

Money, MMT, monetary policy, central banks

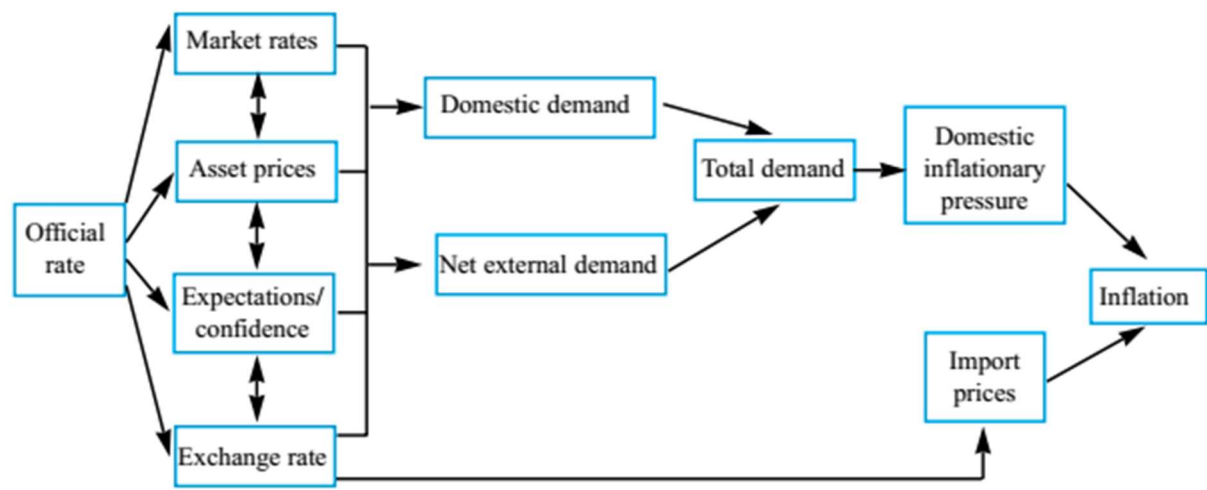


Fig. 1. El mecanisme de transmissió de la política monetària segons el Banc d'Anglaterra
<https://www.bankofengland.co.uk/-/media/boe/files/quarterly-bulletin/1999/the-transmission-mechanism-of-monetary-policy>

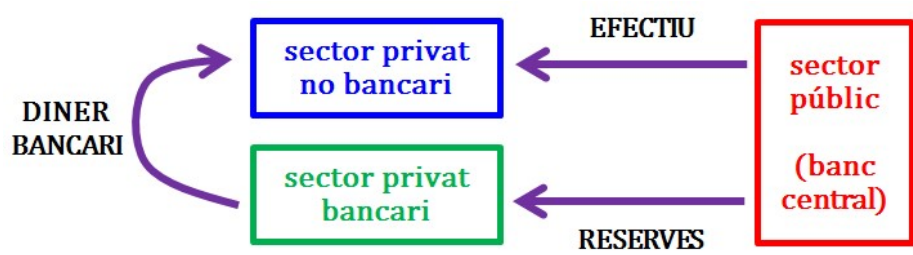


Fig. 7. Les formes bàsiques de diner com a promeses del pagament entre sectors

banc central		sector bancari		sector no bancari	
actius	efectiu reserves	efectiu reserves	dipòsits deutes	dipòsits efectiu	deutes actius

Fig. 8. Les formes bàsiques de diner en els balanços sectorials

Fig. 9. La compensació de pagaments a través de reserves del banc central
(Sergio Rossi, 2007, *Money and payments in theory and practice*)



Fig. 12. Prima de risc d'Espanya (juny 2006 – febrer 2025)

<https://datosmacro.expansion.com/prima-riesgo/espana>

“When people talk about the fragility of the euro and the increasing fragility of the euro, and perhaps the crisis of the euro, very often non-euro area member states or leaders, underestimate the amount of political capital that is being invested in the euro (...) We think the euro is 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.” (Èmfasi afegit)

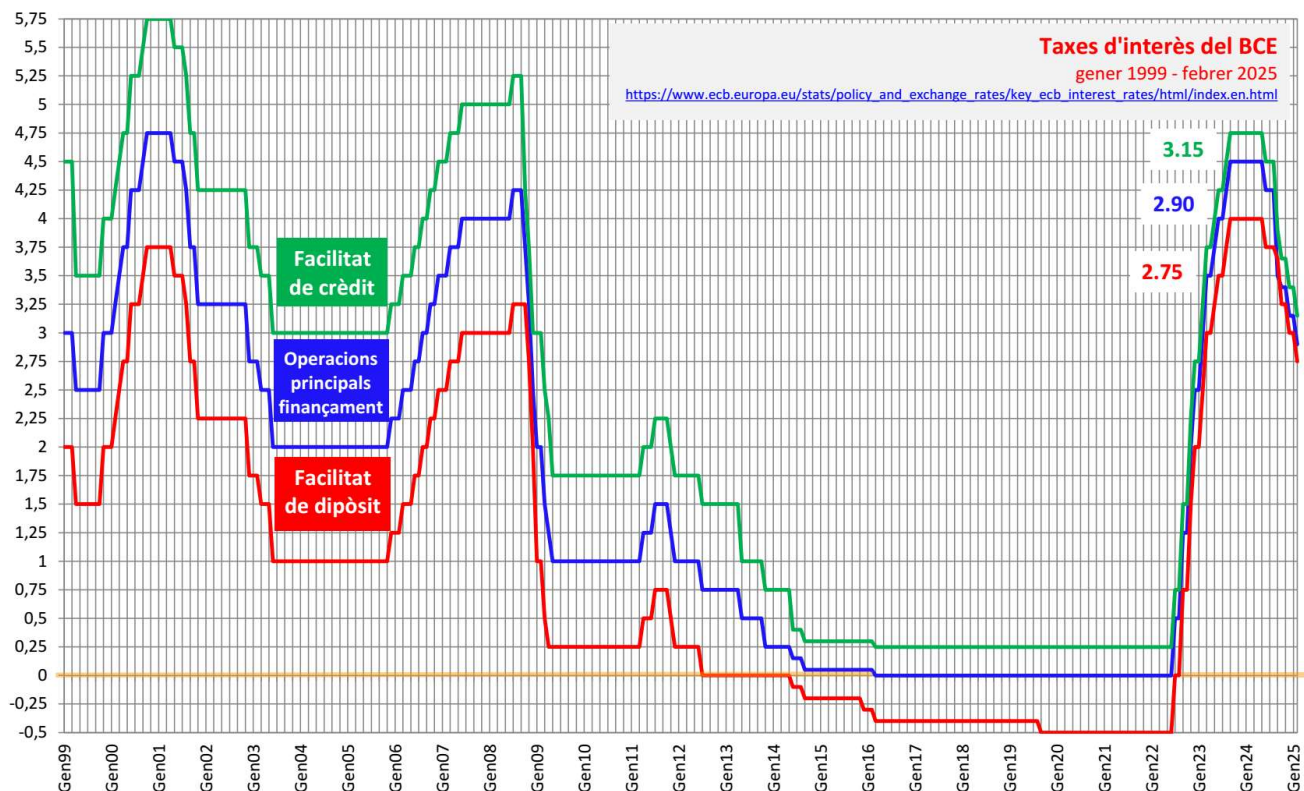


Fig. 15. Taxes d'interès del Banc Central Europeu (de gener 1999 a febrer de 2025)

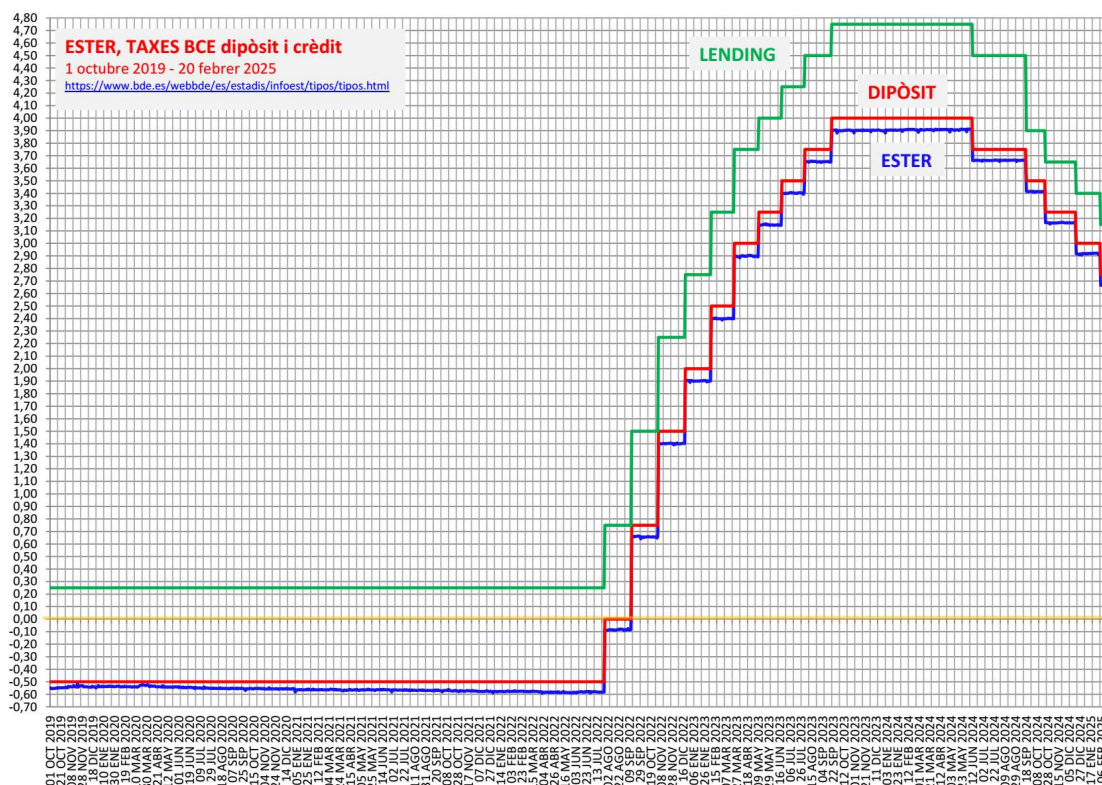
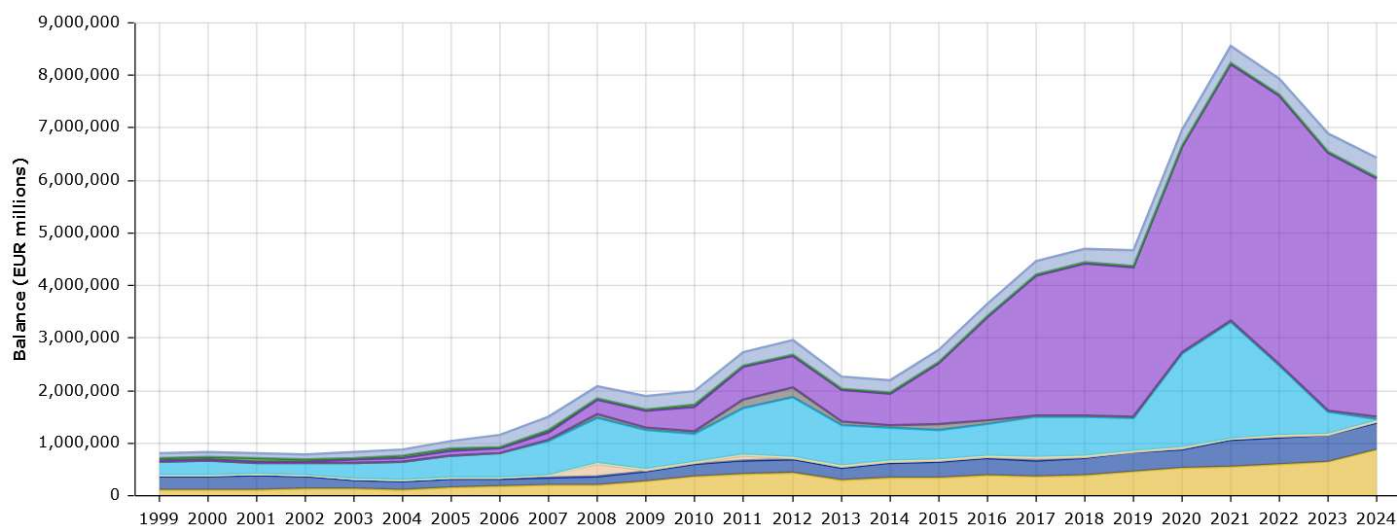


Fig. 18. €STR i taxes del BCE (d'octubre de 2019 a febrer de 2025)



872,158 Gold and gold receivables

522,450 Claims on non-euro area residents denominated in foreign currency

16,014 Claims on euro area residents denominated in foreign currency

20,122 Claims on non-euro area residents denominated in euro

34,221 Lending to euro area credit institutions related to monetary policy operations denominated in euro

36,292 Other claims on euro area credit institutions denominated in euro

4,533,182 Securities of euro area residents denominated in euro

20,394 General government debt denominated in euro

373,596 Other assets

6,428,429

Fig. 23. Actiu del balanç consolidat de l'Eurosistema (MEUR, desembre de 2024)

<https://www.ecb.europa.eu/press/annual-reports-financial-statements/annual/balance/html/index.en.html>

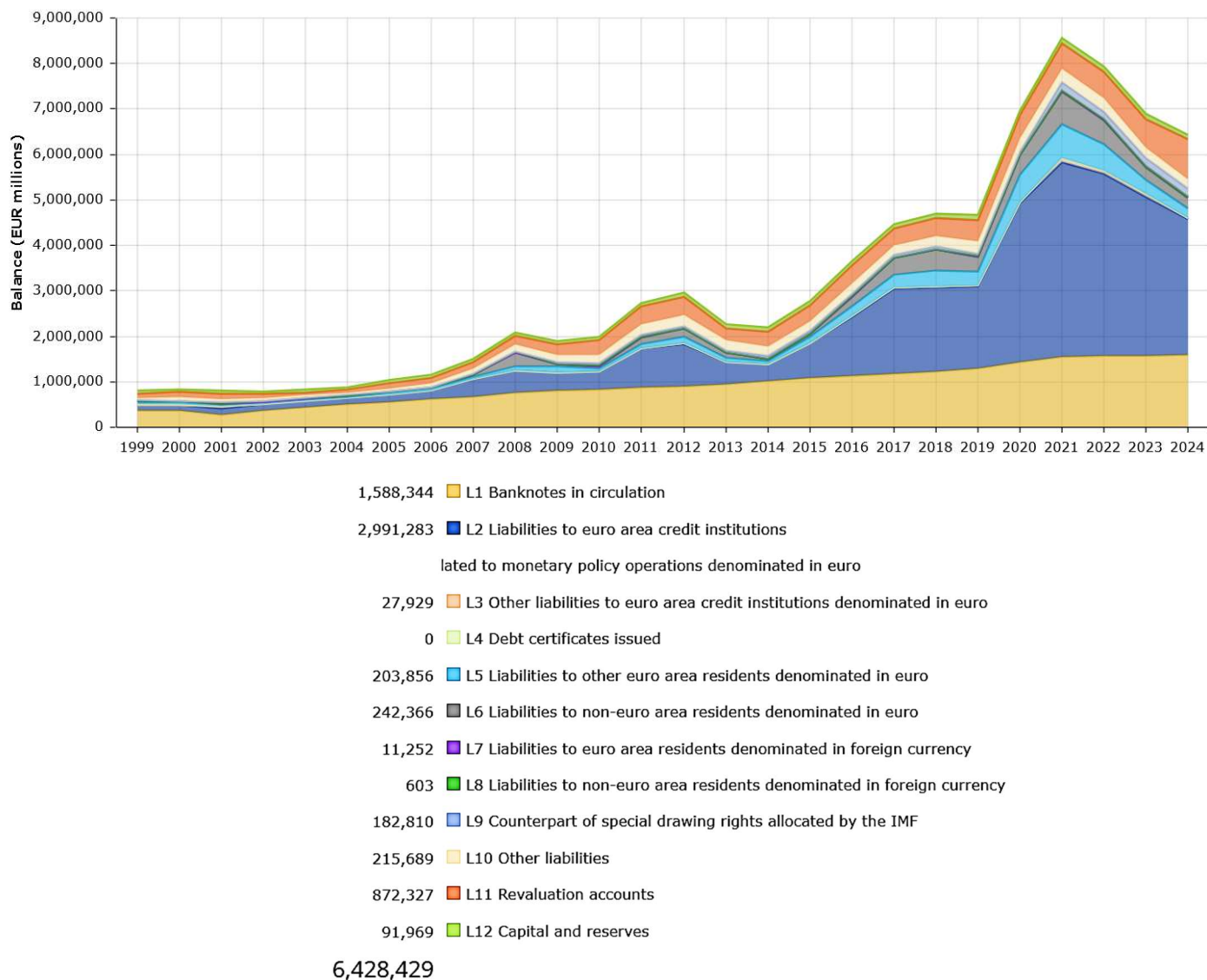


Fig. 24. Passiu del balanç consolidat de l'Eurosistema (MEUR, desembre de 2024)

<https://www.ecb.europa.eu/press/annual-reports-financial-statements/annual/balance/html/index.en.html>

	31 December 2024	31 December 2023
1 Gold and gold receivables	872,158	649,110
2 Claims on non-euro area residents denominated in foreign currency	522,450	499,610
2.1 Receivables from the IMF	236,843	229,003
2.2 Balances with banks and security investments, external loans and other external assets	285,607	270,607
3 Claims on euro area residents denominated in foreign currency	16,014	13,888
4 Claims on non-euro area residents denominated in euro	20,122	20,333
4.1 Balances with banks, security investments and loans	20,122	20,333
4.2 Claims arising from the credit facility under ERM II	0	0
5 Lending to euro area credit institutions related to monetary policy operations denominated in euro	34,221	410,290
5.1 Main refinancing operations	16,979	14,085
5.2 Longer-term refinancing operations	17,194	396,196
5.3 Fine-tuning reverse operations	0	0
5.4 Structural reverse operations	0	0
5.5 Marginal lending facility	48	10
5.6 Credits related to margin calls	0	0
6 Other claims on euro area credit institutions denominated in euro	36,292	28,708
7 Securitised euro area residents denominated in euro	4,533,182	4,898,722
7.1 Securities held for monetary policy purposes	4,283,370	4,694,345
7.2 Other securities	249,812	204,376
8 General government debt denominated in euro	20,394	20,917
9 Other assets	373,596	345,688
Total assets	6,428,429	6,887,265

Fig. 25. Actiu de l'Eurosistema, MEUR, desembre de 2023 i desembre de 2024

<https://www.ecb.europa.eu/press/annual-reports-financial-statements/annual/balance/html/ecb.eurosystembalancesheet2024~28f64426e5.en.html>

	31 December 2024	31 December 2023
1 Banknotes in circulation	1,588,344	1,567,711
2 Liabilities to euro area credit institutions related to monetary policy operations denominated in euro	2,991,283	3,508,865
2.1 Current accounts (covering the minimum reserve system)	192,273	174,019
2.2 Deposit facility	2,799,010	3,334,822
2.3 Fixed-term deposits	0	0
2.4 Fine-tuning reverse operations	0	0
2.5 Deposits related to margin calls	0	24
3 Other liabilities to euro area credit institutions denominated in euro	27,929	58,881
4 Debt certificates issued	0	0
5 Liabilities to other euro area residents denominated in euro	203,856	303,860
5.1 General government	122,026	212,789
5.2 Other liabilities	81,830	91,071
6 Liabilities to non-euro area residents denominated in euro	242,366	281,926
7 Liabilities to euro area residents denominated in foreign currency	11,252	16,382
8 Liabilities to non-euro area residents denominated in foreign currency	603	4,513
8.1 Deposits, balances and other liabilities	603	4,513
8.2 Liabilities arising from the credit facility under ERM II	0	0
9 Counterpart of special drawing rights allocated by the IMF	182,810	177,116
10 Other liabilities	215,689	232,132
11 Revaluation accounts	872,327	634,868
12 Capital and reserves	91,969	101,012
Total liabilities	6,428,429	6,887,265

Fig. 26. Passiu de l'Eurosistema, MEUR, desembre de 2023 i desembre de 2024

<https://www.ecb.europa.eu/press/annual-reports-financial-statements/annual/balance/html/ecb.eurosystembalancesheet2024~28f64426e5.en.html>



Fig. 1. Expansió quantitativa de la Reserva Federal (volum total d'actius, milions de dòlars)
https://www.federalreserve.gov/monetarypolicy/bst_recenttrends.htm

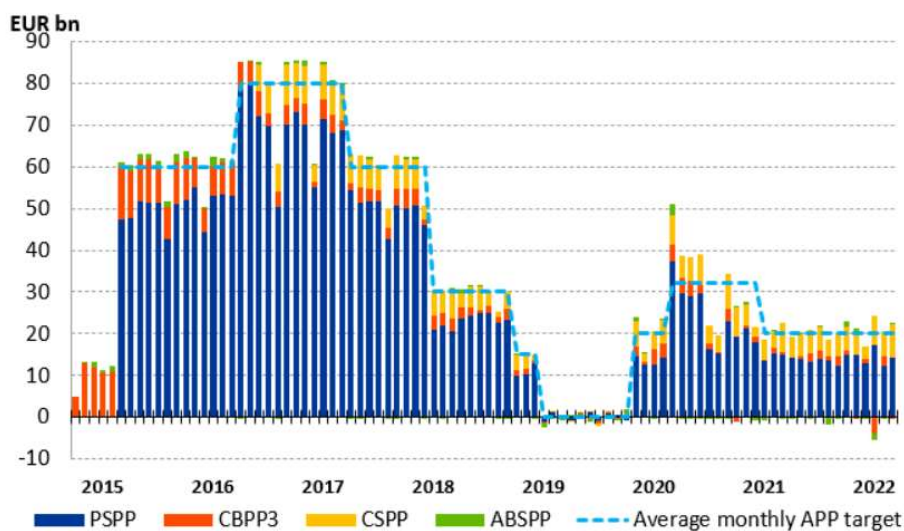


Fig. 2. Expansió quantitativa del Banc Central Europeu (APP = 'asset purchase programme')
 CSPP = compres a empreses ('corporate sector') · PSPP = compres al sector públic
 CBPP3 = tercera ronda de compres de bons garantits ('covered bonds')
<https://www.ecb.europa.eu/mopo/implement/app/html/index.en.html>
<https://www.bbva.com/es/economia-todos-quantitative-easing/>

Eurosystem holdings under the pandemic emergency purchase programme

Changes in holdings in EUR millions	Asset-backed securities	Covered bonds	Corporate bonds	Commercial paper	Public sector securities	Total
Holdings* as at end-Jan 2022	0	6,073	40,301	3,857	1,580,547	1,630,779
Net purchases Feb 22 - Mar 22	0	0	48	2,007	68,342	70,398
Quarter-end amortisation adjustment and redemptions of coupon STRIPS	0	-6	-37	-2	-4,643	-4,688
Holdings as at end-Mar 2022*	0	6,067	40,313	5,862	1,644,247	1,696,489

Fig. 3. Programa de compres d'emergència del BCE per la pandèmia de la covid-19 (PEPP), març 2022 ('commercial paper' = pagarès d'empresa no garantits, amb venciment mitjà d'uns 30 dies)

<https://www.ecb.europa.eu/mopo/implement/pepp/html/index.en.html>

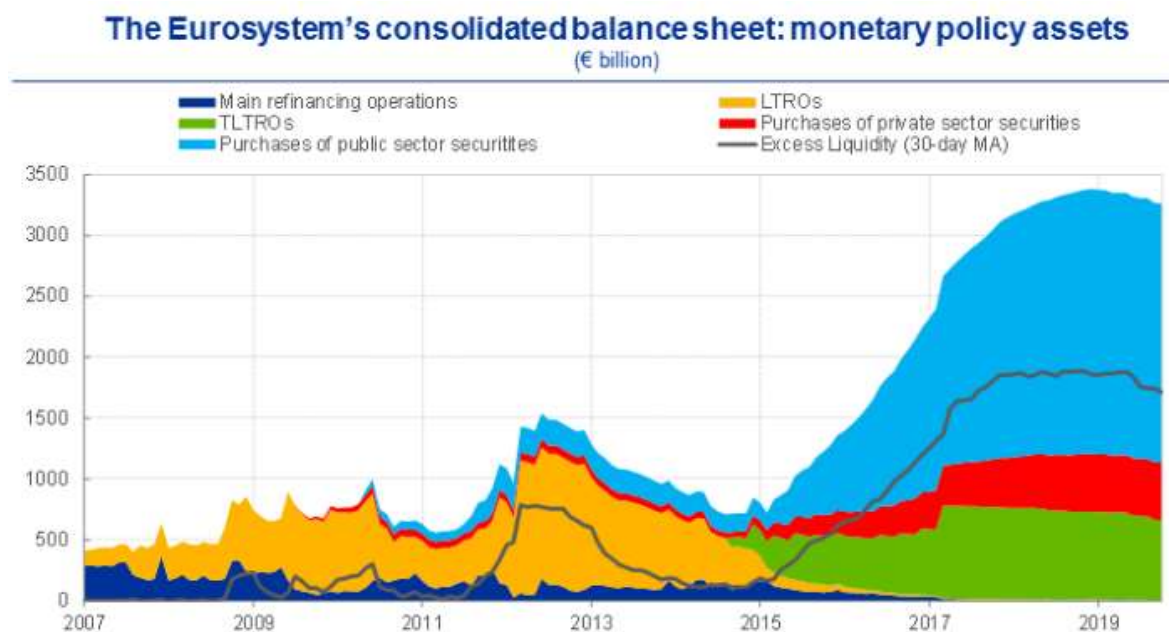


Fig. 4. Balanç de l'Eurosistema (fins octubre de 2019)

<https://www.ecb.europa.eu/press/key/date/2019/html/ecb.sp191112~5808616051.en.html>

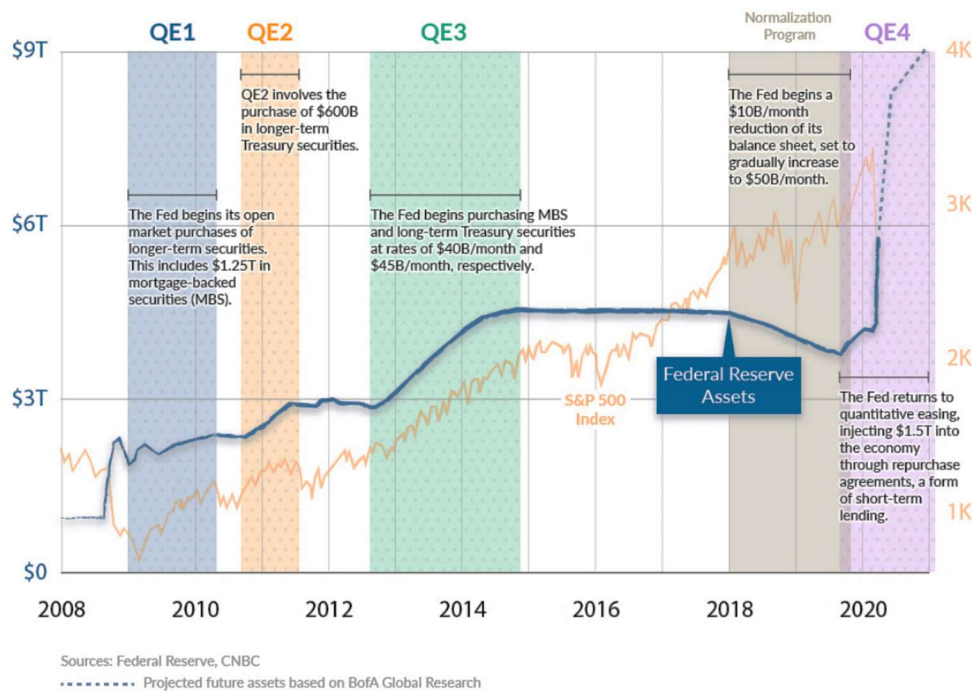
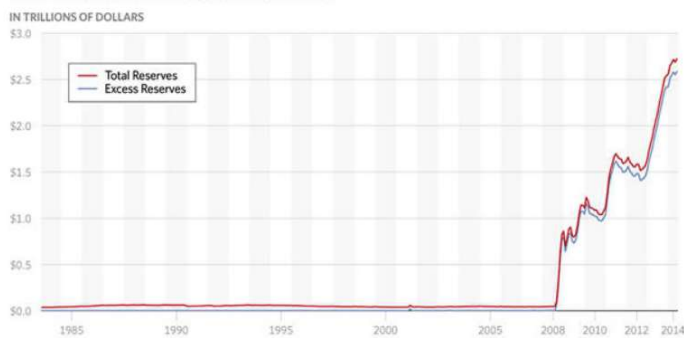


Fig. 5. Actius de la Reserva Federal

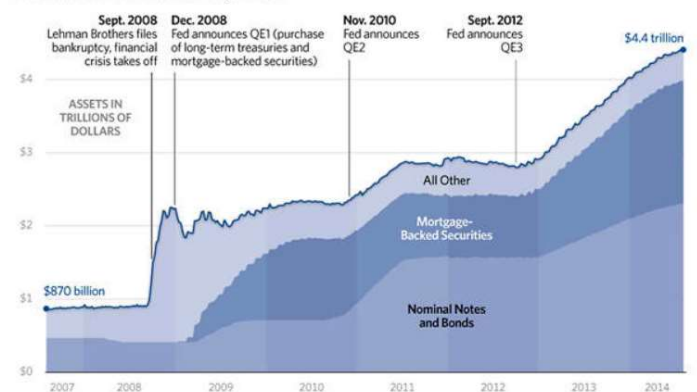
<https://www.visualcapitalist.com/the-feds-balance-sheet-the-other-exponential-curve/>

Excess Reserves Have Spiked Since 2008



BG 2938 heritage.org

Federal Reserve Assets: Key Dates



BG 2938 heritage.org

Figs. 6 i 7. Expansions quantitatives de la Reserva Federal

<https://www.heritage.org/monetary-policy/report/quantitative-easing-the-feds-balance-sheet-and-central-bank-insolvency>

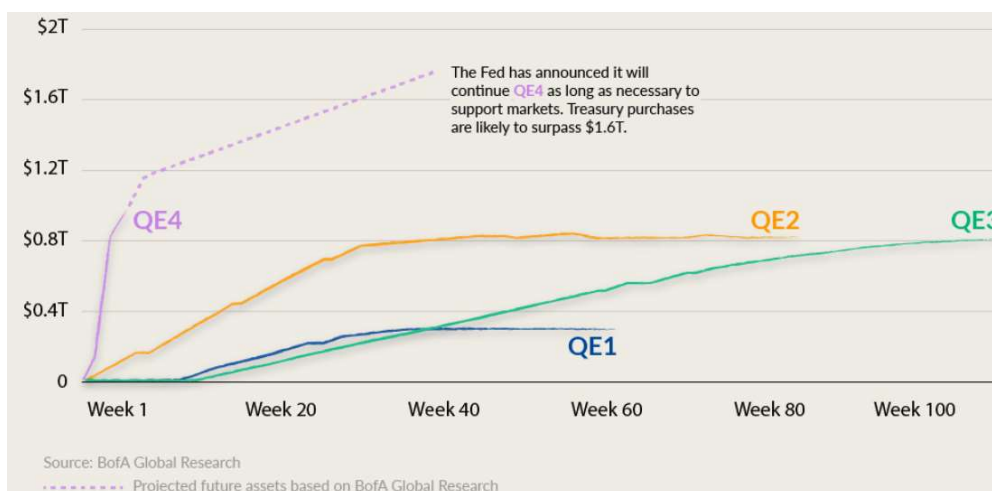


Fig. 8. Magnitud dels programes de compres d'actius de la Reserva Federal

<https://www.visualcapitalist.com/the-feds-balance-sheet-the-other-exponential-curve/>

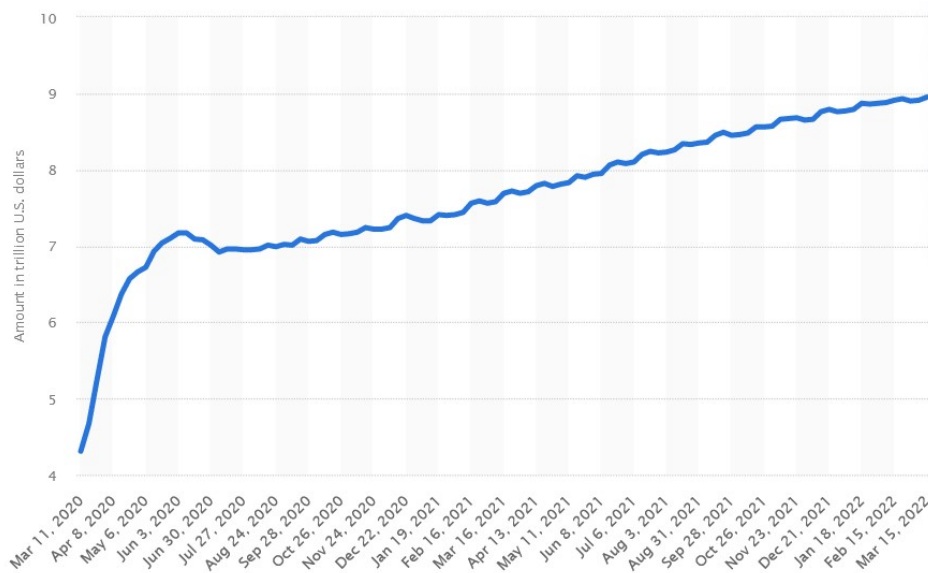


Fig. 9. Expansió quantitativa, Reserva Federal arran de la covid-19 (març 2020-març 2022, bilions \$)
<https://www.statista.com/statistics/1121416/quantitative-easing-fed-balance-sheet-coronavirus/>

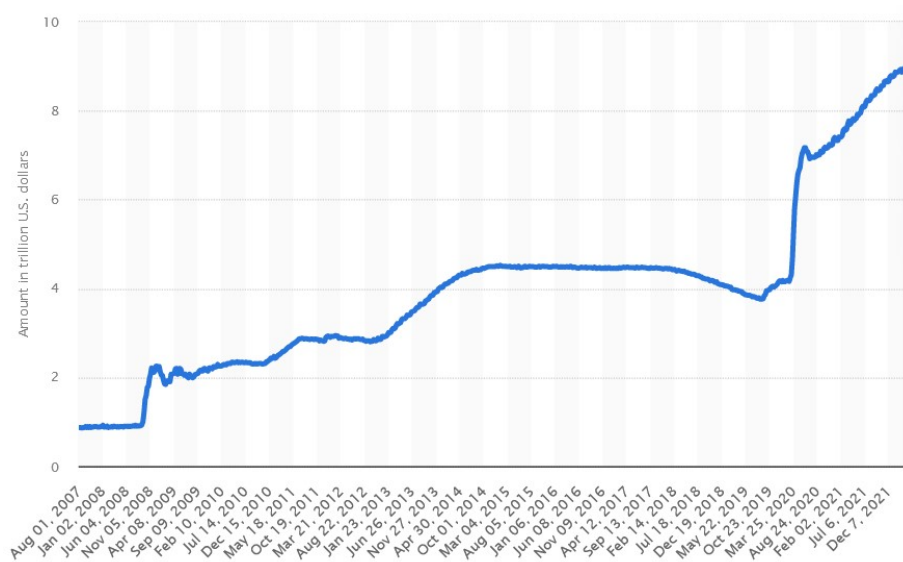


Fig. 10. Expansió quantitativa, Reserva Federal (agost 2007-març 2022, bilions de dòlars)
<https://www.statista.com/statistics/1121448/fed-balance-sheet-timeline/>

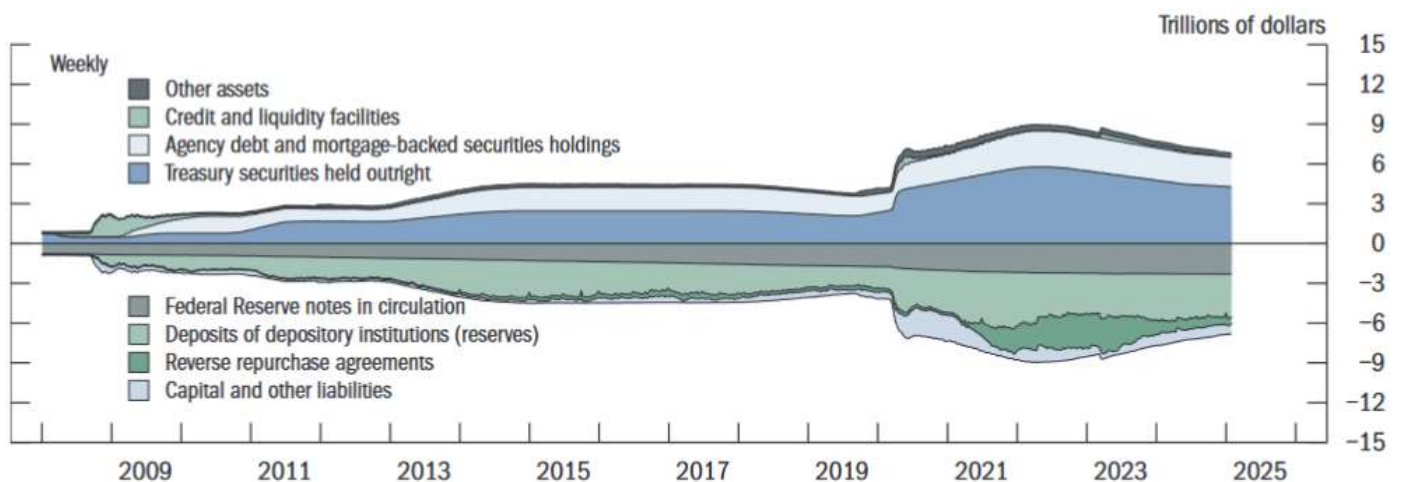


Fig. 11. Balanç de la Reserva Federal (trillion = 10^{12})

https://www.federalreserve.gov/publications/files/20250207_mprfullreport.pdf

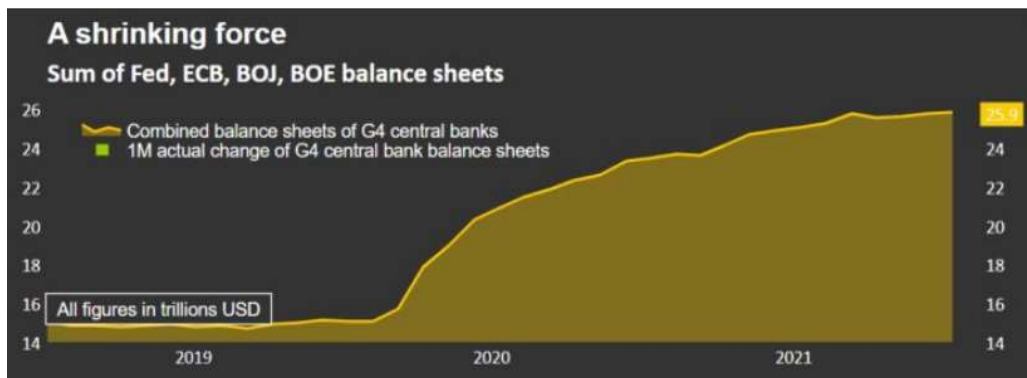


Fig. 12. Balanços agregats del G4 de bancs centrals (EUA, eurozona, Japçó, Regne Unit)

<https://www.reuters.com/business/central-banks-start-turning-off-cash-taps-2022-01-13/>

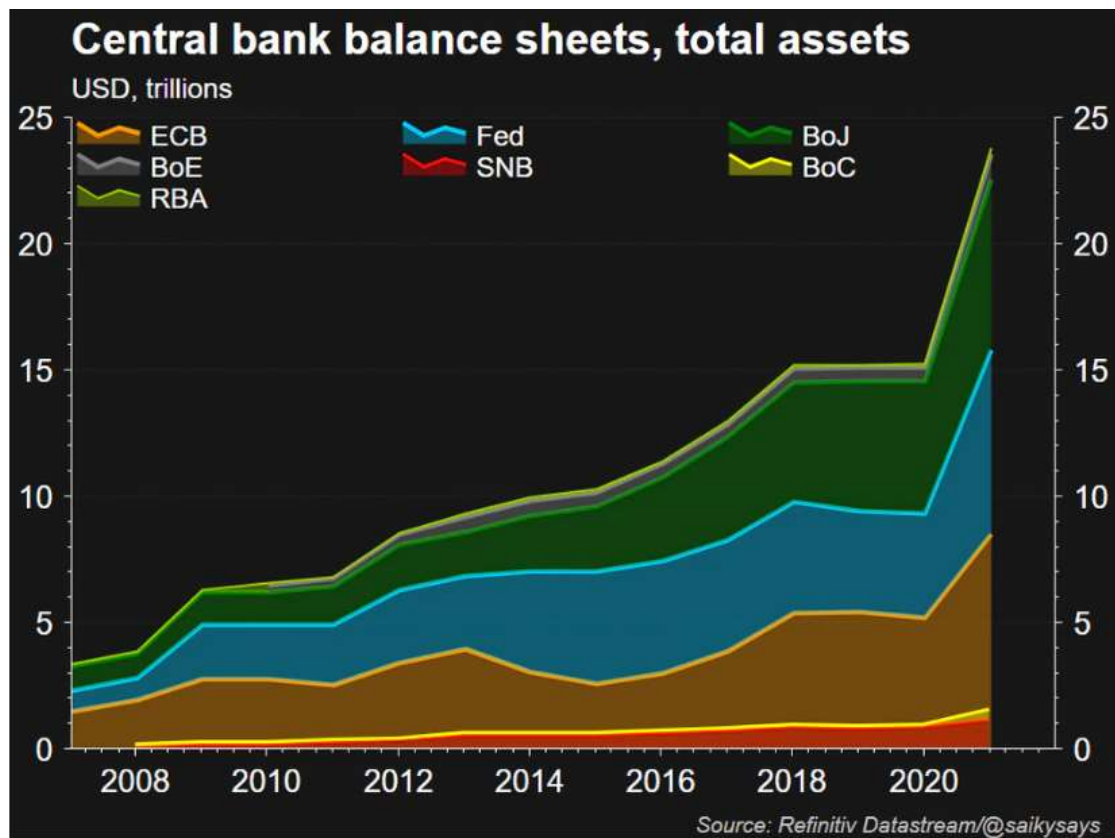


Fig. 13. Balanços de bancs centrals (BoE = Banc d'Anglaterra · RBA = Banc de la Reserva d'Austràlia · BoJ = Banc del Japó · BoC = Banc de Canadà · SNB = Banc Nacional Suís)

<https://www.reuters.com/business/central-banks-start-turning-off-cash-taps-2022-01-13/>



Fig. 14. PIB mundial, bilions de dòlars (2023: Món, 106,2; EUA, 27,72)

<https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>

- La Moneda Digital del Banc Central (CBDC) permetria el préstec directe del Banc Central al sector privat no bancari. Mentrestant, la política fiscal és una eina més efectiva que la política monetària. L'esquema de la Fig. 15 ajuda a entendre el perquè. D'una banda, el Banc Central només pot facilitar directament una forma de diner (reserves) al sector privat bancari; però, d'entrada, el sector privat bancari pot decidir de no estendre la seva forma de diner (dipòsits) al sector privat no bancari. De l'altra, el govern, mitjançant la despesa pública assoleix alhora quatre objectius.
 - Primer: la despesa pública incideix directament sobre l'activitat econòmica del sector real (estimulant la producció, l'ocupació, la creació d'empreses...). El Banc Central no té aquesta capacitat d'incidència directa, ja que necessita la intermediació del sector privat bancari.
 - Segon: la incidència en el sector real pot ser selectiva (microeconòmica). La despesa pública pot aplicar-se sobre activitats econòmiques o empreses concretes, perquè estan més necessitades d'ajuda o perquè es consideren més importants; en canvi, la modificació de les taxes d'interès del Banc Central tenen un impacte universal (macroeconòmic), afecta tothom per igual.
 - Tercer: la despesa pública crea reserves per al sector privat bancari (com una operació de mercat obert expansiva).
 - Quart: la despesa pública crea diner bancari per al sector privat no bancari.

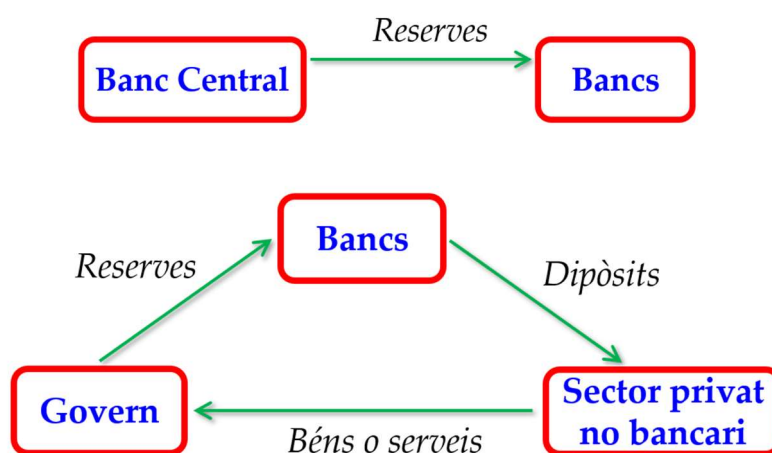


Fig. 15. Política monetària (OMO expansiva) contra política fiscal (despesa pública)

1. 'quantitative tightening o QT

Chart 3: Central bank assets

Total balance sheet for each central bank, as a percent of each jurisdiction's four-quarter average nominal GDP

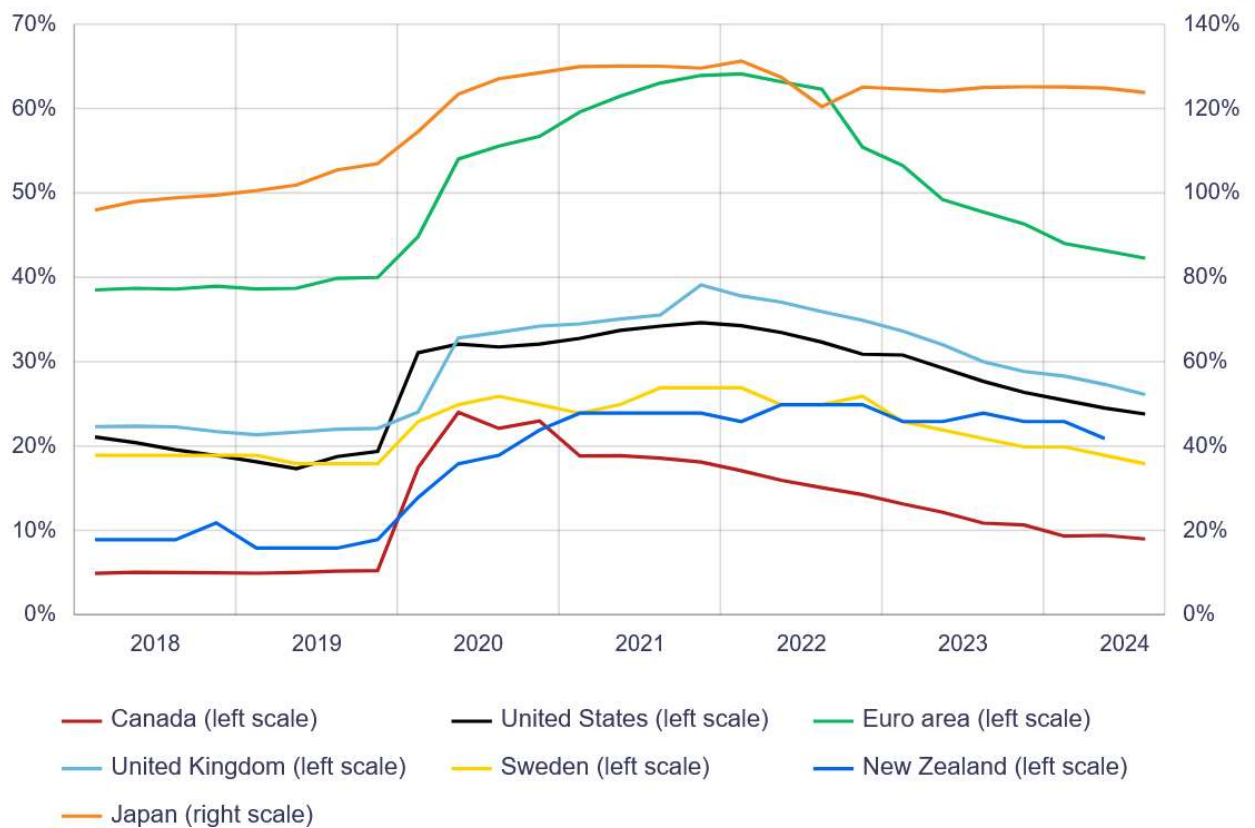


Fig. 16. El balanç dels bancs centrals en relació amb el PIB nominal

<https://www.bankofcanada.ca/2025/01/the-end-of-quantitative-tightening-and-what-comes-next/>

Country ↕	2007 ↕	2008 ↕	2009 ↕	2010 ↕	2011 ↕	2012 ↕	2013 ↕	2014 ↕	2015 ↕	2016 ↕	2017 ↕	2018 ↕	2019 ↕	2020 ↕	2021 ↕	2022 ^[66] ↕	2023 ^[67] ↕	2024 ^[68] ↕
Eurozone	64.9	69.6	80.2	85.7	87.6	91.0	93.0	93.1	91.2	90.4	87.9	85.8	83.8	97.2	95.6	94.2	89.9	88.1
Austria	64.7	68.7	79.7	82.7	82.4	81.9	81.3	84.0	84.9	82.8	78.5	74.1	70.6	83.3	82.8	82.7	78.2	81.6
Belgium	87.0	93.2	99.6	100.3	103.5	104.8	105.5	107.0	105.2	105.0	102.0	99.8	97.7	112.8	108.2	108.3	108.0	108.0
Cyprus	53.5	45.5	53.9	56.3	65.8	80.3	104.0	109.1	108.9	107.1	97.5	100.6	91.1	115.0	103.6	95.2	79.4	70.5
Croatia	37.2	39.1	48.4	57.3	63.7	69.4	80.3	83.9	83.3	79.8	76.7	73.3	71.1	87.3	79.8	74.3	64.4	60.1
Estonia	3.7	4.5	7.0	6.6	5.9	9.8	10.2	10.6	9.7	9.4	9.0	8.4	8.6	19.0	18.1	16.7	18.2	23.8
Finland	34.0	32.6	41.7	47.1	48.5	53.6	56.2	59.8	63.1	63.1	61.4	59.0	59.5	69.0	65.8	72.1	73.8	80.0
France	64.3	68.8	79.0	81.7	85.2	90.6	93.4	94.9	95.8	96.5	97.0	98.4	97.5	114.6	112.9	113.1	111.9	112.2
Germany	63.7	65.5	72.4	81.0	78.3	81.1	78.7	75.6	71.2	68.1	64.1	61.9	58.9	68.7	69.3	67.2	64.8	61.9
Greece	103.1	109.4	126.7	146.2	172.1	161.9	178.4	180.2	176.9	180.8	178.6	181.2	180.7	206.3	193.3	182.1	165.5	163.6
Ireland	23.9	42.4	61.8	86.8	109.1	119.9	119.9	104.2	93.8	72.8	68.0	63.6	57.2	58.4	56.0	51.4	43.6	42.8
Italy	99.8	106.2	112.5	115.4	116.5	126.5	132.5	135.4	132.7	132.0	131.8	134.8	134.3	155.3	150.8	150.2	140.6	137.0
Latvia	8.0	18.6	36.6	47.5	42.8	42.2	40.0	41.6	36.4	40.6	40.1	36.4	36.7	43.3	44.8	41.6	41.4	46.4
Lithuania	15.9	14.6	29.0	36.2	37.2	39.7	38.7	40.5	42.7	40.1	39.7	34.1	35.9	46.6	44.3	39.6	37.4	37.4
Luxembourg	7.7	15.4	16.0	20.1	19.1	22.0	23.7	22.7	21.4	20.8	23.0	21.0	22.3	24.8	24.4	25.4	25.7	26.8
Malta	62.3	61.8	67.8	67.6	69.9	65.9	65.8	61.6	63.9	57.6	50.8	45.8	40.7	53.4	57.0	55.1	49.3	46.7
Netherlands	42.7	54.7	56.5	59.0	61.7	66.3	67.7	67.9	65.1	61.8	56.7	52.4	48.5	54.3	52.1	50.9	45.9	43.2
Portugal	68.4	75.6	83.6	96.2	111.4	129.0	131.4	132.9	129.0	130.1	125.7	122.2	116.6	135.2	127.4	123.4	107.5	100.6
Slovakia	30.1	28.6	41.0	43.3	43.3	51.8	54.7	53.6	52.9	51.8	50.9	49.4	48.1	59.7	63.1	60.3	58.6	60.4
Slovenia	22.8	21.8	36.0	40.8	46.6	53.6	70.0	80.3	83.2	78.5	73.6	70.4	65.6	79.8	74.7	73.5	71.4	69.6
Spain	35.6	39.7	52.7	60.1	69.5	86.3	95.8	100.7	99.2	99.0	98.3	97.6	95.5	120.0	118.4	116.1	109.8	105.3

Fig. 10. Public debt to GDP ratio
<https://en.wikipedia.org/wiki/Eurozone>



<https://datosmacro.expansion.com/prima-riesgo/espana>

- El punt a de la Fig. 1 representa la situació inicial de l'economia. En primer lloc, hi ha una regla fiscal que exigeix no superar el dèficit públic y . En segon lloc, el pla agregat del sector privat es concreta en assolir un supèravit igual a x . En aquestes circumstàncies, el govern aprofita el marge de dèficit fins a límit i incorre en un dèficit públic igual a y . El resultat de la identitat de saldos és que hi ha supèravit exterior igual a z i l'economia se situa en el punt a .

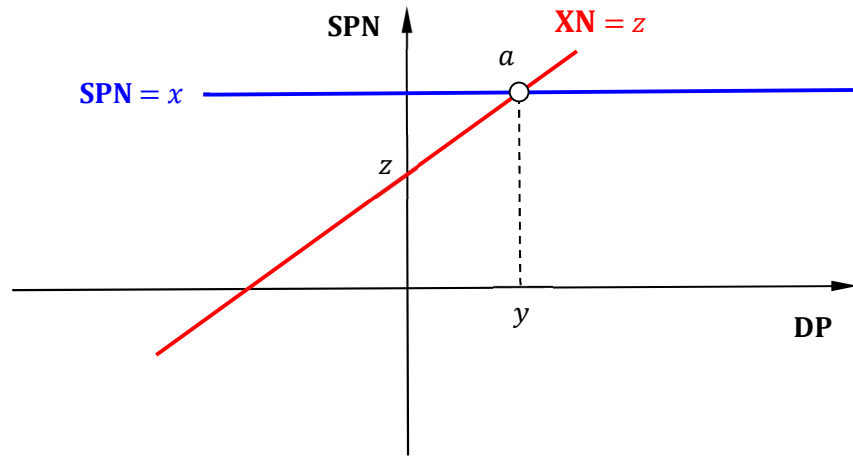


Fig. 1. Initial state of the economy: private surplus, foreign surplus, public deficit

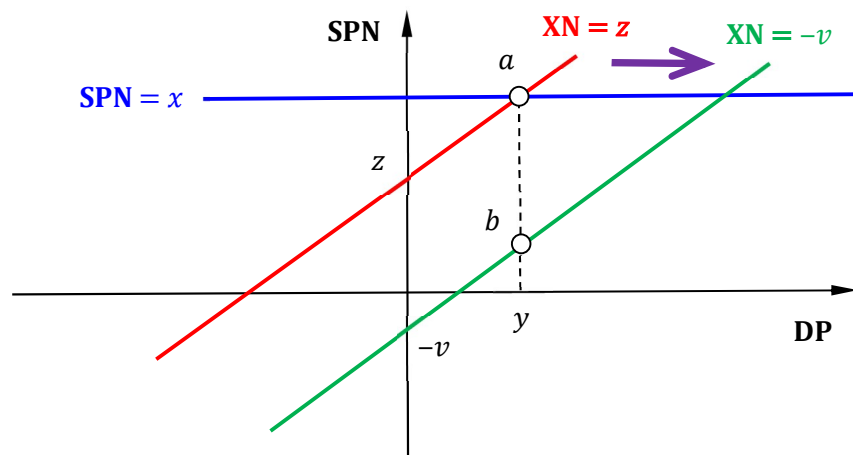


Fig. 2. Next state after ROW increases tariffs if the fiscal rule is met

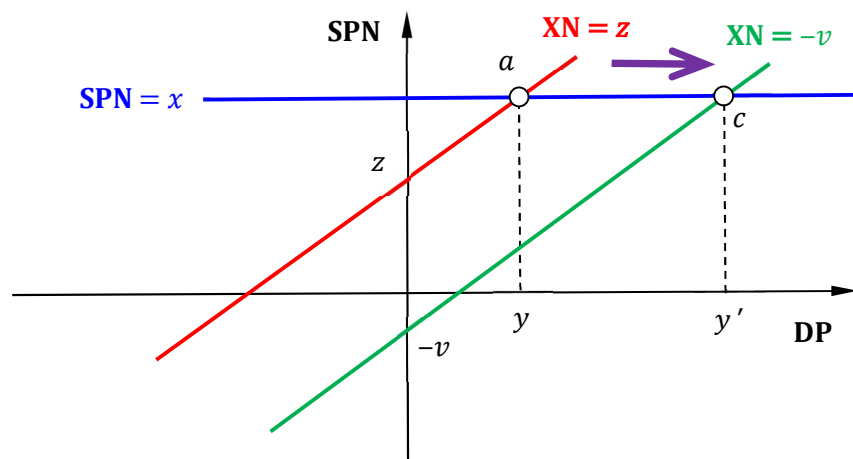


Fig. 3. Next state if the private sector's goal is respected: higher public deficit

