

VoxEU: Predictable financial crises

There is a long-standing debate on whether financial crises can be predicted. This column draws on a chronology of past financial crises and data on credit and asset prices and finds that if there is a large credit expansion with an asset price boom, then financial crises are highly predictable, **writes Robin Greenwood et al**



Source: Shutterstock

How predictable are financial crises?

An important line of thought postulates that they are largely unpredictable. Each of the three principal US policymakers during the 2008 financial crisis has taken this position at different times. Former US Secretary of the Treasury Tim Geithner suggested that “Financial crises cannot be reliably anticipated or pre-empted.” According to former US Secretary of the Treasury Hank Paulson, “My strong belief is that these crises are unpredictable in terms of cause, timing, or the severity when they hit.” According to Federal Reserve Chairman Ben Bernanke, “This crisis involved a 21st century electronic panic by institutions. It was an old-fashioned run in new clothes.” This line of thought is further supported by early empirical studies showing that, even if most crises are preceded by weak economic fundamentals, they are not especially predictable. If these views are correct, then policymakers should concentrate their efforts on ‘firefighting’, or cleaning up after a crisis. But policing market conditions before crises actually happen would be futile.

An alternative view sees financial crises as predictable enough that policymakers should try to prevent or mitigate them *ex ante*. This view sees financial crises as the outcomes of overheated

credit markets, characterized by rapid expansions of credit accompanied by asset price booms (Minsky 1977 and Kindleberger 1978). Borio and Lowe (2002) show that rapid credit growth and asset price growth predict banking crises in 34 countries between 1970 and 1999, spurring numerous academic policy studies on so-called 'early warning indicators'. More recently, Schularick and Taylor (2012) and others have shown that credit expansions and narrow credit spreads predict financial fragility.

Even with all this evidence, precise estimates of the probability of a financial crisis following credit and asset price booms remain unavailable. In Greenwood et al. (2020), we draw on newly available crisis chronologies and data to estimate the probability of financial crises as a function of past credit and asset price growth.

A key quote from the article:

Our first finding is that if there is a large credit expansion with an asset price boom, then financial crises are in fact highly predictable. When either non-financial business credit growth is high and stock market valuations have risen sharply, or when household credit growth is high and home prices have risen sharply, the probability of a subsequent crisis is substantially elevated. This is shown in Table 1, where we list the probability of a financial crisis occurring within three years as a function of past credit and asset price growth. The probability of a crisis beginning within the next three years is 45% when equity price growth is in the top tercile of its historical distribution and business credit growth is in the top quintile of its historical distribution. When home price growth is in the top tercile and household credit growth is in the top quintile, the probability of a crisis beginning within three years is 37%.

We use these results to motivate a simple indicator variable called the Red-zone, or the 'R-zone' for short, that identifies periods of potential credit-market overheating. A country is in the 'business R-zone' if non-financial business credit growth over the past three years is in the top quintile of the historical distribution, and stock market returns over the same window are in the top tercile. Similarly, a country is in the 'household R-zone' if household credit growth over the past three years is in the top quintile of the historical distribution, and stock market returns over the same window are in the top tercile. Using these R-zone predictors, we show that crises are predictable but slow to develop, suggesting that policymakers have time to act based on early warning signs. For example, the US was in the household R-zone in 2002-2006, a clear harbinger of the crisis that started in 2007.

The full and original article first appeared on VoxEU [here](#) on 15 July 2020.

Author

Alissa Lefebvre

Economist

alissa.lefebvre@ing.com

Deepali Bhargava

Regional Head of Research, Asia-Pacific

Deepali.Bhargava@ing.com

Ruben Dewitte

Economist
+32495364780
ruben.dewitte@ing.com

Kinga Havasi
Economic research trainee
kinga.havasi@ing.com

Marten van Garderen
Consumer Economist, Netherlands
marten.van.garderen@ing.com

David Havrlant
Chief Economist, Czech Republic
420 770 321 486
david.havrlant@ing.com

Sander Burgers
Senior Economist, Dutch Housing
sander.burgers@ing.com

Lynn Song
Chief Economist, Greater China
lynn.song@asia.ing.com

Michiel Tukker
Senior European Rates Strategist
michiel.tukker@ing.com

Michal Rubaszek
Senior Economist, Poland
michal.rubaszek@ing.pl

This is a test author

Stefan Posea
Economist, Romania
tiberiu-stefan.posea@ing.com

Marine Leleux
Sector Strategist, Financials
marine.leleux2@ing.com

Jesse Norcross
Senior Sector Strategist, Real Estate
jesse.norcross@ing.com

Teise Stellema

Research Assistant, Energy Transition

teise.stellema@ing.com

Diederik Stadig

Sector Economist, TMT & Healthcare

diederik.stadig@ing.com

Diogo Gouveia

Sector Economist

diogo.duarte.vieira.de.gouveia@ing.com

Marine Leleux

Sector Strategist, Financials

marine.leleux2@ing.com

Ewa Manthey

Commodities Strategist

ewa.manthey@ing.com

ING Analysts

James Wilson

EM Sovereign Strategist

James.wilson@ing.com

Sophie Smith

Digital Editor

sophie.smith@ing.com

Frantisek Taborsky

EMEA FX & FI Strategist

frantisek.taborsky@ing.com

Adam Antoniak

Senior Economist, Poland

adam.antoniak@ing.pl

Min Joo Kang

Senior Economist, South Korea and Japan

min.joo.kang@asia.ing.com

Coco Zhang

ESG Research

coco.zhang@ing.com

Jan Frederik Slijkerman

Senior Sector Strategist, TMT
jan.frederik.slijkerman@ing.com

Katinka Jongkind
Senior Economist, Services and Leisure
Katinka.Jongkind@ing.com

Marina Le Blanc
Sector Strategist, Financials
Marina.Le.Blanc@ing.com

Samuel Abettan
Junior Economist
samuel.abettan@ing.com

Franziska Biehl
Senior Economist, Germany
Franziska.Marie.Biehl@ing.de

Rebecca Byrne
Senior Editor and Supervisory Analyst
rebecca.byrne@ing.com

Mirjam Bani
Sector Economist, Commercial Real Estate & Public Sector (Netherlands)
mirjam.bani@ing.com

Timothy Rahill
Credit Strategist
timothy.rahill@ing.com

Leszek Kasek
Senior Economist, Poland
leszek.kasek@ing.pl

Oleksiy Soroka, CFA
Senior High Yield Credit Strategist
oleksiy.soroka@ing.com

Antoine Bouvet
Head of European Rates Strategy
antoine.bouvet@ing.com

Jeroen van den Broek
Global Head of Sector Research
jeroen.van.den.broek@ing.com

Edse Dantuma

Senior Sector Economist, Industry and Healthcare
edse.dantuma@ing.com

Francesco Pesole
FX Strategist
francesco.pesole@ing.com

Rico Luman
Senior Sector Economist, Transport and Logistics
Rico.Luman@ing.com

Jurjen Witteveen
Sector Economist
jurjen.witteveen@ing.com

Dmitry Dolgin
Chief Economist, CIS
dmitry.dolgin@ing.de

Nicholas Mapa
Senior Economist, Philippines
nicholas.antonio.mapa@asia.ing.com

Egor Fedorov
Senior Credit Analyst
egor.fedorov@ing.com

Sebastian Franke
Consumer Economist
sebastian.franke@ing.de

Gerben Hieminga
Senior Sector Economist, Energy
gerben.hieminga@ing.com

Nadège Tillier
Head of Corporates Sector Strategy
nadege.tillier@ing.com

Charlotte de Montpellier
Senior Economist, France and Switzerland
charlotte.de.montpellier@ing.com

Laura Straeter
Behavioural Scientist
+31(0)611172684
laura.Straeter@ing.com

Valentin Tataru

Chief Economist, Romania

valentin.tataru@ing.com

James Smith

Developed Markets Economist, UK

james.smith@ing.com

Suvi Platerink Kosonen

Senior Sector Strategist, Financials

suvi.platerink-kosonen@ing.com

Thijs Geijer

Senior Sector Economist, Food & Agri

thijs.geijer@ing.com

Maurice van Sante

Senior Economist Construction & Team Lead Sectors

maurice.van.sante@ing.com

Marcel Klok

Senior Economist, Netherlands

marcel.klok@ing.com

Piotr Poplawski

Senior Economist, Poland

piotr.poplawski@ing.pl

Paolo Pizzoli

Senior Economist, Italy, Greece

paolo.pizzoli@ing.com

Marieke Blom

Chief Economist and Global Head of Research

marieke.blom@ing.com

Raoul Leering

Senior Macro Economist

raoul.leering@ing.com

Maarten Leen

Head of Global IFRS9 ME Scenarios

maarten.leen@ing.com

Maureen Schuller

Head of Financials Sector Strategy

Maureen.Schuller@ing.com

Warren Patterson

Head of Commodities Strategy

Warren.Patterson@asia.ing.com

Rafal Benecki

Chief Economist, Poland

rafal.benecki@ing.pl

Philippe Ledent

Senior Economist, Belgium, Luxembourg

philippe.ledent@ing.com

Peter Virovacz

Senior Economist, Hungary

peter.virovacz@ing.com

Inga Fechner

Senior Economist, Germany, Global Trade

inga.fechner@ing.de

Dimitry Fleming

Senior Data Analyst, Netherlands

Dimitry.Fleming@ing.com

Ciprian Dascalu

Chief Economist, Romania

+40 31 406 8990

ciprian.dascalu@ing.com

Muhammet Mercan

Chief Economist, Turkey

muhammet.mercan@ingbank.com.tr

Iris Pang

Chief Economist, Greater China

iris.pang@asia.ing.com

Sophie Freeman

Writer, Group Research

+44 20 7767 6209

Sophie.Freeman@uk.ing.com

Padhraic Garvey, CFA

Regional Head of Research, Americas

padhraic.garvey@ing.com

James Knightley

Chief International Economist, US

james.knightley@ing.com

Tim Condon

Asia Chief Economist
+65 6232-6020

Martin van Vliet

Senior Interest Rate Strategist
+31 20 563 8801
martin.van.vliet@ing.com

Karol Pogorzelski

Senior Economist, Poland
Karol.Pogorzelski@ing.pl

Carsten Brzeski

Global Head of Macro
carsten.brzeski@ing.de

Viraj Patel

Foreign Exchange Strategist
+44 20 7767 6405
viraj.patel@ing.com

Owen Thomas

Global Head of Editorial Content
+44 (0) 207 767 5331
owen.thomas@ing.com

Bert Colijn

Chief Economist, Netherlands
bert.colijn@ing.com

Peter Vanden Houte

Chief Economist, Belgium, Luxembourg, Eurozone
peter.vandenhoute@ing.com

Benjamin Schroeder

Senior Rates Strategist
benjamin.schroeder@ing.com

Chris Turner

Global Head of Markets and Regional Head of Research for UK & CEE
chris.turner@ing.com

Gustavo Rangel

Chief Economist, LATAM
+1 646 424 6464

gustavo.rangel@ing.com

Carlo Cocuzzo

Economist, Digital Finance

+44 20 7767 5306

carlo.cocuzzo@ing.com