

When Credit Bites Back

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PDF

Abstract

Using data on 14 advanced countries between 1870 and 2008 we document two key facts of the modern business cycle: relative to typical recessions, financial crisis recessions are costlier, and

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Adrian, Tobias, and Hyun Song Shin. (2012) "Procyclical Leverage and Value-at-Risk." Federal Reserve Bank of New York Staff Reports, No. 338.

[Google Scholar](#) 

Backus, David, and Patrick Kehoe. (1992) "International Evidence on the Historical Properties of Business Cycles." *American Economic Review*, 82, 864–88.

[Web of Science®](#)  | [Google Scholar](#) 

Barro, Robert J., and José F. Ursúa. (2008) "Macroeconomic Crises since 1870." *Brookings Papers on Economic Activity*, 1, 255–335.

[Google Scholar](#) 

Basu, Susanto, and Alan M. Taylor. (1999) "Business Cycles in International Historical Perspective." *Journal of Economic Perspectives*, 13, 45–68.

[Web of Science®](#)  | [Google Scholar](#) 

Battacharya, Sudipto, Charles A. E. Goodhart, Dimitrios P. Tsomocos, and Alexandros P. Vardoulakis. (2011) "Minsky's Financial Instability Hypothesis and the Leverage Cycle." London School of Economics, Financial Markets Group Special Paper 202.

[Google Scholar](#) 

Bernanke, Ben, and Mark Gertler. (1990) "Financial Fragility and Economic Performance." *Quarterly Journal of Economics*, 105, 87–114.

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Bordo, Michael D., Barry Eichengreen, Daniela Klingebiel, and María Soledad Martínez-Pería. (2001) "Is the Crisis Problem Growing More Severe?" *Economic Policy*, 16, 53–83

[Google Scholar](#) 

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Brunnermeier, Markus K., and Yuliy Sannikov. (2012) "Redistributive Monetary Policy." In *The Changing Policy Landscape*. Proceedings of the 2012 Jackson Hole Economic Policy Symposium, Jackson Hole, WY, August 31–September 1, 2012. Kansas City, MO: Federal Reserve Bank of Kansas City.

[Google Scholar](#) 

Bry, Gerhard, and Charlotte Boschan. (1971) *Cyclical Analysis of Time Series: Selected Procedures and Computer Programs*. New York: NBER.

[Google Scholar](#) 

Cerra, Valerie, and Sweta C. Saxena. (2008) "Growth Dynamics: The Myth of Economic Recovery." *American Economic Review*, 98, 439–57.

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Claessens, Stijn, M. Ayhan Kose, and Marco E. Terrones. (2011) "Financial Cycles: What? How? When?" In *NBER International Seminar on Macroeconomics 2010*, edited by Richard Clarida and Francesco Giavazzi, pp. 303–43. Chicago: University of Chicago Press.

[Google Scholar](#) 

Economic Report of the President, January 2009. 2009. Washington, DC: U.S. Government Printing Office.

[Google Scholar](#) 

Eggertsson, Gauti B., and Paul Krugman. (2012) "Debt, Deleveraging, and the Liquidity Trap: A Fisher Minsky Koo Approach." *Quarterly Journal of Economics*, 127, 1469–513.

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Fisher, Irving. (1933) "A Debt-Deflation Theory of Great Depressions." *Econometrica*, 1, 337–57.

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Harding, Don, and Adrian Pagan. (2002) "Dissecting the Cycle: A Methodological Investigation." *Journal of Monetary Economics*, 49, 365-81.

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Howard, Greg, Robert Martin, and Beth Anne Wilson. (2011) "Are Recoveries from Banking and Financial Crises Really So Different?" Federal Reserve Board of Governors, International Finance Discussion Papers 1037.

[Google Scholar](#)

Jordà, Òscar. (2005) "Estimation and Inference of Impulse Responses by Local Projections." *American Economic Review*, 95, 161-82.

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Jordà, Òscar, Moritz Schularick, and Alan M. Taylor. (2011) "Financial Crises, Credit Booms and External Imbalances: 140 Years of Lessons." *IMF Economic Review*, 59, 340-78.

[Web of Science®](#) | [Google Scholar](#)

IMF. (2010) International Financial Statistics. <http://www.imf.org/external/data.htm>. (Accessed October 2012).

[Google Scholar](#)

King, Mervyn. (1994) "Debt Deflation: Theory and Evidence," *European Economic Review*, 38 (3-4), 419-45.

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Kroszner, Randall S. (2010) "Implications of the Financial Crisis for the Grand Challenge Questions for the NSF/SBE." http://www.nsf.gov/sbe/sbe_2020/2020_pdfs/Kroszner_Randall_304.pdf. (Accessed October 2012).

[Google Scholar](#)

Laeven, Luc, and Fabian V. Valencia. (2008) "Systemic Banking Crises: A New Database." IMF Working Paper

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Mian, Atif, and Amir Sufi. (2010) "Household Leverage and the Recession of 2007 to 2009." *IMF Economic Review*, 58, 74-117.

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Minsky, Hyman. (1986) *Stabilizing an Unstable Economy*. New Haven, CT: Yale University Press.

[Google Scholar](#)

OMB. (2012) *Budget of the U.S. Government, Fiscal Year 2013*. Washington, DC: Office of Management and Budget. <http://www.whitehouse.gov/sites/default/files/omb/budget/fy2013/assets/spec.pdf>.

[Google Scholar](#)

Pozsar, Zoltan, Tobias Adrian, Adam Ashcraft, and Hayley Boesky. (2010) "Shadow Banking." Federal Reserve Bank of New York Staff Reports 458.

[Google Scholar](#)

Reinhart, Carmen M., and Vincent R. Reinhart. (2010) "After the Fall." In *Macroeconomic Challenges: The Decade Ahead*. Proceedings of the 2010 Jackson Hole Economic Policy Symposium, Jackson Hole, WY, August 26-28, 2010, pp. 17-60. Kansas City, MO: Federal Reserve Bank of Kansas City.

[Google Scholar](#)

Reinhart, Carmen M., and Kenneth S. Rogoff. (2009a) "The Aftermath of Financial Crises." *American Economic Review*, 99, 466-72.

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Reinhart, Carmen M., and Kenneth S. Rogoff. (2009b) *This Time Is Different: Eight Centuries of Financial Folly*. Princeton, NJ: Princeton University Press.

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Schularick, Moritz, and Alan M. Taylor. (2012) "Credit Booms Gone Bust: Monetary Policy, Leverage Cycles, and Financial Crises, 1870–2008." *American Economic Review*, **102**, 1029–61.

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Sheffrin, Steven M. (1988) "Have Economic Fluctuations Been Dampened? A Look at Evidence Outside the United States." *Journal of Monetary Economics*, **21**, 73–83.

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Teulings, Coen N., and Nick Zubanov. (2010) "Is Economic Recovery a Myth? Robust Estimation of Impulse Responses." Tinbergen Institute Discussion Paper 040/3.

[Google Scholar](#)

Tobin, James. (1989) "Review of *Stabilizing an Unstable Economy* by Hyman P. Minsky." *Journal of Economic Literature*, **27**, 105–08.

[Web of Science®](#) | [Google Scholar](#)

Turner, Adair. (2009) "The Financial Crisis and the Future of Financial Regulation." Text of a speech at The Economist's Inaugural City Lecture, January 21. http://www.fsa.gov.uk/library/communication/speeches/2009/0121_at.shtml.

[Google Scholar](#)

Turner, Adair. (2010) "What Do Banks Do, What Should They Do, and What Public Policies Are Needed to Ensure Best Results for the Real Economy?" Text of a speech at Cass Business School, March 17. http://www.fsa.gov.uk/library/communication/speeches/2010/0317_at.shtml.

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