

# What Have We Learned about Creditless Recoveries?

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## Section I. Introduction

Bank credit is considered as a critical factor in facilitating economic activities. However, we do observe creditless recoveries after some recessions, namely economic growth without credit growth. This phenomenon was first documented by Calvo, Izquierdo and Talvi (2006), who study what happens to output and credit after global or “systemic” sudden stop episodes. They find that, on average, output returns quickly to pre-crisis levels, but with weak investment and virtually no recovery in domestic or external credit (so-called “Phoenix miracles”).

In a recent paper, Abiad, Dell’Ariccia and Li (2011) address a broad set of questions regarding creditless recoveries. How common are they, and under what conditions do they tend to occur? How do they differ from “normal” recoveries? Do they reflect impaired financial intermediation? And finally, can and should policymakers respond to them? In this article, we provide a non-technical summary of the new findings in Abiad, Dell’Ariccia and Li (2011) and discuss some of the policy related issues.

Our study proceeds in two steps. First, we use macro data to identify and examine creditless recoveries in a broad set of countries. This analysis focuses on correlations and studies the frequency, duration, shape, and composition of the recoveries. It investigates which types of downturns are more prone to be followed by creditless recoveries. And it asks whether creditless recoveries are associated with worse growth performance, and if so, which components of growth are most affected. Second, we turn to sectoral data to investigate the mechanism behind creditless recoveries. In particular, we use a difference-in-difference approach to identify causal links between credit growth and output performance. If disruptions of financial intermediation are at the roots of creditless recoveries, their effect

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should be felt disproportionately more by those sectors that rely more heavily on external finance.

We find that creditless recoveries—defined as episodes where real credit growth is negative in the first three years following a recession—are not rare. They follow about one in five recessions in a wide set of countries. And while they seem to be more common in developing countries and emerging markets, they also occur in advanced economies.

Creditless recoveries are only incomplete “miracles.” On average, activity recovers by substantially less than in recoveries with credit: output growth is on average a third lower. Put differently, creditless recoveries tend to be weaker and more protracted (i.e., it takes longer for output to return to trend). This result remains when controlling for the characteristics of the preceding recession. And these averages mask wide variations—many creditless “recoveries” are followed by stagnant growth.

Looking at what pre-conditions tend to precede creditless recoveries, the frequency of creditless recoveries doubles when the downturn was preceded by a credit boom, and more than doubles when the downturn was preceded by or coincided with a banking crisis. If the downturn was preceded by both a banking crisis *and* a credit boom, the subsequent recovery would almost certainly be creditless. Currency and sovereign debt crises have a smaller effect, and in the presence of a banking crisis they do not significantly increase the likelihood of a creditless recovery. These findings suggest that the relatively weak macroeconomic performance during creditless recoveries is the result of constrained growth due to impaired financial intermediation. This is consistent with Calvo et al. (2006) who argue that the lack of credit growth during these recoveries can be rationalized with financial frictions preventing firms from obtaining funding for new investment.

Output decompositions buttress this perspective. Investment—which is likely to depend more on credit than consumption—has a disproportionately smaller contribution to growth in creditless recoveries relative to other recoveries, although consumption takes a hit as well. Interestingly, creditless recoveries are not jobless recoveries—employment dynamics are no different on average from those in normal recoveries. Instead, it is productivity and capital deepening which are adversely affected.

Using sectoral data, we test more formally the hypothesis that the weaker macroeconomic performance during creditless recoveries stems from disruptions of financial intermediation. We use industry-level data covering 28 manufacturing industries in 48 countries, from 1964 to 2004, and follow Braun and Larrain (2005) who focus on recessions rather than recoveries and analyze an industry’s performance with the growth rate of industrial production. This measure is then regressed on an array of controls, including multiple sets of fixed effects (to

take care of industry-year, and industry-country specific omitted factors), and our variable of interest, the interaction of a measure of the industry's financial dependence and the creditless recovery dummy.

Braun and Larrain (2005) find that more financially dependent industries perform relatively worse during recessions. Consistent with their result, we find that these industries perform relatively better than less financially dependent industries during all typical recoveries (although, similar to their analysis of “booms”, the result is generally weak and not always significant). During creditless recoveries, however, industries that are more dependent on external finance tend to grow disproportionately less than those that are more self-financed. This result appears economically meaningful. During creditless recoveries, the growth rate of industries that are highly dependent on external finance (at the 85<sup>th</sup> percentile of the index distribution) is over 1.5 percentage points lower than in “normal” recoveries. The same difference drops to 0.4 percentage points for low-dependence industries (those at the 15<sup>th</sup> percentile). This differential effect appears robust. It is present in both advanced economies and emerging markets. It survives when controlling for capital inflows. And it does not seem to depend on measurement issues that may stem from large fluctuations in credit aggregates due to exchange rate movements (in the presence of foreign denominated loans).

The finding that creditless recoveries are suboptimal outcomes associated with impaired financial intermediation is relevant from a policy standpoint. Had causality gone the other way—that is, had creditless recoveries resulted instead from an exogenous decline in the demand for credit, for example due to weak growth prospects—there would have been little room for policy action beyond countercyclical macro measures typically adopted in “normal” recoveries. Given the evidence, however, policies aimed at restoring credit supply should lead to fewer credit constraints and higher growth. The findings are also relevant for the recent global financial crisis. Given the widespread financial sector distress, the retrenchment in cross-border capital flows, and the occurrence of credit and property booms in several countries, the recovery from the crisis is likely to be creditless in a number of economies, and thus slower than average. To contain this effect, continued policy action is required to restore the supply of credit, cushion the effects of deleveraging, and address the undercapitalization of several financial institutions.

The rest of the article is organized as follows: Section II examines creditless recoveries from a macro perspective. Section III presents the sectoral analysis. Section IV concludes.

## **Section II. Macro Perspective**

In this section, we study creditless recoveries from a macro perspective. We examine how creditless recoveries differ from “normal” recoveries, and analyze and compare the duration,

shape, and frequency of these recoveries. We also examine whether creditless recoveries are peculiar to certain sets of countries or follow particular events such as banking crises, currency crises, debt crises, sudden stops, or credit booms. For now, we focus on associations and do not attempt to establish causal links between the variables, leaving that for the sectoral analysis in the next section.

In this section, we address what we have learned about creditless recoveries, including:

1. How to define creditless recoveries?
2. How common are they?
3. How are creditless recoveries different from other recoveries?
4. How to decompose creditless recoveries?

Before we can define creditless recoveries we first need to define what countries are recovering from. We identify economic downturns following the methodology in Braun and Larrain (2005). Recessions are identified based on fluctuations of real annual GDP.<sup>2</sup> Specifically, a Hodrick-Prescot filter is used to extract the trend in the logarithm of real GDP. The smoothing parameter is set at 6.25 as recommended for annual data by Ravn and Uhlig (2002). Recessions are identified whenever the cyclical component of GDP (detrended real output) exceeds one country-specific standard deviation below zero. The recession is then dated as starting the year following the previous peak in (detrended) real output, and continuing until the year of the trough (when the cyclical component is at its lowest point). We then define the “recovery period” as the first three years following the trough of a recession. This simplifies the distinction between creditless and normal recoveries and limits problems associated with “double dip” recessions. This methodology identifies 388 recoveries, roughly equally divided between advanced OECD countries, emerging markets, and low-income countries.<sup>3</sup>

We focus on bank credit to the private sector, as measured in line 22d of the *IFS*. This is a choice of necessity. The series is the only one available with broad cross-country and time-series coverage. One shortcoming is that it does not include credit extended by non-bank financial intermediaries. For most countries this is not a major issue. But for a couple of cases, such as the U.S., a critical portion of the financial sector is not covered by the data. A

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<sup>2</sup> We use real GDP data from WDI, extended using WEO data to 2008-09 where available. This data covers 172 countries, from 1960-2009 (unbalanced).

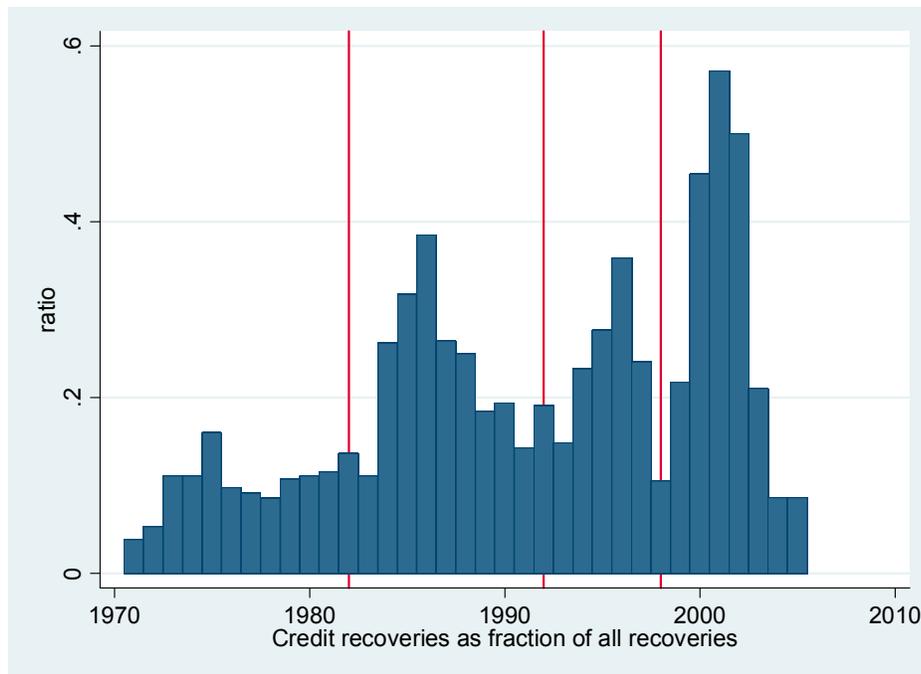
<sup>3</sup> The country groups are defined in the Data Appendix of Abiad, Dell’Ariccia and Li (2011). Emerging markets are the 26 countries covered in the MSCI EM index, advanced OECD refers to the 23 OECD members not in the emerging markets group, and LIC refers to low-income countries according to the World Bank’s income classification.

*creditless recovery* is then defined as one in which the growth rate of real bank credit (deflated by the GDP deflator) is zero or negative in the first three years of recovery.

Creditless recoveries are not rare. They represent about one-fifth of all recoveries. But there are more than slight differences in their distribution across country groups. In particular, creditless recoveries are more common in low income countries and emerging markets than in advance economies, where they represent only about 10 percent of all recoveries. Indeed, a Pearson chi-square test rejects at the 10 percent level the null hypothesis that the relative frequency of creditless recoveries is the same across country groups. This suggests that these events tend to be more common in countries with less developed financial markets. Indeed, the cross-country correlation between financial development (measured by the average credit-to-GDP ratio over the sample period) and the frequency of creditless recoveries is about -0.2.

There is also substantial time-series variation in the relative frequency of creditless recoveries. In particular, creditless recoveries tend to be clustered geographically and around three peak periods (Figure 1). These clusters follow the Latin American debt crisis of the early 1980s, the ERM crisis and Scandinavian banking crises of the early 1990s, and the Asian crisis of the late 1990s.

Figure 1. Creditless Recoveries over Time



The question then arises: to what extent are creditless recoveries associated with the nature of the preceding recession? In particular, we are interested in the predictive power of specific

events such as credit booms, banking and currency crises, and real-estate booms and busts. If creditless recoveries are the result of an impaired financial intermediation, they should be more likely in the aftermath of events associated with disruptions in the credit supply.

We first focus on downturns associated with a systemic banking crisis, as defined by Laeven and Valencia (2008). If a systemic banking crisis occurred in the two years prior to or the year coinciding with a downturn, the frequency of creditless recoveries is three times as high as when there is no banking crisis. Nevertheless, only about half of banking crises are followed by a creditless recovery.

Both currency and sovereign debt crises seem to have some influence independent of the effect of banking crises. In the absence of a banking crisis, a currency crisis preceding a recession doubles the frequency of creditless recoveries, and a sovereign debt crisis more than doubles it. But conditional on a banking crisis, the occurrence of either a currency crisis or a sovereign debt crisis does not seem to be associated with a significantly higher frequency of creditless recoveries.

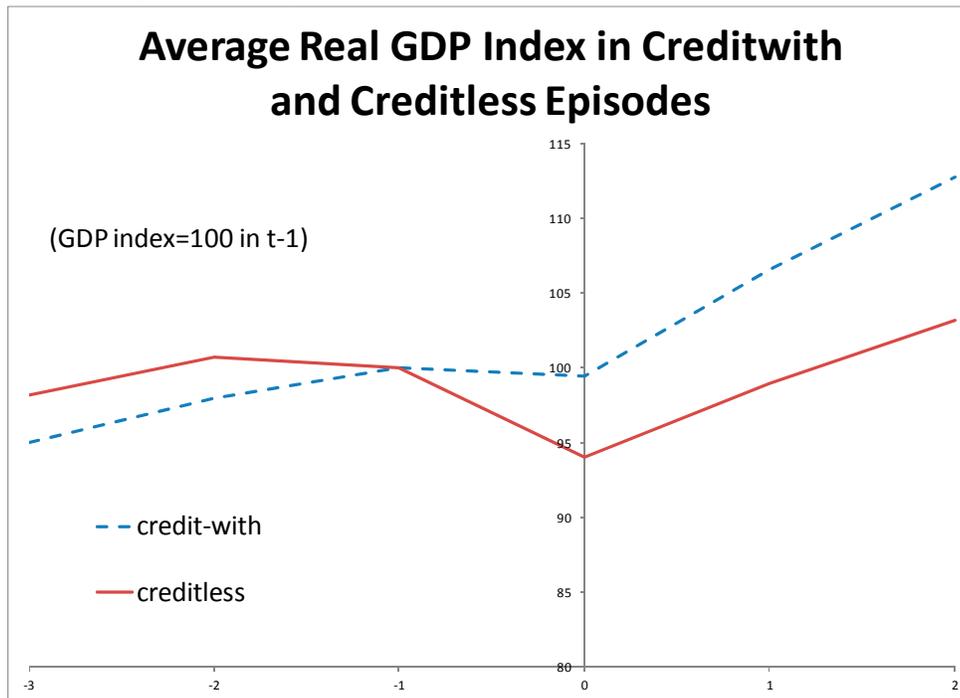
Finally, we look at downturns preceded by a credit boom, using the methodology developed in Mendoza and Terrones (2008). The occurrence of a credit boom prior to the downturn doubles the relative frequency of creditless recoveries. But the effects of a credit boom are weak when there is no banking crisis; instead, it is when downturns are preceded by both a credit boom *and* a banking crisis that creditless recoveries become most likely.

If creditless recoveries tend to follow a credit boom-bust cycle, do they also tend to follow boom-bust cycles in the property market? In the absence of reliable cross-country housing price data, we rely on construction investment data as a proxy, and we do find that creditless recoveries are associated with construction boom-bust cycles. In particular, we find that, on average, creditless recoveries are preceded by a collapse in construction investment (with an average decline of about 17 percent). In contrast, construction investment growth is essentially zero before recoveries with credit. To the extent that a collapse in construction investment signals a housing bust, we interpret this result as evidence that creditless recoveries are associated with the destruction of collateral value (and the consequent increase in agency problems) stemming from sharp declines in real estate prices.

Creditless recoveries are less desirable than “normal” ones from a growth performance standpoint. For our broader sample of recessions, average output growth in creditless recoveries is 4.5 percent per year, compared to about 6.3 percent in recoveries with credit. As a consequence, output is also slower to return to trend. Output returns to trend within three years from the end of the recession in less than half of creditless recoveries, compared to over two thirds of recoveries with credit. In part, this reflects the fact that creditless

recoveries tend to be preceded by deeper recession. But it is also the result of the differential in growth rates. This is consistent with financial accelerator models. Greater destruction of collateral value associated with a deeper recession will translate in a more sluggish credit growth in the recovery, as shown in Figure 2.

Figure 2. Comparison of Creditless with Normal Recoveries

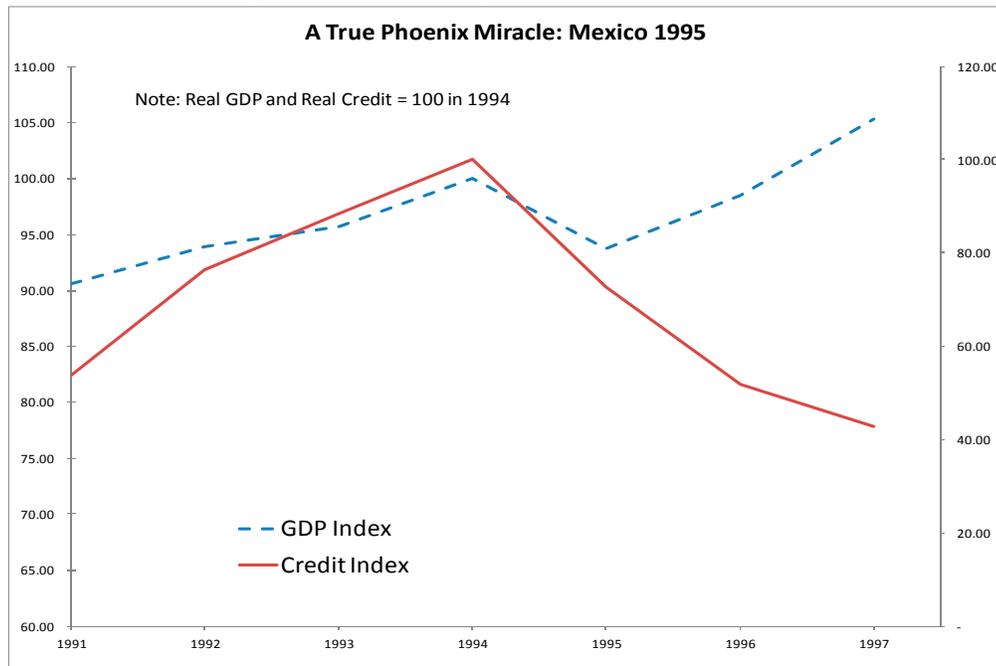


Calvo et al. (2006) document the characteristics of recoveries after systemic sudden stop (3S) episodes. They find that after these episodes economies on average experience a quick, but creditless, recovery and dubbed the phenomenon a “Phoenix miracle”. We find that over half of 3S episodes in our sample are indeed creditless, and average growth during 3S creditless recoveries is indeed quite high—3.9 percent, compared to 4.3 percent during 3S recoveries with credit—which is consistent with Calvo et al.’s (2006) findings.

A closer inspection, however, reveals a bimodal distribution, similar to what Huntley (2008) describes. But going beyond Huntley (2008), we identify the cause of the bimodality: what matters is whether the 3S episode is associated with a banking crisis or not. For 3S episodes that did not result in a banking crisis, the recovery has always been one with positive real credit growth, and output returns to trend within three years in most (5 out of 6) cases. In contrast, during 3S episodes associated with a banking crisis, 80 percent of the recoveries are creditless, and in two-thirds of these episodes output does not return to trend within three years.

That said, we do find a few “true miracles”; exceptional cases in which output recovers sharply in the absence of credit growth. In our sample, Chile and Uruguay in 1984-86, Mexico 1995-98, Argentina 2003-05, fit this description. Figure 3 shows an example of true Phoenix Miracles, observed in the Mexico 1995 episode. These events follow exceptionally deep recessions. Mexico, the possible exception, experienced a drop in output in excess of 6 percent in 1996, and the other three countries all witness double-digit falls during their recessions. It is, then, possible that these “miracles” are in part due to a rebound effect.

Figure 3: One Example of Phoenix Miracles



To shed some light on the difference in macroeconomic performance between creditless and “normal” recoveries, we decompose aggregate growth in its demand components. During creditless recoveries, the contributions of consumption and investment to output growth are roughly one percentage point lower than during normal recoveries, fully accounting for the two percentage point difference in output growth between creditless and with-credit recoveries. In relative terms, however, the contribution of investment falls by roughly half against a fall by a third in that of consumption. This suggests that the components of aggregate demand more dependent on credit contribute the most to the difference in growth rates relative to with-credit recoveries. Net exports do not, on average, contribute to output growth during recoveries, regardless of credit dynamics. To be clear, the external sector does contribute positively to growth during the recession as the current account improves (often swinging from negative to positive). But during the recovery, both exports and imports increase, resulting on average in a roughly null contribution to growth.

Growth accounting points in the same direction. Lower growth during creditless recoveries can be ascribed to lower capital accumulation and lower TFP growth. These results are consistent with what Calvo et al. (2006) find for 3S episodes. Lower capital accumulation is consistent with the results for demand decomposition. Lower TFP growth may indicate that younger and start-up firms, which typically have higher productivity growth, find it more difficult than others to obtain credit during these episodes. It is also consistent with the notion that an impaired financial system is less efficient in reallocating capital across sectors as needed to absorb asymmetric shocks.

In contrast, employment growth (or alternatively, the decline in the unemployment rate) seems independent from the evolution of credit during the recovery. We interpret these results as suggesting that it is, again, the more credit dependent components that suffer during creditless recoveries. As pointed out by Calvo et al. (2006), these results are consistent with a situation where, because of financial frictions, firms can obtain short-term credit for working capital but cannot obtain long-term financing for physical capital.

### III. SECTORAL ANALYSIS

In this section, we test empirically the hypothesis that creditless recoveries (and the associated lower output performance) are the result of impaired financial intermediation. Our identification strategy relies on the notion that, in the presence of market imperfections, different sources of funds (bank credit, the issuance of tradable bonds, and equity) are not perfect substitutes. Then, if creditless recoveries stem from disruptions in the supply of bank credit, firms and industries that are more reliant on credit should perform relatively worse. By contrast, if the creditless nature of the recovery were demand driven, sector's performances should not differ in a systematic way.

Our analysis follows the difference-in-difference approach employed by several studies focusing on the real effects of banking crises and financial development. We use industry-level data from manufacturing sectors in both advanced economies and emerging countries during 1970—2004. Industries are ranked according to the Rajan and Zingales index of external financial dependence, defined as capital expenditures minus cash flow from operations divided by capital expenditures. The differential performance of growth in real value-added and industrial production during recoveries across these industries within a particular country is the main channel through which the real impact of credit is identified.

We adopt the same working assumption as in Rajan and Zingales (1998), later employed among others by Braun and Larrain (2005), Krozner et al. (2007), and Dell'Ariccia et al. (2008): External dependence is determined by technological factors, such as production time, capital intensity, and the importance of R&D investment. And while the absolute value of the index may

vary across countries and time, for the methodology to work it is sufficient that the industry ranking remains broadly the same. Rajan and Zingales (1998) support this assumption with data from Canada.

We start by looking at the relative performance of credit-dependent sectors during all recoveries (irrespective of credit conditions). Braun and Larrain (2005) find that more credit-dependent sectors suffer disproportionately during recessions (when agency problems become more severe). Hence, one would expect them to perform relatively better during recoveries, as agency problems diminish.

We run the following regression on recoveries as our baseline specification.

$$\begin{aligned} Growth_{i,c,t} = & a_1 Share_{i,c,t-1} + a_2 Recovery_{c,t} + a_3 CreditlessRecovery_{c,t} \\ & + a_4 (Recovery_{c,t} \times Dependence_i) + a_5 (CreditlessRecovery_{c,t} \times Dependence_i) \\ & + \sum_{i,c} \beta_{i,c} \times d_{i,c} + \sum_{i,t} \beta_{i,t} \times d_{i,t} + \varepsilon_{i,c,t} \end{aligned}$$

The dependent variable is the growth rate of industrial production in industry  $i$  at time  $t$  in country  $c$ . Regressors include two sets of fixed effects (industry-year and industry-country) and the variable of interest, an interaction term equal to the product of the financial dependence measure for industry  $i$  and the recovery dummy for year  $t$  and country  $c$ . Following Rajan and Zingales (1998), we also include the lagged share of industry  $i$  in country  $c$  to account for “convergence” effects, i.e., the tendency of larger industries to experience slower growth.

The variable  $d_{i,t}$  denotes the industry-year dummy, and  $d_{i,c}$  is the industry-country dummy.  $Share_{i,c,t-1}$  is the size of the industry in the country at the time  $t-1$ .  $Dependence_i$  is the industry-level financial dependence, which follows the Rajan and Zingales (1998) methodology, and is assumed to be constant across years.  $Recovery_{c,t}$  is a dummy taking value 1 in the three years following the trough of a recession in country  $c$  at year  $t$ .  $CreditlessRecovery_{c,t}$  is a dummy equal to one when real credit growth is negative during a recovery. We expect the sum of  $\alpha_2$  and  $\alpha_3$ , reflecting the level effect of creditless recoveries, to be positive. But based on the results from the macro section, we expect  $\alpha_3$  to be negative; the macroeconomic performance during creditless recoveries is weaker than during standard ones. Furthermore, the coefficient  $\alpha_5$  allows us to have a comparison between the sectoral growth and the type of the recovery. In particular, a negative  $\alpha_5$  would indicate that sectors more reliant on external finance perform relatively worse during creditless recoveries. This would in turn lend support to our claim that creditless recoveries are the result of disruptions in the credit supply.

The evidence from sectoral data suggests that creditless recoveries are indeed the result of impaired financial intermediation. During these episodes, sectors more dependent on external finance perform relatively worse. These results are statistically and economically significant and survive several robustness tests.

**Table 1: The Effect of Creditless Recoveries on Sectoral Growth**

VARIABLES	OECD+EM	OECD	EM
size (lagged)	-0.0064 [-0.187]	0.0703* [1.873]	-0.0654 [-1.249]
recovery	0.0273*** [17.645]	0.0230*** [14.366]	0.0328*** [11.473]
creditless recovery	-0.004 [-1.147]	-0.0048 [-1.291]	-0.004 [-0.639]
recovery x dependence	0.0091** [2.380]	0.0049 [1.193]	0.0147** [2.105]
creditless recovery x dependence	-0.0190** [-2.169]	-0.0200** [-2.033]	-0.0265* [-1.730]
Observations	35,796	20,006	15,790
R-squared	0.207	0.347	0.186
Creditless Recovery			
Change in growth rate for high dependence industry	-1.5%	-1.6%	-2.0%
Change in growth rate for low dependence industry	-0.4%	-0.4%	-0.4%
Implied differential effect	-1.1%	-1.2%	-1.5%

Robust t-statistics in brackets

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

This table presents the results from Regression (3) in the text.

The dependent variable is the yearly growth rate in the production index of each ISIC-3 industry in each country computed from the UNIDO Indstat-3 (2006) data set. Lagged size is the share of a country's total manufacturing value added that corresponds to the industry in the previous year. Recovery is a dummy variable that takes a value of 1 when the year and country observation has been identified as recovery as explained in the text, and is 0 otherwise. Creditless recovery is a dummy variable that takes a value of 1 when the year and country observation has been identified as creditless recovery as explained in the text, and is 0 otherwise. External finance dependence is the average figure for each industry in the Rajan and Zingales (1998) index. The set of dummies includes industry-year and country-industry (two sets of cross dummies) fixed effects (coefficients not reported).

The findings of our regression are shown in Table 1. The level coefficient for creditless recoveries is negative as expected, but is not significant, suggesting that the gap in performance between creditless and with-credit recoveries identified in the macro analysis depends in large part on sectoral effects. Indeed, the coefficient of the interaction term of creditless recoveries and

credit dependence is consistently negative across all specifications. This indicates that industries more dependent on external finance perform relatively worse when the recovery is not accompanied by credit growth. The result loses some significance but remains stable when we split the sample in advanced countries and emerging markets. The difference in performance is economically meaningful. During creditless recoveries, the growth rate of industries that are highly dependent on external finance (at the 85<sup>th</sup> percentile of the index distribution) is over 1.5 percentage points lower than in “normal” recoveries. The same difference drops to 0.4 percentage points for low dependence industries (those at the 15<sup>th</sup> percentile). This across-industry difference in performance is even more pronounced in emerging markets (the cross-sector differential is 1.5 percentage points versus 1.2 percentage points for advanced economies), likely reflecting the scarcity of alternative sources of funding and/or more pervasive agency problems.

In addition to the baseline specification, we perform a variety of robustness tests. Details are provided in Abiad, Dell’Ariccia and Li (2011). The results of the robustness tests support our baseline findings. First, we exclude all episodes with exchange rate depreciations in excess of 20 percent. The concern here is that sharp exchange rate falls may lead us to misclassify creditless recoveries as with-credit recoveries, through their effect on the stock of foreign credit measured in domestic currency. Our main coefficient of interest maintains sign and significance. Further, consistent with our concern of depreciation blurring the line between creditless and with-credit recoveries, it is larger than in our baseline specification. Second, we control for the effect of capital inflows. Again, the coefficient of interest maintains sign and significance, and remains broadly stable in size. The coefficient of the capital-flows-to-GDP variable is positive and significant as expected. In addition, capital flows seem to favor sectors that are more heavily dependent on external finance.

In addition, to control for omitted country-time specific variables, we include a third set of fixed effects in the regression. As discussed above, these will take care of any omitted variable that does not vary simultaneously across all three dimensions of our data. All coefficients maintain the same sign and significance as in the previous regressions. The differential effect between sectors at the 85<sup>th</sup> percentile and the 15<sup>th</sup> percentile of the distribution of the external dependence index continue to range between about 1 percentage points and 1.5 percentage points, which are roughly of the same magnitude as in the other regressions.

#### IV. CONCLUSION

This article summarizes our new findings in Abiad, Dell’Ariccia and Li (2011) regarding the puzzling phenomenon of creditless recoveries. In contrast to previous studies, we find: (1) Creditless recoveries, while not the norm, are far from rare. They follow about one in five recessions. (2) Creditless recoveries are somewhat less desirable than “normal” recoveries. Output growth is on average a third lower. (3) They are preceded by events likely to disrupt the

supply of credit, such as banking crises, credit booms, and real-estate boom-bust cycles. (4) Investment has a disproportionately lower contribution to growth than in “normal” recoveries and productivity and capital deepening are adversely affected. (5) Industries more reliant on external finance seem to grow disproportionately less during creditless recoveries.

Overall, both the macro-level and sectoral evidence supports the hypothesis that creditless recoveries are the result of impaired financial intermediation: their lower growth performance likely the outcome of a constrained allocation of resources. The results are consistent with agents delaying or downsizing their more credit dependent investment and expenditure decisions and firms more dependent on external finance being forced to curtail their activities.

This finding is relevant from a policy standpoint. During creditless recoveries, policy measures aimed at restoring financial intermediation are likely to lead to higher growth. Of course, the obstacles to efficient financial intermediation will vary from case to case and policies should be adapted accordingly. For instance, the lack of credit growth may be caused by stress on banks’ balance sheets that could be addressed by recapitalizing banks (possibly with public intervention). Alternatively, the lack of credit growth could result from an over-indebted private non-financial sector. Even in the presence of relatively healthy banks, debt overhang would exacerbate agency problems and prevent an efficient allocation of capital. In this case, the response would be much more complex and would have to entail policies to facilitate deleveraging or possibly debt restructuring. Finally, given the association of creditless recoveries with banking crises, credit booms, and real-estate boom-bust cycles and their lower growth performance, supportive measures (including a more expansionary macroeconomic stance) could be taken in anticipation of a less buoyant recovery phase when the recession is associated with these events.

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