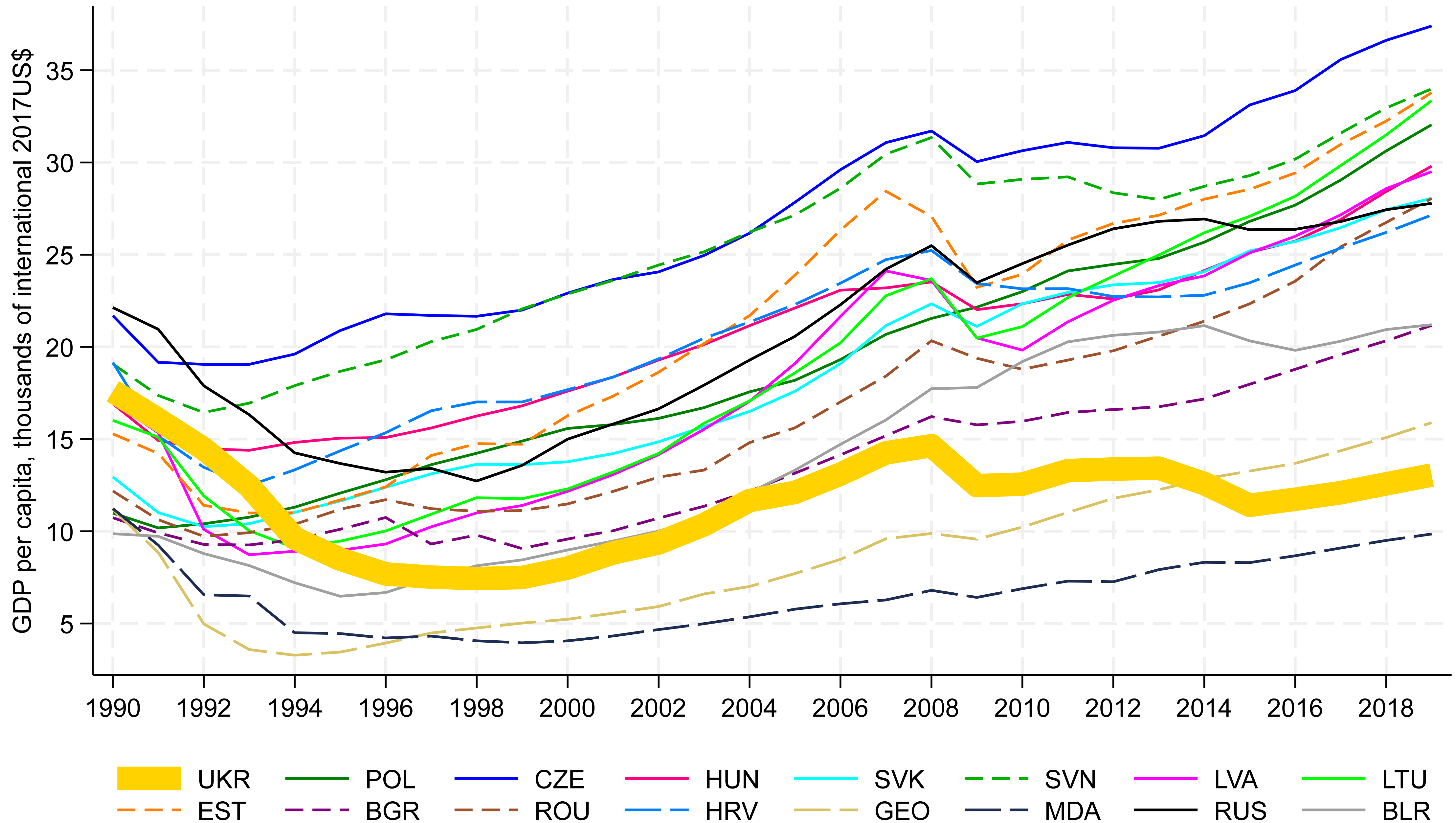
You Only Live Twice: Financial Inflows and Growth in a Westward-Facing Ukraine

Yuriy Gorodnichenko
UC Berkeley & 

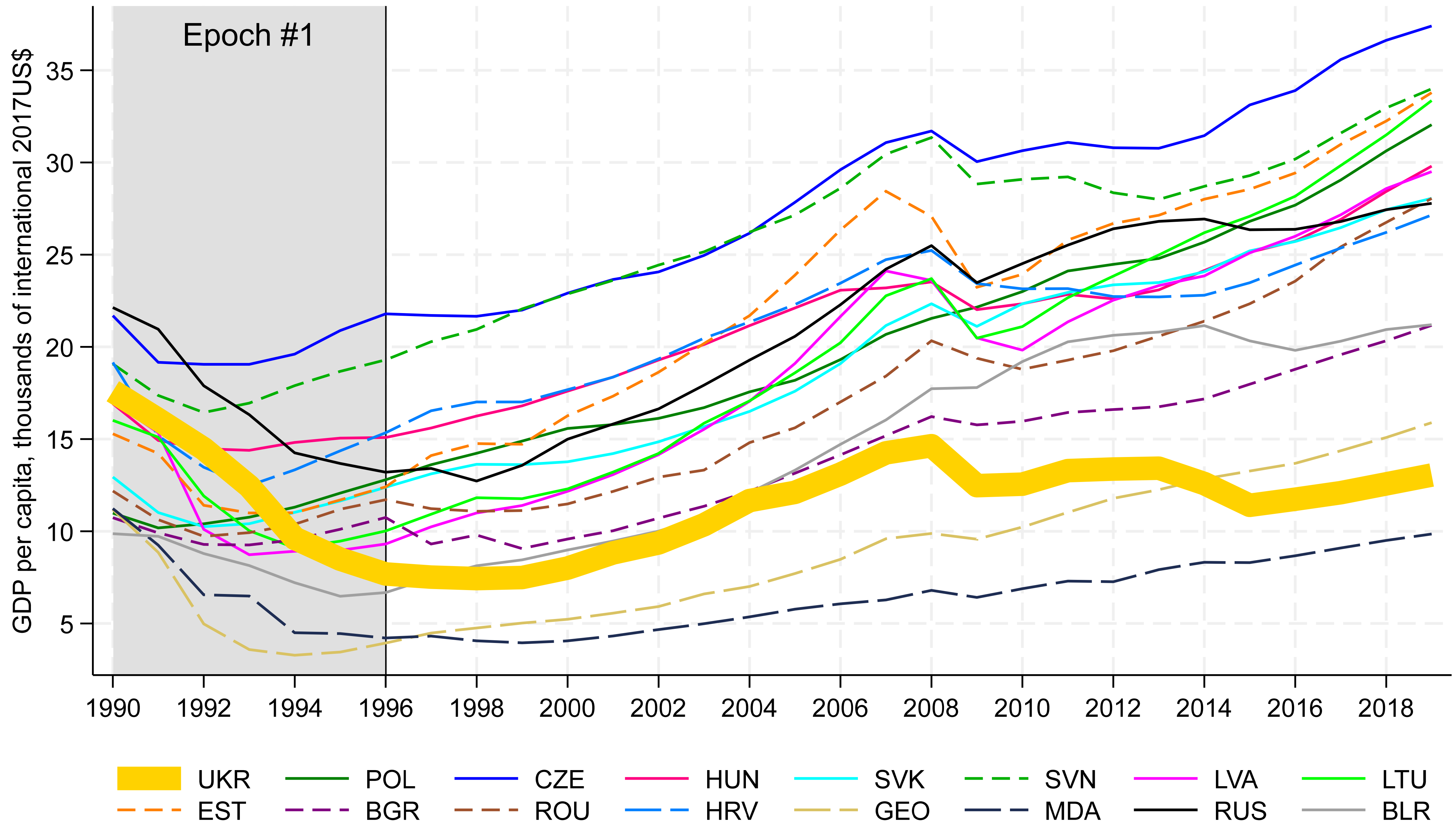
Maurice Obstfeld
Peterson Institute for International Economics & UC Berkeley

Macro history



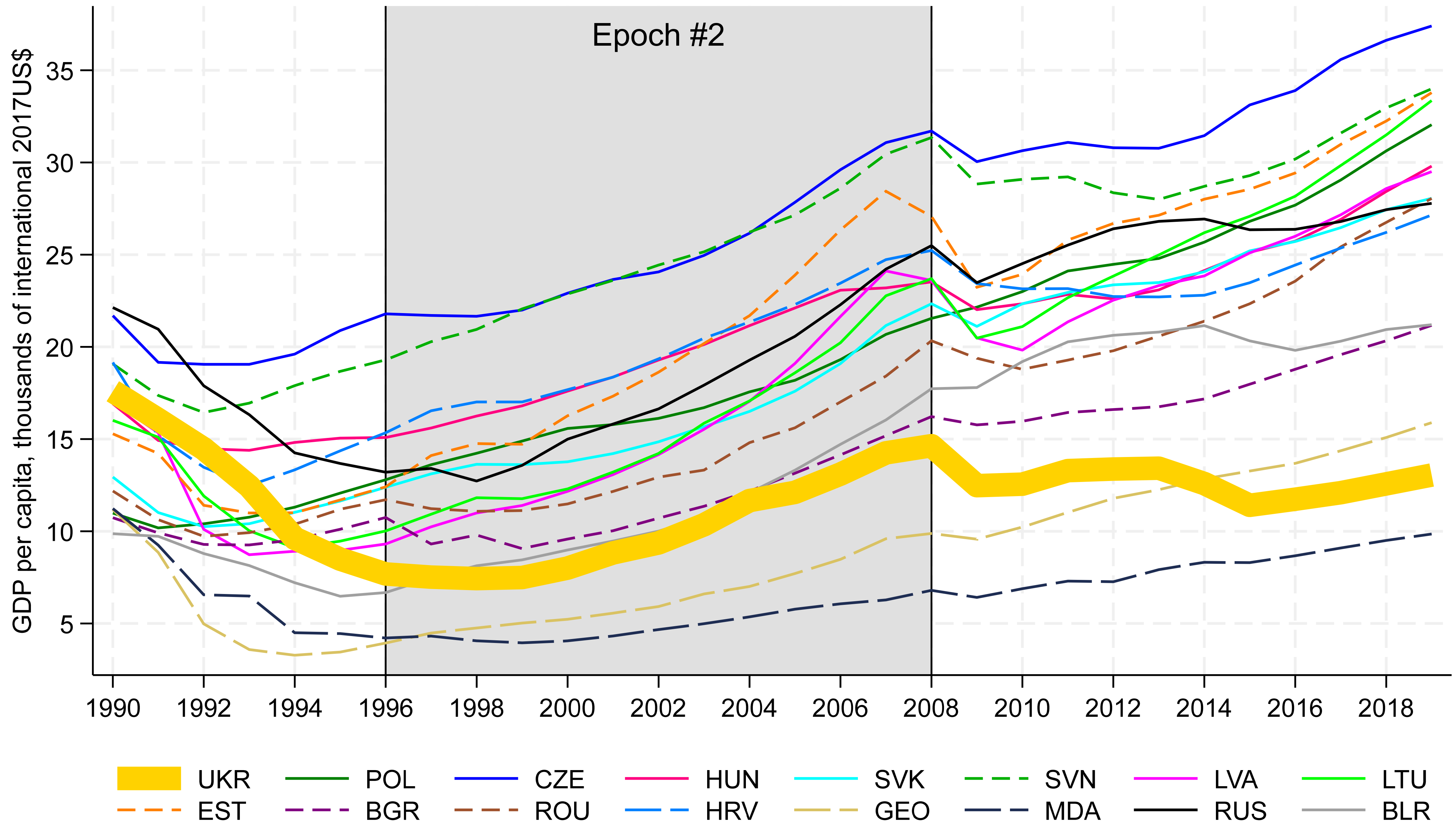
Dramatic reversal of fortune for Ukraine

MACRO HISTORY



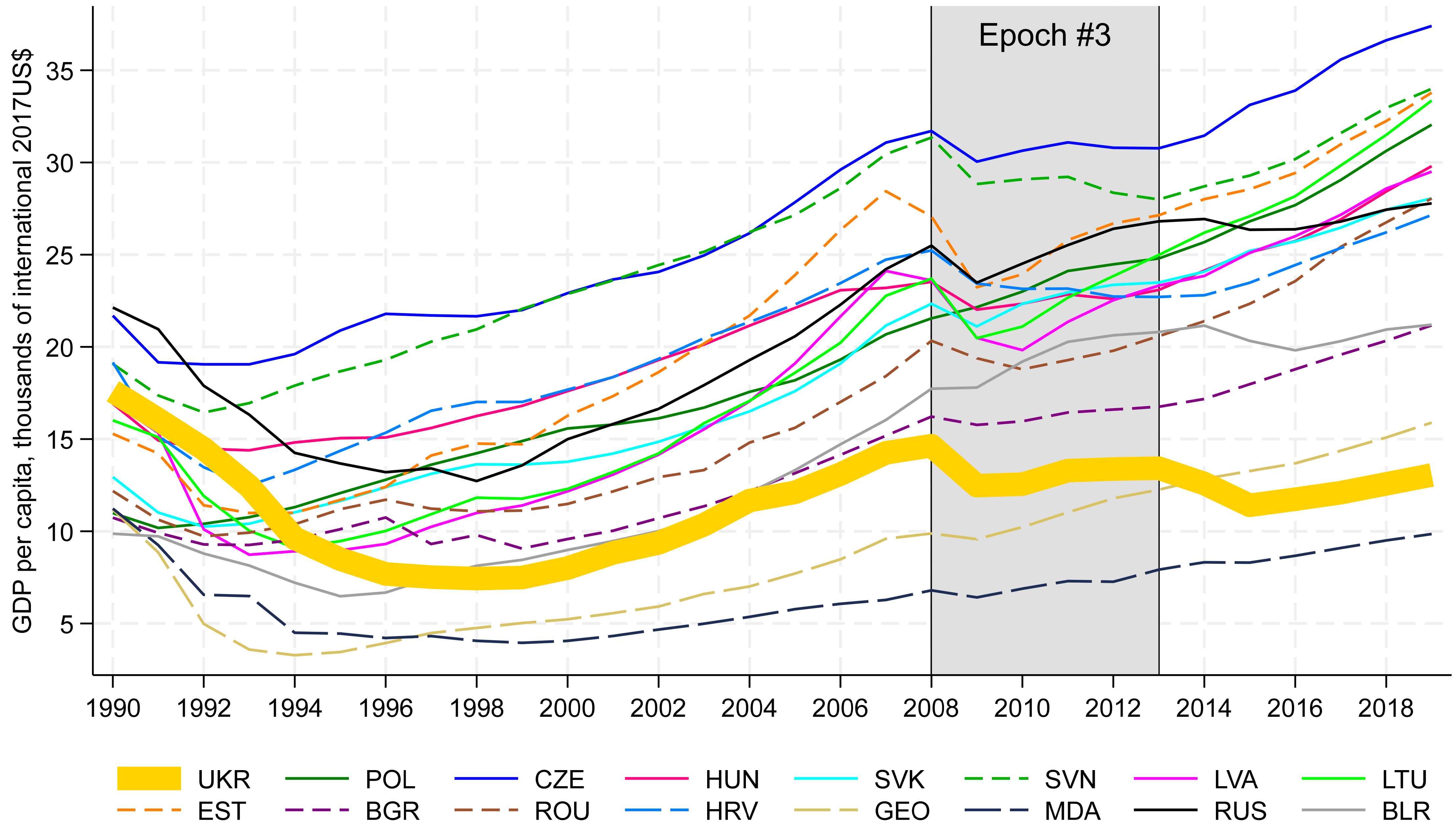
"Collapse": the economy collapsed during a bumpy and distorted transition to the market. GDP per capita fell by more than half, hyperinflation of 10,000% in 1993.

MACRO HISTORY



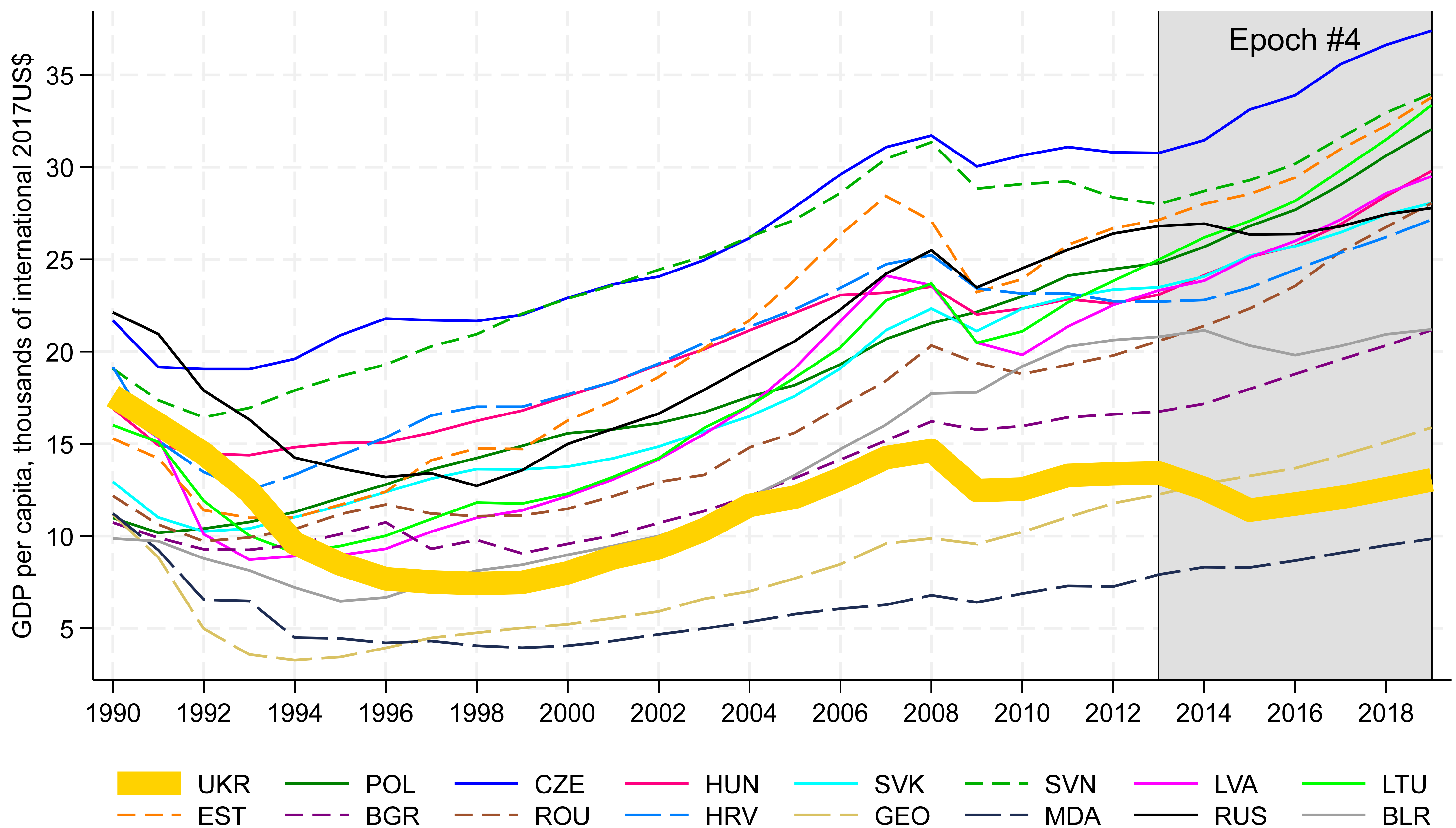
“Recovery”: 1996 currency reform, but inflation remained in a wide range of about 5 to 25 per cent per year; GDP per capita nearly doubled, powered (as in many other emerging markets) by buoyant commodity exports and plentiful global liquidity.

MACRO HISTORY



"Post-GFC stagnation": stagnant incomes, beginning with the global financial crisis of 2008-2009; constrained foreign credit, weak foreign demand, continuing corruption, and domestic political infighting all held back growth.

Macro history

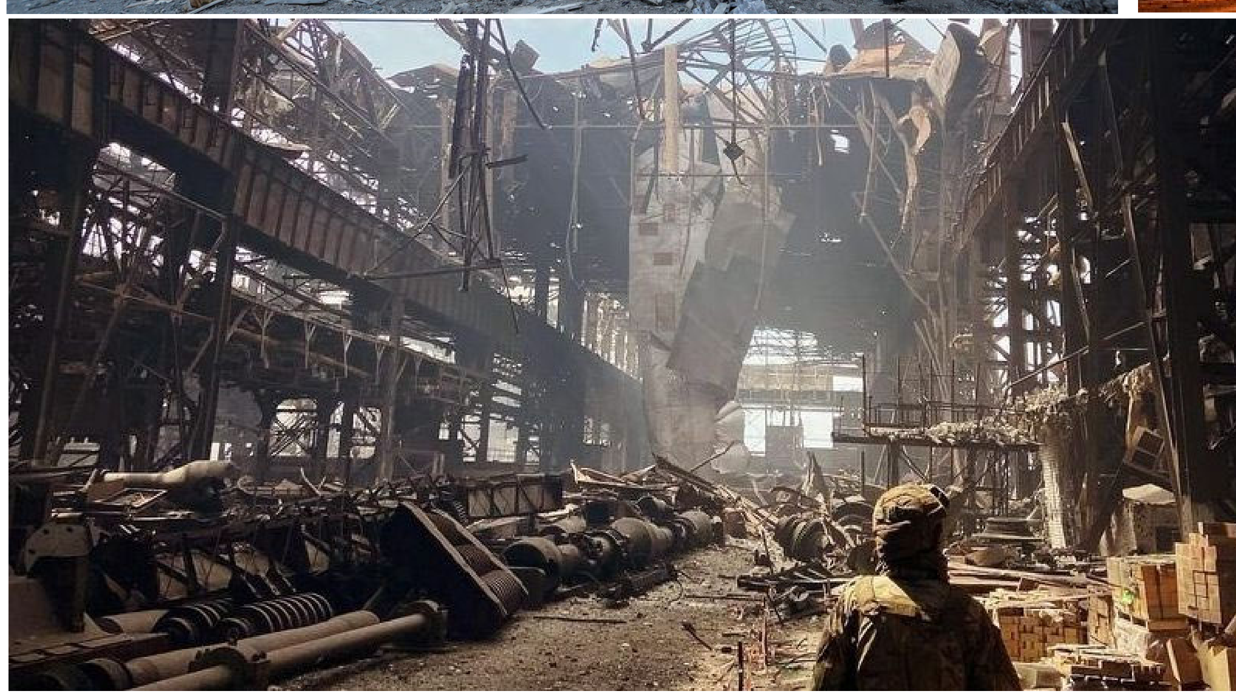


"Russian aggression": Russia's illegal annexation of Crimea and incursion into the Donbas in the first half of 2014. Post-2014 economy was dominated by overt military conflict with Russia and its proxies, has seen incomes continue to stagnate before dropping sharply with the full-scale Russian invasion of February 2022 and the ongoing war.

RUSSIAN AGGRESSION

Ukraine's GDP: ↓ 30%, Unemployment rate: ↑ to 35%, Ukrainian refugees ≈ 9 million






EPOCH 5: POST-WAR CHALLENGE AND OPPORTUNITY

- Transition to a peacetime economy
- Extensive rebuilding
- Overcome long-term structural challenges
- Join the European Union and NATO

EPOCH 5: POST-WAR CHALLENGE AND OPPORTUNITY

- Transition to a peacetime economy
- Extensive rebuilding
- Overcome long-term structural challenges
- Join the European Union and NATO
- Key questions:
    - What are the engines of economic growth?
        - Population
        - Productivity
        - Capital

Epoch 5: Post-war Challenge and Opportunity

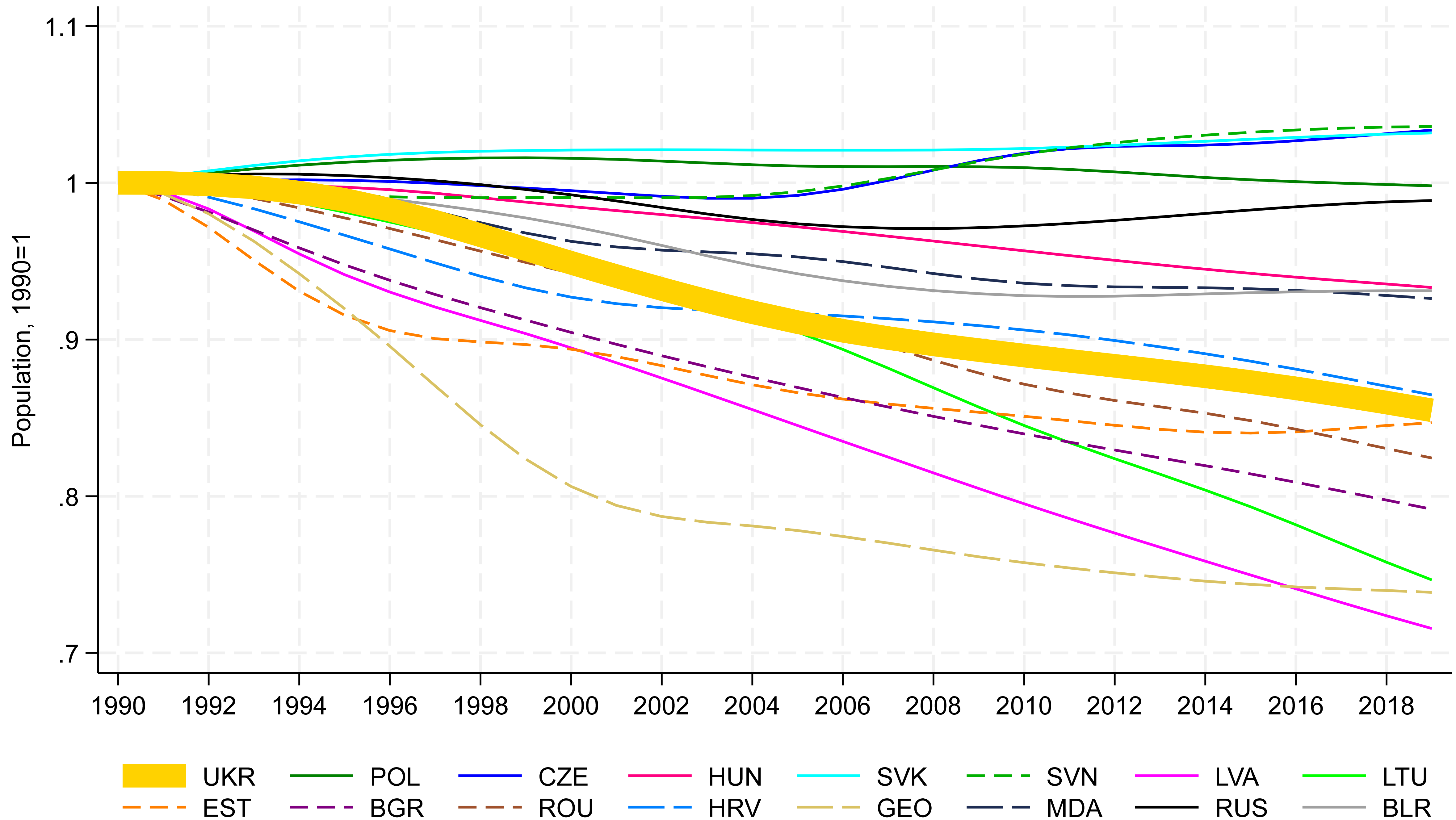
- Transition to a peacetime economy
- Extensive rebuilding
- Overcome long-term structural challenges
- Join the European Union and NATO
- Key questions:
  - What are the engines of economic growth?
    - Population
    - Productivity
    - Capital
  - What can we do to accelerate convergence to EU peers?

Epoch 5: Post-war Challenge and Opportunity

- Transition to a peacetime economy
- Extensive rebuilding
- Overcome long-term structural challenges
- Join the European Union and NATO
- Key questions:
    - What are the engines of economic growth?
        - Population
        - Productivity
        - Capital
    - What can we do to accelerate convergence to EU peers?

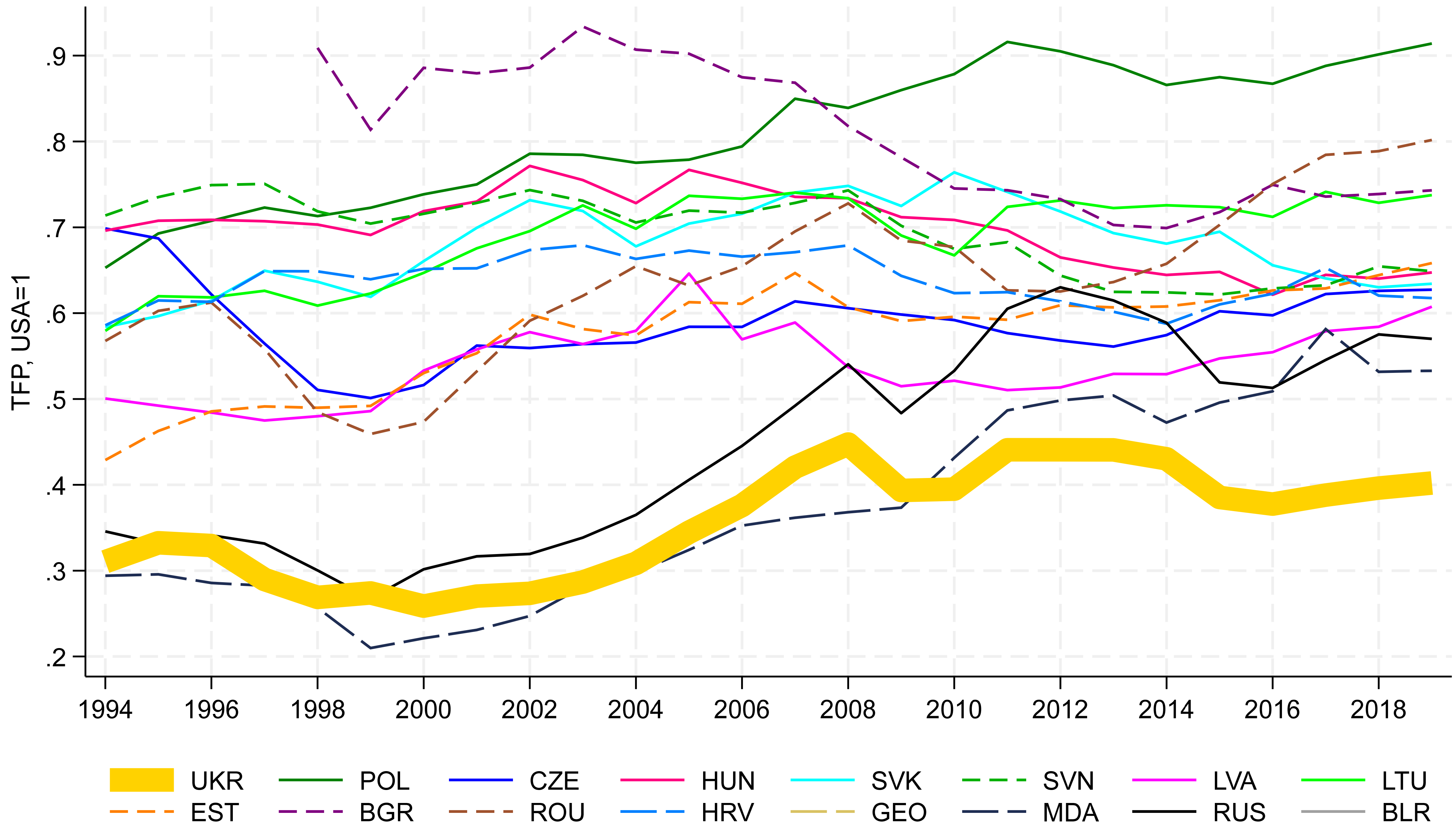
- Our main message: Ukraine needs massive investment

Population



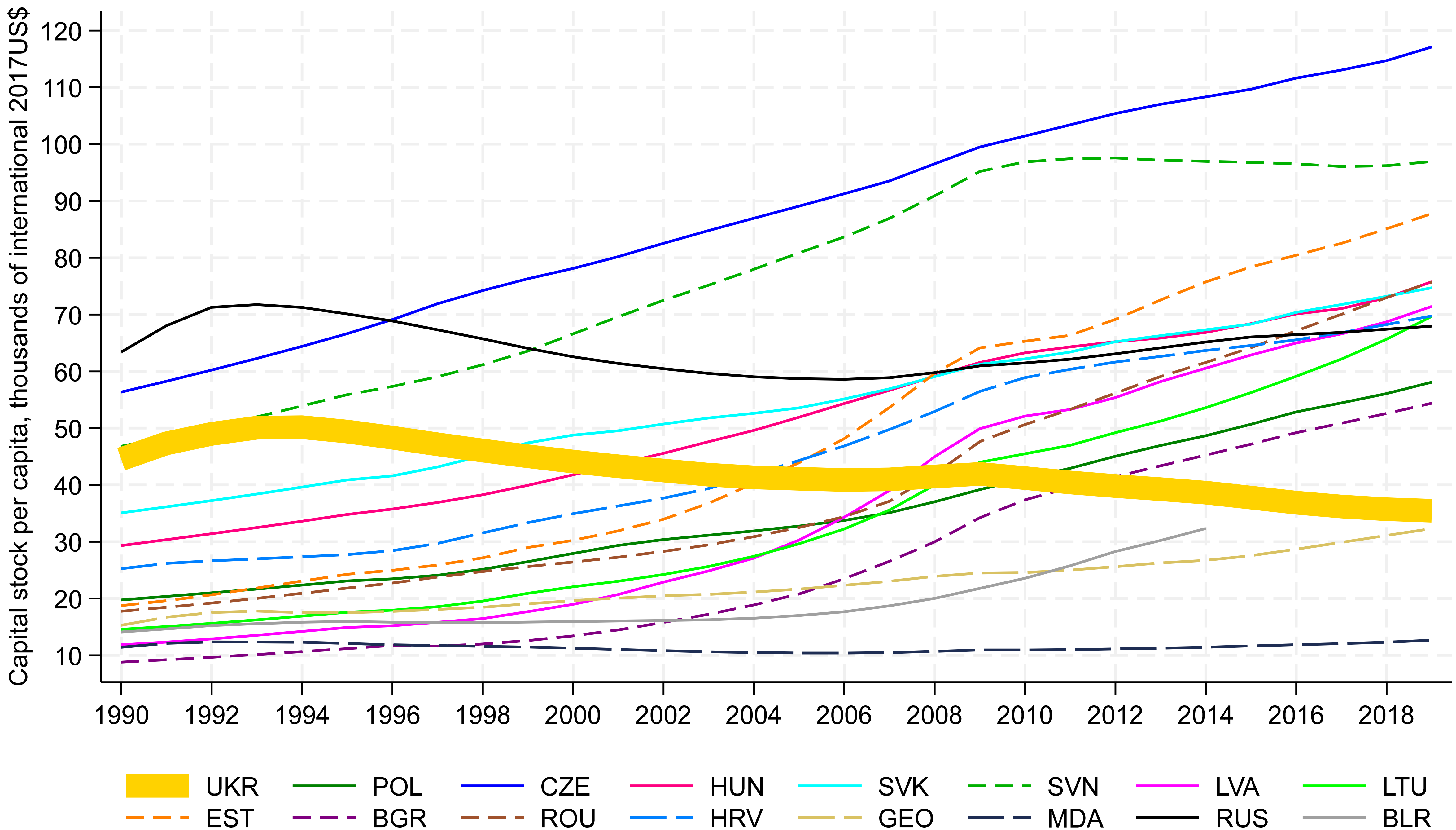
Broad-based depopulation in Eastern Europe but particularly in poor and war-affected countries.

PRODUCTIVITY



Productivity catch-up everywhere but stagnation in Ukraine since 2008.

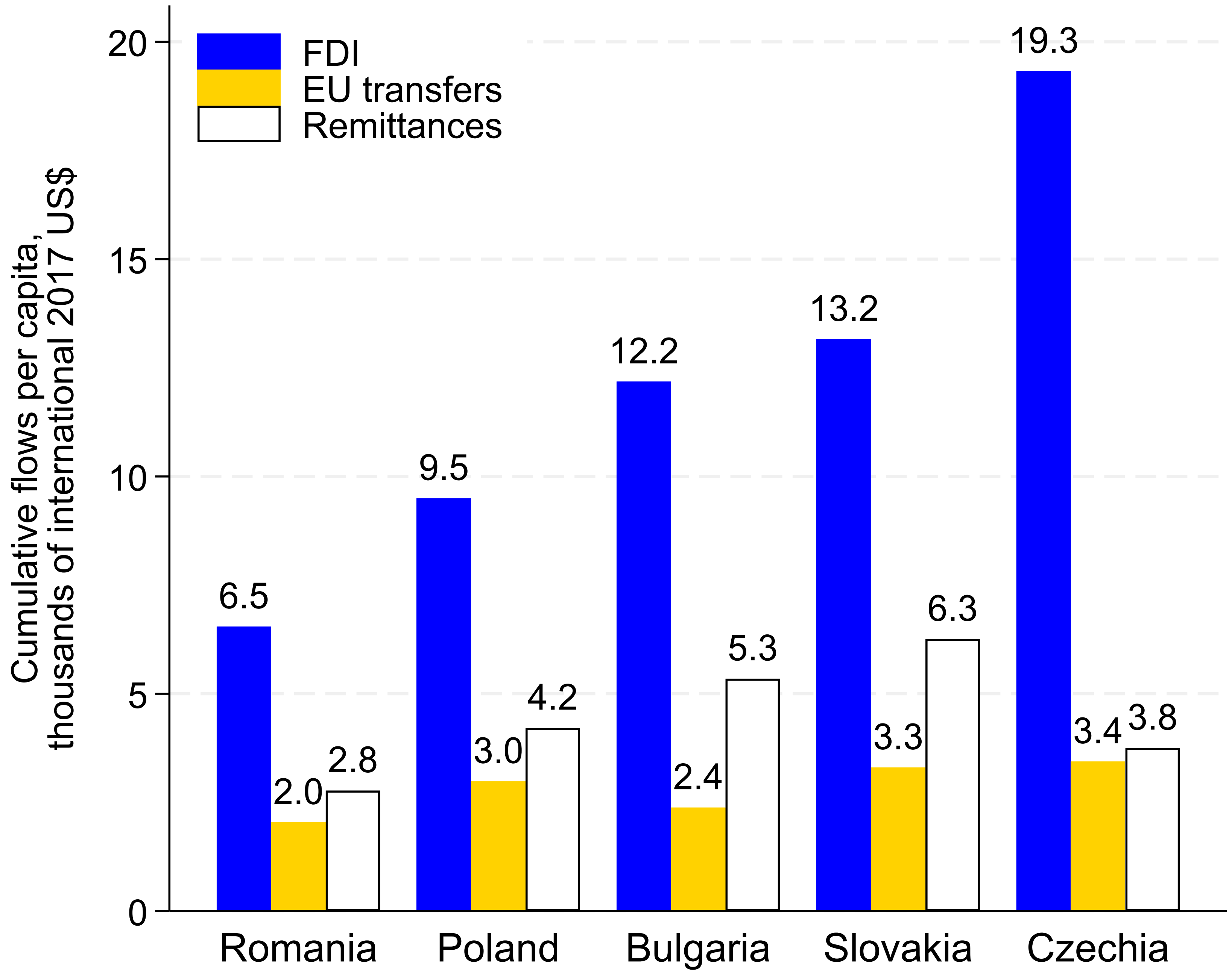
CAPITAL STOCK



- Ukraine moved from being relatively capital abundant to relatively capital scarce
- Dramatic capital deepening in EU countries

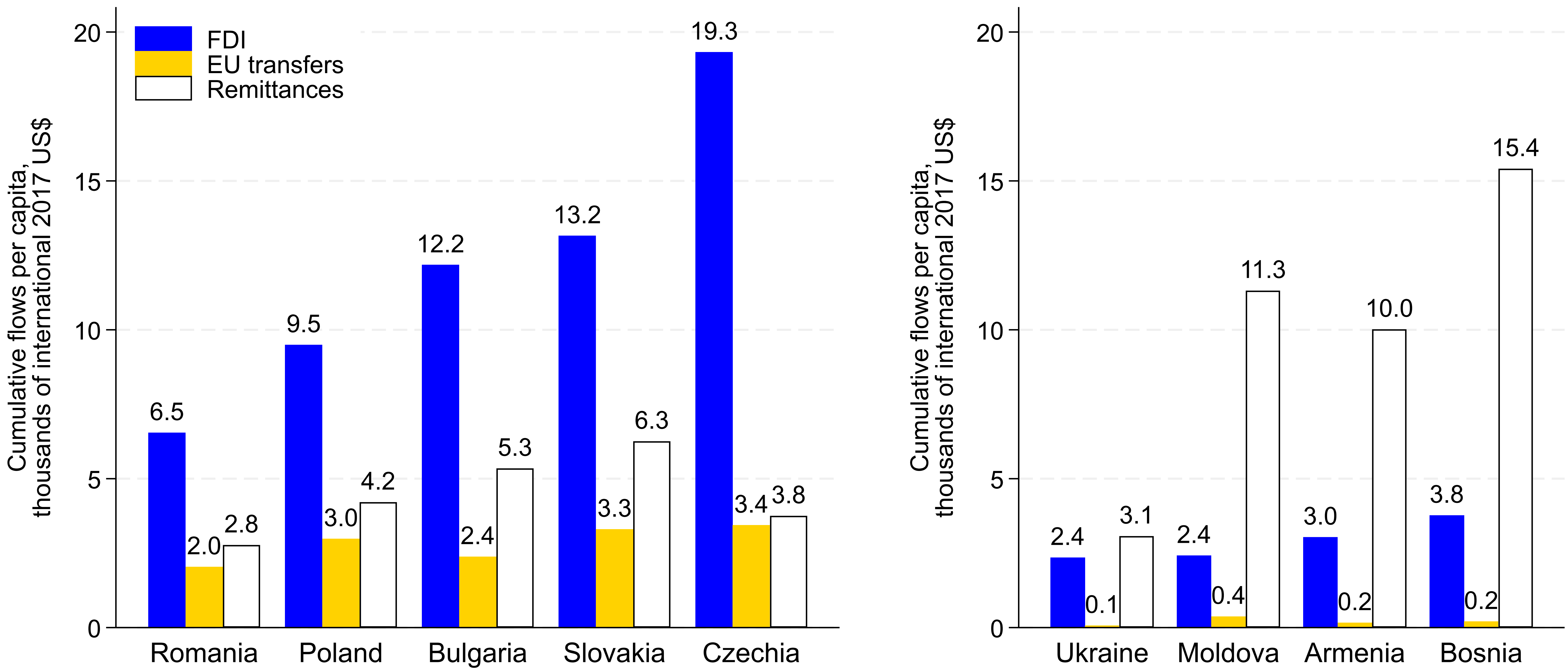
WHERE DID CAPITAL COME FROM?

WHERE DID CAPITAL COME FROM?



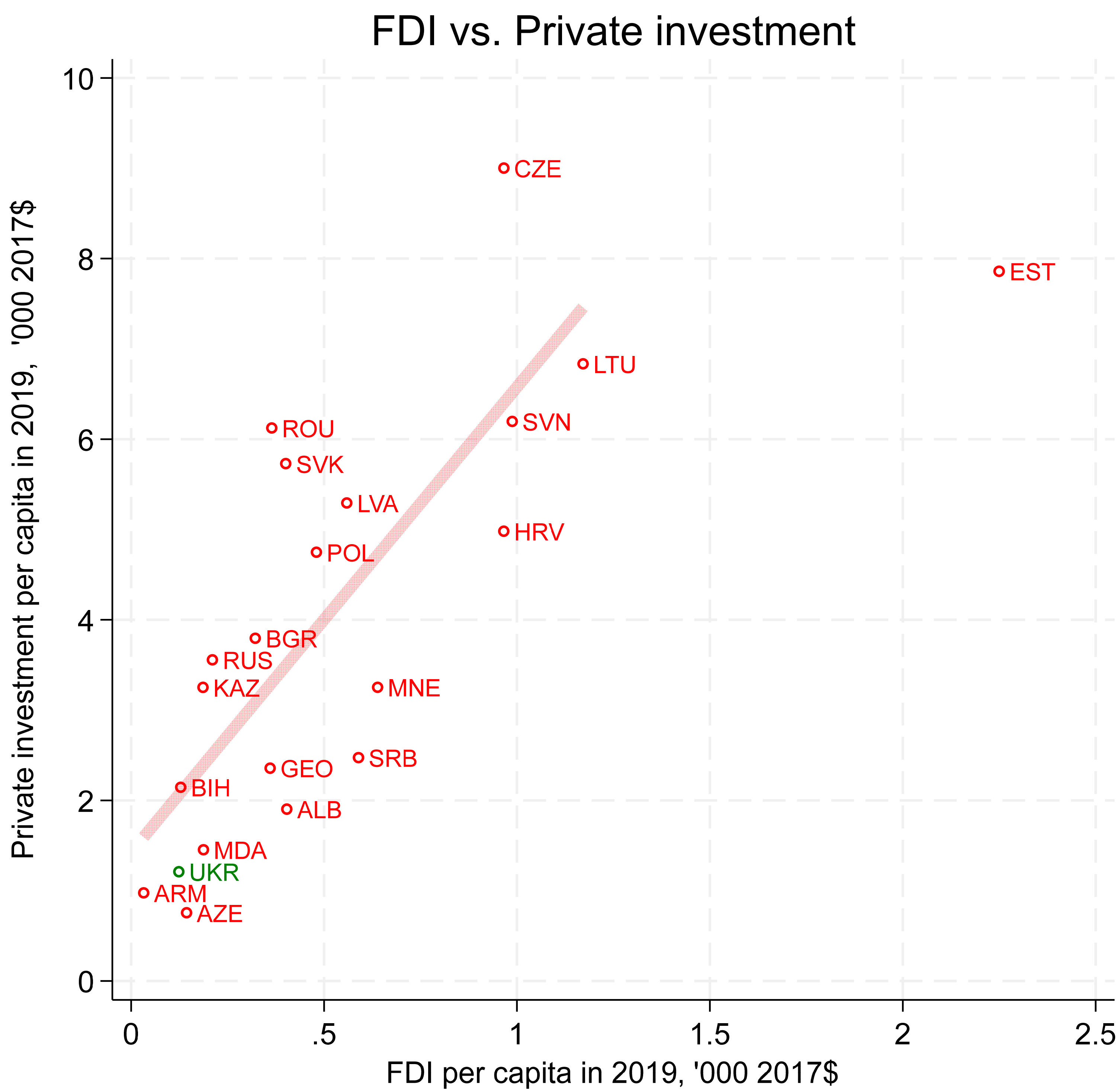
- EU members: FDI >> remittances > EU transfers

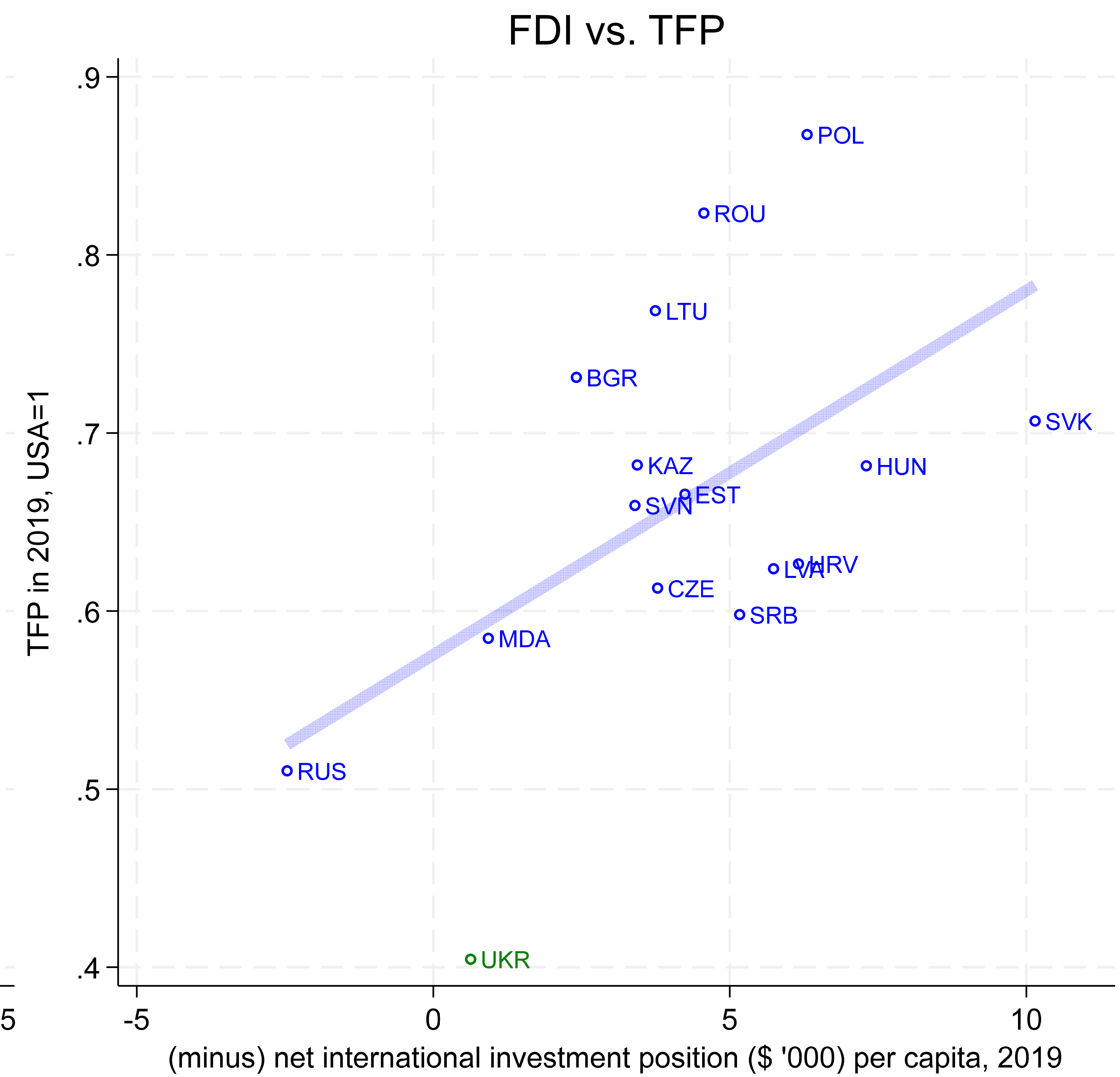
WHERE DID CAPITAL COME FROM?



- EU members: FDI >> remittances > EU transfers
- Ukraine: remittances > FDI >> EU transfers

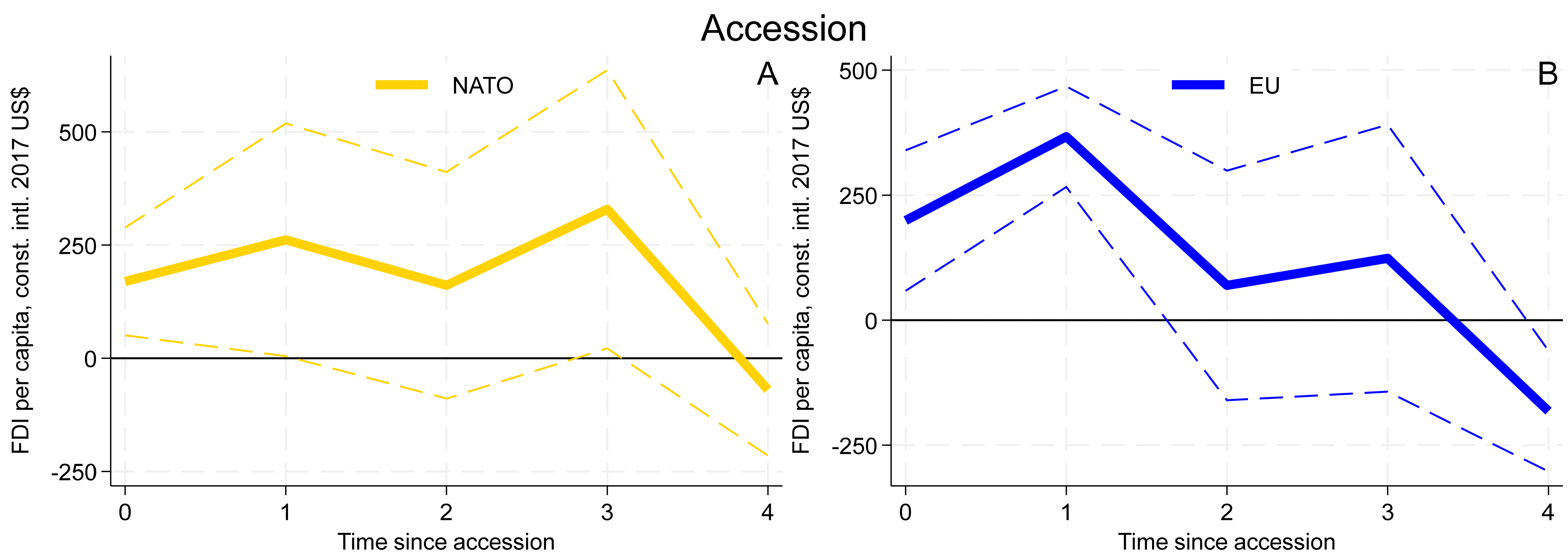
VIRTUOUS CIRCLE WITH FDI





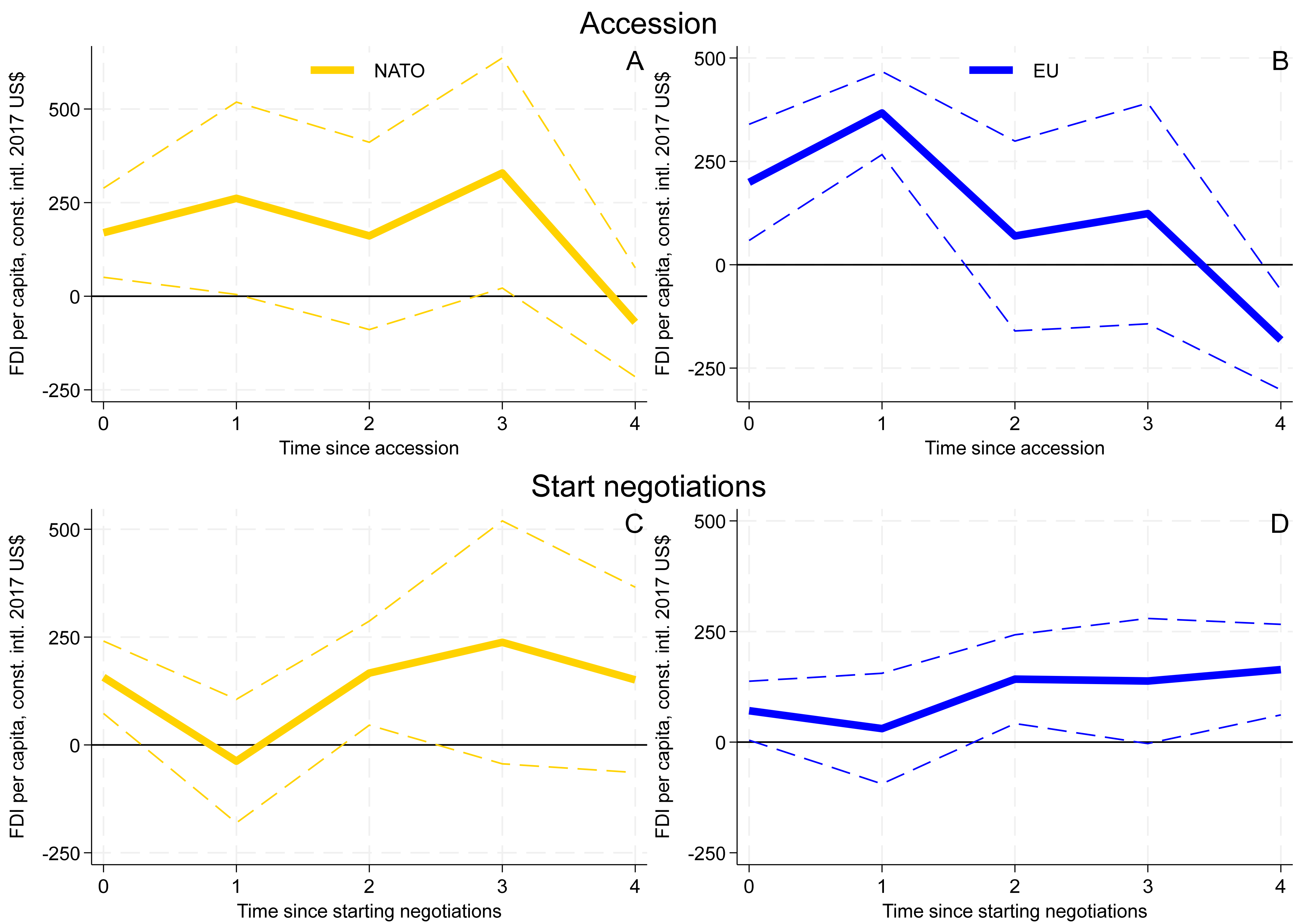
FDI, TFP growth, and private investment reinforce each other

FDI and the EU/NATO



FDI follows joining the EU and NATO

FDI AND THE EU/NATO



German Volkswagen acquired an equity stake in Czech Škoda in 1991, years before Czechia joined NATO or the EU (but after the EU launched a program to help Czechia and a few other prospective member countries attract foreign investment). Volkswagen fully acquired Škoda in 2000, after Czechia joined NATO (in 1999) but before it joined the EU (in 2004).

GROWTH ACCOUNTING FOR TRANSITION ECONOMIES

Period: 1994-2019	Non-EU countries	EU countries
Output growth (log points)	0.865	0.792

Similar growth

GROWTH ACCOUNTING FOR TRANSITION ECONOMIES

Period: 1994-2019	Non-EU countries	EU countries
Output growth (log points)	0.865	0.792
Contribution:		
Productivity	0.700	0.301
Capital	0.181	0.402
Labor (human capital)	-0.011	0.089
Input growth		
Capital	0.375	0.906
Labor (human capital)	0.013	0.160

Similar growth but sources were different

Capital deepening is key for income growth in the new EU members

CAN WE DO BETTER?

- New EU members had rapid growth
- This experience does not mean that Ukraine can’t grow even faster
- What is needed to accelerate Ukraine’s convergence to EU peers?

CAN WE DO BETTER?

- New EU members had rapid growth
- This experience does not mean that Ukraine can’t grow even faster
- What is needed to accelerate Ukraine’s convergence to EU peers?

Three models in spirit of the Ramsey-Koopmans model

CAN WE DO BETTER?

- New EU members had rapid growth
- This experience does not mean that Ukraine can’t grow even faster
- What is needed to accelerate Ukraine’s convergence to EU peers?

Three models in spirit of the Ramsey-Koopmans model

- Capital as collateral

CAN WE DO BETTER?

- New EU members had rapid growth
- This experience does not mean that Ukraine can't grow even faster
- What is needed to accelerate Ukraine's convergence to EU peers?

Three models in spirit of the Ramsey-Koopmans model:

- Capital as collateral
- Productivity growth (via human capital) vs. capital accumulation

Can we do better?

- New EU members had rapid growth
- This experience does not mean that Ukraine can't grow even faster
- What is needed to accelerate Ukraine's convergence to EU peers?

Three models in spirit of the Ramsey-Koopmans model:

- Capital as collateral
- Productivity growth (via human capital) vs. capital accumulation
- Capital deepening as a channel to induce refugees to return

Model setup

$$\max \int_0^\infty e^{-\delta t} u[c(t)]dt$$

subject to

$$\dot{k} = \underbrace{\underbrace{y - c}_{\text{gross investment}} - \underbrace{\theta k}_{\text{depreciation}}}_{\text{standard part}} + \underbrace{\underbrace{\gamma \dot{k}}_{\text{borrowing from abroad}} - \underbrace{r^* \gamma k}_{\text{interest payments to foreign creditors}}}_{\text{new part (externality)}}$$

γ = how much capital can be pledged as collateral for foreign creditors

r^* = global interest rate (assume = δ to simplify things)

Consumption

Planner:

$$\frac{\dot{c}}{c} = \sigma\left[\underbrace{\frac{\alpha A k^{\alpha-1} - (\gamma r^* + \theta)}{1-\gamma}}_{\text{net return}} - \delta\right]$$

Market economy:

$$\frac{\dot{c}}{c} = \sigma\left(\underbrace{\alpha A k^{\alpha-1} - \theta}_{\text{net return}} - \delta\right)$$

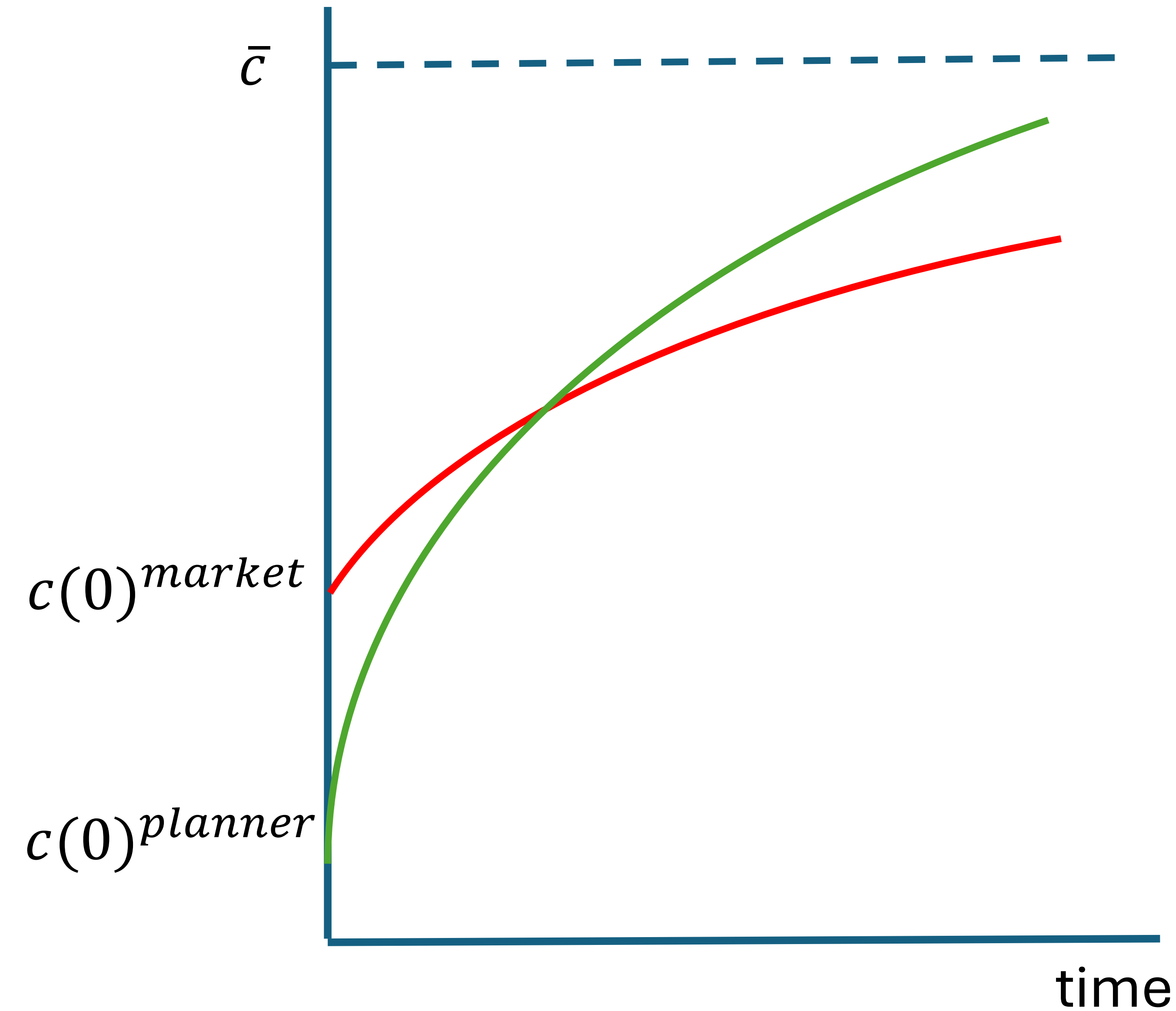
CONSUMPTION

Planner:

$$\frac{\dot{c}}{c} = \sigma \left[\underbrace{\frac{\alpha A k^{\alpha-1} - (\gamma r^* + \theta)}{1-\gamma}}_{\text{net return}} - \delta \right]$$

Market economy:

$$\frac{\dot{c}}{c} = \sigma \left(\underbrace{\alpha A k^{\alpha-1} - \theta}_{\text{net return}} - \delta \right)$$



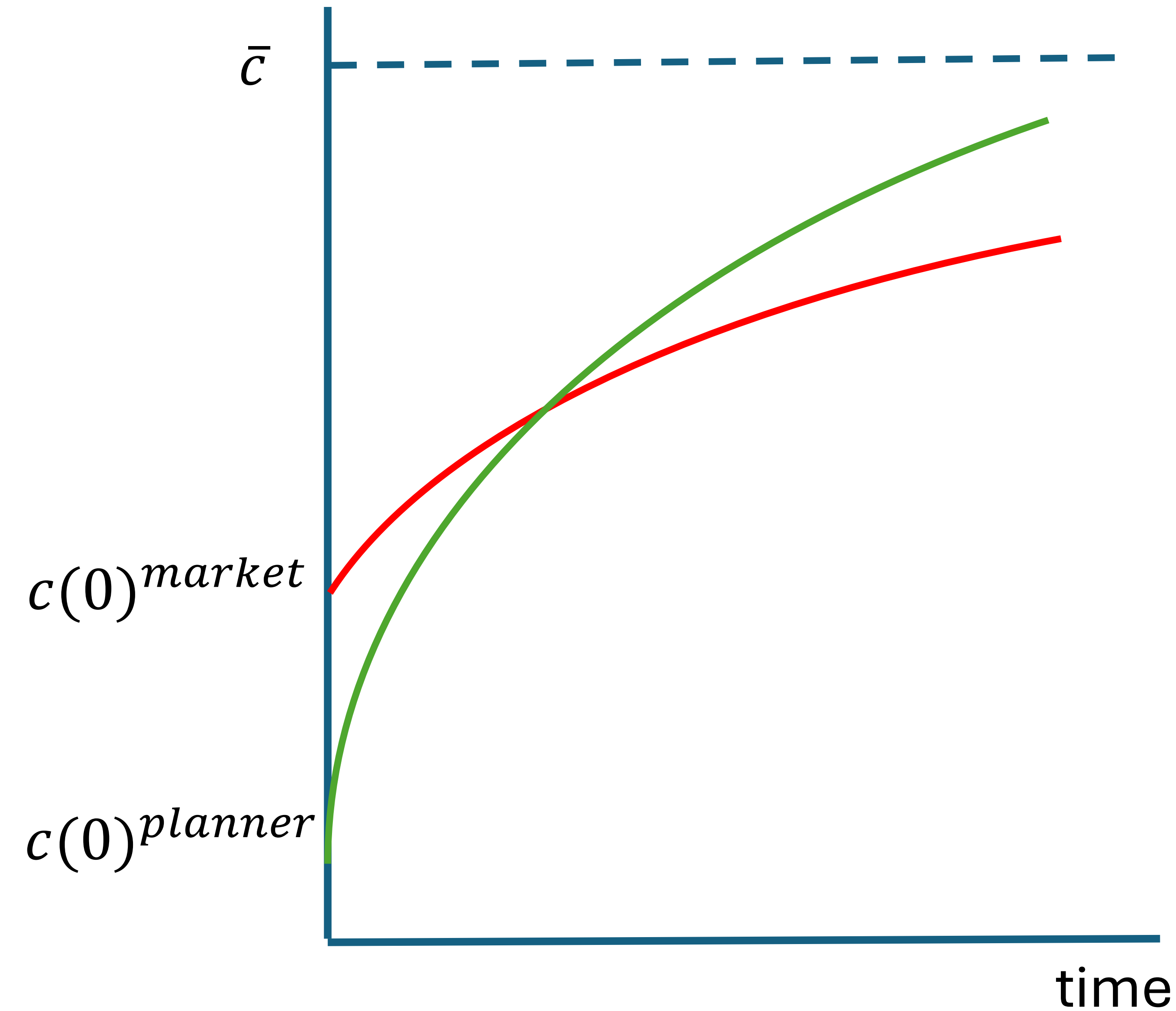
Consumption

Planner:

$$\frac{\dot{c}}{c} = \sigma\left[\underbrace{\frac{\alpha A k^{\alpha-1} - (\gamma r^* + \theta)}{1-\gamma}}_{\text{net return}} - \delta\right]$$

Market economy:

$$\frac{\dot{c}}{c} = \sigma\left(\underbrace{\alpha A k^{\alpha-1} - \theta}_{\text{net return}} - \delta\right)$$



Correction: "consumption tax" (declining VAT rebated to households)

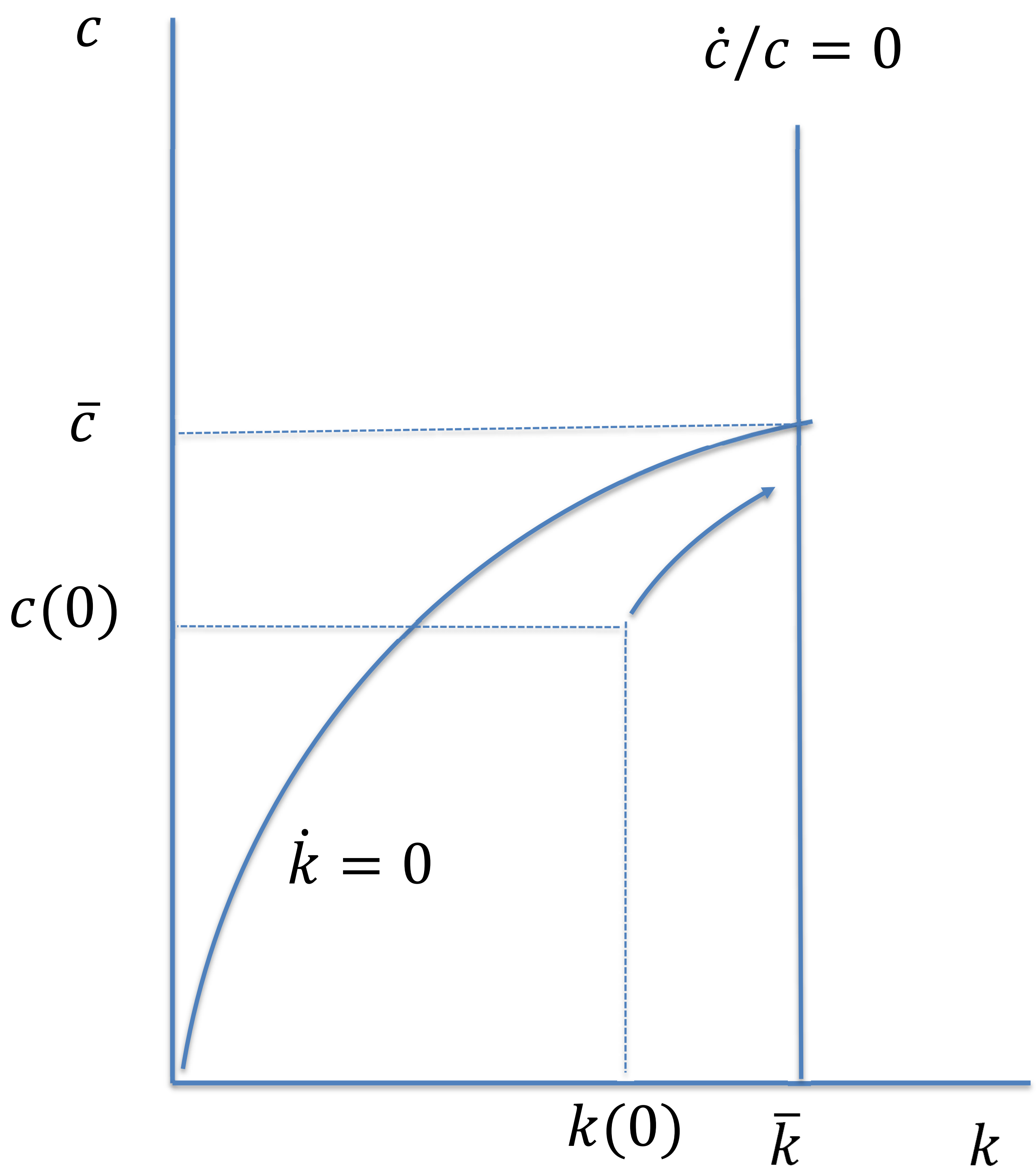
$$\Delta(t) = \frac{\gamma}{1-\gamma}\left[\alpha A k(t)^{\alpha-1} - \alpha A \bar{k}^{\alpha-1}\right]$$

THE PROMISE OF AID

Suppose aid a is promised to arrive in the future (“EU funds,” “reconstruction”)

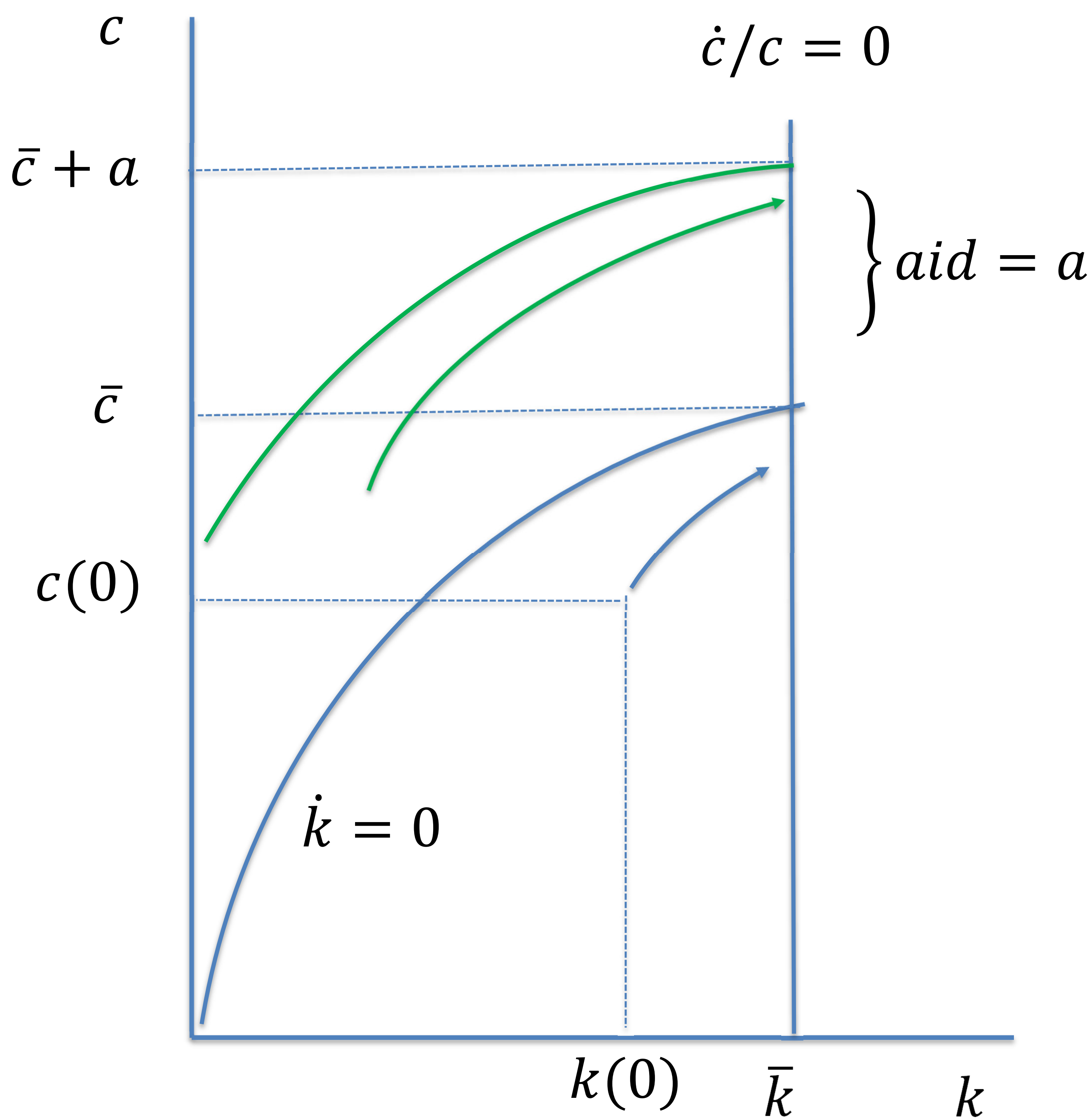
The promise of aid

Suppose aid a is promised to arrive in the future ("EU funds," "reconstruction")



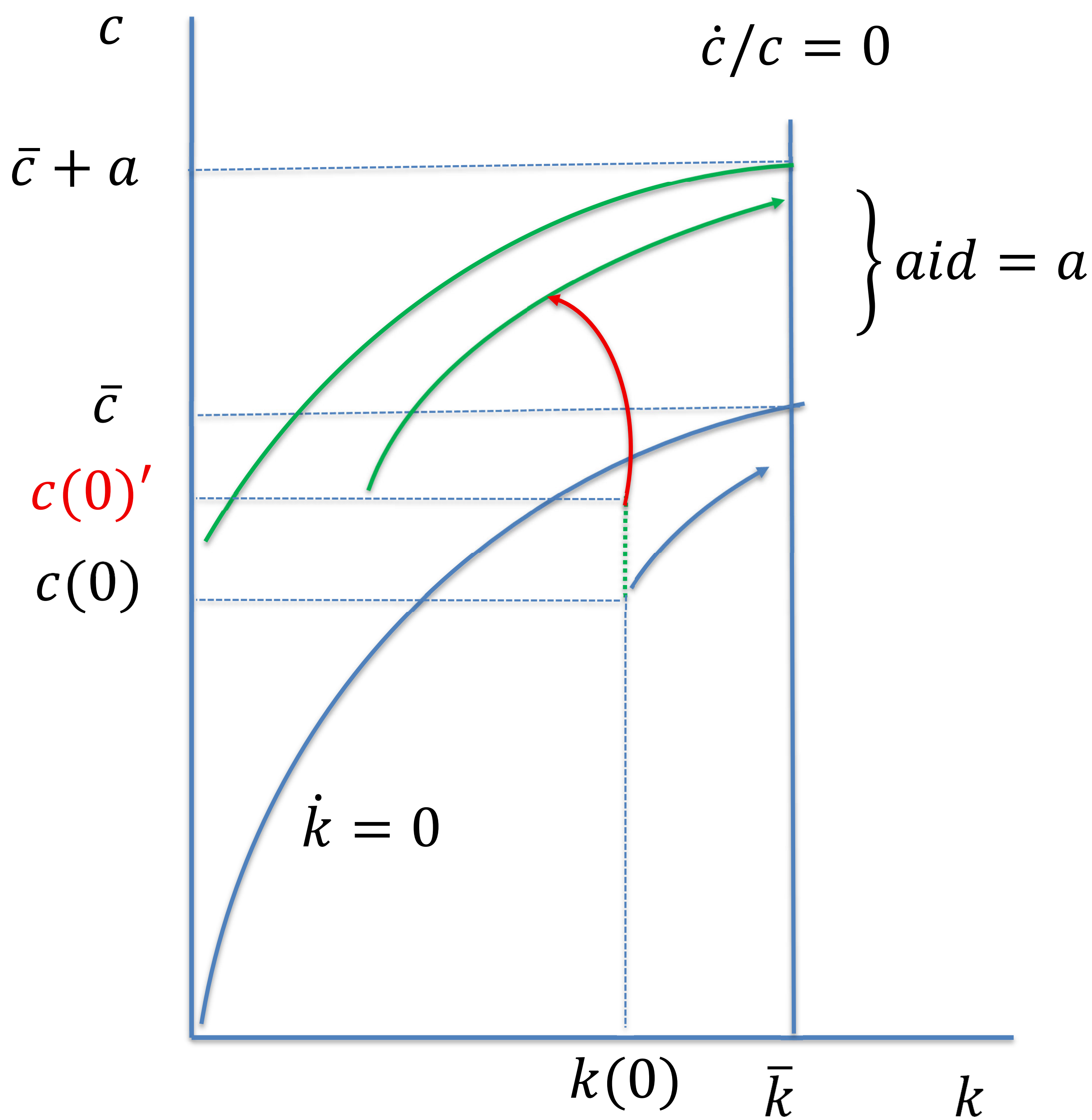
The promise of aid

Suppose aid a is promised to arrive in the future ("EU funds," "reconstruction")



THE PROMISE OF AID

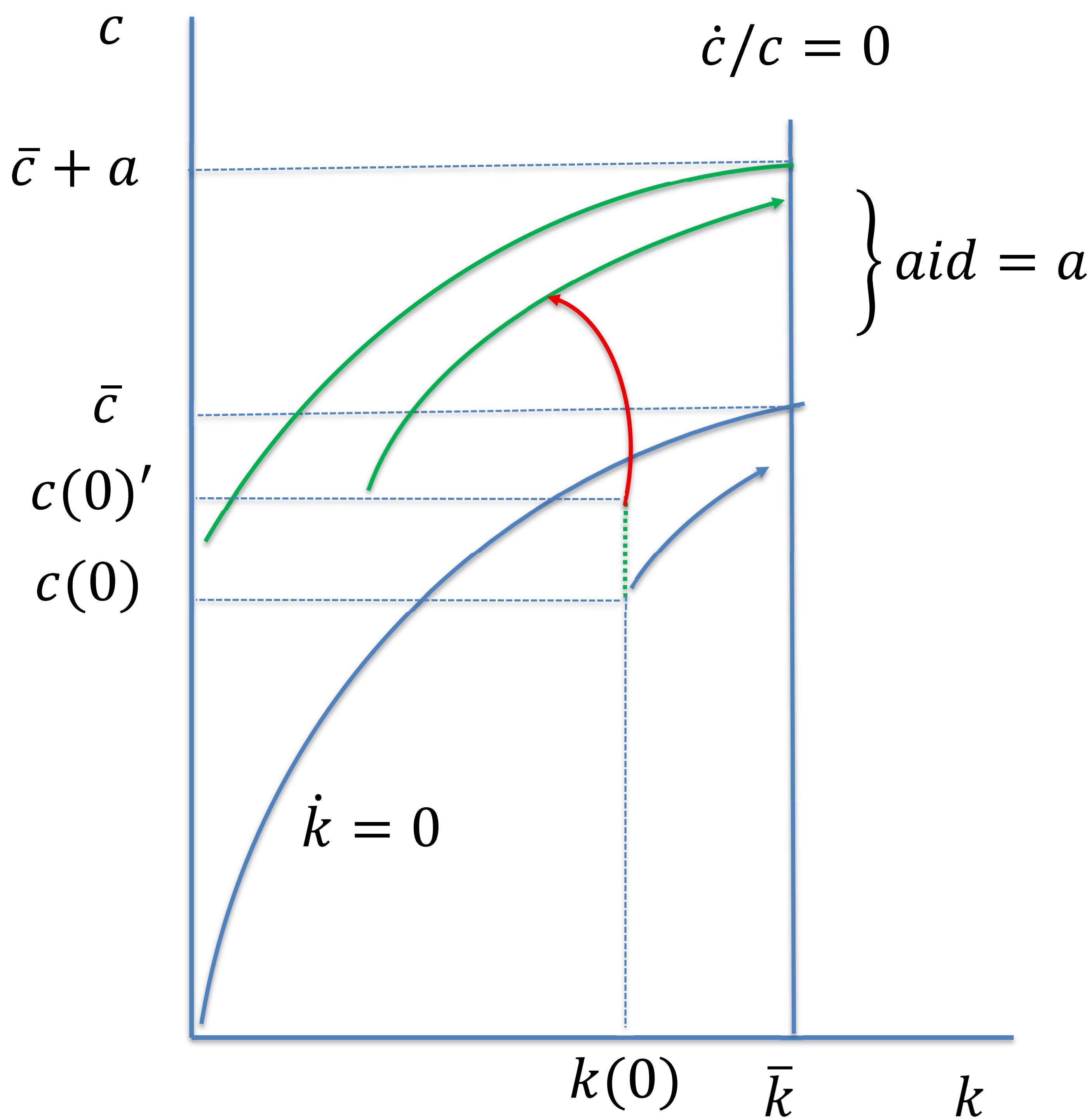
Suppose aid a is promised to arrive in the future ("EU funds," "reconstruction")



- A promise of aid raises consumption today and may reduce capital in the short run

THE PROMISE OF AID

Suppose aid a is promised to arrive in the future ("EU funds," "reconstruction")



- A promise of aid raises consumption today and may reduce capital in the short run
- But what if aid expectations were too optimistic? The result is a consumption collapse to the point implied by the diminished capital stock, and a net welfare loss. The possibility of unjustified "great expectations" is another reason why the government should be cautious in the face of high consumption demand.

CONSISTENT MESSAGE

Three models in spirit of the Ramsey-Koopmans model:

- Capital as collateral
  - Limit consumption $\Longrightarrow$ declining VAT and possible permanent investment subsidy

CONSISTENT MESSAGE

Three models in spirit of the Ramsey-Koopmans model:

- Capital as collateral
  - Limit consumption $\Longrightarrow$ declining VAT and possible permanent investment subsidy
- Productivity growth (via human capital) vs. capital accumulation
  - Human capital is not collateralizable $\Longrightarrow$ invest more in physical capital
  - Limit consumption $\Longrightarrow$ declining VAT and permanent investment subsidy

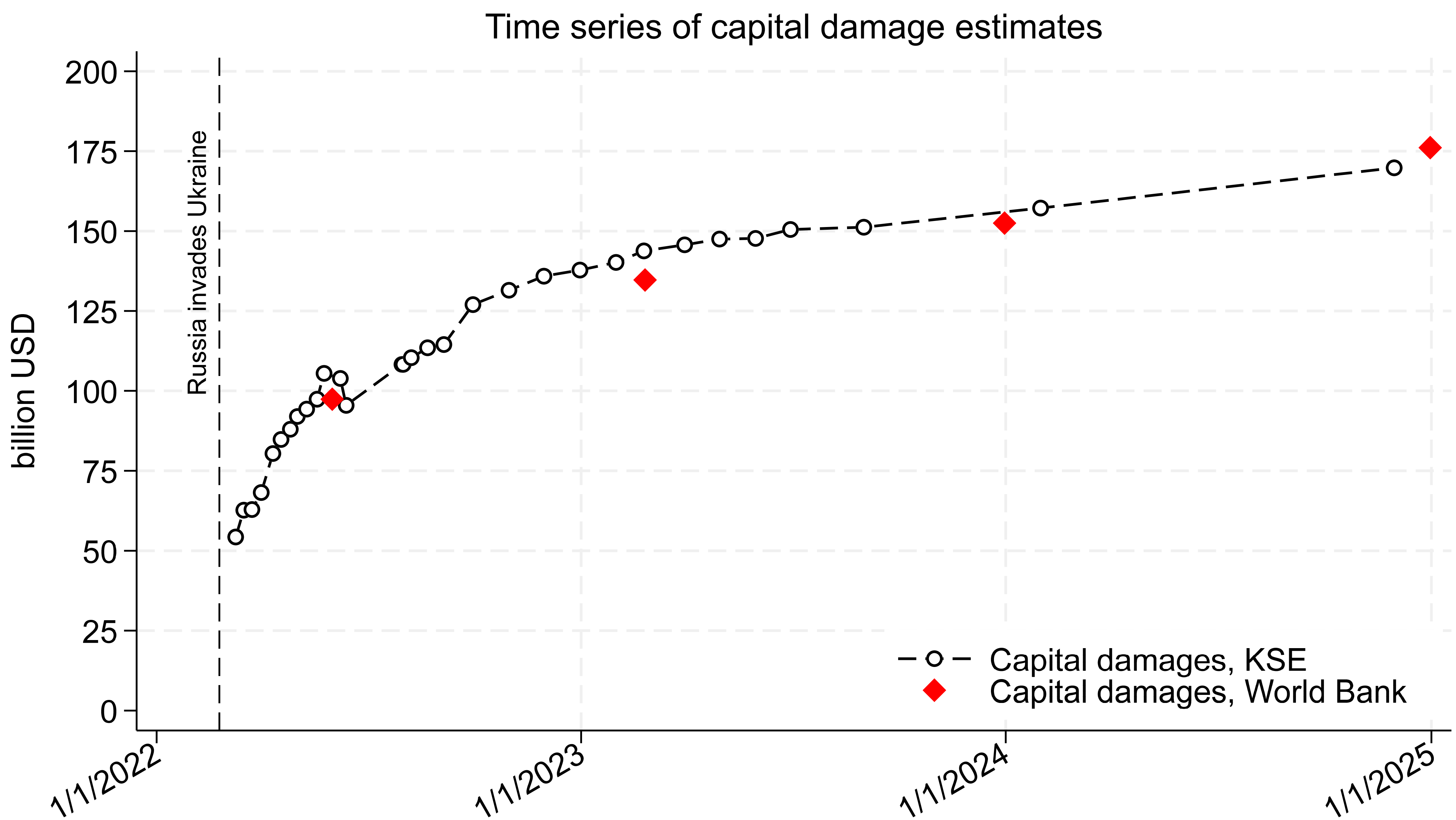
CONSISTENT MESSAGE

Three models in spirit of the Ramsey-Koopmans model:

- Capital as collateral
  - Limit consumption $\Longrightarrow$ declining VAT and possible permanent investment subsidy
- Productivity growth (via human capital) vs. capital accumulation
  - Human capital is not collateralizable $\Longrightarrow$ invest more in physical capital
  - Limit consumption $\Longrightarrow$ declining VAT and permanent investment subsidy
- Capital deepening to induce refugees to return
  - Limit consumption $\Longrightarrow$ declining VAT and permanent investment subsidy

How much capital is needed?

- Rebuild capital: **$20 billion** per year over 10 years



How much capital is needed?

- Rebuild capital: **$20 billion** per year over 10 years
- Capital deepening (A): stop falling behind Poland: **$10 billion** per year

The IMF data suggest that Poland was adding approximately $2,000 in capital per capita per year between 2007 and 2019. In contrast, Ukraine was losing roughly $600 per year in per capita capital over the same period even though Ukraine's population was shrinking. (All amounts are in international 2017 dollars.)

HOW MUCH CAPITAL IS NEEDED?

- Rebuild capital: **$20 billion** per year over 10 years
- Capital deepening (A): stop falling behind Poland: **$10 billion** per year
- Capital deepening (B): modest convergence (5%/year of the gap) to Poland: **$10 billion**

HOW MUCH CAPITAL IS NEEDED?

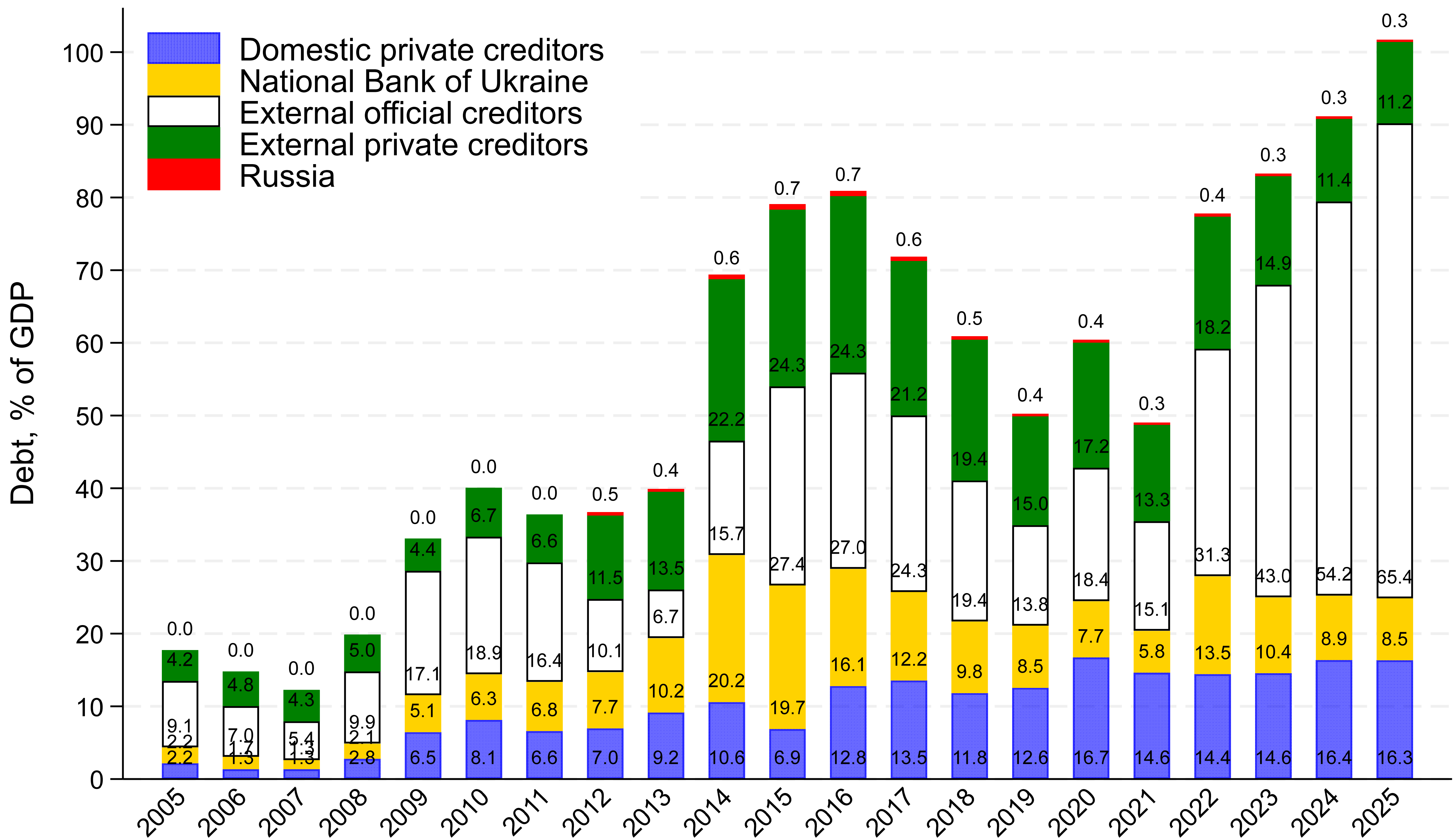
- Rebuild capital: **$20 billion** per year over 10 years
- Capital deepening (A): stop falling behind Poland: **$10 billion** per year
- Capital deepening (B): modest convergence (5%/year of the gap) to Poland: **$10 billion**

  Total: **$40 billion** per year

This is doable:

- Ukraine received ≈ $40 billion per year in budgetary support during the full-scale war.
- Poland's net FDI was ≈ $20 billion in 2024.
- For the 2021-2027 period, the EU budget for cohesion policy is €392 billion, which translates to roughly €56 billion per year and suggests some room for EU funds earmarked for Ukraine.
- Utilize frozen Russian assets.

DEBT OVERHANG



Deep debt relief is needed after the war; use grants rather than loans to support now

ADDITIONAL CONSIDERATIONS AND CAVEATS

ADDITIONAL CONSIDERATIONS AND CAVEATS

- *Political economy*: protect the most vulnerable when limiting consumption growth

ADDITIONAL CONSIDERATIONS AND CAVEATS

- *Political economy*: protect the most vulnerable when limiting consumption growth
- *Boom-bust cycle*: watch for real currency appreciation (limit consumption growth!)

ADDITIONAL CONSIDERATIONS AND CAVEATS

- *Political economy*: protect the most vulnerable when limiting consumption growth
- *Boom-bust cycle*: watch for real currency appreciation (limit consumption growth!)
- *Absorptive capacity*: public investment rate ~10% & total investment rate of 20-25%; best results with strong institutions

ADDITIONAL CONSIDERATIONS AND CAVEATS

- *Political economy*: protect the most vulnerable when limiting consumption growth
- *Boom-bust cycle*: watch for real currency appreciation (limit consumption growth!)
- *Absorptive capacity*: public investment rate ~10% & total investment rate of 20-25%; best results with strong institutions
- *Allocation efficiency*: institutional reforms, privatize state-owned banks, fight corruption, deal with non-performing loans, set up a reconstruction agency

ADDITIONAL CONSIDERATIONS AND CAVEATS

- *Political economy*: protect the most vulnerable when limiting consumption growth
- *Boom-bust cycle*: watch for real currency appreciation (limit consumption growth!)
- *Absorptive capacity*: public investment rate ~10% & total investment rate of 20-25%; best results with strong institutions
- *Allocation efficiency*: institutional reforms, privatize state-owned banks, fight corruption, deal with non-performing loans, set up a reconstruction agency
- *Mobilizing domestic saving*: unlikely in the short run due to underdeveloped capital markets, but Ukraine can lay foundations for future organic growth

Additional considerations and caveats

- *Political economy*: protect the most vulnerable when limiting consumption growth
- *Boom-bust cycle*: watch for real currency appreciation (limit consumption growth!)
- *Absorptive capacity*: public investment rate ~10% & total investment rate of 20-25%; best results with strong institutions
- *Allocation efficiency*: institutional reforms, privatize state-owned banks, fight corruption, deal with non-performing loans, set up a reconstruction agency
- *Mobilizing domestic saving*: unlikely in the short run due to underdeveloped capital markets, but Ukraine can lay foundations for future organic growth
- *Natural resources*: unlikely a major source of growth in the short run due to long gestation lags, political/security risks, and underdeveloped capital markets

CONCLUDING REMARKS

- Growth miracles can happen. In 30 years, Czechia and Poland have reached incomes comparable to France, Italy, and the United Kingdom.

CONCLUDING REMARKS

- Growth miracles can happen. In 30 years, Czechia and Poland have reached incomes comparable to France, Italy, and the United Kingdom.
- How? Productivity gains and physical capital accumulation played the key roles in this stunning rise in incomes.

CONCLUDING REMARKS

- Growth miracles can happen. In 30 years, Czechia and Poland have reached incomes comparable to France, Italy, and the United Kingdom.
- How? Productivity gains and physical capital accumulation played the key roles in this stunning rise in incomes.
- Massive private capital inflows and public structural funds facilitated technology transfer and helped address demographic issues. In other words, capital, technology, and labor reinforced each other, creating a virtuous circle: more investment makes countries more productive and livable, which in turn makes these countries more attractive for investment.

Concluding remarks

- Growth miracles can happen. In 30 years, Czechia and Poland have reached incomes comparable to France, Italy, and the United Kingdom.
- How? Productivity gains and physical capital accumulation played the key roles in this stunning rise in incomes.
- Massive private capital inflows and public structural funds facilitated technology transfer and helped address demographic issues. In other words, capital, technology, and labor reinforced each other, creating a virtuous circle: more investment makes countries more productive and livable, which in turn makes these countries more attractive for investment.
- The tried-and-true recipe of capital accumulation is a safe bet for Ukraine's economic development.

CONCLUDING REMARKS

- Growth miracles can happen. In 30 years, Czechia and Poland have reached incomes comparable to France, Italy, and the United Kingdom.
- How? Productivity gains and physical capital accumulation played the key roles in this stunning rise in incomes.
- Massive private capital inflows and public structural funds facilitated technology transfer and helped address demographic issues. In other words, capital, technology, and labor reinforced each other, creating a virtuous circle: more investment makes countries more productive and livable, which in turn makes these countries more attractive for investment.
- The tried-and-true recipe of capital accumulation is a safe bet for Ukraine's economic development.
- One can improve upon "Poland": The government can achieve superior outcomes by directing more resources to investment (via, e.g., a declining consumption tax).

CONCLUDING REMARKS

- This strategy worked in Poland & Czechia but how do we know it will work for Ukraine?

CONCLUDING REMARKS

- This strategy worked in Poland & Czechia but how do we know it will work for Ukraine?
- Ukraine needs to be a better student and there is much homework to do

CONCLUDING REMARKS

- This strategy worked in Poland & Czechia but how do we know it will work for Ukraine?
- Ukraine needs to be a better student and there is much homework to do but this time it could be different
  - There is an overwhelming consensus in Ukrainian society regarding EU/NATO
  - Europe now views Ukraine as a part of Europe rather than a Russian sphere of influence or a buffer state.
  - Ukraine's chances will be better, of course, if the EU raises its own ambition and unity in the face of a triad of threats from a hostile Russia, a revisionist China, and a commercially aggressive but militarily disengaging United States.

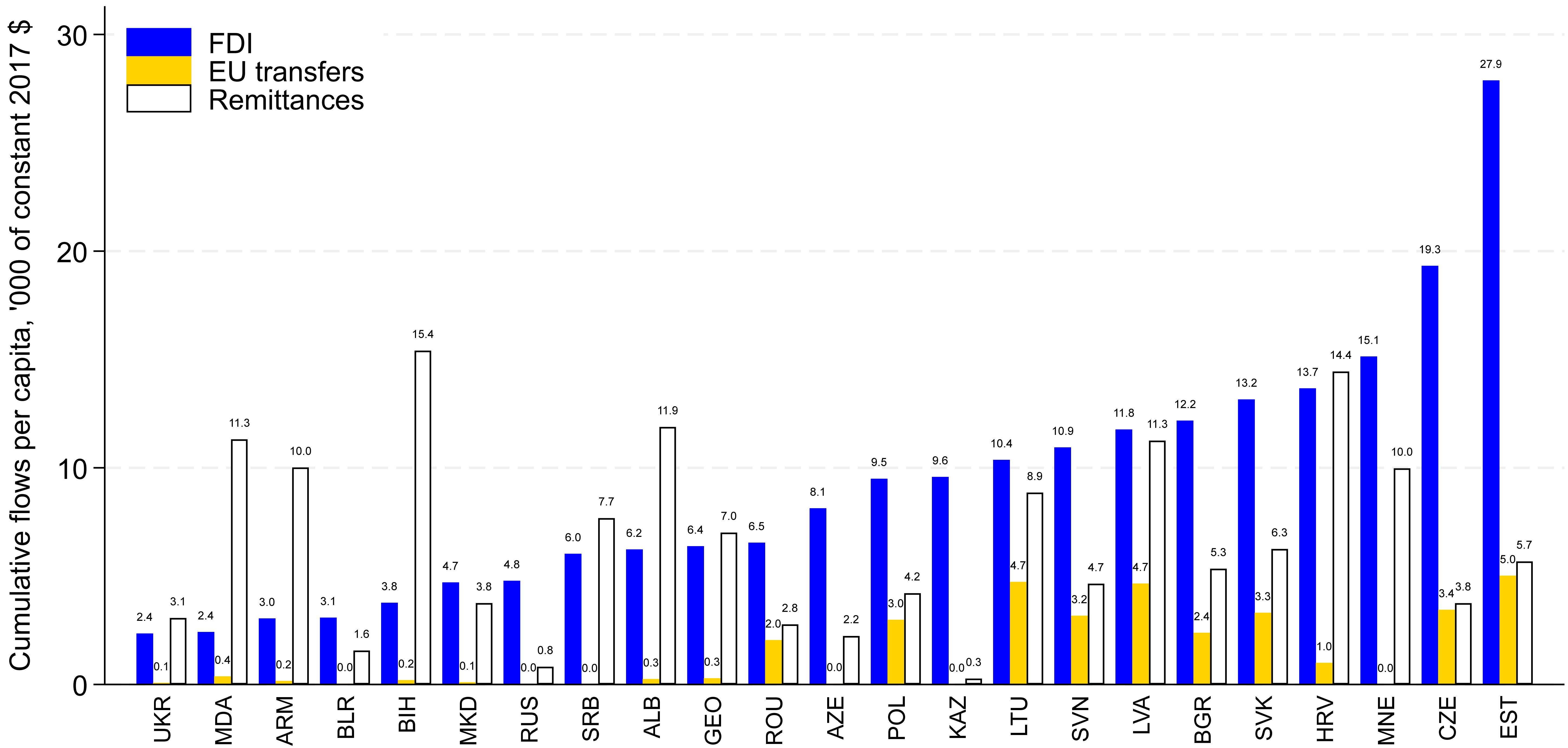
CONCLUDING REMARKS

- This strategy worked in Poland & Czechia but how do we know it will work for Ukraine?
- Ukraine needs to be a better student and there is much homework to do but this time it could be different
    - There is an overwhelming consensus in Ukrainian society regarding EU/NATO
    - Europe now views Ukraine as a part of Europe rather than a Russian sphere of influence or a buffer state.
    - Ukraine's chances will be better, of course, if the EU raises its own ambition and unity in the face of a triad of threats from a hostile Russia, a revisionist China, and a commercially aggressive but militarily disengaging United States.

You only live twice:
Once when you are born,
And once when you look death in the face

Haiku by James Bond in *You Only Live Twice* (1964)

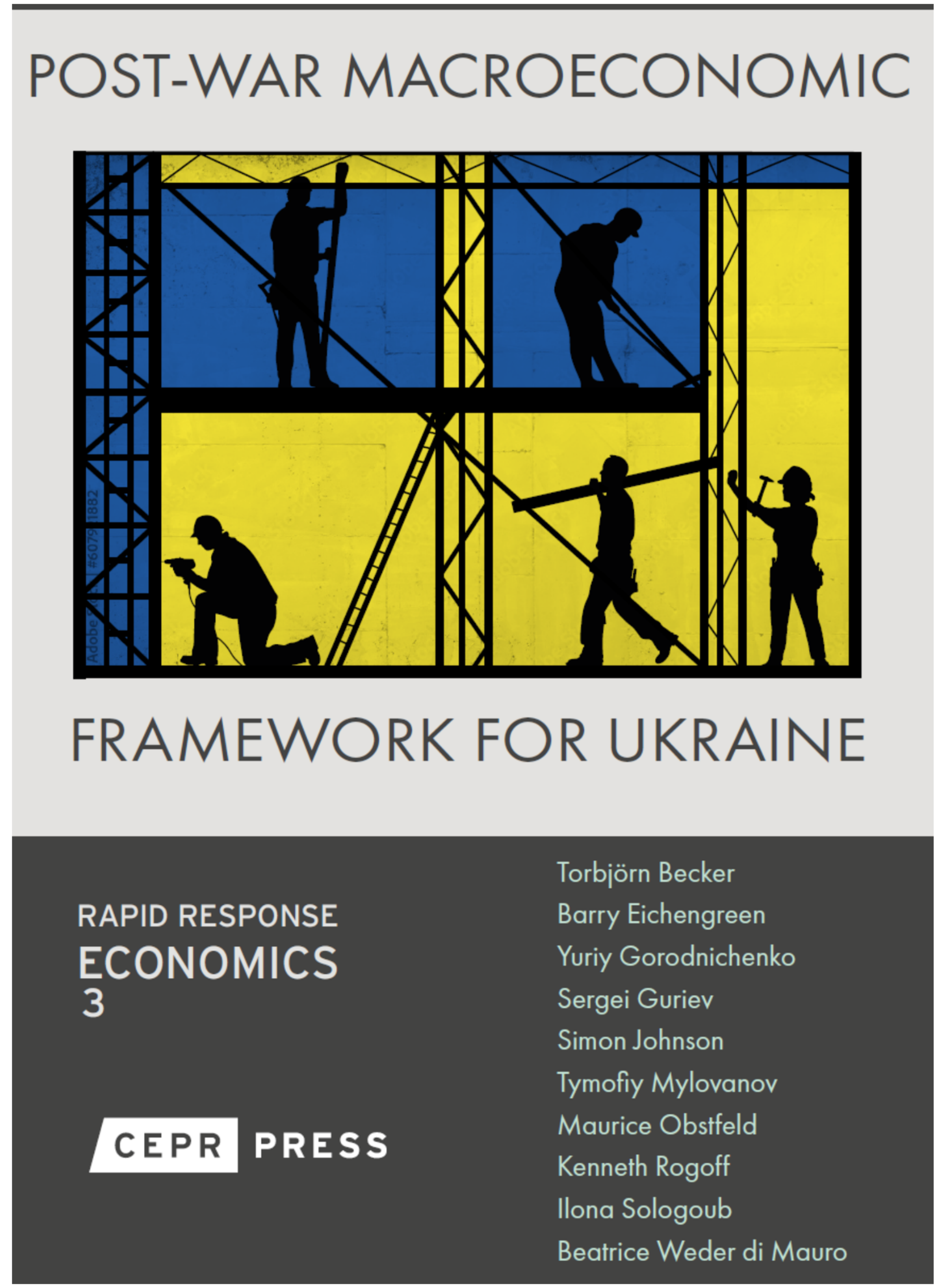
WHERE DID CAPITAL COME FROM?

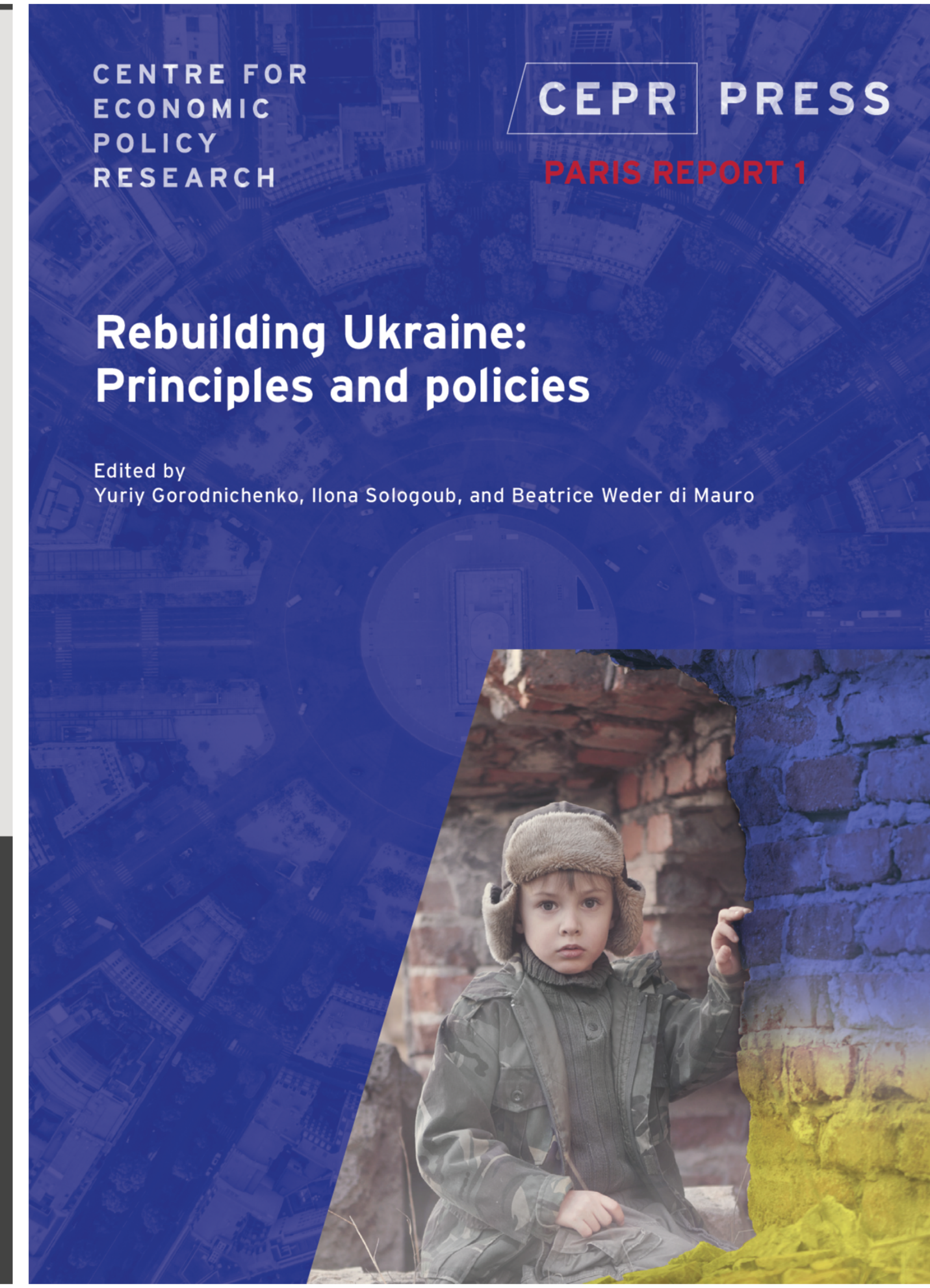


- Ukraine: remittance > FDI >> EU transfers
- Poland: FDI>> remittance > EU transfers

POST-WAR RECONSTRUCTION OF UKRAINE


A BLUEPRINT FOR THE RECONSTRUCTION OF UKRAINE
RAPID RESPONSE ECONOMICS 1
Torbjörn Becker
Barry Eichengreen
Yuriy Gorodnichenko
Sergei Guriev
Simon Johnson
Tymofiy Mylovanov
Kenneth Rogoff
Beatrice Weder di Mauro
CEPR PRESS


POST-WAR MACROECONOMIC
FRAMEWORK FOR UKRAINE
RAPID RESPONSE ECONOMICS 3
CEPR PRESS
Torbjörn Becker
Barry Eichengreen
Yuriy Gorodnichenko
Sergei Guriev
Simon Johnson
Tymofiy Mylovanov
Maurice Obstfeld
Kenneth Rogoff
Ilona Sologoub
Beatrice Weder di Mauro


CENTRE FOR ECONOMIC POLICY RESEARCH
CEPR PRESS
PARIS REPORT 1
Rebuilding Ukraine: Principles and policies
Edited by
Yuriy Gorodnichenko, Ilona Sologoub, and Beatrice Weder di Mauro