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* Views expressed are those of the authors and do not necessarily reflect official positions of De Nederlandsche Bank.

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De Nederlandsche Bank NV
P.O. Box 98
1000 AB AMSTERDAM
The Netherlands

The shift in bank credit allocation: new data and new findings*

Dirk Bezemer[a], Anna Samarina[b] and Lu Zhang[c]

[a] *University of Groningen*
[b] *De Netherlandsche Bank*
[c] *Utrecht University*

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Abstract

In this paper we present a new data set on bank credit in four categories: home mortgages, consumer credit, bank loans to non-bank financials, and loans to non- financial business, for 74 economies over 1990–2013. We offer a full description of sources and methods of data collection and construction and comparisons with adjacent data sets. We document key trends including the shift in bank credit allocation away from traditional business lending. The literature suggests substantial consequences of this 'debt shift' for growth, income distribution and macroeconomic resilience, which motivated this data construction. A second contribution is to analyze drivers of debt shift in fixed-effects and system-GMM regressions for the full sample and separately for advanced and emerging economies. We find that debt shift is larger in advanced economies with a stronger presence of foreign banks and higher trade. Financial deregulation strongly correlates with debt shift.

Keywords: credit allocation; business lending; household mortgage.
JEL Classification: E44, E51, G21.

* Corresponding author: Faculty of Economics and Business, University of Groningen, PO Box 800, 9700 AV Groningen, The Netherlands. Phone: +31 50 3633799; Email: d.j.bezemer@rug.nl. This research was conducted while Anna Samarina was at the University of Groningen. The views expressed do not necessarily reflect the official views of De Nederlandsche Bank. Financial support from the Equilibrio Foundation and the Institute for New Economic Thinking is gratefully acknowledged.

1 Introduction

The allocation of bank credit over firms and households has shifted dramatically in recent decades. An emerging literature discusses the consequences of this 'debt shift' for macroeconomic outcomes. In this paper we contribute in two ways to this research agenda. The first is to present a new data set on bank credit allocation covering 74 economies. The construction of this data set is motivated by the fact that different categories of bank credit have exhibited different dynamics over time and between countries, and have different effects on macroeconomic outcomes.

The distinguishing feature of the data set is that we report bank credit in four categories: home mortgages, consumer credit, bank loans to non-bank financials, and loans to non-financial business. With our and similar data sets (discussed below), users can go beyond a 'bank credit' aggregate, which is often identified with bank loans to non-bank financials. But in a balanced sample of 14 economies over 1990–2011 in our data, we observe that more than 30 of the 50 percentage points rise in domestic bank debt as a ratio of GDP (from about 75% to almost 125%) is due to household mortgage credit, and much of the rest — due to household consumer credit. Loans to non-financial firms have constituted a falling share of all bank credit in recent decades. This has implications for the analysis of financial development, and it motivated the construction of the new data set.

The second contribution of this paper is to use the data to examine the drivers of this debt shift, a topic which is relatively under-researched. Since the shift in bank debt allocation was ubiquitous across many economies, its drivers are likely to be not only micro-level bank features, but also macro-level structural, regulatory and financial-market changes. This motivates an analysis of drivers using our macro-level data set, with additional data on the candidate determinants. We exploit the panel nature and the wide country coverage of our data by running fixed-effects and system-GMM regressions for the whole sample as well as separately for advanced versus emerging and developing economies. The findings show that debt shift is larger in mature countries

with a stronger presence of foreign banks and higher trade; financial deregulation is also a driver of debt shift, especially in emerging and developing countries.

We provide a descriptive overview of the new dataset and a comparison to similar datasets by Beck et al. (2012) and BIS (2013) in Section 3. In Section 2 we motivate the new data by surveying the relevance of differentiated bank credit to economic performance in terms of growth, financial stability and inequality. Our data set is offered to support research into these issues. Section 4 describes the methodology and data used to analyze determinants of the momentous change in bank credit allocation over the last decades. Sections 5 and 6 discuss the main estimation results and robustness checks, respectively. Section 7 concludes with a discussion of data limitations, future updates, additional data collection efforts, and policy uses of the new data.

2 Differentiating bank credit: relevance to growth, stability and inequality

The distinction between uses of bank credit and their macro-level consequences is not new (Schumpeter, 1939; Bezemer, 2014). Neither consumer credit nor home mortgages are directly linked to productivity growth in the way loans to non-financial firms are, by financing innovation and productivity growth. Hence the channels from credit to growth are different, so that their growth coefficients can be expected to diverge. The rising share of mortgages in total credit may be a key reason for the falling credit-growth coefficients observed in the literature (Rousseau and Wachtel, 2011; Arcand et al., 2015; Bezemer et al., 2016), and also for the financial fragility connected to credit expansions (Jorda et al., 2016).

In the contemporary financial-development literature, this differentiation was mostly neglected until the 1990s. Werner (1997) makes an early distinction between income growth effects of mortgages and business loans in Japan. Jappelli and Pagano (1994) argue that higher household credit depresses savings and thereby growth. This is in

line with Xu (2000) who show that business investment, not household spending, is the channel through which financial development affects growth. Beck et al. (2012) is a groundbreaking empirical study. They build a similar cross-country dataset to ours, with smaller country coverage and shorter time span, including a broad distinction between household and business credit. Beck et al. (2012) find that household credit has negligible growth effects, a finding confirmed by Bezemer et al. (2016).

Apart from the now voluminous credit-growth literature, a second area where the distinction in credit types appears relevant is in the field of crisis, fragility and instability. Jappelli et al. (2008) collect micro credit data for the U.K., U.S. and Germany. They find that more household debt leads to more insolvencies and arrears. Büyükkarabacak and Valev (2010), using a dataset similar to Beck et al. (2012), also show that household credit increases the probability of crisis. Büyükkarabacak and Krause (2009) find that countries with more household credit have weaker external balances. Sutherland et al. (2012) find that when private sector debt levels (particularly for households) rise above trend, the likelihood of recession increases.

A number of other studies find that private debt increases the probability of a financial crisis, and worsens the consequences in terms of output loss and duration (Claessens et al., 2010; Cecchetti et al., 2011; Lane and Milesi-Ferretti, 2011; Berkmen et al., 2012; Babecky et al., 2013; Beck et al., 2014). Some focus specifically on household debt. For instance, Mian and Sufi (2014) show that U.S. households with more mortgage debt reduced their spending more than others after 2007 (also, Mian and Sufi, 2009; Dynan, 2012). IMF (2012) finds for advanced economies over the past three decades that recessions are more severe if they are preceded by larger increases in household debt. Jorda et al. (2016) use long-term data on 17 economies and find that growth in real estate lending has caused financial instability. They also confirm that these are often followed by deeper recessions and slower recoveries than other shocks. In sum, differentiating household credit from non-financial business credit, and differentiating household mortgage debt from household consumer debt, is important to

understand the impact of credit on both growth and stability.

Credit allocation is also likely to affect a third area of macro-level outcomes: inequality in wealth and income. Growth of bank credit may reduce income inequality if it reduces investment barriers and risk (Greenwood and Jovanovic, 1990; Galor and Zeira, 1993; Banerjee and Newman, 1993). This is empirically supported for developing countries (Clarke et al., 2006; Beck et al., 2007), but not clearly for advanced economies. Beck et al. (2007) find that growth in credit-to-GDP decreases income inequality in the US, but Van Arnum and Naples (2013) report that growth of the U.S. financial sector increased inequality. Denk and Cournéde (2015) find that financial expansion has held back income growth of low- and middle-income households in OECD economies. This may well be connected to the rising share of bank credit to (real estate and financial) asset markets as opposed to non-financial business. This re-allocation of credit leading to rising asset prices may entail redistribution of income between wage earners and owners of assets, with rising income inequality (Piketty, 2014). The 'Great Mortgaging' (Jorda et al., 2016) after the 1980s generated large income growth in the Finance, Insurance and Real Estate (FIRE) sectors, which expanded rapidly.

In this section we indicated how differentiating credit may help understand macro-level economic performance in terms of growth, stability and inequality. In the next section we describe the new data set and compare it to similar data.

3 The new dataset

3.1 Content

The new data provides a detailed description of monetary financial institutions' (banks and credit unions) loan assets where the counterparty is a domestic non-government non-bank. We collect data from the consolidated balance sheets of monetary financial institutions from central bank statistics for 74 countries.[1] The time period coverage

[1]We collected data form the asset side of banks' balance sheets. An alternative would be to have data from the liabilities side of firms and households, in a country's flow of funds data. However, few

is conditional on data availability. For most countries in our sample we have credit data over the period 1990–2013; for several countries (Germany, Greece, Hong Kong, Japan, Portugal, Switzerland, Turkey, UK, US), the data goes back much further than 1990. The credit data is observed at annual frequency, although for about 50 countries we have also quarterly data. A country is included in the dataset if we find publicly available data on bank loans, reported separately for credit to non-financial business, credit to financial business, mortgages to households, and household consumption credit (though this is sometimes imputed). Table 1 provides an overview of the dataset with the list of countries, time period coverage and averages of all credit categories in % GDP.[2] Appendix A discusses the consistency and reliability of the data.

Table 1: **Overview of the dataset**

Country	Period	Frequency	Total credit	Non-fin. bus.	Fin. bus.	Hh mortgage	Hh consum.
Albania	2002–2013	Y	26.9	18.7	0.8	5.4	2.3
Argentina	1993–2013	Y,Q	13.0	7.8	0.9	1.6	2.7
Armenia	2000–2013	Y,Q	20.5	10.9	0.5	2.0	4.6
Australia	1990–2013	Y,Q	93.3	33.0	6.9	46.2	7.2
Austria	1995–2013	Y,Q	78.7	45.0	6.2	20.1	7.4
Azerbaijan	2005–2013	Y	17.9	11.2	0.4	0.8	5.5
Belarus	1999–2013	Y	28.5	21.9	0.3	4.7	1.7
Belgium	1999–2013	Y,Q	72.4	29.7	9.9	27.7	5.0
Botswana	2004–2013	Y	26.0	9.9	0.4	4.9	10.8
Brazil	1994–2013	Y	33.4	20.6	-	4.2	8.6
Bulgaria	1995–2013	Y,Q	40.1	29.2	-	5.0	5.9
Cambodia	2001–2013	Y	20.3	18.0	0.3	1.8	1.7
Canada	1990–2013	Y,Q	122.0	39.8	11.4	44.8	25.9
Chile	1990–2013	Y,Q	64.4	43.1	1.4	11.9	6.5
China	2002–2013	Y	129.0	103.8	9.3	15.2	7.7
Colombia	2002–2013	Y,Q	20.1	17.9	-	3.8	7.4
Croatia	1998–2013	Y	54.0	25.3	0.6	13.7	19.2
Cyprus	2005–2013	Y,Q	234.0	110.5	13.8	52.4	57.4
Czech Rep	1993–2013	Y,Q	45.0	28.3	2.7	9.7	5.5

Continued on next page

countries provide sufficiently detailed flow of funds data on bank loans by sector. What is often reported is total borrowing, including equity market borrowing, while we focus on bank credit so as to preserve comparability between countries. Also, to the extent that equity is held in the private non-financial sector, this is debt from the private non-financial sector to the private non-financial sector.

[2]The Source Appendix offers details on the data collection choices for each country in the dataset.

Table 1 – *Continued from previous page*

Country	Period	Frequency	Total credit	Non-fin. bus.	Fin. bus.	Hh mortgage	Hh consum.
Denmark	2000–2013	Y,Q	156.6	42.9	7.7	80.2	25.8
Egypt	1991–2013	Y	48.9	41.2	-	-	7.7
Estonia	1997–2013	Y,Q	63.3	28.8	7.4	21.8	5.3
Finland	1997–2013	Y,Q	70.0	25.0	2.0	35.6	13.6
France	1993–2013	Y,Q	81.4	36.5	4.4	28.0	12.4
Georgia	2003–2013	Y,Q	21.7	13.6	0.6	4.7	4.1
Germany	1968–2013	Y,Q	83.2	48.9	2.3	22.6	9.3
Greece	1980–2013	Y,Q	62.7	36.2	1.2	13.7	5.6
Hong Kong	1980–2013	Y,Q	130.0	73.2	13.4	11.5	32.0
Hungary	1989–2013	Y,Q	43.3	24.2	4.5	8.3	6.3
Iceland	2003–2013	Y,Q	143.2	98.3	3.9	24.5	16.5
India	2001–2013	Y	36.0	27.0	2.6	3.1	3.3
Indonesia	2002–2013	Y	26.5	16.3	2.5	2.0	5.7
Ireland	2003–2013	Y,Q	159.4	63.2	24.0	56.7	15.5
Israel	1999–2013	Y,Q	86.6	55.2	-	21.0	10.5
Italy	1998–2013	Y,Q	87.9	47.5	12.2	15.0	13.2
Japan	1977–2013	Y	85.6	51.9	7.4	22.6	3.8
Kazakhstan	1997–2013	Y	32.1	23.5	1.2	2.3	5.2
Kenya	1997–2013	Y	29.6	23.4	1.4	1.6	3.1
Korea	2007–2013	Y,Q	106.5	54.5	4.5	28.9	18.3
Kyrgyz Rep	1996–2013	Y,Q	7.7	6.3	-	1.2	0.7
Latvia	2010–2013	Y,Q	75.2	38.4	2.3	27.9	6.6
Lithuania	1993–2013	Y,Q	31.8	18.7	1.8	8.2	3.1
Luxembourg	1999–2013	Y,Q	125.2	30.3	51.1	35.5	8.4
Macedonia	2003–2013	Y	36.2	22.4	0.0	2.5	11.2
Malaysia	1996–2013	Y,Q	110.2	49.7	13.3	25.9	21.3
Malta	1996–2013	Y,Q	94.1	53.8	9.7	26.2	8.2
Mexico	2000–2013	Y,Q	20.4	8.2	-	8.9	3.3
Moldova	1993–2013	Y	25.9	21.6	1.0	2.0	1.3
Mongolia	2004–2013	Y,Q	40.2	23.7	0.1	4.4	12.0
Morocco	2001–2013	Y,Q	30.8	15.3	0.3	12.0	3.2
Netherlands	1990–2013	Y,Q	143.8	50.2	21.7	63.9	8.1
New Zealand	1990–2013	Y,Q	120.5	33.5	24.3	57.8	5.0
Norway	1995–2013	Y,Q	98.4	34.1	2.9	50.9	10.6
Pakistan	2006–2013	Y,Q	19.7	16.6	0.8	0.4	1.9
Peru	2001–2013	Y,Q	23.9	16.2	-	3.0	4.8
Philippines	1993–2013	Y	34.9	24.5	7.8	1.5	2.5
Poland	1996–2013	Y,Q	34.7	14.9	1.3	8.6	9.9
Portugal	1979–2013	Y,Q	91.6	44.0	8.3	30.4	8.8
Romania	2007–2013	Y,Q	38.3	19.1	0.6	5.2	13.2
Russia	1995–2013	Y	29.4	23.2	0.8	1.3	4.1
Singapore	1991–2013	Y,Q	98.2	59.7	13.5	25.1	-

Continued on next page

Table 1 – *Continued from previous page*

Country	Period	Frequency	Total credit	Non-fin. bus.	Fin. bus.	Hh mortgage	Hh consum.
Slovakia	2004–2013	Y	45.6	23.3	2.7	14.3	5.3
Slovenia	2004–2013	Y	73.1	47.3	4.8	9.8	11.2
Spain	1994–2013	Y,Q	117.5	55.7	3.7	45.7	12.4
Sri Lanka	1996–2013	Y	26.3	19.1	1.2	2.1	3.9
Sweden	1996–2013	Y,Q	145.0	51.2	47.5	43.8	11.0
Switzerland	1977–2013	Y	154.4	40.1	9.9	103.4	1.4
Thailand	2003–2013	Y,Q	105.4	47.0	4.0	17.8	36.5
Tunisia	2003–2013	Y	64.5	42.8	7.2	10.6	3.9
Turkey	1986–2013	Y,Q	19.9	13.8	0.2	2.2	2.7
Ukraine	2002–2013	Y	50.8	35.6	0.8	6.2	8.2
UK	1986–2013	Y,Q	88.8	20.9	24.8	34.8	8.3
Uruguay	2005–2013	Y	21.5	13.8	0.5	2.8	4.3
USA	1947–2013	Y,Q	25.8	9.1	-	11.1	5.6

Notes: The Table reports the means of total bank credit and four credit categories (in % of nominal GDP) for all countries included in our dataset. '-' indicates that the data for a particular credit type are not available. 'Y' indicates that the data are available at annual frequency, 'Q' — at quarterly frequency.

Non-financial business credit includes loans to non-financial companies. For some countries, loans are reported according to the classification of economic activities. In these cases, non-financial business credit includes loans to agriculture, industry, and services sectors (excluding public, financial and real estate services). Credit to financial business includes loans to insurance companies, pension funds, other financial intermediaries and financial auxiliaries, and other non-bank financial institutions. We include this since it is part of what banks lend to the private sector, although not to the private non-financial sector. These loans may be relevant in the analysis for some purposes, and the data accommodate this need. We excluded interbank lending.

Mortgages in our data are household mortgages, which is only a part of total mortgages. Some countries also report business mortgage lending separately from other lending to business; in these cases it is clear that a substantial part of lending to business is lending secured by real estate. But since only few countries report business mortgages separate from other bank lending to business, we cannot consistently include total mortgages.

Bank-issued household consumption credit includes all types of household loans that are not mortgages. These are e.g. loans for purchase of passenger cars, other consumer durable goods, student loans, and credit card advances. For countries which do not separately report consumer loans, they are calculated as total household loans minus mortgages.

Domestic bank credit includes loans by both domestic and foreign banks, in domestic and foreign currency. For reasons of consistency across countries, it excludes non-bank lending and securitized bank loans, both of which are sometimes but not often reported in central bank statistics. Some countries have large non-bank debt markets or securitization, so that loan assets on banks' balance sheets paint an incomplete picture. For one extreme example, this is why 'total bank credit' values for the U.S. are comparatively low: most credit in the U.S. is non-bank credit (bonds and short-term papers) and a large part of loans (especially, mortgages) is securitized; that is why it cannot be observed on banks' balance sheets. However, the U.S. is exceptional in this respect. Especially for many developing countries, bank lending is the bulk of official lending to the private sector.

3.2 Comparison with other datasets

There exist several datasets comparable to ours. Three similar datasets merit discussion. The first was constructed by Beck et al. (2012) for 73 countries over the period 1994–2005. The second, by Büyükkarabacak and Valev (2010) is a panel of 37 countries over 1990–2007. These studies pioneered cross-country research on growth effects of different credit aggregates. A more recent comprehensive dataset is the Bank of International Settlement 'Long series on credit to private non-financial sectors' (BIS, 2013).

There are three differences between Beck et al. (2012) and the present dataset. First, time period coverage (until 2013, compared to 2005). Second, we observe household credit in two separate categories, while Beck et al. (2012) combine mortgage and other household credit into one category. This starts with a 'total credit' (TC) measure taken

from the Financial Development and Structure Database (Beck et al., 2000, updated in Beck et al., 2010), which consists of credit to non-financial business (BC) and credit to households. Here 'private credit' captures bank borrowing of the private non-financial sector, including mortgages.[3] The 'household credit' in Beck et al. (2012) and Büyükkarabacak and Valev (2010) is measured as the difference between total credit and business credit. Household consumer credit and mortgages are not distinguished. Third, we report bank credit to non-bank financial business, which does not appear in the data of Beck et al. (2012) and Büyükkarabacak and Valev (2010).

The BIS 'Long series on credit to private non-financial sectors' data is described in Dembiermont et al. (2013). A first difference with our dataset is that here only 'lending by all sectors' (i.e., banks and securities markets) is reported separately for households and enterprises. Since bank credit is not disaggregated, we cannot directly compare the BIS data to ours. The data set is complementary to ours, with its advantages and limitations. By including in one credit measure also nonbank lending (which is mostly lending through securities markets), it is not possible to use the BIS data to study the effects of different bank credit types. This may be desirable to study issues unique to banks, such as links to the payment system, credit creation, and banks' role in information collection. On the other hand the BIS data provide a more complete picture of all loans to the private non-financial sector. This data are being continually updated.

Tables B.2-B.3 In Appendix B show that our data and the data of Beck et al. (2012) and Büyükkarabacak and Valev (2010) are to a large extent comparable.[4] The BIS sample is less similar to ours, due to inclusion of nonbank lending and cross-border credit (Table B.4). Table B.1 shows correlations of our data with the other three datasets.[5].

[3]Beck et al. (2000) note that "claims on real estate (mortgage credit) is included for nonbanks lending".

[4] One of the exceptions is Czech Republic, for which our credit/GDP is much lower than in the two other datasets. Personal communications with Czech National Bank staff suggest that our lower credit stocks may be due to widespread credit write-downs and historical data revisions since 2005, reduction in the number of banks, and inclusion of foreign banks. For Sweden, our data for total and non-financial business credit-to-GDP is much higher than in other datasets. This could be due to the reclassification of banks and non-banks.

[5]Note that the samples are different due to different coverages and time spans.

Two other related datasets are Jorda et al. (2016) and the 'Lending to Households in Europe' dataset by the European Credit Research Institute. The latter covers 40 countries over 1995–2014; this dataset is not publicly available. It appears to be constructed from similar sources to ours. Jorda et al. (2016) construct long time series for real estate lending and its share in total lending for 17 advanced economies since 1870. This includes loans from banks, savings banks, credit unions, and building societies. They do not separate out household mortgages from total real estate lending. This data offers the advantage of longer time coverage but for fewer countries, and of broader coverage of real estate lending.

3.3 Data presentation and trends

Table 2 reports descriptive statistics of total bank credit and of the disaggregated credit categories (in % GDP) in our dataset. Bank credit to non-financial business and household mortgage credit are the largest categories. There is considerable variation around the averages, especially between countries.

Table 2: **Descriptive Statistics**

Description	Mean	Min	Max	Std	Stdw	Stdb	Obs
Total bank credit	69.89	1.74	272.69	48.34	19.61	46.40	1337
Non-financial business credit	33.85	1.41	171.52	21.34	8.64	21.16	1349
Financial business credit	7.48	0.00	85.28	10.66	4.43	9.83	1132
Household mortgage credit	21.66	0.00	136.82	24.55	10.17	20.56	1289
Household consumer credit	8.81	0.00	61.04	8.79	3.55	8.97	1289

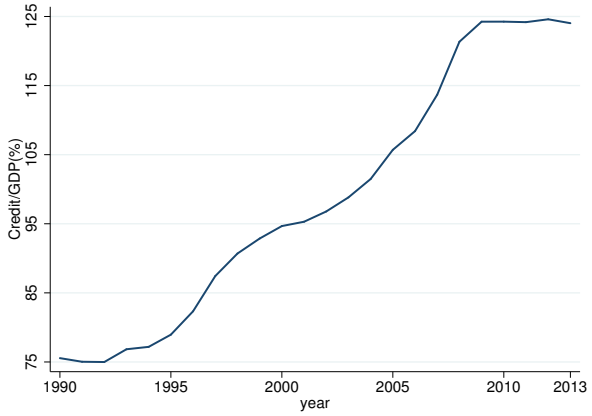
Note: Stdw and Stdb refer to within and between standard deviations, respectively.

Some stylized trends are worth noting. Figure 1 graphs the development of total bank credit during the period 1990–2013. There is a substantial increase in credit over time, in both advanced and emerging countries. Advanced economies have much higher credit-to-GDP levels (note the scale difference), which remained high after the financial crisis. The drop in China's credit-to-GDP before 2007 is fairly unique, and related to faster GDP growth than growth in bank credit. The uncertainties around GDP and credit statistics in China should be noted. With that caveat, the V-shaped develop-

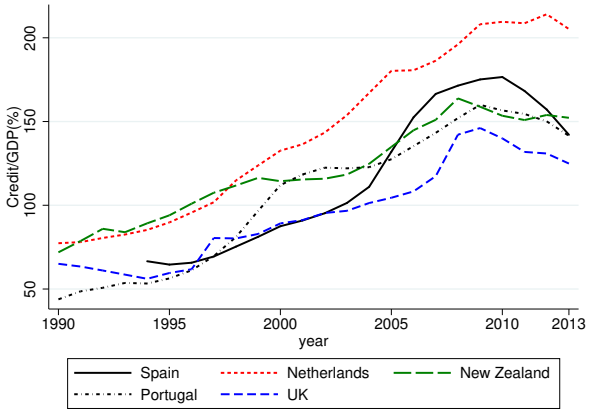
ment of China's credit-to-GDP is consistent with its growth spurt before the crisis and massive investment credit injections since 2008.

Figure 1: Development of total bank credit over 1990–2013

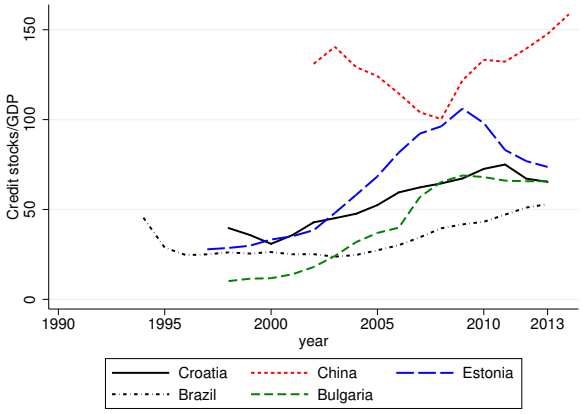
(a) Total credit – balanced panel of 14 countries



(b) Total credit for selected developed countries



(c) Total credit for selected emerging countries



Notes: Panel (a) plots the unweighted average for a balanced panel of 14 countries, namely Canada, Switzerland, Chile, Germany, UK, Greece, Hong Kong, Hungary, Japan, the Netherlands, New Zealand, Portugal, Singapore, and U.S.

A comprehensive overview of total and disaggregated credit categories (in % GDP) for different country groups is presented in Table 3. This table reports averages of credit over country groupings for selected years, as well as averages over (at most) the period 1990–2013. We observe substantial growth of total credit in advanced countries, with increasing shares of mortgage lending. Bank credit increased slowly in emerging and developing economies and was largely directed towards non-financial business,

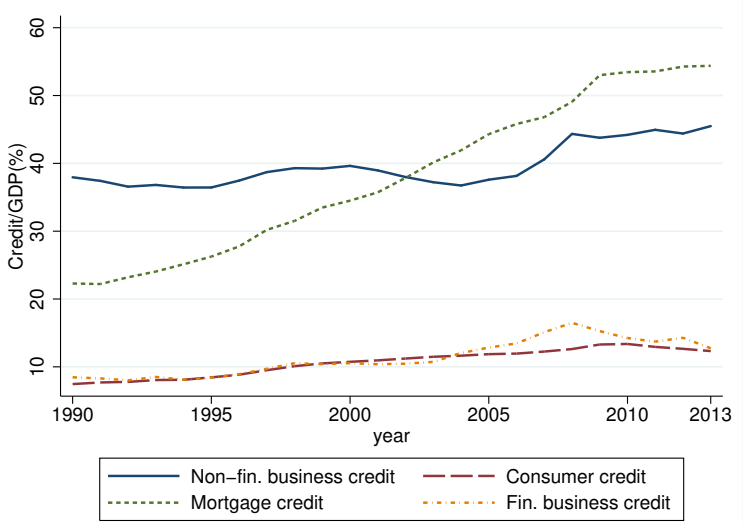
Table 3: **Bank credit composition by country groups**

	1995	2000	2005	2010	2013	1990–2013
All countries (74)						
Total bank credit	61.47	63.82	66.03	80.82	81.51	70.83
Non-financial business credit	32.89	31.03	30.76	37.02	37.11	33.98
Financial business credit	5.61	7.78	7.24	8.21	7.95	7.67
Hh mortgage credit	18.83	19.74	21.15	26.06	26.86	22.14
Hh consumer credit	6.46	7.35	9.50	11.02	11.06	9.14
Advanced economies (34)						
Total bank credit	77.13	88.58	103.81	122.52	119.17	101.38
Non-financial business credit	37.29	39.43	41.67	48.91	46.68	43.09
Financial business credit	7.21	10.69	12.02	14.41	13.35	11.99
Hh mortgage credit	26.11	30.21	38.07	46.26	47.22	36.33
Hh consumer credit	8.74	10.31	13.21	14.21	13.08	11.71
Euro Area (19)						
Total bank credit	61.35	73.84	96.49	121.20	110.04	93.01
Non-financial business credit	34.81	36.54	40.74	51.67	45.83	42.55
Financial business credit	2.60	8.18	11.09	13.96	11.42	9.86
Hh mortgage credit	16.88	21.82	32.02	41.92	40.70	30.46
Hh consumer credit	7.05	8.08	12.63	13.65	12.09	10.57
Other advanced economies (12)						
Total bank credit	96.71	106.25	119.79	130.12	137.29	117.58
Non-financial business credit	43.14	44.47	48.12	51.81	53.28	48.6
Financial business credit	10.36	12.97	12.30	12.83	15.28	13.57
Hh mortgage credit	40.17	38.92	47.80	52.79	56.79	45.32
Hh consumer credit	10.62	12.42	13.95	15.01	14.41	13.19
Emerging and developing economies (40)						
Total bank credit	28.42	30.39	34.21	45.38	49.50	39.06
Non-financial business credit	24.53	20.23	21.58	26.91	28.96	24.67
Financial business credit	1.49	3.12	2.46	2.21	2.72	2.51
Hh mortgage credit	2.44	3.72	5.23	8.46	9.10	6.29
Hh consumer credit	2.14	3.47	6.31	8.40	9.39	6.54
CIS and transition economies (9)						
Total bank credit	14.88	11.60	20.16	36.74	39.04	25.98
Non-financial business credit	14.49	9.95	15.10	26.20	27.46	18.84
Financial business credit	0.02	0.14	0.65	1.22	1.22	0.74
Hh mortgage credit	0.20	0.48	1.67	4.43	3.79	2.71
Hh consumer credit	0.17	0.42	2.99	5.03	6.71	3.57
Emerging and developing Asia (9)						
Total bank credit	x	61.57	52.20	58.22	71.17	58.72
Non-financial business credit	x	37.29	33.29	34.47	40.36	35.96
Financial business credit	x	8.94	3.92	3.81	5.69	5.11
Hh mortgage credit	x	8.04	7.85	8.82	11.49	8.6
Hh consumer credit	x	7.30	11.30	11.11	13.63	10.61
Emerging and developing Europe (8)						
Total bank credit	24.83	22.52	31.79	52.40	51.34	36.68
Non-financial business credit	22.48	15.38	17.43	27.11	27.30	21.01
Financial business credit	0.30	0.92	2.02	2.18	1.82	1.50
Hh mortgage credit	1.17	1.09	5.03	11.08	10.84	6.30
Hh consumer credit	0.98	3.64	7.88	12.30	11.47	7.88
Latin America (7)						
Total bank credit	34.39	31.91	24.75	32.43	39.26	32.08
Non-financial business credit	25.16	20.47	15.12	18.89	22.89	20.43
Financial business credit	1.66	1.69	1.07	0.30	0.45	1.07
Hh mortgage credit	5.20	6.85	4.29	6.14	7.57	5.63
Hh consumer credit	2.91	3.75	4.88	7.27	8.61	5.51
Middle East and Africa (6)						
Total bank credit	48.39	45.73	36.90	36.01	38.13	38.48
Non-financial business credit	41.15	39.63	25.56	22.73	22.66	27.41
Financial business credit	x	1.54	2.22	1.98	2.36	1.20
Hh mortgage credit	x	1.03	5.24	7.46	9.20	5.98
Hh consumer credit	7.24	4.82	5.36	5.42	5.84	5.33

while household lending there was mostly dominated by consumer credit, with a negligible role for mortgages.

Figure 2 plots the credit composition for a balanced sample of 14 countries for which we have data over 1990–2013. Household mortgage lending more than doubled as a share of total bank credit and GDP, which is proportionally similar to what Jorda et al. (2016) report. Credit to non-financial business was stable until about 2005 and then rose from 35% to 45% GDP on average. The other two credit categories — consumer credit and credit to financial business — oscillated around 8-12% GDP with negligible growth dynamics.

Figure 2: Development of credit composition over 1990–2013

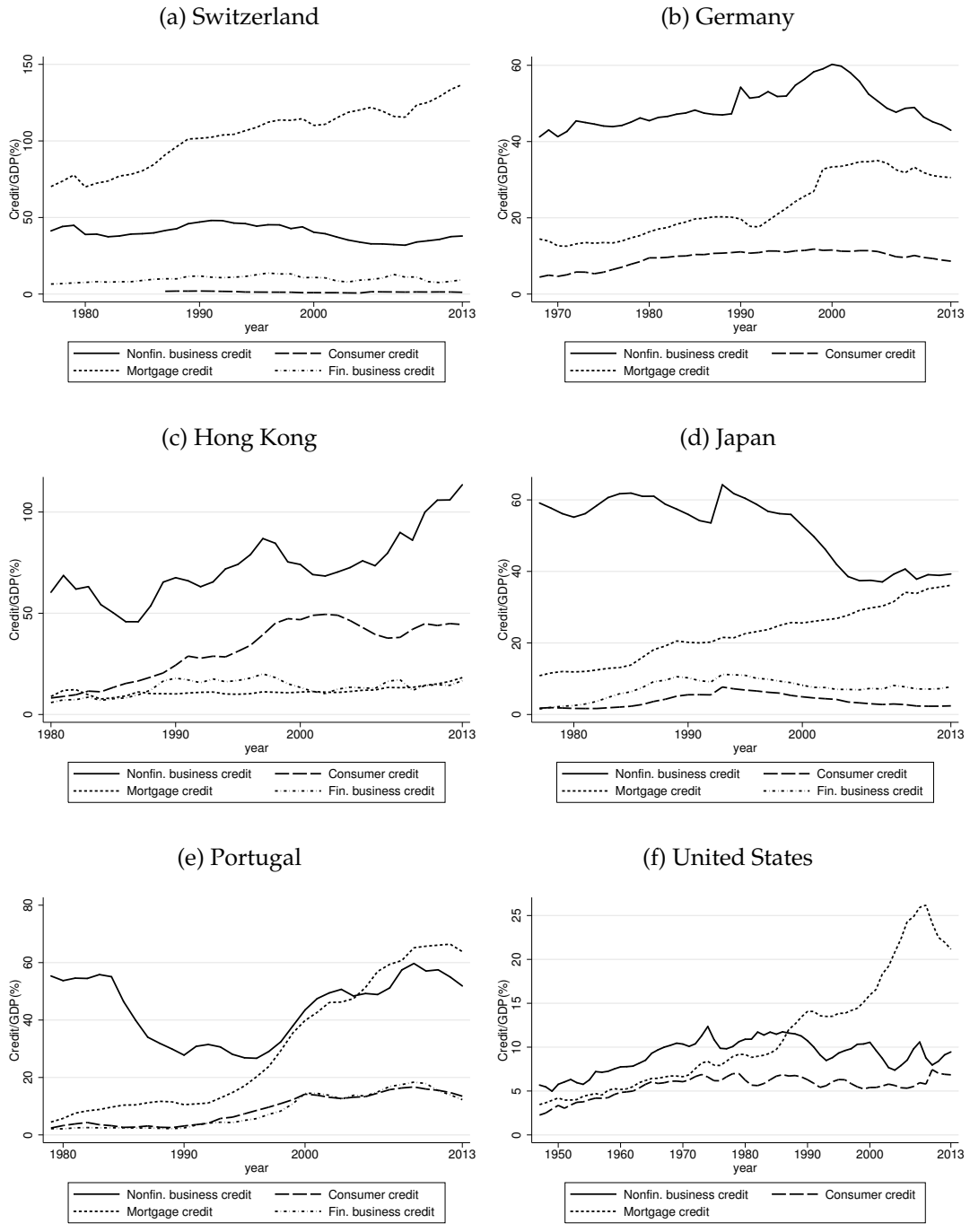


Note: Figure 2 plots the unweighted average for a balanced panel of 14 countries as in Figure 1a.

In Figure 3 we report trends for selected countries with data availability prior to 1990. While patterns vary across the economies, a common trend is the rise in mortgage credit, mirrored in a fall of credit to non-financial business. The exception is Hong Kong, where the share in all credit of consumer credit is unusually large, and the mortgages share small relative to other advanced economies.

Figure 4 plots the extent of 'debt shift' (the shift in credit composition over time) for each country in the sample. On the vertical and horizontal axes of panel (4a) are the shares of non-financial business credit in total credit at the end and at the start

Figure 3: Development of credit composition: selected countries

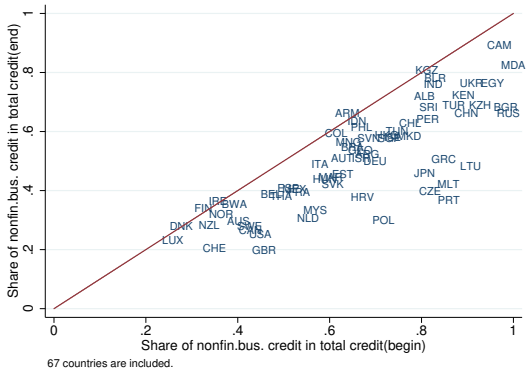


of a country's time series, respectively. If the country is located below the 45 degree line, there was 'debt shift' as defined above: bank credit allocation shifted away from non-financial business. Strikingly, our graph suggests that this holds for almost all countries in our sample. Panel (4b) suggest that the rising share of household mort-

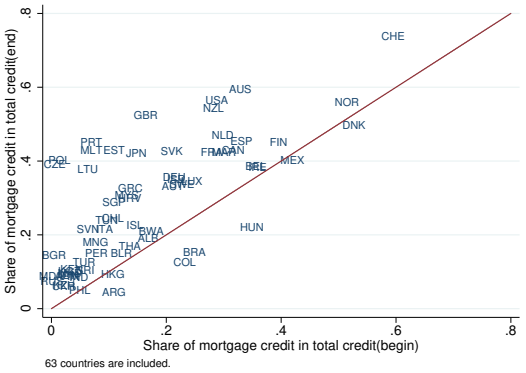
gage credit was almost everywhere the reason (except in Argentina, Brazil, Colombia, and Hungary). In some countries, household mortgages now constitute the largest bank loan category. Consumer credit and financial business credit also has gained in importance, though on a lower level in panel (4c) and (4d), respectively. In a striking reversal of late 19th century trends, banks have moved away from 'credit mobilier' in recent decades. They have become, as noted by Jorda et al. (2016), much like real estate funds. There is a gap between the textbook description of banks as financial institutions lending to non-financial firms and the actual allocation of bank credit. This motivates new directions in research into the role of banks in the economy.

Figure 4: Shift in credit composition across countries

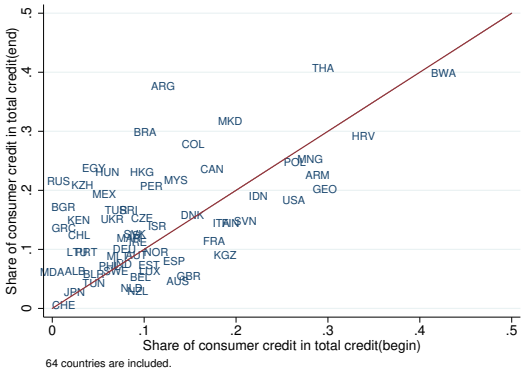
(a) Non-financial business credit



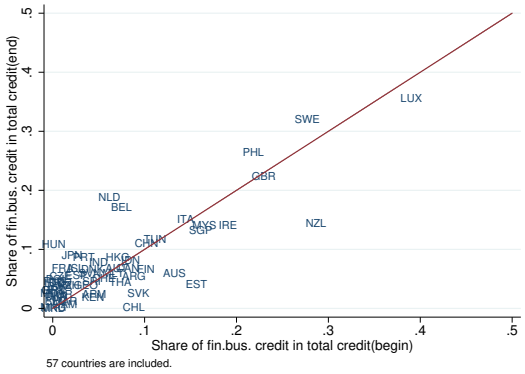
(b) Household mortgage credit



(c) Household consumer credit



(d) Financial business credit



Note: Figure 4 uses data from 1970 onwards. Countries with a minimum of 10 observations over time are included. The number of countries varies in four different panels.

4 Factors driving credit allocation

Given the importance of 'debt shift' in terms of its size and ubiquity (Section 3) but also in terms of its macroeconomic consequences (Section 2), it is pertinent to study the drivers of this shift in bank credit allocation. This is the aim of this section. We will proxy credit allocation by the share of non-financial business credit in total bank credit. The literature suggests a number of potential drivers of the shift in credit allocation away from business lending. We organize their discussion by distinguishing six sets of drivers.

First, there are macroeconomic factors such as income levels and the business cycle, in particular differences in income growth before and after the 2008 crisis. Second, structural factors such as investment shares and sectoral structures matter. More investment benefits bank lending to non-financial business, while growing service sectors in high-income economies may portend faster declines in demand for business investment and financing than for other lending (Summers, 2013). Third, external conditions like trade openness and capital flows are relevant. Trade openness increases business investment demand. Capital inflows could raise investment and credit demand by non-financial firms in the tradable sector, provided that repayment is assured by future export profits (Lucas, 1990; Blanchard and Giavazzi, 2002). Some (but not all) capital inflows may cause increased home mortgage lending (Samarina and Bezemer, 2016).

Fourth, monetary factors, summarized in overnight money market interest rates, capture domestic money market conditions and risk perceptions. Low interest rates due to monetary easing signal low investment risk and may disproportionately stimulate mortgage lending. Conversely, after a monetary tightening, banks substitute real estate and consumer loans with commercial and industrial loans, as Den Haan et al. (2007) report.

Fifth, financial factors such as credit market deregulation have resulted in a loosening of mortgage lending rules (Dell'Ariccia et al., 2012; Jorda et al., 2016), often in

conjunction with policy-induced trends in home ownership rates (Maddaloni and Peydro, 2011). The resulting securitization and originate-to-distribute lending trends favor mortgage lending (Purnanandam, 2011; Jiminez et al., 2014; Favara and Imbs, 2015). In mature credit markets, banks may more actively seek to extend lending into non-business markets, the more so if the presence of foreign banks leads to lower funding cost and more supply of funds. Stock market capitalization may influence credit allocation as it substitutes bank debt with equity in the financing of non-financial business. Finally, we take into account bank characteristics such as market concentration, bank efficiency, leverage, and returns. These will affect their lending decisions and portfolio composition.

We estimate the correlations of these potential drivers of credit allocation in a sample of 74 countries over the period 1990–2013. We compute 3-year non-overlapping averages of the underlying annual data, in order to reduce the impact of short-term business cycle fluctuations while still retaining enough observations. The baseline model specification is the following:

$$S_{it} = \alpha + \beta MAC_{it} + \gamma STR_{it} + \delta EXT_{it} + \theta MON_{it} + \eta FIN_{it} + \kappa BNK_{it} + \mu_i + \omega_t + \epsilon_{it}, \quad (1)$$

where S_{it} is the share of credit to non-financial business in total bank credit of country i in period t. We include the six sets of explanatory variables discussed above, namely: (1) macroeconomic MAC_{it} (initial income level (log of real GDP per capita at the beginning of each period) and GDP growth); (2) structural STR_{it} (investment share and services sector value-added share); (3) external EXT_{it} (trade openness and gross capital inflows); (4) monetary MON_{it} (overnight money market interest rate); (5) financial FIN_{it} (total credit at the beginning of each period, financial deregulation, stock market capitalization, and foreign bank presence); and (6) bank characteristics BNK_{it} (market concentration, bank leverage, efficiency, and returns on equity). Table B.5 in Appendix B summarizes definitions, sources and descriptive statistics of all variables. We control

for unobserved country-specific fixed effects in μ_i and time fixed effects in ω_t. ϵ_{it} is a white-noise error term with mean zero and variance σ^2_ϵ.

A common pattern is that income levels, total credit-to-GDP ratios and non-financial business credit shares tend to be jointly determined. We therefore employ the system-GMM methodology due to Arellano and Bover (1995) and Blundell and Bond (1998). This aims to correct for possible endogeneity of initial income level and total credit in a panel estimation with fixed-effects. The system-GMM model combines equation (1) in levels with the equation in first differences. The endogenous variables are instrumented by their lags in the first-difference equation and by first-differences in the level equation. In all specifications, one or two lags are used as instruments,[6] where the number of instruments is smaller than the number of countries. To test for consistency of estimates and validity of instruments, we compute a Hansen test of over-identifying restrictions, along with tests for first- and second-order autocorrelation of the residuals.

5 Estimation results

The data was cleaned for outliers and extreme values which could drive the outcomes.[7] Table 4 presents the estimation results for the full sample. Recall that the dependent variable is the share of loans to non-financial business in total bank credit (the business credit share, for short). First we show fixed-effect (FE) estimations; then we add system-GMM specifications in the next columns.

We find lower business credit shares in economies with higher income levels and income growth, and higher levels of financial development (bank credit/GDP). The correlation with GDP per capita is significant and strongly negative in both FE and

[6] A common concern is the variation in GMM results depending on the choice of lags. Including more lags however reduces the efficiency of our estimates due to short time span of the sample. But it does not alter our findings. Estimations with more lags are available on request.

[7] We dropped Hong Kong and Singapore which have very high values of trade openness (over 300% GDP), above the 95th percentile of the distribution. Other extreme values include stock market capitalization in Hong Kong, which are between 410% and 1037% GDP (1% of observations in our data), against a sample average of 47%. In addition, we excluded a few observations of extremely high interest rate (for Belarus, Turkey, Russia in one period) and for services value-added.

system-GMM regressions. This result sheds some light on recent finance-growth findings (Arcand et al., 2015; Bezemer et al., 2016). If lower business credit shares are one feature of more financial development, then it is understandable that more financial development is not necessarily 'good for growth', given the fact that it is business credit, not household credit, which drives the finance-growth relation (Beck et al., 2012). This leaves still open the question why lower business credit shares are one feature of more financial development. Perhaps this is due to saturation effects in business credit markets, or to changing financial technologies over the course of financial development which favor non-business lending. Disentangling these channels is likely to be a fruitful application of the new data.

The structure of the economy, captured by the share of the service sector in total value-added, also matters (although weakly): in economies which are more intensive in services, banks allocate more credit to non-financial business. Services sector may have less retained profit, making them more reliant on external finance. Note that we do not observe the effect of services value-added in columns (3)-(4) where we do not include GDP per capita. This is plausibly due to the strong link between income level and economic structure. It suggests that it is sensible to control for income levels, or — as we do below — to analyze country groupings according to income level. Additionally, higher capital inflows are correlated with a larger share of business lending.

Higher financial deregulation is robustly associated with lower business credit shares. This is an important finding, since it points to policy impacts on credit allocation. Deregulation of credit markets since the 1990s increased the scope for non-business lending, and for financial innovations on the funding side (such as securitization) that allowed banks to extend lending, especially to households.

A lower business credit share is also associated in FE estimations with lower interest rates, but this correlation is insignificant in a system-GMM model. Two other factors which are significantly associated with lower business credit shares (but only when controlling for endogeneity) are a greater presence of foreign banks, and lower

Table 4: **Determinants of credit allocation, full sample**

	(1)	(2)	(3)	(4)
	FE	S-GMM	FE	S-GMM
GDP per capita$_0$	−15.452 ***	−15.689 ***		
	(4.945)	(5.186)		
GDP growth	0.114	−0.825 *	0.235	−0.791
	(0.200)	(0.492)	(0.196)	(1.039)
Investment	0.103	0.089	−0.091	−0.096
	(0.159)	(0.282)	(0.141)	(0.350)
VA services	−0.002	0.858 *	−0.109	−0.372
	(0.196)	(0.471)	(0.196)	(0.252)
Trade openness	−0.075	0.053	−0.078	0.054
	(0.052)	(0.037)	(0.055)	(0.045)
Capital inflows	−0.015	0.138 **	−0.019	0.307 *
	(0.014)	(0.060)	(0.017)	(0.173)
Interest rate	0.201 ***	−0.308	0.201 **	−0.391
	(0.075)	(0.264)	(0.079)	(0.352)
Total credit$_0$	0.042	−0.163 **	0.062 **	−0.428 **
	(0.026)	(0.079)	(0.027)	(0.213)
Financial deregulation	−1.118	−2.643 *	−1.336 *	−5.503 ***
	(0.701)	(1.420)	(0.725)	(1.939)
Stock market capitalization	0.013	−0.002	0.016	0.007
	(0.016)	(0.048)	(0.019)	(0.077)
Foreign bank presence	−0.060	−0.174 ***	−0.113 **	−0.182 **
	(0.056)	(0.066)	(0.051)	(0.089)
Bank concentration	−0.053	0.111	−0.059	0.175
	(0.050)	(0.091)	(0.054)	(0.150)
Leverage (bank credit to deposit ratio)	0.021	0.100 **	0.012	0.153 **
	(0.026)	(0.041)	(0.027)	(0.069)
Efficiency (bank income to cost ratio)	−3.913 *	4.118	−5.328 **	2.385
	(2.059)	(3.623)	(2.480)	(5.853)
Returns on equity	−0.017	−0.135	−0.042	−0.161
	(0.036)	(0.090)	(0.038)	(0.130)
Observations	223	223	223	223
Countries	58	58	58	58
R-squared	0.70		0.68	
AR(1)		0.84		0.19
AR(2)		0.20		0.74
Hansen test p-value		0.48		0.23

Notes: The dependent variable is the share of non-financial business credit in total bank credit. The Table reports coefficient estimates with robust standard errors in parentheses, for FE and system-GMM regressions. ***p<0.01, **p<0.05, *p<0.1. Constant, country-fixed effects, and time dummies are included in the estimations (not reported). AR(1) and AR(2) are the Arellano-Bond tests for first- and second-order serial correlation of residuals, respectively. The Hansen test p-value reports the Hansen over-identification statistic.

bank leverage (smaller ratios of credit to deposits). This is understandable in light of the fact that many benefits of foreign banking noted in the literature — more competition, financial innovations, and pressure on government to liberalize credit markets — also foster non-business lending. However, the impact of foreign banks is very heterogeneous across countries (Claessens and van Horen, 2014). Below we explore this heterogeneity in subgroupings of advanced vs emerging and developing economies.

Bank leverage is not significantly associated with business credit shares in the FE specification, plausibly since there is reverse causality: more non-business lending (typically, mortgage lending) is often funded with non-deposit funding, increasing leverage. Controlling for this reverse causality in the system-GMM models, we find that banking systems that have larger volumes of loans for a given volume of deposits, i.e. those which use their deposit base more efficiently, are also banking systems which lend more of their resources to non-financial business, rather than to households or to non-bank financials. Findings on banks in developing economies, especially in Africa, suggest that low lending volumes relative to deposits may be caused by government deficits which make it attractive to invest deposits in liquid assets such as government bonds rather than into loans to business (Freedman and Click, 2006). Also environments of high default rates and with weak institutions are characterized by low lending levels relative to deposits (Andrianova et al., 2015). Improvements in these institutions and policy choices may not only increase lending volumes for a given deposit base, but, our findings suggest, may also increase allocation of credit towards non-financial business. These possible linkages merit further research beyond the scope of this paper.

Given the strong correlation of credit allocation with income levels, in Tables 5-6 we explore drivers of credit allocation separately in advanced versus emerging and developing country groups, using the IMF classification.[8] We interact an advanced-economy dummy (1 for advanced countries, 0 for emerging and developing) with drivers of

[8] Any differences in impacts between country groups may partly be explained by the larger variation in credit allocation. The business credit share ranges between 16% and 90% in advanced economies but between 31% to 99% in emerging and developing economies.

Table 5: **Determinants of credit allocation in advanced versus emerging and developing economies**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GDP per capita$_0$	−11.946	−17.195 **	−25.374 ***	−26.111 ***	−19.150 ***	−11.511 **	−16.264 ***
	(7.456)	(8.359)	(8.874)	(8.440)	(5.825)	(5.214)	(6.006)
GDP growth	−0.928	−0.622	−1.096 *	−1.300 *	−0.856 *	−0.549	−0.096
	(0.659)	(0.520)	(0.642)	(0.728)	(0.507)	(0.530)	(0.763)
GDP growth×group	2.079						
	(2.456)						
Investment	−0.082	−0.340	−0.137	0.138	0.434	−0.035	0.170
	(0.317)	(0.355)	(0.357)	(0.367)	(0.380)	(0.310)	(0.400)
Investment×group		0.992 *					
		(0.583)					
VA services	0.435	0.482	0.731 *	1.247 **	1.208 **	0.385	0.474
	(0.592)	(0.486)	(0.424)	(0.577)	(0.521)	(0.422)	(0.512)
VA services×group			0.541 **				
			(0.219)				
Trade openness	0.019	0.053	0.094 *	−0.050	0.074 *	0.032	0.066
	(0.041)	(0.043)	(0.050)	(0.046)	(0.040)	(0.038)	(0.057)
Trade openness×group				0.270 ***			
				(0.085)			
Capital inflows	0.114	0.124 *	0.147 **	0.060	−0.631 *	0.115 *	−0.006
	(0.110)	(0.074)	(0.067)	(0.076)	(0.345)	(0.064)	(0.046)
Capital inflows×group					0.814 **		
					(0.361)		
Interest rate	−0.130	0.068	0.130	−0.214	−0.207	−0.121	−0.111
	(0.322)	(0.295)	(0.338)	(0.424)	(0.353)	(0.243)	(0.166)
Interest rate×group						1.791	
						(1.411)	
Total credit$_0$	−0.121	−0.219 **	−0.296 **	−0.189 *	−0.229 **	−0.151 *	−0.206 *
	(0.150)	(0.094)	(0.117)	(0.100)	(0.113)	(0.086)	(0.111)
Total credit$_0$×group							0.193 *
							(0.111)
Financial deregulation	−2.450	−3.182 *	−2.443	−0.547	−2.232	−3.057 *	−1.904
	(2.133)	(1.806)	(1.775)	(1.750)	(1.494)	(1.596)	(1.488)
Stock market capitalization	−0.066	−0.014	0.048	0.046	0.016	−0.044	−0.017
	(0.045)	(0.053)	(0.061)	(0.057)	(0.054)	(0.041)	(0.060)
Foreign bank presence	−0.161 **	−0.119 **	−0.091	−0.161 **	−0.183 **	−0.144 **	−0.099
	(0.069)	(0.060)	(0.069)	(0.069)	(0.080)	(0.068)	(0.076)
Bank concentration	0.100	0.076	0.032	−0.024	0.150	0.078	−0.104
	(0.124)	(0.099)	(0.126)	(0.123)	(0.095)	(0.094)	(0.102)
Leverage	0.068	0.127 **	0.175 **	0.134 **	0.133 **	0.076 *	0.085 *
	(0.052)	(0.051)	(0.071)	(0.057)	(0.055)	(0.042)	(0.045)
Efficiency	5.260	4.302	7.938	10.351 *	6.201	2.909	3.139
	(5.156)	(4.034)	(5.379)	(6.107)	(4.537)	(3.473)	(3.546)
Returns on equity	−0.133	−0.136	−0.139	−0.137	−0.156	−0.179	−0.076
	(0.100)	(0.093)	(0.115)	(0.124)	(0.099)	(0.121)	(0.105)
Observations	223	223	223	223	223	223	223
AR(1)	0.23	0.54	0.56	0.49	0.60	0.75	0.86
AR(2)	0.41	0.73	0.59	0.49	0.15	0.14	0.74
Hansen test p-value	0.10	0.12	0.74	0.52	0.63	0.16	0.17

Notes: The dependent variable is the share of non-financial business credit in total bank credit. 'Group' takes value 1 for advanced economies and 0 for other economies. The Table reports coefficient estimates with robust standard errors in parentheses for system-GMM regressions. ***p<0.01, **p<0.05, *p<0.1. Constant, country-fixed effects, and time dummies are included in the estimations (not reported). AR(1) and AR(2) are the Arellano-Bond tests for first- and second-order serial correlation of residuals, respectively. The Hansen test p-value reports the Hansen over-identification statistic.

Table 6: **Determinants of credit allocation in advanced versus emerging and developing economies, cont.**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GDP per capita$_0$	−24.831 ***	−19.546 ***	−18.850 ***	−23.108 **	−22.221 ***	−24.988 ***	−14.575 **
	(9.208)	(6.372)	(5.701)	(10.909)	(8.408)	(8.665)	(5.793)
GDP growth	−0.840	−1.136 **	−1.024 *	−0.574	−1.154 **	−0.972 *	−0.643
	(0.551)	(0.491)	(0.529)	(0.507)	(0.546)	(0.563)	(0.467)
Investment	−0.207	0.058	0.048	−0.101	0.347	−0.214	0.037
	(0.334)	(0.287)	(0.282)	(0.315)	(0.353)	(0.332)	(0.292)
VA services	0.834 *	0.988 **	0.971 **	0.847	1.046 *	0.795 *	0.662
	(0.468)	(0.461)	(0.453)	(0.654)	(0.557)	(0.438)	(0.452)
Trade openness	0.075 *	0.089 *	0.053	0.063	0.082 *	0.073 *	0.038
	(0.043)	(0.051)	(0.036)	(0.048)	(0.048)	(0.042)	(0.035)
Capital inflows	0.135 *	0.128 **	0.137 **	0.116 *	0.146 **	0.143 **	0.119 *
	(0.074)	(0.062)	(0.059)	(0.066)	(0.060)	(0.063)	(0.067)
Interest rate	0.054	−0.267	−0.319	0.216	−0.275	0.205	−0.182
	(0.309)	(0.300)	(0.348)	(0.349)	(0.282)	(0.304)	(0.244)
Total credit$_0$	−0.223 **	−0.179 **	−0.240 ***	−0.236 **	−0.314 ***	−0.253 ***	−0.152 *
	(0.100)	(0.086)	(0.092)	(0.094)	(0.113)	(0.095)	(0.087)
Financial deregulation	−3.560 **	−2.774 *	−2.316	−1.768	−3.542 **	−2.316	−2.987 *
	(1.643)	(1.415)	(1.429)	(1.992)	(1.623)	(1.751)	(1.603)
Deregulation×group	3.798 **						
	(1.619)						
Stock market capitalization	0.017	−0.091	0.022	0.013	0.066	0.030	−0.026
	(0.052)	(0.063)	(0.050)	(0.064)	(0.077)	(0.053)	(0.044)
Capitalization×group		0.150					
		(0.095)					
Foreign bank presence	−0.090	−0.208 **	−0.284 ***	−0.096 *	−0.130 **	−0.075	−0.159 **
	(0.062)	(0.084)	(0.093)	(0.059)	(0.066)	(0.061)	(0.072)
For.bank pres.×group			0.281 ***				
			(0.107)				
Bank concentration	0.016	0.074	0.105	−0.185	0.102	0.013	0.110
	(0.125)	(0.099)	(0.098)	(0.184)	(0.086)	(0.117)	(0.091)
Concentration×group				0.410 *			
				(0.219)			
Leverage	0.137 **	0.119 ***	0.149 ***	0.132 ***	0.065	0.158 ***	0.089 **
	(0.056)	(0.045)	(0.055)	(0.049)	(0.050)	(0.060)	(0.040)
Leverage×group					0.197 *		
					(0.110)		
Efficiency	7.391	8.656 *	3.613	9.252	7.500	13.760 **	4.030
	(4.748)	(5.204)	(3.586)	(6.615)	(4.713)	(6.248)	(3.829)
Efficiency×group						−9.107 ***	
						(3.577)	
Returns on equity	−0.181 *	−0.130	−0.159 *	−0.198 **	−0.216 *	−0.142	−0.285
	(0.101)	(0.082)	(0.092)	(0.117)	(0.111)	(0.095)	(0.190)
RoE×group							0.313
							(0.271)
Observations	223	223	223	223	223	223	223
AR(1)	0.55	0.49	0.70	0.54	0.50	0.41	0.51
AR(2)	0.71	0.46	0.30	0.17	0.62	0.25	0.70
Hansen test p-value	0.45	0.58	0.70	0.21	0.40	0.51	0.24

Notes: The dependent variable is the share of non-financial business credit in total bank credit.'Group' takes value 1 for advanced economies and 0 for other economies. The Table reports coefficient estimates with robust standard errors in parentheses for system-GMM regressions. ***p<0.01, **p<0.05, *p<0.1. Constant, country-fixed effects, and time dummies are included in the estimations (not reported). AR(1) and AR(2) are the Arellano-Bond tests for first- and second-order serial correlation of residuals, respectively. The Hansen test p-value reports the Hansen over-identification statistic.

business credit shares as identified in Table 4. In the interest of brevity, we only report the results for system-GMM models (FE regressions results are available on request).

For total credit/GDP (a proxy for financial development), both the coefficient on the variable itself and its interaction term with the advanced-country dummy are significant. It appears that, while higher financial development is associated with lower business credit shares in the whole sample, this correlation is driven by the observations for emerging and developing economies. For developed economies, the total effect is negative but much smaller in magnitude. It is likely that the difference is explained by differences in creditor protection and ownership rights which make business lending, with its larger uncertainty and more difficult collateral conditions, a less attractive option in emerging and developing countries. For instance, De Haas et al. (2010) find that where pledge and mortgage laws are perceived to be of high quality, banks focus more on mortgage lending. These issues merit further research, bringing in their different implications for different types of credit.

The weakly significant impact of economic structure in the full sample, is more significant for advanced economies. Also, higher trade openness is associated with larger business credit share only in advanced countries. The effect of financial deregulation appears to be specific to emerging and developing economies; adding up the deregulation coefficient of -3.6 with the advanced-economy interaction term of +3.8 yields close to a zero coefficient. We note that in emerging and developing countries in the sample, the deregulation index increases on average over the period 1990–2013 from 6.4 to 8.3; in advanced economies it is at a constant high average between 8.3 and 9.4. Deregulation in advanced economies mostly occurred before the observation time window in this data. More variation in this variable in emerging and developing economies may account for its significant and economically substantial coefficient.

The positive effect of capital inflows on business credit shares in Table 4 turns out to be driven by advanced economy observations. The positive interaction coefficient of $+0.81$ outweighs the direct negative coefficient of -0.63. A promising avenue to

explore the reasons for this difference would be to analyze industry destinations of capital flows, and types of capital flows. For instance, Samarina and Bezemer (2016) find that foreign capital inflows into the nonbank sector (but not into the bank sector) are associated with lower shares of business lending in domestic bank portfolios. Also, if foreign capital flows into economies with few investment opportunities, it may substitute for domestic bank lending to non-financial business, so that bank balance sheets become more dominated by household lending. These findings are in line with more positive coefficients for advanced economies, where more foreign capital inflows are to the banking sector.

The effect of foreign bank presence is approximately zero for advanced economies, while it is negative in other country group. Foreign banks increased their presence in domestic financial market in emerging and developing countries more strongly and to higher levels, from 23 % to 47% of all banks. This compares to an increase from 25 % to 35% in advanced economies. In addition, the different impact is also connected to the pioneering role in extending mortgage lending which foreign banks played in many emerging economies, in turn supported by their greater financial sophistication and access to international funding (De Haas et al., 2010) .

The association of bank's leverage (volume of loans relative to deposits) with business credit shares is larger in advanced countries than it is for the whole sample. This may be due to differences between the country groupings, in both level and changes in leverage. Leverage in advanced economies is about 30% larger than in emerging and developing economies, and increased from 104 to 129 over the analyzed period, compared to a change from only 97 to 104 on average over time for emerging and developing economies.

Higher bank efficiency is significantly associated with more credit allocated to business. Interestingly, this result is much larger in magnitude in emerging and developing economies (coefficient 13.76), while for advanced countries it is much smaller due to the negative interaction term (4.65). It is not obvious what makes more efficient bank-

ing systems also banking systems that allocate more of credit to business. The new data should be exploited further in combination with other data to pursue this issue.

6 Robustness checks

In the robustness analysis, we test how our main results are sensitive to the country group classifications, modifications and inclusion of variables. For brevity, we do not report these in separate tables but all the results discussed in this section are available on request.

First, we re-estimate the models with country groupings, now based on three other classifications of countries by income level: World Bank, OECD, and threshold level groupings. A group dummy for World Bank–high income countries or OECD members takes the value 1, and 0 otherwise. We also calculated the sample-average GDP per capita as a threshold; a group dummy for above-average income countries takes the value 1, and for below-average – value 0. The results turn out to be somewhat sensitive to the chosen country classifications: while the signs of all interaction terms are similar to the benchmark results, several coefficient estimates (for services value-added, capital inflows, total credit, deregulation, foreign bank presence) are insignificant when using World Bank and OECD classifications. The models based on income threshold classification produce results almost identical to the IMF classification.

Next, we include (one by one) several additional variables: inflation, unemployment, government expenditures, stock market returns, house prices, and the rule of law (as a proxy for institutions). This robustness check did not affect the main results, while most of the added variables were insignificant. We noted that among advanced economies, countries with higher rule of law scores and those with more government spending have higher business credit shares. In emerging and developing countries, more government spending is associated with smaller business credit shares.

Finally, we experimented with the proxy for money market conditions, the interest rate. Instead of using a short-term money market rate, we employed alternatives such

as the deposit rate, the lending rate, and the interest rate spread (difference between lending and deposit rate). These are the variables for which the data are available for all analyzed countries. None of these modifications affected the benchmark outcomes, or produced clearer outcomes.

7 Concluding remarks

In this paper we presented a new data set on bank credit allocation, and new empirical results on correlates of the shift in bank credit since the 1990s, away from traditional business lending. We surveyed recent literature on the consequences of this 'debt shift' for income growth, macrofinancial stability, and inequality. This motivates more research into 'debt shift', and to this end we constructed a data set on bank credit allocation covering 74 economies.

In this data set, we report bank credit in four categories: home mortgages, consumer credit, bank loans to non-bank financials, and loans to non-financial business. We use the data to show the extent of debt shift: loans to non-financial firms have constituted a sharply falling share of all bank credit in recent decades. We present the data features in detail, compare them to adjacent data sets, and include (in Appendix) a full description of sources and methods of data collection and construction. The collection and description of these data is this paper's first contribution to the literature.

The second contribution is to use the data to examine the drivers of debt shift, a topic which is relatively under-researched. Since the shift in bank debt allocation was ubiquitous across many economies, its drivers are likely to be not only micro-level bank features, but also macro-level structural, regulatory and financial-market changes. This motivates an analysis of drivers using our new macro-level data set, with additional data on the candidate determinants. We exploit the panel nature and the wide country coverage of our data by running fixed-effects and system-GMM regressions for the whole sample as well as separately for advanced versus emerging and developing economies. The findings show that debt shift is larger in financially

and economically mature countries with a stronger presence of foreign banks and more trade; financial market deregulation is also a driver of debt shift, especially in emerging and developing countries.

Two important features of the data and the analysis should be noted. The first is that we collected macro-level data. We observe the total volume of loans to institutional sectors at the country level. As we illustrated in the analysis, this is useful to the extent that debt shift is related to changes in macro-level structural and regulatory changes. But a limitation is that micro-level heterogeneity in bank credit allocation, and in drivers of debt shift, cannot be observed. Also, micro-level data offer far better opportunities to tackle endogeneity concerns and to delve into casual mechanisms. We therefore offer these data as complementary to micro-level data sets which are increasingly the standard in studies of financial development. We emphasize though that there is a continuing need for macro-level data. Our data offer more granularity on the uses of bank debt, while retaining the macro-level coverage of bank lending that allows for international comparisons.

The data are also complementary to other data sets, notably the World Bank financial Structure and Development data set and the BIS long series on private lending. The new data are complementary in that they offer similar country coverage but more recent data compared to the World Bank data (which end in 2005), but the World Bank data are much richer in its variety of measures for financial structure and development (bank branches, access to insurance and savings products, and so on). Compared to the BIS data, our data allow disaggregation of bank lending and not only of total (bank and nonbank) lending to the private sector. This focus on banks allows for analysis of topics specific to banks, such as linkages between credit extension and money growth, to the payment system, or to securitization of bank loans.

In conclusion, we offer the new data as one of several recent tools to analyze the rapidly changing financial markets landscape, and its consequences for macroeconomic outcomes in terms of growth, distribution and resilience.

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Appendix A

Data Reliability and Consistency

Reliability

The data is based on publicly available, official statistics reported by national central banks and statistical bureaus. The quality and quantity of the data varies over countries. For most advanced countries, variables are clearly defined and consistently measured. Also countries in Central and Eastern Europe and South-East Asia provide well-organized bank credit data. For Latin America and Africa, we encountered more often unclear definitions of lending sectors and methodologies of data construction, but still no substantial measurement problems. This was a criterion for data collection from the start. We included 74 countries where data definitions and sources are comprehensible and consistent with international practice.

Consistency

We ensured international consistency in terms of definitions and construction of credit categories. In 10 countries (Belarus, Iceland, Kazakhstan, Lithuania, Moldova, Mongolia, Russia, Slovakia, Turkey, Ukraine) separation of household credit into mortgages and consumption credit was available only for the latest few years, while for earlier years in the available data period only total household credit was reported. To extend the series of these credit categories, we calculated their average shares in total household credit over the period for which the separation into mortgages/consumer credit was available. Since these shares were quite stable over time, we used them to impute mortgages and consumer loans for earlier periods. For China we did not find household credit separated into sectors, only by maturity. Since short-term household credit is mainly used to finance consumption, we assumed that medium- and long-term

household credit are mortgages and short-term loans are consumption credit refers. The same approach was followed for Belgium.

To ensure intertemporal consistency, we checked that there are no serious breaks in time series. In Singapore there was a break in non-financial business credit in March 2004 , when total loans to Professional and Private Individuals (PPI) were split into loans to PPI by business purposes and consumer loans. To smooth this break, we added PPI loans for business purposes back to non-financial business.

There is large diversity in reporting formats of central banks with respect to business credit. Most do not differentiate between lending to public sector firms and private sector firms, some do (e.g., Canada, Egypt, Latvia, Mongolia, the Netherlands, Thailand). We include credit to both private and public non-financial firms in non-financial business credit.[9] Some central banks (e.g. Czech Republic, Indonesia, Malaysia, Switzerland, Tunisia, Uruguay) report credit to between 10 and 15 separate industries. In the interest of cross-country consistency, we collapsed these into aggregate 'financial' and 'non-financial' sectors. The central bank of Egypt reports only 'household' and 'business' lending. We assigned all household lending to consumption credit (other evidence suggests little household mortgage lending in Egypt) and business lending to non-financial business (according to available sources, bank lending to financial business is negligible).

[9]Note that in this respect we differ from some of the literature which adopts a measure for 'credit to the private sector'. This is not possible in our data since we cannot always observe public and private sectors separately. It may also understate credit growth to non-financial business by excluding part of the non-financial business sector based on the ownership status. We not include lending to government itself.

Appendix B

Table B.1: **Pairwise correlations of credit categories: our data with different datasets**

Credit category	Beck et al. (2012)	Büyükkarabacak and Valev (2010)	BIS
Total (private non-financial sector) credit	0.869	0.757	0.622
Non-financial business credit	0.653	0.624	0.436
Household credit	0.880	0.744	0.735

Notes: The table reports pairwise correlations of total credit (private non-financial sector credit), non-financial business credit and household credit (sum of mortgage and consumer credit) between our data and three datasets: Beck et al. (2012), Büyükkarabacak and Valev (2010), and BIS. Credit categories are in % of GDP.

Table B.2: **Comparison: our data and Beck et al. (2012) (B2012), 1994–2005**

	Total credit		Non-fin. business credit		Household credit	
Country	Our data	B2012	Our data	B2012	Our data	B2012
ARG	12.9	21.2	8.7	8.7	4.1	12.5
AUS	77.7	82.3	31.1	27.9	46.6	54.4
AUT	71.6	100.5	47.4	65.3	24.2	35.2
BEL	65.1	74.4	31.5	31.4	33.6	43.0
BGR	24.0	21.9	20.2	14.5	3.8	7.4
CAN	102.9	96.2	39.6	18.8	63.3	77.4
CHE	155.5	160.3	40.6	60.4	114.9	99.9
CZE	37.1	48.4	31.6	31.4	7.3	17.0
DEU	97.0	105.3	55.8	65.3	41.2	40.0
DNK	126.1	89.4	36.3	13.3	89.8	76.1
EGY	58.8	44.6	50.5	37.2	8.3	7.4
EST	30.0	28.6	18.2	17.6	11.8	11.0
FIN	36.7	63.0	19.8	22.7	38.0	40.3
FRA	69.0	85.0	34.4	33.9	34.6	51.1
GBR	62.0	126.9	18.7	55.7	43.3	71.2
GRC	44.4	66.3	29.4	37.9	15.0	28.4
HUN	29.3	23.1	21.8	18.9	7.5	4.2
IDN	20.5	25.2	14.2	17.0	6.3	8.2
IND	24.9	21.9	20.3	15.6	4.6	6.3
IRE	108.4	112.8	47.7	11.0	60.7	101.8
ISL	124.5	91.8	88.4	49.2	36.1	42.6
JPN	81.9	154.9	51.4	107.0	30.5	47.9
KEN	25.0	24.0	22.5	19.0	2.5	5.0
LTU	15.8	14.9	12.6	10.4	3.2	4.5
MEX	17.9	18.6	7.8	8.7	10.1	9.9
MKD	21.1	18.7	15.1	14.0	6.0	4.7
MYS	102.9	127.8	60.6	114.5	42.3	13.3
NLD	110.3	163.9	46.5	63.0	63.8	100.9
NZL	87.3	111.8	30.3	70.3	57.0	41.5
POL	23.8	24.4	14.3	13.5	9.5	10.9
PRT	85.0	110.3	39.1	50.7	45.8	59.6
RUS	17.9	14.7	16.4	11.4	1.4	3.3
SVK	32.6	41.5	21.1	26.5	11.5	15.0
SVN	47.6	34.0	33.9	24.0	13.8	10.0
SWE	90.3	63.6	49.5	23.3	43.7	40.3
THA	99.4	122.6	52.3	100.1	47.1	22.5
TUR	12.1	17.9	10.6	11.5	1.5	6.4
URY	17.9	39.2	13.5	19.4	4.4	19.8
USA	31.4	49.8	9.2	11.8	22.2	38.0

Notes: The table reports the averages of total credit (private non-financial sector credit), non-financial business credit and household credit (sum of mortgage and consumer credit) for 39 countries over 1994–2005 based on our data and Beck et al. (2012). Credit stocks are in % of GDP.

Table B.3: **Comparison: our data and Büyükkarabacak and Valev (2010) (BV2010), 1990–2007**

	Total credit		Non-fin. business credit		Household credit	
Country	Our data	BV2010	Our data	BV2010	Our data	BV2010
ARG	12.4	22.1	8.4	8.6	4.0	13.5
AUS	74.5	80.6	30.1	28.5	44.4	52.1
AUT	71.5	103.5	46.3	68.4	25.2	35.2
BEL	65.6	74.8	30.7	31.8	34.9	43.1
BGR	27.8	24.5	22.0	15.7	5.8	8.8
CAN	104.5	102.0	40.7	12.8	63.7	89.2
CHE	154.3	160.6	41.2	62.6	113.2	98.0
CZE	38.1	48.1	31.4	30.9	9.1	17.2
DEU	93.1	105.3	54.2	60.7	38.9	44.6
DNK	134.4	33.8	38.7	9.1	95.8	24.7
EGY	54.2	43.2	46.7	35.5	7.6	7.7
EST	39.4	33.6	22.3	20.9	17.2	12.8
FIN	43.5	65.2	21.0	24.4	41.2	40.8
FRA	71.0	86.0	35.0	33.7	35.9	52.3
GBR	59.7	133.7	20.0	29.7	39.7	104.0
GRC	45.8	69.0	29.9	39.0	16.0	30.0
HUN	32.9	30.2	23.1	21.8	9.8	8.4
IDN	21.0	24.9	14.4	16.9	6.6	8.0
IND	27.4	22.7	21.7	15.9	5.7	6.9
IRE	127.7	120.6	59.7	77.3	68.1	43.2
ISL	162.2	91.7	115.7	39.0	46.6	52.6
JPN	81.0	110.6	51.1	74.7	29.9	35.8
KEN	25.1	24.0	22.1	20.0	2.9	3.9
LTU	20.7	17.7	15.1	13.0	5.6	4.7
MEX	18.4	19.4	7.6	12.2	10.9	7.2
MYS	99.8	125.7	56.2	73.6	43.6	52.1
NLD	106.7	146.1	46.4	47.8	60.3	98.2
NZL	84.6	115.2	29.9	44.4	54.7	70.8
PAK	25.3	23.1	21.0	17.6	4.3	5.5
POL	25.5	22.9	14.3	16.2	11.2	6.8
PRT	80.5	96.0	38.4	48.1	42.1	47.9
RUS	20.6	15.9	18.0	12.4	2.5	3.5
SVK	37.8	40.9	23.5	26.2	14.3	14.7
SVN	55.8	36.2	39.7	25.2	16.1	11.0
SWE	95.7	37.4	49.5	22.8	46.3	14.6
THA	96.9	110.0	49.6	78.0	47.3	32.0
TUR	12.9	14.0	11.0	11.1	2.2	2.9
URY	18.3	32.9	13.6	17.4	4.7	15.5
USA	31.8	50.3	9.3	9.5	22.5	40.8

Notes: The table reports the averages of total credit (private non-financial sector credit), non-financial business credit and household credit (sum of mortgage and consumer credit) for 39 countries over 1990–2007 based on our data and Büyükkarabacak and Valev (2010). Credit stocks are in % of GDP.

Table B.4: **Comparison: our data and BIS**

	Total credit		Non-fin. business credit		Household credit	
Country	Our data	BIS	Our data	BIS	Our data	BIS
ARG	12.0	26.8	7.7	22.7	4.3	4.3
AUS	96.1	131.7	35.9	83.5	60.2	48.4
BEL	62.4	169.5	29.7	124.1	32.7	45.4
BRA	32.8	43.8	20.1	31.4	12.7	12.4
CAN	110.5	160.0	39.8	90.8	70.7	69.2
CHE	157.8	186.5	36.0	77.0	121.8	109.4
CHN	117.6	143.8	96.3	120.0	21.3	23.9
CZE	40.8	74.8	25.7	58.2	15.1	17.4
DEU	81.8	106.8	49.2	52.1	32.6	54.6
DNK	148.9	220.7	42.9	104.2	106.0	116.5
ESP	113.8	153.2	55.7	94.1	58.1	59.1
FIN	74.2	140.0	25.0	94.2	49.2	45.8
FRA	77.0	143.2	36.5	102.0	40.5	41.4
GBR	64.0	144.7	20.9	70.1	43.1	74.6
GRC	67.4	79.3	38.0	47.7	29.4	33.1
HKG	131.8	176.2	80.0	124.8	51.8	51.9
HUN	38.8	78.7	24.2	60.7	14.6	18.0
IDN	24.1	28.3	16.3	15.9	7.8	12.3
IND	39.7	57.8	32.2	48.4	7.5	9.5
IRE	135.4	250.2	63.2	155.9	72.2	94.2
ITA	75.7	102.1	47.5	68.8	28.2	33.3
JPN	78.3	182.8	51.9	119.1	26.4	63.8
KOR	101.7	176.7	54.5	102.2	47.2	77.5
LUX	77.1	355.5	30.9	306.5	46.2	48.9
MEX	20.4	28.3	8.2	16.6	12.2	11.8
MYS	89.5	119.2	36.2	60.9	53.3	58.3
NLD	122.1	202.8	50.2	121.5	71.9	84.8
NOR	95.6	174.6	34.1	107.3	61.5	67.4
POL	33.4	52.4	14.9	33.8	18.5	18.6
PRT	83.2	139.9	44.0	95.4	39.2	44.5
RUS	31.5	43.9	25.1	36.3	6.4	7.4
SGP	84.8	107.5	59.7	67.1	25.1	39.8
SWE	106.0	178.7	51.2	117.9	54.8	60.8
THA	101.3	99.8	47.0	49.1	54.3	50.7
TUR	18.7	28.5	13.8	22.9	4.9	5.6
USA	26.9	109.6	9.4	52.6	17.5	57.0

Notes: The table reports the averages of total credit (private non-financial sector credit), non-financial business credit and household credit (sum of mortgage and consumer credit) for 36 countries based on our data and BIS 'Long series on credit to private non-financial sectors'. The time period varies across countries. For the sake of comparability, we calculate averages of credit for the same periods as available in BIS. Credit stocks are in % of GDP.

Table B.5: **Factors of credit allocation: definitions, data sources, and descriptive statistics for 1990–2013 (3-year data)**

Variable	Definition	Data sources	Obs.	Mean	Sd	Min	Max
Credit allocation	Share of non-financial business credit in total credit (in %)	Source Appendix	418	56.73	18.99	16.52	98.90
Macroeconomic factors							
Income level$_0$	GDP per capita, in 2005 U.S. dollars (in ln)	WDI World Bank	416	9.07	1.38	5.86	11.13
GDP growth	Annual growth rate of GDP per capita (in %)	WDI World Bank	417	2.77	3.23	−10.92	27.26
Structural factors							
Investment	Gross fixed capital formation (in % GDP)	WDI World Bank	418	23.16	5.04	10.00	45.19
VA services	Share of VA of services in total VA (in %)	WDI World Bank	407	61.96	9.96	24.93	79.97
External factors							
Trade openness	Export plus import of goods and services (in % GDP)	WDI World Bank	402	80.40	38.80	16.22	213.78
Capital inflows	Total gross capital inflows (in % GDP)	IMF BoP	411	13.78	25.68	−81.16	191.92
Monetary and financial factors							
Interest rate	Short-term money market interest rate (in %)	IFS IMF	409	6.94	8.42	0.00	62.93
Total credit$_0$	Total bank credit (in % GDP)	Source Appendix	418	67.42	47.74	1.74	266.12
Financial deregulation	Credit market deregulation includes 3 components: ownership of banks, extension of credit, presence of interest rate controls/negative interest rates. Deregulation index is an average of components; takes values from 1 to 10.	Fraser Institute's Economic Freedom Indicators	362	8.58	1.24	4.11	10.00
Stock market capitalization	Market capitalization of listed domestic companies (in % GDP)	GFDD World Bank	316	59.05	50.27	0.28	259.95
Foreign bank presence	Percentage of the number of foreign owned banks to the number of the total banks. A foreign bank is a bank where >50% of its shares are owned by foreigners.	GFDD World Bank	396	35.14	24.41	0.00	87.00
Bank characteristics							
Concentration	Assets of 5 largest banks as a share of total commercial banking assets (%)	GFDD World Bank	351	79.45	15.91	25.98	100.00
Leverage	Bank credit to bank deposits (in %)	GFDD World Bank	405	109.43	46.93	15.60	361.02
Efficiency	Bank income to cost ratio (%), in ln	GFDD World Bank	373	−4.01	0.26	−4.50	−2.24
ROE	Bank return on equity (%, before tax)	GFDD World Bank	372	14.62	11.54	−23.08	72.03
Additional variables							
Inflation	Measured as $\frac{\pi/100}{1+\pi/100}$, where π is annual CPI inflation rate	WDI World Bank	418	0.06	0.08	−0.03	0.68
Unemployment	Total, % of total labor force	WDI World Bank	418	8.38	5.01	0.27	36.95
Fiscal policy	Government consumption in % of GDP	WDI World Bank	418	16.79	4.60	4.42	26.92
Stock market returns	%, year-on-year	GDFF World Bank	353	12.13	25.48	−54.67	172.71
House prices	Annual house price index	BIS	308	86.16	25.63	23.20	176.33
Rule of law	Takes values from 1 to 6	ICRG database	398	4.54	1.20	1.00	6.00

Source Appendix: Guide for data construction

1. Albania (ALB)

Data source: https://www.bankofalbania.org/web/
Source steps: Bank of Albania –Publications – Annual Reports – Statistical Appendix, different years – Tables: Loans by economic activity; Household loans by purpose and currency.
Remarks: Household mortgages are 'real estate' loans to households. Consumer credit is the sum of household loans for overdraft, nondurable goods, and durable goods. Household loans for business activity are added to the non-financial business credit. Financial business loans are loans for 'financial intermediation'. Non-financial business loans are calculated as total business loans - financial business loans + household loans for business activity.

2. Armenia (ARM)

Source link: https://www.cba.am/en/SitePages/statmonetaryfinancial.aspx
Source steps: Central Bank of the Republic of Armenia – Statistics – Monetary and financial statistics – Loans and deposits – File 7: Commercial Banks and Credit organizations Loans by Fields (monthly); File 6: Commercial Banks Loans by Sectors (monthly).
Remarks: Financial business loans are loans to Other Financial Corporations (file 6). Non-financial business loans are calculated as the sum of industry, agriculture, construction, communications, trade, and service sectors' loans (file 7). Consumer loans and mortgage loans are from file 7.

3. Argentina (ARG)

Source link: http://www.bcra.gob.ar/Estadisticas/estind020303.asp
Source steps: Central Bank of Argentina – Statistics and Indicators – Monetary and Financial Variables – Bank Assets and Liabilities –Financial institutions balance sheet ('Balance consolidado de las entidades financieras, saldos a fin de mes, en miles de pesos'). For financial business loans go to: 'Préstamos por actividades' – 'Informacin de detalle'.
Remarks: Mortgages = 'home purchase', consumption loans = 'personal loans'. Financial business loans are category 0 for 'Intermediación financiera y otros servicios financieros'. Non-financial business loans = total loans - mortgages - consumption loans - financial business loans.

4. Australia (AUS)

Source link: http://www.rba.gov.au/statistics/tables/index.html
Source steps: Reserve Bank of Australia – Statistics – Statistical Tables – Money and Credit statistics – Tables D5 (bank lending classified by sectors) and D8 (bank lending to business selected statistics).
Remarks: Based on D5: mortgage loans are the sum of owner-occupiers loans and investors loans; consumer loans are the sum of fixed loans and revolving loans. Based on D8: financial business loans = Finance & Insurance; non-financial business loans = total business financial intermediaries. Non-financial business loans for 1990-1992 are imputed as: fin business/0.33 (0.33 is the share of financial business credit to non-financial business credit in 1993).

5. Austria (AUT)

Source link: https://www.oenb.at/isaweb/dyna1.do?lang=EN&go=initHierarchie
Source steps: Austrian National Bank – Statistics – User-Defined Tables – Financial Institutions – Banks – Balance Sheet and Profit& Loss Account – Selected Data.
Remarks: All sectors, in EUR. Mortgage loans are domestic housing loans. Consumer loans = total household loans - mortgage loans.

6. Azerbaijan (AZE)

Source link: http://en.cbar.az/assets/2357/Kredit_qoyulushlarinin_saheler_uzre_strukturu.pdf
Source steps: Central Bank of Azerbaijan – Statistics – Key Monetary Indicators – Sectoral breakdown of loans (end of period).
Remarks: Financial business credit is 'Loans to financial sector'. Non-financial business includes: Trade and services, Power engineering, chemical and natural resources, Agriculture and processing, Con-

struction and real estate, Industry and manufacturing, Transport and communication, Other sectors. Consumer loans are total household loans - mortgages.

7. Belarus (BLR)

Source link: http://www.nbrb.by/engl/statistics/bulletin/
Source steps: National Bank of the Republic of Belarus – Statistics – Bulletin of Banking Statistics, Yearbook, different years.
Remarks: As the data is reported on the 1st of each month, this value is used as outstanding of previous month. Non-financial business includes public and other non-financial corporations. Financial business is 'non-bank financial and credit institutions'. Household credit is credit to natural persons. Consumer loans for 1999-2010 are imputed as 0.27∗household credit (the average share of consumer loans in household credit during 2011-2014). Mortgages are calculated as total household credit - consumer credit.

8. Belgium (BEL)

Source link: http://stat.nbb.be/
Source steps: Home – Financial Institutions – Credit Institutions – Loans and deposits, data on territorial basis – Loans by counterpart sector – Total, recorded in the assets of the balance sheet.
Remarks: Consumer loans include household loans up to 5 years as consumer credit and other lending plus consumer credit over 5 years. Mortgage credit includes lending for house purchase (all maturities) plus other lending over 5 years. For financial business, sum loans for insurance corporations and pension funds with other financial intermediaries and financial auxiliaries.

9. Botswana (BWA)

Source link: http://www.bankofbotswana.bw/index.php/content/2009111815019-statistics
Source steps: Bank of Botswana – Statistics – Economic and Financial Data – Botswana Financial Statistics – Current issue –Table 3.2. Other Depository corporations survey, assets, claims on other sectors; Table 3.19. Commercial Banks: Outstanding loans and advances to households; Table 3.30 Botswana Building Society, Assets and liabilities; Table 3.31 Botswana Savings Bank, Assets and liabilities.
Remarks: Other Depository Corporations include commercial banks, Botswana Building Society – BBS (bank for mortgage loans) and Botswana Savings Bank – BSB (small household loans). Non-financial business include public and other non-financial corporations. Financial businesses are 'other financial corporations'. Mortgages to households include property loans (commercial banks) + loans & advances (BBS). Consumer loans are calculated as total household loans of commercial banks - property loans to households + loans & advances of BSB.

10. Brazil (BRA)

Source link: https://www3.bcb.gov.br/sgspub/localizarseries/localizarSeries.do?method=prepararTelaLocalizarSeries
Source steps: Central Bank of Brazil – Credit indicators – Discontinued series – 1) Credit outstanding by economic activity: series 2046 - Industry private sector; 2048 - Rural private sector; 2049 - Commerce private sector; 2050 Households; 2051 - Other services private sector; 4446 - Private sector. 2) Credit outstanding by economic activity Housing: series 2047 - Housing.
Remarks: Non-financial business includes categories 2406, 2408, 2409 and 2051. Mortgages are category 2047. Consumer credit is category 2050. Financial business credit is not available.

11. Bulgaria (BGR)

Source link: http://www.bnb.bg/Statistics/index.htm?toLang=_EN
Source steps: Bulgarian National Bank – Statistics – Monetary and Interest Rate Statistics – Monetary Statistics – Loans to Non-financial Corporations, Households and Non-profit Institutions Serving Households (NPISH).
Remarks: Mortgages are often in foreign currency. Credit to financial business is not available.

12. Cambodia (KHM)

Source link: http://www.nbc.org.kh/English/publications/annual_reports.php
Source steps: National Bank of Cambodia – Publications – Annual Reports 2014, 2012, 2007, 2006 – Appendix – Table 7(8): Credit Granted Classified by Type of Business /Credit Granted Classified by

Ownership in the Economic Sector.
Remarks: For data from 2008: mortgages to households are in category 'Mortgages, Owner-Occupied Housing'; consumer credit is the sum of Personal Lending and Credit Cards; financial business is 'Other Financial Institutions'; non-financial business is 'Non-financial Institutions'. For data before 2008: financial business is 'Finance'; non-financial business loans are calculated as TOTAL - Finance - Other; Other are Households, separation of household credit into mortgage and consumer credit is not available.

13. Canada (CAN)

Source link: `http://www5.statcan.gc.ca/cansim/a45?lang=eng&CORId=3764`
Source steps: Statistics Canada – National economic accounts – Financial and wealth – Balance sheet (stocks) by sector – Credit market summary table – Table: 378-0122.
Remarks: For each of the nine groups, subtract bonds to get bank loans. Non-financial corporations include Non-financial private corporations plus Non-financial government enterprises. Financial businesses are domestic financial institutions. Household loans include Households and NPISHs. Consumer loans are total household loans minus mortgages.

14. Chile (CHL)

Source link: `http://www.bcentral.cl/en/faces/estadisticas`
Source steps: Central Bank of Chile – Statistics – Database – Money and Banking – Loans – Loans by kind of debtor, balances; Loans by industry.
Remarks: Financial business is 'Interfinancial sector'. Mortgages are credit for housing. Non-financial business loans are total private sector loans minus household loans and financial business loans.

15. China (CHN)

Source link: `http://www.pbc.gov.cn/diaochatongjisi/116219/116319/index.html`
Source steps: People's Bank of China – Statistical directory in Chinese to Sources & Uses of Credit Funds of Financial Institutions by Sectors; Balance Sheet of Other Depository Corporations.
Remarks: Financial business is Other Financial Corporations. Non-financial business is Non-financial Corporations. For 2007-2014: Loans to Households are divided into Short-term Consumption and Operating Loans, and Medium & Long-term Consumption and Operating Loans. We assume that all medium and long-term household loans are mortgages, and all short term are consumer credit. The credit volumes we get this way for mortgages are similar to the ones reported for home mortgages by Barth, Li, and Lea (2012) "*Chinas housing market: Is a bubble about to burst?*" Milken Institute Research Report. For 2000-2006: households loans are Claims on other resident sectors.

16. Colombia (COL)

Source link: `http://www.banrep.gov.co/en/monetary-credit-aggregates`
Source steps: Bank of the Republic – Statistics – Monetary and Credit Aggregates – Total loans of the financial sector (gross by type and net).
Remarks: Non-financial business loans are Commercial loans plus microcredit. Mortgages are adjusted mortgage loans. Financial business loans are not available.

17. Croatia (HRV)

Source link: `http://www.hnb.hr/publikac/epublikac.htm`
Source steps: Croatian National Bank – Publications – Annual Report, different years – Table D5: Distribution of Deposit Money Banks' Loans by Domestic Institutional Sectors.
Remarks: Non-financial business loans are loans to enterprises/non-financial corporations. Financial business loans are loans to non-banking financial institutions. Mortgages are housing/home loans plus mortgage loans. Consumer loans are total household loans minus mortgages.

18. Cyprus (CYP)

Source link: `http://www.centralbank.gov.cy/nqcontent.cfm?a_id=9837&lang=en`
Source steps: Central Bank of Cyprus – Media & Publications – Publications – Monetary and Financial Statistics – Tables 4-6.
Remarks: Consumer credit is the sum of consumer loans and other household lending. Financial business includes 'other financial intermediaries' and 'insurance corporations and pension funds'.

19. Czech Republic (CZE)

Source link: http://www.cnb.cz/en/statistics/money_and_banking_stat/
Source steps: Czech National Bank – Statistics – Monetary and Financial Statistics – Banking Statistics – Loans – Client loans by sector; Loans to Households.
Remarks: none.

20. Denmark (DNK)

Source link: http://nationalbanken.statistikbank.dk/statbank5a/default.asp?w=1440
Source steps: National Bank of Denmark – Statistics on the MFI sector – Balance sheets and flows of the MFI sector. For loans to non-financial business, financial business and total households, go to DNSEKT3: MFI-sectors domestic lending and deposits by balance post item, sector, data type and currency. For mortgage loans go to DNSEKT2: Mortgage-credit institutes domestic lending by sector and currency.
Remarks: Consumer credit is calculated as total household credit minus mortgage credit to households. Financial business includes other financial intermediaries and financial auxiliaries, insurance corporations and pension funds.

21. Egypt (EGY)

Source link: http://www.cbe.org.eg/English/Economic+Research/Time+Series/
Source steps: Central Bank of Egypt – Research and Publications – Time Series – Banks – Lending and Discount Balances by sector.
Remarks: Loans to non-financial business include credit to private and public business sectors. Loans to financial business and mortgage credit are not available. Therefore, all household credit is assumed to be consumer credit. As the data for 1991-2001 is available only at the end of June, the end year values for those years are computed by taking the average of two consecutive years.

22. Estonia (EST)

Source link: http://statistika.eestipank.ee/?lng=en#treeMenu/FINANTSSEKTOR/147/650
Source steps: Bank of Estonia – Statistics – Financial sector statistics – Credit institutions statistics – Loans – Tables 3.3.1 and 3.3.3.
Remarks: Consumer loans include consumer credit, student loans and others.

23. Finland (FIN)

Source link: http://www.suomenpankki.fi/en/tilastot/Pages/default.aspx
Source steps: Bank of Finland – Statistics – MFI balance sheet (loans and deposits) and interest rates – Tables – Euro-denominated Finnish MFI loans to euro area residents.
Remarks: Consumer and mortgage loans are available from 2003; loans for non-financial corporations – from 1997, for financial business – from 1998.

24. France (FRA)

Source link: http://webstat.banque-france.fr/en/
Source steps: Bank of France – Monetary Statistics – Loans to the Economy. For consumer and mortgage loans: go to Households and similar. For non-financial corporations: go to Loans, total domestic. For financial business: go to Institutional sectors, Insurance, Pension Funds & Other financial institutions.
Remarks: Mortgages includes 'Loans for house purchasing', Domestic, households & NPISH. Consumer loans are total household loans minus mortgages. Financial business loans include loans for insurance companies, pension funds and other financial institutions.

25. Georgia (GEO)

Source link: http://www.nbg.gov.ge/index.php?m=306
Source steps: National Bank of Georgia – Statistics – Statistical Data – Monetary and Financial Statistics – Table L3.10.1. Loans to the National Economy (stocks).
Remarks: Financial business loans include loans to financial intermediaries and transactions in real estate and researchers. Mortgages are 'Loans secured by real estate'. Loans to non-financial business are total branches minus financial business.

26. Germany (DEU)

Source link: http://www.bundesbank.de/Navigation/EN/Statistics/Time_series_databases/Macro_economic_time_series/macro_economic_time_series_node.html

Source steps: Deutsche Bundesbank – Statistics – Time series databases – Macro-economic time series – Banks and other financial institutions – Banks – Assets and liabilities of banks (MFIs) in Germany – Lending by banks in Germany to non-banks.

Remarks: Private mortgage data only available until 2002. Total mortgage credit (including business) has been added as extra column. However, this does not add up to the total to avoid double counting in the total amount.

27. Greece (GRC)

Source link: http://www.bankofgreece.gr/Pages/en/Statistics/monetary/financing.aspx

Source steps: Bank of Greece – Statistics – Monetary and Banking Statistics – Credit Aggregates – Credit to the General Government and the private sector from domestic MFIs (1980–).

Remarks: Housing loans and consumer credit are available from 1980. Consumer credit includes consumer and other loans. Non-financial business and financial business loans are available form 1990; do not include corporate bonds, only bank loans to non-financial and financial corporations; loans to sole proprietors distinguished from 2010, added to loans for non-financial businesses.

28. Hong Kong (HKG)

Source link:

http://www.hkma.gov.hk/eng/market-data-and-statistics/monthly-statistical-bulletin

Source steps: Hong Kong Monetary Authority – Market Data and Statistics – Monthly Statistical Bulletin – Section 3: Banking – 3.5. Loans and advances for use in Hong Kong by economic sector – Table 3.5.1 (Authorized institutions).

Remarks: Hong Kong has a three tier banking system. MFI's are described as 'authorized banking institutions', which are divided into licensed banks, restricted license banks, and deposit-taking companies. Loans are aggregated for these 3 subcategories. Financial business loans include categories 'Financial concerns' and 'Stockbrokers'. Household mortgage loans are the sum of loans For the purchase of flats in Home Ownership and For the purchase of other residential properties. Consumer loans include loans for credit card advances, for other personal purposes and for other business purposes. Non-financial business credit is calculated as total loans - financial business loans - mortgages - consumer loans.

29. Hungary (HUN)

Source link:

www.mnb.hu/en/statistics/statistical-data-and-information/statistical-time-series

Source steps: Magyar Nemzeti Bank – Statistics – Statistical Data and Information – Time Series – XII. Financial accounts (financial assets and liabilities of institutional sectors) – Full set of financial accounts (including all sectors) – Time-series tables by sectors. For mortgage and consumer loans: go to Detailed financial accounts of households. For non-financial business loans: go to Detailed financial accounts of non-financial corporations. For financial business loans: go to Stocks, consolidated, by sector. Choose other financial corporations, insurance corporations, pension funds.

Remarks: Loans from credit institutions. Mortgage loans are 'Housing loans'. Consumption loans are 'Consumer and other loans'. Financial business loans are the sum of loans for other financial corporations, insurance corporations, and pension funds.

30. Iceland (ISL)

Source link:

http://statistics.cb.is/en/data/set/23g0/#!display=line&ds=23g0!2kos=1.5.6.7.8.10.6j

Source steps: Central Bank of Iceland – Statistics – The credit system – Monetary statistics – Time series – Lending categories – Lending to residents, different categories.

Remarks: Non-financial business includes Companies plus Holding companies. Financial business are Non-bank financial companies. Consumer loans are total households loans minus residential mortgages. Mortgages before July 2007 are imputed as 0.61$*$total households loans (0.61 is the average share of mortgages in households loans in August-December 2007).

31. India (IND)

Source link: http://dbie.rbi.org.in/DBIE/dbie.rbi?site=statistics
Source steps: Reserve Bank of India – Statistics – Financial Sector – Banking - Sectoral Statistics – Yearly – Bank credit of SCBs – Summary-Occupation wise.
Remarks: Financial business loans are in the category Finance. Mortgages are loans for housing. Consumer loans include the rest of personal loans. Non-financial business credit is total credit minus credit to Finance and personal loans.

32. Indonesia (IDN)

Source link: http://www.bi.go.id/en/statistik/seki/terkini/moneter/Contents/Default.aspx
Source steps: Bank of Indonesia – Statistics – Indonesian Financial Statistics – Monetary Sector – I.4: Outstanding of Loans in Rupiah and Foreign Currency of Commercial and Rural Banks by Group of Banks and Economic Sector; I.15: Outstanding of Property Credits of Commercial and Rural Banks by Group of Banks and Type of Utilization.
Remarks: Non-financial business includes agriculture, mining, manufacturing, utility, construction, trade, transport and service sectors. Financial business is financial, ownership & business services. Household loans are total loans minus financial and non-financial business loans. For 2010-2013: based on Table I.4, mortgages are the sum of loans for Housing, Flat and Apartment, and Shophouse. For 2002-2009: based on Table I.15, mortgages are House and Apartment Ownership Credits. Consumption credit is total households loans minus mortgages.

33. Ireland (IRE)

Source link: www.centralbank.ie/polstats/stats/cmab/Pages/Money%20and%20Banking.aspx
Source steps: Central Bank of Ireland – Economic Policy & Statistics – Credit, Money and Banking Statistics – Money and Banking – Table A1. Summary Irish Private Sector Credit and Deposits.
Remarks: Mortgages are loans for house purchase. Consumption loans include consumer credit plus other households loans.

34. Israel (ISR)

Source link: http://www.boi.org.il/en/DataAndStatistics/Pages/Default.aspx
Source steps: Bank of Israel – Data & Statistics – Financial Activity – Credit Market – Debt by borrower sector – Business sector debt, Borrowers' Outstanding Debt.
Remarks: This is reported from the viewpoint of the borrower. Non-financial business loans are measured as credit to the public (Business sector debt excl. banks and insurance companies). Mortgage loans are housing credit to the public. Consumer loans are credit to the public excl. housing (households' debt); no data for financial business loans.

35. Italy (ITA)

Source link: https://infostat.bancaditalia.it/
Source steps: Bank of Italy – Statistical Database – Money and Banking – Banks: Balance Sheet and Other Information – TSC20300 Loans by sector of economic activity; TSC20400 Loans to residents of Italy, by maturity and type.
Remarks: Loans to financial business include loans to domestic OFIs and to insurance companies and pension funds. Non-financial business credit is loans to domestic non-financial enterprises. Consumption credit is consumer loans and loans for other uses. Mortgages are loans for house purchases.

36. Japan (JPN)

Source link: http://www.stat-search.boj.or.jp/index_en.html
Source steps: Bank of Japan – Statistics – Deposits and Loans Market – By list of statistics – Outstanding of Deposits and Loans. For housing loans for households go to: Others – Loans to Households (1) Housing Loans, Domestically Licensed Banks and Shinkin Banks – Housing Loans/Amount Outstanding/ Loans to Households/Banking Accounts, Trust Accounts and Overseas Office Accounts/ Domestically Licensed Banks. For non-financial business, financial business, real estate, and total household loans go to: Loans and Bills Discounted by Sector – Loans and Bills Discounted by Sector (by Type of Major Industries) (1) Domestically Licensed Banks – different sectors.
Remarks: We take only loans from domestically licensed banks. Financial business is in category 'Fi-

nance and Insurance'. Consumer loans are total household loans minus housing loans for households. Mortgages are the sum of housing loans for households and real estate. Non-financial business loans are total loans minus financial business, real estate, local government, and households loans.

37. Kazakhstan (KZH)

Source link: http://www.nationalbank.kz/?docid=182
Source steps: National Bank of Kazakhstan – Statistics – Monetary and credit statistics – Monetary Survey of banks. Mortgages: Home – Financial stability – Financial stability reports, Tables and Figures.
Remarks: Loans to non-financial business include Claims to private and public non-financial institutions. Financial business loans are Claims to non-bank financial institutions. Households loans include Claims to households and nonprofit institutions. Mortgages are resident mortgage loans, available for 2007-2013. For 2004-2006, mortgages are calculated using growth rates of Credits to individuals for buying or building Housing in 2005-2007. Mortgages count 40% of total households loans in 2004. We use this share to impute mortgages before 2004. Consumer credit is total household credit minus mortgages.

38. Kenya (KEN)

Source link: https://www.centralbank.go.ke/index.php/statistical-bulletin
Source steps: Central Bank of Kenya – Press and publications – Publications – Statistical Bulletin, different issues – Commercial Banks – Distribution of credit facilities by sector and activity.
Remarks: Financial business are Finance & Insurance; Mortgages are Real Estate; Consumer loans are 'Private households'; Non-financial business credit = total credit to private sector - Financial business loans - mortgages - consumer loans.

39. Korea (KOR)

Source link: http://ecos.bok.or.kr/flex/EasySearch_e.jsp
Source steps: Bank of Korea – Economic Statistics System – 3. Deposits, loans and discounts – 3.3. Loans and discounts by industry – 3.3.1. Depository Corporations – 3.3.1.1. Loans and discounts by industry; 3.6.1. Credit to Households, depository corporations.
Remarks: Financial business loans are in the category Finance & Insurance; non-financial business loans are calculated as total industry Finance & Insurance; mortgages are under category 'household mortgage loans'; consumer loans are 'Others'.

40. Kyrgyz Republic (KGZ)

Source link: http://www.nbkr.kg/index1.jsp?item=125&lang=ENG
Source steps: National Bank of the Kyrgyz Republic – Statistics – Banking Statistics – Credits of commercial banks by the end of the period – total credits by sectors.
Remarks: No data for financial business loans. Non-financial business loans are calculated as total credit minus mortgage and consumer loans. Mortgage loans are from 2003.

41. Latvia (LVA)

Source link: http://statdb.bank.lv/lb/Default.aspx
Source steps: Bank of Latvia – Statistics – Monetary Financial Institutions' (MFI) Balance Sheet Statistics – 05. Loans granted by MFIs (except the Bank of Latvia) (until December 2014) – 0505. Loans granted to resident non-MFIs in breakdown by sector.
Remarks: Consumer loans are the sum of consumer credit and other loans to households; mortgages are loans to households for house purchases. Non-financial businesses include public and private non-financial corporations. Financial businesses include insurance corporations and pension funds, other financial intermediaries and financial auxiliaries.

42. Lithuania (LTU)

Source link:
http://www.lb.lt/monetary_financial_institutions_balance_sheet_and_monetary_statistics
Source steps: Bank of Lithuania – Statistics – Monetary Financial Institutions Balance Sheet and Monetary Statistics – 2.5. Loans of Other MFIs to Residents Except MFIs.
Remarks: Consumer loans include consumer credit and other loans to households. Financial businesses include insurance corporations and pension funds, investment funds and other financial intermediaries.

Mortgage and consumer loans for 1993-2003 are imputed. As the average share of these loans in total households loans during 2004-2013 is rather stable, we use the shares (0.7 for mortgage and 0.3 for consumer loans) of total household loans to calculate those loans for 1993-2003.

43. Luxembourg (LUX)

Source link: http://www.bcl.lu/en/statistics/series/11_credit_institutions/index.html
Source steps: Central Bank of Luxembourg – Statistics – Series - Luxembourg – 11. Credit Institutions – 11.6: Credits granted by credit institutions by counterpart and original maturity; 11.7: Credits granted by credit institutions to euro area households and NPISH by type and original maturity.
Remarks: Consumer loans include consumer credit and other loans to households. Financial businesses include insurance corporations & pension funds and other financial intermediaries & auxiliaries.

44. Macedonia (MKD)

Source link: http://www.nbrm.mk/?ItemID=DF4B1C52AFFF9E4E99BA611079390EB7
Source steps: National Bank of the Republic of Macedonia – Statistics – Bulletins – Quarterly Bulletin-IV/2013 – Tables from the monetary sector – Tables 8 and 12.
Remarks: Financial businesses are in category 'Other Financial Corporations'. Non-financial business includes public and other non-financial corporations. Mortgages are households lending for house purchase. Consumer loans are calculated as total households loans minus mortgages.

45. Malaysia (MYS)

Source link: http://www.bnm.gov.my/index.php?ch=en_publication_catalogue&pg=en_publication_msb&eId=box1&mth=1&yr=2014&lang=en
Source steps: Central Bank of Malaysia – Publications & Research Paper – Periodicals – Monthly Statistical Bulletin, choose the latest – 1. Banking System: Classification of Loans by Sector (2006-2013); 1.19 Banking System: Classification of Loans Purpose (2006-2013), II.7 Loans by Sector: Banking System.
Remarks: Bank loans are sum of loans provided by Merchant or Investment banks, Commercial banks, and Islamic banks. Financial businesses include real estate and finance, insurance & business services. Non-financial businesses = agriculture + mining and quarrying + manufacturing + electricity, gas water supply + Wholesale & retail trade, and restaurants & hotels + construction + purchase of non-residential property (for data before 2006) + Transport, storage and communication + Business services (Renting & business activities, R&D, other business activities) + Education, health & others + other sectors (Purchase of transport vehicles, Community, social and personal services). Mortgages are under the category 'purchase of residential property'. Consumer loans are consumption credit, incl. personal uses, credit cards, purchase of consumer durable goods, purchase of passenger cars.

46. Malta (MLT)

Source link: http://www.centralbankmalta.org/monetary-banking-and-financial-markets
Source steps: Central Bank of Malta – Economics & Statistics – Monetary, Banking and Financial Markets – OMFI's Loans – Loans to residents of Malta by Economic Activity/by sector; Other Historical Data – Deposit Money Banks' loans outstanding by economic activity.
Remarks: Consumer loans include consumer credit and other lending. Non-financial business loans include loans for all economic branches except real estate activities. Financial business loans include real estate activities, insurance companies and pension funds.

47. Mexico (MEX)

Source link: http://www.banxico.org.mx/SieInternet/consultarDirectorioInternetAction.do?accion=consultarCuadro&idCuadro=CF341&sector=3&locale=en
Source steps: Bank of Mexico – Statistics – Financial System – Monetary Aggregates and Flows of funds – Total financial resources (Sources and uses)– Quarterly.
Remarks: Non-financial business credit is Credit granted by financial intermediaries to Firms. Financial business loans are not available.

48. Moldova (MDA)

Source link: http://www.bnm.md/en/stat_mon_bancar
Source steps: National Bank of Moldova – Statistics – Monetary and financial statistics – Monetary sur-

vey – Banking system. Consumer loans go to: Publications – Annual Report, different years.
Remarks: Non-financial businesses include public and other non-financial corporations. Financial businesses are other financial corporations. Households loans are claims on the other resident sectors. Consumer loans before 2010 are imputed as 0.39∗total household loans (this is the average share of consumer loans in household loans for 2010-2013). Mortgages are total households loans minus consumer loans.

49. Mongolia (MNG)

Source link: `http://www.mongolbank.mn/eng/liststatistic.aspx?did=2`
Source steps: Bank of Mongolia – Statistics – Statistical Bulletin – Deposit Corporations Monetary Survey; Mortgage Loans Report of Banks.
Remarks: Non-financial businesses include public and private corporations. Financial business is other financial corporations. Mortgage loans are available from 2008 and count 21.5% of households loans in 2008. We use this share to impute mortgages for 2004-2007. Consumption loans are total household loans minus mortgages.

50. Morocco (MAR)

Source link: `http://www.bkam.ma`
Source steps: Bank Al-Maghrib – Monetary and financial statistics – Monetary statistics (as from December 2001) – Ventilation croisée du crédit bancaire par secteur économique et par objet.
Remarks: Non-financial business includes public and private non-financial corporations. Financial business – 'Autres Sociétés financiéres'. Consumption credit – Crédits á la consommation'. Mortgages - 'Crédits a l'habitat'.

51. Netherlands (NLD)

Source link: `www.dnb.nl/en/statistics/statistics-dnb/financial-institutions/index.jsp`
For mortgage credit: `http://www.dnb.nl/en/statistics/statistics-dnb/households/index.jsp`
Source steps: De Nederlandsche Bank – Statistics – Financial institutions – Domestic MFI-statistics (monetary) – Loans from MFIs to the private sector, breakdown by sector, original maturity and instrument; not adjusted for securitizations. For mortgages go to: Statistics – Households – Some components of assets and liabilities of Dutch households.
Remarks: Loans to financial business include loans to insurance corporations and pension funds and other financial institutions. Households consumer loans = households consumer credit + households other lending. Non-financial businesses include non-financial private and public corporations. Household mortgages = total residential mortgages - pension funds - insurance corporations.

52. New Zealand (NZL)

Source link: `http://www.rbnz.govt.nz/statistics/`
Source steps: Reserve Bank of New Zealand – Statistics – Lending & Credit Statistics – C5. Sector credit: Banks & Non-bank lending institutions, C6. Household credit: Banks & Non-bank lending institutions.
Remarks: We report only loans of registered banks. Mortgages are in category 'Housing'. Consumer credit is in category 'Consumer'. Finance includes Finance, Insurance, and Property and business. Non-financial business, consumer and mortgage loans before 1998 are imputed with the share 0.93 (this is the ratio of registered banks in the sum of claims of registered banks and non-bank lending institutions).

53. Norway (NOR)

Source link: `www.ssb.no/statistikkbanken/SelectTable/hovedtabellHjem.asp?KortNavnWeb=finsek&CMSSubjectArea=nasjonalregnskap-og-konjunkturer&StatVariant=&PLanguage=1&checked=true`
Source steps: Central Bank of Norway – 1) For loans for non-financial business, financial business and households: Home – Statistics – National accounts and business cycle – Financial accounts – Create tables and diagrams – Table: 10706: Financial accounts, by sector, item and counterpart sector – Sector: banks, state lending institutions, and mortgage companies; Assets: loans. 2) For mortgage loans: Home – Statistics – Financial corporations, balance sheet – Create tables and diagrams – Banks (also Mortgage companies, State lending institutions). Loans, by types of loans and borrower sector.
Remarks: Non-financial business is non-financial corporations. Financial businesses include Other financial institutions and Insurance corporations and pension funds. Household loans are loans for households and NPISHs. Mortgages are Credit lines, secured on dwellings plus Repayment loans se-

cured on dwellings. Consumer loans are total household loans minus mortgages. Loans from state lending institutions are available untill 2013Q2 due to change in methodology. For the last two quarters of 2013 these loans are interpolated as averages for Q1-Q2 of 2013.

54. Pakistan (PAK)

Source link: `http://www.sbp.org.pk/ecodata/index2.asp`
Source steps: State Bank of Pakistan – Economic Data – Monetary Sector – Credit/Loans Classified by Borrowers.
Remarks: Financial business loans are in category 'Real estate, renting and business activities'. Non-financial business loans are Loans to Private Sector Business minus financial business loans. Mortgages are Personal loans For house building. Consumer loans are Consumer financing minus mortgages.

55. Peru (PER)

Source link: `http://www.bcrp.gob.pe/publications/weekly-reports/tables.html`
Source steps: Central Reserve Bank of Peru – Statistics – Statistical Tables – Credit – 6. Credit to the private sector of the depository corporations by type of credit.
Remarks: Credit to financial businesses is not reported. 'A Empresas' is credit to non-financial business (sum of loans for business and micro business). 'Consumo' is consumption loans for households, 'Hipotecario' are mortgages.

56. Philippines (PHL)

Source link: `http://www.bsp.gov.ph/statistics/overview.asp`
Source steps: Bangko Sentral ng Pilipinas – Statistics.
For non-financial and financial business loans go to: Monetary, External, and Financial Statistics – Key Statistical Indicators – Financial System Accounts – Loans Outstanding: Universal and Commercial Banks – Loans Outstanding: For Production and Household Consumption (PSIC 1994) Universal and Commercial Banks.
For consumer and mortgage loans go to: Statistics – Banking Statistics – Universal and Commercial Banking System – Consumer loans.
Remarks: The data file has two sheets: 1993-Nov2001, Dec2001-2014. Before 2001 there were only commercial banks, after 2001 – universal and commercial banks. Financial business includes Financial Intermediation, and Real Estate, Renting & Business Services. Non-financial business loans are total loans for production by economic activity minus loans for financial business. Mortgages are Residential Real Estate loans. Consumer credit includes auto loans, other consumer loans and credit card receivables.

57. Poland (POL)

Source link: `http://www.nbp.pl/homen.aspx?f=/en/statystyka/zobowiazania.html`
Source steps: National Bank of Poland – Statistics – Monetary and financial statistics – Assets and liabilities of monetary financial institutions.
Remarks: Non-financial business is non-financial corporations. Financial business is non-monetary financial institutions. Mortgages are loans for the purchase of real property of HHs & NPISH. Consumer credit is total HHs&NPISHs loans minus mortgages.

58. Portugal (PRT)

Source link:
`www.bportugal.pt/EstatisticasWeb/%28S%28cq1fc5noxot15zjivc4uazry%29%29/Default.aspx`
Source steps: Bank of Portugal – Time series analysis – Monetary and financial statistics – Monetary financial institutions – Details of the assets of OFMI's vis-á-vis residents – Loans to private individuals - by purpose and maturity; Loans to non-financial corporations - by NACE; Balance sheet of OMFIs' – Assets and Liabilities vis-á-vis OFIFA (other financial intermediaries and financial auxiliaries), ICPF (insurance companies and pension funds).
Remarks: Consumer credit includes consumer loans and other loans to private individuals. Mortgages are housing loans to private individuals. Non-financial business loans are total non-financial corporations loans minus real estate activities. Financial businesses include financial intermediaries and auxiliaries, insurance companies, pension funds, and real estate activities.

59. Romania (ROM)

Source link: http://www.bnro.ro/Interactive-database-1107.aspx
Source steps: National Bank of Romania – Statistics – Interactive Database – Monetary and Financial Statistics – Monetary Financial Institutions (MFI) – Deposits and credits by institutional sectors – Credits by institutional sectors.
Remarks: Consumer loans include consumer credit and other loans to households. Mortgages are housing loans.

60. Russian Federation (RUS)

Source link: http://www.cbr.ru/eng/statistics/?Prtid=dkfs
Source steps: Bank of Russia – Statistics – Macroeconomic Statistics – Monetary Statistics – Monetary Statistics Indicators, 2008-2015; 2001-2007 (Banking System sheet); 1995-2000 (Monetary Survey sheet). For mortgage loans go to: Statistics – Banking Sector – Housing (Mortgage) Loan Market – Loans Extended by Credit Institutions to Individuals and Individual Entrepreneurs, Outstanding Debt.
Remarks: Financial businesses are 'Other financial institutions'. Non-financial business includes Private and Other non-financial organizations. Mortgages are housing loans to individuals. Consumer loans are total households loans minus mortgages. Mortgages are available from 2005. Mortgages for 1995-2004 are imputed as 0.17$*$total household loans (the share of mortgages in household loans for 2005-2006).

61. Singapore (SGP)

Source link:
http://www.mas.gov.sg/Statistics/Monthly-Statistical-Bulletin/Money-and-Banking.aspx
Source steps: Monetary Authority of Singapore – Statistics – Monthly Statistical Bulletin – Money and Banking – I.5A Banks: Loans and Advances of DBUs to Non-Bank Customers by Industry.
Remarks: DBU is domestic banking unit. The jump in March 2004 in non-financial business is because the consumer credit is split out (“'Data prior to March 2004 refer to total loans to Professional and Private Individuals (PPI) as there is no breakdown of the data into loans to PPI by business purposes and consumer loans”). We add it back into non-financial business. Financial business credit is loans to financial institutions. Non-financial business loans are total business loans minus loans to financial institutions.

62. Slovakia (SVK)

Source link: www.nbs.sk/en/statistics/money-and-banking-statistics/statistical-data-of-monetary-financial-institutions/loans
Source steps: National Bank of Slovakia – Statistics – Monetary and Financial Statistics – Statistical Data of Monetary Financial Institutions – Loans – Loans granted – sector break-down.
Remarks: Until 2009 loans are in SKK, then in Euro. Households-Employers (sole-proprietors) are counted into non-financial business. Households and HPISHs loans for house purchases are mortgages. Consumer loans = total Households and HPISHs loans - mortgages - claims under repo. For 2004-2005 mortgage and consumer loans are imputed as 0.7 and 0.3 share of households credit, respectively (based on the shares computed for 2006).

63. Slovenia (SVN)

Source link: http://www.bsi.si/en/financial-data-r.asp?MapaId=982#14091
Source steps: Bank of Slovenia – Statistics – Data Series – Money and monetary financial institutions – 1.5. Selected claims of other Monetary Financial Institutions – by sector (S.11: Non-financial corporations; S.14-15: Households, NPISHs; S.123-125: Non-monetary financial institutions).
Remarks: Consumer credit includes consumer and other loans to households and NPISHs. Financial business are non-monetary financial institutions. Mortgages are lending for house purchases.

64. Spain (ESP)

Source link: http://www.bde.es/bde/en/areas/estadis/
Source steps: Bank of Spain – Statistics.
1) Financial Accounts of the Spanish Economy – Chapter 2. Financial Accounts – 2.36. Monetary financial institutions – 2.36a. Financial balance sheet – time series – categories: CF_2_36A.25 (loans to non-financial corporations), CF_2_36A.28 (loans to non-monetary financial institutions), CF_2_36A.30 (loans to households and non-profit institutions).

2) BIEST - Time Series Search Engine – Concepts – Financial institutions – Banks and credit finance establishments. Monitoring states – 4.14. Breakdown of lending and deposits by credit institutions. Total lending and total doubtful loans to other resident sectors by type. Deposit-taking institutions – loans for HHs and NPISHs.
Remarks: Household loans are split into mortgage and consumer credit only for data set based on 2) for deposit-taking institutions and from Dec 1998; while data under 1) starts in Dec 1994 but does not split HHs credit and is for loans from monetary financial institutions, which include deposit-taking institutions and other credit institutions. Loans from deposit-taking institutions count for 90% of lending from monetary financial institutions. To get mortgage and consumer loans for data based on 1), we take shares of this credit in total HHs & NPISHs loans from deposit-taking institutions from 1998 on 2) and multiply them by total loans to HHs and NPISHs from monetary financial institutions. For period 1994-1998, we impute mortgage and consumer credit using their shares in total HHs & NPISHs credit in 1998. Mortgages are in category 'House purchase and renovation' (D_MDTEE62800). Consumer credit is total HHs & NPISHs credit (D_MDTEE62000) minus mortgages.

65. Sri Lanka (LKA)

Source link: `http://www.cbsl.gov.lk/htm/english/10_pub/p_2.html`
Source steps: Central Bank of Sri Lanka – Publications – Economic & Social Statistics of Sri Lanka, different years – Banking and Financial Institutions – Loans and advances of commercial banks by purpose.
Remarks: Change in methodology in 2009! From 2009: Financial business loans are in category 'Financial and business services'. Consumer loans are in category 'Personal loans and advances', sum from consumption durables to personal healthcare. Mortgages are calculated as personal loans and advances minus consumption loans. Before 2009: Financial business loans are in category 'Financial'. Consumer loans are in category 'Consumption'. 'Housing and Property Development' includes both mortgages and construction of housing. To split it, we use the data for 2009 for construction of housing and households mortgages, calculate relative shares in their sum (0.48 of mortgages, 0.52 for construction of housing). We use these shares to interpolate mortgages before 2009 as $0.48*$ 'Housing and Property Development'. In all cases (before and after 2009), non-financial business loans = total loans - financial business loans - mortgages - consumption loans.

66. Sweden (SWE)

Source link: `http://www.scb.se/en_/Finding-statistics/Statistical-Database/`
Source steps: Sveriges Riksbank – Statistical database – Financial markets – Financial institutions assets and liabilities – Financial accounts – Financial accounts by sector, item and counterpart-sector (ESA2010). Quarterly; Balances; Sector: S11 non-financial corporations, S12 financial corporations, S14+15 households including NPISHs; FL0100 Liabilities; Counterpart-sector: S1221 banks, S1223 housing credit institutions, S1224 Other monetary credit market corporations.
Remarks: Mortgages for households are the sum of loans from mortgage credit institutions and mortgage loans from banks. Consumer credit is total households credit minus mortgages.

67. Switzerland (CHE)

Source link: `http://www.snb.ch/en/iabout/stat/statpub/bchpub/stats/bankench`
`http://www.snb.ch/en/iabout/stat/statpub/histz/id/statpub_histz_actual` (1977-2008)
`http://www.snb.ch/en/iabout/stat/statpub/bstamon/stats/bstamon/bstamon_KS_Sek` (1997-2013)
Source steps: Swiss National Bank – Statistics – Statistical Publications.
Consumer credit: Banks in Switzerland – Assets – 8. Consumer credit lending – Time series – All banks.
Mortgage credit: Banks in Switzerland – Assets – 11a. Domestic mortgage loans (first, second and third mortgages) – Time series – All banks.
Non-financial and financial business: for 1977-2008 go to: Historical Time Series – Series 5: Banks in Switzerland, Table 21. For 1997-2013 go to: Monthly Bulletin of Banking Statistics – Credit volume statistics, Domestic, by sector/economic activity.
Remarks: For 1977-2008: Financial business includes pension funds, insurance corporations, health insurance companies, and collective investment institutions pursuant to CISA, financial corporations. Non-financial business is non-financial corporations. For 1997-2013: Financial business is 'Finance and insurance activities'. Non-financial business includes categories from Agriculture, forestry and fishing up to Information and communication; Real estate activities; Professional, scientific and technical activ-

ities; Administrative and support service activities (without Finance and insurance activities). All loans for 1997-2013 data are taken as 'Utilized'.

68. Thailand (THA)

Source link: www.bot.or.th/English/Statistics/EconomicAndFinancial/Pages/default.aspx
Source steps: Bank of Thailand – Statistics – Economic and Financial – Money and Banking – 1) MFS: Sectoral Balance Sheet – EC_MB_011: Other Depository Corporations Sectoral Balance Sheet (non-financial business, financial business, total households). 2) Main Assets & Liabilities – EC_MB_038: Housing Loans for Personal Consumption Extended by Financial Institutions (mortgages).
Remarks: Financial business loans are loans for other financial corporations. Non-financial business loans are Loans for Public Non-financial Corporations and Other Non-financial Corporations. Households loans are 'Loans Other Resident Sectors. Mortgages are 'Housing Loans for Personal Consumption Extended by Financial Institutions' (sum of loans from commercial banks and depository specialized financial institutions). Consumer loans are total households loans minus mortgages.

69. Tunisia (TUN)

Source link: http://www.bct.gov.tn/bct/siteprod/documents/BSF_ang.pdf
Source steps: Central Bank of Tunisia – Publications – Catalog – Financial Statistics Bulletin – VIII-1 Overall Loans Counted by the Risk Base and Broken Down by Branch of Economic Activity (1); VIII-4. Breakdown of Non Professional Loans to Individuals Granted by Banking Sector (1).
Remarks: Mortgages are Housing loans. From December 2011 due to methodology change, mortgages include housing loans and loans for fitting out and housing. Consumption credit includes Vehicles, University loans, and Consumption loans. Financial business includes Financial activities and Real estate, renting and services to corporates. Financial business loans for 2003-2006 are imputed as 0.13∗Overall Loans (this is the share of financial business loans in total for 2007-2008). Non-financial business loans are Overall loans minus financial business loans.

70. Turkey (TUR)

Source link: http://evds.tcmb.gov.tr/index_en.html
Source steps: Central Bank of the Republic of Turkey – Statistics – Statistical Data – Monthly Money and Banking Statistics – Loans – Deposit Money Banks - Loans - Sectoral Breakdown.
Remarks: Use only loans from deposit money banks. Non-financial businesses include non-financial companies and individual corporations. Financial businesses are non-bank financial institutions. Total households' loans are in broad category 'Consumer loans'. Mortgages are 'housing loans'. Mortgage loans for 1993-2004 are imputed as 0.45∗total household loans (this is the average share of mortgages in total households' loans during 2005-2013, it is rather stable). Consumer loans are total household loans minus mortgages.

71. Ukraine (UKR)

Source link: http://bank.gov.ua/control/en/publish/category?cat_id=8782107
Source steps: National Bank of Ukraine – Statistics – Monetary and Financial Statistics – Data – Surveys, deposits, loans – Loans granted by deposit-taking corporations (excluding National bank of Ukraine) – Tables 3.3.1.1. (Loans to resident sectors) and 3.3.5.1. (Loans to households, breakdown by type of loans and original maturity).
Remarks: Non-financial businesses loans include loans for public and other non-financial corporations. Financial business are other financial corporations. Mortgages to households are 'mortgage credit'. Mortgages for 2002-2005 are imputed as 0.25∗total household loans (this is the share of mortgages in total households loans in 2006). Consumption credit is total households credit minus mortgages.

72. United Kingdom (GBR)

Source link: http://www.bankofengland.co.uk/boeapps/iadb/BankStats.asp?Travel=NIx
Source steps: Bank of England – Statistics – Interactive Database – Tables – C. Further analysis of deposits and lending – Industrial analysis of monetary financial institutions lending to UK residents – Industrial analysis of sterling monetary financial institutions lending to UK residents: long runs – Not seasonally adjusted – all categories.
Remarks: Mortgages are 'secured lending to individuals', consumer loans are 'unsecured loans to in-

dividuals'. Financial businesses include companies dealing with real estate, firms involved in financial intermediation, insurance companies and pension funds. Non-financial business loans = total MFI's lending - mortgages - consumer loans - financial business loans.

73. Uruguay (URY)

Source link:
`http://www.bcu.gub.uy/Servicios-Financieros-SSF/Paginas/Series-Estadisticas-Creditos.aspx`
Source steps: Central Bank of Uruguay – Sistema Financiero – Bancos – Series Estadisticas Creditos – Detalle por grandes sectores - SSF (desde Diciembre 1999): includes all sector credit.
Apertura por Sector de Actividad - CIIU Revisión 3 (desde Diciembre 2001): includes credit to financial business, households mortgages and consumption credit.
Remarks: Non-financial business credit is credit to agriculture, trade, construction, manufacturing, services and others. We took 'total value', i.e. 'vigentes' (current outstanding amount) and 'vencidos' (amount that is overdue). Total household loans are in category 'Familias'. Mortgages are in category 97010 'Créditos Familias para adquisición de inmuebles'. Consumption credit is the sum of 97030 'Otros Familias (créditos al consumo)' and 97020 'Créditos Familias para adquisición de vehículos automotores'. Financial business loans are from category 65990 'Otros de tipos de intermediación financiera n.c.p.' to 70200 'Actividades inmobiliarias realizadas a cambio de una retribución o por contrata'.

74. United States of America (USA)

Source link: `http://www.federalreserve.gov/datadownload/Choose.aspx?rel=H8`
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De Nederlandsche Bank N.V.
Postbus 98, 1000 AB Amsterdam
020 524 91 11
dnb.nl