NINETY-THIRD INTERNATIONAL ATLANTIC ECONOMIC EUROPEAN CONFERENCE

INTRODUCTION

KATHERINE S. VIRGO

EXECUTIVE VICE PRESIDENT

INTERNATIONAL ATLANTIC ECONOMIC SOCIETY

30 March – 1 April 2022

NINETY-THIRD INTERNATIONAL ATLANTIC ECONOMIC EUROPEAN CONFERENCE

PLENARY PANEL:
SECULAR AND CYCLICAL PAYMENTS IMBALANCES

Robert Aliber, Brendan Brown, Robert McCauley, Gylfi Zoega

INTERNATIONAL ATLANTIC ECONOMIC SOCIETY

31 March 2022

NINETY-THIRD INTERNATIONAL ATLANTIC ECONOMIC EUROPEAN CONFERENCE

THE CASE FOR FLEXIBLE EXCHANGE RATES IS INTELLECTUALLY BANKRUPT

Chair

Robert Aliber

University of Chicago

31 March 2022

OVERVIEW

- FOUR STYLIZED FACTS ABOUT OVERSHOOTING
- GOODS MARKET SHOCKS VS MONEY MARKET SHOCKS
- THREE COUNTRY EXPERIENCES
- CONCLUSION

OVERSHOOTING FOUR STYLIZED FACTS

- OVERSHOOTING AND THE MARKET IN CURRENCIES
- OVERSHOOTING AND THE MARKET IN SECURITIES
- OVERSHOOTING AND BANKING CRISES
- WHY THE UNITED STATES MORPHED FROM THE LARGEST CREDITOR TO THE LARGEST DEBTOR

GOODS MARKET SHOCKS VS MONEY MARKET SHOCKS

- DID THE CHANGES IN THE U.S. INTERNATIONAL INVESTMENT POSITION FOLLOW FROM CHANGES IN U.S. TRADE BALANCE ?

OR

- DID THE CHANGES IN THE U.S. TRADE BALANCE FOLLOW FROM CHANGES IN THE U.S. INTERNATIONAL INVESTMENT POSITION?

THE ICELANDIC EXPERIENCE

- ICELAND EXPERIENCED AN AUTONOMOUS INCREASE IN ITS CAPITAL ACCOUNT SURPLUS
- ICELAND REQUIRED A CORRESPONDING INCREASE IN ITS CURRENT ACCOUNT DEFICIT
- TWO CONTRIBUTING FACTORS
  - INCREASE IN THE PRICE OF KRONA
  - INCREASE IN PRICE OF ICELANDIC STOCKS
- INCREASE IN EXTERNAL INDEBTEDENSS IS TOO RAPID TO BE SUSTAINED
- AS INVESTMENT INFLOWS SLOWED, PRICE OF KRONA AND KRONA SECURITIES FELL THESE PRICES HAD BEEN INVOLVED IN OVERSHOOTING

THE JAPANESE EXPERIENCE 1980-1989

- 1985 CAPITAL ACCOUNT DEFICIT 5 PERCENT OF GDP
- 1985-89 DECLINE IN CAPITAL ACCOUNT DEFICIT TO TWO PERCENT
- A COMPARABLE DECLINE IN CURRENT ACCOUNT SURPLUS
  - INCREASE IN PRICE FOR JAPANESE YEN
  - INCREASE IN PRICE OF JAPANESE STOCKS
- DECEMBER 1989 CAPITAL ACCOUNT DEFICIT TWO PERCENT OF GDP
- NO NEED FOR FURTHER REDUCTION IN CAPITAL ACCOUNT DEFICIT AND HENCE NO NEED FOR FURTHER INCREASE IN ASSET PRICES

THE U.S. EXPERIENCE 1980-2020

- FOUR SPIKES IN PRICES OF ASSETS
- THREE SPIKES IN PRICE OF THE U.S. DOLLAR
- ONE MASSIVE BANKING PRICE
- THE UNITED STATES EVOLVES FROM WORLD'S LARGEST CREDITOR TO THE WORLD'S LARGEST DEBTOR

CONCLUSION –WHY THE CASE FOR FLEXIBLE EXCHANGE RATES IS INTELLECTUALLY BANKRUPT

- CENTRAL BANK MONETARY INDEPENDENCE IS PRIMARY MOTIVE
- INVESTORS HAVE MUCH GREATER INCENTIVES TO BUY FOREIGN SECURITIES
- PURCHASES OF FOREIGN SECURITIES LEADS TO OVERSHOOTING
- IMPLOSION OF ASSET PRICE SPIKES LEADS TO BANKING CRISES

NINETY-THIRD INTERNATIONAL ATLANTIC ECONOMIC EUROPEAN CONFERENCE

US DOLLAR HEGEMON'S CENTURY WITHOUT A SOLID ANCHOR: OPTIONS FOR RE-DESIGN

Brendan Brown

Senior Fellow, Mises Institute; Senior Fellow, Hudson Institute; Founding Partner, Macro Hedge Advisors

31 March 2022

6 US monetary anchor regimes 1919-2022

- 1919-33 US unilateral gold standard
- 1936-68/71 Truncated dollar-gold convertibility for foreigners
- 1972-79 embryonic money supply targets
- 1979-84 monetarist “experiment”
- 1985-96 anchor-less; ornamental money supply targets
- 1997-Present anchor-less under “2 percent inflation standard”

Concept of Anchoring

- Definition of monetary anchor
- Glossary of other terms:
    - Monetary inflation
    - Goods inflation
    - Asset inflation
    - Solid anchor
    - Super-money

Failed anchor re-designs

- The monetarist experiment 1979-83
- (the gold reform which did not take place)
- Monetarism abandoned; new inflation 1986-90
  - Global asset inflation
  - High US goods inflation
- The inflation standard reform 1996-2003
- Failures of the inflation standard
  - The Great Asset inflation 1996-2007
  - The Great Financial Crisis 2008-12
  - The Great Economic Sclerosis 2013-20
  - The Great Pandemic Inflation 2020-22

Options for anchor design

- Design objectives:

  Supple supply of money

  Strong, stable demand for money
- Alternative anchoring devices
- Does crypto change the choice?

NINETY-FIRST INTERNATIONAL ATLANTIC ECONOMIC EUROPEAN CONFERENCE

THE FED AS GLOBAL DOLLAR LENDER OF LAST RESORT

Robert N McCauley*

*Senior nonresident fellow, Global Development Policy Center, Boston University and Associate member, Faculty of History, University of Oxford

The author thanks Robert Aliber and Catherine Schenk for discussion.

31 March 2022

Punch lines

- In response to crises in 2008 and 2020, the Fed backstopped the global domain of the dollar.
- In 2008, supported the dollar funding of non-US banks in three ways:
  - Through *domestic* discount window lending to US branches of non-US banks.
  - By serving as *domestic* buyer and underwriter of last resort of assets held by US money market funds (MMFs), stopping a run on dollar funding of non-US banks.
  - By swapping dollars with central banks that in turn provided dollars offshore to non-US banks.
- In 2020, Fed extended its backstop from money market to bond market.
  - Again, it stabilised MMFs and thereby the dollar funding of non-US banks.
  - Again, it extended its credit to non-US banks through central bank swap lines.
  - Fed bought Treasuries from foreign central banks, who sought liquid balances.
  - Fed bought US corporate bonds and thereby stabilised market for dollar bonds issued by firms and governments outside the United States.

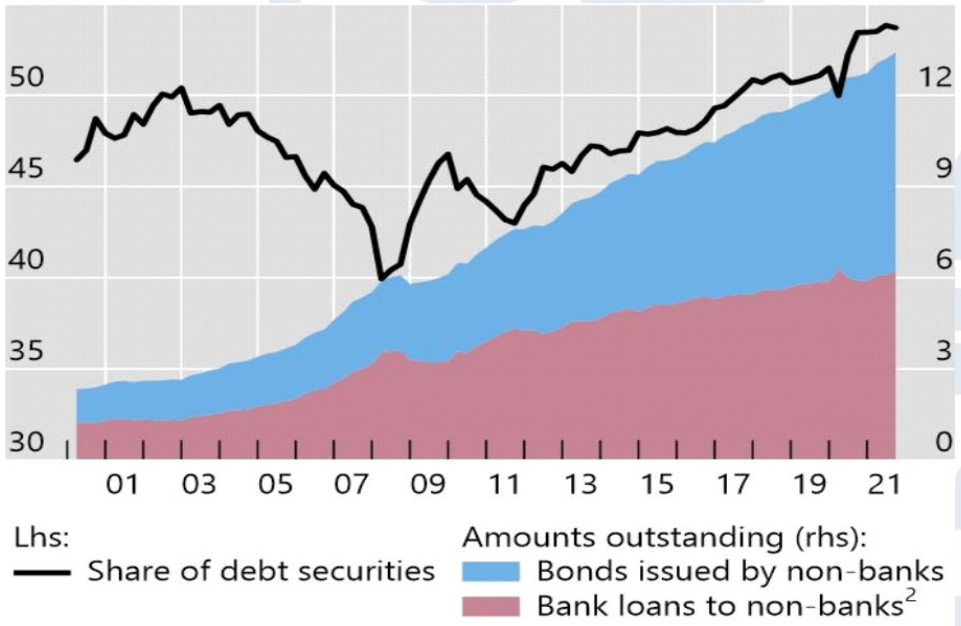
$ debt: non-banks offshore and non-US banks

On-balance sheet US dollar liabilities of . . .

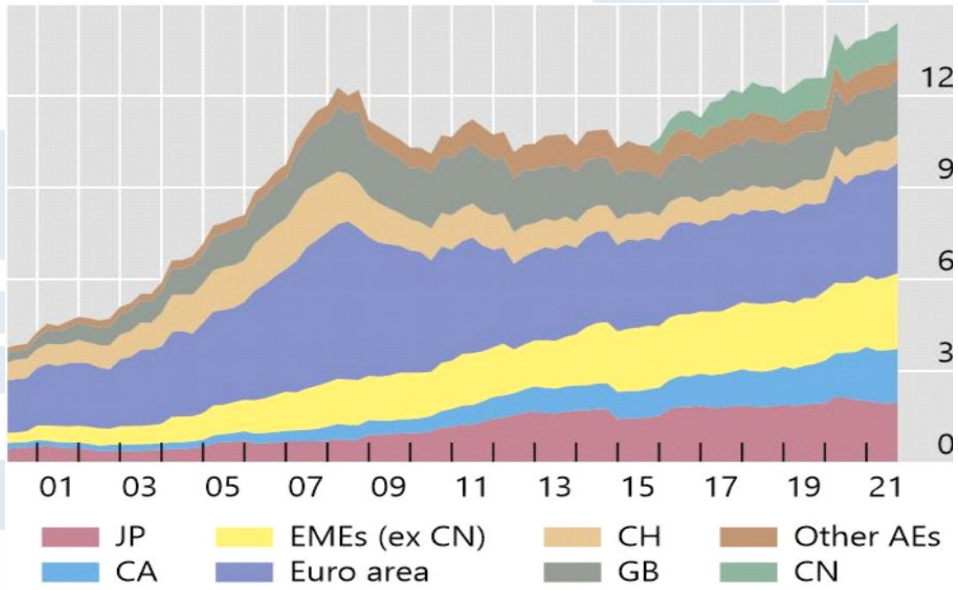
Amounts outstanding, in USD trillions

Graph 1

Non-banks outside the United States, by type of liability[1]



Non-US banks, by bank nationality[3]



[1] Non-banks comprise non-bank financials, non-financial corporations, governments, households and international organisations. [2] Loans by LBS-reporting banks to non-bank borrowers, including non-bank financial entities, comprise cross-border plus local loans. [3] Non-US banks' US dollar-denominated liabilities raised in any of the 47 BIS reporting countries (including the United States). Excludes intragroup positions but includes liabilities to other (unaffiliated) banks. From end-2015, includes positions reported by China and Russia.

Sources: Dealogic; Euroclear; Thomson Reuters; Xtrakter; BIS locational banking statistics; BIS calculations.

2008: Fed discount window credit to non-US banks

- Non-US banks lose dollar funding as US house price declines reduce value of holdings of private mortgage-backed securities.
- In December 2007, Fed retools discount window into term auction facility (TAF) with no stigma and non-US banks in US use heavily.
- Central bank swaps play a supporting role as ECB ($20b) and Swiss National Bank (SNB, $4b) provide parallel dollar funding offshore against their usual collateral (ECB as “13th Federal Reserve district”).
- Before Lehman default, large non-US bank share of $150b TAF dominates ECB swap at $55b and SNB at $6b.

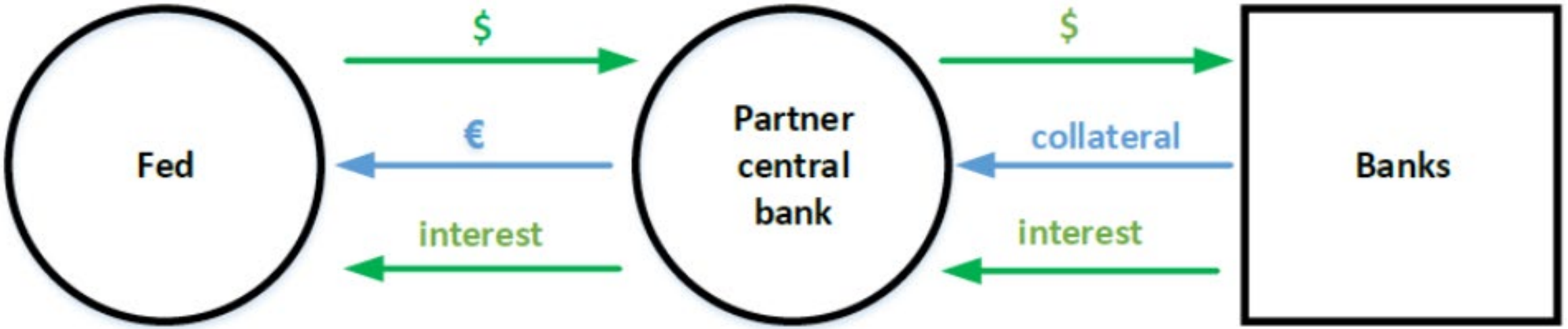
2008: Fed backstops MMFs, non-US banks' $ source

- Lehman default "breaks the buck" at a MMF, shares not worth par, setting off run on $1.2 trillion of dollar funding for non-US banks.
- To stabilise MMFs, the key US commercial paper market, and bank funding, Fed and US Treasury backstop MMFs.
  - Fed in effect buys asset-backed commercial paper: buyer of last resort.
  - Fed underwrites commercial paper: underwriter of last resort.
  - US Treasury offers guarantees on par value of MMFs.
- Non-US banks lose at least $175b dollar funding from MMFs.
- Like the TAF, the backstop for US MMFs was a domestic last-resort operation that supported non-US banks' global dollar funding.

2008: Fed swaps dollars to central banks

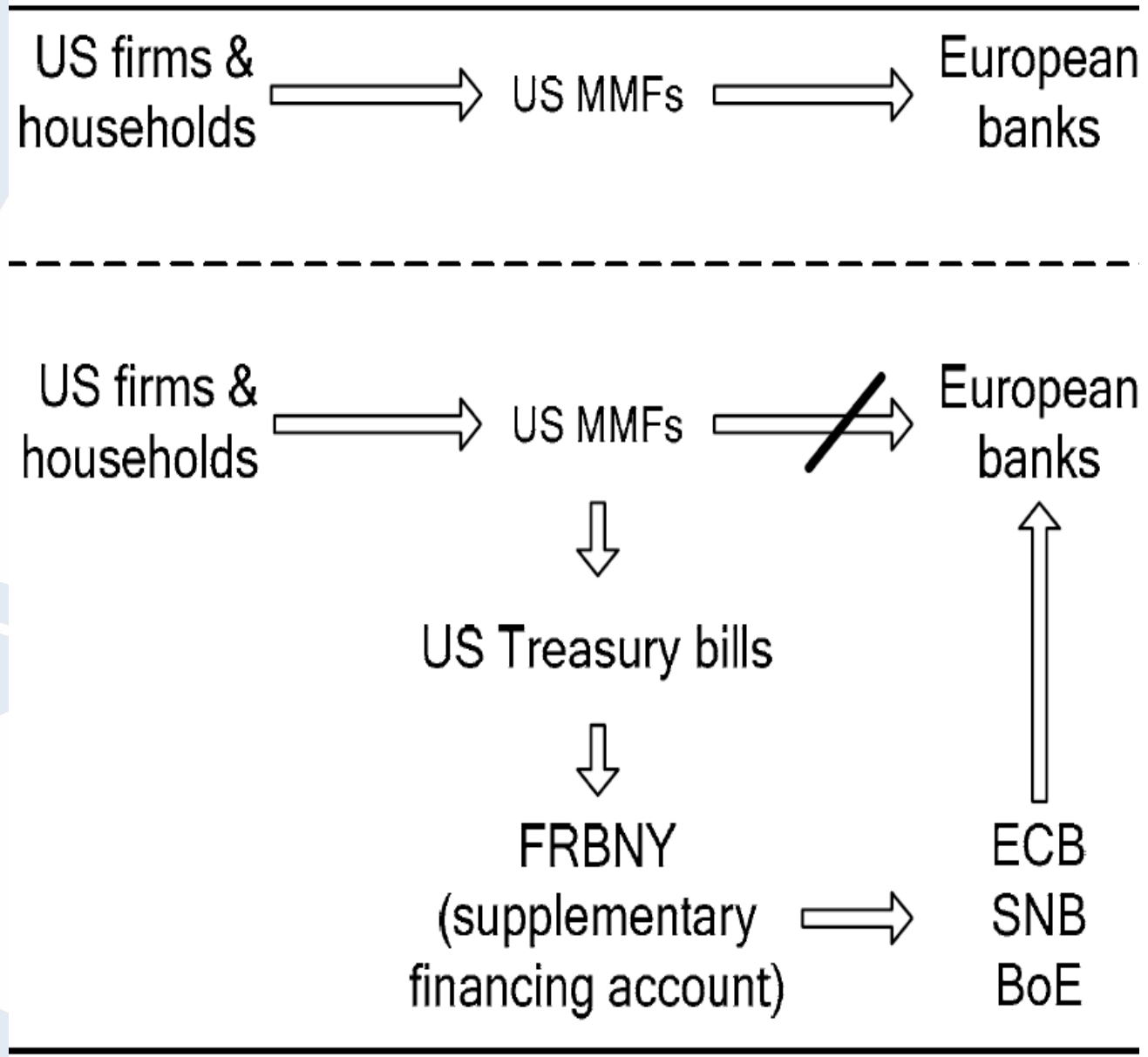
- Non-US banks' dollar needs after Lehman lead to wider swap lines:
  - Immediately with the Banks of Japan, England and Canada.
  - And subsequently with central banks of Australia, Sweden, Denmark, Norway and then New Zealand.
  - And finally to emerging markets Brazil, Mexico, Singapore, South Korea.
- And larger swap lines, from $61b to $290b in late September.
- Then in mid-October 2008, the swaps with the ECB, SNB, Bank of Japan, Bank of England and Bank of Canada ceased to have pre-set limits: An "unimaginable" step in central bank cooperation, according to the General Manager of the Bank for International Settlements.
- Total amounts swapped by the Fed to partner central banks and provided offshore to banks reached almost $600b.

Providing dollars offshore through swaps



Central bank swaps replace dollar funding from MMFs after Lehman failure

- Lehman failure leads to switches from corporate to government MMFs.
- Government MMFs buy Treasury bills, Treasury deposits proceeds in FRBNY.
- Fed swaps dollars with European central banks.
- European central banks provide dollars to European banks.



2020: Fed backstops $ money & bond market

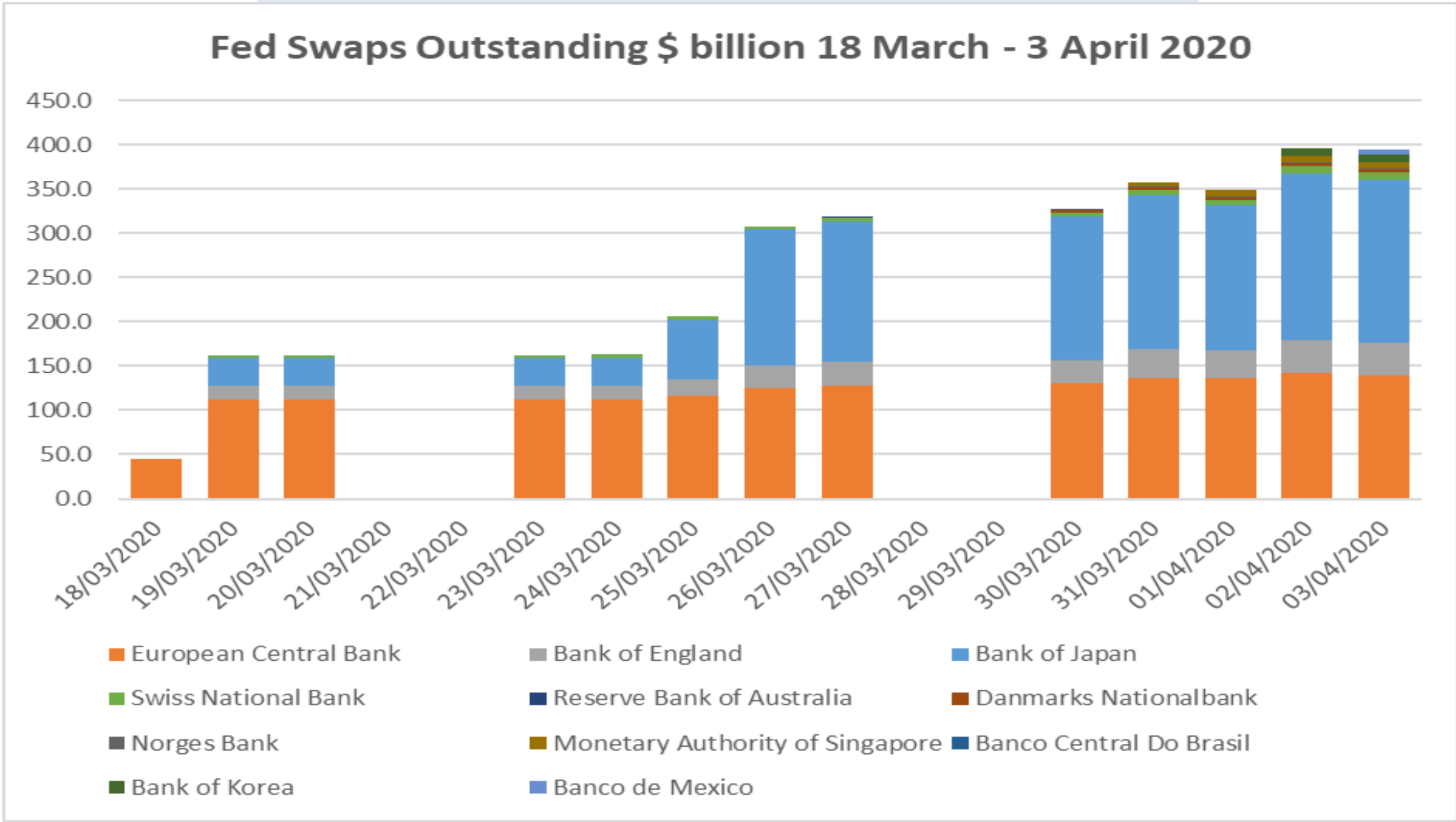
- Fed faced runs on MMFs and on bond funds, and dumping of US Treasury securities in strained markets, while banks experienced not runs but wholesale precautionary draw-down of credit lines.
- Again, Fed stabilised MMFs and thereby the dollar funding of non-US banks.
- Again, it extended its credit to non-US banks through central bank swap lines.
- Fed bought Treasuries from central banks, who sought liquid balances.
- Fed bought US corporate bonds and thereby stabilised market for dollar bonds issued by firms and governments outside the United States.

2020: Fed supports MMFs and non-US bank $ funding

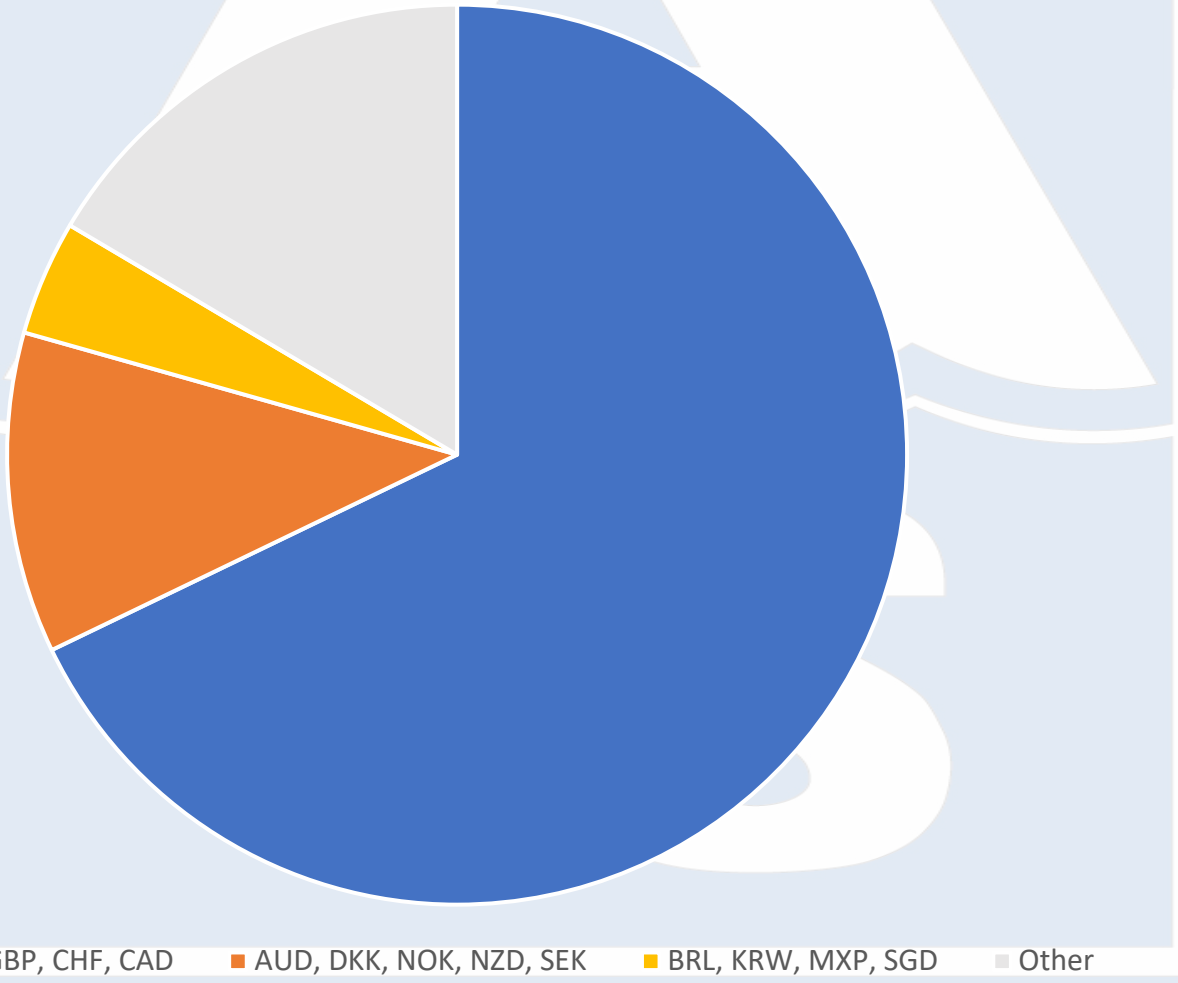
- Non-US banks relied on both US and offshore MMFs for about an eighth of their on-balance sheet funding before the onset of Covid (Aldasoro et al 2021).
- MMFs suffered runs in the dash for cash at the onset of the Covid pandemia, to some extent spurred by the reforms since 2008.
- In mid-March 2020, the Fed supported assets held by MMFs by last resort underwriting and buying of commercial paper.
- Still, non-US banks lost $200 billion in funding from MMFs, about 2% of their on-balance sheet dollar funding.

2020: Fed extends swap lines

- In March 2020, the Fed put the swap lines to work in days versus the months taken in 2007-08.
  - On 15 March, the spread on the standing swaps with the ECB, SNB and Banks of Japan, England and Canada was reduced, and 84 day operations were introduced; on 20 March daily operations started.
  - Swaps were agreed with the same 9 other central banks as in 2008 on 19 March.
- A new repo line against US Treasury holdings at the New York Fed was introduced on 31 March.
- The yield premium on dollars in private foreign exchange swaps tended to peak in late March.
- Through 14 central banks, Fed's swap lines cover currencies accounting for a very large proportion of private foreign exchange swaps involving dollars.


Fed Swaps Outstanding $ billion 18 March - 3 April 2020
450.0
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
18/03/2020
19/03/2020
20/03/2020
21/03/2020
22/03/2020
23/03/2020
24/03/2020
25/03/2020
26/03/2020
27/03/2020
28/03/2020
29/03/2020
30/03/2020
31/03/2020
01/04/2020
02/04/2020
03/04/2020
European Central Bank
Bank of England
Bank of Japan
Swiss National Bank
Reserve Bank of Australia
Danmarks Nationalbank
Norges Bank
Monetary Authority of Singapore
Banco Central Do Brasil
Bank of Korea
Banco de Mexico

Fed's standing and temporary central bank swaps cover most FX market swaps vs $



The Fed buys Treasuries from central banks

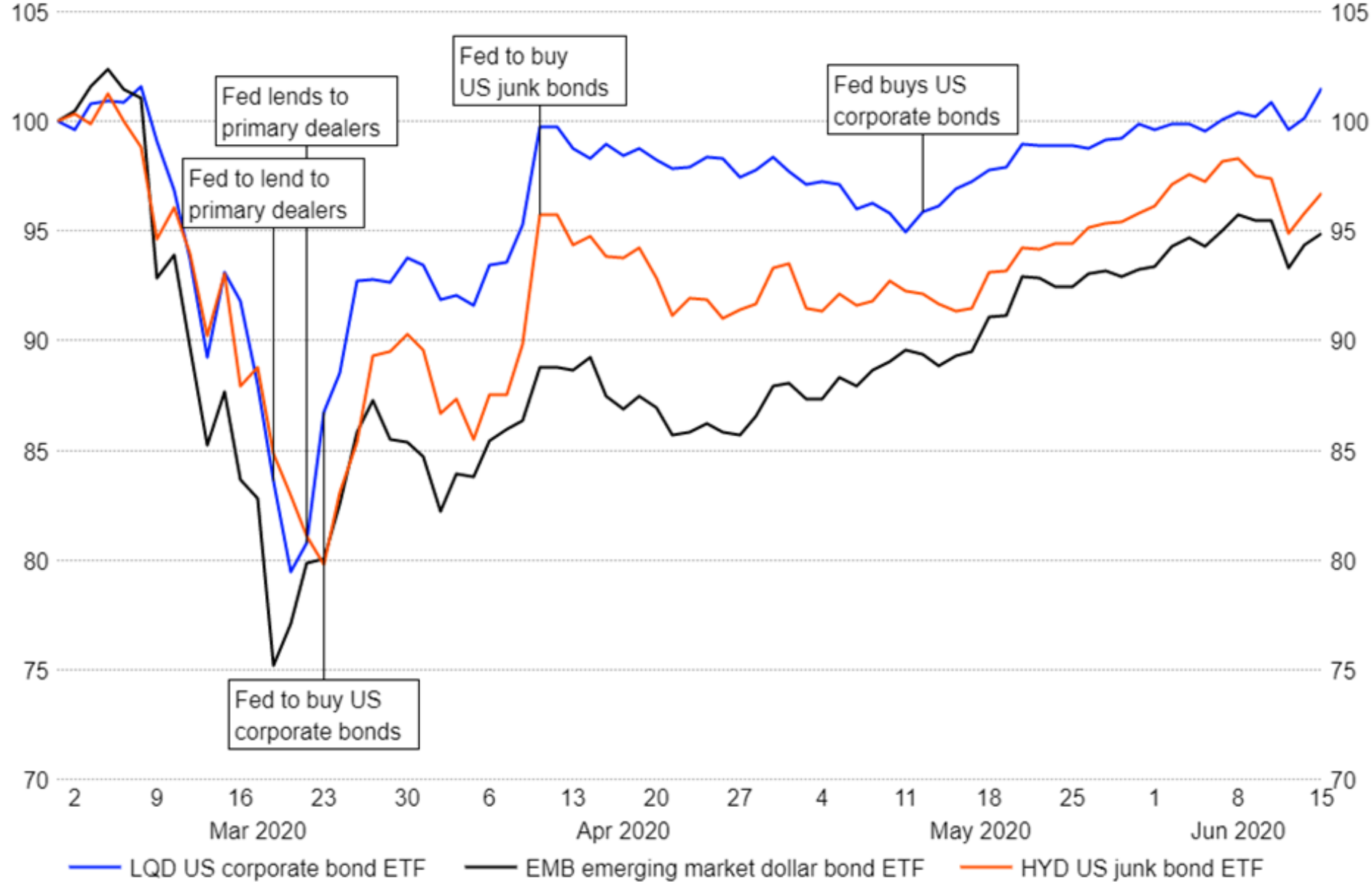
- Central bank dash to US dollar cash from US Treasury bonds was just part of a broad dumping of Treasuries in March 2020.
  - Highly leveraged hedge funds sold Treasury bonds to the tune of $200 b.
  - Spooked by price declines, investors in US bond funds sold a huge 5.6% of their holdings in March, and the funds dumped $260 b. of Treasuries.
  - Central banks, making their reserves liquid to fund banks and firms or to intervene to support their currencies, sold $200 b.
- Between 11 March and 2 April 2020 the Fed bought no less than $900 billion of Treasury and agency securities, “in the amounts needed” to restore proper functioning of the market.
- Fed served as buyer of last resort from global central banks.
- At end of March 2020, Fed introduces repo facility so central banks can become liquid without selling Treasuries held at the Fed.

The Fed's promise to purchase US corporate bonds stabilises prices of and flows into offshore $ bonds

- Precedents: The Fed was buyer of last resort and underwriter of last resort of corporate money market paper in 2008 and used its emergency powers to revive these facilities in mid-March 2020.
- Lender of last resort to securities dealers: In March 2020, the Fed also revived its emergency lending to securities dealers, allowing them to finance themselves with corporate bonds as collateral.
- In March 2020 the Fed undertook to buy US corporate bonds, raising prices and turning around flows to bond mutual funds.
- An unintended result: the Fed's last resort buying of US corporates also raised prices and turned around flows into dollar bonds issued by non-US borrowers.

Emerging market $ bonds rise as Fed buys US corporate bonds

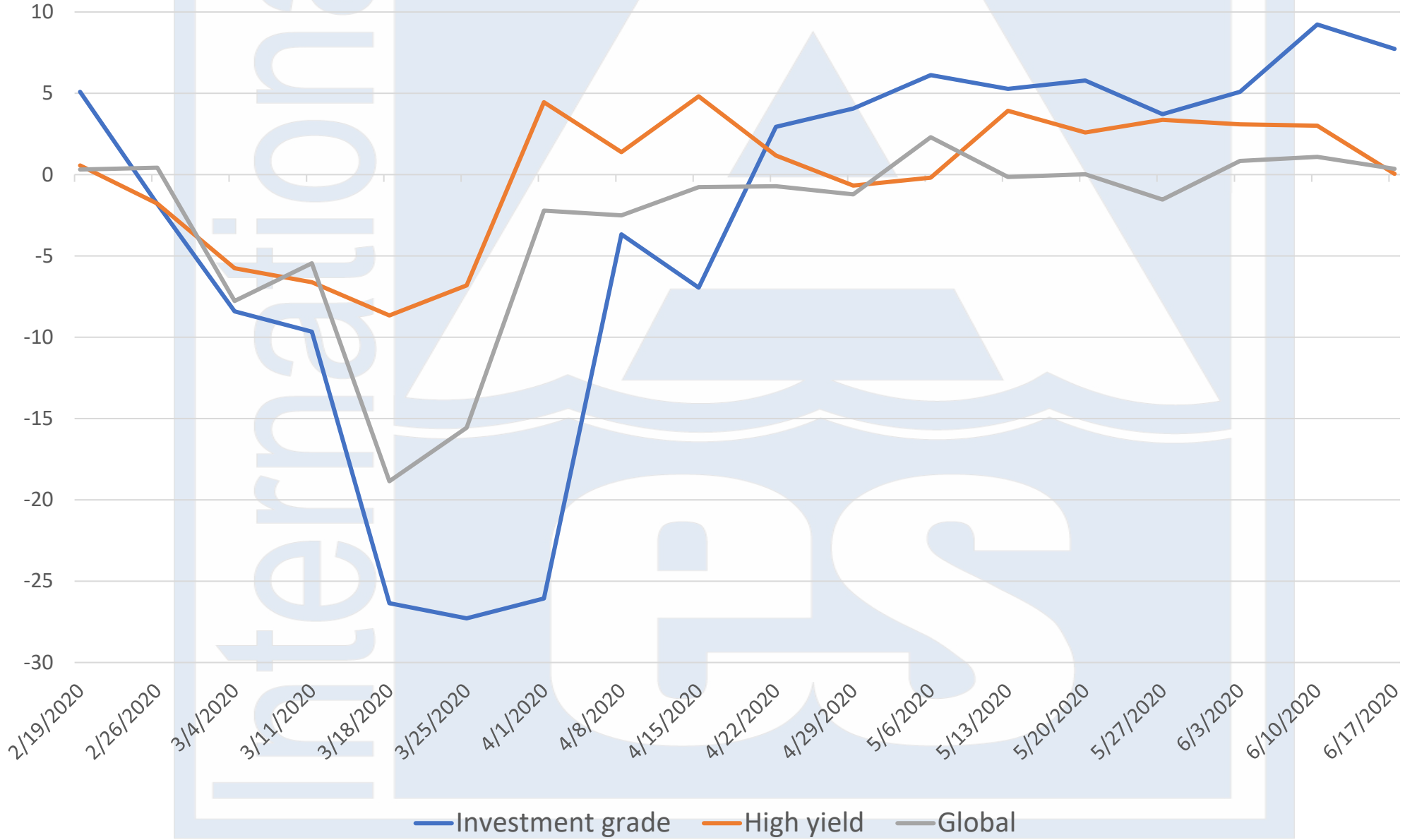
ETF prices, 28 February 2020 = 100



Source: Refinitiv Datastream; Federal Reserve; author's calculations.

Global bond fund flows turn as Fed to buy US corporate bonds

Billions of dollars per week



Fed's last resort operations are maintaining US global economic leadership

- Global economic leader at least maintains its lending to the rest of the world during an economic downturn—Kindleberger.
- Yet, left to themselves, US financial markets tended to cut credit to the rest of the world in 2008 and 2020.
- Fed's lending and buying of last resort in 2008 and 2020 has both replaced private credit to the rest of the world, and checked the withdrawal of private credit to the rest of the world.
- US global economic leadership has come to depend on Fed's backstopping of global dollar banking and bond markets.

NINETY-THIRD INTERNATIONAL ATLANTIC ECONOMIC EUROPEAN CONFERENCE

CHANGES IN THE ALIGNMENT OF CREDITOR COUNTRIES: 1995 TO 2020

Gylfi Zoega

University of Iceland and Birkbeck College, London

31 March 2021

- Data on current account imbalances for the OECD countries and for emerging economies used to map imbalances across countries and over time.
- The data is described by calculating the principal components of a matrix of current account imbalances for 47 countries going back to 1995.
  - These capture the unobserved underlying factors that explain how the pattern of surpluses and deficits has evolved.
  - The analysis identify the origins of surplus savings, which triggered capital inflows into different currencies.
- Results will show patterns of surpluses and deficits that may explain a large fraction of the variation in the data.

Data – current account (% of GDP) for 47 countries

(OECD plus emerging markets)

	arg	aut	aus	bel	bra	can	chi	chin	col	crica	cze	den	est	fin	fra	ger	gre	hun	ice	ind	indo	ire	isr	ita	jap	kor	lat	lit	lux	mex	net	nze	nor	pol	por	cric	rus	safr	sara	slo	sloe	spa	swe	swi	tur	UK	US
1995	-1.8	-5	-3	5	-2	-1	-2	0.2	-4	-3.1	-2	1	-4	4	1	-1	-2	-4	0.2	-2	-3	3.2	-5	2	2.1	-2	-0	-9	11	-1	6.2	-3.9	3.5	0.6	-0	-3	2.2	-1	-3.7	2	-1	-1.3	3.1	4.9	-2.4	-1	-2
1996	-2.4	-4	-3	5	-3	0	-4	0.8	-4	-2.2	-6	1	-8	4	1	-1	-3	-4	-3	-1	-3	3.5	-5	3	1.4	-4	-4	-9	11	-1	5.1	-4.7	6.7	-2.1	-5	-2	2.8	-1	0.4	-10	0.1	-0.9	3.3	5.3	-1	-1	-2
1997	-3.9	-3	-3	6	-4	-1	-4	3.9	-5	-3.8	-6	1	-11	5	3	-1	-4	-4	-2	-1	-2	3.3	-3	3	2.1	-2	-5	-11	9.9	-2	6.5	-5.2	6.2	-3.7	-6	-4	0	-1	0.2	-9	0.1	-0.7	3.8	8.4	-1	-0	-2
1998	-4.5	-5	-2	5	-4	-1	-5	3.1	-5	-3.7	-2	-1	-9	5	3	-1	-3	-8	-7	-2	3.8	0.8	-1	2	2.8	11	-9	-13	9	-3	3.2	-2.7	-0.3	-4	-8	-4	0.1	-2	-9	-9	-1	-1.7	3.6	7.6	0.7	-0	-2
1999	-3.9	-6	-2	5	-4	0	0	1.9	1	-5.6	-2	2	-4	5	3	-1	-4	-8	-7	-1	3.7	0.2	-1	1	2.5	4.4	-9	-11	8	-2	3.8	-4.9	5.5	-9.1	-9	-6	13	-0	0.3	-6	-4	-3.2	3.9	8.5	-0.4	-3	-3
2000	-3	-4	-1	4	-4	3	-1	1.7	1	-4.6	-4	1	-5	8	1	-2	-8	-9	-10	-1	4.8	0.6	-2	-0	2.6	1.8	-4	-5	13	-3	1.9	-3.2	14.8	-6	-11	-5	18	-0	7.6	-4	-3	-4.3	3.9	11	-3.6	-2	-4
2001	-1.4	-2	-1	3	-4	2	-2	1.3	-1	-3.2	-5	3	-7	8	2	-0	-7	-6	-5	0.3	4.3	0.2	-2	0	2	0.4	-7	-4	8.3	-2	2.4	-0.8	15.8	-3.1	-11	-3	11	0.2	5.1	-8	0	-4.4	4.7	6.8	1.9	-2	-4
2002	8	-4	2	5	-1	2	-1	2.4	-1	-5.1	-5	3	-11	8	1	1.9	-6	-6	1.2	1.4	4	0.2	-1	-1	2.6	0.7	-6	-4	7.6	-2	2.6	-2.2	12.3	-2.8	-8	-5	8.4	0.8	6.3	-8	0.9	-3.7	4.4	6.9	-0.3	-2	-4
2003	5.8	-5	2	4	0.6	1	-0	2.6	-1	-5.1	-6	3	-13	5	1	1.4	-9	-8	-5	1.5	3.5	0.5	0.6	-1	3.1	1.6	-8	-6	7	-1	5.5	-2.4	12	-2.5	-7	-5	7.2	-1	13.1	-1	-1	-3.9	5.8	11	-2.4	-2	-5
2004	1.8	-6	2	3	1.7	2	3	3.5	-1	-3.6	-4	3	-12	6	1	4.5	-8	-9	-10	0.1	0.6	-0	1.5	-1	3.7	3.7	-12	-8	7.1	-1	7.6	-4.6	12.4	-5.8	-8	-4	9.1	-3	20.8	-8	-3	-5.5	6	13	-3.5	-2	-5
2005	2.5	-6	2	2	1.6	2	2	5.8	-1	-4.2	-2	4	-9	3	0	4.7	-9	-7	-16	-1	0	-4	3	-1	3.5	1.3	-12	-7	6.9	-1	7.1	-7.1	16.5	-2.9	-10	-4	10	-3	28.5	-8	-2	-7.3	6	12	-4.1	-2	-6
2006	2.8	-6	3	2	1.2	1	5	8.4	-2	-4	-2	3	-15	4	0	5.8	-12	-7	-23	-1	2.7	-5	4.1	-2	3.8	0.2	-21	-11	6.7	-0	9.1	-7.1	16.3	-4.3	-10	-4	8.9	-4	26.3	-8	-2	-8.8	8.1	13	-5.6	-3	-6
2007	2.1	-7	4	2	0.1	1	4	9.9	-3	-5.5	-5	1	-15	4	-0	6.9	-15	-7	-14	-1	2.2	-7	3.2	-1	4.7	0.9	-21	-15	6.5	-1	6.9	-6.8	12.4	-6.6	-10	-6	5.3	-5	22.5	-5	-4	-9.4	8.1	8.7	-5.3	-3	-5
2008	1.5	-5	5	-1	-2	0	-4	9.2	-3	-8.3	-2	3	-9	3	-1	5.7	-15	-7	-21	-3	0	-6	1	-3	2.8	0.4	-12	-13	6.2	-2	5	-7.7	15.8	-7	-12	-8	5.9	-5	25.5	-6	-5	-8.9	7.8	1.5	-5	-4	-5
2009	2.2	-5	3	2	-2	-3	2	4.8	-2	-1.7	-2	4	3	2	-1	5.8	-12	-1	-9	-2	1.8	-5	3.2	-2	2.8	3.6	8.2	1.9	5.6	-1	5.4	-2.3	10.8	-4.1	-10	-2	3.8	-2	4.9	-4	-1	-4.1	5.9	6.1	-1.6	-3	-3
2010	-0.4	-4	3	2	-4	-4	1	3.9	-3	-3.2	-4	7	2	2	-1	5.8	-10	0.3	-6	-3	0.7	-1	3.3	-3	3.8	2.5	2.7	-0	5.8	-0	7	-2.2	11	-5.5	-10	-3	4.3	-1	12.6	-5	-1	-3.7	5.9	14	-5.6	-3	-3
2011	-1	-3	2	-2	-3	-3	-2	1.8	-3	-5.3	-2	7	1	-1	-1	6.2	-9	0.6	-5	-4	0.2	-2	1.5	-3	2.1	1.3	-3	-4	5.6	-1	8.6	-2.8	12.5	-5.4	-6	-5	4.7	-2	23.6	-5	-1	-2.7	5.5	6.8	-8.8	-2	-3
2012	-0.4	-4	2	-0	-3	-4	-4	2.5	-3	-5.1	-2	6	-2	-2	-1	7.1	-4	1.6	-4	-5	-3	-3	0.4	-0	1	3.8	-3	-2	5.3	-2	10	-3.9	12.4	-4	-2	-5	3.2	-5	22.4	1	1.3	0.1	5.5	9.4	-5.5	-4	-3
2013	-2.1	-3	2	1	-3	-3	-5	1.5	-3	-4.8	-1	8	0	-2	-1	6.5	-1	3.4	6.2	-3	-3	1.6	2.8	1	0.9	5.6	-3	1.7	4.6	-3	9.8	-3.1	10.2	-1.8	1.6	-5	1.4	-5	18.1	2	3.3	2	5.2	10	-5.8	-5	-2
2014	-1.6	-3	3	1	-4	-2	-4	2.3	-5	-4.7	0.2	9	1	-1	-1	7.2	-1	1.1	4.3	-1	-3	1.1	4.1	2	0.8	5.6	-2	3.3	4.7	-2	8.5	-3.1	11	-2.6	0.2	-5	2.7	-5	9.8	1	5.1	1.7	4.2	7.5	-4.1	-5	-2
2015	-2.7	-5	2	1	-3	-4	-3	2.6	-6	-3.4	0.4	8	2	-1	-0	8.6	-1	2.3	5.6	-1	-2	4.4	5.2	1	3.1	7.2	-1	-3	4.8	-3	6.3	-2.7	8	-0.9	0.2	-3	4.9	-4	-8.7	-2	3.8	2	3.3	9.4	-3.2	-5	-2
2016	-2.7	-3	3	1	-1	-3	-3	1.7	-5	-2.1	1.8	8	1	-2	-1	8.5	-2	4.5	8	-1	-2	-4	3.6	3	3.8	6.6	1.7	-1	4.7	-2	8.1	-2.1	4	-0.8	1.2	-2	1.9	-3	-3.7	-3	4.8	3.2	2.4	8	-3.1	-5	-2
2017	-4.8	-3	1	1	-1	-3	-3	1.5	-3	-3.6	1.6	8	2	-1	-1	7.8	-2	2	4.2	-2	-2	0.5	3.6	3	4.2	4.6	1.1	0.5	4.7	-2	11	-2.8	5.5	-0.3	1.3	-4	2	-2	1.5	-2	6.2	2.8	2.9	6.3	-4.7	-4	-2
2018	-5.2	-2	1	-1	-3	-2	-5	0.2	-4	-2.9	0.4	7	1	-2	-1	7.8	-3	0.2	3.5	-2	-3	5.2	2.8	3	3.5	4.5	-0	0.2	4.6	-2	11	-3.9	8	-1.3	0.6	-3	6.9	-3	8.8	-2	5.9	1.9	2.7	6.1	-2.4	-4	-2
2019	-0.8	1	2	0	-4	-2	-5	0.7	-5	-1.2	0.3	9	3	-0	-0	7.4	-2	-1	5.8	-1	-3	-20	3.4	3	3.4	3.6	-1	3.5	4.7	-0	9.4	-2.9	2.9	0.5	0.4	-1	4	-3	4.8	-3	6	2.1	5.5	5.4	0.9	-3	-2
2020	0.9	3	2	1	-2	-2	-2	1.9	-3	-1.3	3.5	8	-0	1	-2	6.9	-7	-2	0.8	1.3	-0	-3	5.4	4	2.9	4.5	3	7.3	3.8	2.4	7	-1.1	0.7	3	-1	-1	2.4	2	-3.1	0	7.4	0.8	6.1	2.9	-5	-3	-3

Eigenvalues

Principal component	Value	Proportion	Cumulative value	Cumulative proportion
PC1	17.5	0.38	17.5	0.38
PC2	10.2	0.22	27.6	0.60
PC3	4.0	0.09	31.6	0.69
PC4	2.8	0.06	34.4	0.75
PC5	2.3	0.05	36.7	0.80
PC6	1.8	0.04	38.5	0.84
PC7	1.5	0.03	40.0	0.87
PC8	1.1	0.02	41.2	0.89

Eigenvectors

OECD	PC1	PC 2	PC 3	PC 4	PC 5		PC 1	PC 2	PC 3	PC 4	PC 5	**Non-OECD**	PC 1	PC 2	PC 3	PC 4	PC 5
Australia	0.16	-0.05	**0.23**	-0.03	**-0.22**	Japan	-0.05	0.11	**0.21**	-0.06	0.32	Argentina	-0.12	0.13	**0.23**	-0.01	-0.11
Austria	0.01	**0.29**	0.10	0.06	0.04	Korea	0.12	0.04	-0.01	**0.25**	0.36	Brazil	-0.09	0.16	**0.19**	**-0.18**	**0.20**
Belgium	-0.12	**-0.24**	0.04	-0.05	0.12	Latvia	**0.18**	-0.08	0.07	0.15	**-0.22**	China	-0.14	0.19	-0.05	**-0.16**	0.09
Canada	**-0.20**	-0.05	0.13	-0.01	0.05	Lithuania	**0.18**	0.05	**0.19**	**0.20**	**-0.16**	India	-0.06	-0.10	**0.36**	-0.02	**0.21**
Chile	-0.15	0.13	**0.16**	0.05	0.09	Luxembourg	-0.14	**-0.22**	-0.08	-0.05	-0.09	Indonesia	**-0.18**	-0.04	0.15	**0.27**	0.06
Colombia	-0.16	0.01	0.11	**0.29**	-0.09	Mexico	0.02	0.09	**0.29**	**-0.30**	-0.27	Russia	-0.14	0.00	0.08	**0.32**	0.01
Costa Rica	0.12	-0.09	**0.27**	-0.09	0.03	Netherlands	0.14	**0.17**	-0.08	**-0.18**	0.06	Saudi Arabia	-0.10	0.23	-0.10	-0.02	-0.15
Czech R.	**0.18**	0.10	0.07	0.01	0.13	New Zealand	0.13	-0.11	**0.20**	**0.30**	-0.10	South Africa	-0.04	**-0.19**	**0.31**	0.10	**-0.16**
Denmark	**0.19**	0.15	0.07	0.12	-0.01	Norway	-0.14	0.16	-0.08	**0.18**	-0.15						
Estonia	**0.20**	0.02	-0.02	**0.19**	-0.13	Poland	**0.17**	-0.05	**0.23**	**-0.19**	0.01						
Finland	**-0.20**	-0.15	0.12	0.04	0.01	Portugal	**0.22**	-0.02	-0.03	-0.11	0.11						
France	-0.13	**-0.22**	-0.07	0.03	**0.17**	Slovakia	0.15	0.06	-0.03	0.09	-0.09						
Germany	0.13	**0.25**	0.03	-0.02	0.09	Slovenia	**0.22**	-0.01	0.15	-0.03	0.07						
Greece	**0.17**	**-0.17**	-0.08	0.02	**0.17**	Spain	**0.22**	-0.10	-0.02	0.03	0.06						
Hungary	**0.22**	0.07	-0.08	0.04	-0.06	Sweden	-0.12	**0.22**	0.08	-0.10	-0.14						
Iceland	**0.20**	-0.11	0.04	0.07	0.06	Switzerland	-0.08	0.07	-0.05	**0.20**	**0.24**						
Ireland	0.00	-0.14	-0.15	0.11	0.06	Turkey	-0.02	**-0.23**	0.12	0.01	0.14						
Israel	0.09	**0.24**	0.14	0.10	**0.19**	U.K.	-0.12	**-0.19**	0.06	**-0.21**	**-0.16**						
Italy	0.14	**-0.18**	0.07	**-0.21**	0.18	U.S.	**0.18**	-0.16	-0.13	-0.04	-0.09						

Western financial boom and bust

Captures:

- Capital inflow into the U.S., Italy, Greece, Spain, Portugal, Baltic countries, Iceland before 2008 and,
- reversal after 2008.

This component explains 38% of the variation in the data.

Surplus and deficit countries

Captures:

- Current account surpluses of Germany, the Netherlands, Austria, Denmark, Norway, Sweden China, and Saudi Arabia,
- the deficits of the U.K., the U.S., Ireland, New Zealand, Turkey, Belgium, France and Italy.

Explains 22% of the variation in the data.

Emerging market boom

Captures:

- Capital inflow into emerging economies, which started before 2008 and continued after the crisis in countries such as; Argentina, Brazil, India, Indonesia and South Africa.

Explains 9% of the variation in the matrix.

Fourth principal component

Captures:

- Countries where the current account improved suddenly around 2000 and then declined gradually in the years that followed: Russia, Indonesia, Norway, Korea, Colombia, New Zealand…

Explains 6% of the variation in the matrix.

Concluding remarks

Three underlying factors explain close to 70% of the variation in the current account of 47 countries from 1995 to 2020:

Western financial crisis

- Capital inflow into Italy, Greece, Spain, Portugal, Baltic countries, Iceland before 2008 and reversal after 2008.
    - Explains 38% of the variation in the data.

Surplus and deficit countries

- Current account surpluses of Germany, the Netherlands, Austria, Denmark, Norway, Sweden China, and Saudi Arabia and
- the deficits of the U.K., the U.S., Ireland, New Zealand, Turkey, Belgium, France and Italy.
    - Explain 22% of the variation in the data.

Emerging market boom

- Capital inflow into emerging economies, which started before 2008 and continued after the crisis, in Argentina, Brazil, India, Indonesia and South Africa.
    - Explains 9% of the variation in the matrix.

NINETY-THIRD INTERNATIONAL ATLANTIC ECONOMIC EUROPEAN CONFERENCE

30 March – 1 April 2022