serasa Experian on credit report requests show that during 2010 demands for credit by low-income households (those with less than R$500 per month) significantly increased followed by demands for credit by mid-high (R$5,000–10,000) and high income (more than R$ 10,000) households.[12] Hence, Serasa Experian data is consistent with the fact that financial inclusion advanced during the past years while at the same time some groups of households accumulated different loan products.

17. **The recent credit expansion has been accompanied by an increase in household leverage.** The debt service-to-income calculated by the central bank was broadly stable till mid-2008, coinciding with the extension of loan maturities. However, during 2011, debt service-to-income picked-up reflecting additional credit, some financial tightening and the higher use of more expensive lending products (such as credit cards and overdraft accounts).

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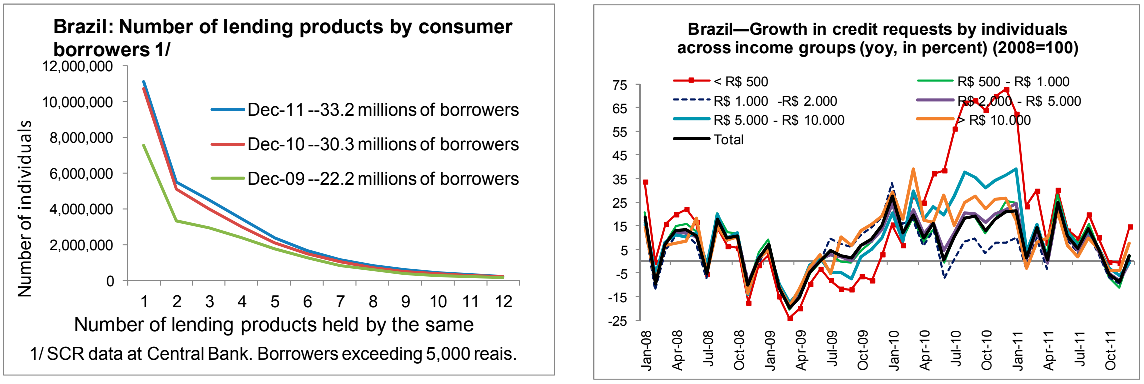
[10] *Sistema de Informações de Crédito (SCR)*, which is the central bank's credit information system, registers all positive and negative information on corporate and consumer loans granted by commercial banks and provides information on the distribution of interest rates by loan size. For loans exceeding R$5,000, the SCR identifies individuals and corporations. Starting in January and with the aim of better monitoring credit developments and associated risks, the SCR also registers information on individuals income and enterprises revenues and the threshold for recording detailed information on loans has been lowered to R$1,000. Transactions of credit portfolios between banks will also have to be reported. See Annex 1 for the list of the main variables in SCR and changes implemented in January 2012.

[11] The number of borrowers with loans exceeding R$5,000 increased by 36 percent during 2009–2010, and by 9.5 percent in 2011.

[12] Note that Serasa data reflects credit requests, and not actual extension of credit to these income groups.

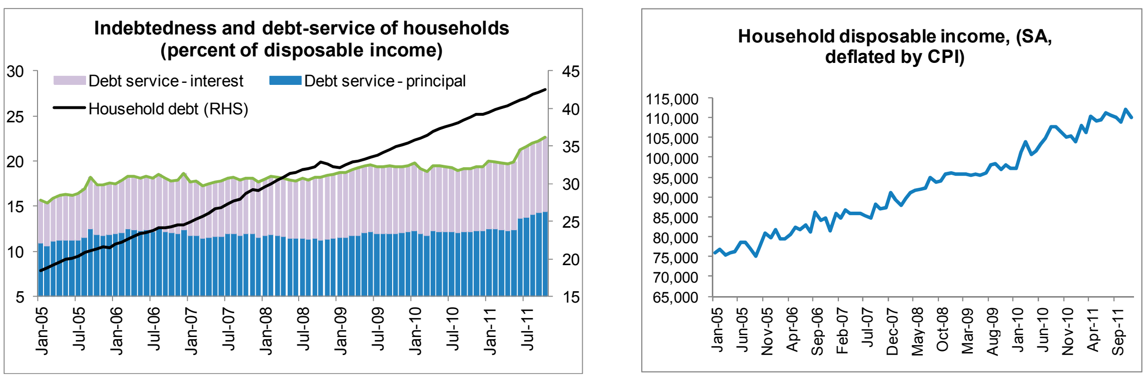
Figure 6. Financial Inclusion and Additional Indebtedness Underlying Credit Growth



Source: SCR and staff calculations

Source: Serasa Experian and IMF staff calculations.

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



Source: Banco Central Brazil and IMF staff calculations.

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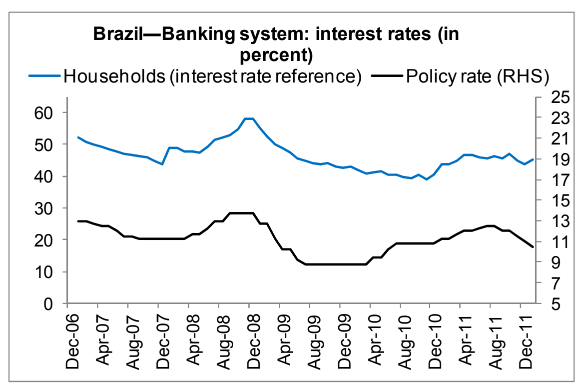


Source: Banco Central Brazil and IMF staff calculations.

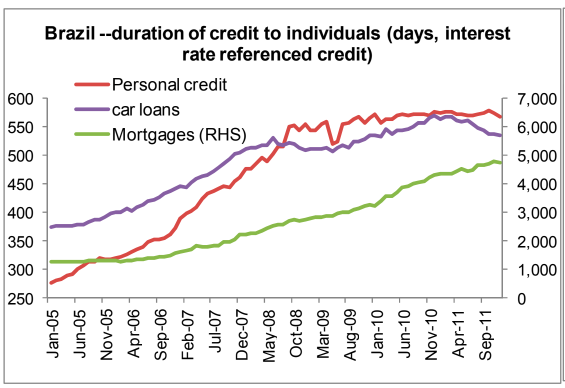
- *Tighter financial conditions.* Since mid-2010 through mid-2011, the central bank hiked policy rates. In addition, in response to the rapid increase of certain types of consumer loans and loosening lending standards (such as lack of down payment or excessive loan tenors), the central bank tightened macroprudential measures in specific lending products since late

2010.[13] 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).

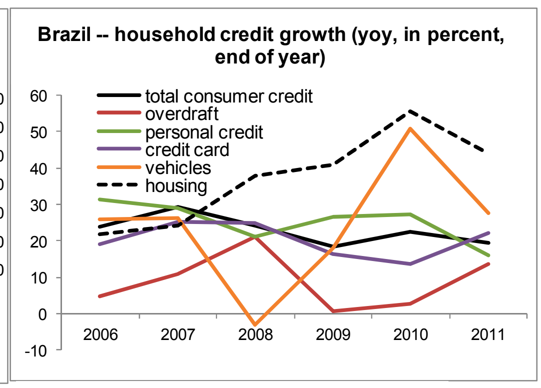
- *Credit continued expanding albeit at a decelerating rate.* Following the tightening of financial conditions, new credit concessions decelerated in 2011. The stock of credit to consumers decelerated slightly during 2011 growing by 20.7 during compared to 22.4 during 2010, with new credit decelerating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



Source: Banco Central Brazil and IMF staff calculations.



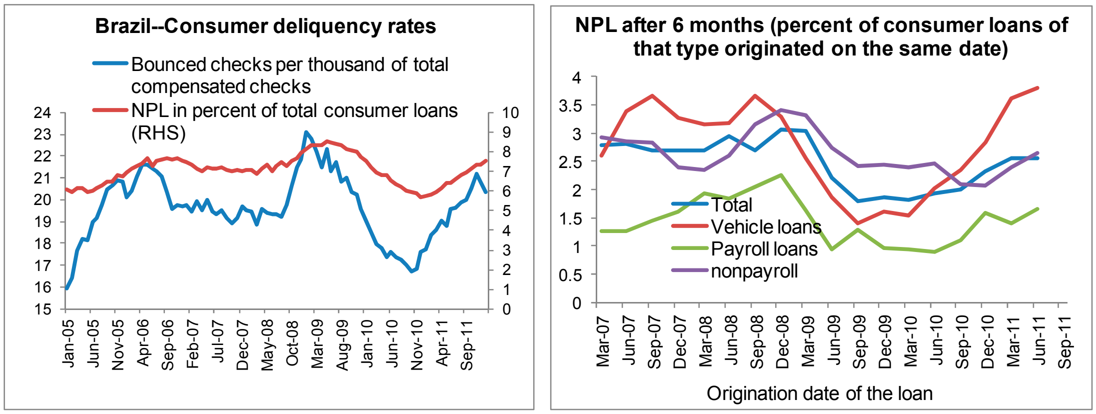
Source: SCR and staff calculations

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

[13] 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.

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



Source: Central Bank and Serasa Experian.

Source: SCR at Central Bank and IMF staff calculations.

V. 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 sector.** Though the overall level of credit-to-GDP ratio remains relatively low by international standards, the rapid increase poses concerns, not so much for the Brazilian financial sector right now, but for households. The credit growth during this decade has been the result of financial inclusion of new consumer segments and further accumulation of loans by some consumers. As a result of these developments, aggregate household leverage has increased. More importantly, this is associated with high debt service burdens given the high interest rates and short loan maturities, which mostly reflect that mortgages continue to be only a small share of the total consumer credit portfolio.

20. **There are indicators of financial distress in at least some segments of the household sector.** The Household Budget Surveys show that financial sector credit penetration was still limited in 2008–09, in particular for low and mid-low income groups, but other forms of credit were widespread. The central bank data shows that the most recent expansion of credit growth is driven by further financial inclusion and accumulation of loans. With average debt service-to-income estimated above 20 percent, there are indications that some households are already under financial distress. Recent data on delinquency rates and bounced checks suggests that at least some households may have reached or exceeded the limit of their debt-carrying capacity.

21. **Though consumer credit does not pose an immediate risk to the banking or household sector, monitoring continues to be key to avoid the building up of additional vulnerabilities.** Continued tight monitoring by the central bank will help also in the design

of macroprudential tools that may be needed to targeted to specific lending products, as was the case in late 2010 when certain features of consumer and vehicle loans (maturities and loan to value) started to raise concerns about sustainability. Broad-based macroprudential tools could also be needed to limit the sensitivity of credit to the economic cycle. In addition, to better contain potential risks, the credit risk scoring undertaken by commercial banks could incorporate information on indebtedness for potential customers. In this regard, the recent changes to the SCR, in particular, the lowering of the size of the loan threshold that identifies individuals, would help banks identify highly indebted individuals and incorporate information, such as the array of products they hold, in the risk scoring models. Last, caution is also warranted in the mortgage market as this lending product is experiencing very strong growth rates and commercial banks see in this sector a niche to gain market share.

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Annex 1. Brazil: Central de Risco

Information	Before 2012	starting in 2012	Companies	Individuals
Threshold for recording all the variables listed below (R$)	**5,000**	**1,000**		
Customer Identification	yes	yes	yes	yes
Type of client (individual person / company)	yes	yes	yes	yes
Authorization for query	yes	yes	yes	no
Company size (Companies)	yes	yes	yes	no
Control Type (private, state)	yes	yes	yes	no
Beginning of the customer relationship with the financial institution	yes	yes	yes	yes
Revenue (Companies)	**no**	**yes**	**yes**	**no**
Income (individual person)	**no**	**yes**	**no**	**yes**
Contract code	yes	yes	yes	yes
Zip code of FIs Agency	yes	yes	yes	yes
Funding	yes	yes	yes	yes
Benchmark rate or index (Fixed, post, floating and other kinds of rate)	yes	yes	yes	yes
Percentage if the index applied to the operation	**no**	**yes**	**yes**	**yes**
Annual interest rate	yes	yes	yes	yes
Contract currency				
Nature of the facility	yes	yes	yes	yes
.Own operations	yes	yes	yes	yes
.Operations transferred	yes	yes	yes	yes
Facility type	yes	yes	yes	yes
Operation's Risk rating	yes	yes	yes	yes
Maturities	yes	yes	yes	yes
Dates				
.date of the beginning of the operation	yes	yes	yes	yes
.date of the ending of the operation	yes	yes	yes	yes
Guarantees				
. Guarantor identification	yes	yes	yes	yes
. Percentage exposure covered by the guarantor	**no**	**yes**	**yes**	**yes**
Collaterals				
.type	yes	yes	yes	yes
.Initial collateral value	**no**	**yes**	**yes**	**yes**
.Current collateral value	yes	yes	yes	yes
.Date of collateral revaluation	yes	yes	yes	yes
Initial Value of the operation	**no**	**yes**	**yes**	**yes**
Operation provision	yes	yes	yes	yes
Outflows				
.Total payment	**no**	**yes**	**yes**	**yes**
.Transfer to other institution with no guarantee	**no**	**yes**	**yes**	**yes**
.Transfer to a non financial institution with no guarantee	**no**	**yes**	**yes**	**yes**
.Renegotiation	**no**	**yes**	**yes**	**yes**

Source: Brazil Central Bank.

ANNEX II. BRAZIL: SUMMARY OF RECENT CHANGES TO THE MACROPRUDENTIAL MEASURES TARGETED ON CONSUMER CREDIT

December 2010

- Announced an increase of the minimum payment for credit card bills to 15 percent (previously 10 percent) (effective in June), and anticipates another hike to 20 percent by December 2011.

- Increase of capital requirements for long term consumer loans. The risk weight for such exposures was increased from 100 percent to 150 percent.

Operation	Maturity and LTV	Capital requirement (in percent)
Vehicles (financing and leasing)	Maturity between 24 and 36 months and LTV > 80 percent	16.5
	Maturity between 36 and 48 months and LTV > 70 percent	
	Maturity between 48 and 60 months and LTV > 60 percent	
	Maturity higher than 60 months and any LTV	
Payroll deduction loans	Maturity higher than 36 months	
Personal loans	Maturity higher than 24 months	
Other consumer loans		11
Other consumer loans classified as retail		8.5

Note. The risk weight was kept at 75 percent for agricultural loans, payroll deduction loans with maturity under 36 months, home financing, and loans funded by government programs.

April 2011

- Increase of the IOF on consumer credit operations to 3 percent (previously 1.5 percent).

November 2011

- Maintain the minimum payment for credit card bills at 15 percent (previously programmed to be increased to 20 percent in December).

- Redefinition of risk weights applied to consumer loan exposures involving longer maturities, regardless of loan-to-value amounts. Reduce capital requirements for consumer loans with maturity between 24 and 60 months, albeit increasing capital requirements for those with maturity above 60 months. Eliminate the different capital requirements for car loans with maturities between 24 and 60 months according to down payment.

Operation	Maturity and LTV	Capital requirement
Vehicles	Maturity under 60 months and classified as retail (RW 75%)	8.25%
	Maturity under 60 months and not classified as retail (RW 100%)	11%
	Maturity higher than 60 months (RW 150%)	16.5%
Consumer loans	Maturity under 36 months[1] (RW 75%)	8.25%
	Maturity between 36 and 60 months (RW 150%)	16.5%
	Maturity higher than 60 months (RW 300%)	33%
Other consumer loans (risk weight: 100 percent)		11%
Other consumer loans classified as retail (risk weight: 75 percent)		8.5%

[1] Includes agricultural loans, payroll deduction loans, home financing, loans funded by Government programs.

December 2011

- IOF tax on credit for consumption (from 3 to 2.5 percent).