Introduction to Economic History : Capital, Inequality, Growth

(Master APE & PPD)

(EHESS & Paris School of Economics)

Thomas Piketty

Academic year 2026-2027

Lecture 5: Global Wealth Accumulation, Ownership Patterns and Public vs Private Capital in History

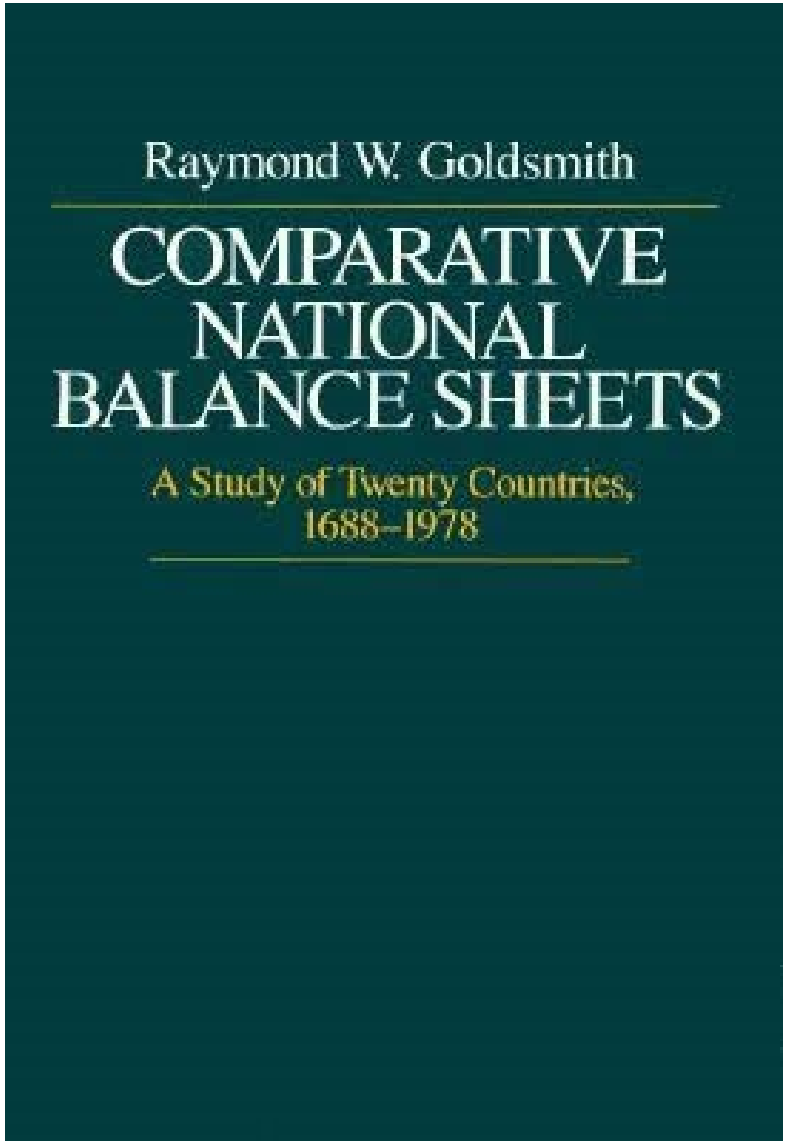
Roadmap of the lecture

- The Great Transformation (1910-1950): the Fall of Inequality & Private Wealth, the Rise of a New Property Regime
- Global Wealth Accumulation & Public-Private Ownership Patterns (1800-2025)
- Main Long-Run Results (1800-2025)
- Detailed Decompositions over the 1980-2025 period
- Capital Shares, Rates of Return & R>G
- Long-Run Changes in Firm-Level Concentration of Sales, Profits, Capital, Labour, etc.

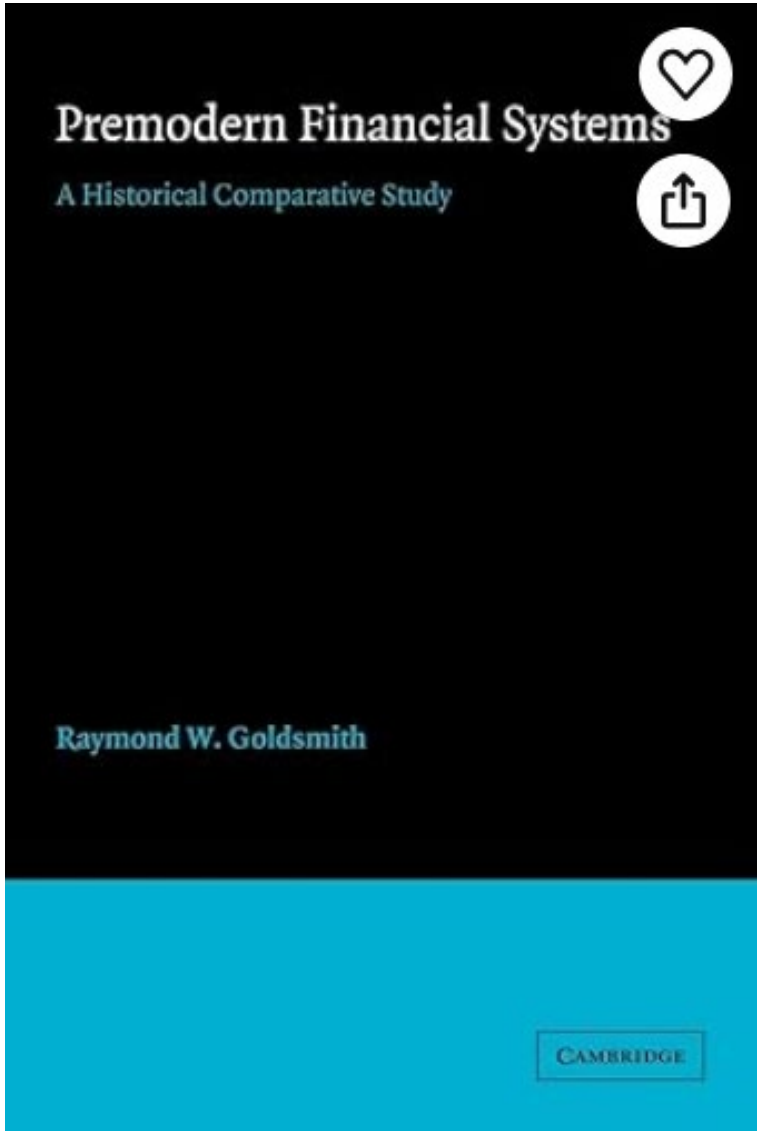
Short Bibliography

- R. Giffen, The Growth of Capital, 1889
- R. Goldsmith, Comparative National Balance Sheets: A Study of 20 Countries 1688-1978, Oxford UP, 1985; Premodern Financial Systems. A Historical Comparative Study, CUP 1991
- T. Piketty, On the Long-Run Evolution of Inheritance: France 1820-2050, QJE 2011 (Database)
- T. Piketty, G. Zucman, Capital is Back: Wealth-Income Ratios in Rich Countries, 1700-2010, QJE 2014 (Macro-Historical Database)
- *** L. Bauluz et al, "Global Wealth Accumulation and Ownership Patterns, 1800-2025", WIL WP 2025**
- Y. Ma, M. Zhang, K. Zimmerman, "Business Concentration Around the World: 1900-2020", WP Chicago 2026

National Balance Sheets: The Measurement of National Wealth



1986



1991

CAPITAL IS BACK: WEALTH-INCOME RATIOS IN RICH COUNTRIES 1700–2010*

THOMAS PIKETTY AND GABRIEL ZUCMAN

How do aggregate wealth-to-income ratios evolve in the long run and why? We address this question using 1970–2010 national balance sheets recently compiled in the top eight developed economies. For the United States, United Kingdom, Germany, and France, we are able to extend our analysis as far back as 1700. We find in every country a gradual rise' of wealth-income ratios in recent decades, from about 200–300% in 1970 to 400–600% in 2010. In effect, today's ratios appear to be returning to the high values observed in Europe in the eighteenth and nineteenth centuries (600–700%). This can be explained by a long-run asset price recovery (itself driven by changes in capital policies since the world wars) and by the slowdown of productivity and population growth, in line with the $\beta=\frac{s}{g}$ Harrod-Domar-Solow formula. That is, for a given net saving rate $s=10\%$, the long-run wealth-income ratio β is about 300% if $g=3\%$ and 600% if $g=1.5\%$. Our results have implications for capital taxation and regulation and shed new light on the changing nature of wealth, the shape of the production function, and the rise of capital shares. *JEL* Codes: E10, E20, D30, D31, D33.

I. INTRODUCTION

This article addresses what is arguably one of the most basic economic questions: how do wealth-income and capital-output ratios evolve in the long run and why?

Until recently it was difficult to properly address this question, because national accounts were mostly about flows, not stocks. Economists had at their disposal a large body of historical series on flows of output, income, and consumption—but limited data on stocks of assets and liabilities. When needed, for example, for growth accounting exercises, estimates of capital stocks were typically obtained by cumulating past flows of saving and investment. Although suitable for some purposes, this procedure se-

2014

The Great Transformation (1910-1950): the fall of inequality & private wealth, the rise of new property regime

- **Fall of top income shares 1914-1950, particularly in Europe**
- Rebound of inequality since 1980, especially in the US
- But inequality levels in Europe in 2010s are still much below pre-WW1 levels
- **The decline in income inequality during the 20c is largely due to the fall of top capital incomes**
- In contrast, the inequality of labour income has been relatively stable in the long-run, particularly in Europe (≠ sharp rise in US since 1980s)
- Basic orders of magnitude. **Top 10% income share declined from 50% to 25-30% of total income. Top 10% wealth share declined from 90% to 50-60% of total wealth**. Bottom & middle incomes are made of labour income, top incomes are made of capital income. Bottom wealth = liquidities, middle wealth = housing, top wealth = financial & business assets.

In order to understand the fall in top capital incomes during 20c, one needs to distinguish between two mechanisms:

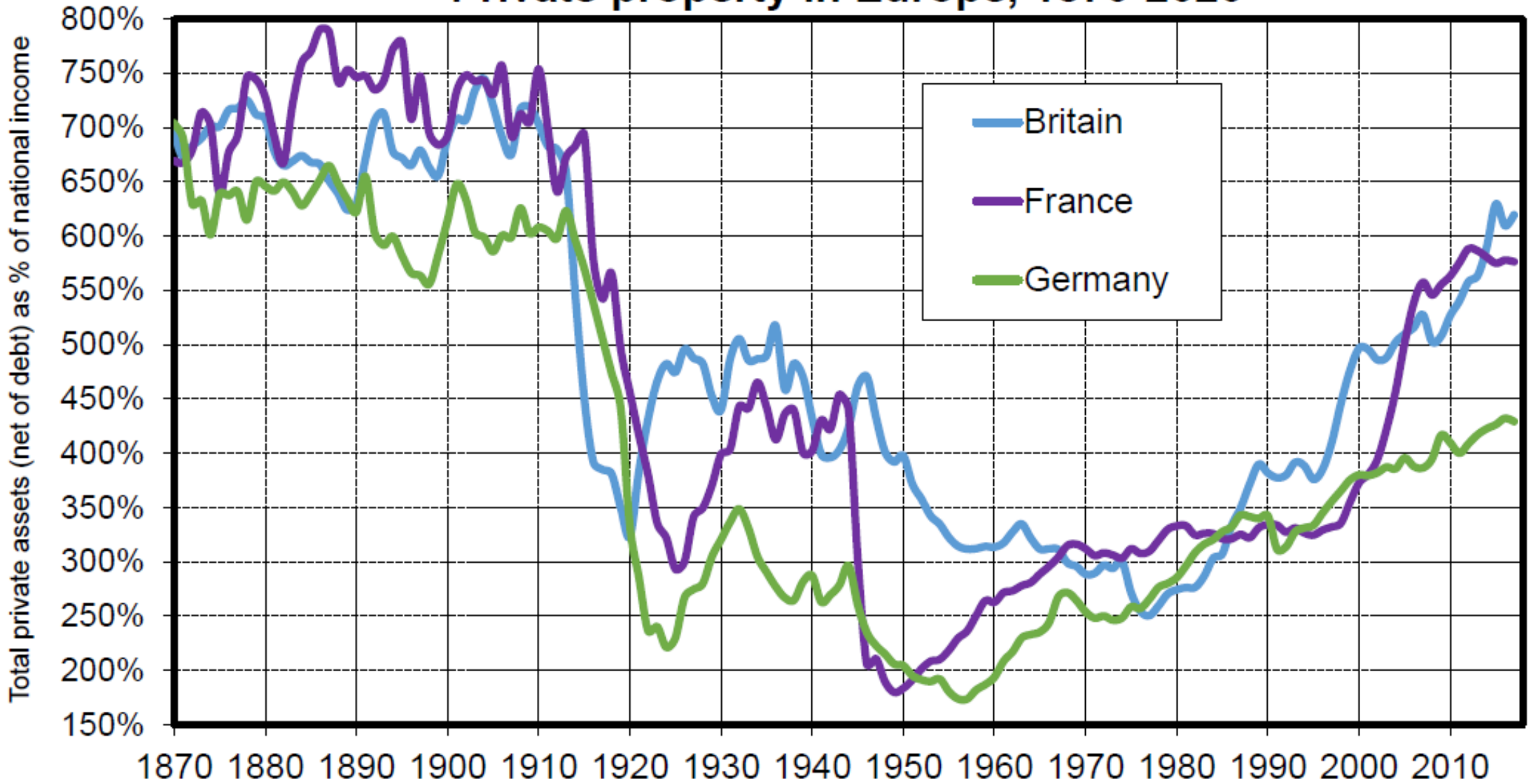
1. The fall (& recovery) in aggregate private property. From 600%-800% of national income in 1880-1914, down to 200%-300% in 1950-1970, back up to 500%-600% by 2000-2020. But wealth concentration did not recover (yet).

2. The fall (& incomplete recovery) of the concentration of private property. In principle, the fall in aggregate private property could have affected all wealth levels in the same proportion, with unchanged wealth shares by decile.

But: (i) Assets held at the top (e.g. foreign wealth) were particularly affected.
(ii) Top wealth holders need their capital income to finance their savings & living standards; 20c shocks led to a collapse of their saving capacity; some even started to sell some of their assets so as maintain their living standards.
(iii) Progressive taxation of top income and top inheritance made it virtually impossible to return to the previous concentration.

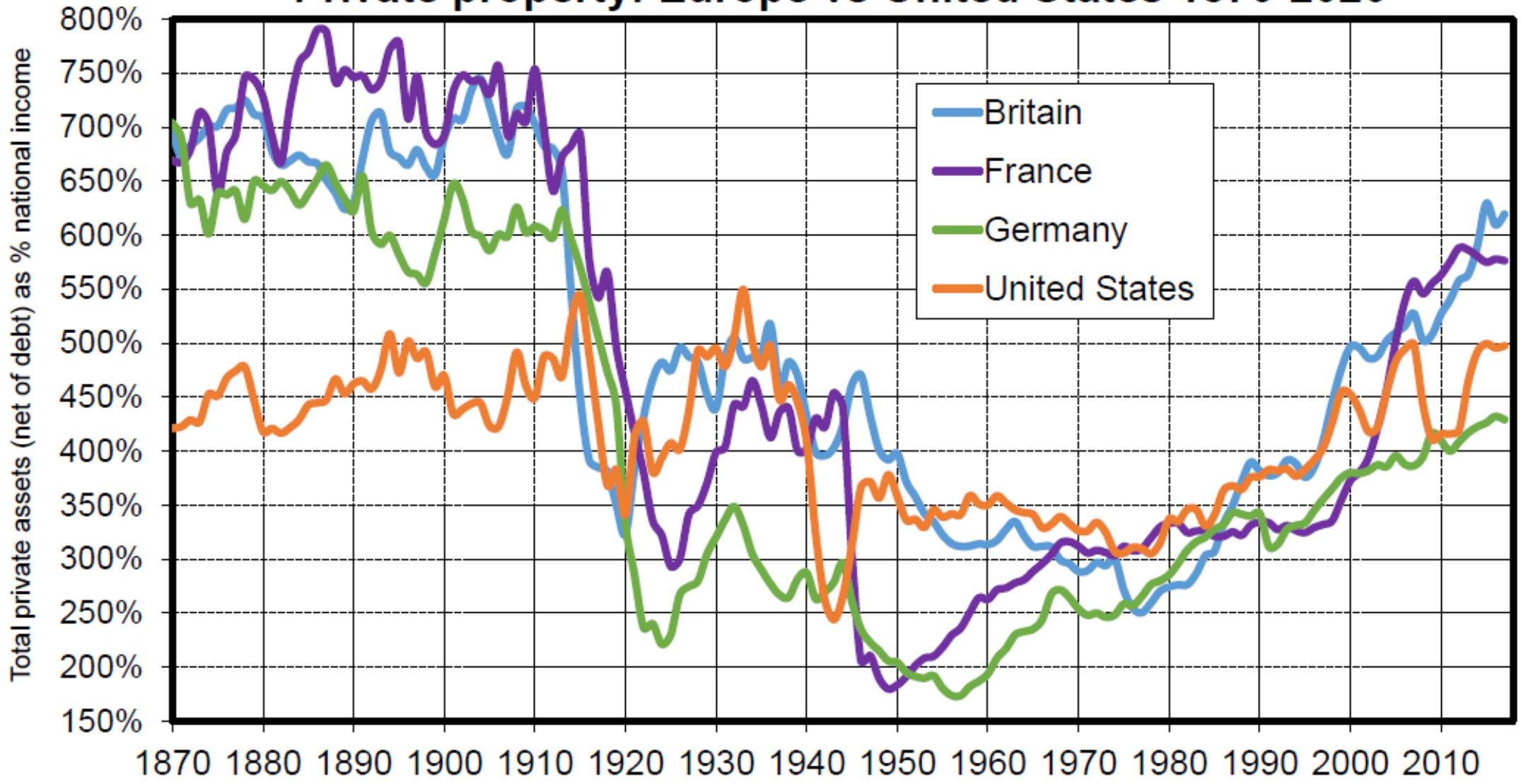
- For detailed decompositions of the fall in aggregate private property between 1914 and 1945, see Piketty-Zucman,Capital is Back: Wealth-Income Ratios in Rich Countries, 1700-2010, QJE 2014 (database) (see also *Capital in the 21st century*, chapters 3-5)
- **Physical destructions** of capital: 25-30% of the 1914-1945 fall in France and German, <5% in Britain
- Other two main components explaining the fall (about 50-50):
- **Lack of investment** (low private savings, most of which were absorbed to finance the public debt used to pay for the war)
- **Change in legal property regime**: nationalization, financial regulation, codetermination (power sharing beween shareholders and worker representative in companies), rent control, etc. → decline in the market value of assets (companies, real estate) for property owners, but not necessarily of the real economic value of capital

Private property in Europe, 1870-2020



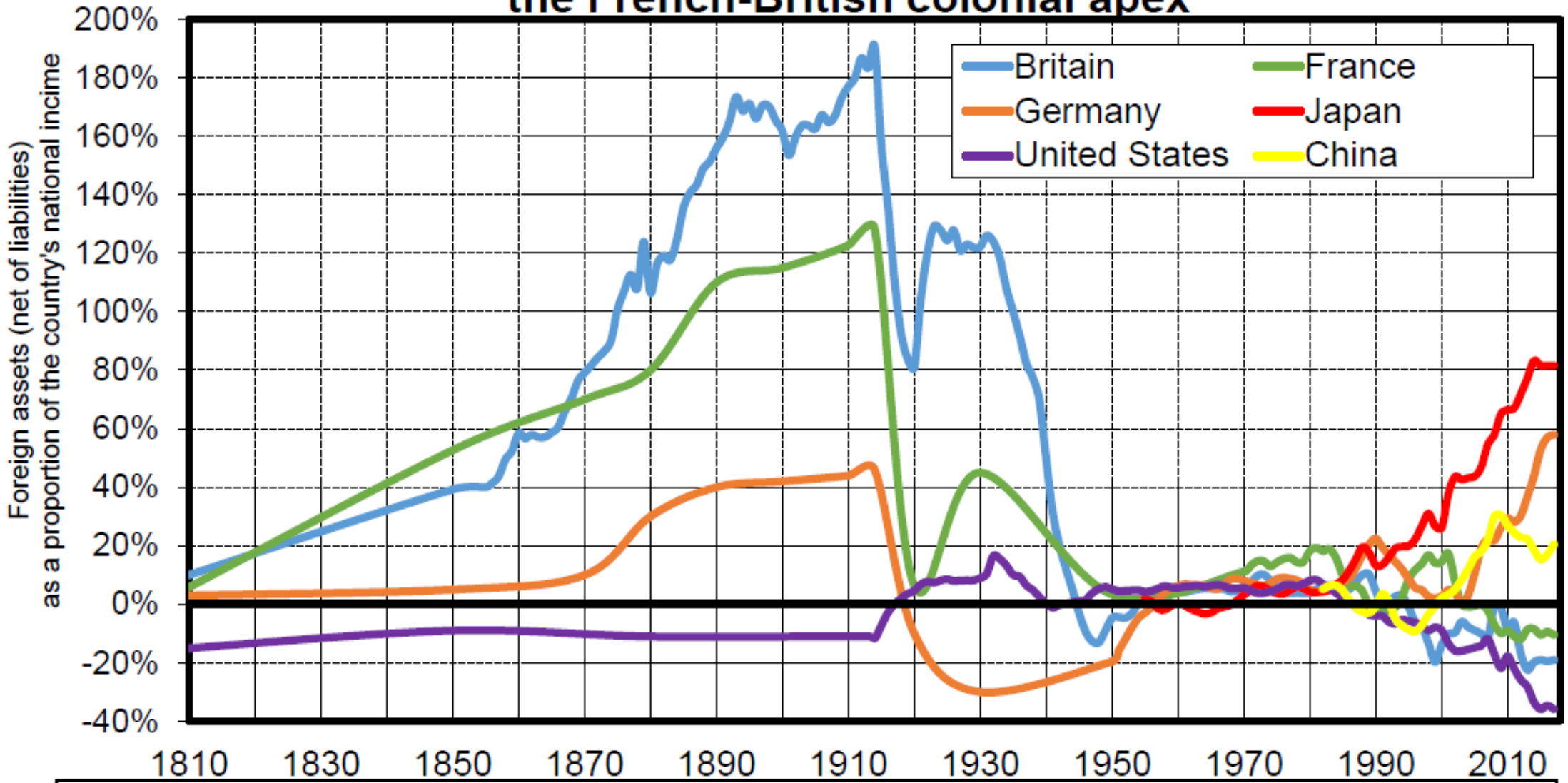
Interpretation. The market value of private property (all assets combined: real estate, business and financial assets, net of debt) was about 6-8 years of national income in Western Europe in 1870-1914, before falling from 1914 to 1950 and reaching about 2-3 years of national income in 1950-1970, and then rising again around 5-6 years in 2000-2020. **Sources and series**: see piketty.pse.ens.fr/ideology (figure 10.8).

Private property: Europe vs United States 1870-2020



Interpretation. The market value of all private assets (real estate, business and financial assets, net of debt) was about 6-8 years of national income in Western Europe in 1870-1914, before falling between 1914 and 1950 (2-3 years during the 1950s-1970s), and rising again to about 5-6 years in 2000-2020. In the US, the historical variations have been less massive (the market value of private property has generally fluctuated around 4-5 years of national income). **Sources and series**: see piketty.pse.ens.fr/ideology (figure S10.8).

Foreign assets in historical perspective: the French-British colonial apex



Interpretation. Net foreign assets, i.e. the difference between assets owned abroad by resident owners (including in some cases the governement) and liabilities (i.e. assets owned in the country by foreign owners), amounted in 1914 to 191% of national income in Britain and 125% in France. In 2018, net foreign assets reach 80% of national income in Japan, 58% in Germany and 20% in China.
Sources and series: see piketty.pse.ens.fr/ideology (figure 7.9).

SEPTEMBER 2025

WORLD INEQUALITY LAB

Global Wealth Accumulation 1800-2025

(1) **A new historical database on global wealth accumulation**

For recent decades (1980-2025), full decompositions of wealth accumulation into volume effects (savings) & price effects (capital gains), as well as global series on capital shares & rates of return

Historical series 1800-2025 for national wealth, domestic capital and foreign wealth, private and public wealth

(2) **We find very large variations in wealth-income and capital-output ratios and in ownership patterns over time and across regions**.

Very different picture from supposed "Kaldor facts" (i.e. stable $\beta=K/Y$ & $\alpha=Y_K/Y$ in the long-run). With limited data , everything looks stable! But with broader historical & geographical data coverage, we are able to uncover more substantial variations.

These historical and regional variations are largely due to changing ideology, balance of power and institutions, rather than to purely economic or technological factors.

(3) **We also discuss the implications of our historical findings for the future**

Can we address 21c social and environmental challenges with the current ownership patterns? Probably not. Most likely we need larger public share in national wealth (more public investment & ownership in energy, transportation, housing, etc.) and a smaller capital share.

See forthcoming GJP scenarios for global ownership patterns 2025-2100 (not included in this paper, which focuses on historical evolutions)

Relation to the Literature

(i) Large literature on W/Y, K/Y and Y_K/Y in the long-run
Mostly focuses on Western countries
Piketty-Zucman 2014: historical series 1700-2010 covering top 8 rich countries **US**, **GB**, **FR**, **DE**, **JP**, **IT**, **CA**, **AU**

(ii) **Recent historical work covering more & more countries in & outside the West**. Artola et al 2021 **ES**, Novokmet et al 2018 **RU**, Kumar 2019 **IN**, Chatterjee et al 2020 **ZA**, Piketty et al 2019 & Mo et al 2024 **CN**, Toussaint et al 2022 **NL**, Carranza et al 2023 **BR**, etc.

But not attempt so far to provide consistent global estimates

Main novelty of present paper: we build upon previous work & collect additional national balance sheets in order to construct the **first truly global historical database of wealth accumulation and ownership patterns**

Detailed imputations methods: see Bauluz et al 2025 & Dietrich et al 2025

Bottom line: we have direct balance sheet data for countries covering 70-80% of world GDP (all rich countries & main emerging countries CN IN RU BR ZA etc.) so imputations have limited impact on aggregate results

+ all main results are robust to changes in imputations methods

Table 1. A New Global Wealth Database: Available Series	
1800-2025 (57 core territories: 48 main countries + 9 residual regions)	National wealth = Domestic capital + Net foreign wealth (nweal = nwnfa + nwnxa) National wealth = Private wealth + Public wealth (nweal = pweal + gweal) Public wealth = Public assets - Public debt (gweal = gwass - gwdeb) Net foreign wealth = Gross foreign financial assets - Gross foreign financial liabilities (nwnxa = nwgxa - nwgxd)
1980-2025 (216 core countries)	Same as above, + the following decompositions Domestic capital = Housing assets + Business & other domestic capital assets (nwnfa = nwhou + nwbus) Private wealth = Private non-financial assets + Private financial assets – Private liabilities (pweal = pwnfa + pwfin - pwdeb) Private non-financial assets = Private housing + Private business & other domestic capital assets (pwnfa = pwhou + pwbus) Private wealth = Personal household wealth + Non-profit wealth (pweal = hweal + iweal) Public wealth = Public non-financial assets + Public financial assets - Public debt (gweal = gwnfa + gwfin - gwdeb) Public non-financial assets = Public housing + Public business & other domestic capital assets (gwnfa = gwhou + gwbus) Book-value corporate wealth = Corporate non-financial assets + Corporate financial assets – Corporate non-equity liabilities (cwboo = cwnfa + cwfin - cwdeb) Corporate non-financial assets = Corporate housing + Corporate business & other domestic capital assets (cwnfa = cwhou + cwbus) Residual corporate wealth = Book-value corporate wealth - Corporate equity liabilities (cwres = cwboo - cwdeq) Tobin's Q = Corporate equity liabilities / Book-value corporate wealth (icwtoq = cwdeq / cwboo) Book-value national wealth = Market-value national wealth + Residual corporate wealth (nwboo = nweal + cwres) National housing assets = Private housing assets + Public housing assets + Corporate housing assets (nwhou = pwhou + gwhou + cwhou) National business & other domestic capital assets = Private business & other domestic capital assets + Public business & other domestic capital assets + Corporate business & other domestic capital assets - Corporate residual wealth (nwbus = pwbus + gwbus + cwbus - cwres)
Our database on global wealth includes more detailed decompositions for recent decades (1980-2025) than for the full historical period (1800-2025). We also provide complete series on saving rates, capital shares and rates of return over the 1980-2025 period. For variable codes, see wid.world/code-dictionary	

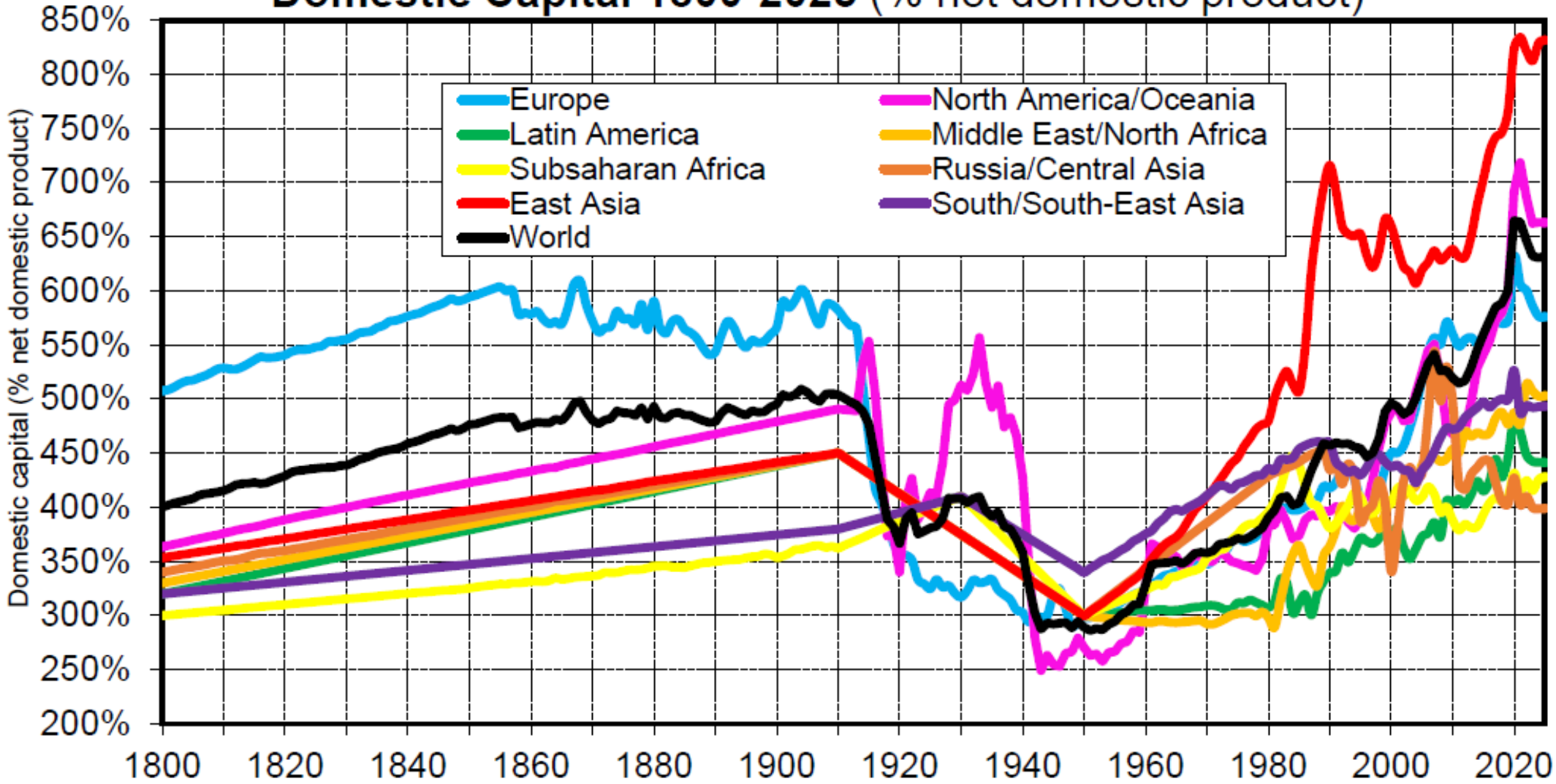
Main long-run historical results (1800-2025)

- Over 1800-2025, it is impossible to construct homogenous series on saving rates vs capital gains or on capital shares and rates of return

- However it is possible to construct approximate series on domestic capital stock K_t and foreign wealth FW_t (via historical data on trade flows and balance of payments) and on the public-private split

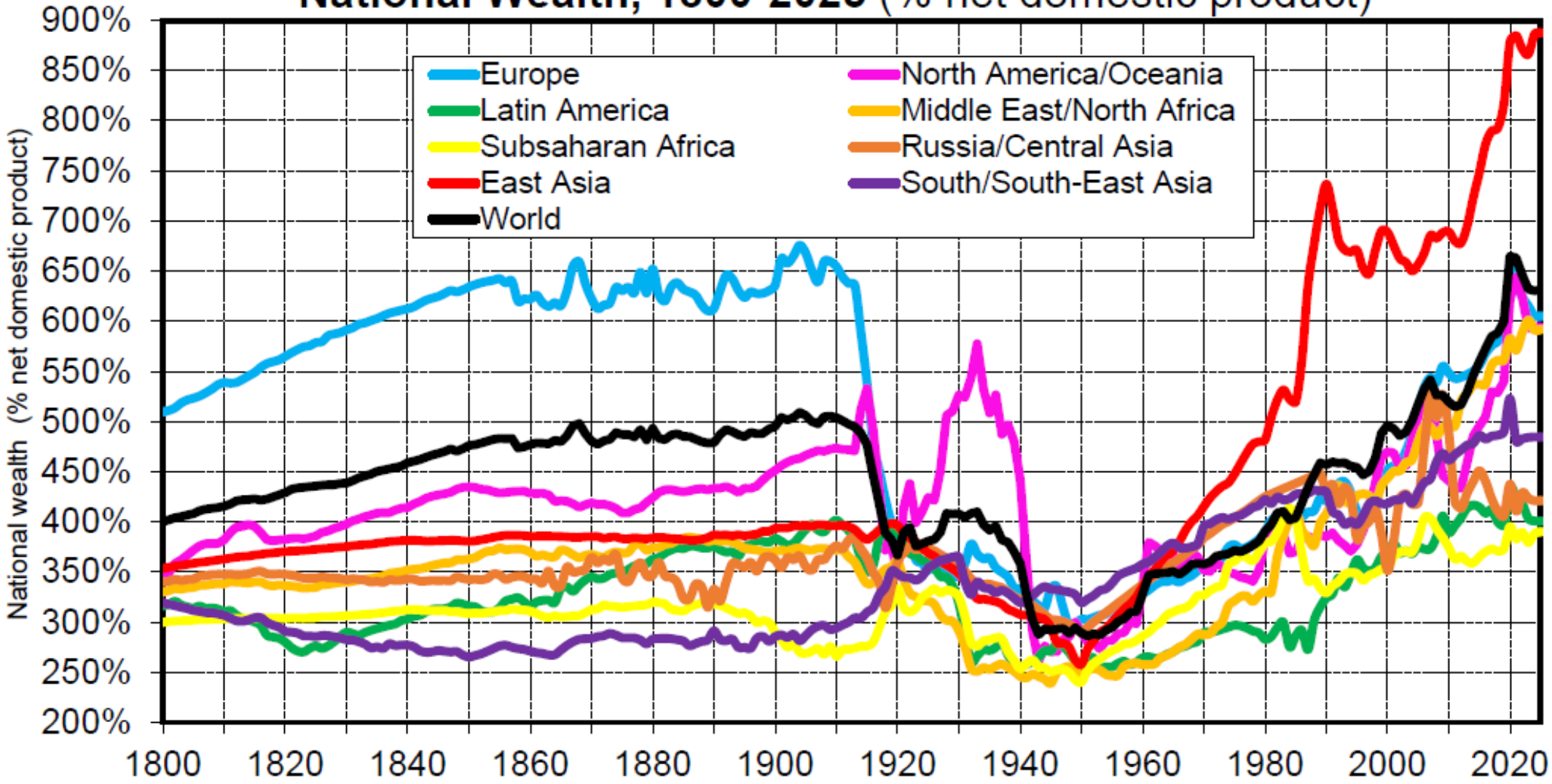
- **Available sources again show very large historical variations in K/Y, foreign wealth patterns (colonial vs post-colonial pattern)** (Nievas-Sodano 2024, Nievas-Piketty 2025) **and public-private split**

Domestic Capital 1800-2025 (% net domestic product)



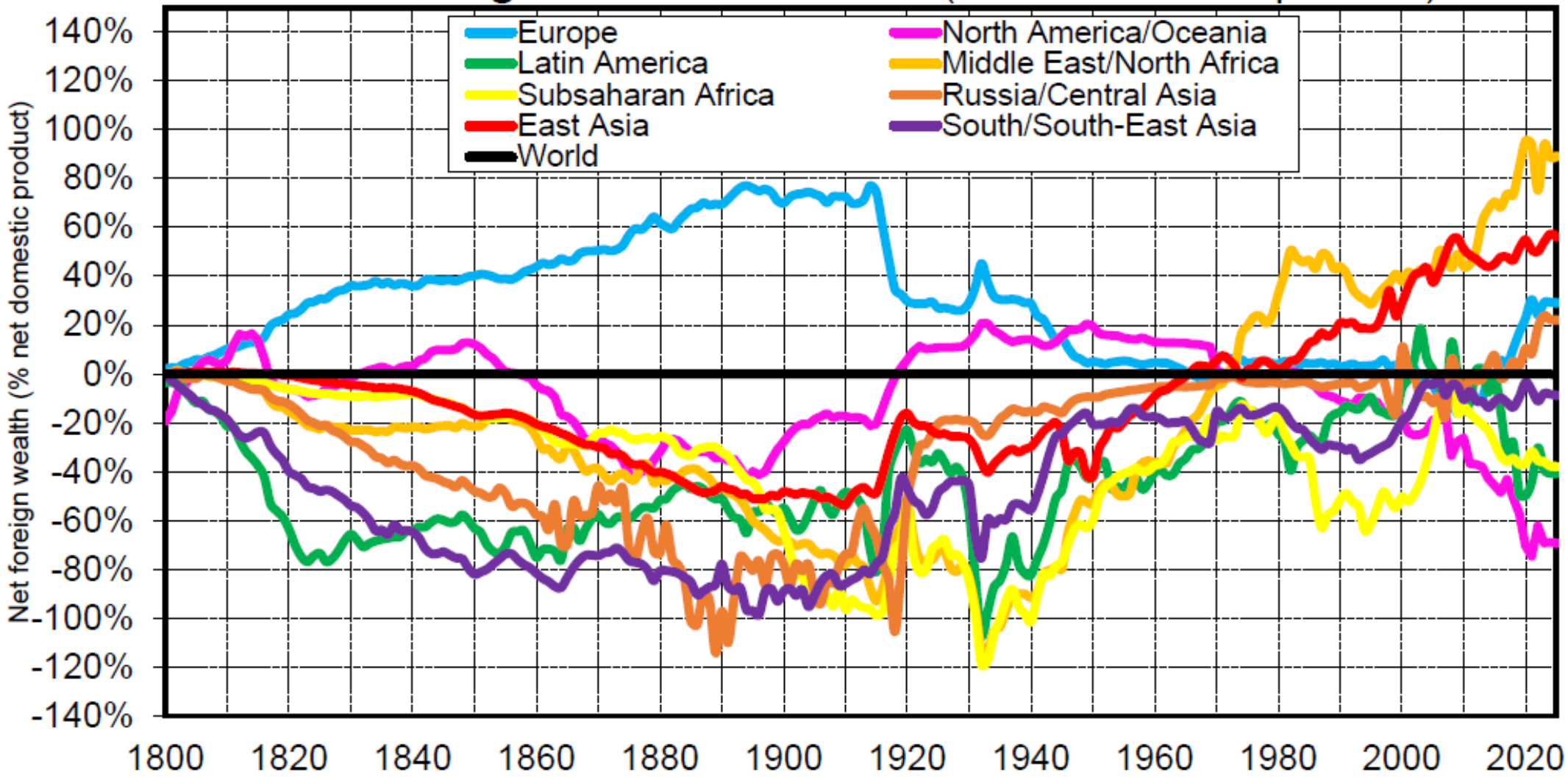
Interpretation. According to available historical sources, domestic capital rose from about 400% of net domestic product at the world level in 1800 to about 500% in 1910, down to about 300% in 1950, back up to 600-650% in the 2020s. The large rise observed in recent decades can be accounted for by various factors, including rising asset prices (agglomeration effects, policy changes, rising bargaining power of capital owners, etc.) and very high saving rates (private + public) in East Asia. **Sources and series**: wid.world

National Wealth, 1800-2025 (% net domestic product)



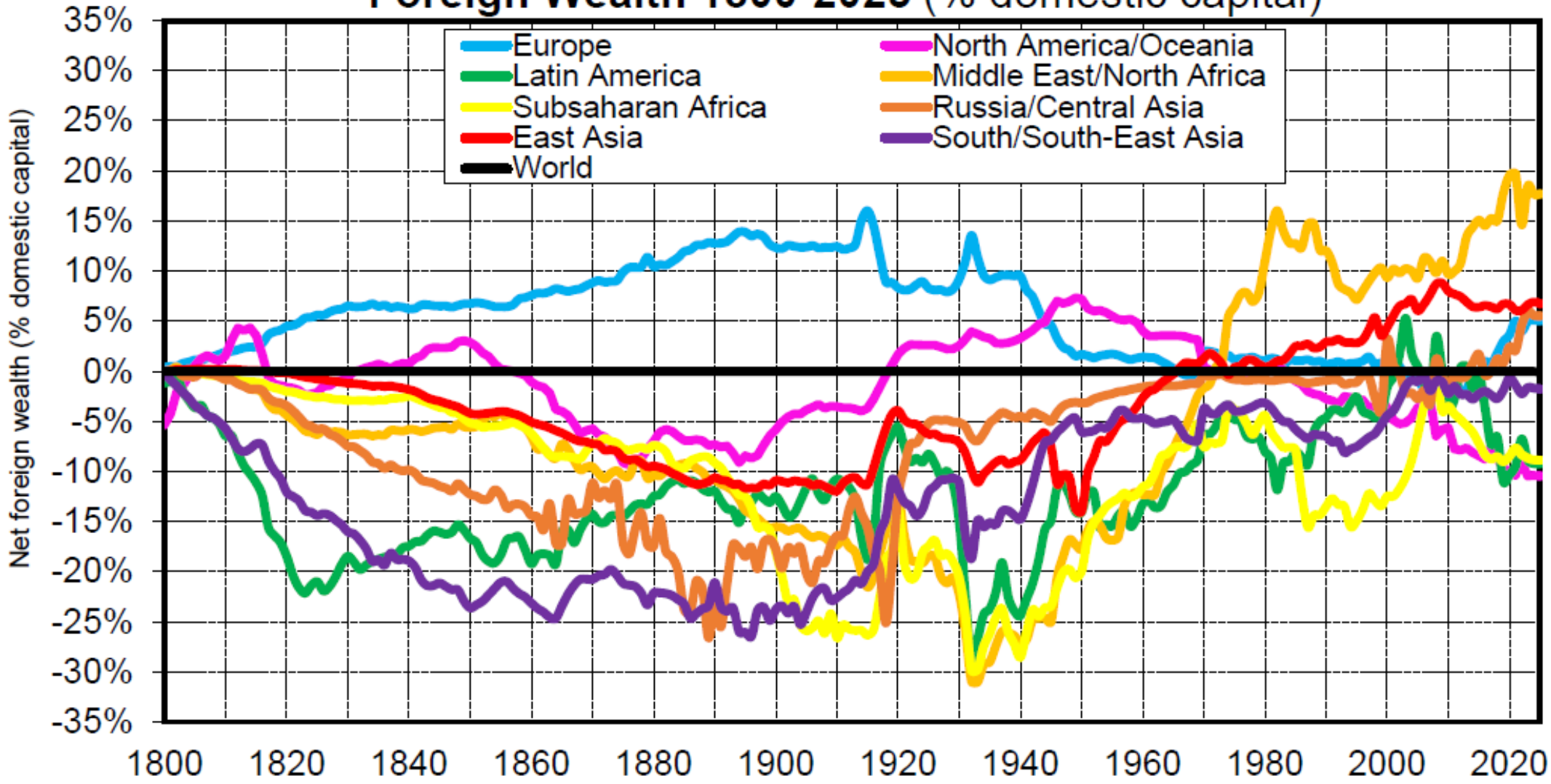
Interpretation. Historical variations in national wealth by region have been even larger than variations in domestic capital, due to the amplifying impact of foreign wealth: Europe owns substantial foreign wealth in 1800-1914, and so does East Asia in 1980-2025 (though in a less massive manner). **Sources and series**: wid.world

Net Foreign Wealth 1800-2025 (% net domestic product)



Interpretation. Between 1800 and 1914, Europe owns a rising fraction of the rest of the world. These foreign assets vanish between 1914 and 1950. They are partly replaced by foreign assets owned by the US between 1920 and 1970 and by oil countries and East Asia since the 1970s-1980s. **Sources and series**: wid.world

Foreign Wealth 1800-2025 (% domestic capital)



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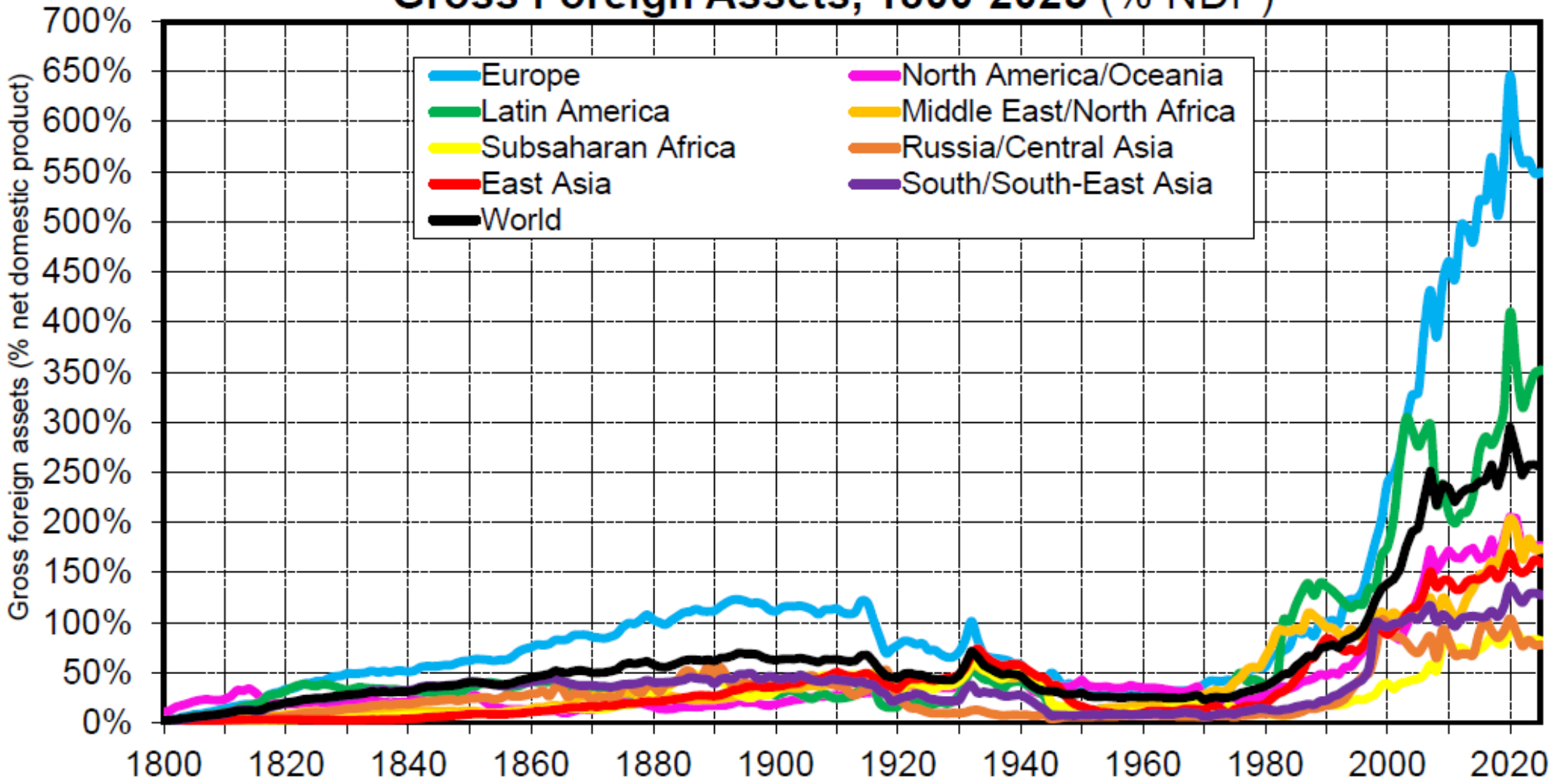
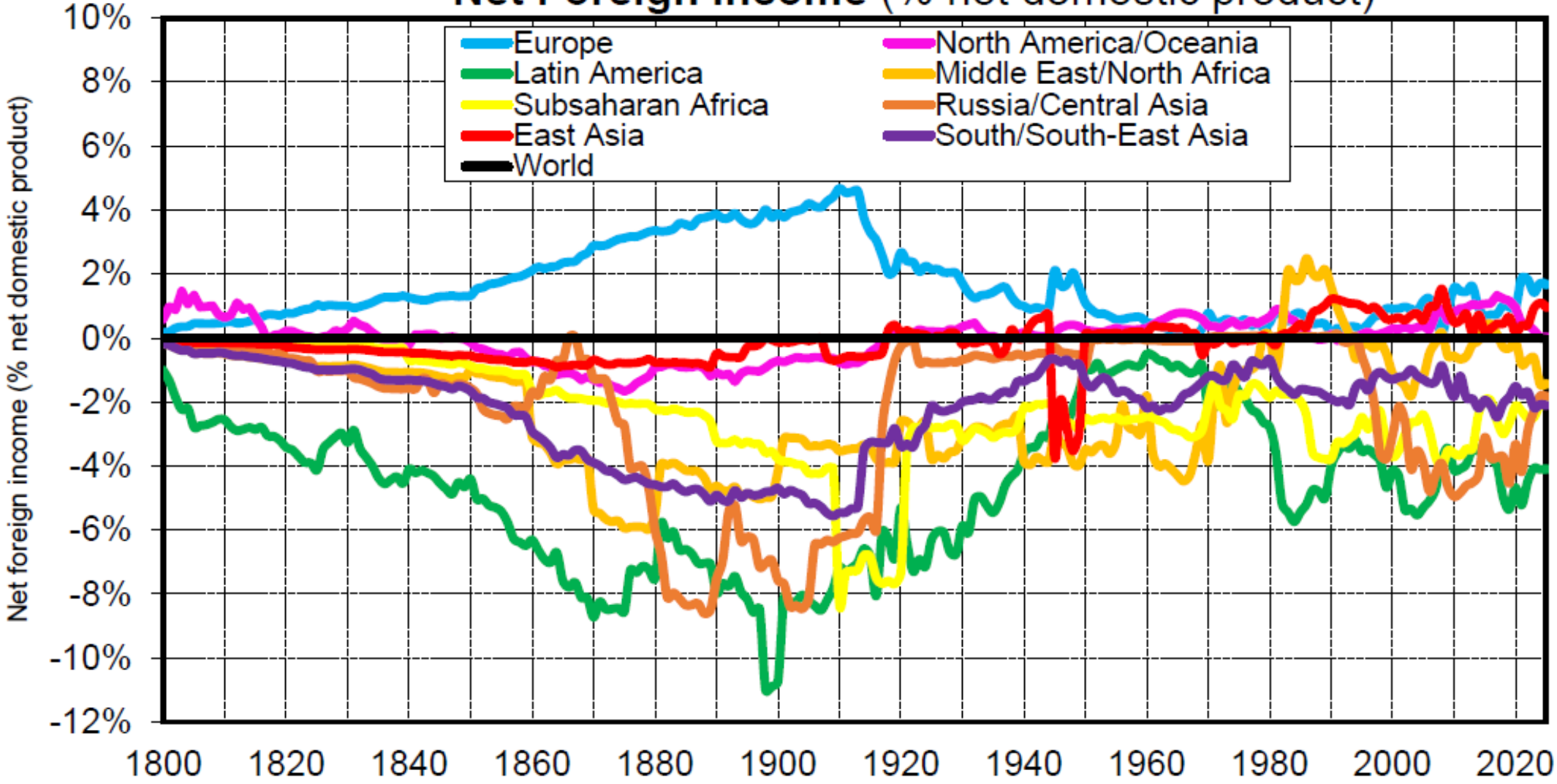
Gross Foreign Assets, 1800-2025 (% NDP)



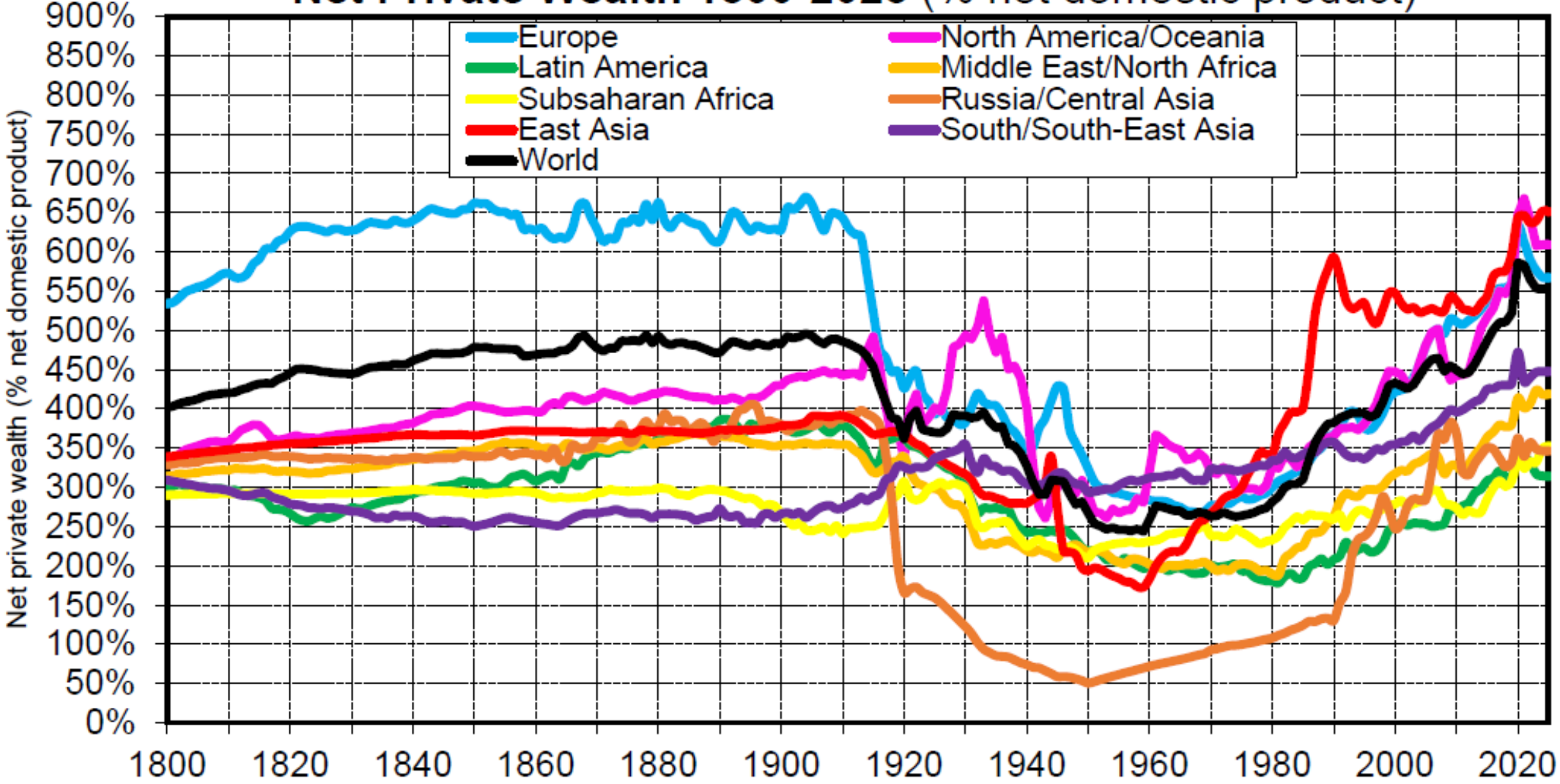
Interpretation. Unlike net foreign asset positions (which are not larger today than what they were in 1900-1910), gross foreign asset positions have grown to unprecedented levels in recent decades. This reflects the global financialization of wealth, including the rise of cross-company shareholding and cross-country ownership. **Sources and series**: wid.world

Net Foreign Income (% net domestic product)



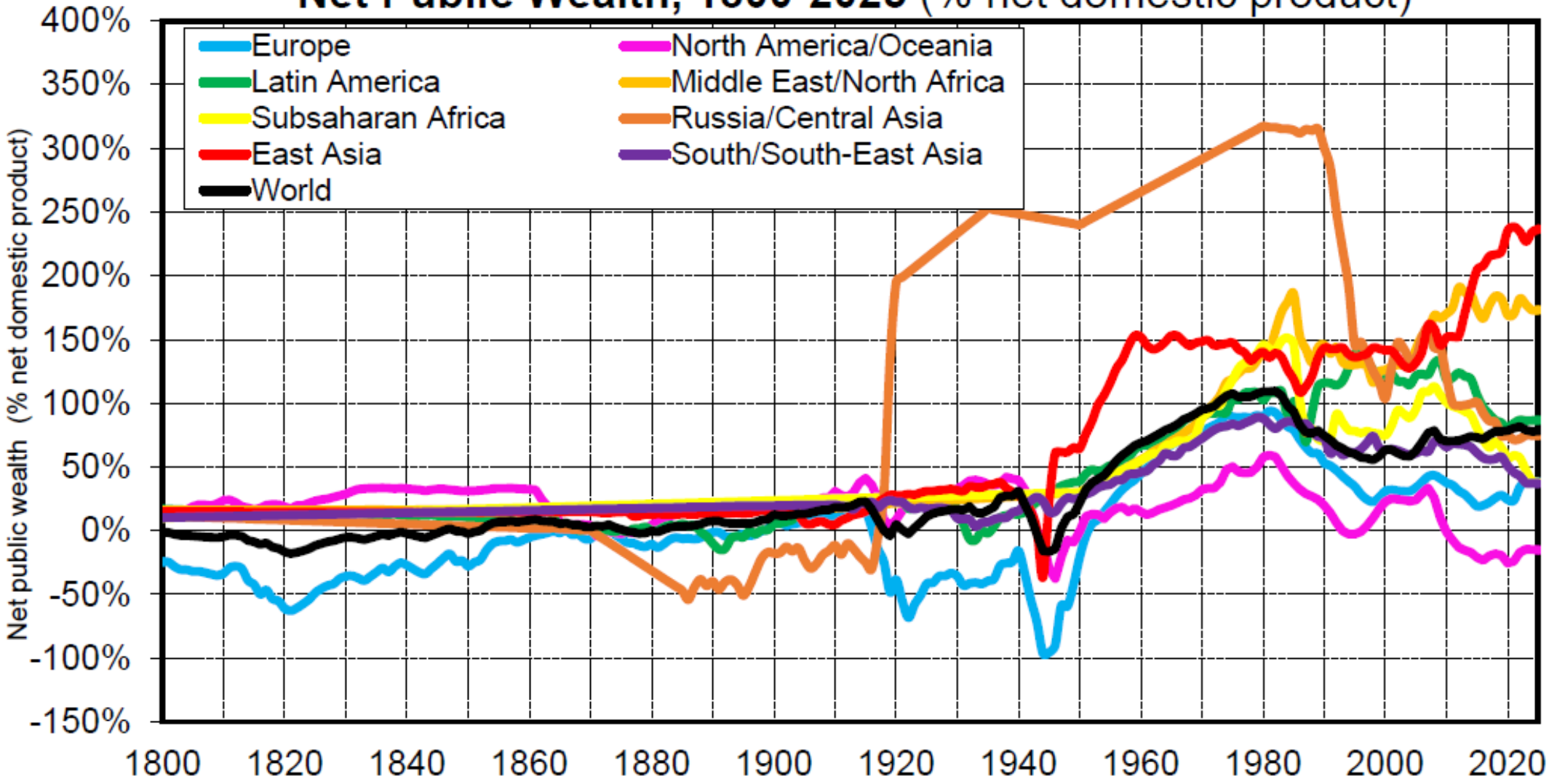
Interpretation. Between 1800 and 1914, Europe owns a rising fraction of the rest of the world and is receiving an increasing flow of capital income from the rest of the world. In the 2010s-2020s, Europe and North America are still receiving positive foreign income, in spite of the fact that their foreign wealth is small or negative. This reflects the fact that they receive higher rates or returns on their assets (and pay small returns on their liabilities) than the rest of the world (so-called "exorbitant privilege"). **Sources and series**: wid.world

Net Private Wealth 1800-2025 (% net domestic product)



Interpretation. If we focus on private wealth (rather than national wealth), then the levels of wealth-NDP ratios observed today in East Asia are very close to those observed today in North America/Oceania and in Europe, and to those observed in Europe before 1914. I.e. the differences in national wealth are entirely due to differences in levels of public wealth. **Sources and series**: wid.world

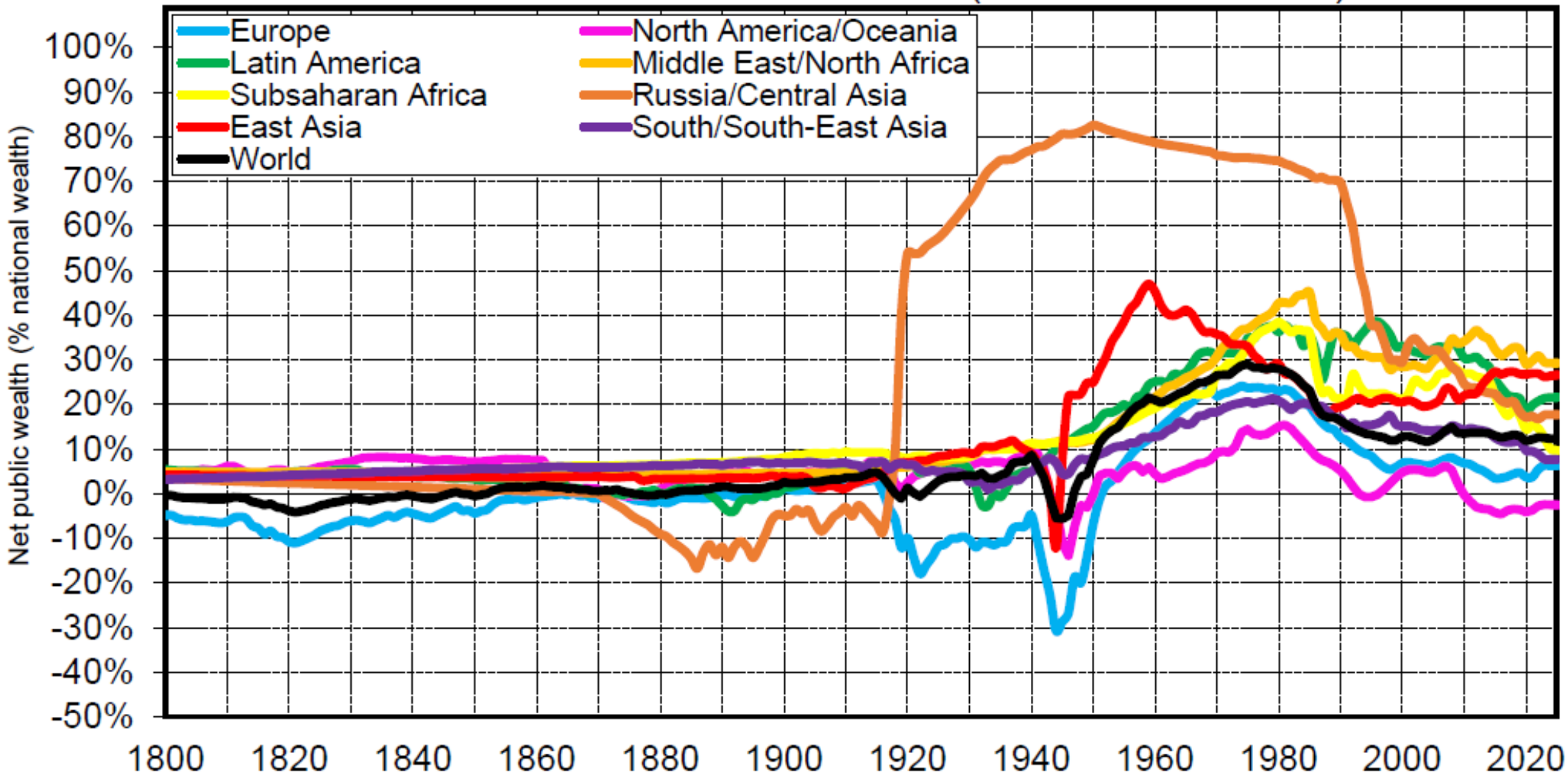
Net Public Wealth, 1800-2025 (% net domestic product)



Interpretation. Net public wealth (public assets minus public debt) are very large in East Asia (driven by China), while they are small or negative in Europe and North America/Oceania.

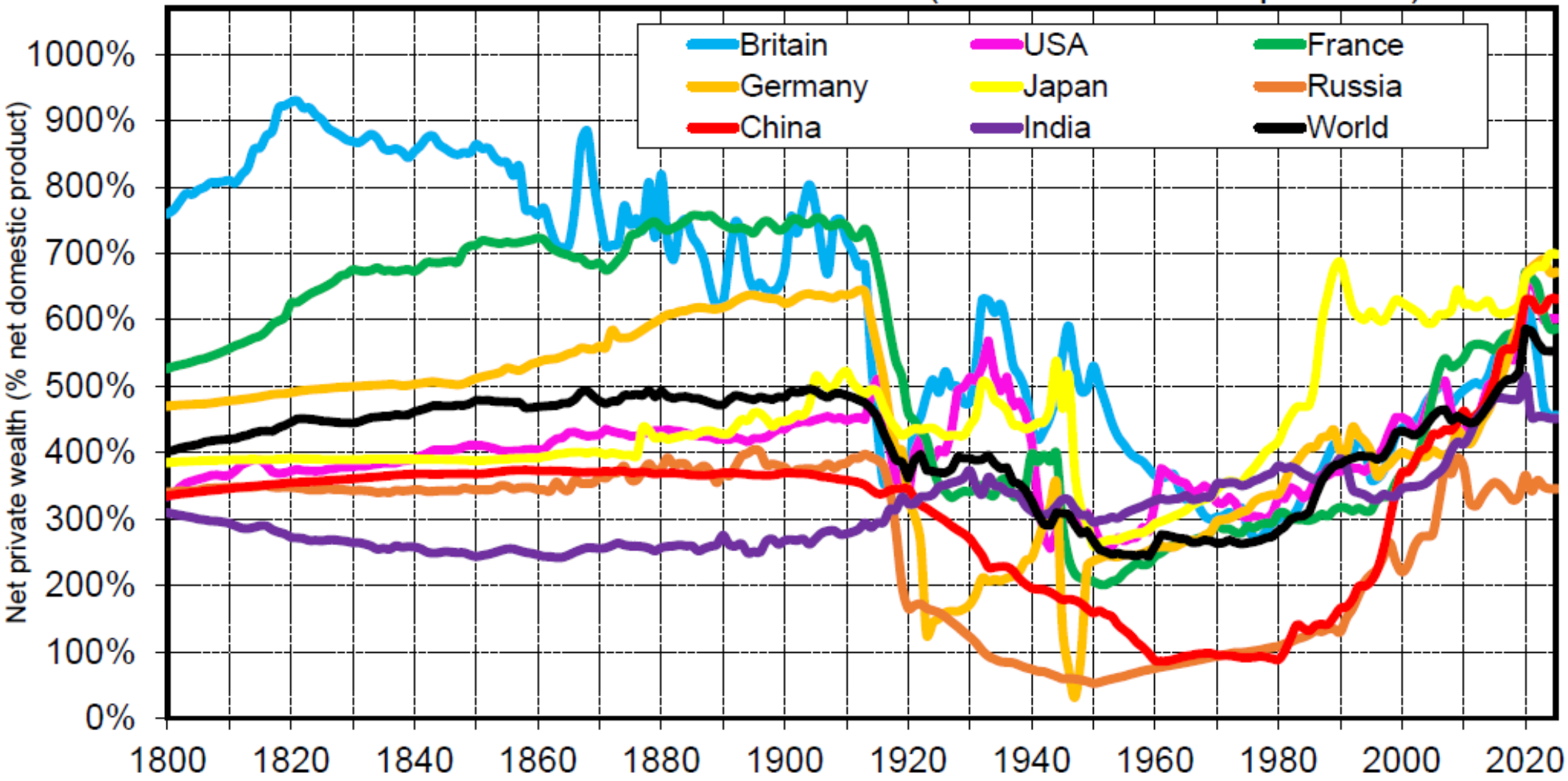
Sources and series: wid.world

Share of Public Wealth (% national wealth)



Interpretation. We observe very large variations in the share of public wealth in national wealth, from very low levels in the 19th century to very high levels in communist countries in the 20th century to intermediate levels in the 2020s, with large variations across regions.
Sources and series: wid.world

Net Private Wealth 1800-2025 (% net domestic product)



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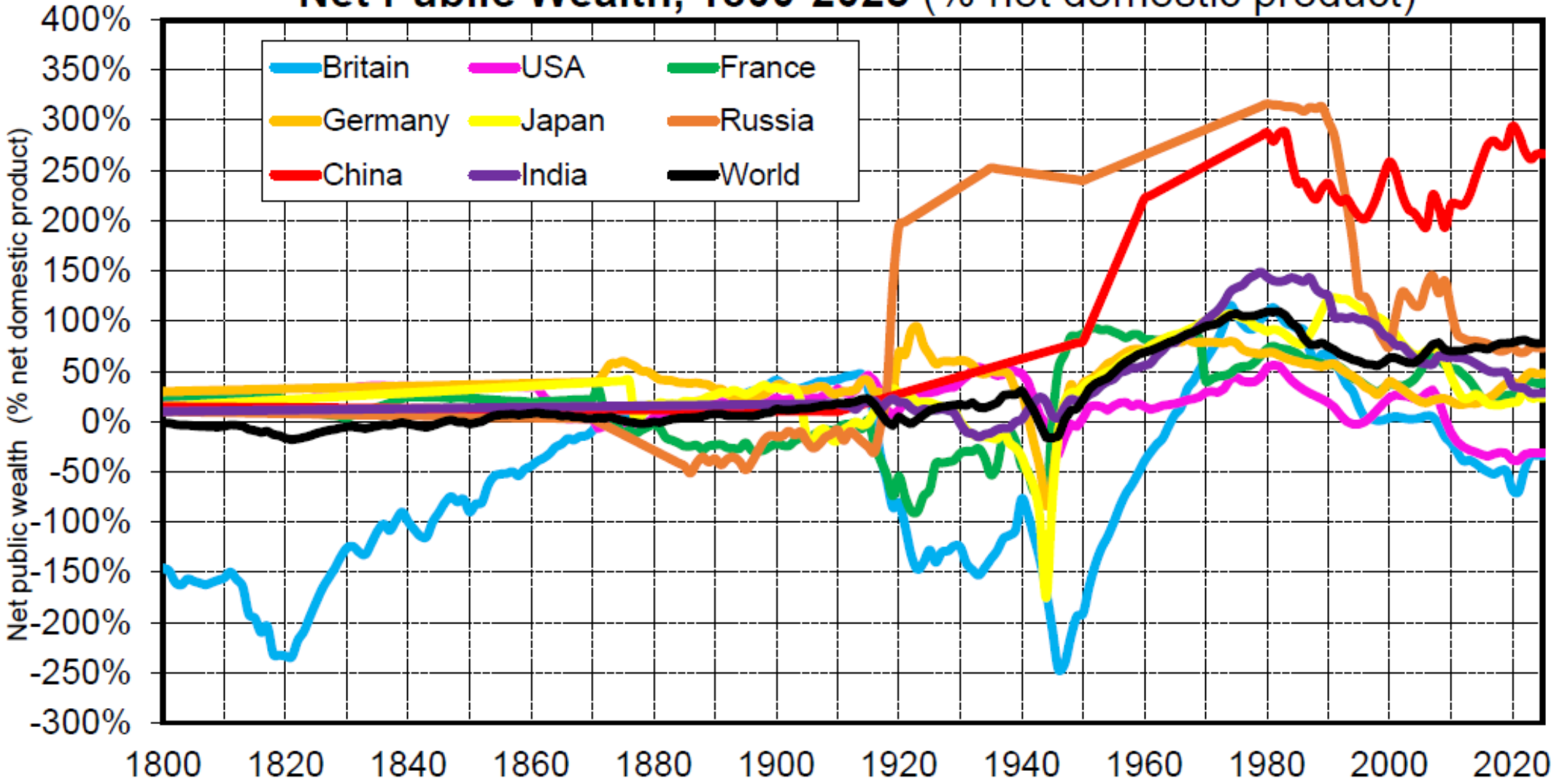

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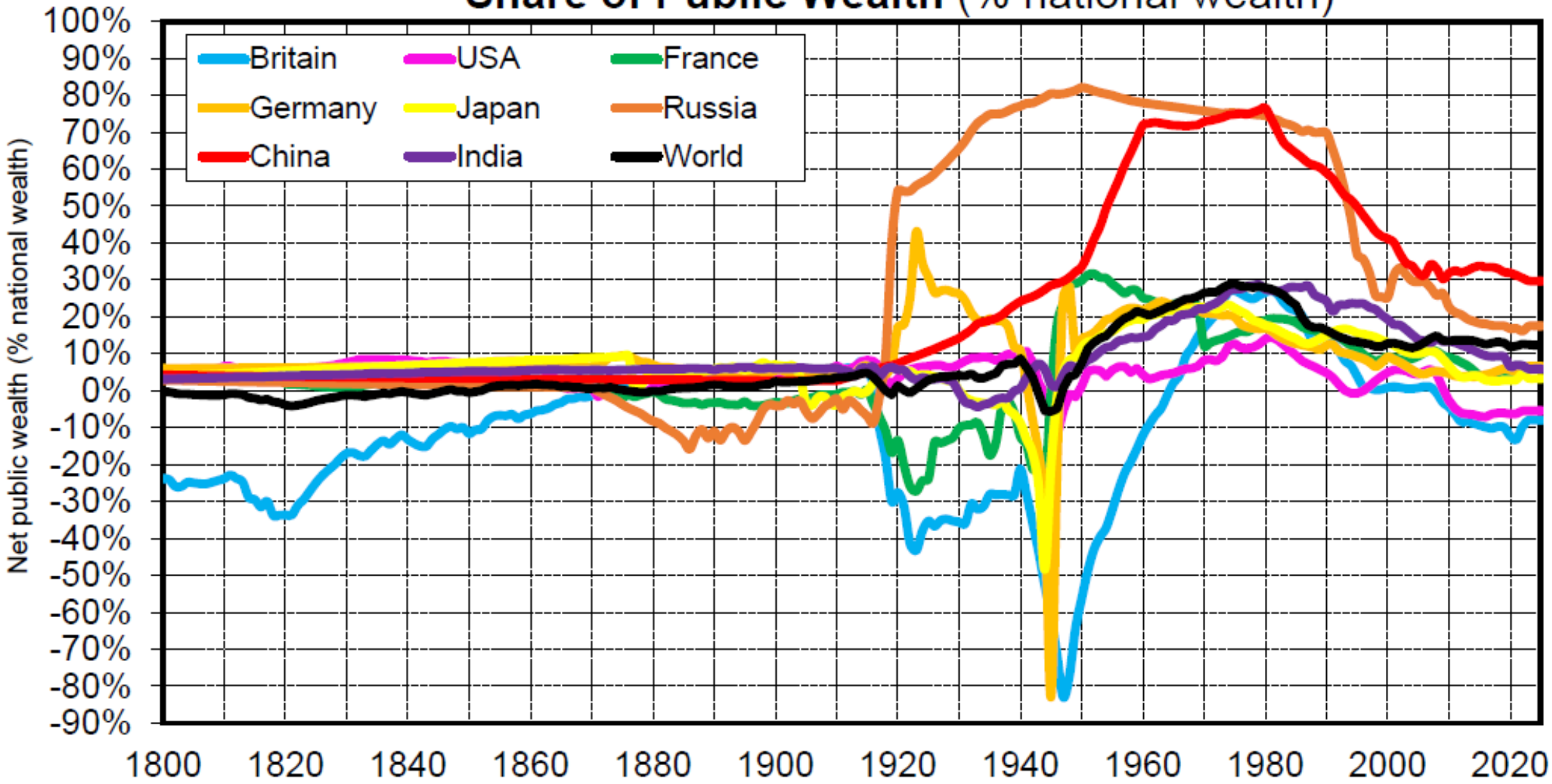

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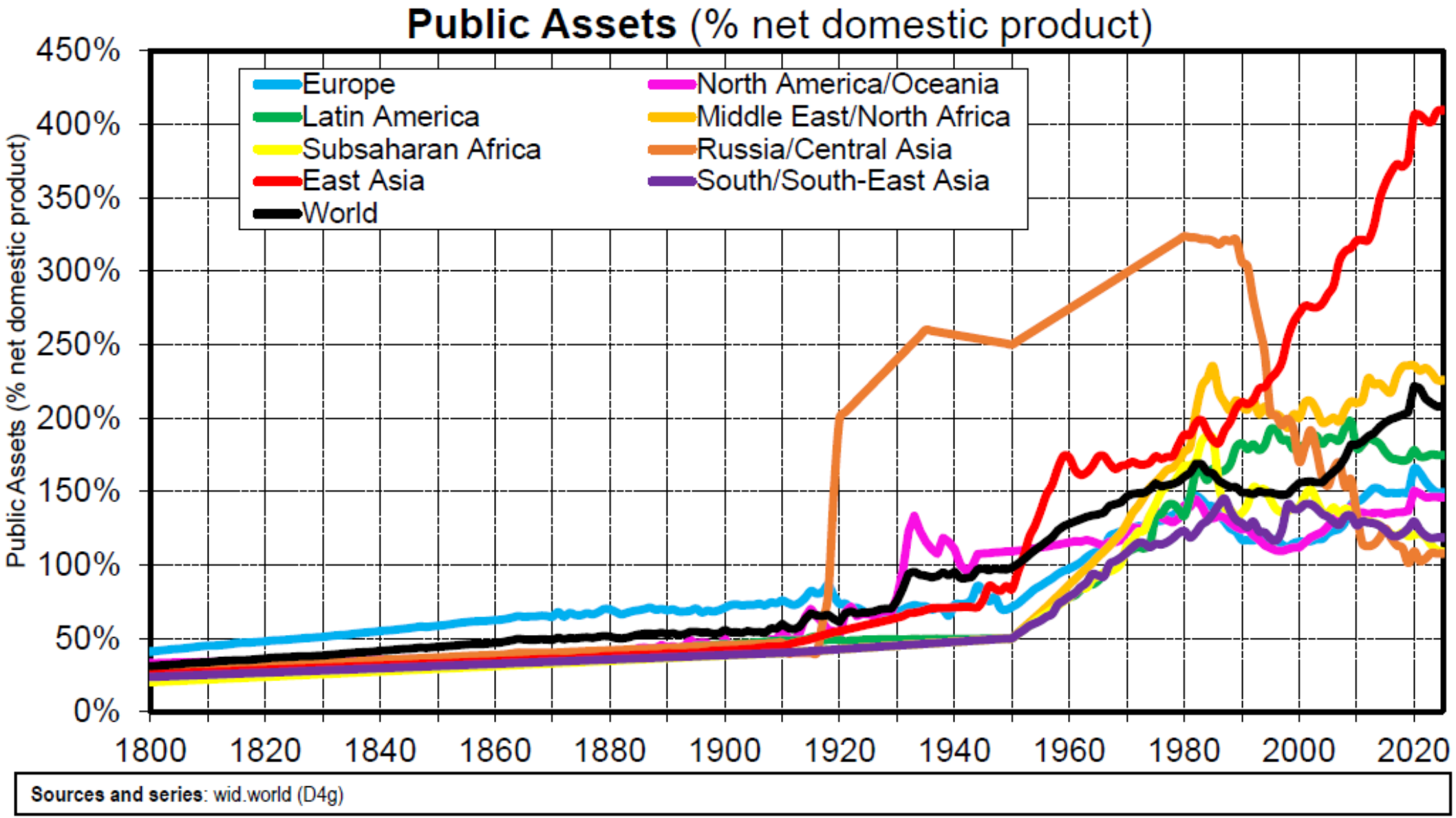
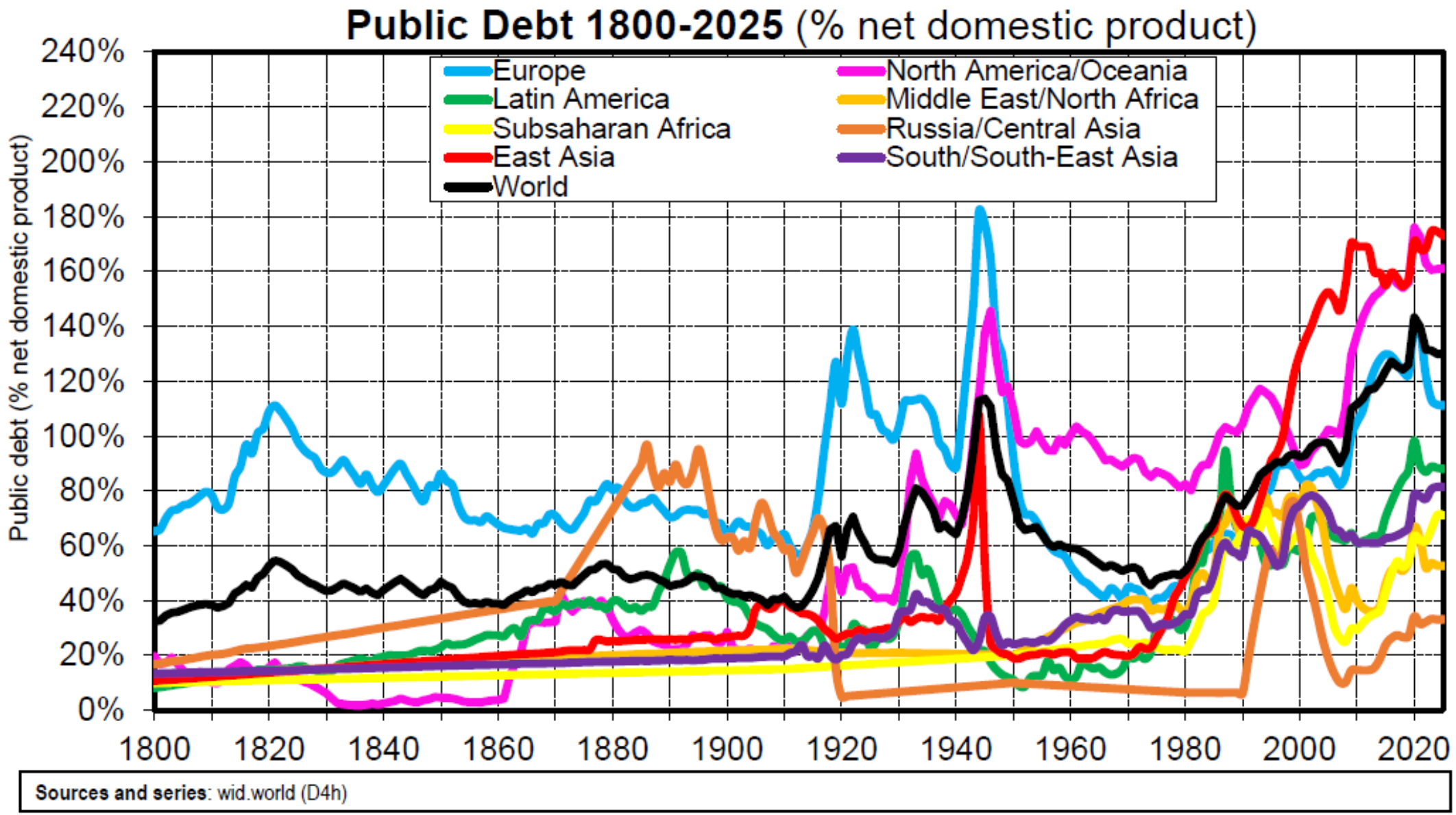

Public Assets (% net domestic product)
Public Assets (% net domestic product)
450%
400%
350%
300%
250%
200%
150%
100%
50%
0%
1800
1820
1840
1860
1880
1900
1920
1940
1960
1980
2000
2020
Europe
North America/Oceania
Latin America
Middle East/North Africa
Subsaharan Africa
Russia/Central Asia
East Asia
South/South-East Asia
World
Sources and series: wid.world (D4g)

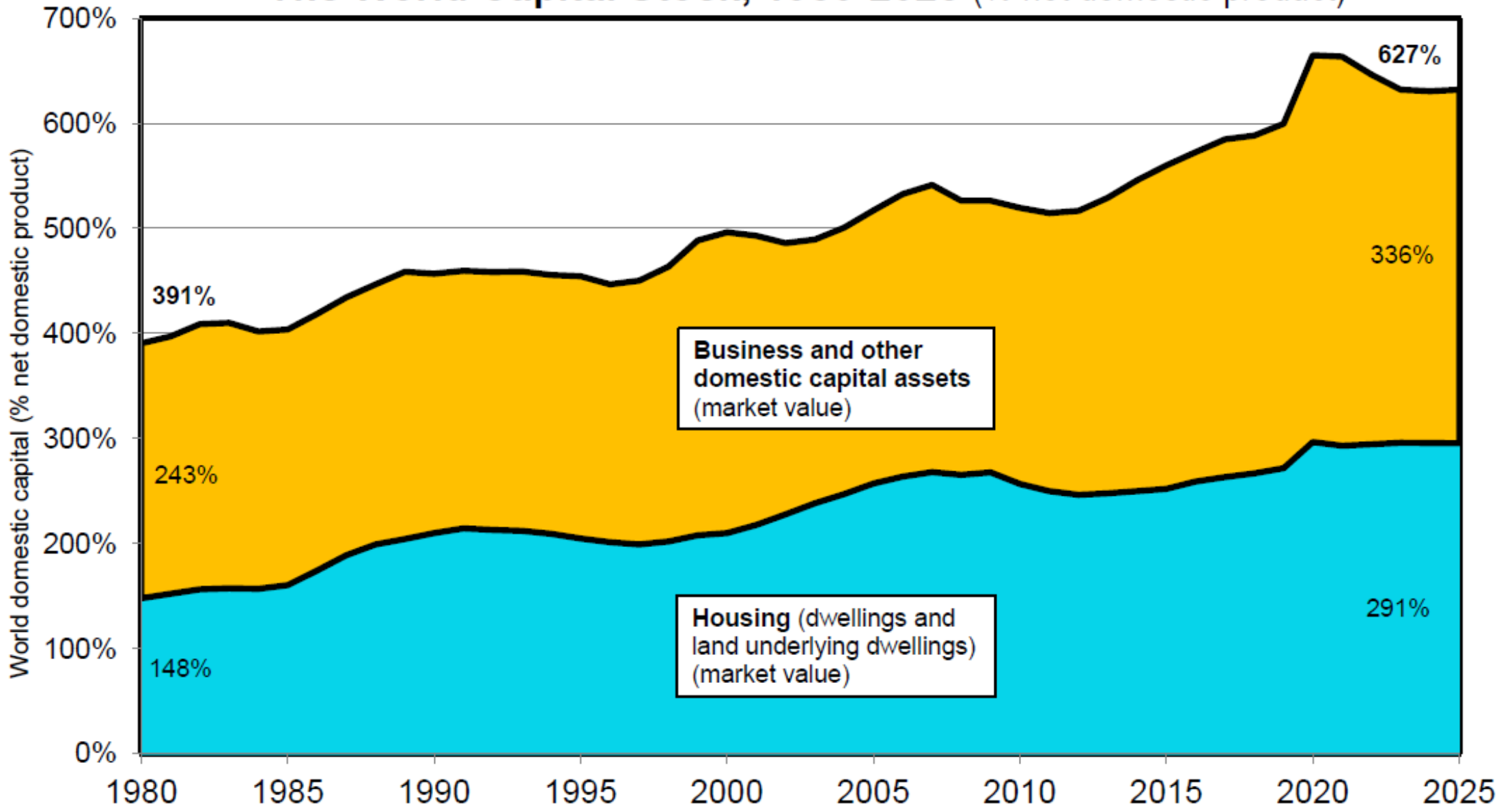

Public Debt 1800-2025 (% net domestic product)
Public debt (% net domestic product)
240%
220%
200%
180%
160%
140%
120%
100%
80%
60%
40%
20%
0%
1800
1820
1840
1860
1880
1900
1920
1940
1960
1980
2000
2020
Europe
North America/Oceania
Latin America
Middle East/North Africa
Subsaharan Africa
Russia/Central Asia
East Asia
South/South-East Asia
World
Sources and series: wid.world (D4h)

Main results covering 1980-2025 period

- **National wealth W_t = Domestic capital K_t + Foreign wealth FW_t**
- Domestic capital K_t = Housing K_{ht} + Business and other domestic capital assets K_{bt} (benchmark series: market-value $K_t = K_{ht}+K_{bt}$)
- **National wealth W_t = Private wealth W_{pt} + Public wealth W_{gt}**

- **Basic result: W/Y ↑ everywhere in 1980-2025**
- True both for housing & business assets
- **Due mostly to capital gains: rising bargaining power of capital owners** (and/or agglomeration effects)
- **W/Y ↑ v.strong in East Asia**: high saving & high public wealth

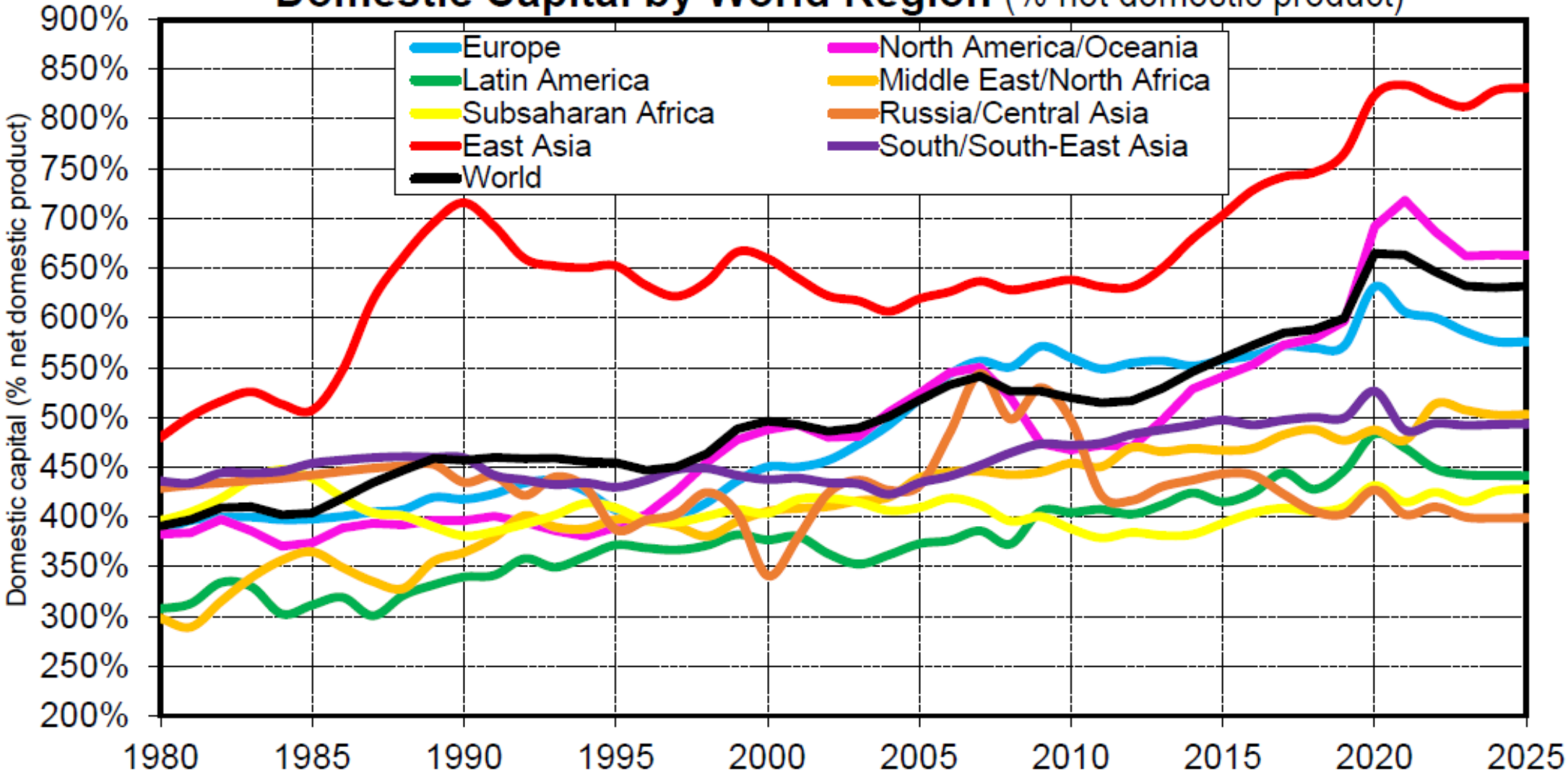
The World Capital Stock, 1980-2025 (% net domestic product)



Interpretation. At the world level, the total domestic capital stock increased from 391% to 627% of net domestic product between 1980 and 2025. The rise is due both the rise of housing assets and business and other domestic capital assets, with an increasing share of housing assets.

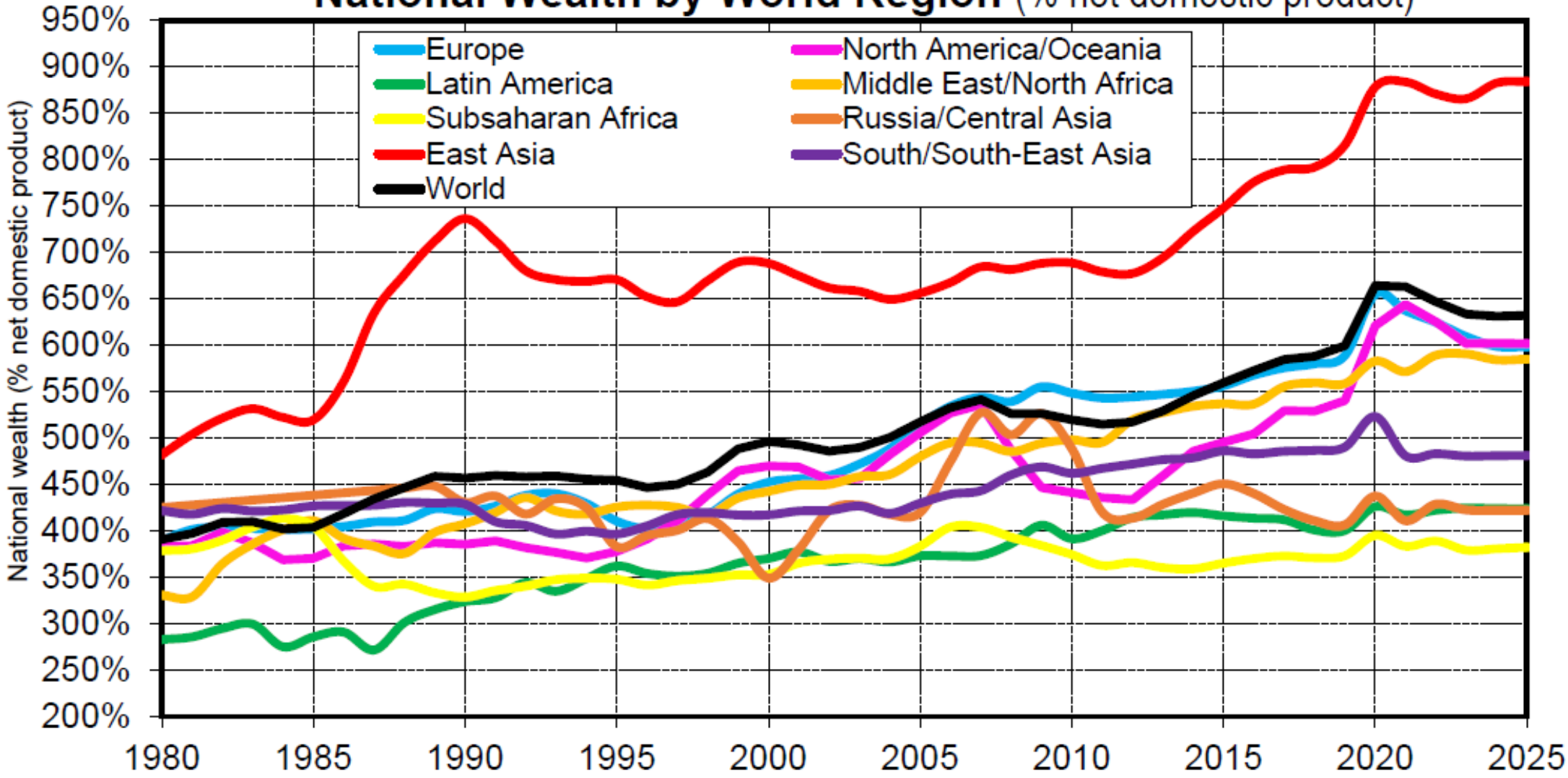
Note. All assets are valued at market prices in our benchmark estimates, e.g. stock prices for listed companies, etc. **Sources and series**: wid.world

Domestic Capital by World Region (% net domestic product)



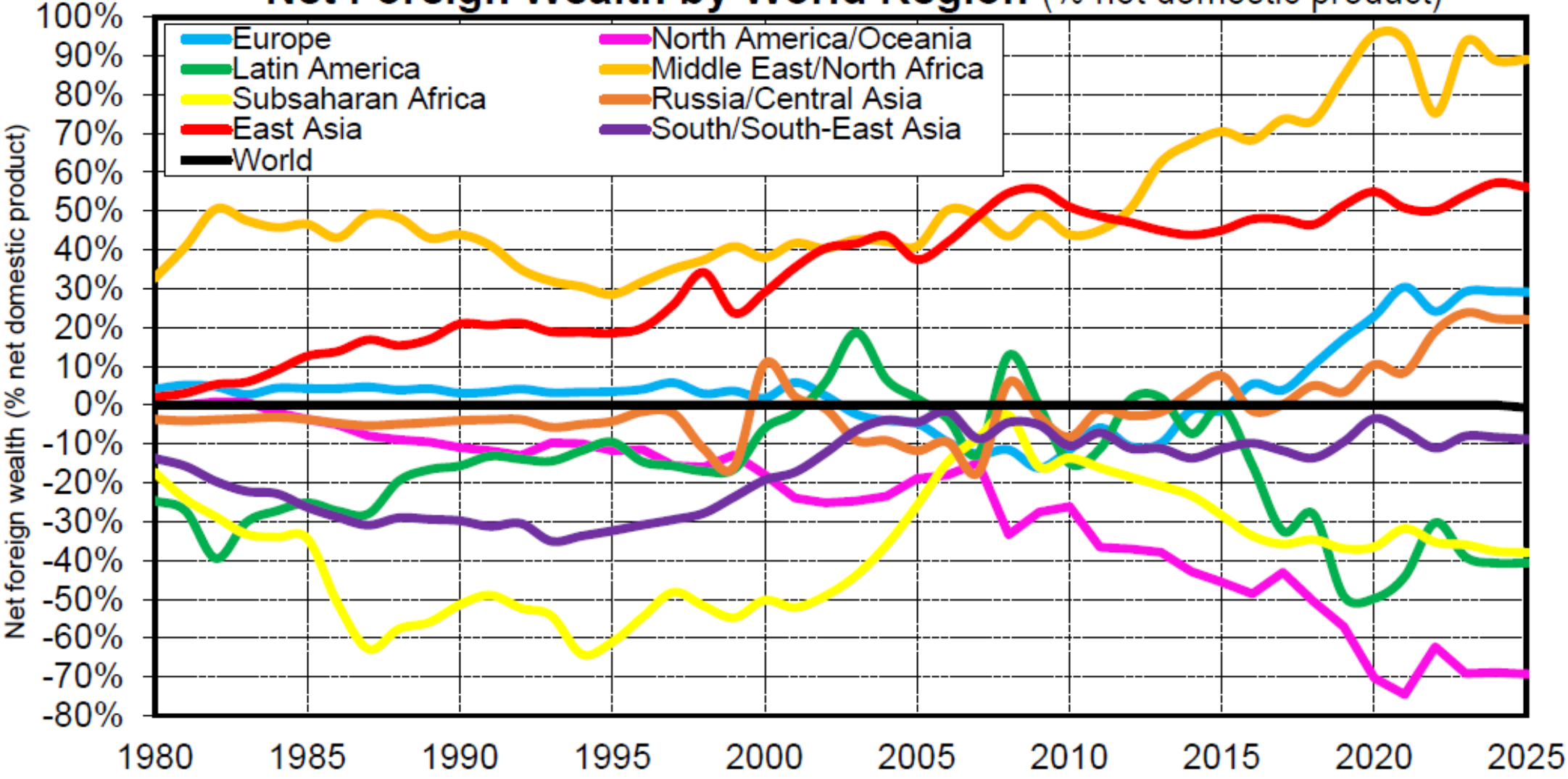
Interpretation. At the world level, the total domestic capital stock rose from 391% to 627% of net domestic product between 1980 and 2025. The rise occured in most regions, but with large variations in magnitude. The very high levels of domestic capital observed in East Asia can be accounted for by a combination of factors: high saving rates (private and public) (volume effect) and large capital gains (valuation effect), large public wealth. **Sources and series**: wid.world

National Wealth by World Region (% net domestic product)



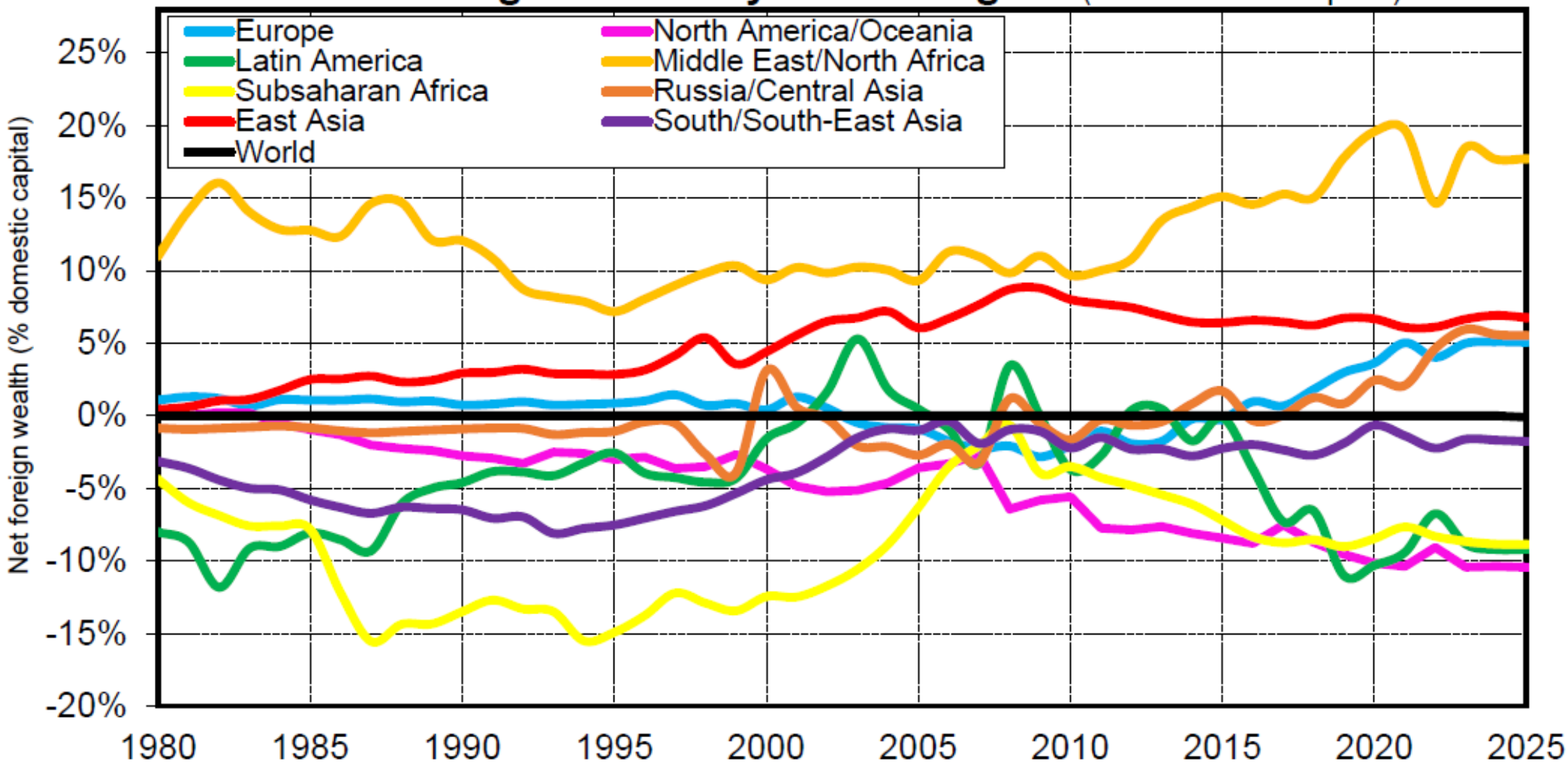
Interpretation. National wealth is equal to the sum of domestic capital and net foreign wealth. At the world level it is equal to total domestic capital as foreign wealth sums to zero. At the regional level, national wealth can be either larger than domestic capital (e.g. for regions with positive foreign wealth like East Asia, which in effect own part of the domestic capital of other regions) or smaller than domestic capital (e.g. for regions with negative foreign wealth like Subsaharan Africa). **Sources and series**: wid.world

Net Foreign Wealth by World Region (% net domestic product)



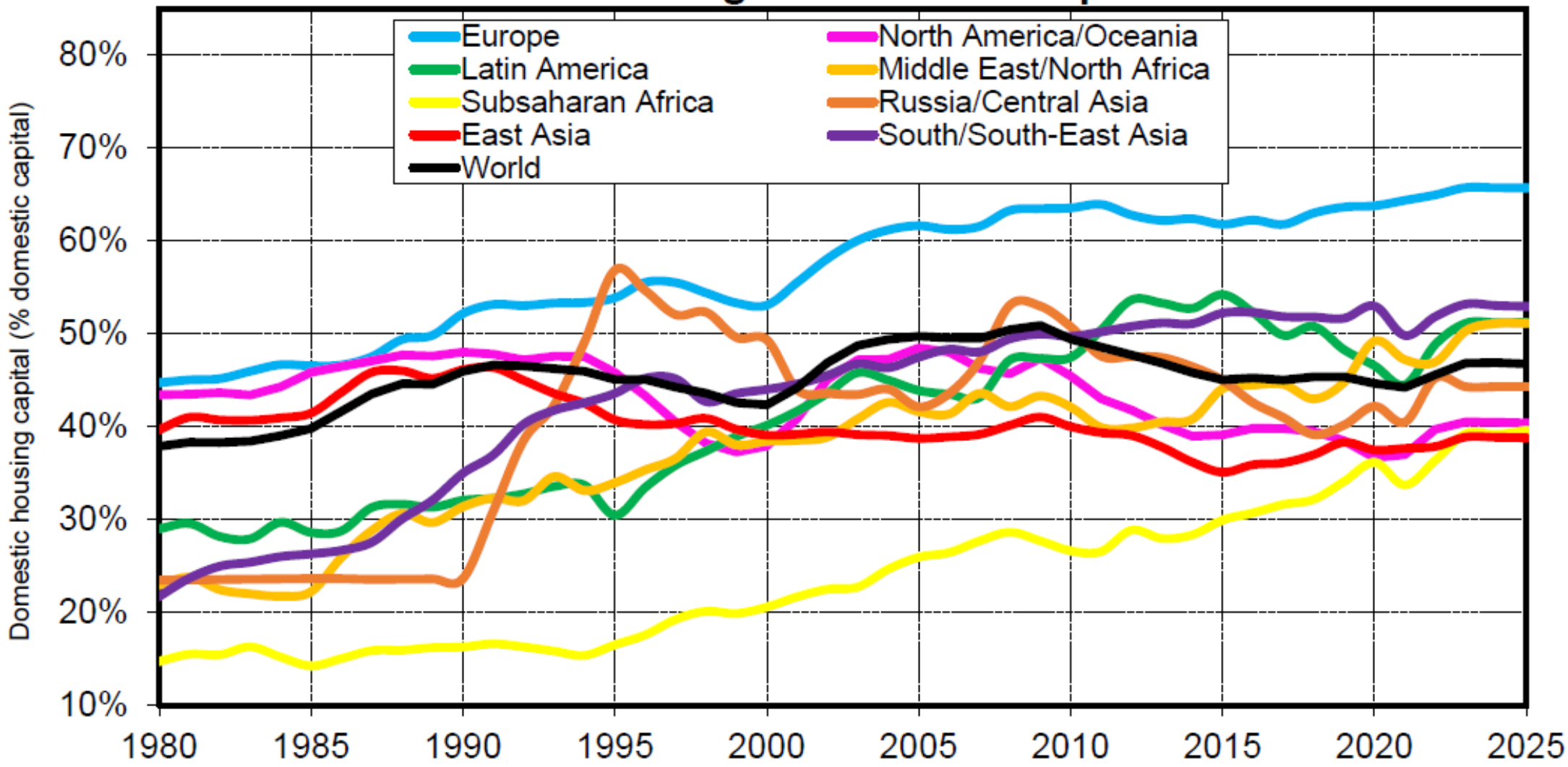
Interpretation. The two regions with the largest net foreign assets in the 2020s are MENA (with net foreign wealth around 75% of the region's net domestic product) and East Asia (50%). The regions with the largest net foreign liabilities used to be Latin America, Subsaharan Africa and South & South-East Asia in the 1980s-1990s. They have been overtaken by North America/Oceania in the 2010s-2020s (with negative foreign wealth equivalent to about 70% of the region's net domestic product). **Sources and series**: wid.world

Net Foreign Wealth by World Region (% domestic capital)



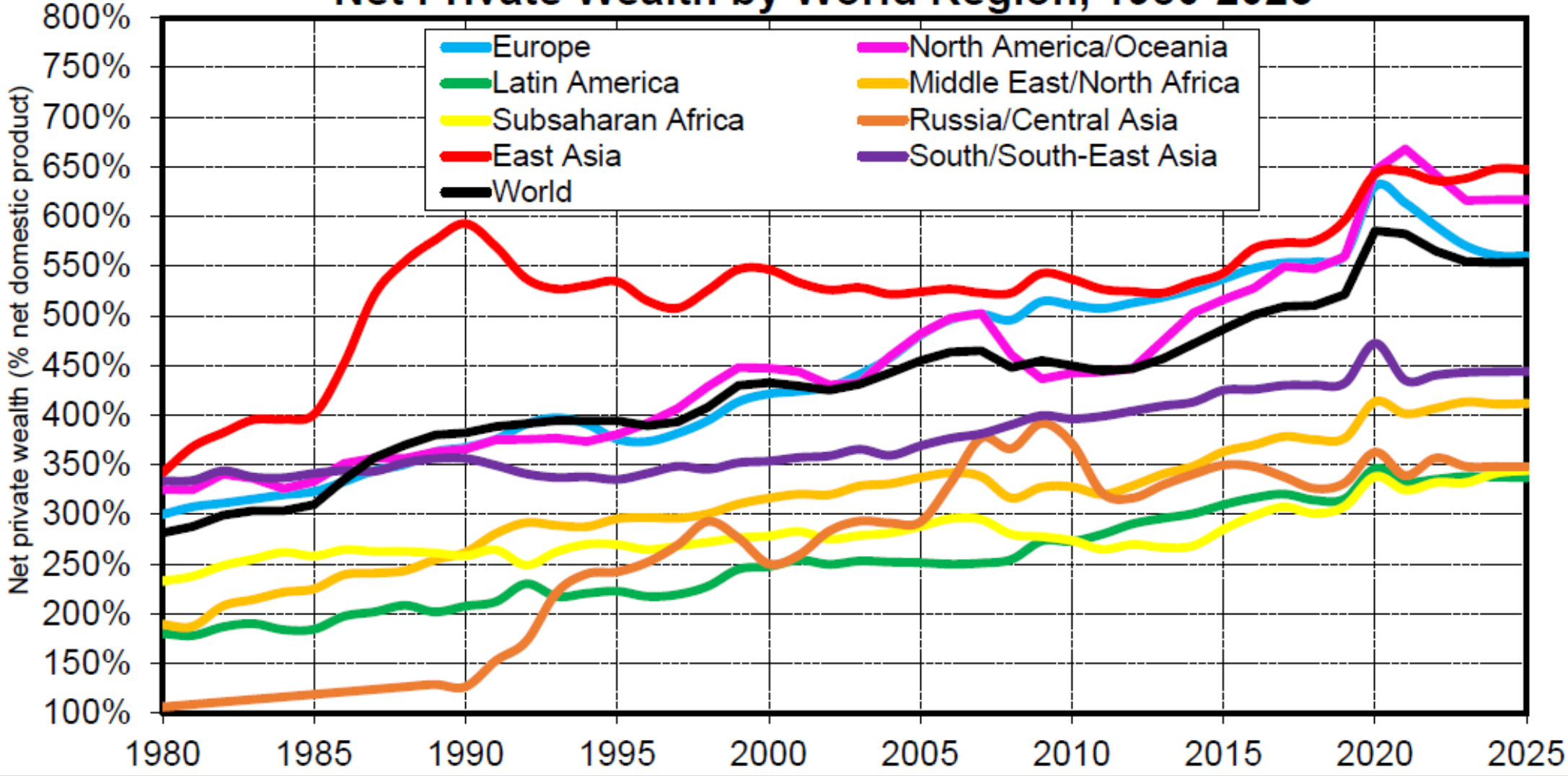
Interpretation. The two regions with the positive net foreign assets in the 2020s are MENA (with net foreign wealth around 15% of the region's domestic capital) and East Asia (7%). The regions with the largest net foreign liabilities used to be Latin America, Subsaharan Africa and South & South-East Asia in the 1980s-1990s. They have been overtaken by North America/Oceania in the 2010s-2020 (with negative foreign wealth equivalent to about 10% of the region's domestic capital). **Sources and series**: wid.world

The Share of Housing in Domestic Capital 1980-2025



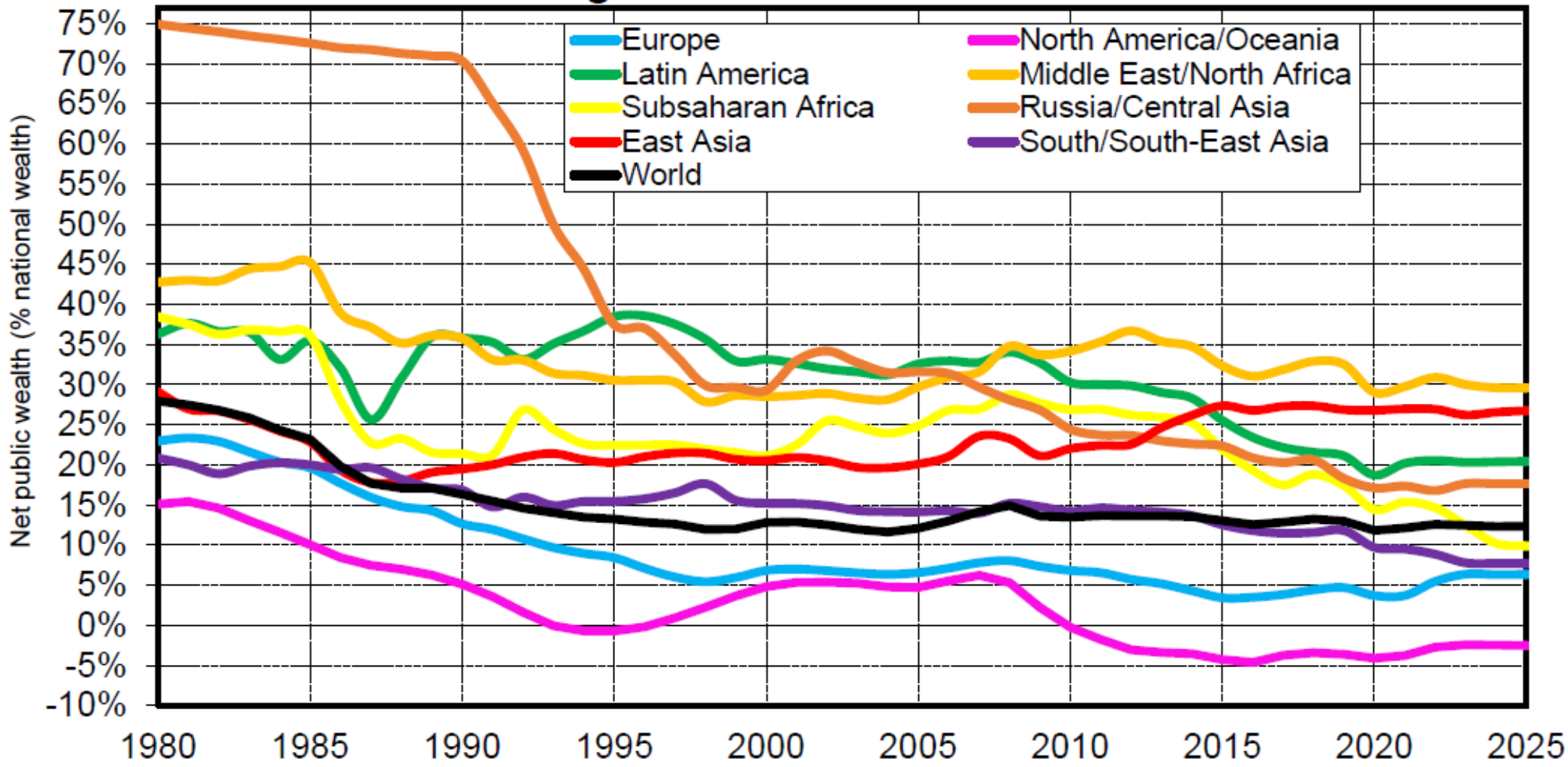
Interpretation. At the world level, the share of housing in total domestic capital increased from 38% in 1980 to 46% in 2025. Variations across regions can reflect not only differences in the magnitude of housing investment flows relative to other investment flows (volume effects) but also other factors including land scarcity, agglomeration effects and regulation (rent control, public housing, etc.) (price effects). The large rise in Russia/Central Asia 1990-1995 reflects both the rise of housing prices and the drop in business valuation. **Sources and series**: wid.world

Net Private Wealth by World Region, 1980-2025



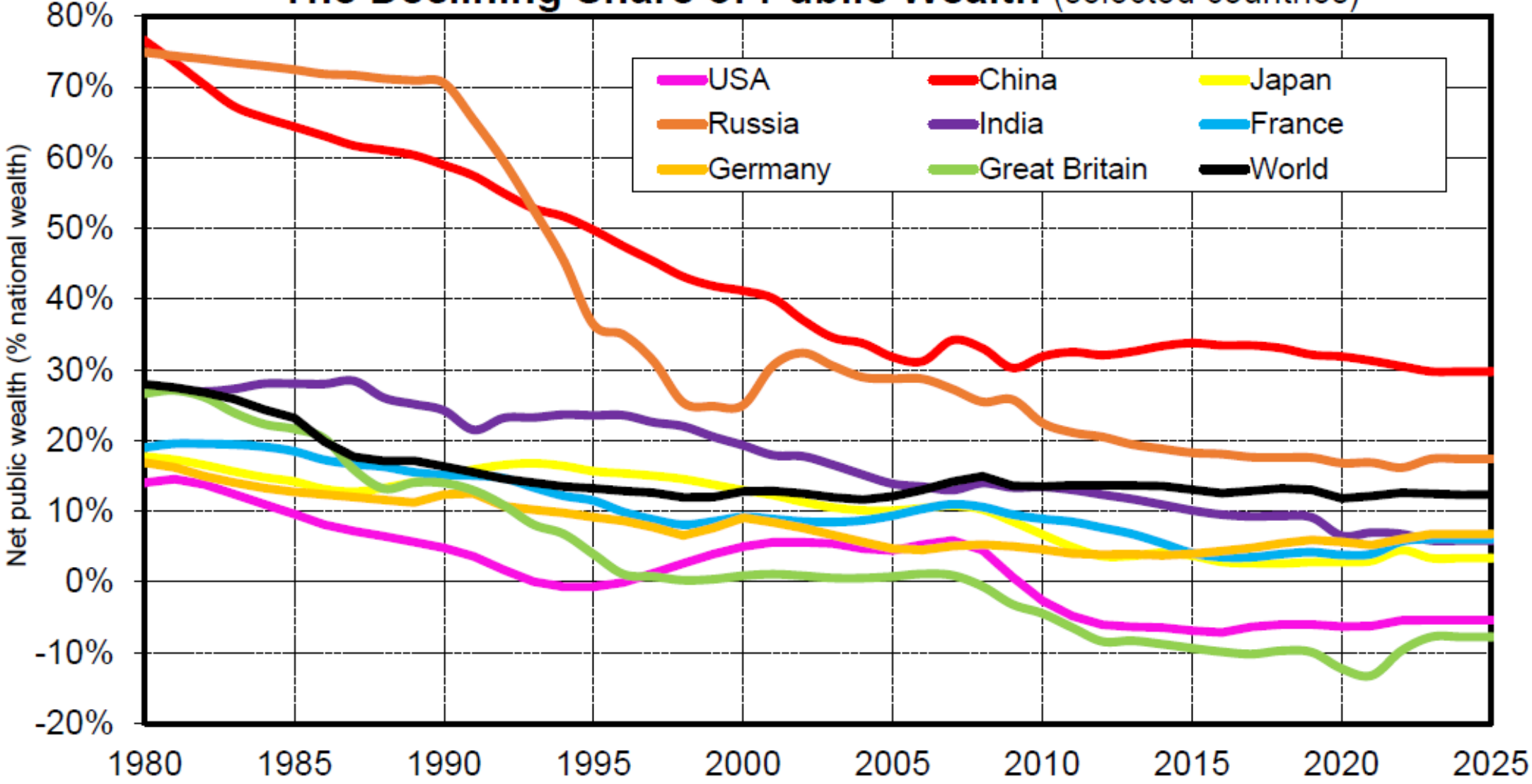
Interpretation. Net private wealth (i.e. net wealth owned by households and non-profit institutions) increased from 281% to 546% of net domestic product at the world level between 1980 and 2025. This reflects for the most part the rise of personal household wealth (which always represents about 95% of private wealth) and this accounts for all of the rise in national wealth (expresed as % of net domestic product).
Sources and series: wid.world

The Declining Share of Public Wealth 1980-2025



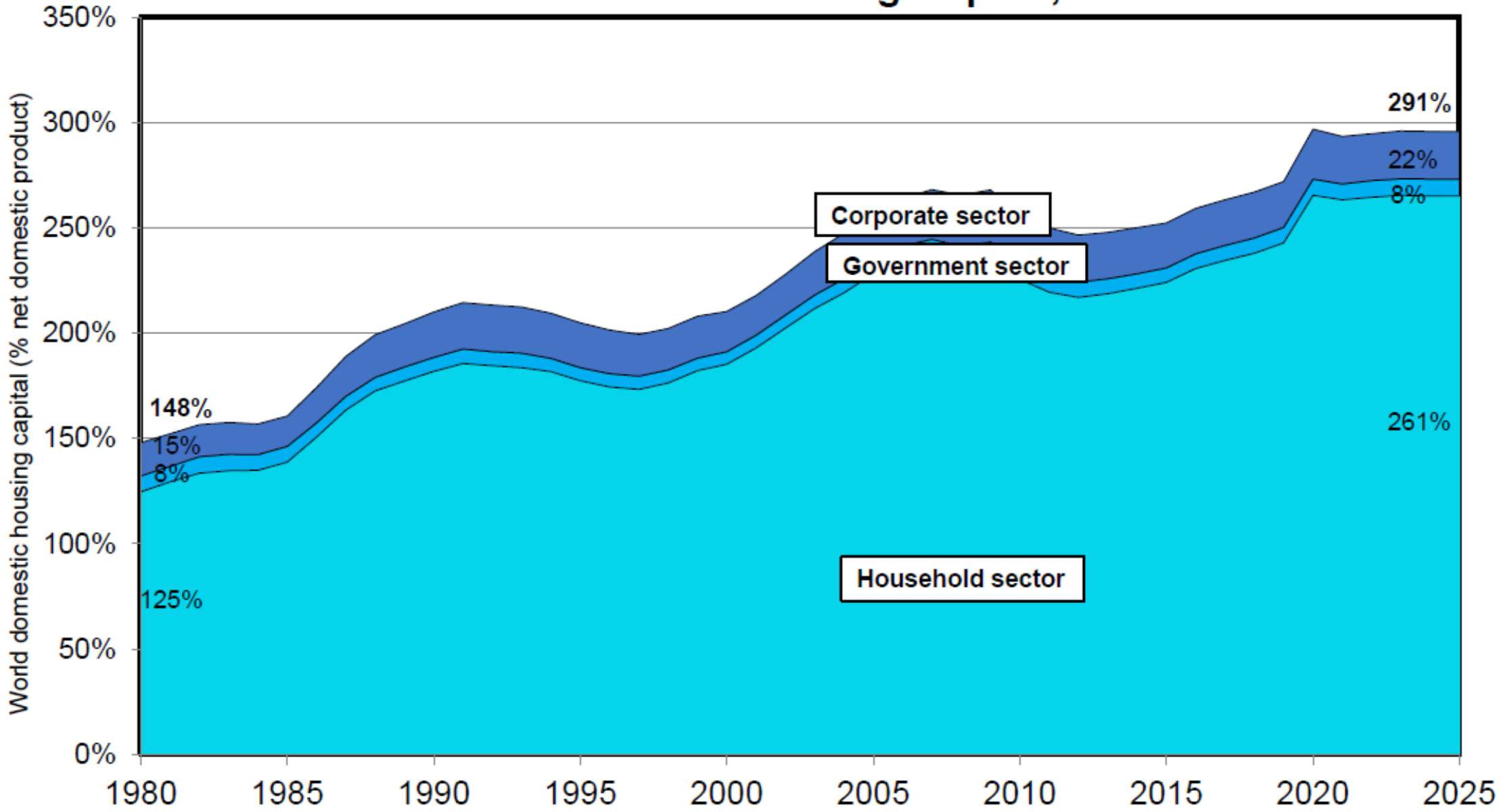
Interpretation. At the world level, the share of public wealth in national wealth has fallen from 28% in 1980 to 13% in 2025. This reflects both the decline of public assets (largely due to privatization) and the rise of public debt. The fall has been particularly spectacular in Russia/Central Asia after USSR collapse in 1990-1991. In North America/Oceania, the public share is now negative, as public debt exceeds public assets. In East Asia, it has stablized around 25-30%, reflecting the stabilisation of the public share around 30% in China. **Sources and series**: wid.world

The Declining Share of Public Wealth (selected countries)



Interpretation. At the country level, the decline of the share of public wealth has been of comparable magnitude in China and Russia, except that it stabilized at a higher level in China. **Note.** Net public wealth is defined as net wealth of central and local governement and all public entities belonging to the governement sector according to national accounts definitions of institutional sectors (SNA 2008). **Sources and series**: wid.world

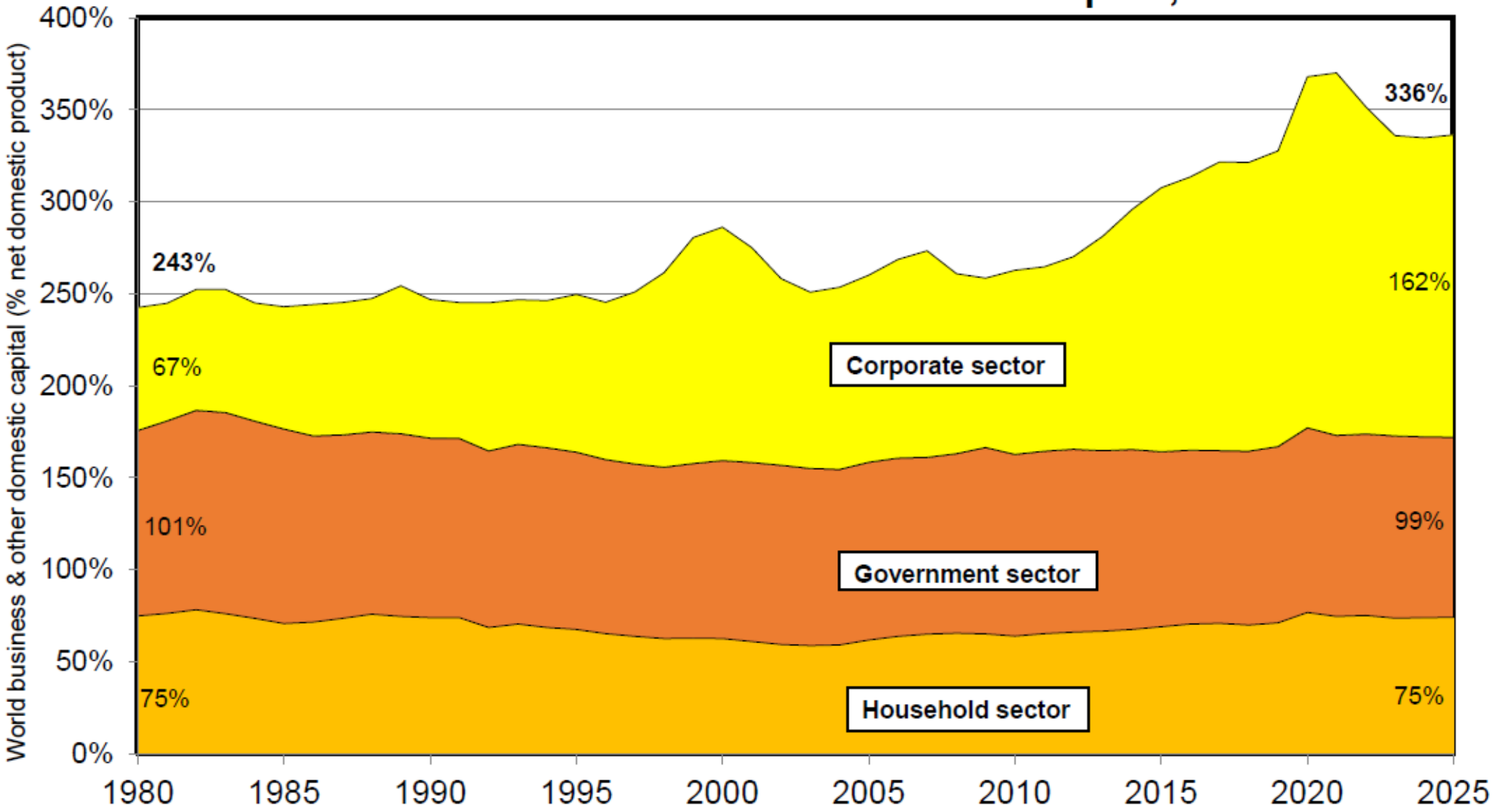
Structure of Domestic Housing Capital, 1980-2025



Interpretation. At the world level, the market value of total housing capital stock has increased from 148% to 291% of net domestic product between 1980 and 2025. Most of the housing stoch has always been owned by households, and this share rose over time.

Note. Public housing entities are classified in corporate sector if they apply significant rent (typically more than half of their ressources). **Sources and series**: wid.world

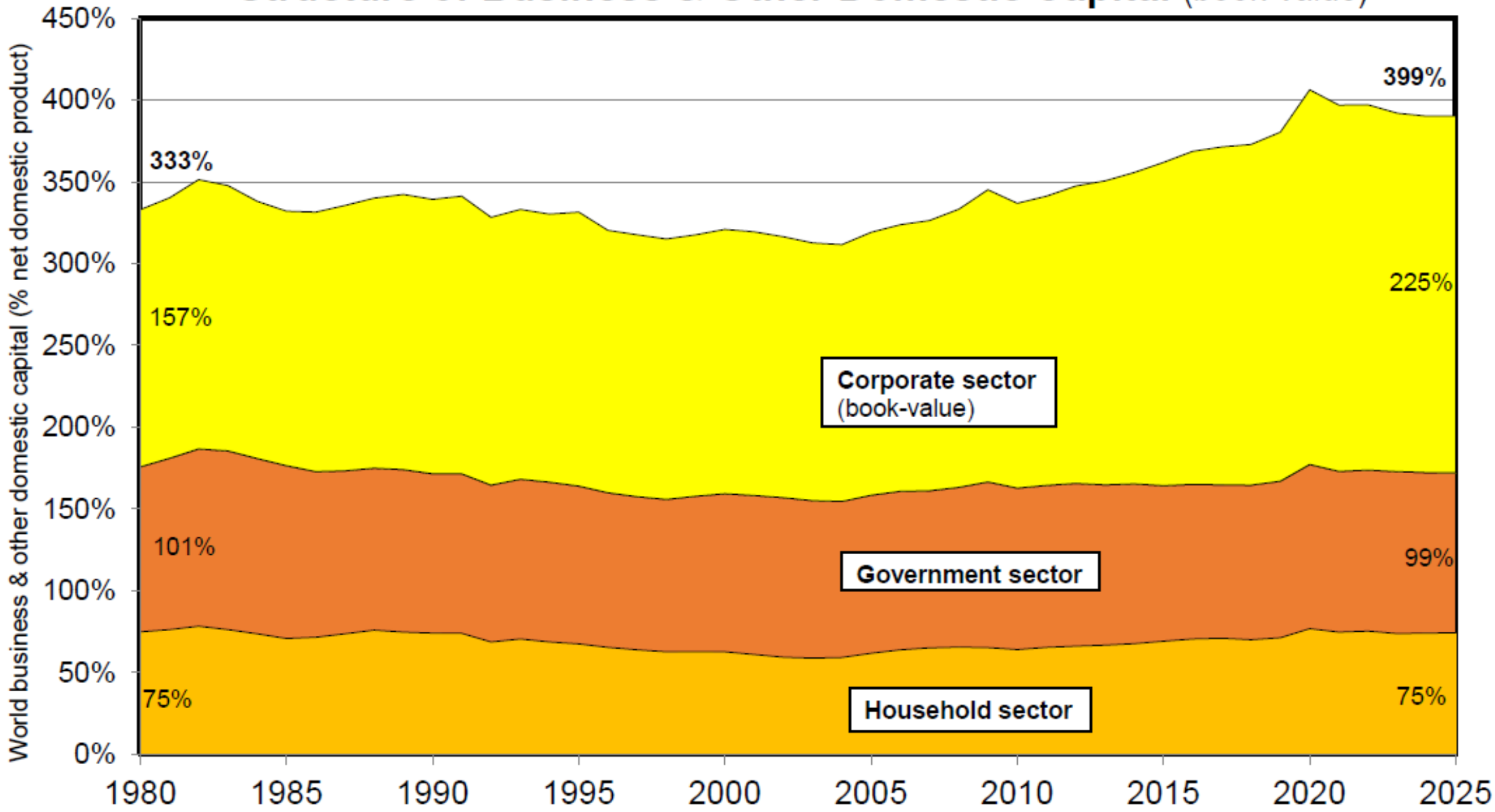
Structure of Business & Other Domestic Capital, 1980-2025



Interpretation. At the world level, the market value of total business and other non-housing domestic capital stock has increased from 243% to 336% of net domestic product between 1980 and 2025, with a large rise in the share of the corporate sector.

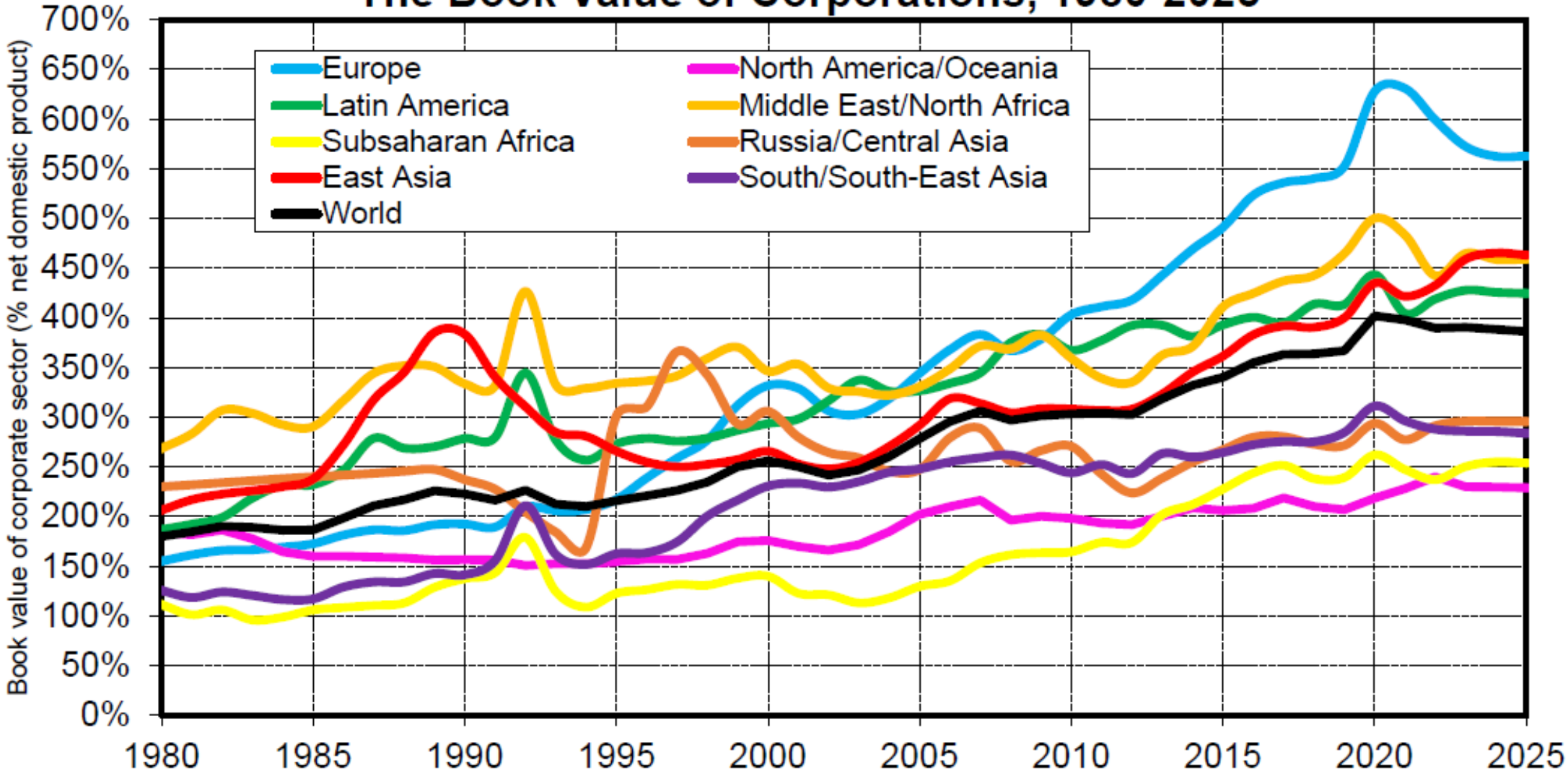
Note. Public companies are classified in corporate sector if they apply significant prices (typically more than half of their total ressources). **Sources and series**: wid.world

Structure of Business & Other Domestic Capital (book-value)



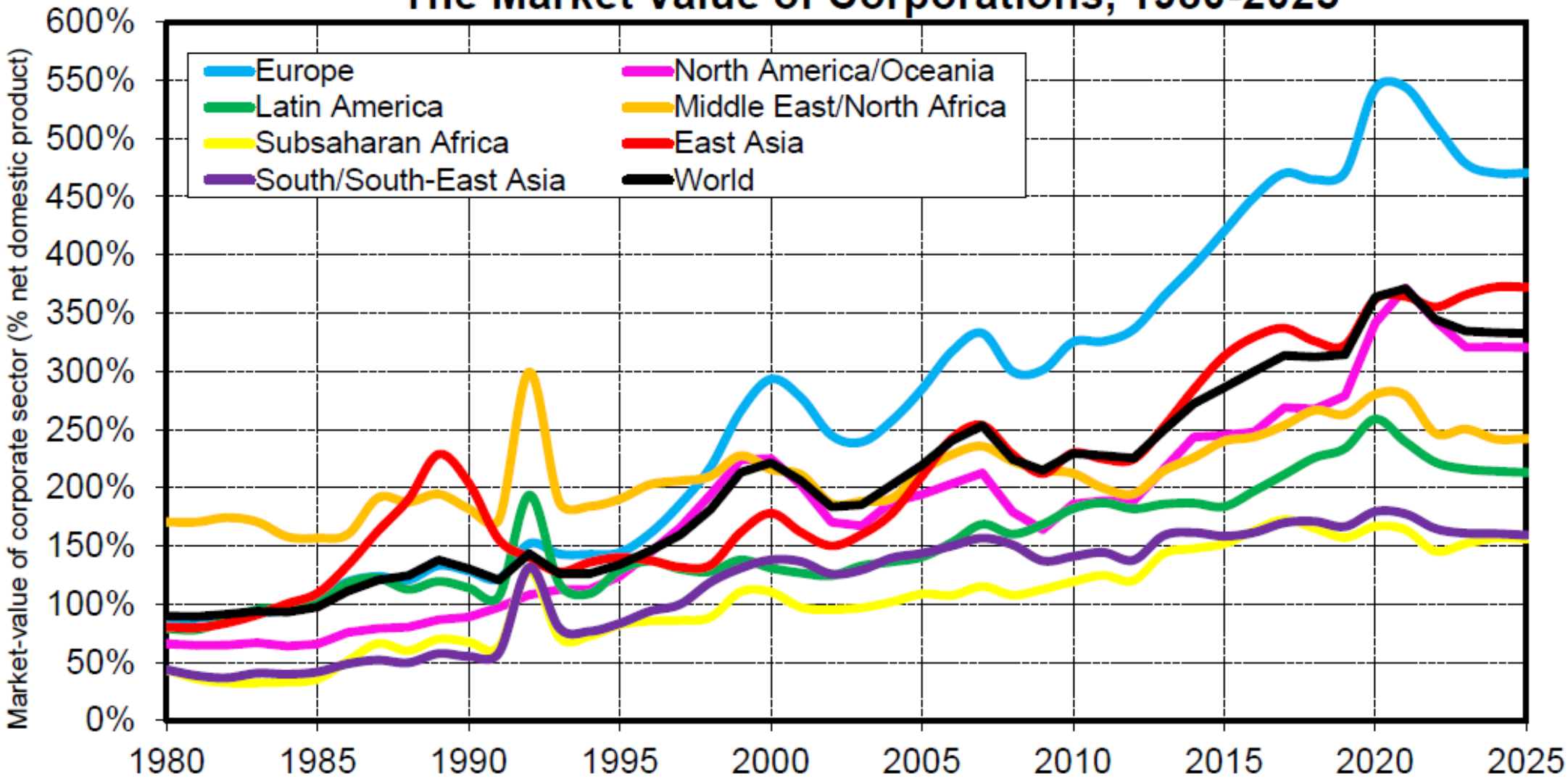
Interpretation. At the world level, the book value of corporate business and other capital stock has increased from 157% to 225% of net domestic product between 1980 and 2025. It has always been larger than the corresponding market value but the gap has reduced over time.
Note. Public companies are classified in corporate sector if they apply significant prices (typically more than half of their total ressources). **Sources and series**: wid.world

The Book Value of Corporations, 1980-2025



Interpretation. The book value of corporations rose from 180% to 387% of net domestic product between 1980 and 2025 at the world level, with large variations across regions. **Note.** The book value of corporations is the difference between the value of corporate assets (non-financial + financial) and the value of corporate non-equity liabilities (debt). The corporate sector covers all corporations (non-financial and financial). **Sources and series**: wid.world

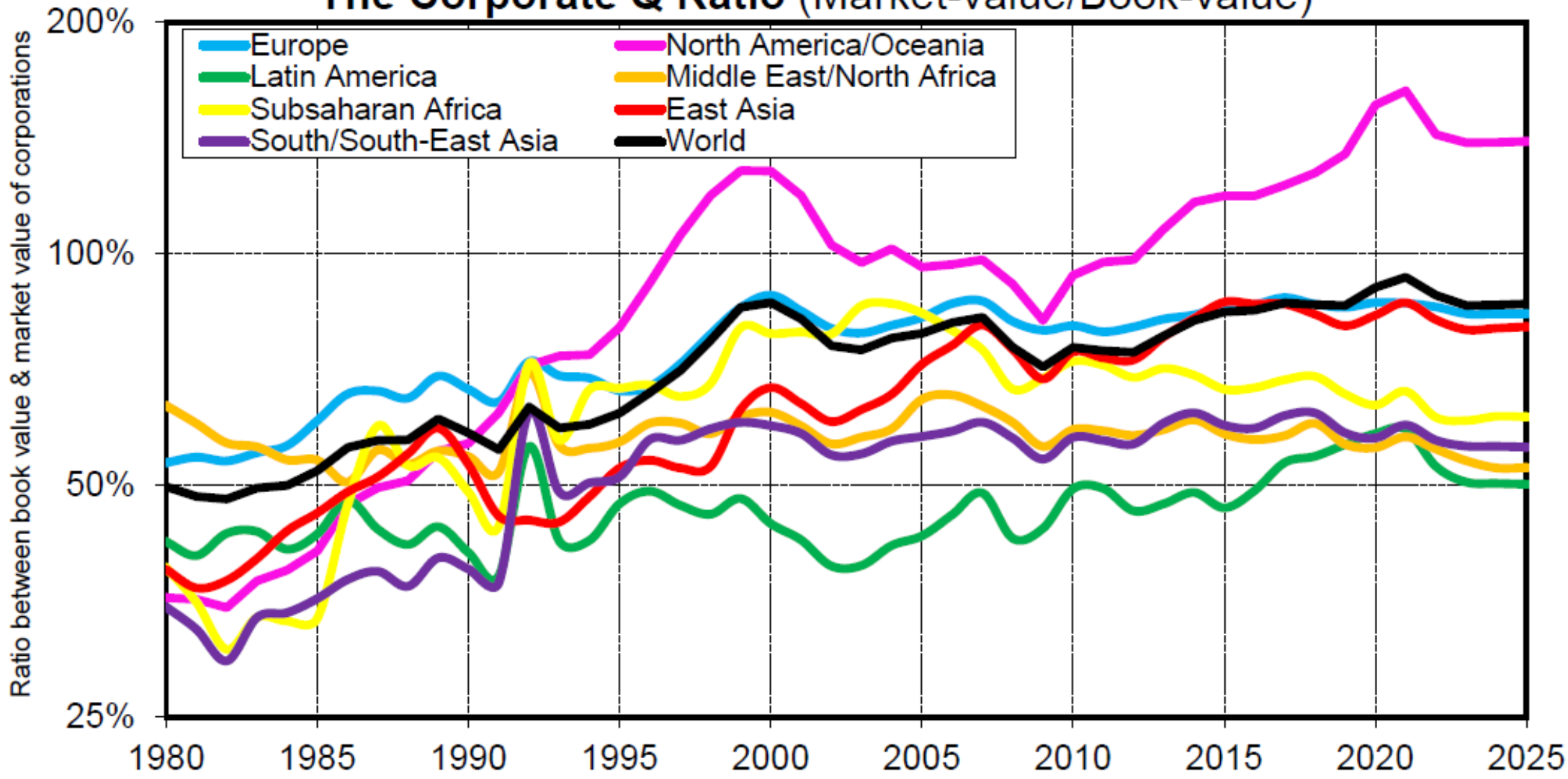
The Market Value of Corporations, 1980-2025



Interpretation. The market value of corporations rose from 90% to 324% of net domestic product between 1980 and 2025 at the world level, with large variations across regions. It has always been smaller on average than the book value, but the gap has reduced over time.

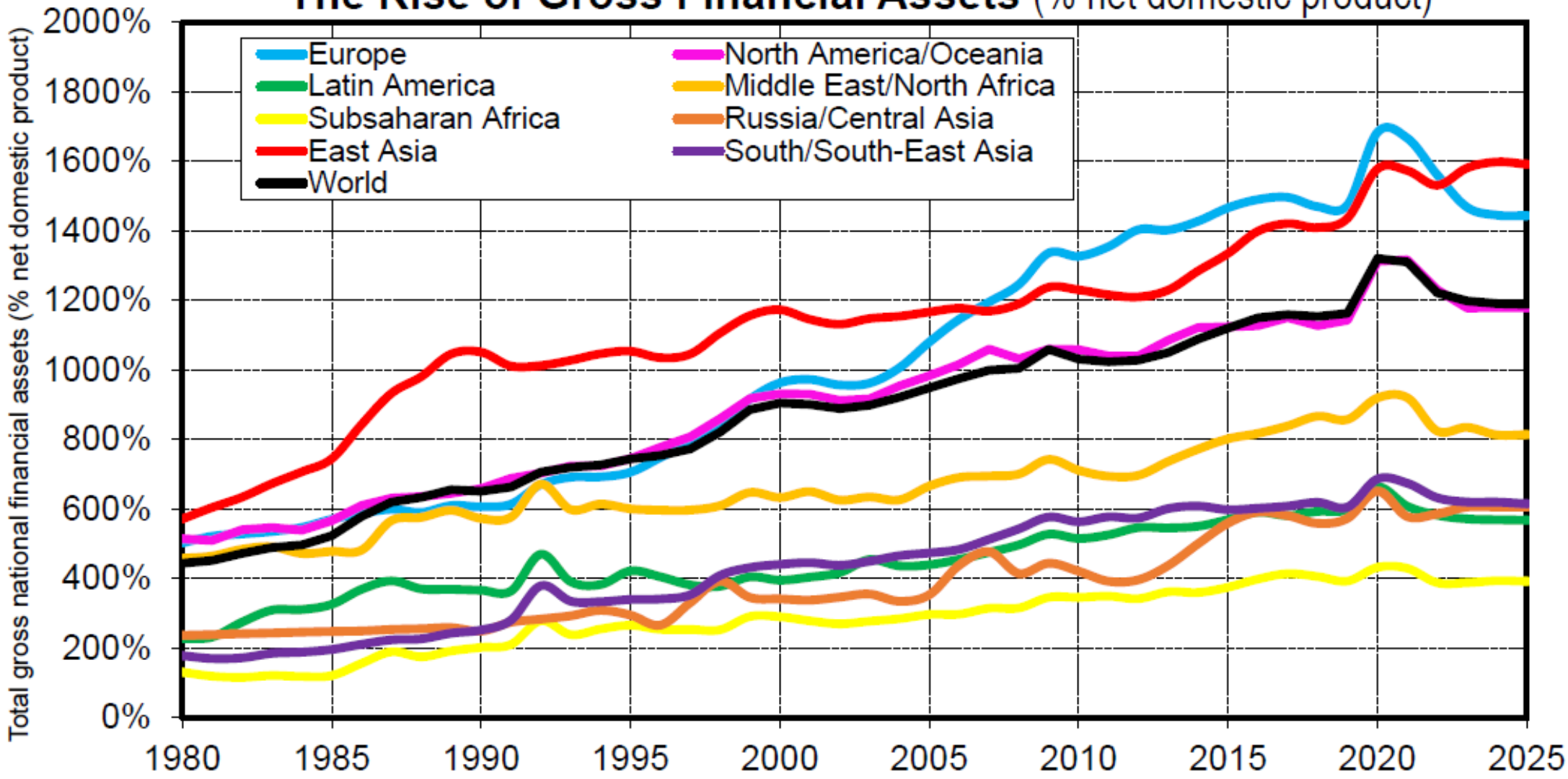
Note. The market value of corporations is the equity value (stock market capitalization or equivalent market valuation for non-listed firms). **Sources and series**: wid.world

The Corporate Q Ratio (Market-value/Book-value)



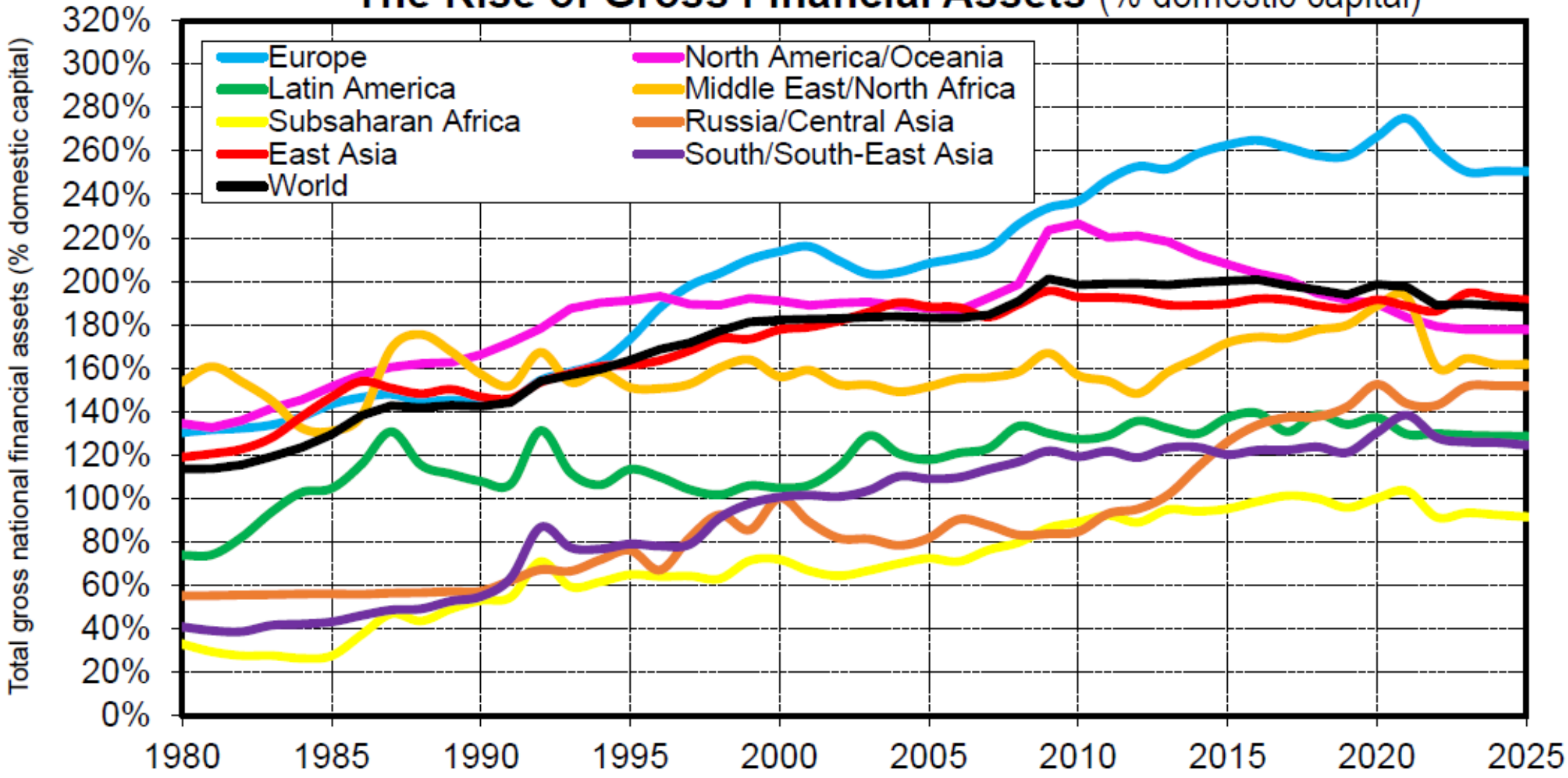
Interpretation. The corporate Q ratio (defined as the ratio between the market value and book value of the corporate sector) has risen from 50% and 84% between 1980 and 2025 at the world level (and is now higher than 100% in North America/Oceania). This can be explained by various factors, including a possible rise in the bargaining power of capital owners (and especially shareholders) vis-a-vis workers (and other stakeholders in general). **Sources and series**: wid.world

The Rise of Gross Financial Assets (% net domestic product)



Interpretation. Total gross financial assets owned by all institutional sectors combined (governement, household, corporate) rose from 444% to 1164% of net domestic product at the world level between 1980 and 2025, with large variations in levels across regions. This reflects the global financialization of wealth, including the rise of cross-company shareholding and cross-border ownership.
Sources and series: wid.world

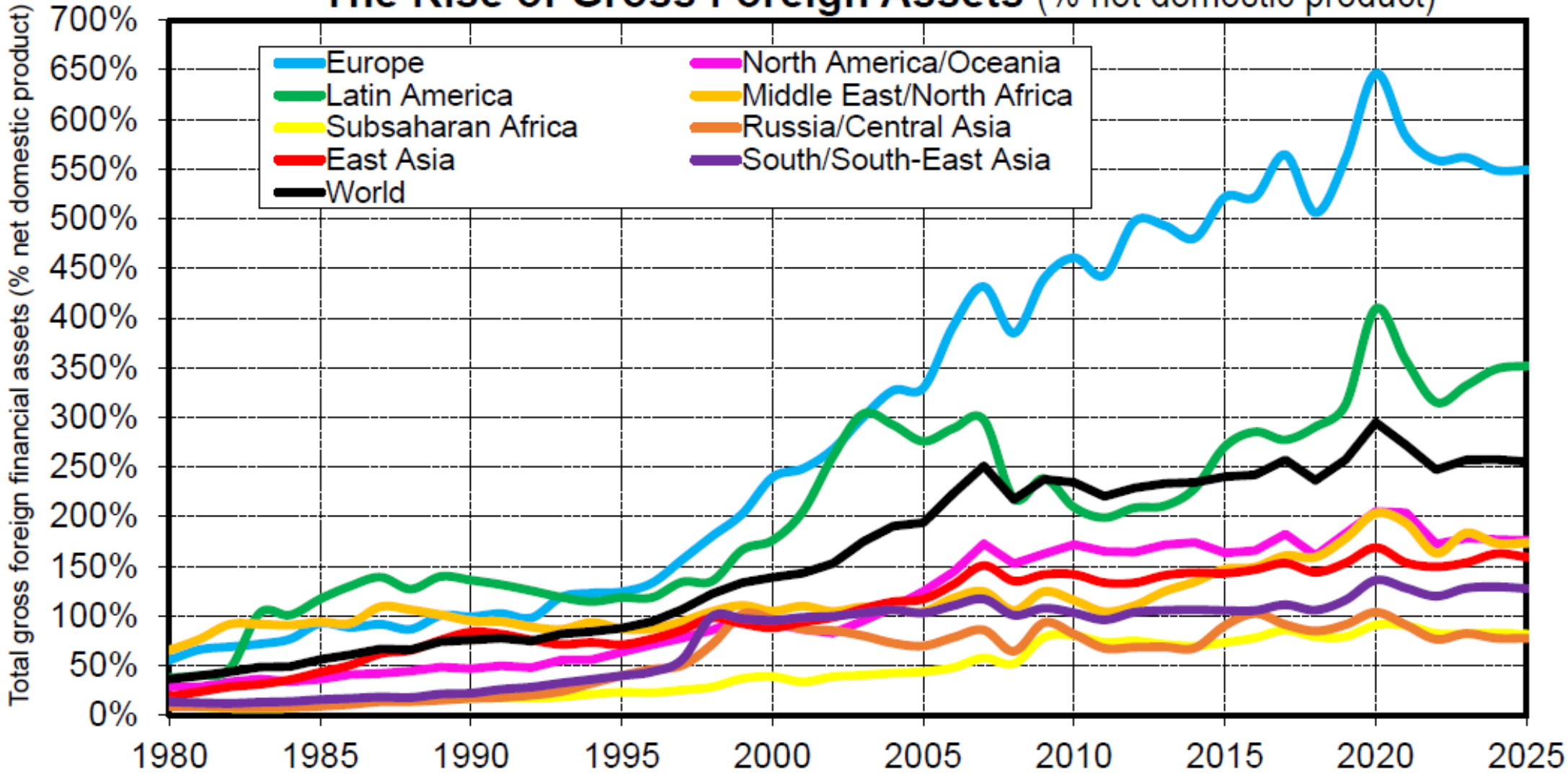
The Rise of Gross Financial Assets (% domestic capital)



Interpretation. Total gross financial assets owned by all institutional sectors combined (governement, household, corporate) rose from 114% to 186% of net domestic capital at the world level between 1980 and 2025, with large variations in levels across regions.

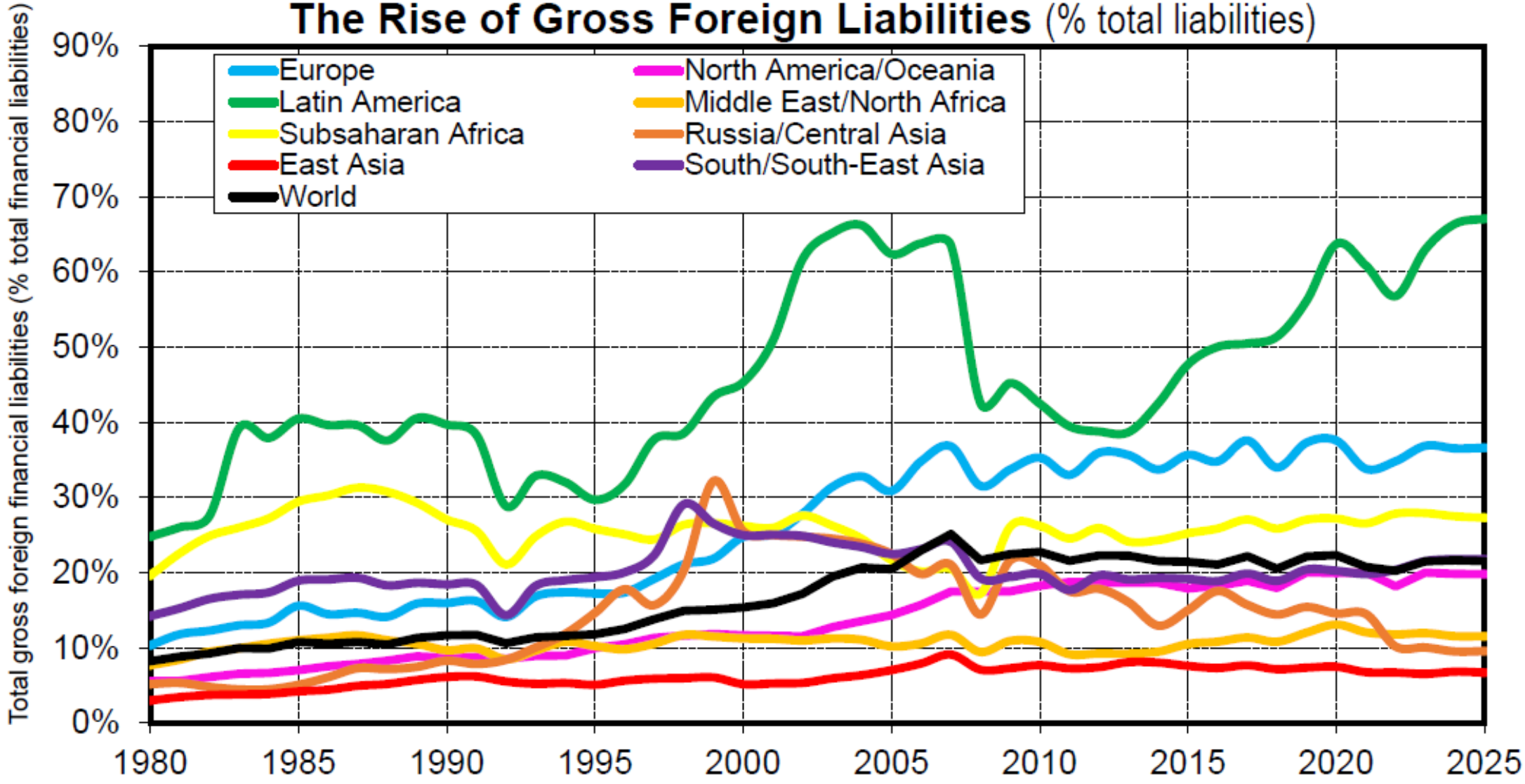
Sources and series: wid.world

The Rise of Gross Foreign Assets (% net domestic product)



Interpretation. Total gross foreign financial assets owned by all institutional sectors combined (governement, household, corporate) rose from 37% to 245% of net domestic product at the world level between 1980 and 2025, with large variations in levels across regions. This reflects an unprecedented rise of cross-border ownership. **Sources and series**: wid.world

The Rise of Gross Foreign Liabilities (% total liabilities)



Interpretation. Total gross foreign financial liabilities issued by all institutional sectors combined (governement, household, corporate) rose from 8% to 21% of total gross financial liabilities at the world level between 1980 and 2025, with large variations in levels across regions. This reflects the fact the cross-border ownershop has increased even faster than the domestic financialization of wealth.

Sources and series: wid.world

Decomposition of wealth accumulation

$W_{t+1} = W_t$ + Savings (volume effects) + Capital gains (price effects)

In practice, savings explain a very small fraction (or none at all, depending on the region) **of the rise of $\beta_t = W_t/Y_t$ over 1980-2025, which is mostly due to very large capital gains**

Rising valuation of capital assets can in turn be interpreted as rising bargaining power of capital owners (and/or rising agglomeration effects, but this should hold mostly for housing, not so much for business assets)

Table 3. Sources of national wealth accumulation, 1980-2025 - Additive decomposition

Regions	Market-value national wealth-national income ratios		Decomposition of market-value wealth-income ratio at time t+n		
	β_t	β_{t+n}	Initial wealth effect	Cumulated new savings	Capital gains or losses
East Asia	**470%**	**857%**	**63%**	**483%**	**312%**
			7%	*56%*	*36%*
Europe	**394%**	**600%**	**188%**	**238%**	**174%**
			31%	*40%*	*29%*
Latin America	**281%**	**439%**	**115%**	**160%**	**163%**
			26%	*36%*	*37%*
Middle East & North Africa	**319%**	**588%**	**91%**	**402%**	**95%**
			16%	*68%*	*16%*
North America & Oceania	**381%**	**600%**	**126%**	**102%**	**371%**
			21%	*17%*	*62%*
Russia & Central Asia	**425%**	**433%**	**229%**	**421%**	**-217%**
			53%	*97%*	*-50%*
South & South-East Asia	**413%**	**491%**	**47%**	**323%**	**121%**
			10%	*66%*	*25%*
Sub-Saharan Africa	**347%**	**388%**	**83%**	**191%**	**114%**
			21%	*49%*	*29%*
World	**385%**	**631%**	**118%**	**268%**	**245%**
			19%	*43%*	*39%*

Interpretation. At the world level, the national wealth-national income ratio rose from 385% in 1980 to 631% in 2025, which can be decomposed into 118% due to initial wealth effect, 268% due to cumulated new savings and 245% due to residual capital gains and losses (changes in asset prices relatively to general price index). Capital gains play a very important role in most regions, which can be explained by various factors, including agglomeration effects, policy and regulatory changes, rising barganing power of capital owners vis-a-vis other stakeholders, etc. **Sources and series**: see wid.world.

Table 4. Sources of national wealth accumulation, 1980-2025 - Multiplicative decomposition

Regions	Real growth rate of national income g	Real growth rate of national wealth g_w	National saving rate $s = S/Y$	Savings-induced wealth growth rate $g_{ws} = s/\beta$	Real rate of capital gains q
East Asia	**4.8%**	**6.3%**	**26%**	**4.0%**	**2.2%**
				64%	*36%*
Europe	**1.7%**	**2.7%**	**8%**	**1.6%**	**1.1%**
				60%	*40%*
Latin America	**2.1%**	**3.2%**	**6%**	**1.4%**	**1.7%**
				45%	*55%*
Middle East & North Africa	**3.0%**	**4.4%**	**18%**	**3.4%**	**1.0%**
				77%	*23%*
North America & Oceania	**2.6%**	**3.7%**	**4%**	**0.9%**	**2.7%**
				26%	*74%*
Russia & Central Asia	**1.5%**	**1.5%**	**14%**	**3.1%**	**-1.5%**
				198%	*-98%*
South & South-East Asia	**5.2%**	**5.6%**	**19%**	***3.8%***	**1.7%**
				69%	*31%*
Sub-Saharan Africa	**3.4%**	**3.7%**	**9%**	**2.3%**	**1.3%**
				64%	*36%*
World	**2.8%**	**4.0%**	**11%**	**2.1%**	**1.8%**
				54%	*46%*

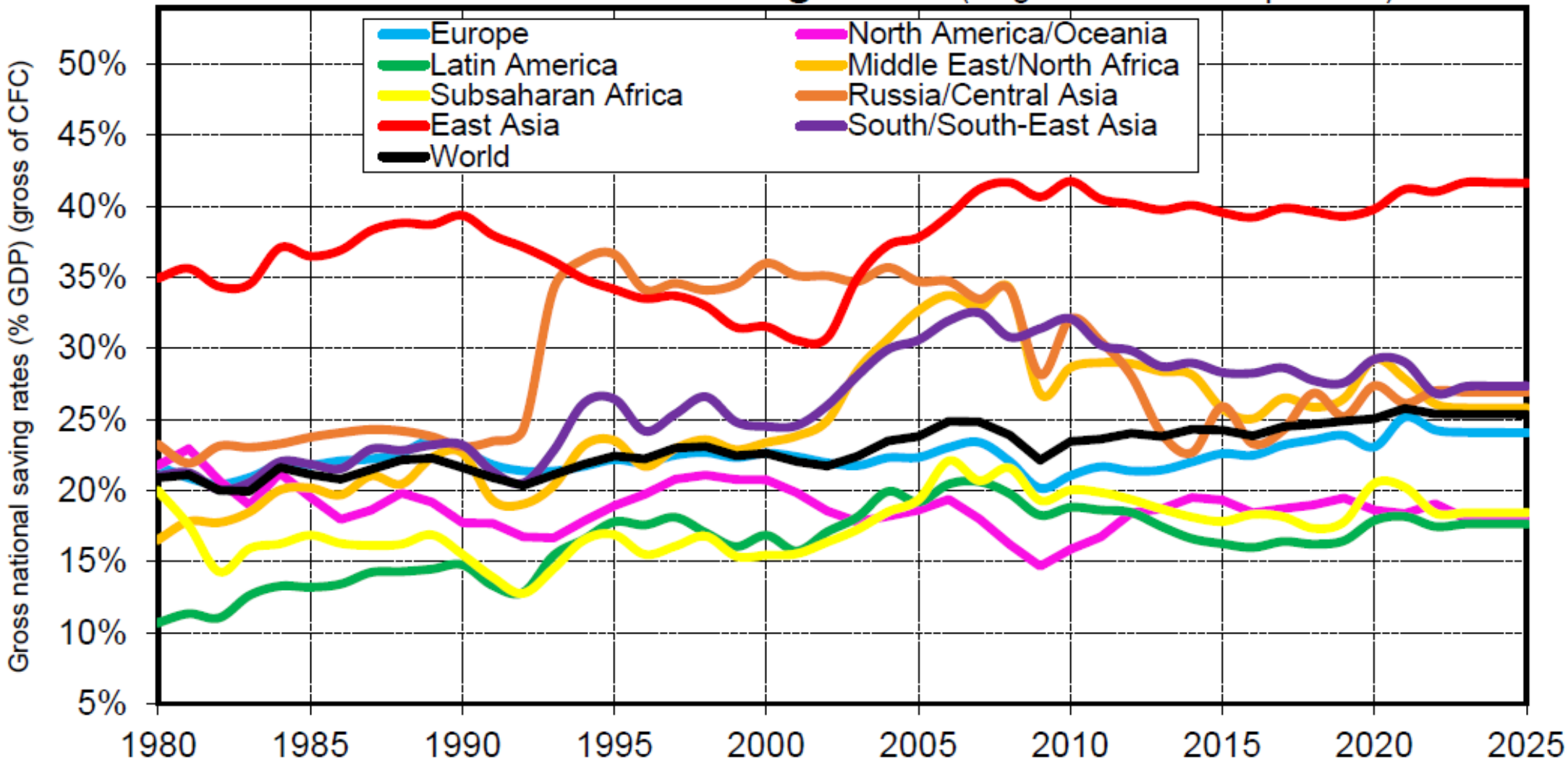
Interpretation. At the world level, net national income rose at a real growth rate of 2.8% per year between 1980 and 2025, and net national wealth at a real growth rate of 4.0% per year (both relatively to general price index). On the basis of cumulated new savings, wealth should have grown at 2.1% per year. The remaining growth (1.8% per year) can be accounted for by residual capital gains and losses (changes in asset prices relatively to general price index). **Sources and series**: see wid.world.

Table 5. Saving Rates 1980-2025: National vs. Private & Public

Average net saving rates 1980-2025 (% net national income)	**Net national saving** (private + public)	**Net private savings** (personal + corporate)	incl. personal savings	incl. corporate savings (retained earnings)	**Net public saving**
East Asia	26.3%	17.0%	11.6% **68%**	5.4% **32%**	9.3%
Europe	7.6%	9.6%	6.0% **63%**	3.6% **37%**	-2.0%
Latin America	5.6%	5.0%	3.8% **75%**	1.3% **25%**	0.5%
Middle-East & North Africa	17.5%	11.8%	4.7% **40%**	7.1% **60%**	5.7%
North America & Oceania	3.8%	8.8%	5.0% **57%**	3.8% **43%**	-5.0%
Russia & Central Asia	14.2%	8.1%	3.0% **37%**	5.1% **63%**	6.1%
South & South-East Asia	18.5%	16.8%	10.6% **63%**	6.2% **37%**	1.8%
Sub-Saharan Africa	9.2%	7.0%	2.4% **34%**	4.6% **66%**	2.2%
World	10.8%	10.7%	6% **61%**	4% **39%**	0.1%

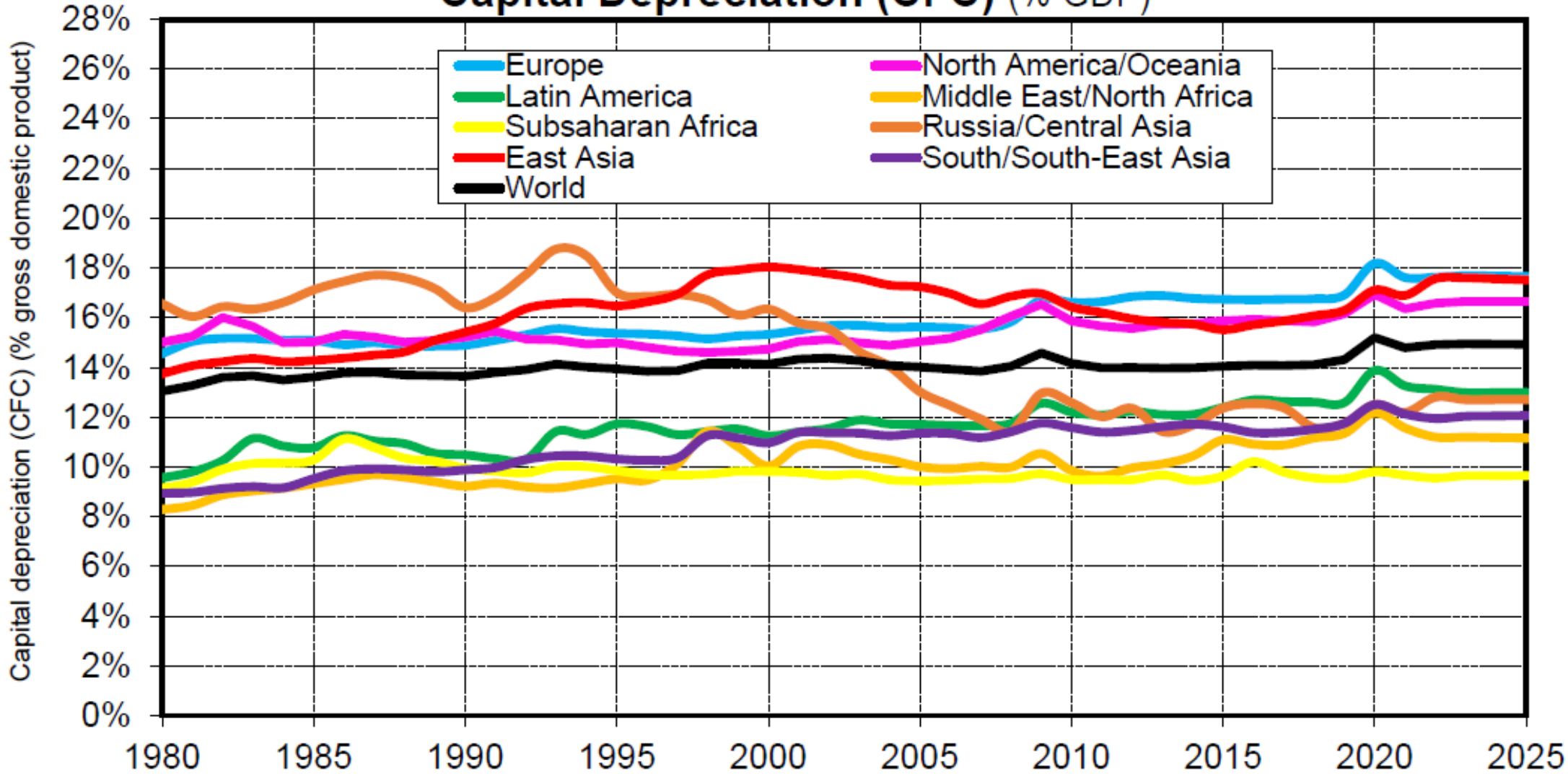
Interpretation. At the world level, the net-of-depreciation national saving rate has been equal to 10.8% on average between 1980 and 2025, including 10.7% for private saving and 0.1% for public saving, with very large country variations. **Note**. Corporate savings were split between private and public saving on the basis of portfolio composition, and only the private fraction (usually the predominant fraction) was added to private saving, the rest being included into public saving. **Sources and series**: see wid.world.

Gross National Saving Rates (% gross domestic product)



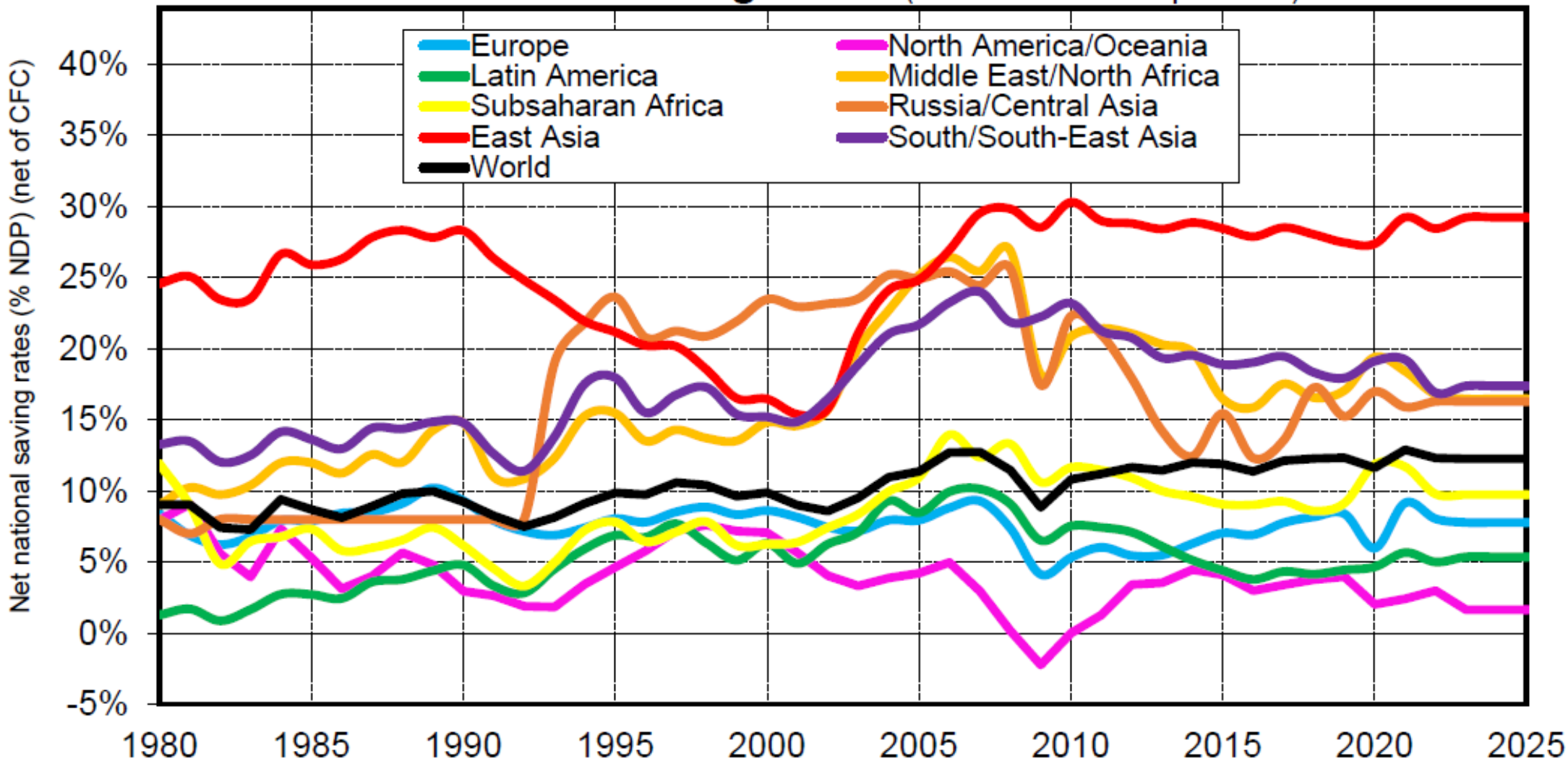
Interpretation. At the world level, gross national saving rates (private + public) rose from 20.9% to 25.4% of world gross domestic product between 1980 and 2025, with very large variations across regions. In particular, gross national savings have generally been around 35-40% of GDP in East Asia, vs less than 15-20% in North America/Oceania, Latin America & Subsaharan Africa. **Sources and series**: wid.world (B1a)

Capital Depreciation (CFC) (% GDP)



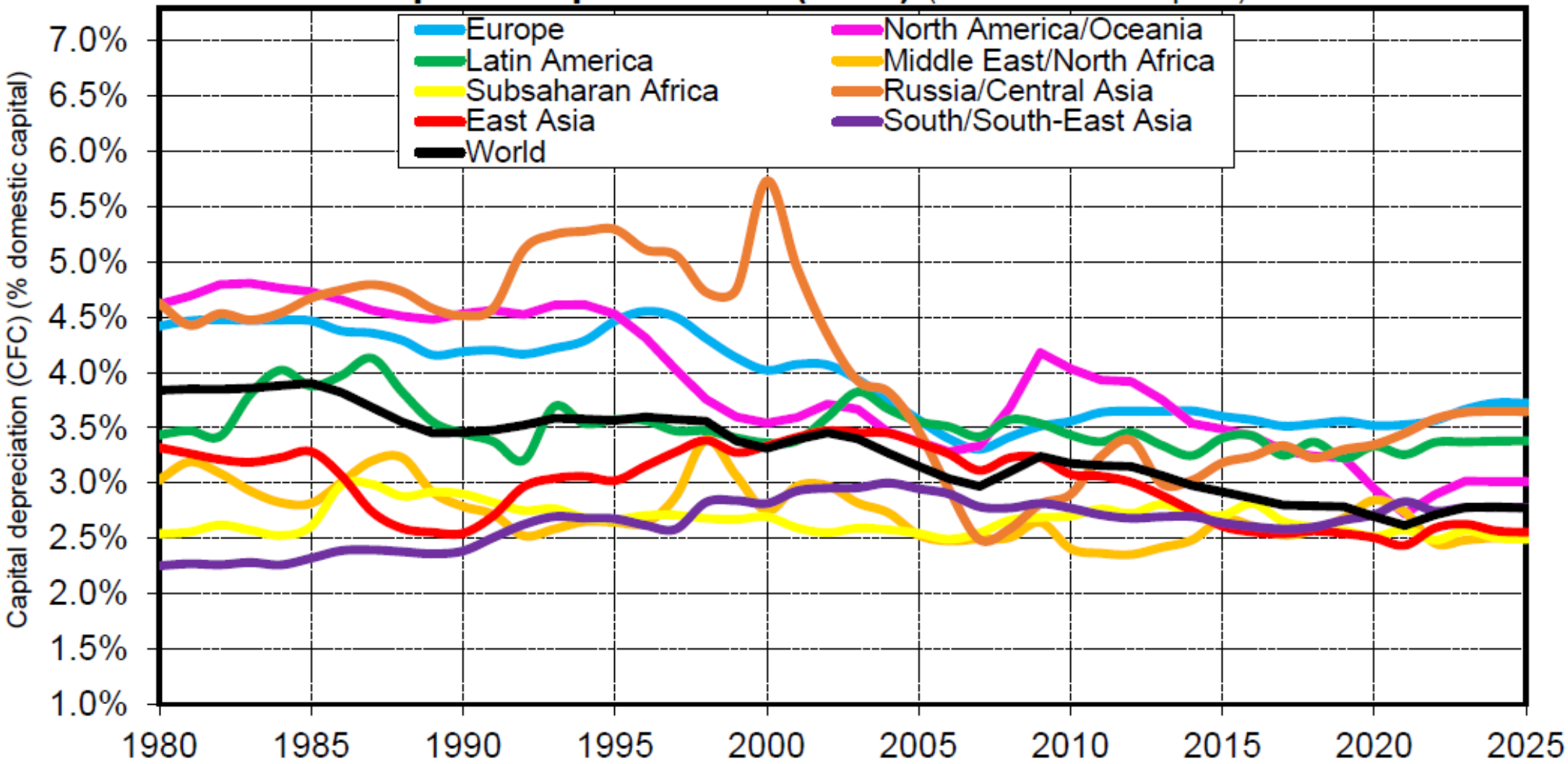
Interpretation. At the world level, capital depreciation (defined as consumption of fixed capital (CFC) in national accounts) rose from 13.0% to 14.9% of world GDP between 1980 and 2025. Capital depreciation makes a larger fraction of GDP in richer countries, which can be explained by various factors, including a larger capital stock (relative to GDP) and differences in capital composition (e.g. more equipment with short life span like computers, and less structures with long life spans like land and buildings). **Sources and series**: wid.world

Net National Saving Rates (% net domestic product)



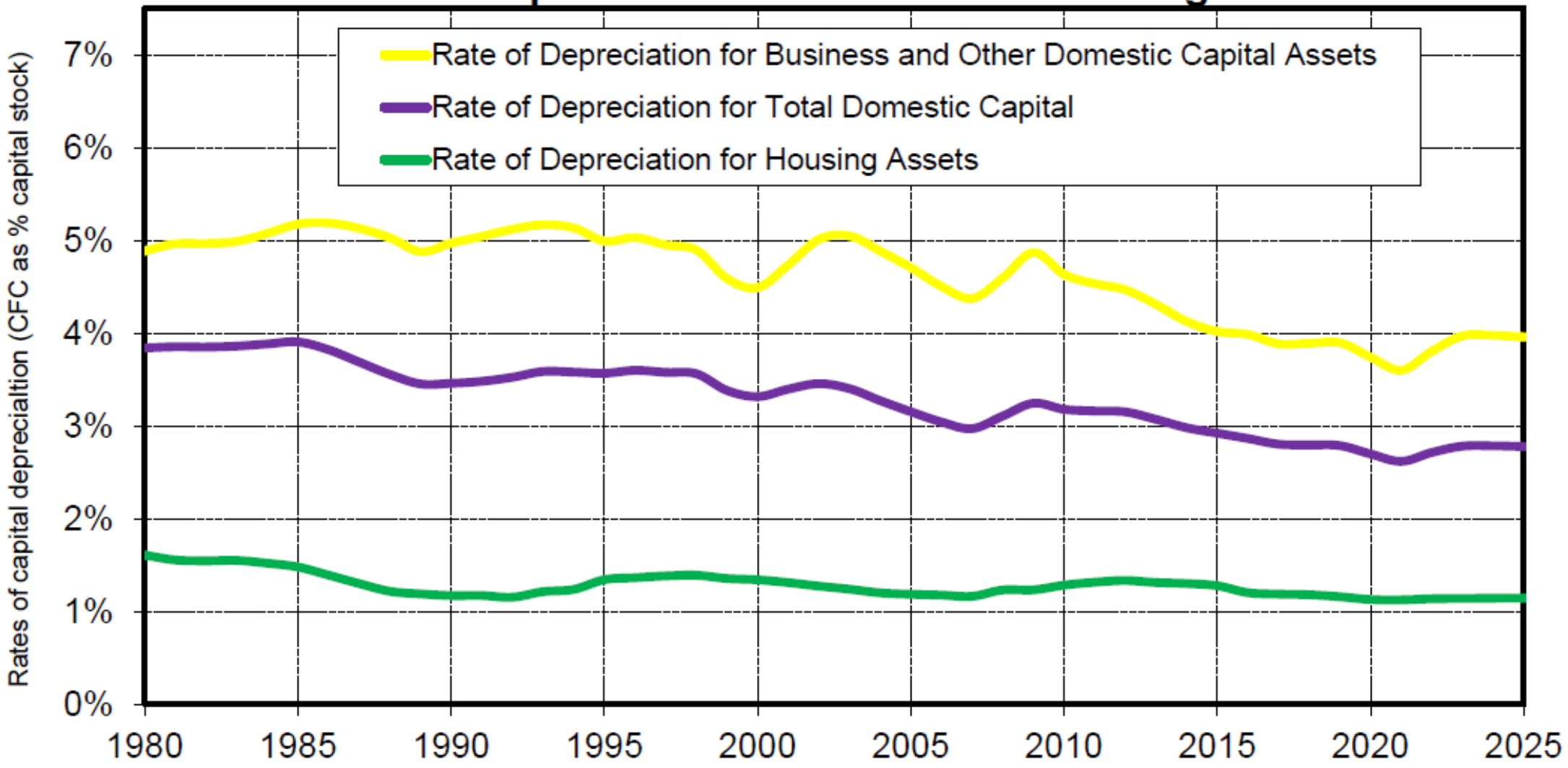
Interpretation. At the world level, net national saving rates (private + public) rose from 9.0% to 12.3% of world net domestic product between 1980 and 2025, with very large variations across regions. In particular, net national savings have generally been around 25-30% of NDP in East Asia, vs less than 5% in North America/Oceania. **Sources and series**: wid.world

Capital Depreciation (CFC) (% domestic capital)



Interpretation. At the world level, the rate of capital depreciation (defined as consumption of fixed capital (CFC) divided by total domestic capital stock) has declined from 3.8% in 1980 to 2.8% in 2025, with large regional variations. This decline can be accounted for by various factors, including rising asset values and changing capital structure (larger share of housing). **Sources and series**: wid.world

Rates of Depreciation: Business vs Housing Assets



Interpretation. At the world level, the rate of capital depreciation for business and other domestic capital assets (defined as consumption of fixed capital (CFC) divided by corresponding capital stock) has always been substantial larger than the rate of depreciation for housing assets. The average values over the 1980-2025 period have been 4.6% for business and other domestic capital assets, 3.3% for total domestic capital and 1.3% for housing assets. This regularity holds in all world regions, with important variations. **Sources and series**: wid.world

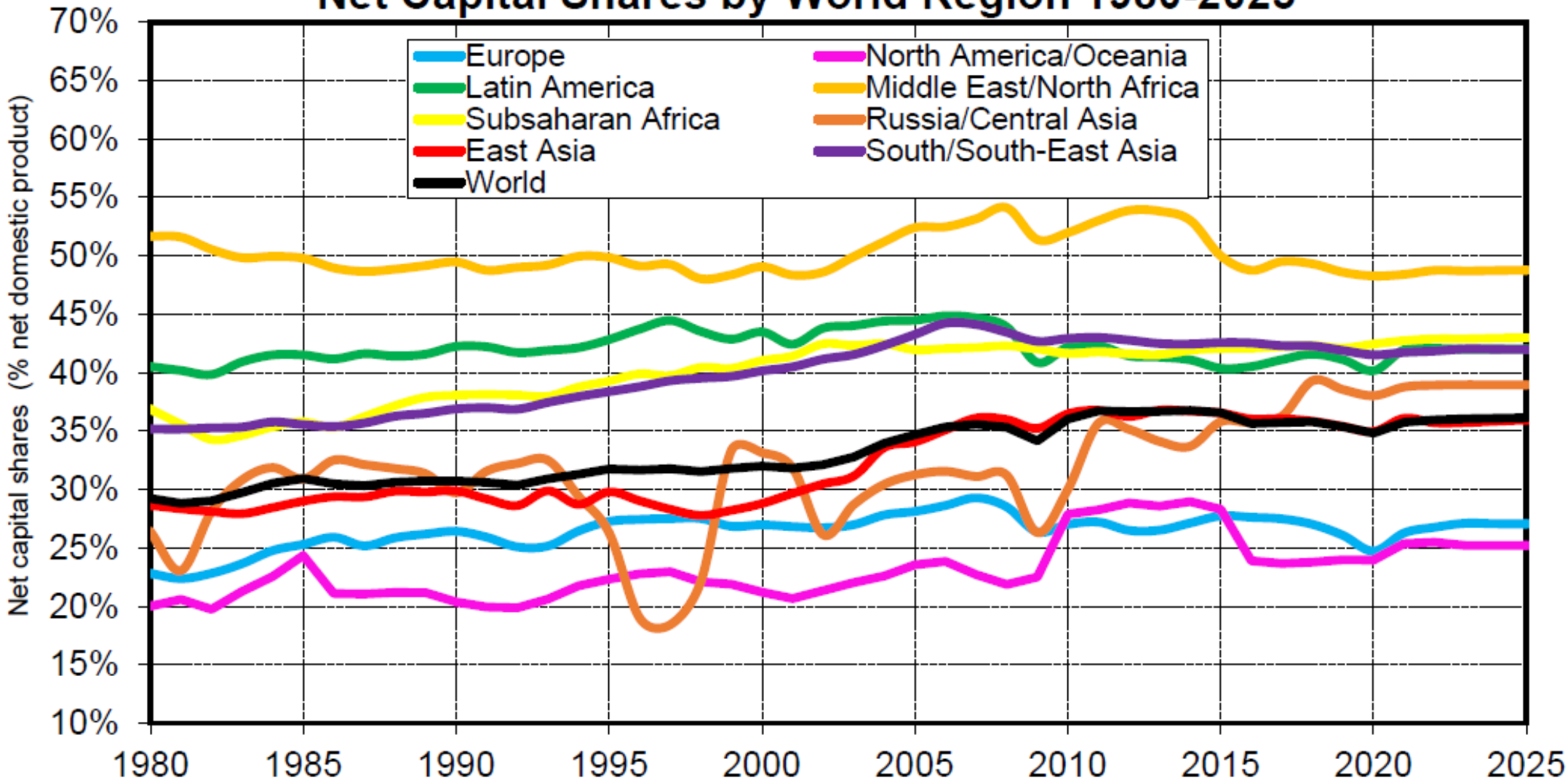
Capital shares and rates of return as $\beta_t \uparrow$

Capital share $\boldsymbol{\alpha_t} = Y_{Kt}/Y_t = r_t\, K_t/Y_t = \boldsymbol{r_t\, \beta_t}$, i.e. $\boldsymbol{r_t = \alpha_t / \beta_t}$

$\alpha_t \uparrow$in 1980-2025, but less than β_t, as $r_t \downarrow$: as capital accumulation deepens, capital owners need to find new areas of exploitation (personal data, IA, public knowledge, new oil fields & natural ressources, etc.) in order to compensate for diminishing returns

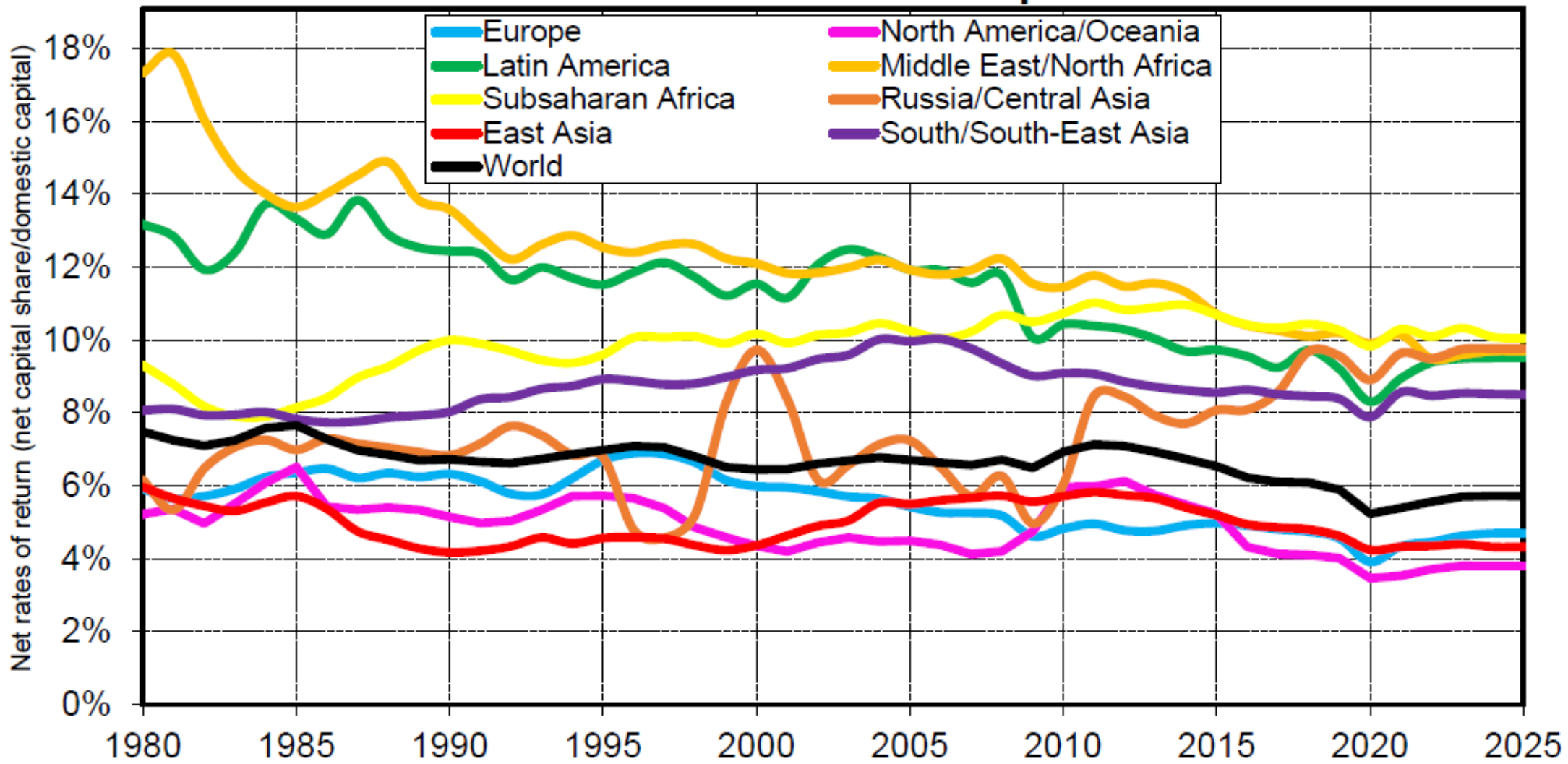
α_t & r_t are much larger in poor countries (& in 19c Europe) **than in rich countries 1980-2025**. Can be due to larger risk, different technology & esp. **larger bargaining power of capital owners**

Net Capital Shares by World Region 1980-2025



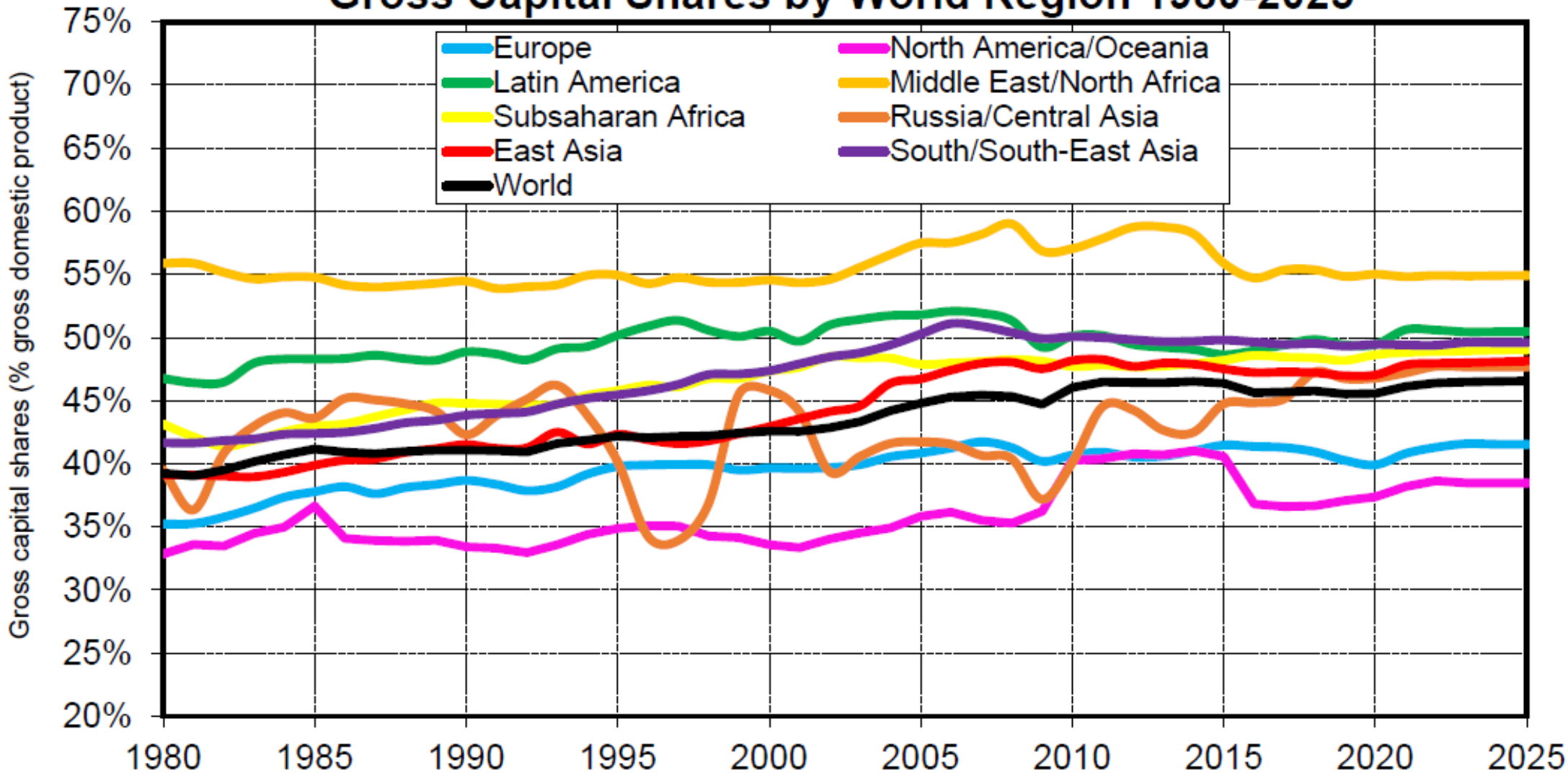
Interpretation. At the world level, the share of net-of-depreciation domestic capital income (housing rent + capital share of self-employment income + corporate profits) in net domestic product has increased from 29% in 1980 to 36% in 2025. The capital share has always been larger in poorer countries, which can be explained by several factors, including larger bargaining power of capital owners vis-a-vis workers and different sectoral composition. **Sources and series**: wid.world

Net Rates of Return to Domestic Capital 1980-2025



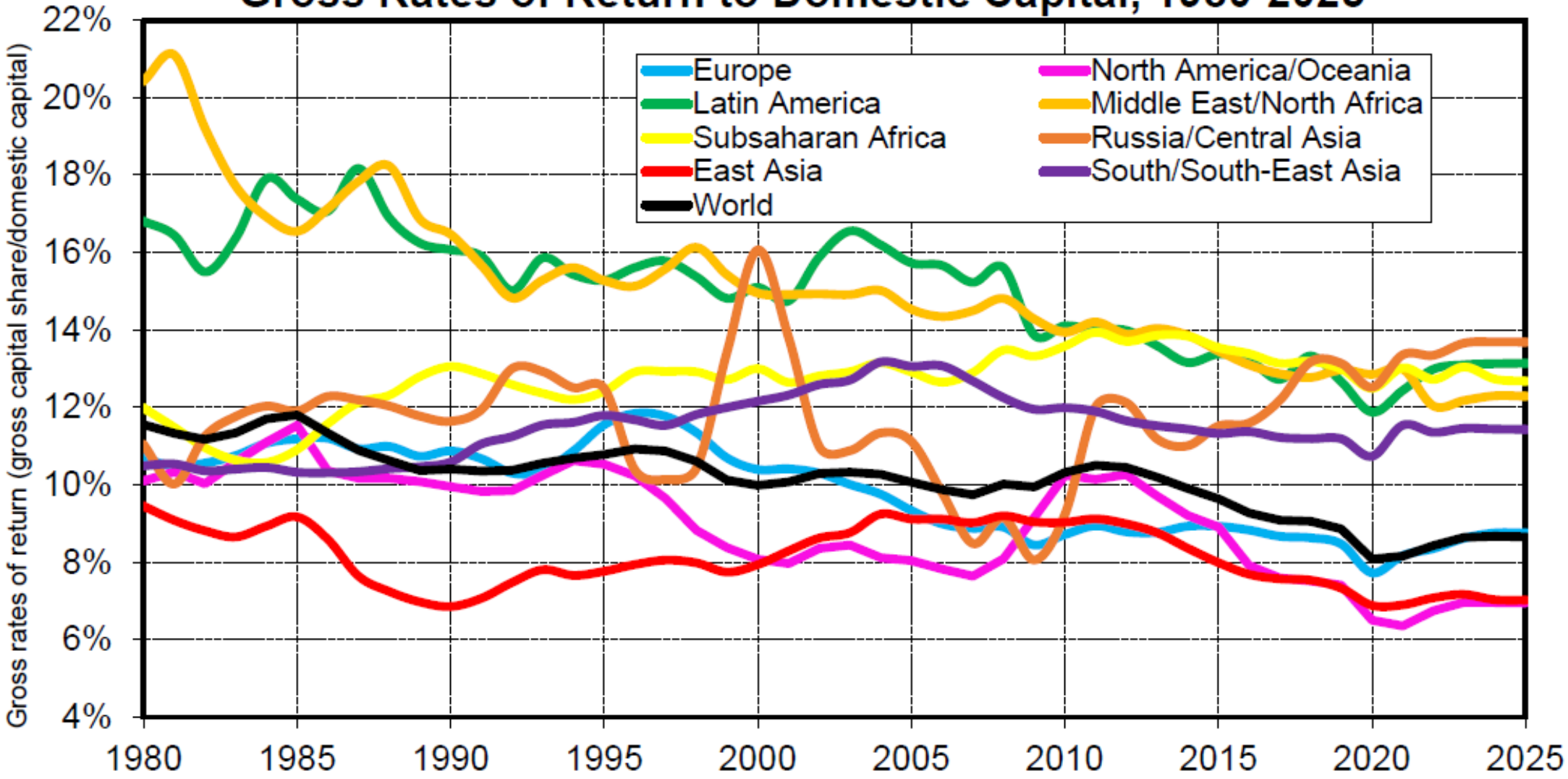
Interpretation. At the world level, the average net rate of return to capital (defined by the ratio between the net capital share and total domestic capital) has declined from 7.5% in 1980 to 5.6% in 2025. This reflects the fact that the capital share has increased less than the capital stock. The higher of returns observed in poorer countries can be explained by several factors, including larger bargaining power of capital owners vis-a-vis workers and different sectoral composition. **Sources and series**: wid.world

Gross Capital Shares by World Region 1980-2025



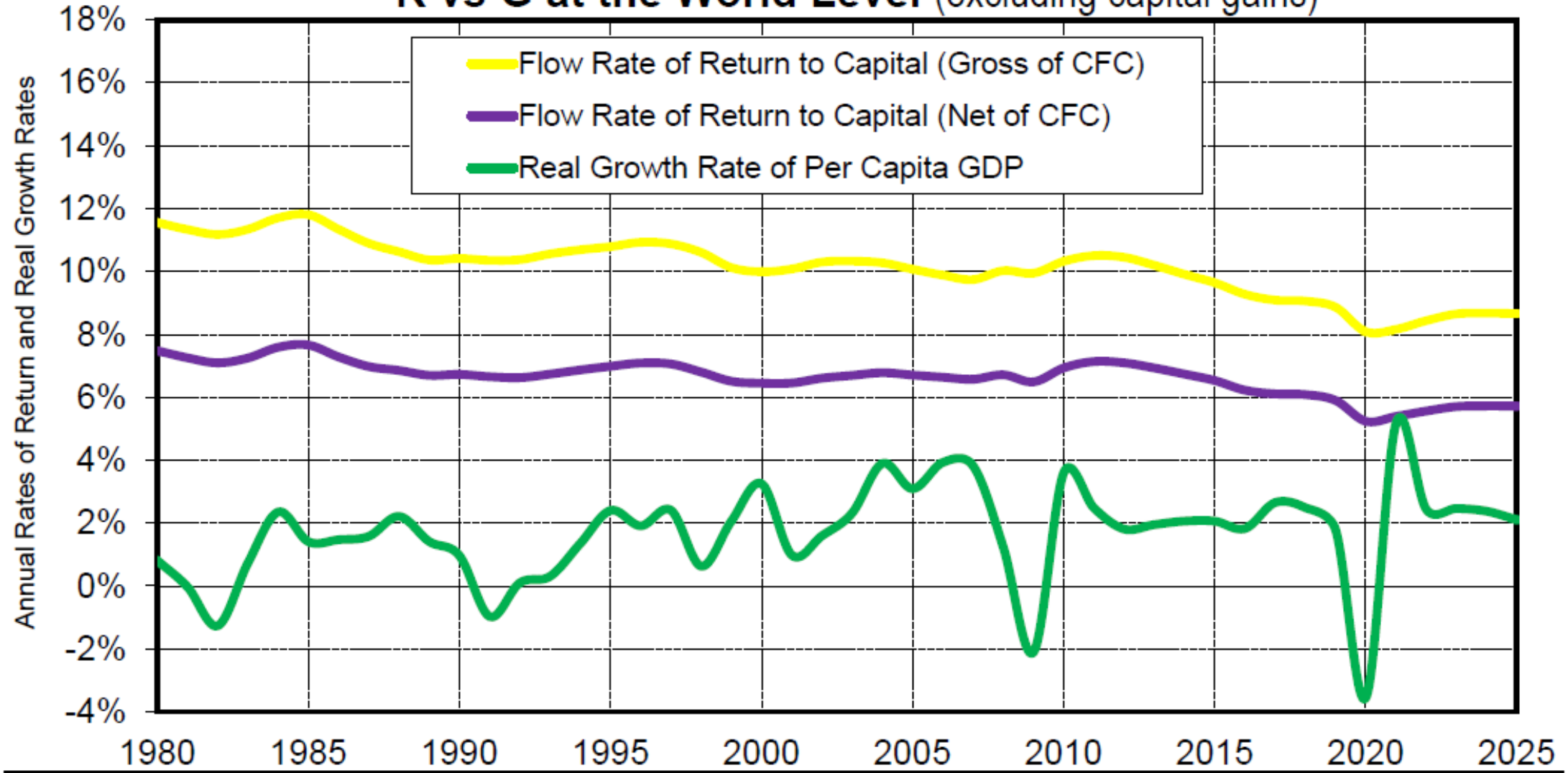
Interpretation. At the world level, the share of gross-of-depreciation domestic capital income (housing rent + capital share of self-employment income + corporate profits) in gross domestic product has increased from 39% in 1980 to 47% in 2025. Estimates of capital depreciation (CFC, consumption of fixed capital) have a very large impact on capital shares and rates of return. **Sources and series**: wid.world

Gross Rates of Return to Domestic Capital, 1980-2025



Interpretation. At the world level, the average gross rate of return to capital (defined by the ratio between the gross capital share and total domestic capital) has declined from 11.6% in 1980 to 8.7% in 2025. Estimates of capital depreciation (CFC, consumption of fixed capital) have a very large impact on capital shares and rates of return. **Sources and series**: wid.world

R vs G at the World Level (excluding capital gains)

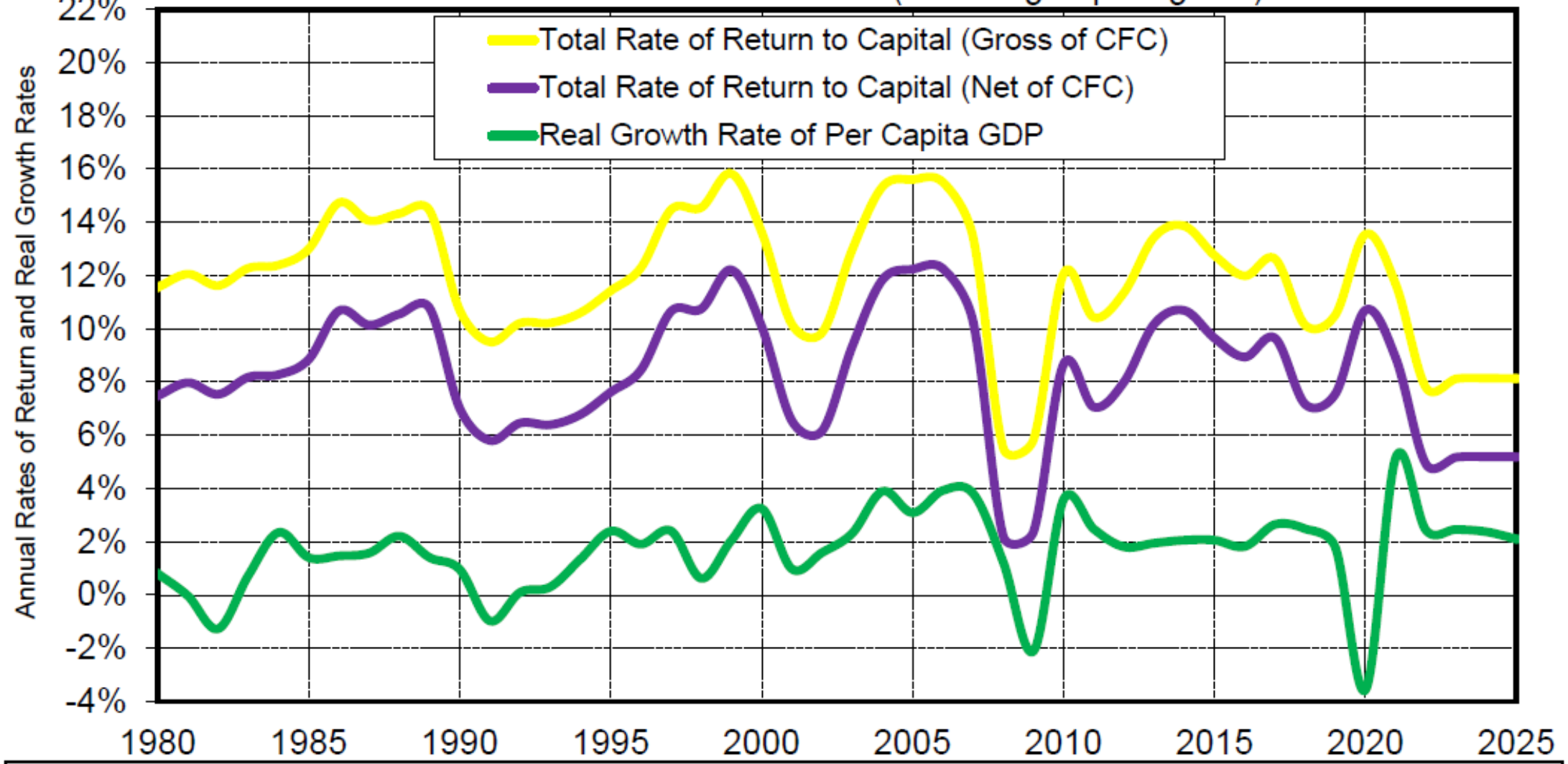


Interpretation. At the world level, the macroeconomic flow rate of return to capital (defined as the capital share divided by domestic capital stock, excluding capital gains and losses) has always been substantially larger than the real growth rate of per capita GDP. The average values over the 1980-2025 period have been 10.1% for the gross-of-depreciation rate of return, 6.6% for the net-of-depreciation rate of return and 1.7% for the real per capita growth rate. The inequality R>G (a necessary condition for dynamic efficiency in standard macroeconomic models) holds in all world regions, with significant variations. **Sources and series**: wid.world

R > G: Macro Efficiency vs Inequality

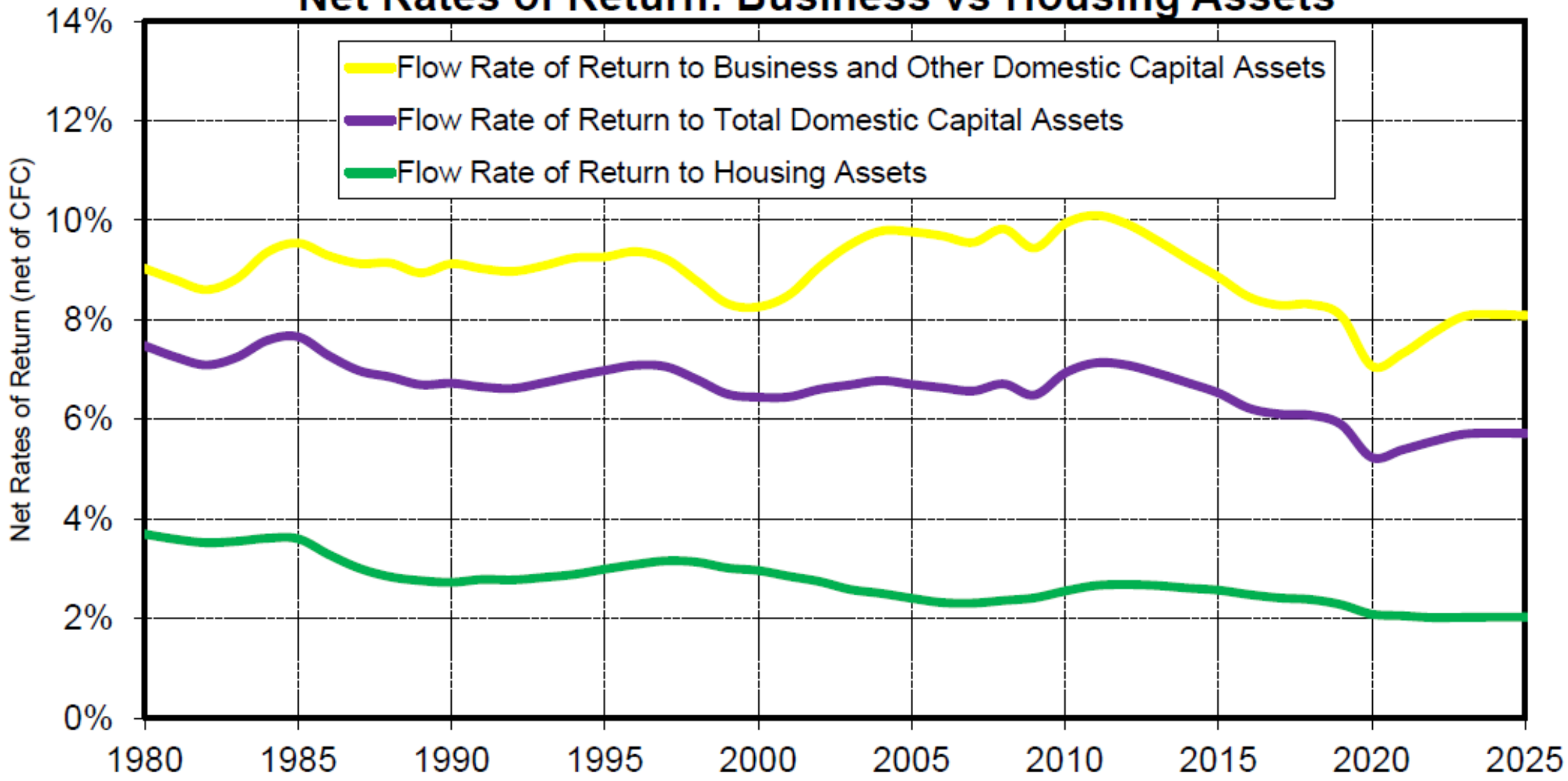
- **R > G is not bad in itself, quite the contrary: it is condition for dynamic efficiency at the macroeconomic level**
- With a representative-agent model, R>G simply means that we only need to reinvest a fraction G/R (<1) of capital income Y_K=RK & consume the rest
- Conversely, if R<G, this would imply that we need to reinvest more than Y_K in order to keep K/Y stable: this corresponds to over-accumulation of K
- R > G is well-known & uncontroversial: see About Capital in 21c, AER 2015; see also Jorda et al, The Rate of Return on Everything 1870-2015, QJE 2019
- **But with inequality (individual-level shocks to earnings, returns, etc.), a larger gap R-G also tends to amplify wealth concentration, unless adequate policies are put in place** (public-private property mix, more bargaining power for labour, progressive redisribution of wealth)

R vs G at the World Level (including capital gains)



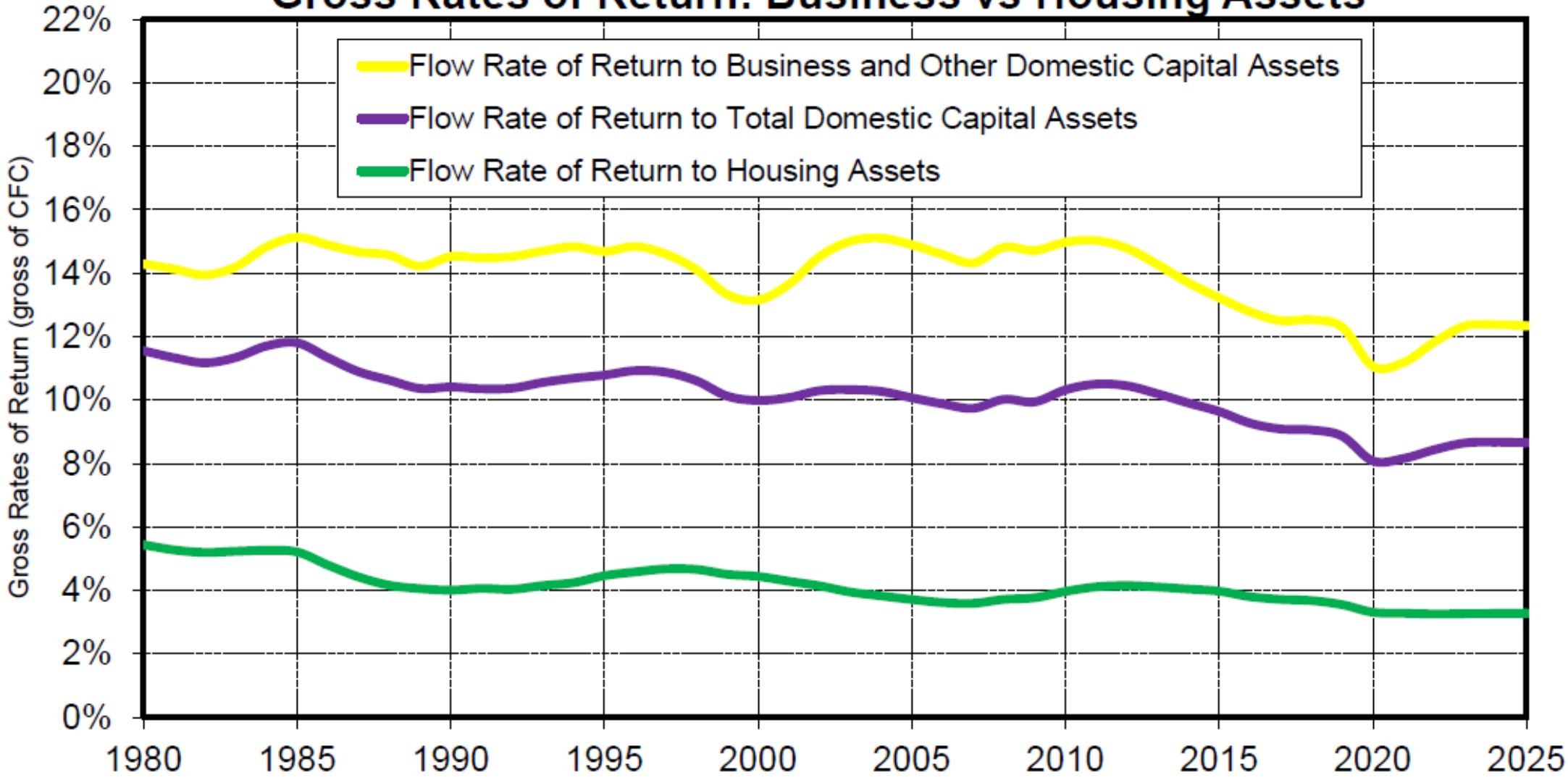
Interpretation. At the world level, the macroeconomic total rate of return to capital (defined as the capital share divided by domestic capital stock, including capital gains and losses) has always been substantially larger than the real growth rate of per capita GDP. The average values over the 1980-2025 period have been 11.8% for the gross-of-depreciation rate of return, 8.3% for the net-of-depreciation rate of return and 1.7% for the real per capita growth rate. The inequality R>G (a necessary condition for dynamic efficiency in standard models) holds in all world regions, with significant variations. Capital gains raise rates of return but also make them more volatile. **Sources and series**: wid.world

Net Rates of Return: Business vs Housing Assets



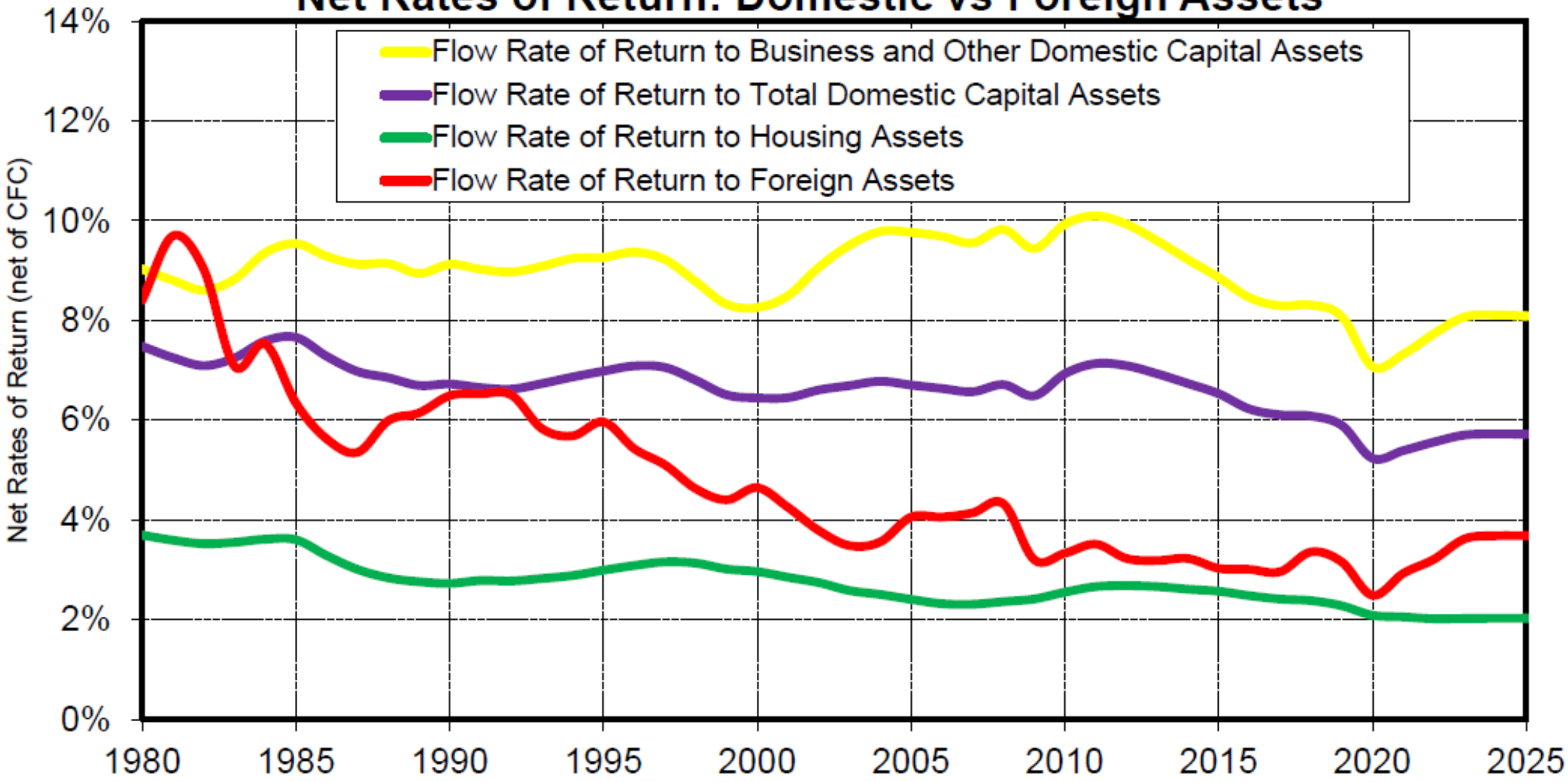
Interpretation. At the world level, the rate of return to business and other domestic capital assets (defined as the capital share divided by corresponding capital stock) has always been substantial larger than the rate of return to housing assets. The average values over the 1980-2025 period have been 8.9% for the net-of-depreciation rate of return to business and other domestic capital assets, 6.6% for total domestic capital and 2.9% for housing assets. This can be explained by various factors, including differences in risk, bargaining power and/or management costs (unmeasured labour input). This regularity holds in all world regions, with important variations. **Sources and series**: wid.world

Gross Rates of Return: Business vs Housing Assets

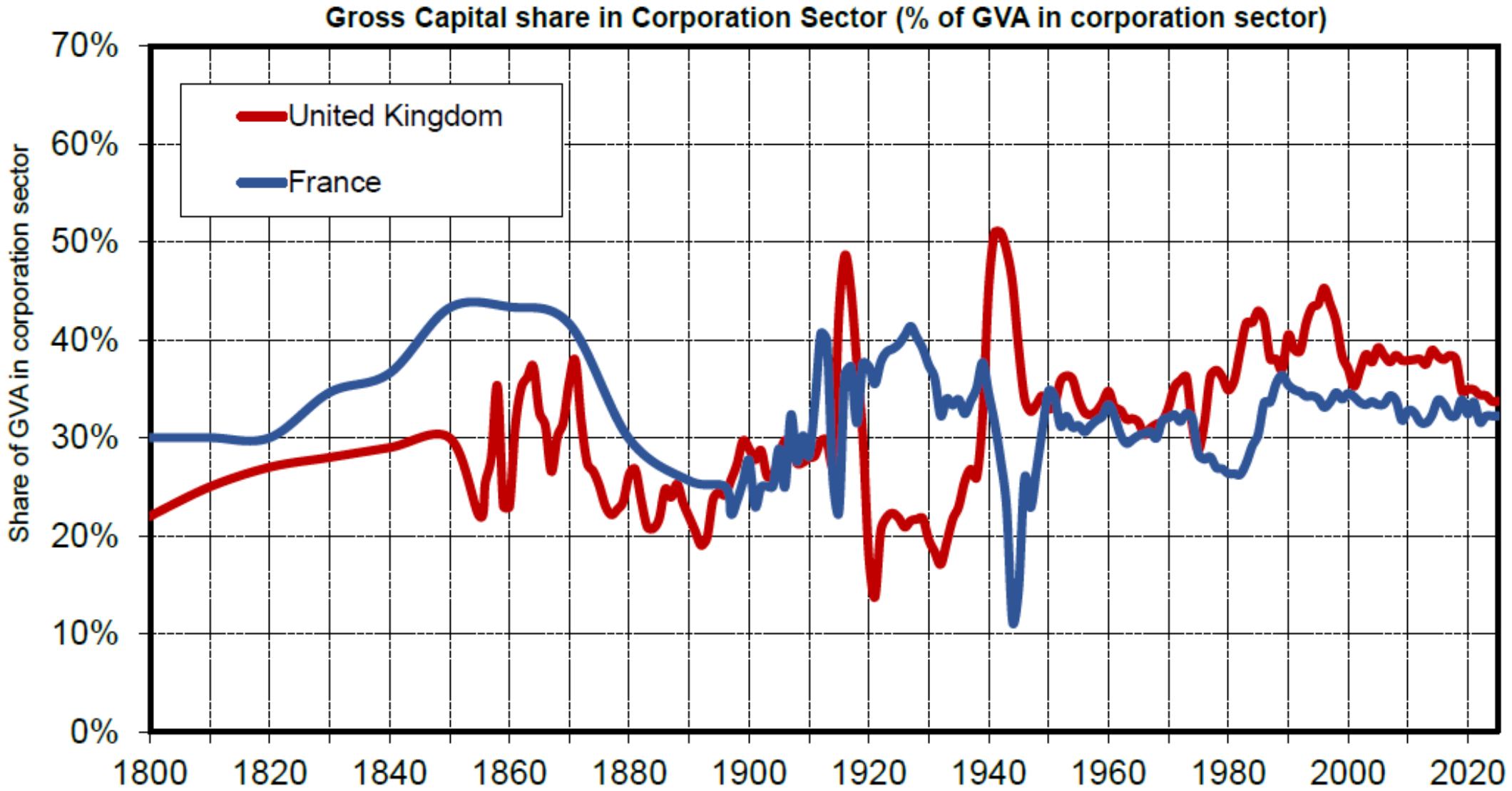


Interpretation. At the world level, the rate of return to business and other domestic capital assets (defined as the capital share divided by corresponding capital stock) has always been substantial larger than the rate of return to housing assets. The average values over the 1980-2025 period have been 13.9% for the gross-of-depreciation rate of return to business and other domestic capital assets, 10.1% for total domestic capital and 4.1% for housing assets. This can be explained by various factors, including differences in risk, bargaining power and/or management costs (unmeasured labour input). This regularity holds in all world regions, with important variations. **Sources and series**: wid.world

Net Rates of Return: Domestic vs Foreign Assets

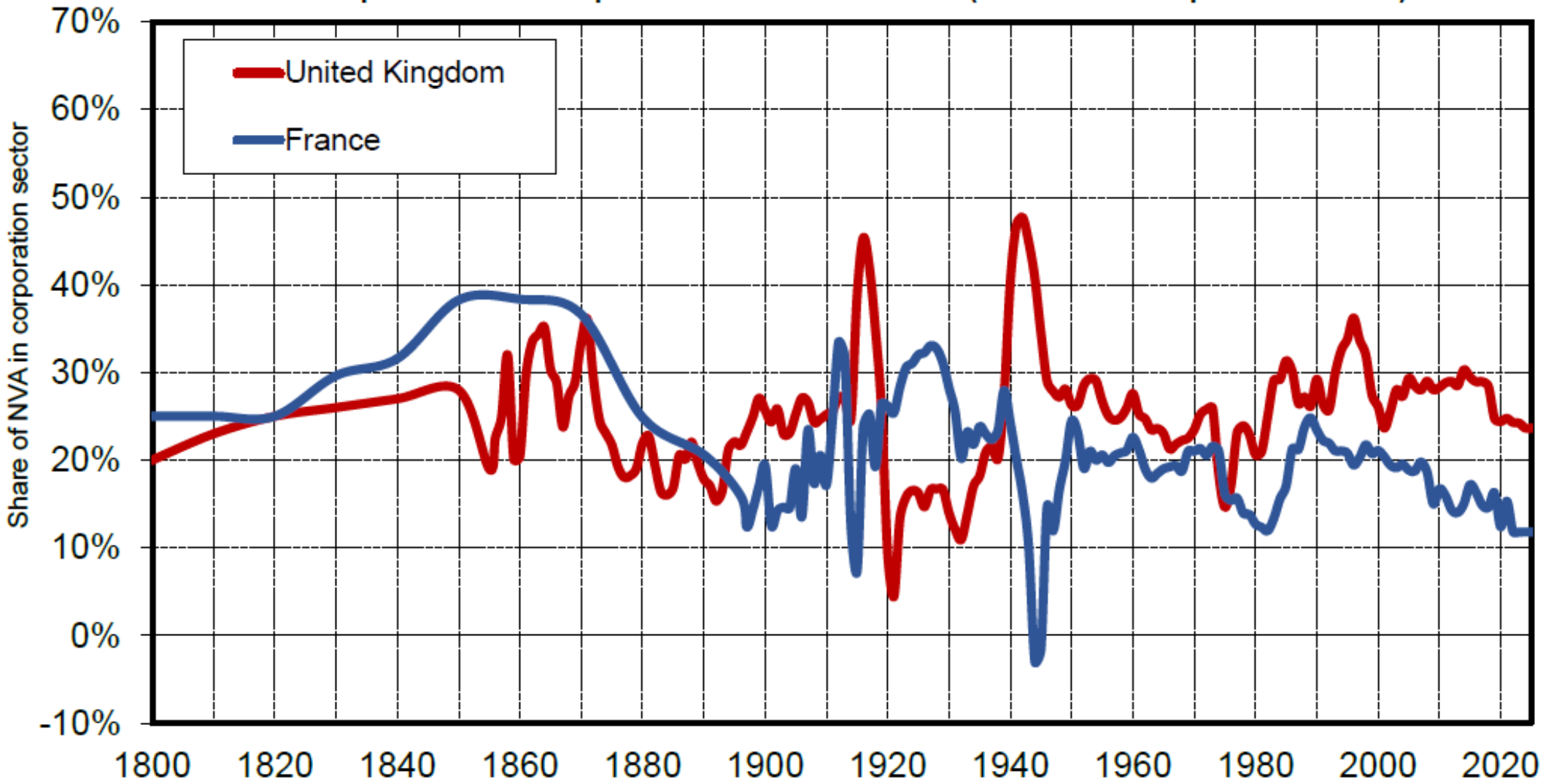


Interpretation. At the world level, the average rate of return to foreign assets has declined between 1980 and 2025: it used to be close to the average rate of return to domestic capital assets, and it is now significantly smaller. This can be explained by various factors, including a transformation of the economic role of foreign assets. I.e. the magnitude of cross-border assets has increased enormously, but they now play increasingly a role of reserve assets (highly liquid and relatively safe, but relatively low return). This comes with large regional variations: rich countries have higher returns on their foreign assets than on their liabilities & conversely for poor countries. **Sources and series**: wid.world



Interpretation. We observed large variations in the gross corporate capital share in the UK and France over the past two centuries: a large rise between 1800 and 1860-1870 (the so-called Engel's wage pause), a decline between 1860-1870 and 1890-1900, a rise between 1890-1900 and 1910-1920, followed by a relatively chaotic evolution during world wars and the intervar period (and a general decline between 1910-1920 and 1970-1980) and a rise since the 1970s-1980s. **Sources and series**: see wid.world

Net Capital share in Corporation Sector net of CFC (% of NVA in corporation sector)



Interpretation. The historical variations in the net corporate capital share in the UK and France broadly follow those of the gross corporate capital shares, with the additional complication that corporate CFC varies substantially over time (general upward trend) and across countries (with substantially larger CFC in France as compared to the UK in the recent period, which might partly reflect different measurement methods between national statistical institutes. **Sources and series**: see wid.world

Long-Run changes in Firm-Level Concentration of Sales, Profits, Capital, Labour, etc.

- **Is SpaceX the largest firm since colonial companies?** Unfortunately we lack good historical studies in order to be able to properly make such comparisons
- Y. Ma, M. Zhang, K. Zimmerman, "Business Concentration Around the World: 1900-2020", WP Chicago 2026
- Basic result: rising concentration for sales, profits, and capital, but not for employment (fairly stable)
- Explanation: not entirely clear (rise of market power and markups by top firms?)

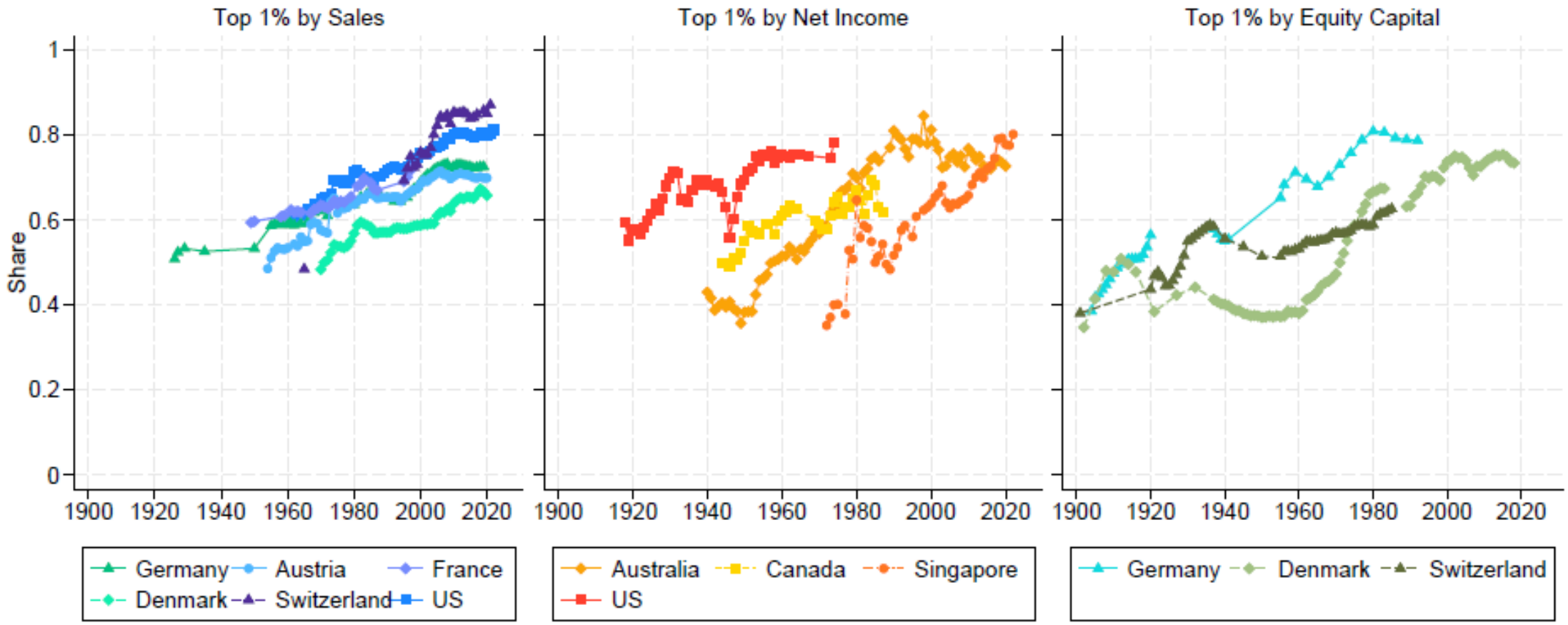


Figure 1. Top 1% Share by Sales, Net Income, and Equity Capital

Notes: This figure shows the sales share of the top 1% firms by sales (left panel), the net income share of the top 1% firms by net income (middle panel), and the equity capital share of the top 1% firms by equity capital (right panel).

Panel A. Top 1% Share

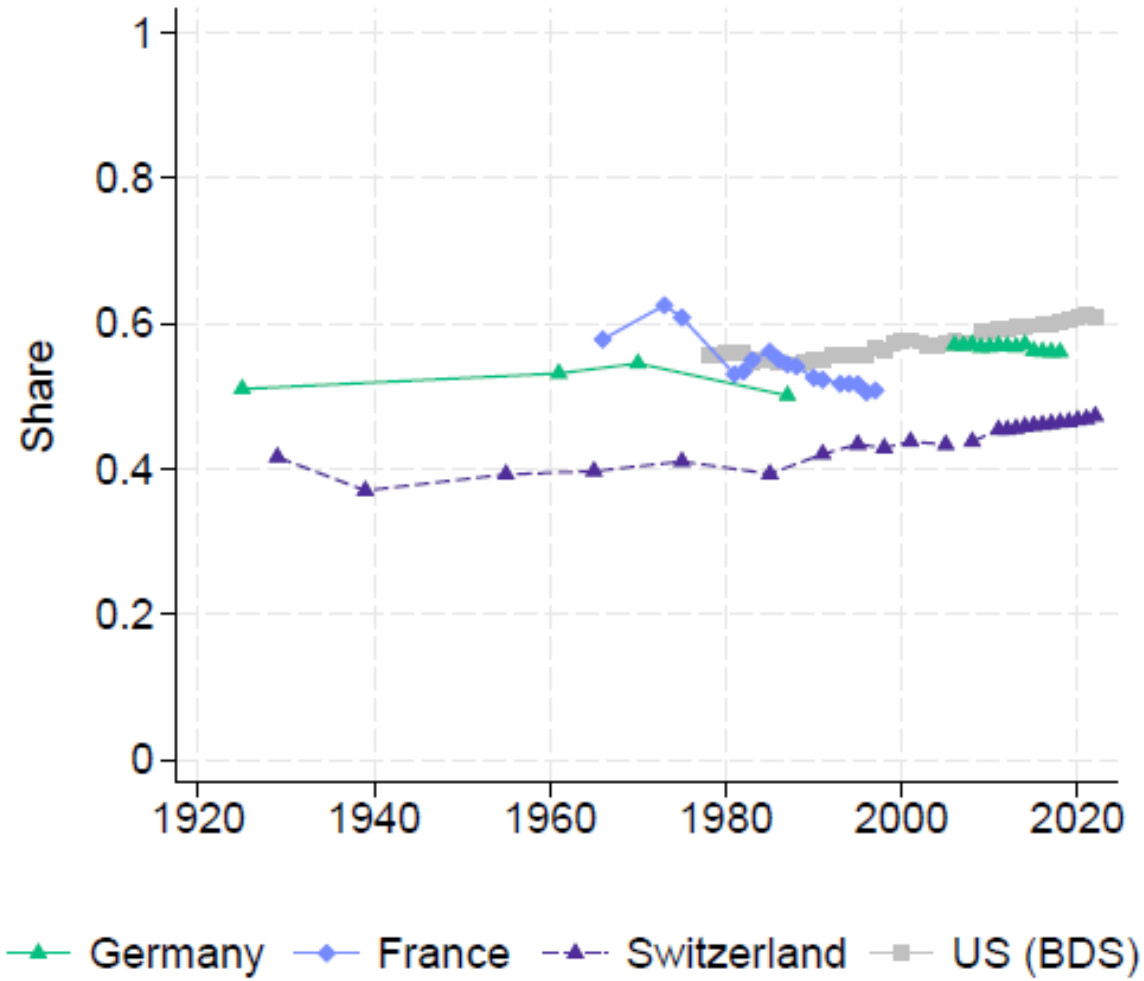


Figure 7. Top Share by Employment

Conclusion of Lecture 5

- **We find very large variations** in wealth-income and capital-output ratios and ownership patterns over time and across regions

- This is very far from the textbook view of stable ratios and immutable ownership patterns: the long-run perspective is critical

- **These historical and regional variations are largely due to changing ideology, balance of power and institutions**, rather than to purely economic or technological factors.

Our findings have important implications for the future

Can we address 21^{c} social and environmental challenges with the current ownership patterns? Probably not. Most likely we need larger public share in national wealth (more public investment & ownership in energy, transportation, housing, etc.) and a smaller capital share.

See forthcoming GJP scenarios for global ownership patterns 2025-2100 (not included in this paper, which focuses on historical evolutions, but which will serve as an important ingredient for GJP)