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CAN EUROPE RECOVER WITHOUT CREDIT?

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Highlights

- Data from 135 countries covering five decades suggests that creditless recoveries, in which the stock of real credit does not return to the pre-crisis level for three years after the GDP trough, are not rare and are characterised by remarkable real GDP growth rates: 4.7 percent per year in middle-income countries and 3.2 percent per year in high-income countries.

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1 INTRODUCTION

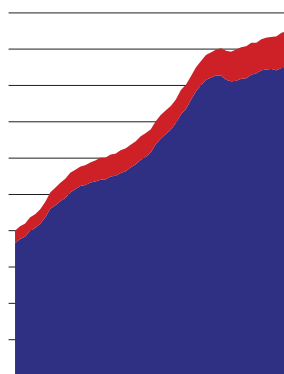
Access to finance is a crucial prerequisite for growth. Beyond using existing cash balances, retaining profits and raising new equity, options that are typically limited during a recession, borrowing can provide funds for day-to-day financial operations and long-term investment.

In continental Europe, borrowing from banks is the dominant source of debt financing for non-financial corporations, and there has been little change in this during the past decade (Figure 1). In contrast, the share of debt securities is much higher in the United States and the issuance of debt securities overcompensated for the drop in bank credit from 2008 to 2011¹. Developments in the United Kingdom are in between the euro area and the US in these regards, while in other EU countries, bank loans tend to dominate even more than in the euro area.

Credit growth has not yet resumed in most European countries, and credit is even declining in nominal terms in a number of countries. The declines in real terms are more significant. Clearly,

economic growth and credit growth are simultaneous and it is not just that credit can drive the economy, but the reverse causality also exists. Economic growth can increase both credit demand (households and corporations are more willing to consume and invest when the economic outlook improves) and credit supply (economic growth improves bank balance sheets and thereby their ability to supply credit). Yet there is abundant academic research concluding that limitations in credit supply have played a major role in credit developments recently, and such supply constraints could hinder credit expansion even if higher credit demand returns. Given the prominent role of credit in the European economy and the limited substitution of bank loans with debt securities, one should be concerned about the consequences for economic growth.

However, while economic theory predicts a close association between credit supply and the business cycle, recent empirical literature has pointed out that there were a number of economic recoveries without credit growth, which are called 'creditless recoveries'. Calvo, Izquierdo and Talvi (2006a, b) were among the first to observe this



1. Since the debt securities market is accessible for large firms only, total debt liabilities of small and medium-sized enterprises (SMEs) might not have increased, even in the US.

phenomenon by studying a sample of emerging market economies after systemic sudden stops. They dubbed such developments ‘*oe ix i g-ces*’ and showed that such recoveries are common, even though investment, a key driver of growth in normal times, remains weak in creditless recoveries.

Subsequent research, such as Claesens, Kose and Terrones (2009a,b), International Monetary Fund (2009), Abiad, Dell’Ariccia and Li (2011), Bijsterbosch and Dahlhaus (2011), and Coricelli and Roland (2011), has looked at various other aspects of creditless (and also with-credit) recoveries. These studies have concluded that creditless recoveries are not rare events (they account for about every fifth recovery), but growth is about a third lower (ie 4.5 percent per year on average during the first three years of the recovery, as calculated by Abiad, Dell’Ariccia and Li, 2011) than in recoveries with credit (when average growth was found to be 6.3 percent per year). Creditless recoveries are typically preceded by banking crises and sizeable output falls. Industries that are more reliant on external finance grow disproportionately less during creditless recoveries. Several papers also conclude that impaired financial intermediation and limited credit supply are the major reasons behind sluggish credit growth during creditless recoveries.

Given this cautiously optimistic literature on the existence of creditless recoveries, it is relevant to ask if European economies could also expect to

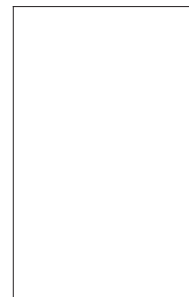
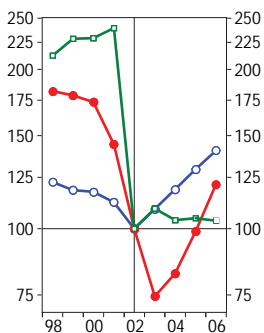
grow without credit in the coming years. This question also has a bearing on the current debate on the targets and implementation speed of the Basel III requirements, since new capital, liquidity and leverage rules will likely impact on the ability of banks to supply credit to the economy.

The goal of this Policy Contribution is to shed light on some less researched aspects of creditless recoveries: the role of exchange rate changes and financial development. After establishing some stylised facts using a sample of 135 countries and almost five decades of data, we assess the potential for creditless recoveries in Europe.

2 CREDITLESS RECOVERIES IN A HISTORICAL PERSPECTIVE: A NEW LOOK

In our view, real exchange rate developments could play a major role in understanding creditless recoveries, yet the literature has not paid sufficient attention to this issue. While dummy variables indicating the existence of a currency crisis were included in some papers, this indicator does not capture the magnitude and persistence of exchange rate changes. In addition, exchange rates also changed in those cases that are not classified as currency crises.

For example, Figure 2 shows that all four ‘true miracles’ identified by Abiad, Dell’Ariccia and Li (2011), ie cases with exceptional high economic growth without cumulative real credit growth three years after the trough, were characterised by very



cator for assessing the speed of recovery, because the global growth environment likely has an impact. Table 1 shows that GDP growth of trading partners used to be somewhat faster in recoveries with credit, though the difference is not large. Growth relative to trading partners was 2.7 percent during with-credit recoveries in low- and middle-

	Recovery type	Per capita income (% US)			All
		Below 10%	10%-60%	above 60%	
Number of recoveries	Creditless	38	32	12	82
	With-credit	112	152	82	346
	% creditless	25.3%	17.4%	12.8%	

Table 2: Wilcoxon-Mann-Whitney test for the equality of medians between the indicators creditless and with-credit recoveries

group. Croatia, the 28th EU member from July 2013, would also belong to this group. The other eleven EU member states would be in the high-income group.

8. These results are consistent with the findings of Abiad, Dell'Ariccia and Li (2011), who analyse 362 recoveries.

9. Note that we classify countries according to GDP per capita at PPP relative to the US in the year of trough, and therefore the twelve high-income countries with creditless recoveries also include the Bahamas in 1975 and Gabon in 1978 (see Appendix 2).

income countries, and only 1.2 percent during creditless recoveries, which is still quite substantial. In high-income countries, the difference between growth relative to trading partners of the two types of recoveries is smaller.

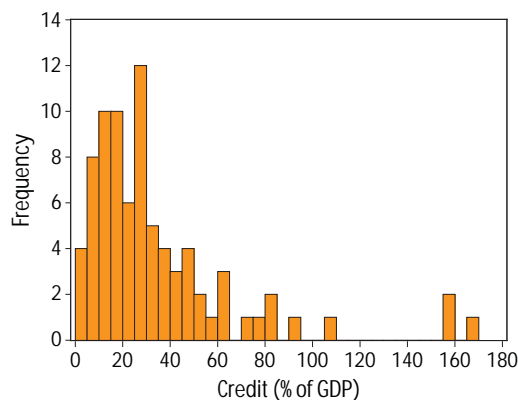
Financial development

We measured financial development using the credit/GDP ratio, which is an imperfect measure, but the only one available for a large number of countries across several decades. The median of this indicator is practically identical for creditless and with-credit recoveries, and therefore within an income group, financial development does not seem to make a difference for the incidence of creditless recoveries. However, Table 1 also confirms that economic and financial developments correlate positively and we have already found that the incidence of creditless recoveries declines with the level of economic development. Therefore, we can also conclude that creditless recoveries are rare at a higher level of financial development, which is confirmed by Figure 3.

Current account

Next, Table 1 indicates the magnitude of current account adjustment, which is defined as the difference between the maximum of current account/GDP positions during the three years after

Figure 3: Histogram of the credit/GDP ratios of the 82 creditless recoveries



Source: Bruegel. Note: the four cases with more than 100 percent of GDP credit stock are Hong Kong in 1989 (169 percent), Malaysia in 1998 (156 percent), Thailand in 1998 (156 percent) and in Portugal 1975 (106 percent). In these cases the depreciation of the real exchange rate in three years after the trough compared to the pre-crisis peak was 8 percent, 16 percent, 58 percent and 18 percent, respectively.

the trough, minus the minimum during the three years before the trough. Creditless recoveries are associated with greater current account adjustment, by about 3 percentage points of GDP, in all three income groups.

Real exchange rate

Current account adjustments are facilitated by adjustment in the real exchange rate. Table 1 shows that all recoveries in all three income groups tended to be associated with lasting real effective exchange rate depreciations, and depreciations tended to be greater in creditless recoveries compared to with-credit recoveries, except in low-income countries. The difference in median cases of creditless and with-credit recoveries is significant (Table 2). In the middle-income countries, the median real effective depreciation is 24 percent from the pre-trough peak until three years after the trough in the creditless cases, and only seven percent in the with-credit cases. The same figures for high-income countries are 10 percent and two percent. And in several cases, part of the depreciation was corrected by the third year after the trough.

However, while creditless recoveries tend to be accompanied by sizeable and durable real exchange rate depreciations, this is not always the case. Figure 4 indicates that the median real exchange rate clearly tends downward during creditless recoveries in middle-income countries, but the upper boundary of the interquartile range remains close to 100, implying that there was no depreciation in about every fourth creditless recovery. Among the high-income countries, in two of the 12 cases the real exchange rate was at a higher level three years after the trough than the maximum before the trough.

Consequently, not all, but most, creditless recoveries are associated with sizeable and durable real exchange rate depreciations, and the median depreciation is significantly larger than the depreciation during recoveries with credit in middle- and high-income countries.

Trade openness

Finally, we also checked if creditless recoveries emerged in countries more open to international trade, but this is not the case. If anything, countries with with-credit recoveries are somewhat more open (Table 1), but the difference is not significant (Table 2).

3 UNDERSTANDING CREDITLESS RECOVERIES

As Abiad, Dell'Ariccia and Li (2011) rightly argue, creditless recoveries are puzzling from a theoretical perspective. While Calvo, Izquierdo and Talvi (2006a), and Biggs, Mayer and Pick (2009) sketch brief analytical models, it is fair to claim that comprehensive theoretical models have not been developed to understand creditless recoveries. Instead, authors studying such recoveries put forward certain hypotheses to explain them, as follows:

- **Absorption of idle capacities:** creditless recoveries used to happen after deep recessions and thereby idle capacities are available for growth: firms could exploit these capacities without investing (eg Calvo, Izquierdo and Talvi, 2006a, b; Abiad, Dell'Ariccia and Li, 2011; and Coricelli and Roland, 2011)¹⁰;
- **Role of liquidity:** following a liquidity crunch, liquidity is restored by discontinuing investment

projects, meaning that firms do not borrow (eg Calvo, Izquierdo and Talvi, 2006a, b);

- **Incorrect measurement of credit developments:** the change in credit growth may matter more for output growth than credit growth itself. When, for example, credit falls sharply in the trough year, but credit growth stabilises in the next year (even if at a negative growth rate), then the change in credit growth is positive in the year after the trough, and that may help economic recovery (Biggs, Mayer and Pick, 2009);
- **Alternative financing:** firms can rely on alternative sources of financing, such as trade credit (eg Claessens *et al.*, 2009; Coricelli and Roland, 2011);
- **Reallocation:** a reallocation from more to less credit-intensive sectors takes place (eg Claessens *et al.*, 2009; Abiad, Dell'Ariccia and Li, 2011; Coricelli and Roland, 2011);
- **Strong external demand:** disruptions to the supply of credit may not matter much for firms that are highly dependent on outside funding, if they produce goods that are highly tradable (IMF, 2009).

These explanations could all be valid to some extent, except perhaps the last one, because, as we found in Tables 1 and 2, GDP growth of trading partners tended to be faster in recoveries with credit. But our preceding analysis underlined that one more factor has to be added:

10. The results of the probit model estimates of Bijsterbosch and Dahlhaus (2011) are consistent with this interpretation, since they find that among the statistically significant variables linked to the incidence of creditless recoveries, two variables, the preceding output fall and the occurrence of a bank

cluding that recently, limited credit supply was an important factor in credit developments in several advanced economies. Hampell and Sorensen (2010) adopt a panel-econometric approach applied to a unique confidential dataset of results from the Eurosystem's bank lending survey, and conclude that even after controlling for various demand-side factors, loan growth is negatively affected by supply-side constraints. Using a different technique – panel vector autoregression identified with sign restrictions – Hristov, Hülsewig and Wollmershäuser (2012) find that loan-supply shocks significantly contributed to the evolution of the loan volume and real GDP growth in euro-area member countries during the financial crisis. The role of credit supply is also corroborated by country-specific studies, for example for Italy by Del Giovane *et al.* (2012) and for Spain by Jiménez *et al.* (2012).

Empirical results for non-euro area countries are similar. Aiyar (2011) looked at UK banks using detailed confidential balance sheet data reported to the Bank of England, and found that shocks to foreign funding caused a substantial pullback in domestic lending.

Using US firm-level data, Becker and Ivashina (2011) interpret switching by firms from loans to bonds as a contraction in credit supply,

and likely has an implication for the speed of economic recovery. By studying 84 recoveries in 17 OECD countries between 1960-2007, Allard and Balvy (2011) found that market-based economies experience significantly and durably stronger rebounds than the bank-based economies¹³.

5 CONCLUDING REMARKS

The literature on creditless recoveries is cautiously optimistic, concluding that while they are not optimal because of weak investment performance, they are not rare and the speed of recovery is still impressive. We also found, by studying historical episodes of economic recoveries in 135 countries during the past five decades, that average yearly real GDP growth during the first three years after the trough was 4.7 percent per year in middle-income countries and 3.2 percent per year in high-income countries¹⁴. Many policymakers

crisis erupted, the depreciation in most euro-area countries fell short of these benchmarks. In Ireland, a high-income country, the 15 percent depreciation from pre-crisis peak to 2012 was greater than the benchmark, and the depreciations in Germany (9 percent), the Netherlands (8 percent), Finland (8 percent) and France (8 percent) are not far from it. But the depreciations in Italy (6 percent), Spain (5 percent), Portugal (5 percent) and Greece (4 percent) are far below the benchmark for the middle-income country group, ie the group to which they belong¹⁵. Unfortunately, these southern European countries are also those that experience sizeable contractions in the out-

standing stock of bank loans to non-financial corporations and therefore they face the double challenge of limited real exchange rate depreciation and sizeable contraction in credit¹⁶.

We did not set up a causal model and hence cannot claim that the real exchange rate depreciation was a cause of creditless recoveries, because GDP growth, credit growth and the real exchange rate are endogenous variables. Yet the stylised facts we established suggest that if credit growth does not return, economic recovery may prove to be difficult in the absence of sizeable real exchange rate depreciation.

REFERENCES

- Abiad, Abdul, Giovanni Dell'Ariccia, and Bin Li (2011) 'Credit-less Recoveries', *Working Paper* 11/58, International Monetary Fund
- Adrian, Tobias, Paolo Colla and Hyun Song Shin (2012) 'Which Financial Frictions? Parsing the Evidence from the Financial Crisis of 2007-9', *Working Paper* No. 18335, NBER
- Aiyar, Shekhar (2011) 'How did the crisis in international funding markets affect bank lending? Balance sheet evidence from the United Kingdom', *Working Paper* No. 424, Bank of England
- Allard, Julien and Rodolphe Balvy (2011) 'Market Phoenixes and banking ducks: Are recoveries faster in market-based economies?', *Working Paper* No. 11/213, International Monetary Fund
- Basel Committee (2013) 'Basel Committee releases revised version of Basel III's Liquidity Coverage Ratio', Press Release, Basel Committee on Banking Supervision, 7 January, <http://www.bis.org/press/p130107.htm>
- Bayoumi, Tamim, Jaewoo Lee and Sarma Jayanthi (2006) 'New Rates from New Weights', *Staff Papers* 53(2), 272-305, International Monetary Fund
- Becker, Bo and Victoria Ivashina (2011) 'Cyclicality of Credit Supply: Firm Level Evidence', *Working Paper* No. 17392, NBER
- Bijlsma, Michiel (2013) 'Banks versus markets – the changing financial landscape', *Working Paper*, forthcoming, Bruegel
- Biggs, Michael, Thomas Mayer and Andreas Pick (2009) 'Credit and economic recovery', *Working Paper* No. 218/2009, De Nederlandsche Bank
- Bijsterbosch, Martin and Tatjana Dahlhaus (2011) 'Determinants of credit-less recoveries', *Working Paper* No. 1358, European Central Bank
- Braun, Matas and Borja Larrain (2005) 'Finance and the Business Cycle: International, Inter-Industry Evidence', *European Economic Review* 60(3), 1097-1128
- Calvo, Guillermo A., Alejandro Izquierdo, and Ernesto Talvi (2006a) 'Phoenix Miracles in Emerging Markets: Recovering without credit from systemic financial crises', *Working Paper* No. 12101, NBER
- Calvo, Guillermo A., Alejandro Izquierdo, and Ernesto Talvi (2006b) 'Sudden Stops and Phoenix Miracles in Emerging Markets', *American Economic Review*, 96(2), 405-410
- Claessens, Stijn, M. Ayhan Kose and Marco E. Terrones (2009a) 'A recovery without credit: Possible, but...', 22 May, voxeu.org
- Claessens, Stijn, M. Ayhan Kose and Marco E. Terrones (2009b) 'What happens during recessions, crunches and busts?', *Journal of Economic Surveys* Vol. 24, Issue 60, 653-700

15. In some of these southern euro-area members, the unit labour cost-based REER index depreciated more than the consumer prices index-based REER, even when controlling for the changing composition of the economy (Darvas (2012b)). Unfortunately, the fall in unit labour costs was largely the result of massive lay-offs (Darvas (2012b)), and did not translate into a fall in prices, as discussed by Wolff (2012).

16. In Italy, the real stock of credit to non-financial corporations remained broadly stable until mid-2011, when it started to fall by about 8 percent until end-2012. This cumulative decline is smaller than the declines in Greece, Portugal and Spain and is similar in magnitude to what happened more gradually in Germany between 2008 and 2012.





APPENDIX 2: LIST OF CREDITLESS RECOVERIES

High income countries

Norway 1990

United States 1

Middle income countries

Greece 1987

Low income countries

Guyana 1990