

1. European Central Bank

- Eurosystem = ECB + 19 national central banks of Eurozone members
- Primary objective: price stability
- Secondary objective: financial stability
- Decision making bodies
 - Governing Council
 - Executive Board
 - General Council

ECB Executive Board

Consists of six members, including the President (Mario Draghi) and the Vice-President.

Feb 2014



<http://www.ecb.int/ecb/orga/decisions/eb/html/index.en.html>

ECB Governing Council

Consists of the six members of the Executive Board plus the 19 governors of the national central banks of the 19 euro area countries.



Jozef Makúch

Jan 2015



Luis
María
Linde

ECB General Council

Consists of the President and the Vice-President of the ECB plus the governors of the national central banks of the 28 EU Member States.

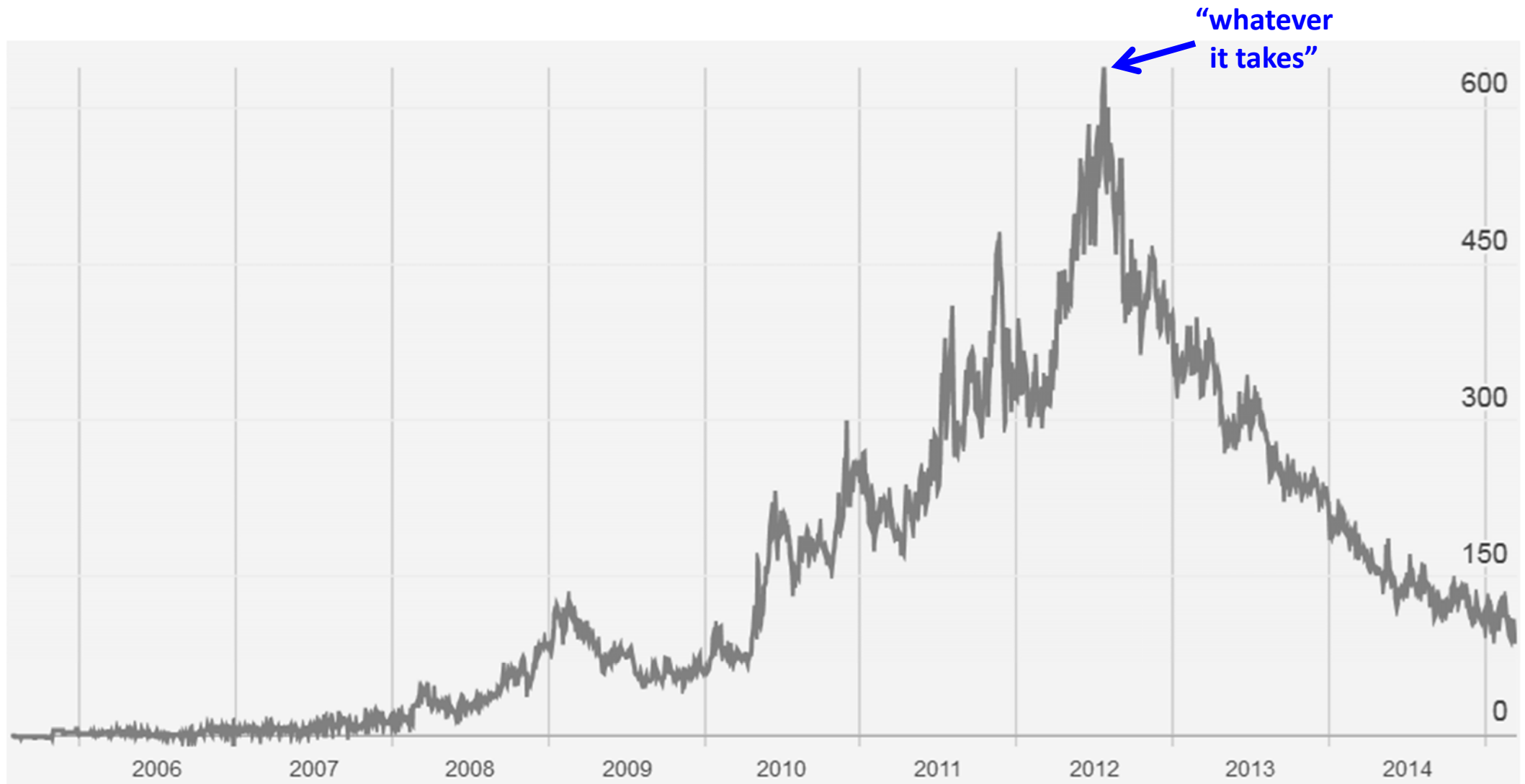
Jan 2015



Mark Carney, Mugur Constantin Isărescu, György Matolcsy, Ilmārs Rimšēvičs, Miroslav Singer, and Yannis Stournaras were not available at the time the photograph was taken.

<http://www.ecb.int/ecb/orga/decisions/genc/html/index.en.html>

Spain – spread to Germany (indicator of sovereign default risk)



12/03/2014 = 87

<http://www.datosmacro.com/prima-riesgo/espana>

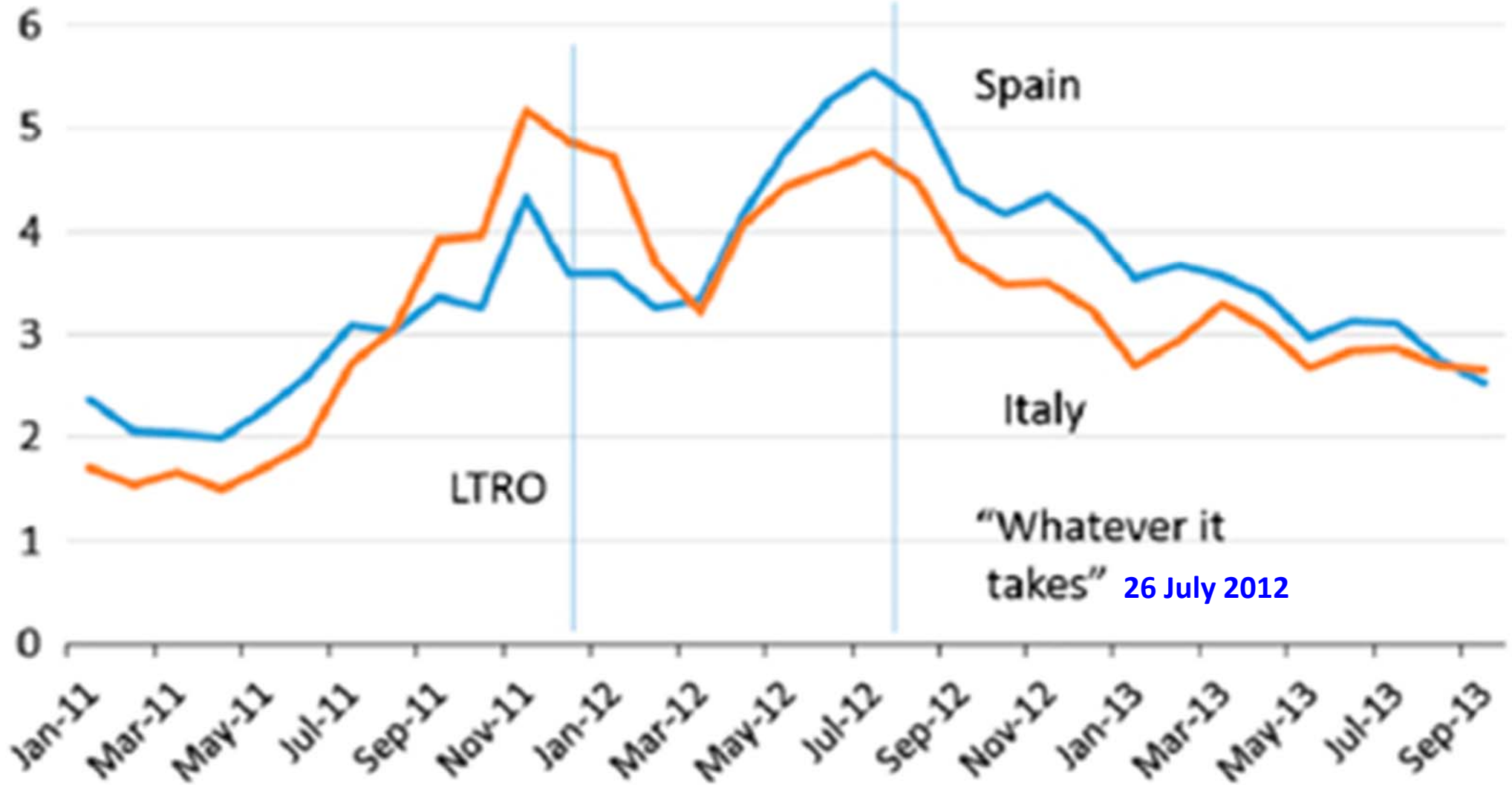
“When people talk about the fragility of the euro (... they...) underestimate the amount of political capital that is being invested in the euro.

(...) we think the euro is irreversible. And it's not an empty word now, because I preceded saying exactly what actions have been made, are being made to make it irreversible.

But there is another message I want to tell you. Within our mandate, the ECB is ready to do whatever it takes to preserve the euro. And believe me, it will be enough.”

Mario Draghi, 26 July 2012

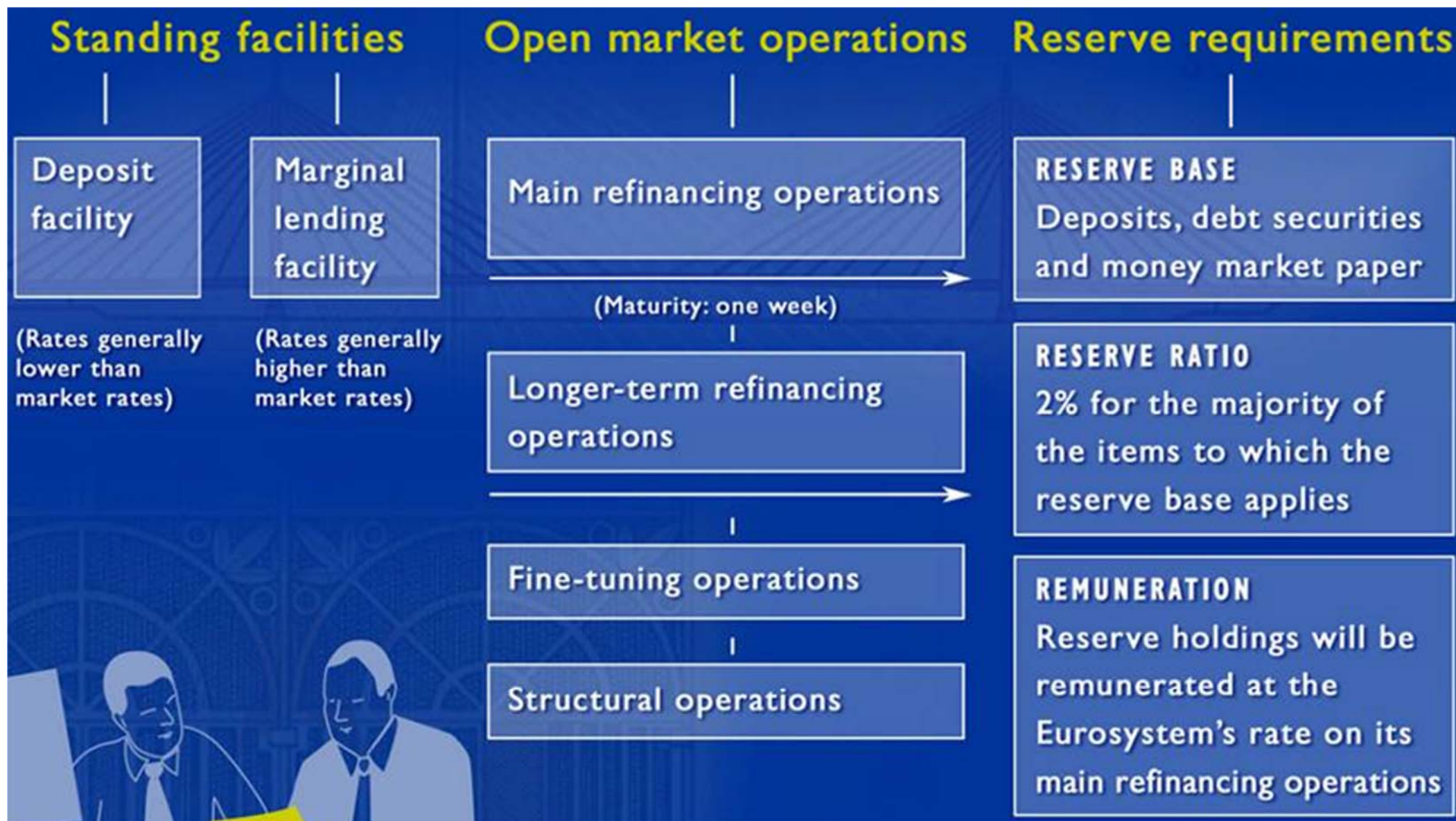
Spreads against Germany in Southern Europe



<http://www.palgrave-journals.com/imfer/journal/v62/n4/full/imfer20149a.html>

2. Monetary tools of the ECB

- Main refinancing operations
 - fixed rate tender
 - variable rate tender
- Standing facilities: lending / deposit
- Policy interest rate
- Reserve requirements

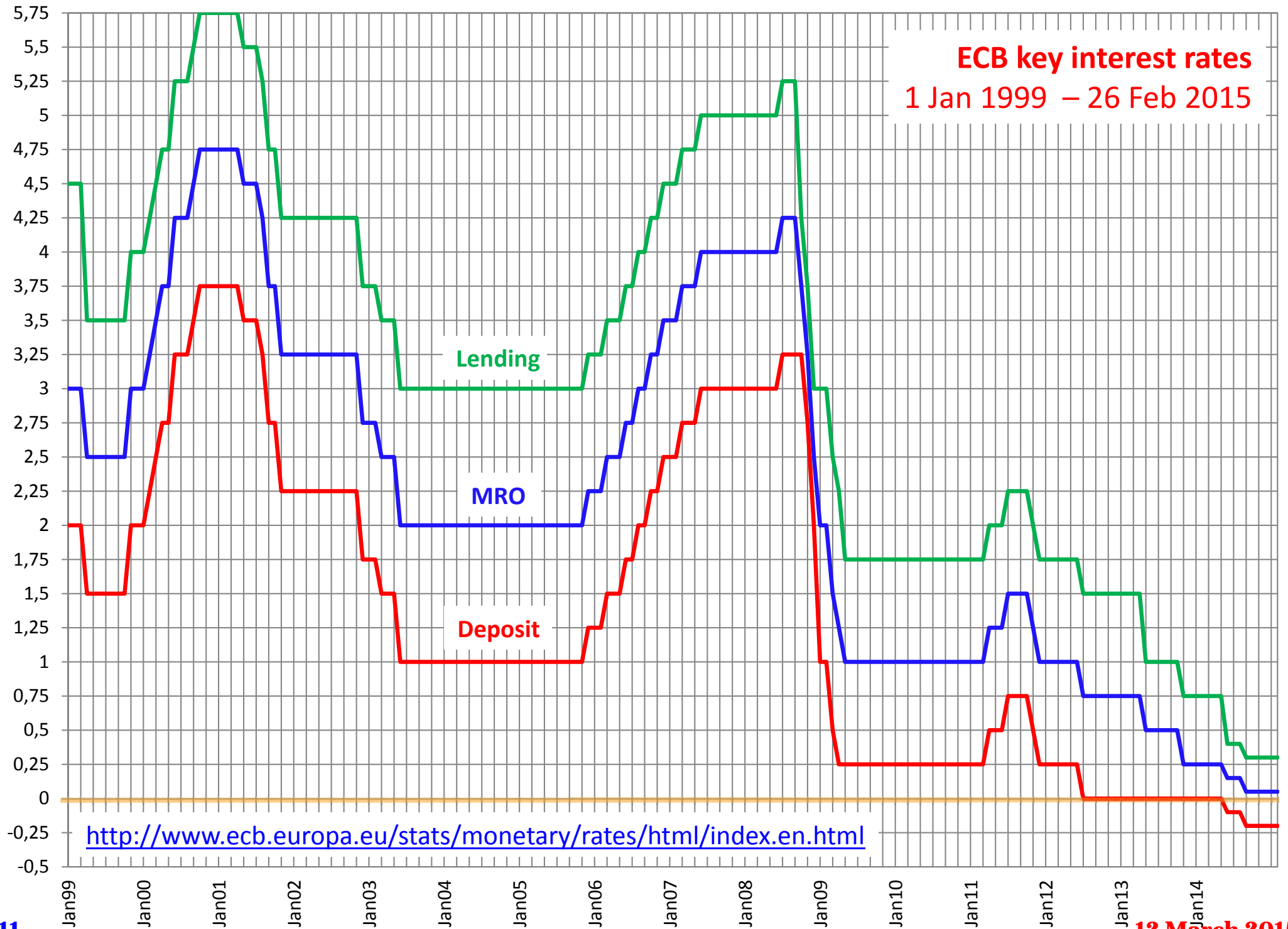


Monetary policy instruments of the European Central Bank

http://www.ecb.int/ecb/educational/shared/img/presentation_mp.en.zip

<u>Name of interest rate</u>	13 Feb 2015	<u>country/region</u>	<u>current rate</u>	<u>direction</u>	<u>previous rate</u>	<u>change</u>
American interest rate FED		United States	0.250 %	↓	1.000 %	12-16-2008
Australian interest rate RBA		Australia	2.250 %	↓	2.500 %	02-03-2015
Banco Central interest rate		Chile	3.000 %	↓	3.250 %	10-16-2014
Bank of Korea interest rate		South Korea	2.000 %	↓	2.250 %	10-15-2014
Brazilian interest rate BACEN		Brazil	12.250 %	↑	11.750 %	01-21-2015
British interest rate BoE		Great Britain	0.500 %	↓	1.000 %	03-05-2009
Canadian interest rate BOC		Canada	0.750 %	↓	1.000 %	01-21-2015
Chinese interest rate PBC		China	5.600 %	↓	6.000 %	11-21-2014
Czech interest rate CNB		Czech Republic	0.050 %	↓	0.250 %	11-01-2012
Danish interest rate Nationalbanken		Denmark	0.050 %	↓	0.200 %	01-19-2015
European interest rate ECB		Europe	0.050 %	↓	0.150 %	09-04-2014
Hungarian interest rate		Hungary	2.100 %	↓	2.300 %	07-22-2014
Indian interest rate RBI		India	7.750 %	↓	8.000 %	01-15-2015
Indonesian interest rate BI		Indonesia	7.750 %	↑	7.500 %	11-18-2014
Israeli interest rate BOI		Israel	0.250 %	↓	0.500 %	08-25-2014
Japanese interest rate BoJ		Japan	0.100 %	↓	0.100 %	10-05-2010
Mexican interest rate Banxico		Mexico	3.000 %	↓	3.500 %	06-06-2014
New Zealand interest rate		New Zealand	3.500 %	↑	3.250 %	07-24-2014
Norwegian interest rate		Norway	1.250 %	↓	1.500 %	12-11-2014
Polish interest rate		Poland	2.000 %	↓	2.500 %	10-08-2014
Russian interest rate CBR		Russia	15.000 %	↓	17.000 %	01-30-2015
Saudi Arabian interest rate		Saudi Arabia	2.000 %	↓	2.500 %	01-19-2009
South African interest rate SARB		South Africa	5.750 %	↑	5.500 %	07-17-2014
Swedish interest rate Riksbank		Sweden	0.000 %	↓	0.250 %	10-28-2014
Swiss interest rate SNB		Switzerland	-0.750 %	↓	-0.500 %	01-15-2015
Turkish interest rate CBRT		Turkey	7.750 %	↓	8.250 %	01-20-2015

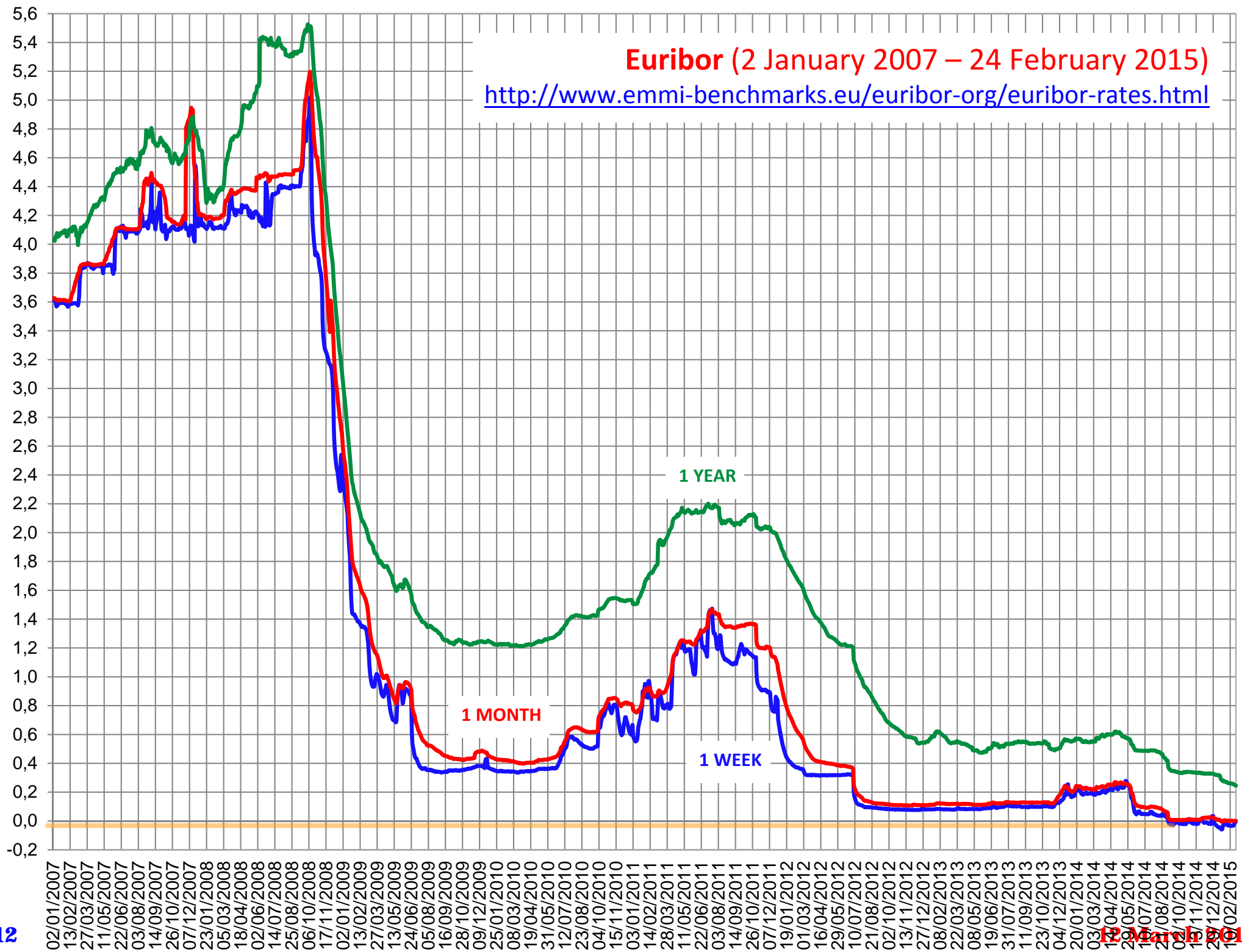
ECB key interest rates
1 Jan 1999 – 26 Feb 2015



<http://www.ecb.europa.eu/stats/monetary/rates/html/index.en.html>

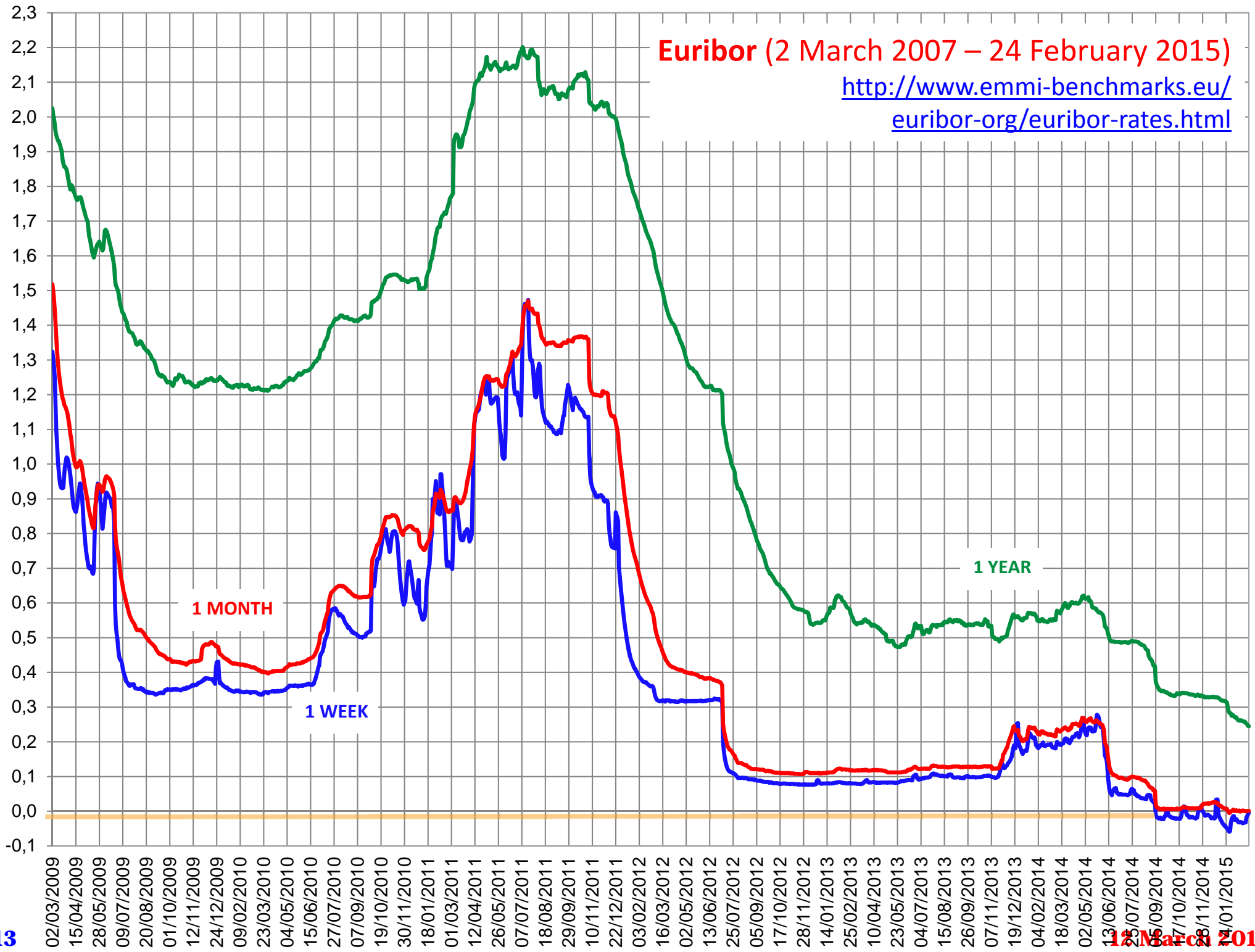
Euribor (2 January 2007 – 24 February 2015)

<http://www.emmi-benchmarks.eu/euribor-org/euribor-rates.html>



Euribor (2 March 2007 – 24 February 2015)

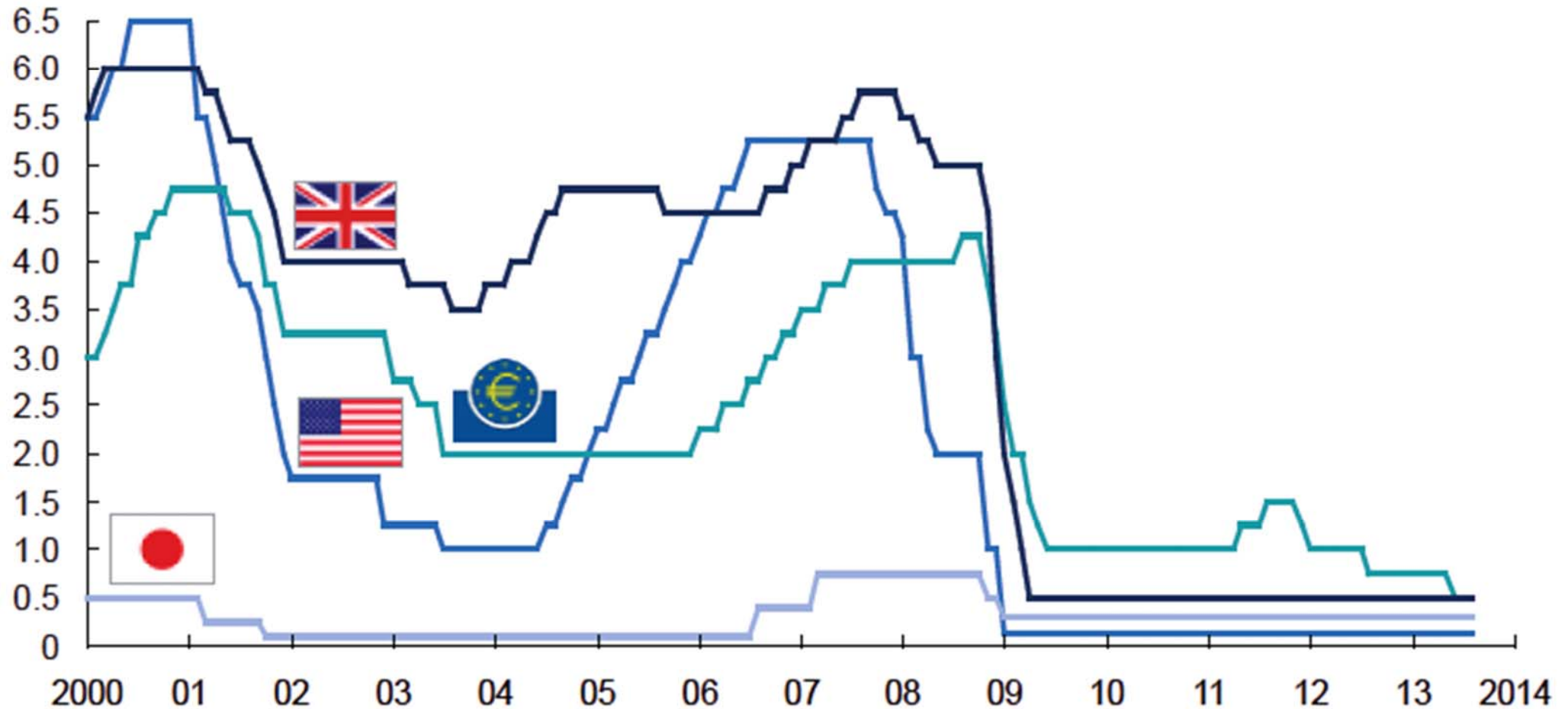
<http://www.emmi-benchmarks.eu/euribor-org/euribor-rates.html>



Central banks pushed policy rates to ultra-low levels in 2009 and have held them there since

Main policy rates
%

- United States
- Eurozone
- United Kingdom
- Japan



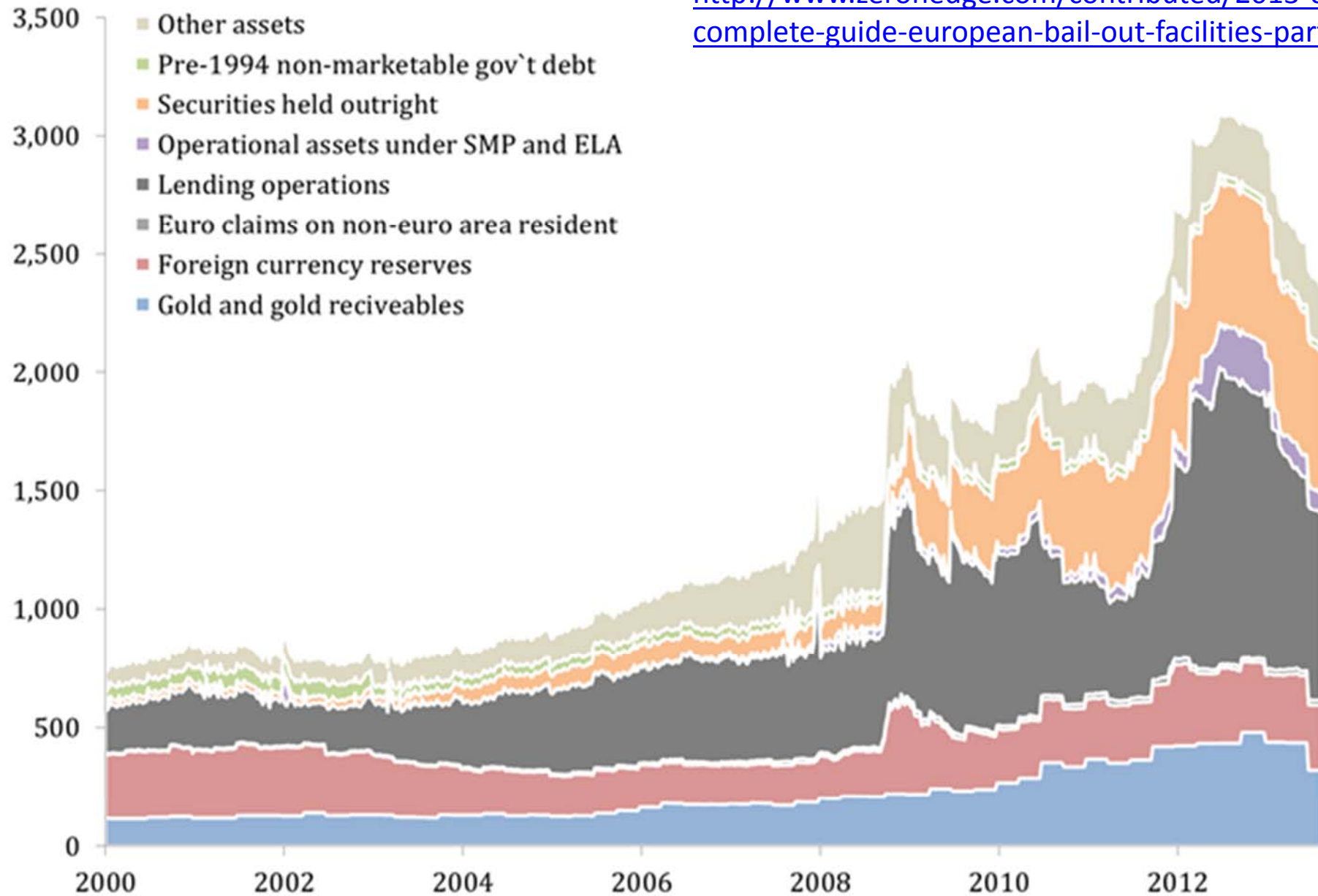
SOURCE: US Federal Reserve; European Central Bank; Bank of England; Bank of Japan; McKinsey Global Institute analysis

http://www.mckinsey.com/insights/economic_studies/ge_and_ultra_low_interest_rates_distributional_effects_and_risks

<i>i</i>	<i>bids by banks</i>		<i>total bids</i>	<i>cumulative bids</i>	<i>allotment</i>		
	B1	B2			B1	B2	
5%	7	3	10	10	7	3	
4%	10	20	30	40	10	20	
3%	20	30	50	90	$20 \cdot 60\%$ $= 12$	$30 \cdot 60\%$ $= 18$	
2%	40	70	110	200	–	–	
Total The ECB wants to supply 70					29	41	70

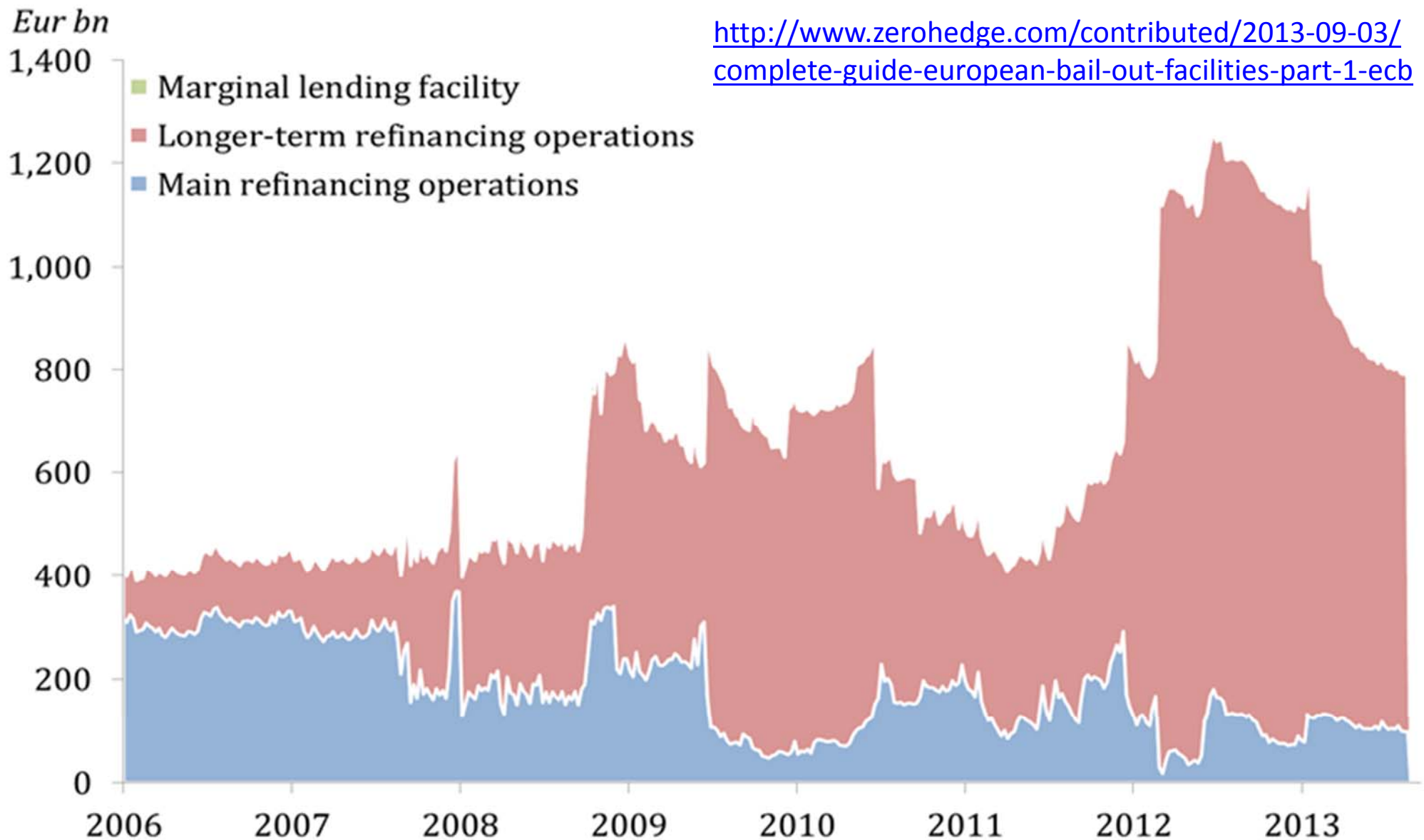
ECB balance sheet; assets

Eur bn



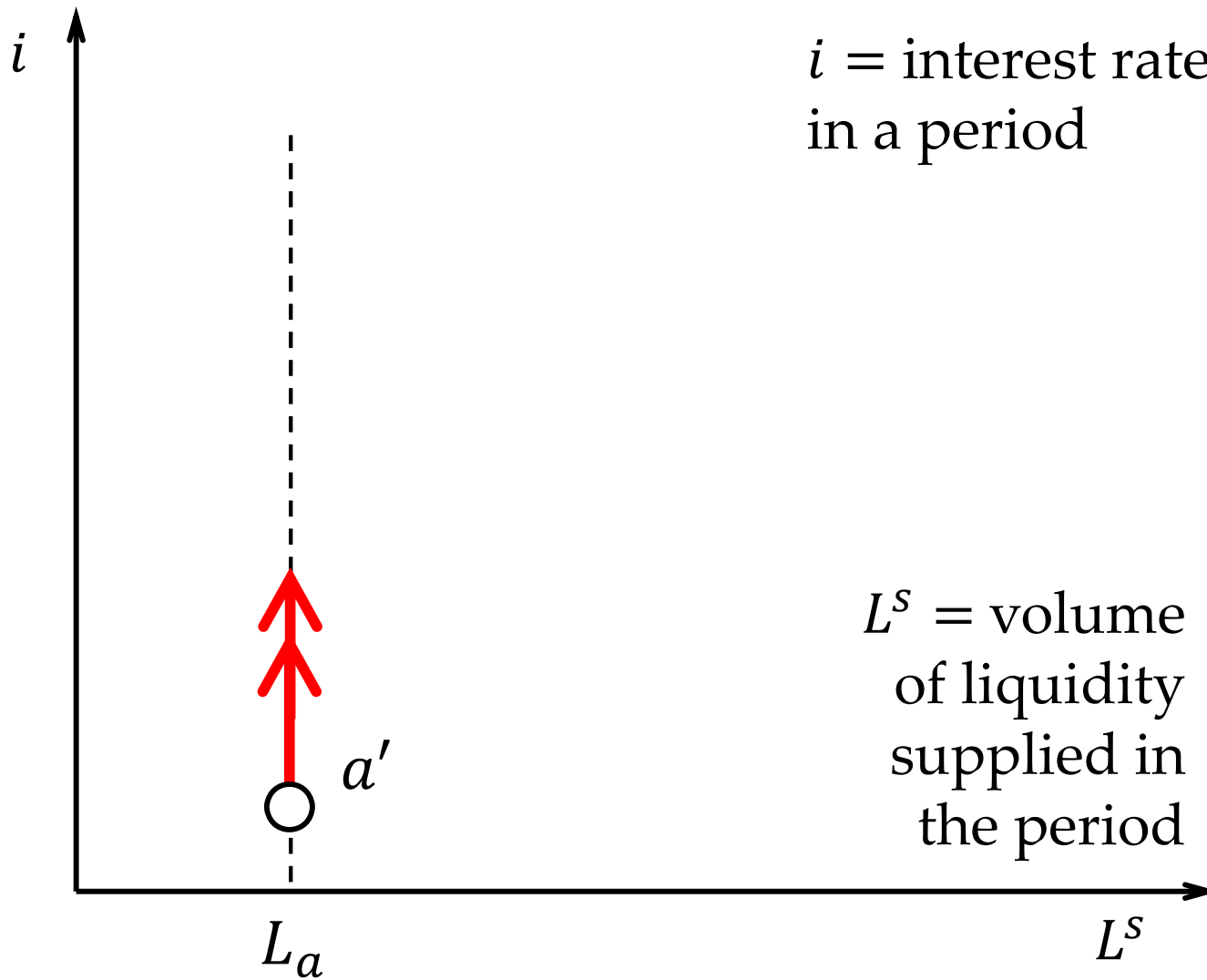
<http://www.zerohedge.com/contributed/2013-09-03/complete-guide-european-bail-out-facilities-part-1-ecb>

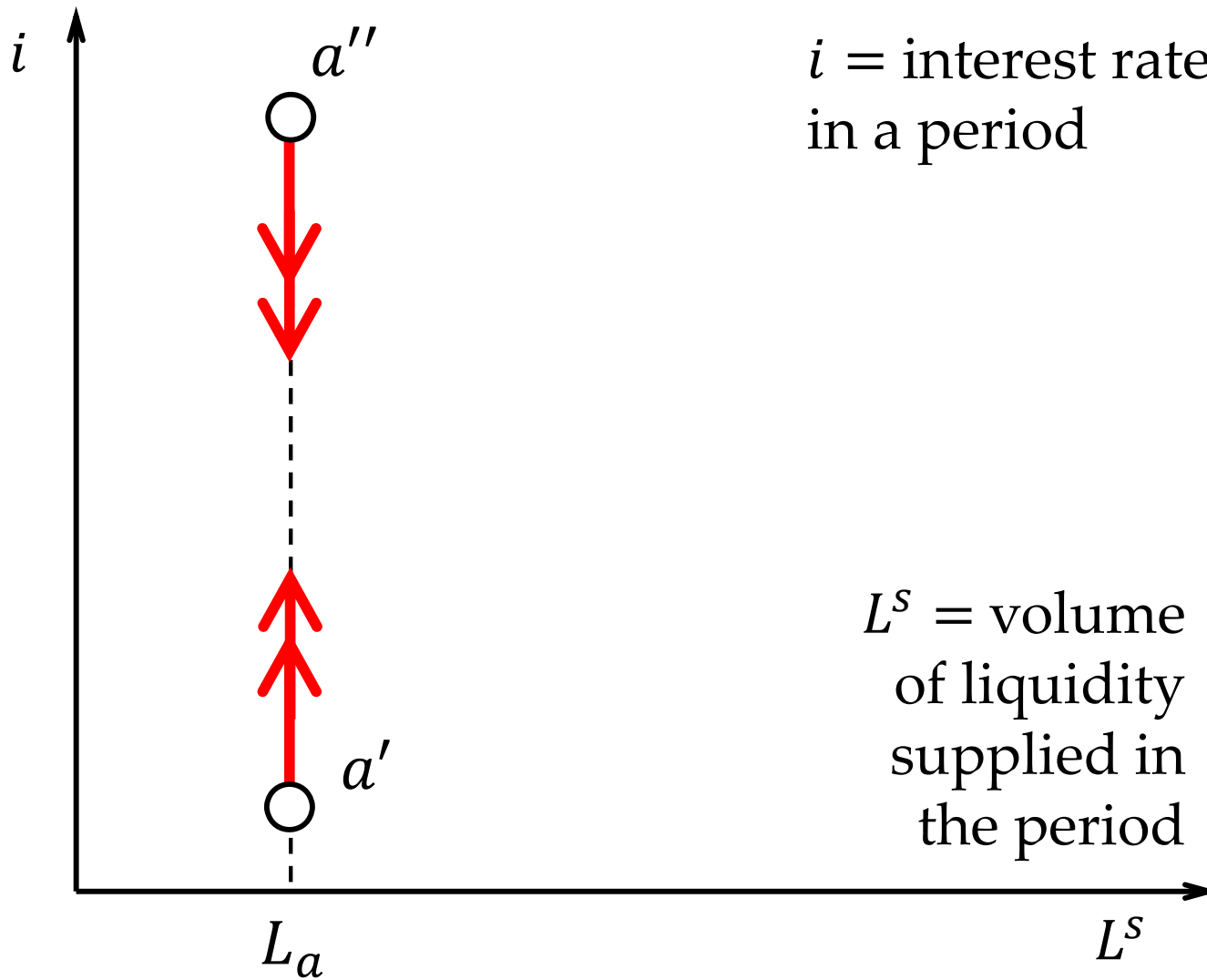
Refinancing operations (MRO & LTRO)

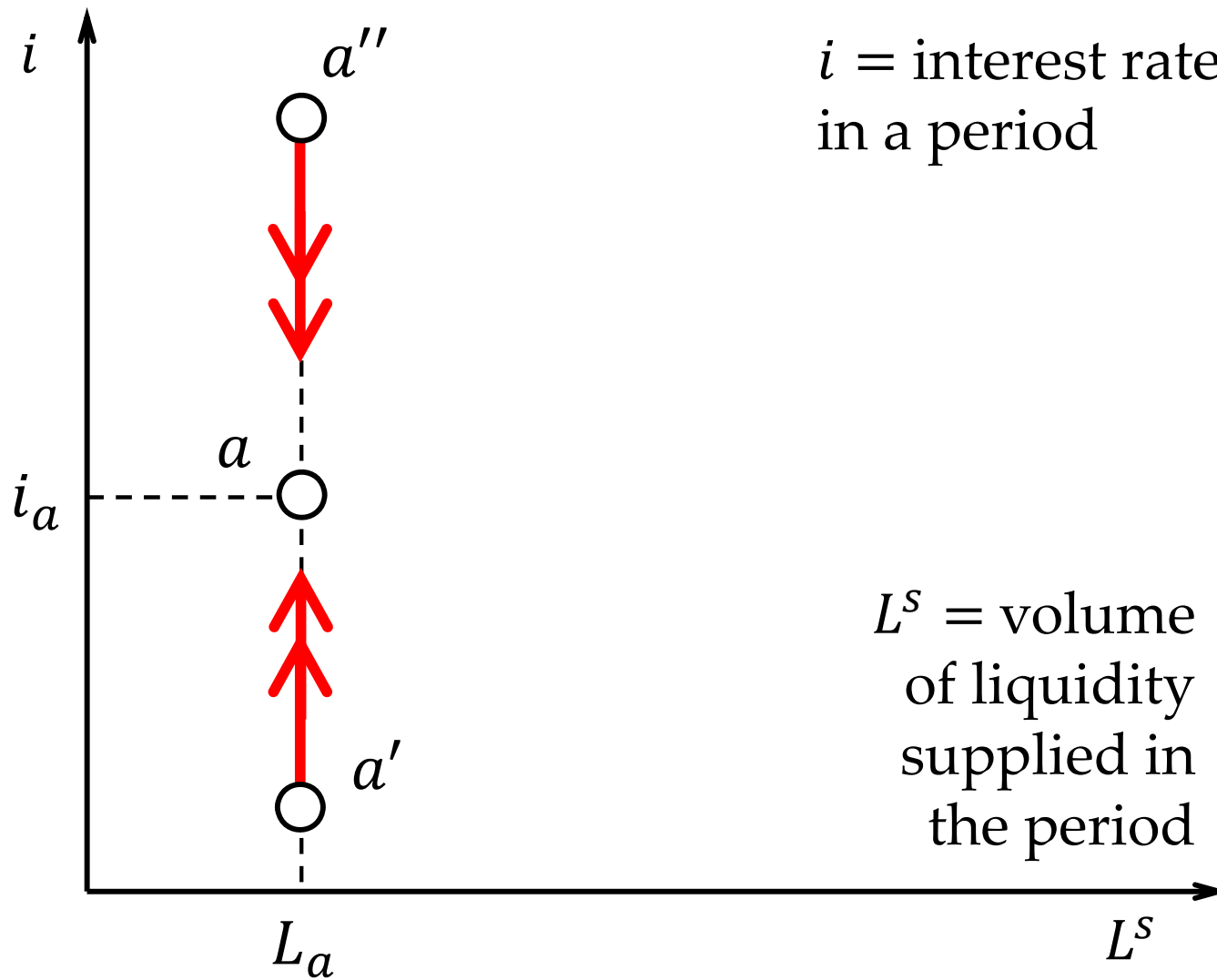


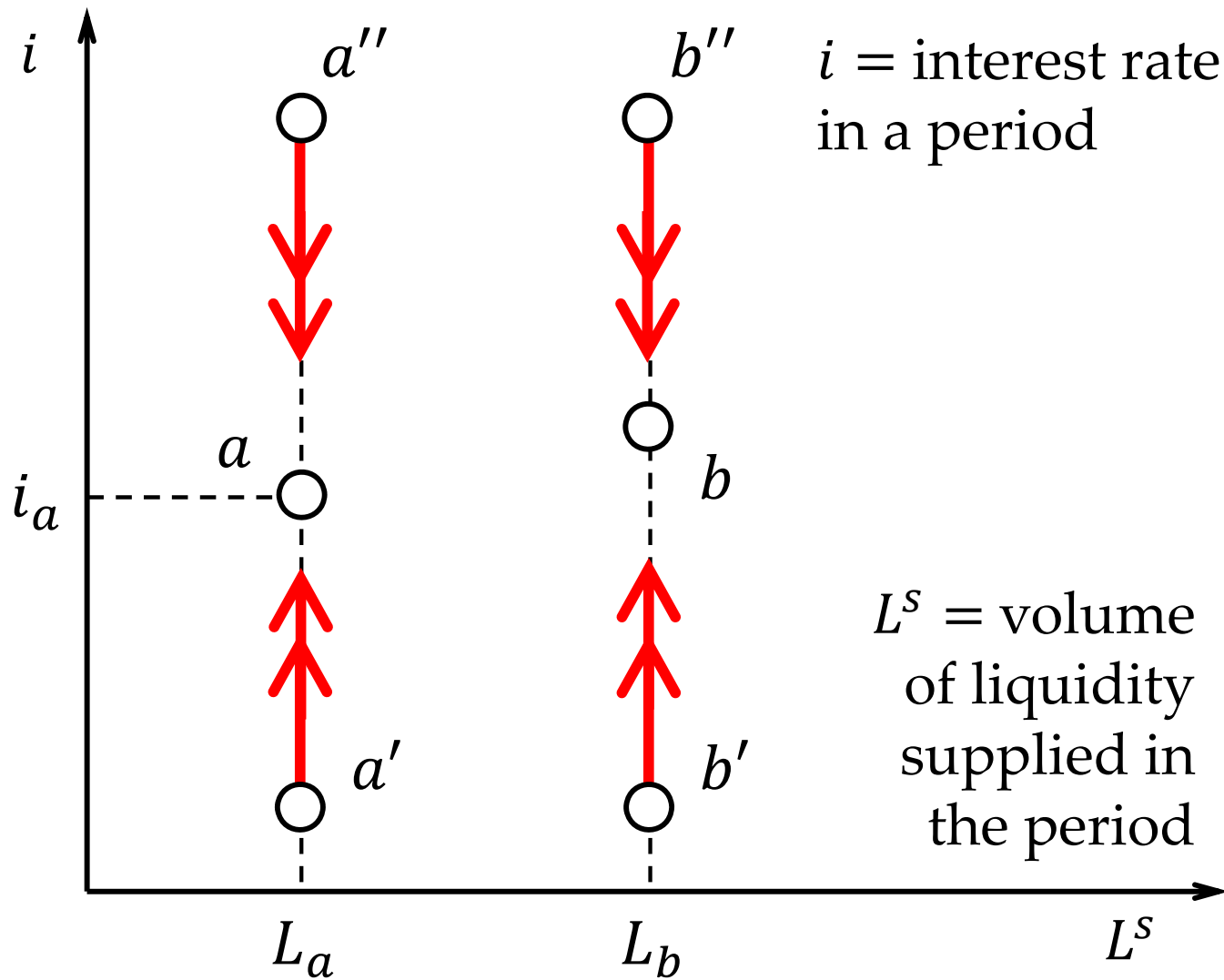
3. A liquidity market model

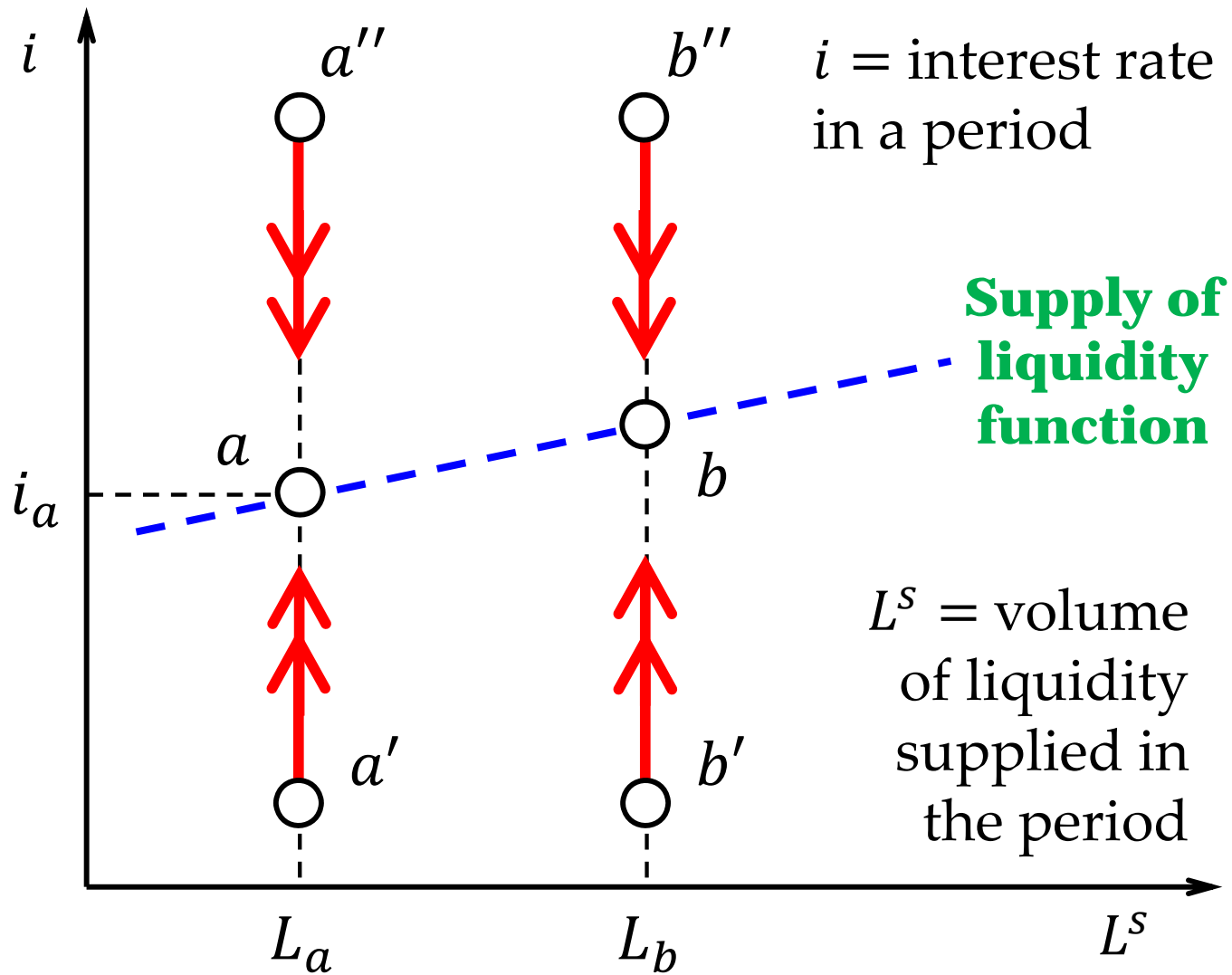
- Supply of liquidity: direct / indirect
- Supply of liquidity function
- Demand for liquidity: direct / indirect
- Demand for liquidity function
- Market equilibrium
- Comparative statics

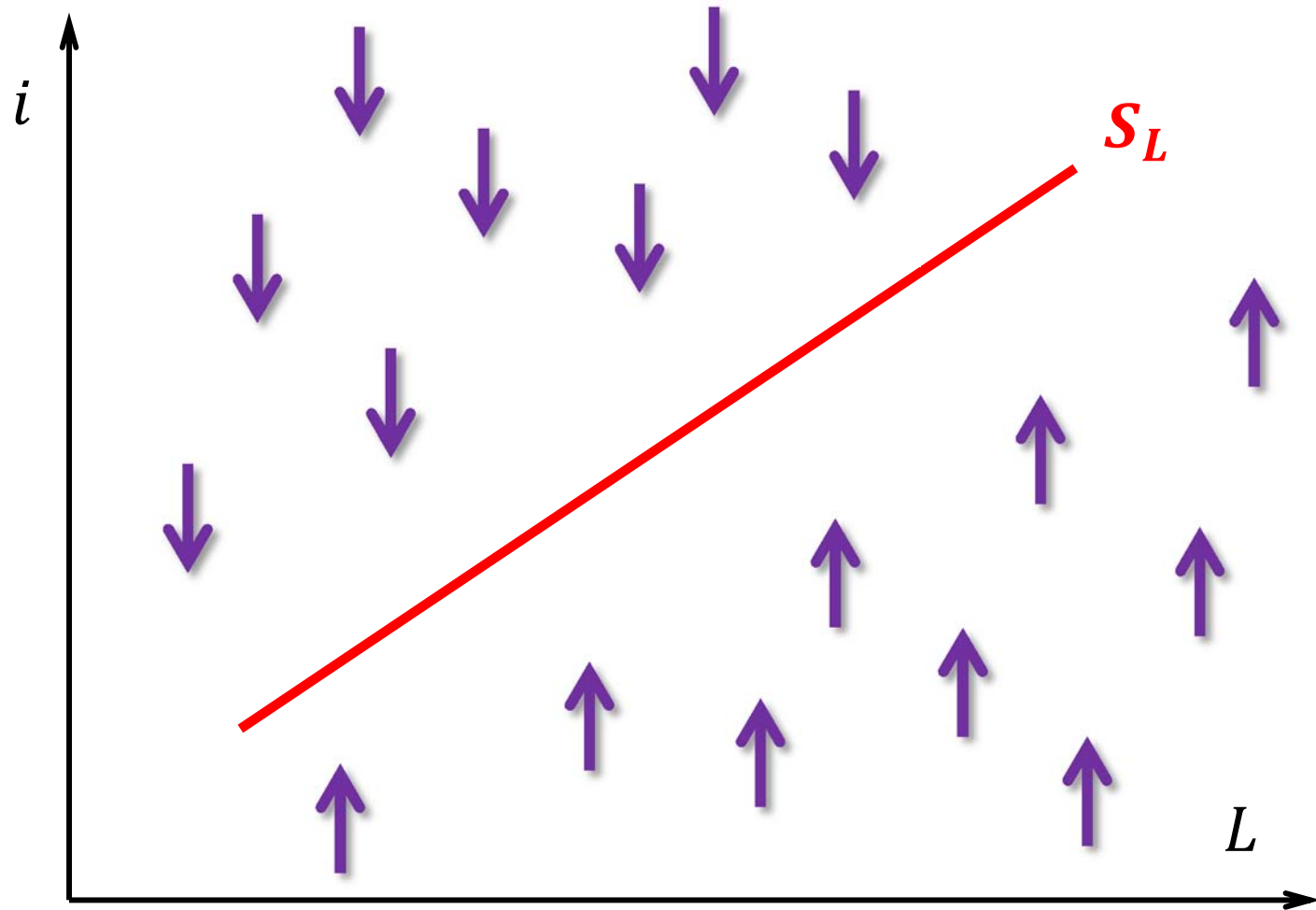


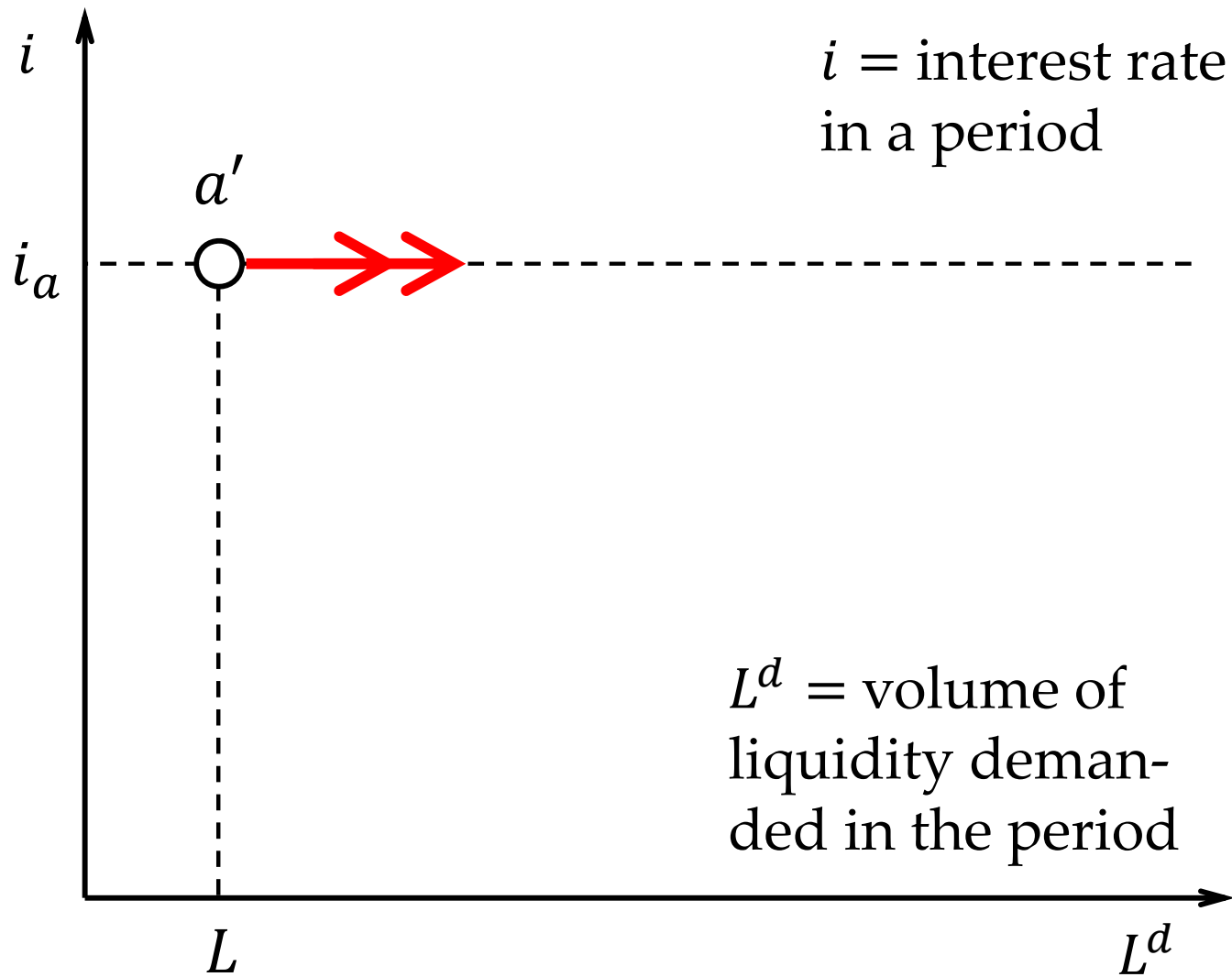


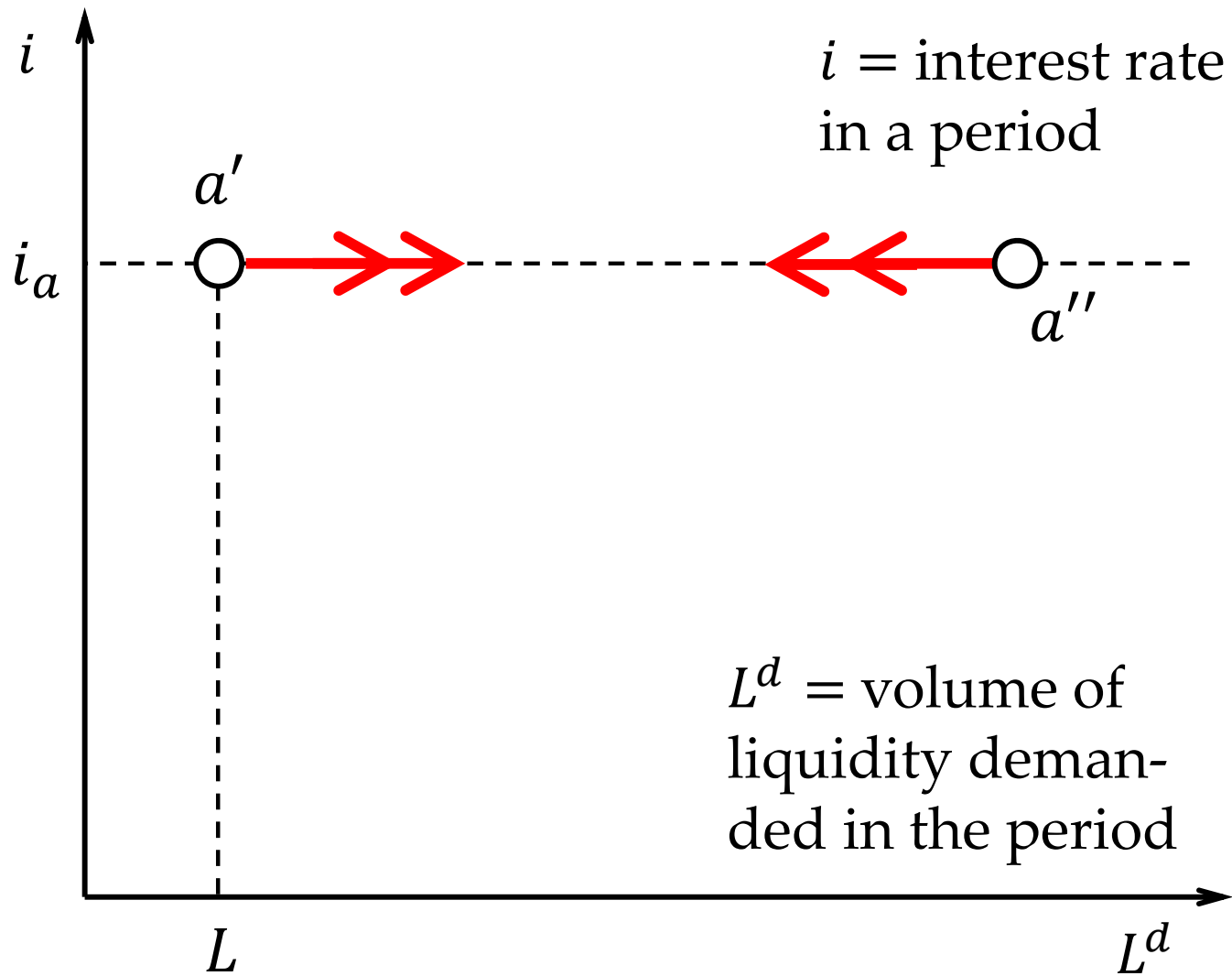


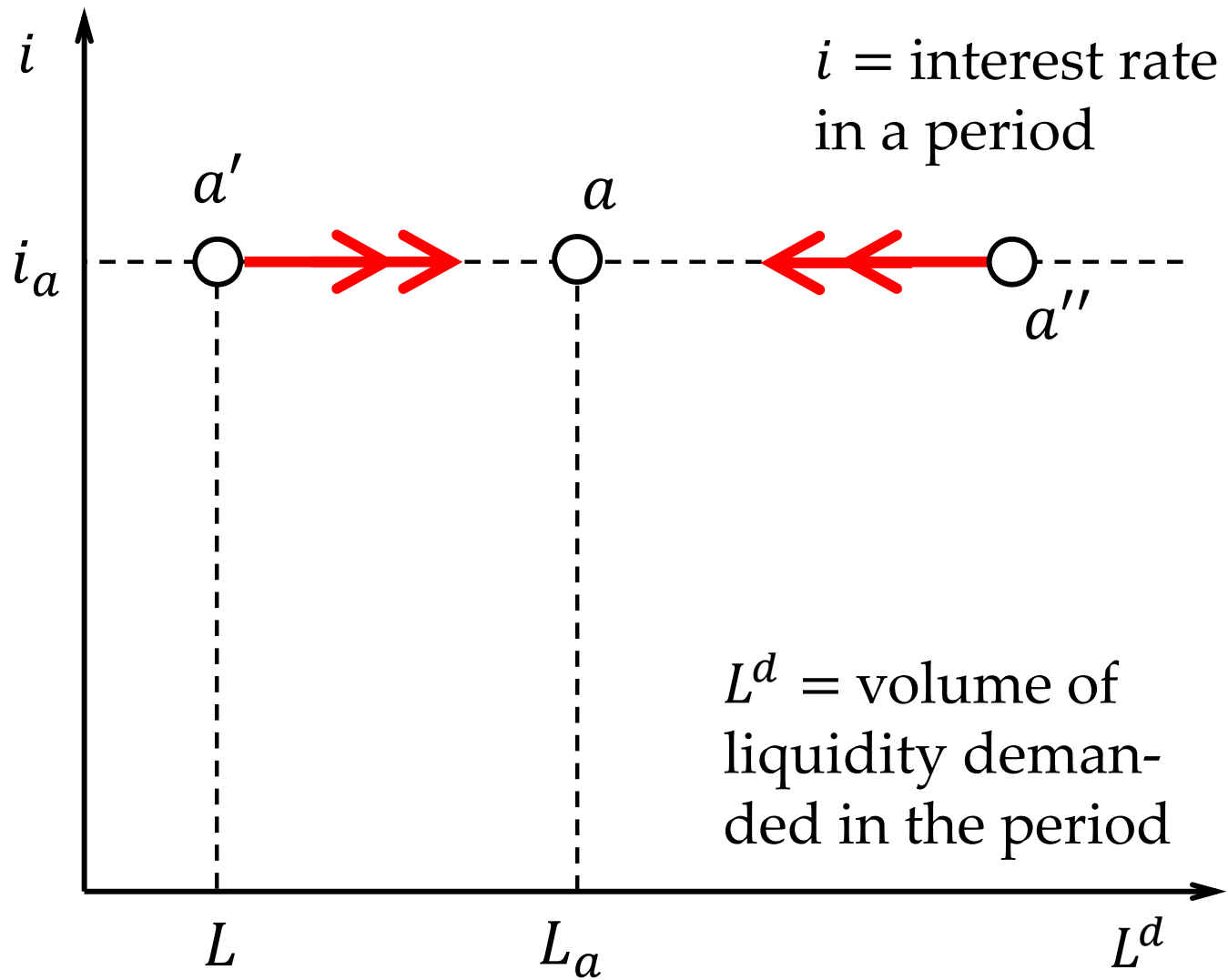


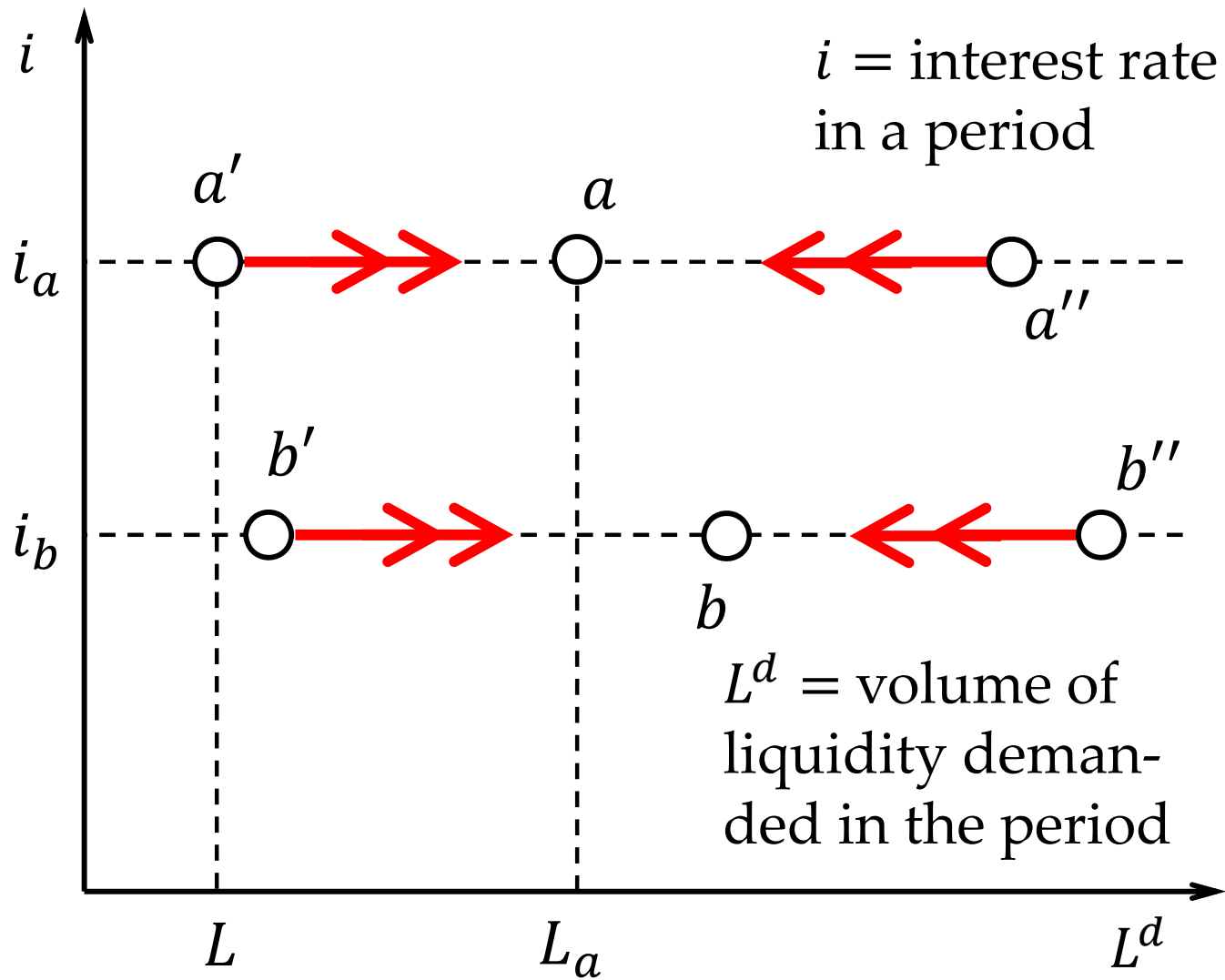


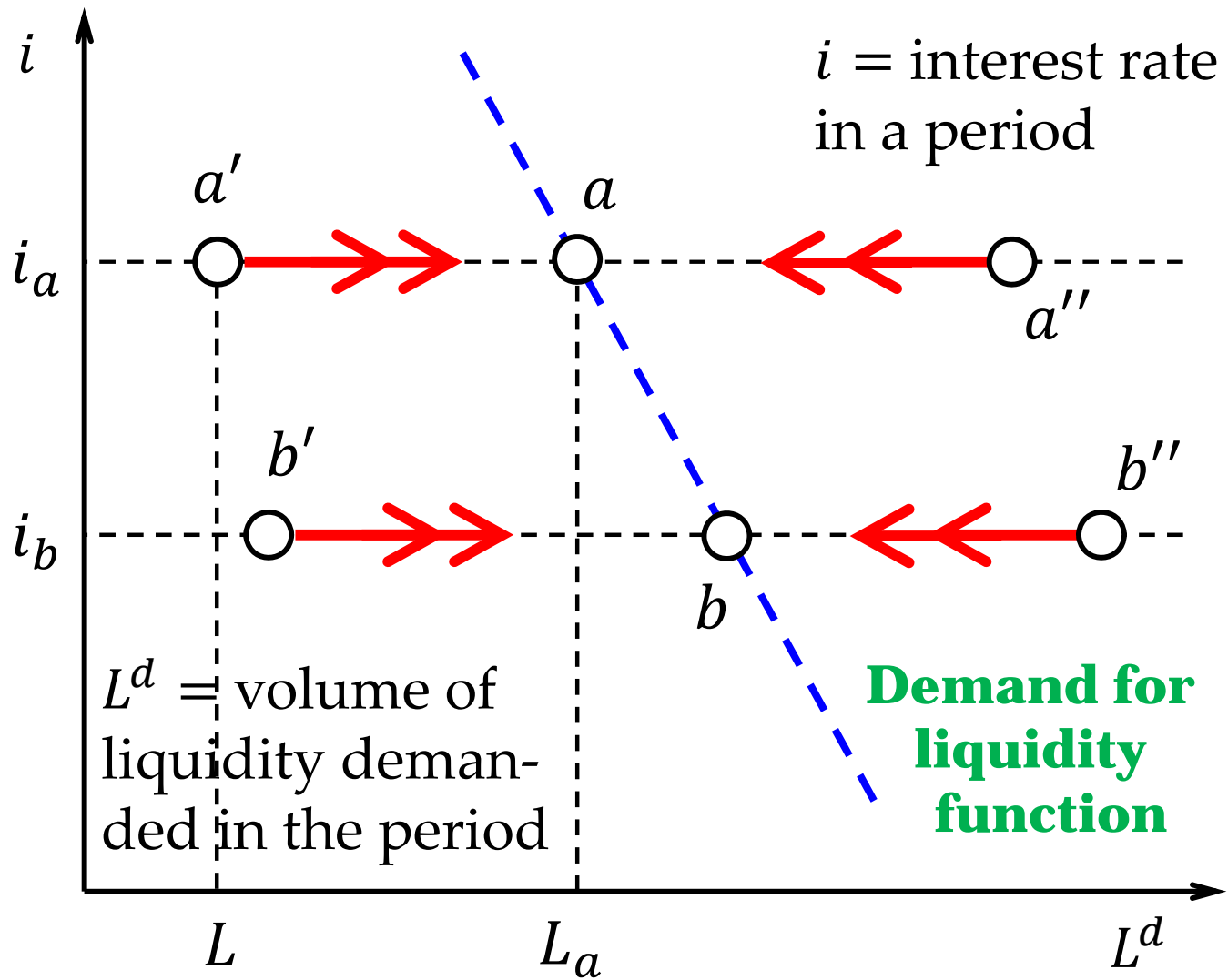


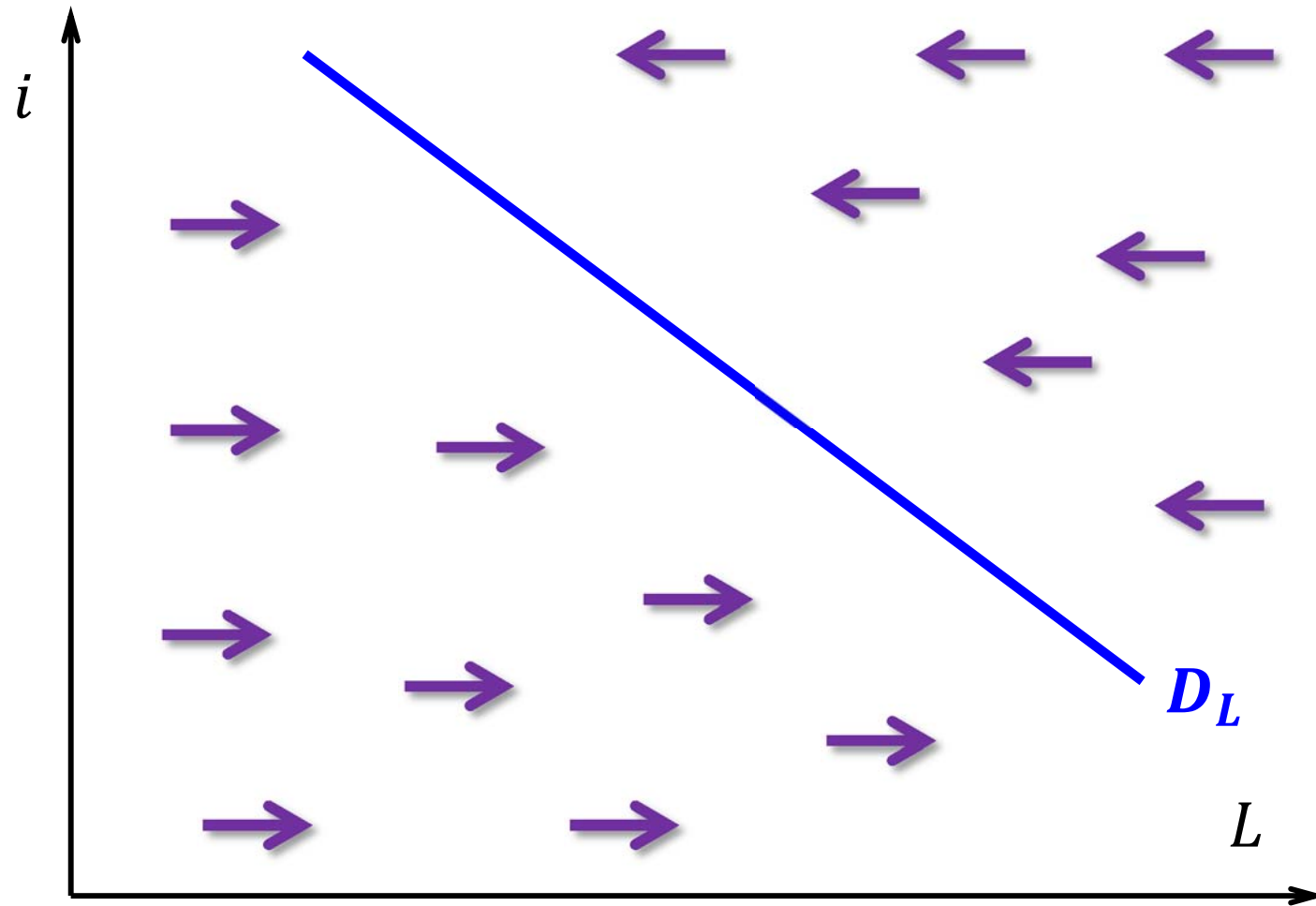


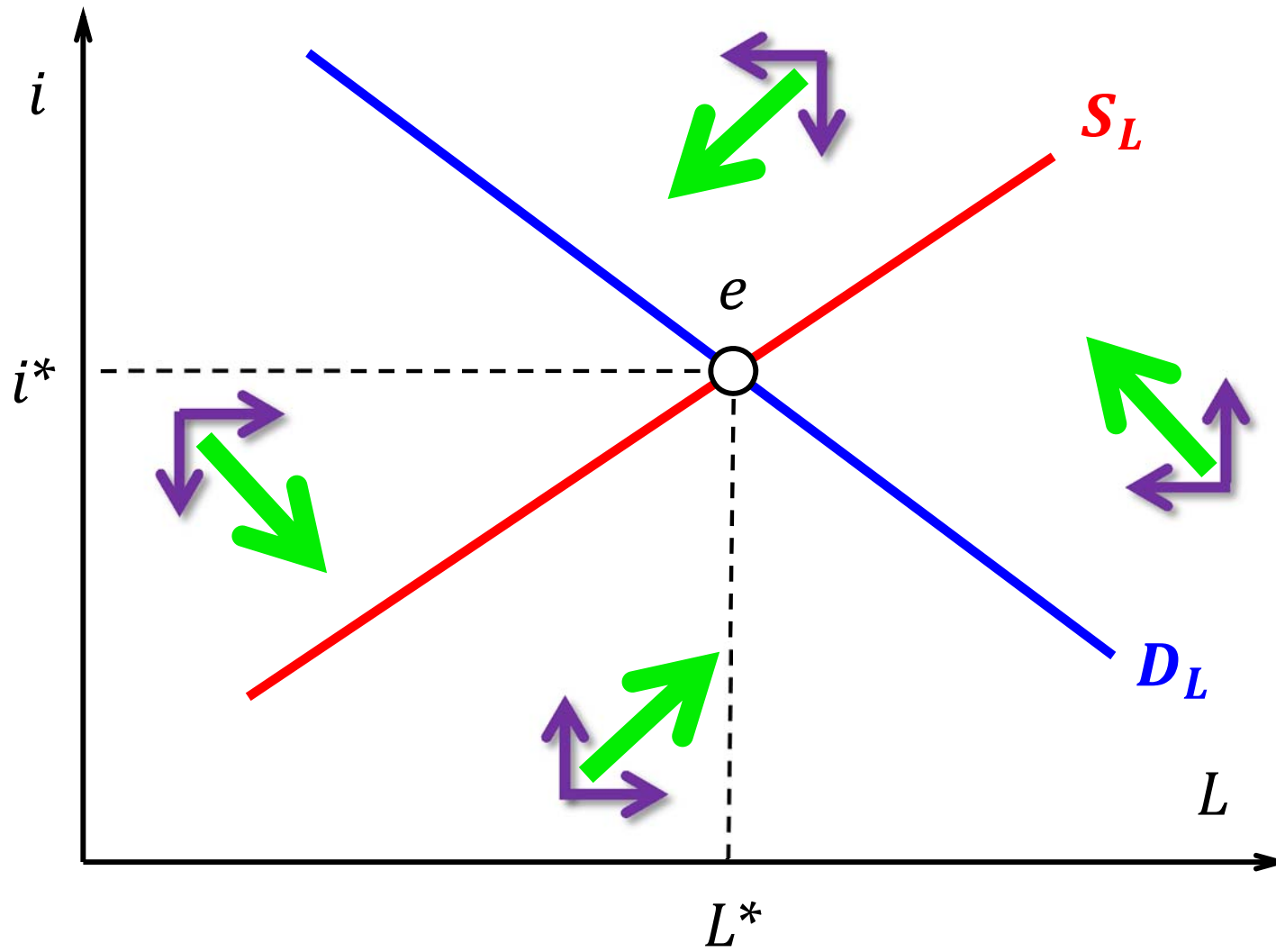


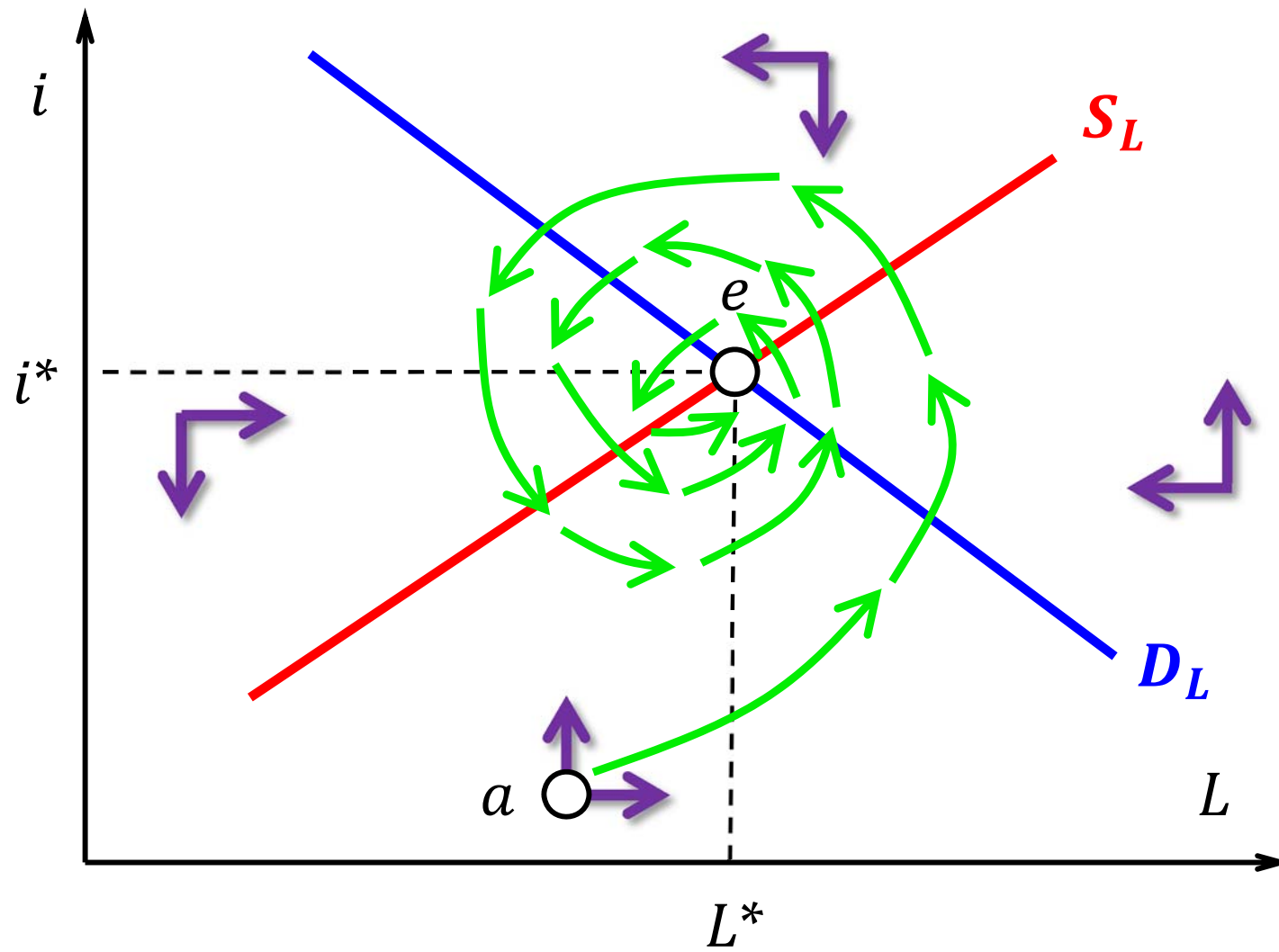




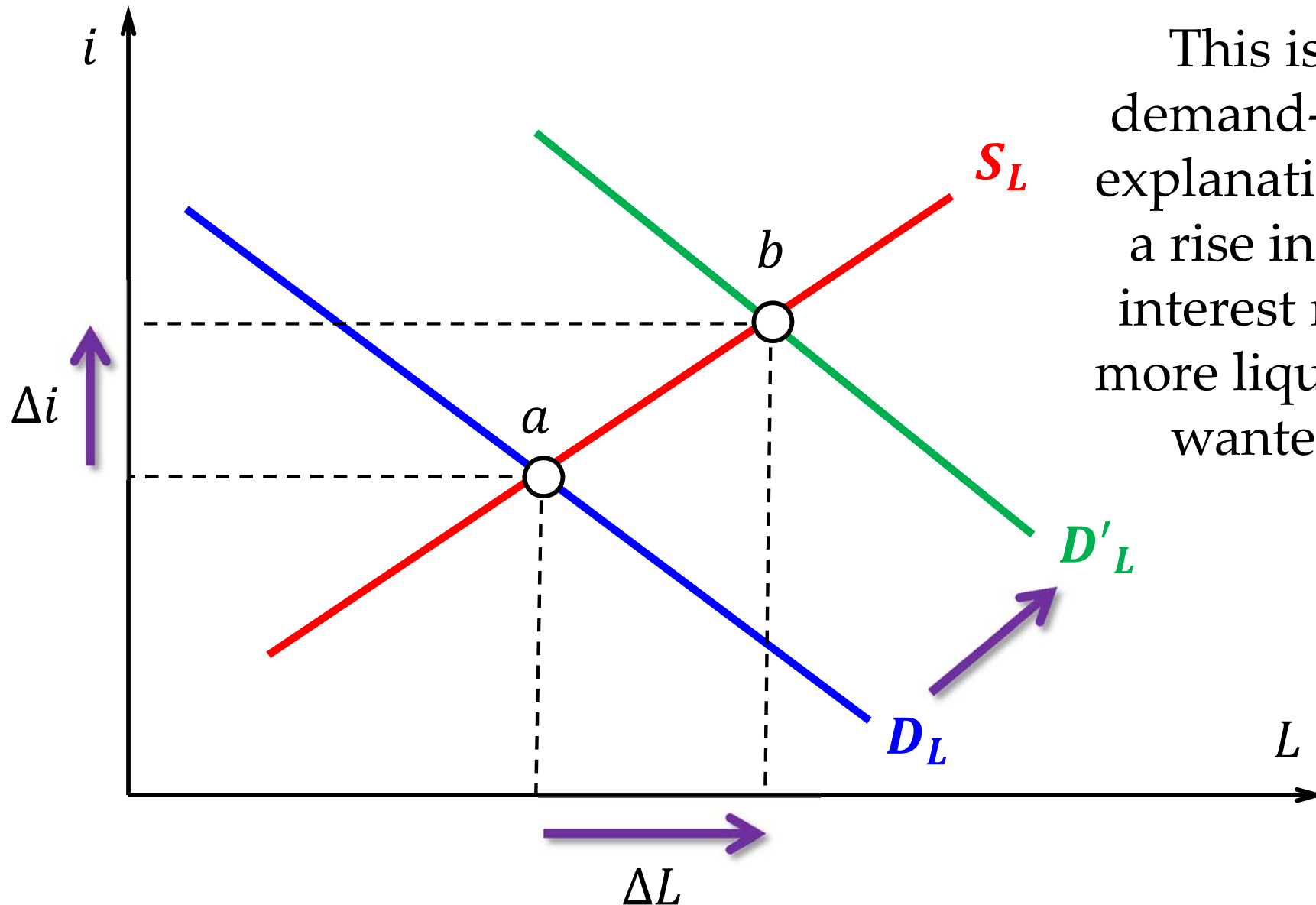






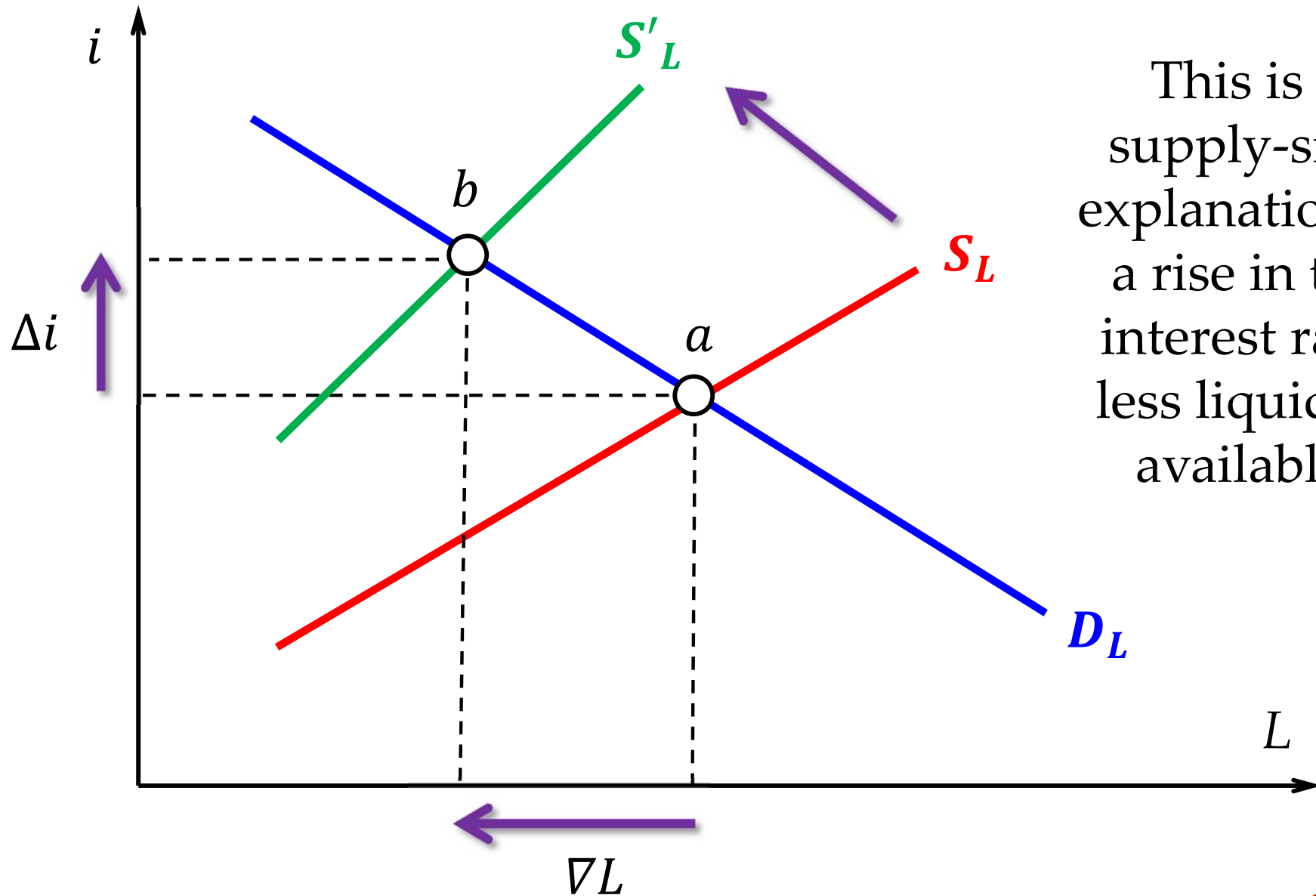


Equilibrium effects of a demand shift to the right



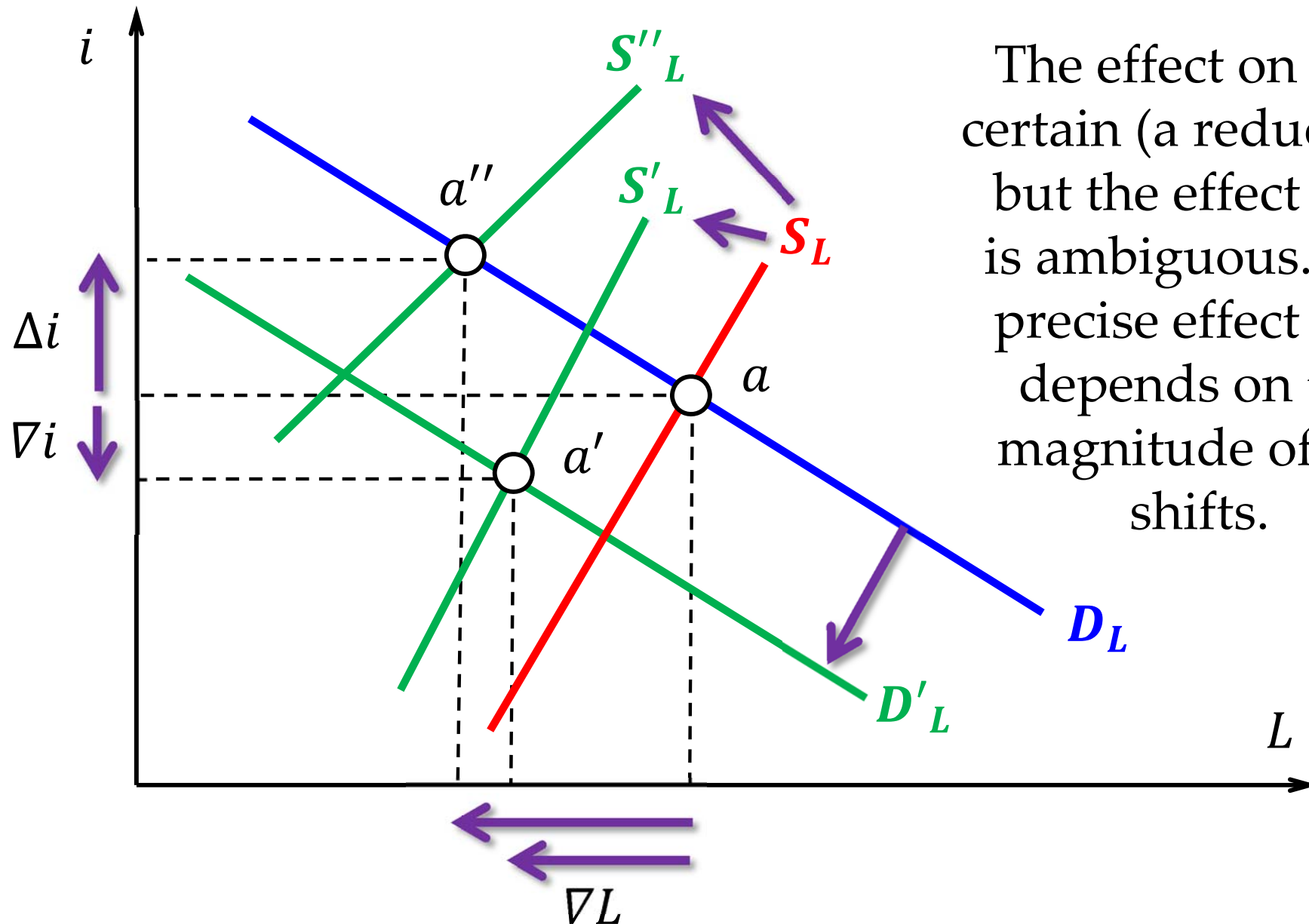
This is a demand-side explanation of a rise in the interest rate: more liquidity wanted.

Equilibrium effects of a supply shift to the right



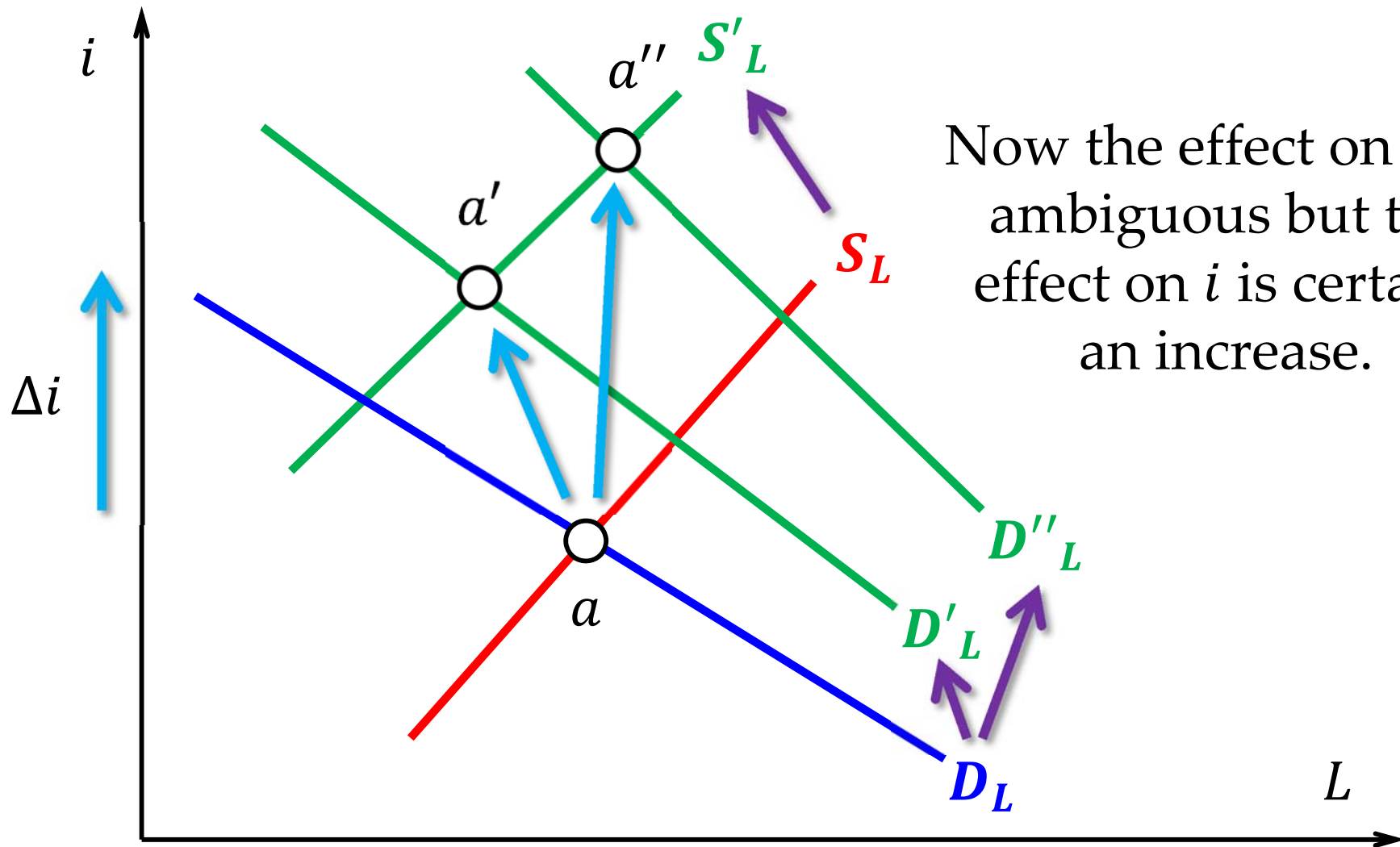
This is a supply-side explanation of a rise in the interest rate: less liquidity available.

Equilibrium effects of S_L to the left & D_L to the left



The effect on L is certain (a reduction) but the effect on i is ambiguous. The precise effect on i depends on the magnitude of the shifts.

Equilibrium effects of S_L to the left & D_L to the right



Now the effect on L is ambiguous but the effect on i is certain: an increase.

4. Real interest rate

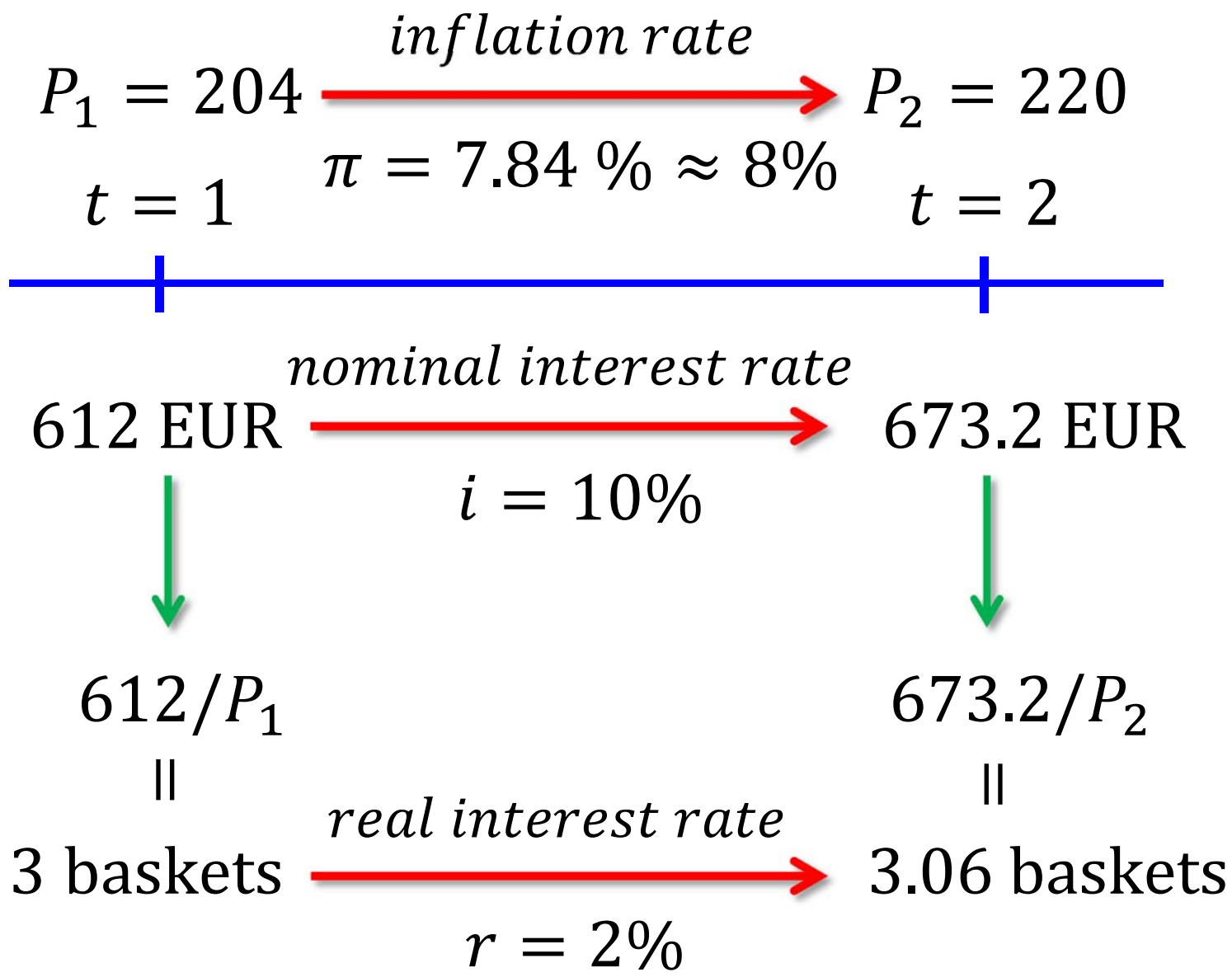
- Numerical example
- Fisher equation

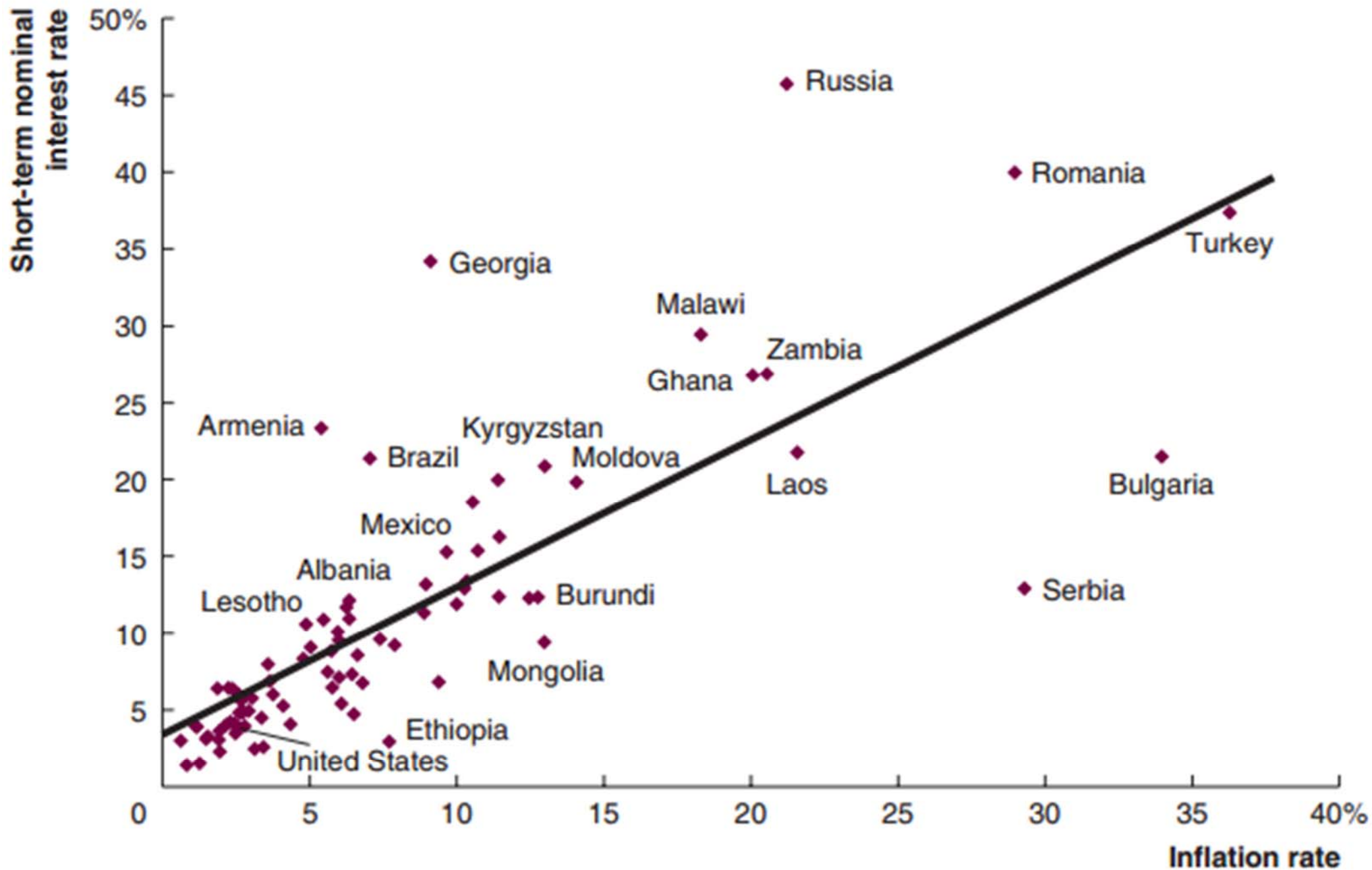
$$i = r + \pi$$

- Fisher effect

$$\uparrow \pi \Rightarrow \uparrow i$$

- Lucas paradox

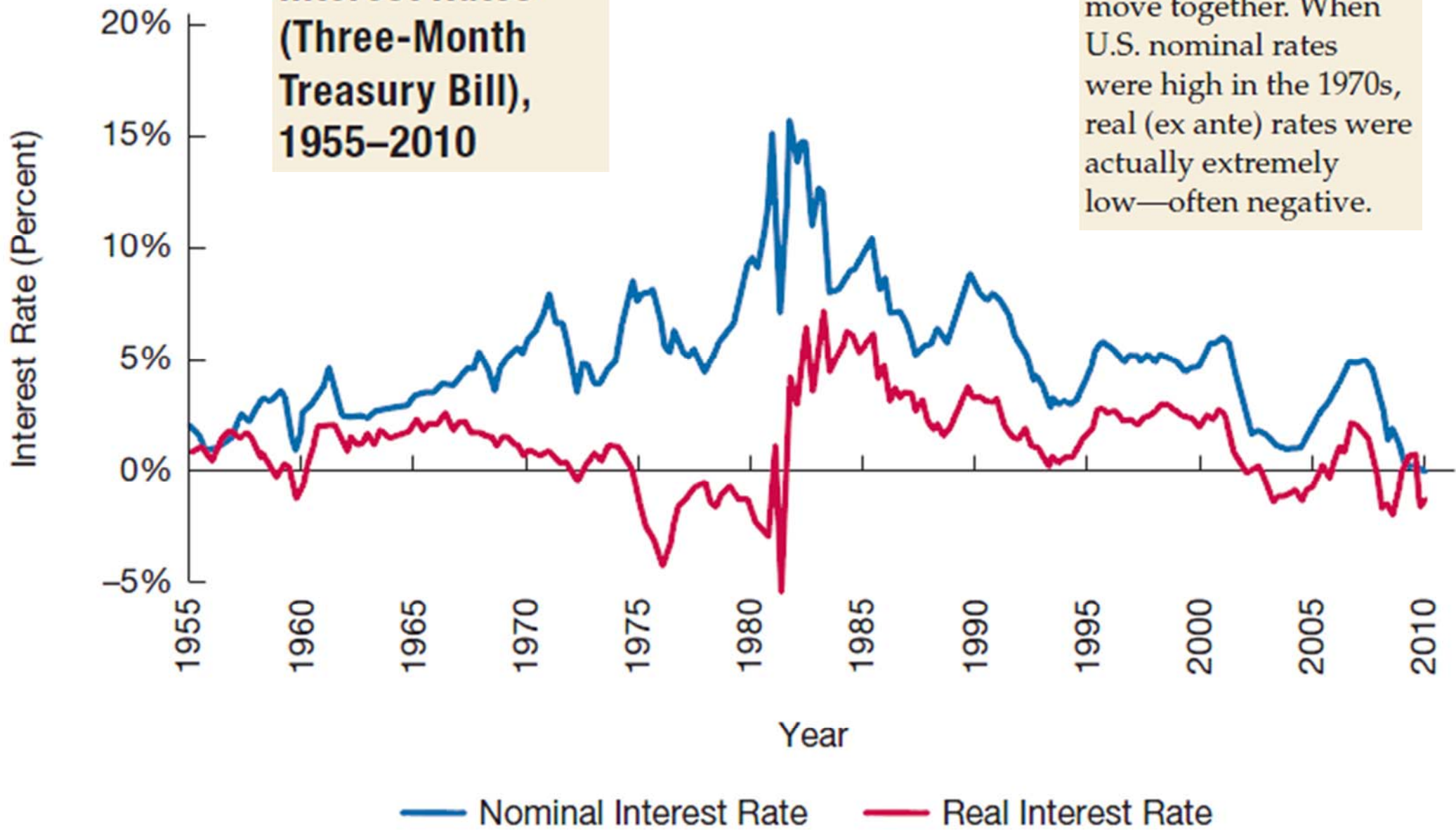




RG Hubbard, AP O'Brien, M Rafferty (2012): Macroeconomics, p. 204

Real and Nominal Interest Rates (Three-Month Treasury Bill), 1955–2010

Nominal and real interest rates often do not move together. When U.S. nominal rates were high in the 1970s, real (ex ante) rates were actually extremely low—often negative.



Frederic S Mishkin (2011): *Macroeconomics. Theory and practice*, p. 40

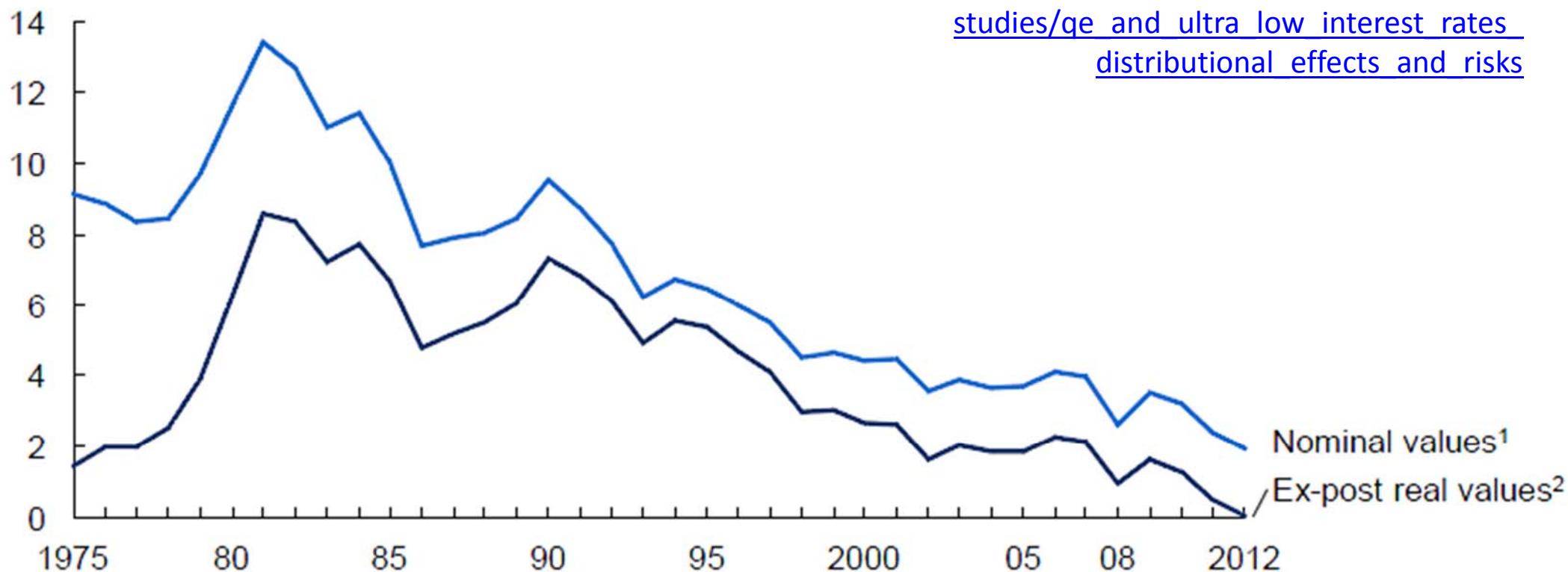
Central bank action has come at the end of a 30-year period of declining real and nominal interest rates

Long-term interest rates in developed economies

Yield to redemption on long-term government bonds, 1975–2012

%, GDP-weighted average

http://www.mckinsey.com/insights/economic_studies/ge_and_ultra_low_interest_rates_distributional_effects_and_risks

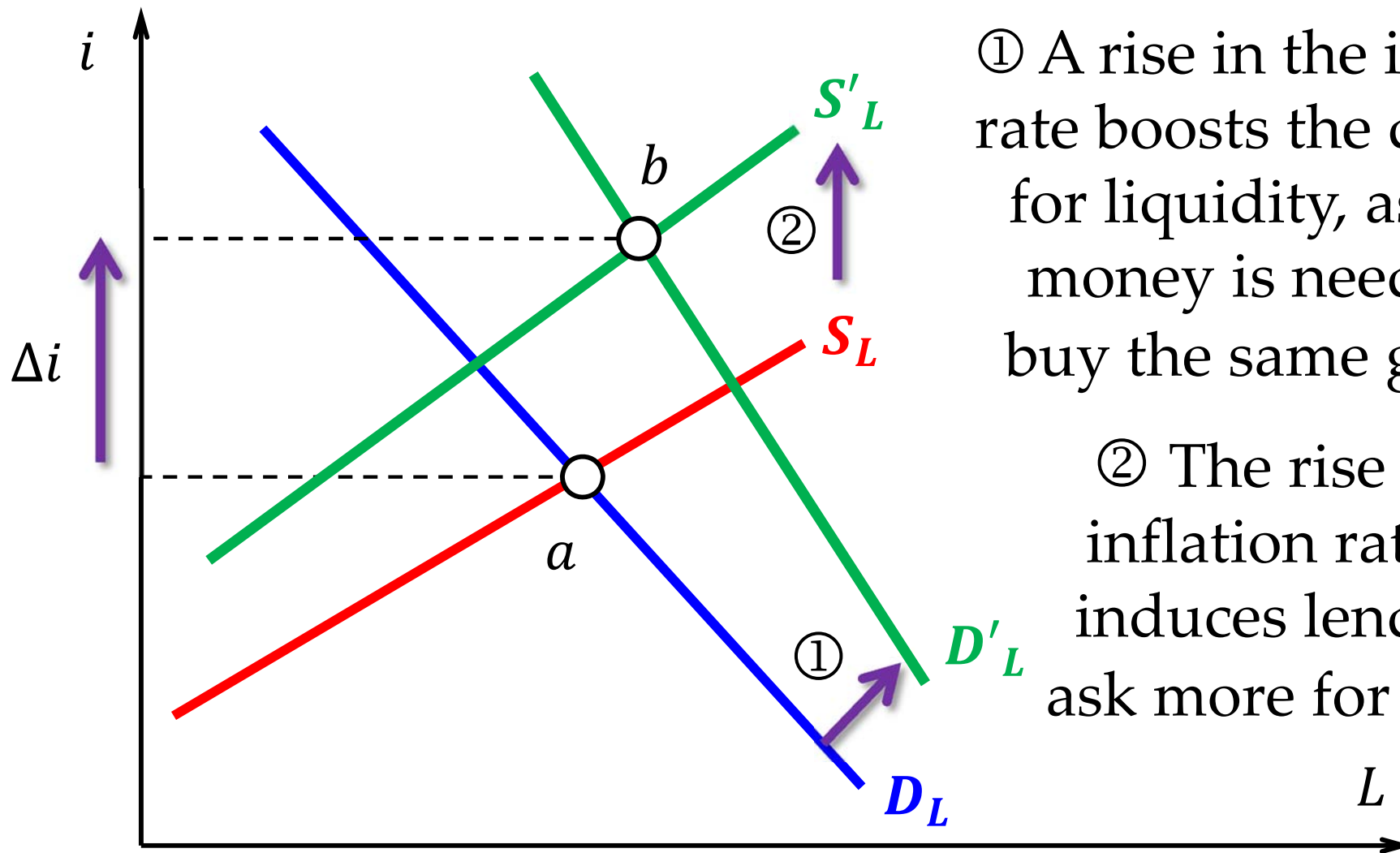


1 Ten-year government bonds, where available, for Australia, Canada, France, Germany, Italy, Japan, South Korea, Spain, the United Kingdom, and the United States.

2 Ex-post real values calculated as nominal yield on ten-year bonds in current year minus average realized inflation over next ten years. IHS Global Insight inflation estimates used for 2012–22.

SOURCE: International Monetary Fund International Financial Statistics; IHS Global Insight; Bloomberg; Organisation for Economic Co-operation and Development; McKinsey Global Institute analysis

The Fisher effect



① A rise in the inflation rate boosts the demand for liquidity, as more money is needed to buy the same goods.

② The rise in the inflation rate also induces lenders to ask more for a loan.