



# International Investment Income: Patterns, Drivers, and Heterogeneous Sensitivities

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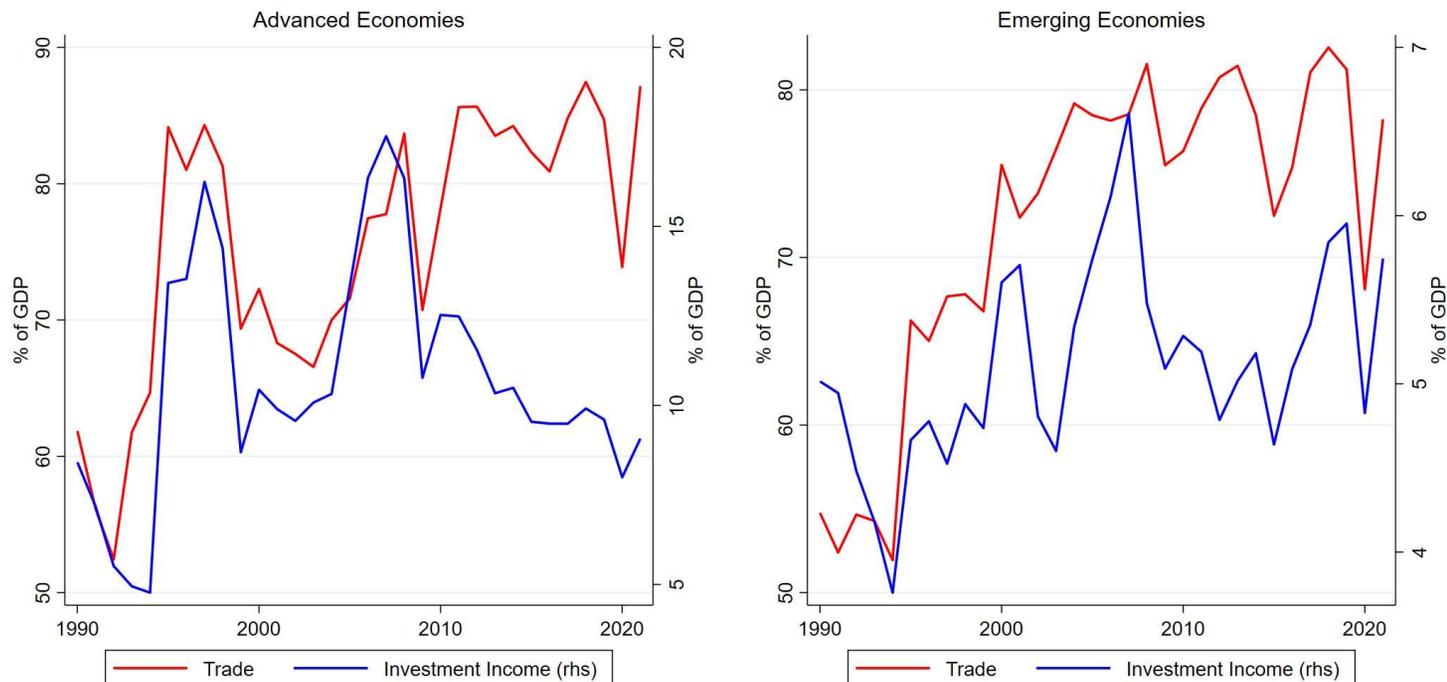
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# Motivation

- Financial globalisation since the mid-1990's, with much larger cross-border assets and liabilities (Lane and Milesi-Ferretti 2018).
  - Flows and dividends and interest should have increased...
  - ...but offsetting effect of downward trend in interest rates.
- Current episode of rising interest rates should increase primary asset income flows. What can we expect for the current account?

Sum of receipts and payments (%GDP, median)



# What we do, and find

- Stylized facts of the evolution of primary asset income since 1999.
  - Steady gross flows overall, but rising FDI and equity flows offset by decreasing debt and other flows.
- Panel analysis of drivers of yields.
  - Contrast advanced and emerging countries.
  - Broad dollar appreciations reduces FDI and equity yields.
  - Higher US interest rate raise other (banking), debt, and reserves.
  - Higher VIX reduces all yields.
  - Higher growth raises FDI yields
- Heterogenous impact on net income, due to different portfolios.
  - Net asset income tends to offset net trade in advanced economies.
  - More contrasted in emerging, amplification following US rates.
- Effect of interest rates on net income in specific episodes.
  - Limited in the 2013 taper tantrum.
  - Larger in the current episode, as short rates have moved.

# Outline

- Relation to the literature.
- Data and stylized facts on asset income.
- Econometric analysis of drivers
  - Conversion to country-specific impact of net income / GDP.
- Case studies if higher interest rates.
  - 2013 taper tantrum.
  - Current episode, including projection.

# Relation to the literature

- Global imbalances in current accounts and investment positions.
  - Assessment of pre-2008 situation, with role of financial development (Chinn and Prasad 2003, Gruber and Kamin, 2007, Caballero et al. 2008).
  - Granular view across sectors (Alfaro et al. 2014).
  - Evolving pattern (Chinn and Ito 2022, IMF 2014), role of portfolio choice (Devereux et al. 2020, Jian et al. 2022), refocus on positions (Alberola et al. 2020, Milesi-Ferretti 2022).
- Impact of shocks on current account.
  - Exchange rate (Obstfeld and Rogoff 2007, Chinn and Prasad 2003, Gruber and Kamin 2007, Cubeddu et al. 2019), with dominant currency paradigm (Boz et al. 2022, Gopinath et al. 2020).
  - Interest rate transmission (Antras 2023, Schuler and Sun 2022).
- Drivers of primary asset income.
  - Role of exchange rate, with mechanical valuation effect (Behar and Hassan 2022, Colacelli et al. 2021, Eugster and Donato 2022).
  - Effect of monetary policy (Auer 2019 for USA and Canada).

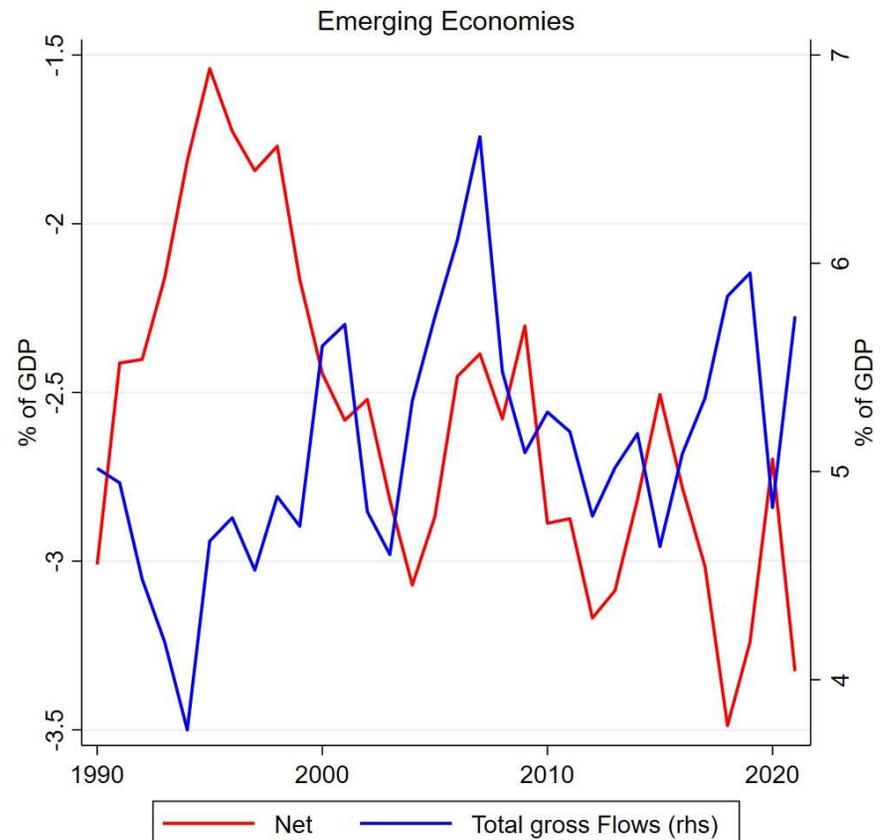
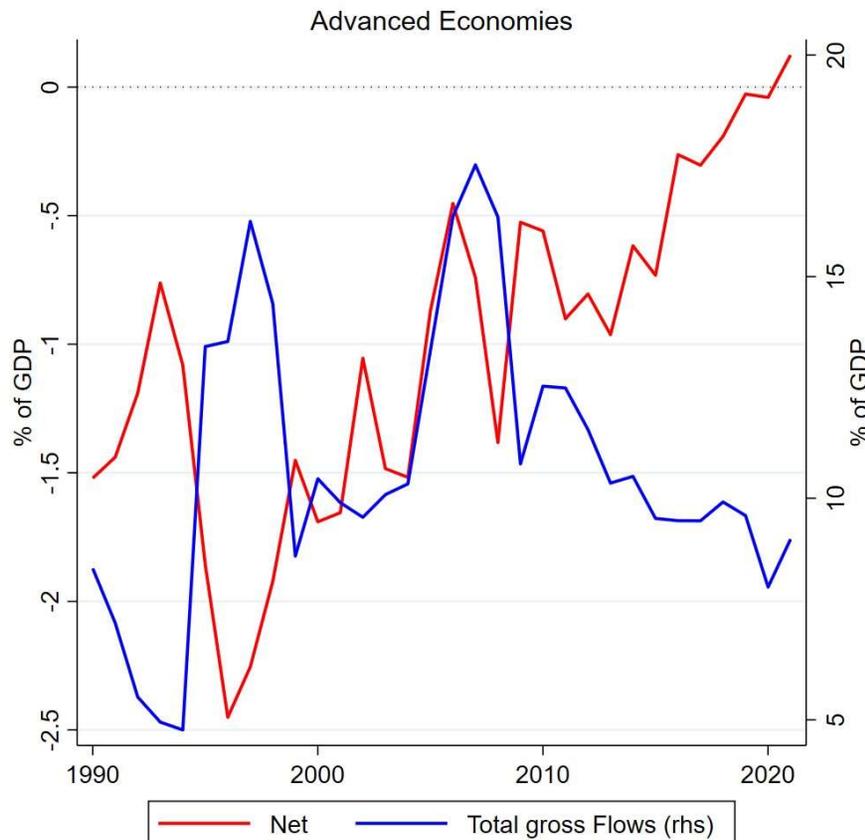
# Data sources

- Trade and primary income flows from IFS.
  - Total, FDI, equity, debt, other, and reserves.
- Investment positions from EWN database.
- Exchange rate composition from Bénétrix et al. (2020).
  - Until 2017, values kept for subsequent years.
  - Total, as well as debt and others.
  - Used to compute exchange rate with respect to currency basket of investment denomination.
- Interest rates from IFS and OECD.
- Macroeconomic data from IFS.
- Econometric analysis since 1999 over 46 countries (23 AE, 23 EME).
  - Stylized facts over a broader set.

# Stylized facts: overall asset income

- Gross flows (receipts + payments) increased until 2008, but not since.
- Net flows: narrowing deficit in advanced, widening in emerging.

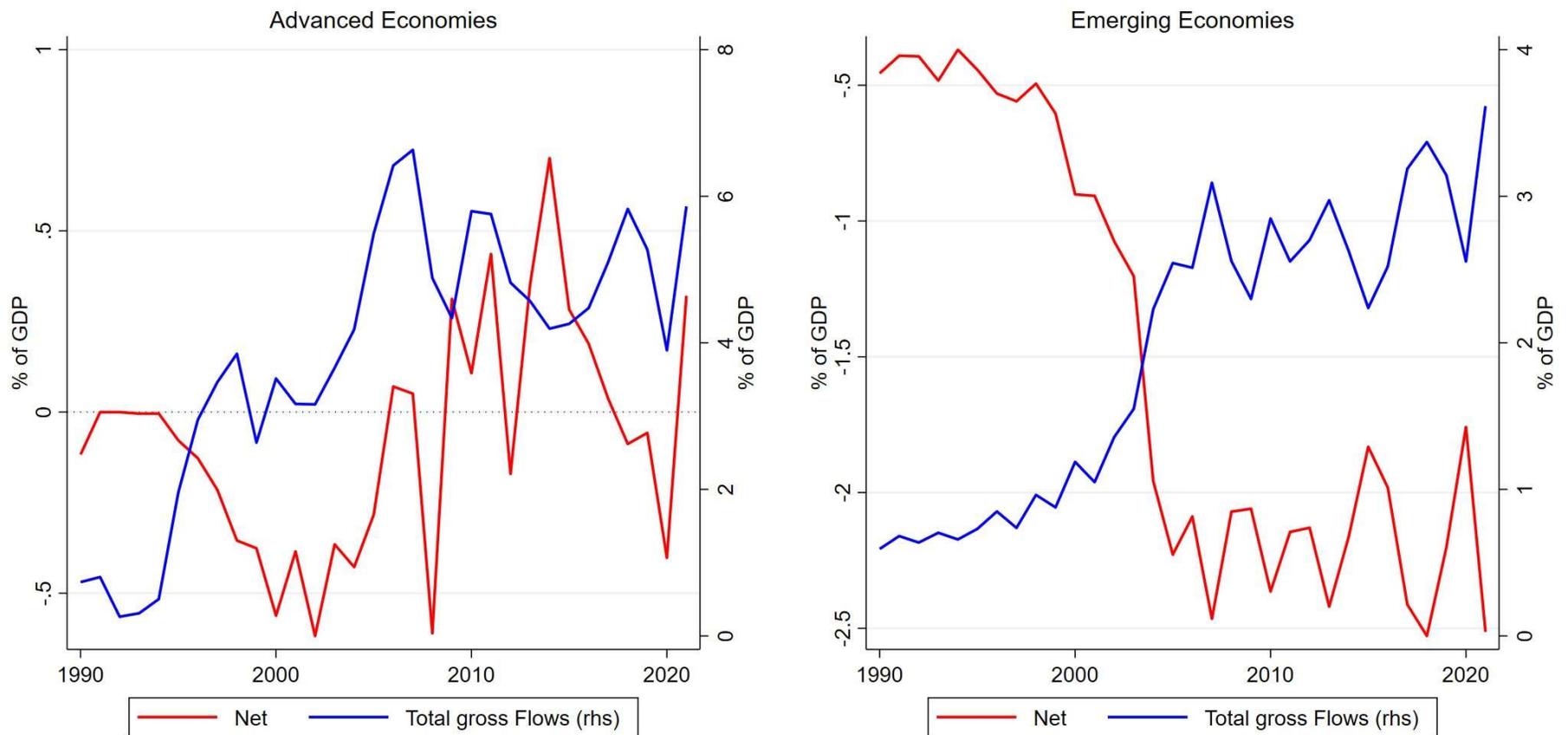
Total asset income (%GDP, median)



# FDI income flows

- Growing trend of gross flows, widening deficit in emerging countries.
- Similar growth of gross flows in equity income (in advanced).

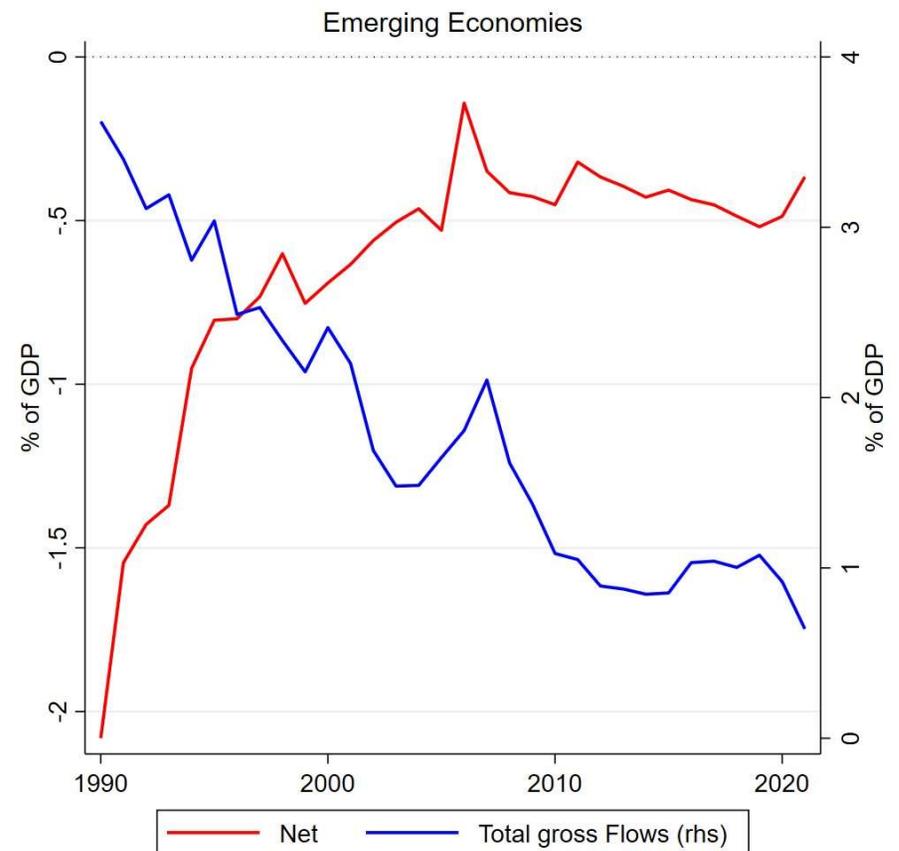
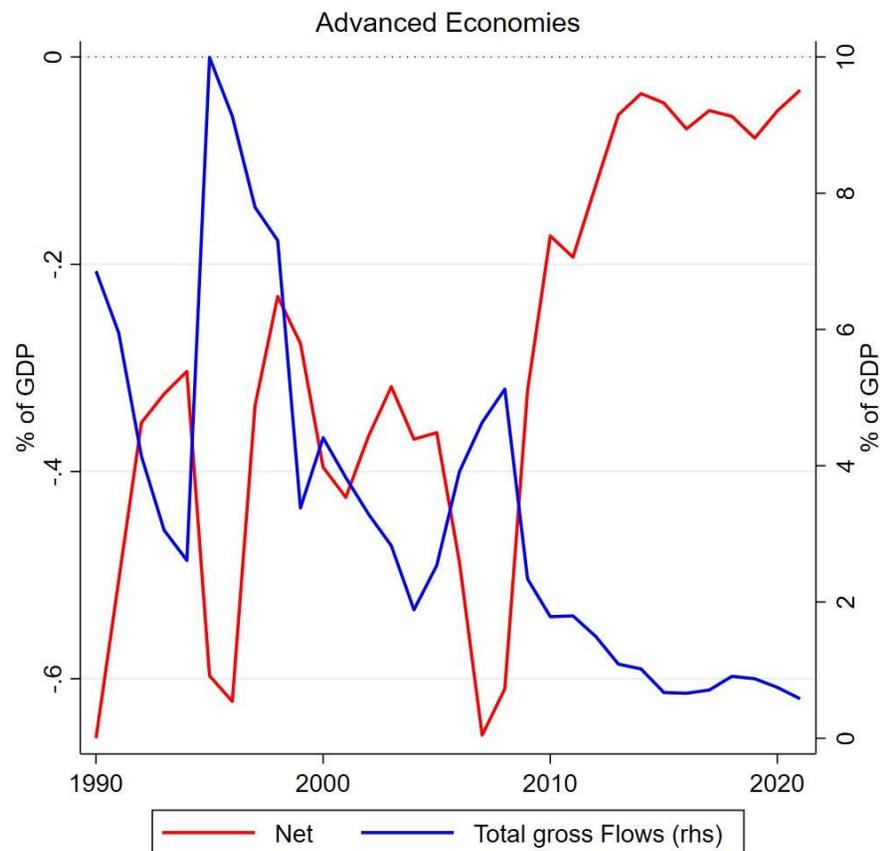
FDI asset income (%GDP, median)



# Other investment income flows

- Downwards trend in gross flows (lower interest rates).
  - Narrowing deficit in advanced, steady in emerging.
- Similar decrease of gross flow for portfolio debt (in advanced).

Other investment asset income (%GDP, median)



# Econometric assessment

- Yield: income flow in year  $t$  / position end  $t-1$ .
- Panel regression of (ln) yield on:
  - Own lag.
  - % change in exchange rate between dollar and basket currency of denomination (mechanical effect).
  - % appreciation of broad dollar index: dominant role in trade and international finance.
  - US interest rates (3 months and 10 years), VIX, SP500.
  - Real growth and inflation (global for receipts, domestic for payments).
  - Domestic interest rates (advanced countries).
- Regression of trade/GDP on similar variables for comparison of trade and income balance.
- Effect often on both receipts and payments, with unclear net pattern.
  - Combine panel estimates for yields with country-specific asset and liabilities positions by categories to get effects on income as % of GDP.

# Effect of the broad dollar index

- A dollar appreciation **reduces yields**.
  - Concentrated in **FDI**, and in **equity**.
  - **Stronger on payments**, especially in emerging economies FDI.
- Consistent with dominant invoicing currency, if multinationals dominate trade.

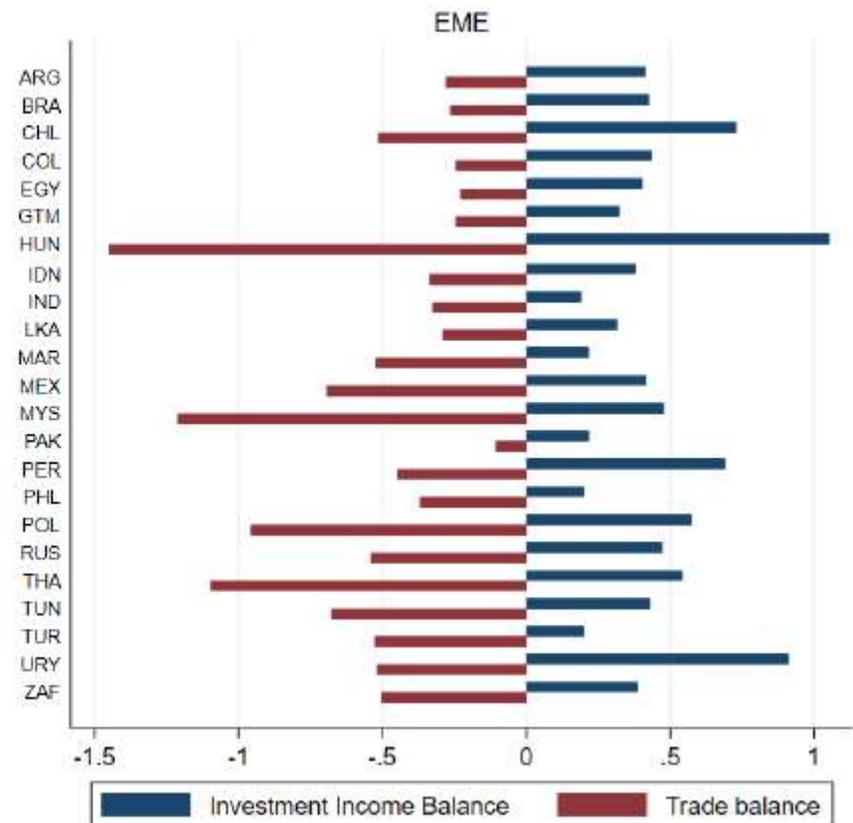
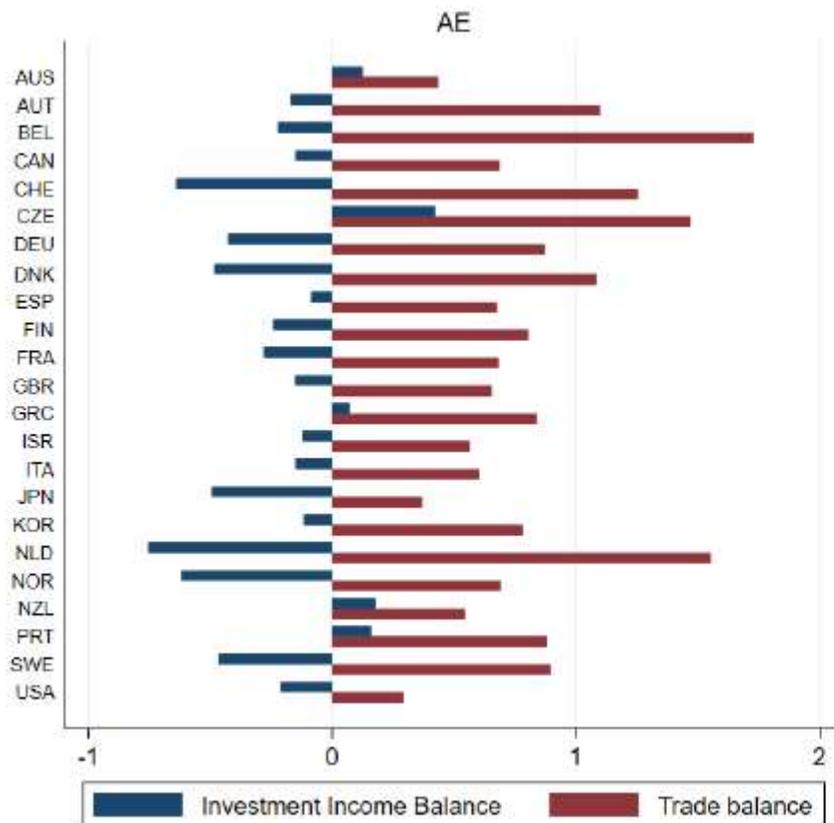
Broad dollar appreciation

	Total		FDI		Equity	
	Receipt	Payment	Receipt	Payment	Receipt	Payment
All	-1.136***	-1.718***	-2.364***	-2.847***	-0.903	-2.659***
ADV	-1.098***	-0.981***	-2.814***	-3.191***	-2.120***	-2.776***
EME	-0.949	-1.474**	-2.072*	-3.096***	2.153	-1.232
	Debt		Other investment		FX res.	
	Receipt	Payment	Receipt	Payment	Receipt	
All	-2.024**	0.216	0.282	-0.154	-0.386	
ADV	-0.113	0.635	0.711	0.777*	-0.944	
EME	-3.237*	0.789	0.235	-0.509	0.0343	

# Dollar appreciation and net income

- Stronger dollar lowers yields, with contrasted net effect.
  - Positive net asset income effect for emerging, offsets trade deficit.
  - Opposite for advanced.

Impact of 10% dollar appreciation on net **trade** and **asset** income (% GDP)



# US short-term interest rate

- Higher US 3 months rates raises yields.
  - Concentrated in other payments and reserves.
  - Negative effect on equity payments in advanced countries.

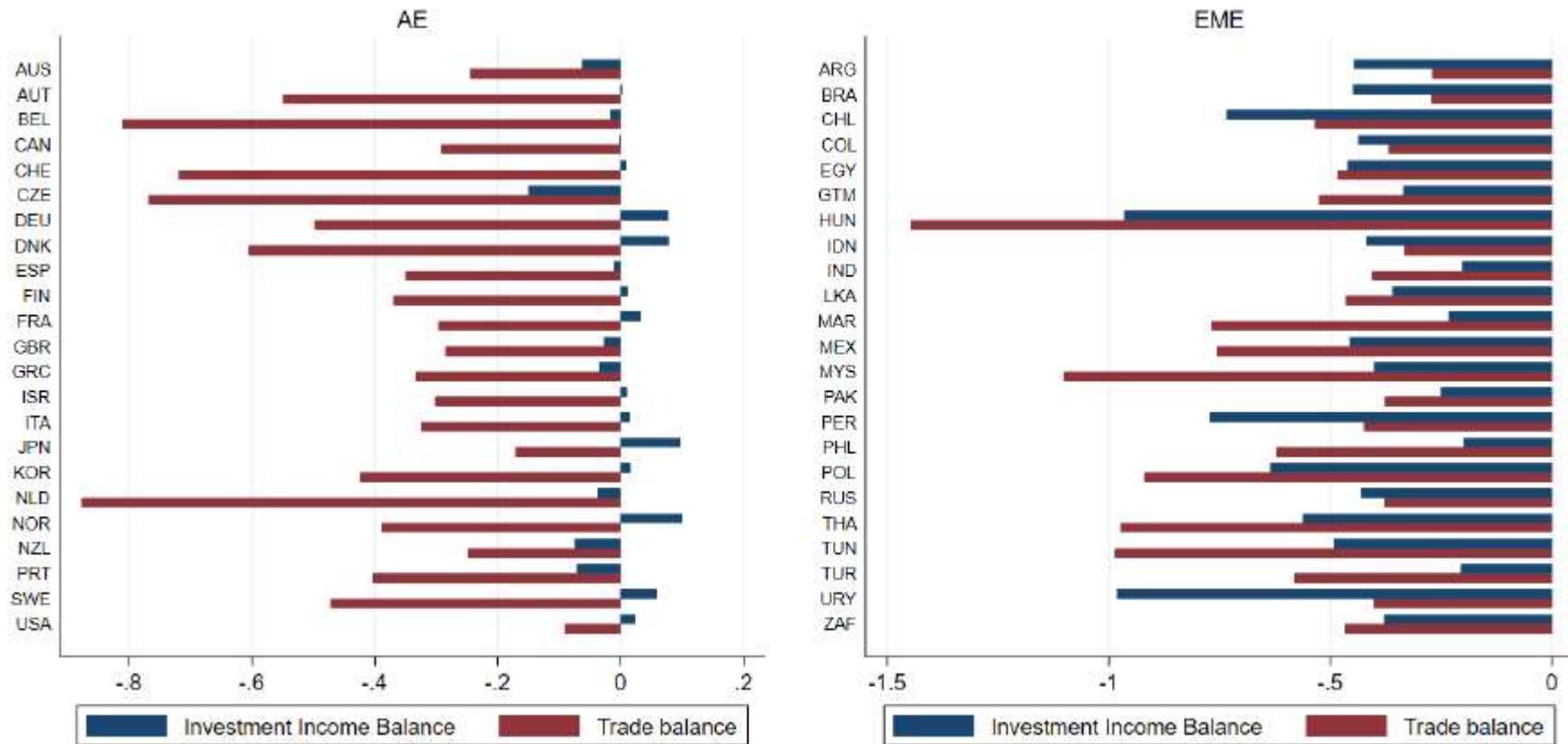
US 3 month interest rate

	Total		FDI		Equity	
	Receipt	Payment	Receipt	Payment	Receipt	Payment
All	0.0462***	0.0347***	0.0166	-0.00804	0.0177	-0.0363**
ADV	0.0156***	0.0158**	0.0198	0.016	0.000882	-0.0256**
EME	0.0781***	0.0878***	0.0201	-0.0279*	0.0577	-0.103
	Debt		Other investment		FX res.	
	Receipt	Payment	Receipt	Payment	Receipt	
All	0.00447	-0.0012	0.0203*	0.0708***	0.0898***	
ADV	-0.0203*	0.00805	0.0194	0.0544***	0.0738***	
EME	0.0547	-0.0184	0.0221	0.0613***	0.120***	

# US short-term rate and net income

- Limited effect on net income in advanced economies.
- Deterioration of net income in emerging, amplifies trade effect.

Impact of 1 ppt increase of US 3 months rate on net **trade** and **asset** income (% GDP)



# US long-term interest rate

- Higher rate has no impact overall.
  - Raises yields on **debt**, **other** investment yields, **reserves**
  - Limited to advanced countries.

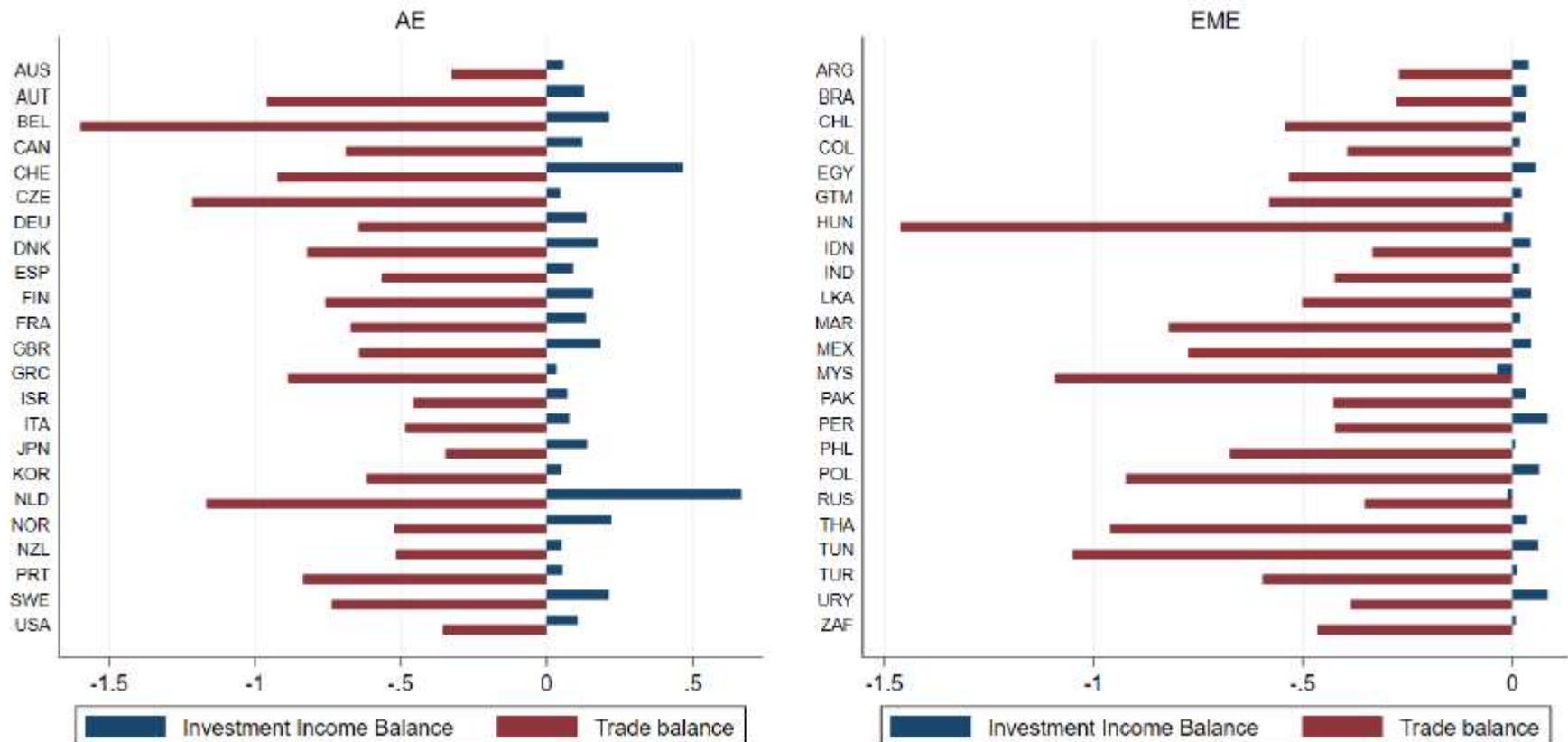
US 10 year interest rate

	Total		FDI		Equity	
	Receipt	Payment	Receipt	Payment	Receipt	Payment
All	-0.00886	0.0281	-0.0195	0.00552	0.106	-0.0152
ADV	0.00663	0.00467	-0.00741	-0.0266	-0.0655	-0.0892***
EME	-0.0205	0.0421	-0.0215	-0.00132	0.326*	0.0732
	Debt		Other investment		FX res.	
	Receipt	Payment	Receipt	Payment	Receipt	
All	0.0526	0.0483**	0.0654*	0.110**	0.130***	
ADV	0.0763***	0.0401*	0.108***	0.0982*	0.141**	
EME	0.00984	0.0292	0.0269	0.0336	0.115	

# US long-term rate and net income

- Heterogeneous increase in net asset income in advanced economies.
- Moderate increase in emerging economies.

Impact of 1 ppt increase of US 10 year rate on net **trade** and **asset** income (% GDP)



# VIX and GDP growth

- Higher VIX leads to a broad decrease in yields.
  - Both on receipts and payments.
  - Stronger in equity and other investment.
- Stronger growth raises yields.
  - Especially in FDI and equity (advanced economies).
  - Offsetting effects on receipts and payments.
  - Reduces yields on reserves.

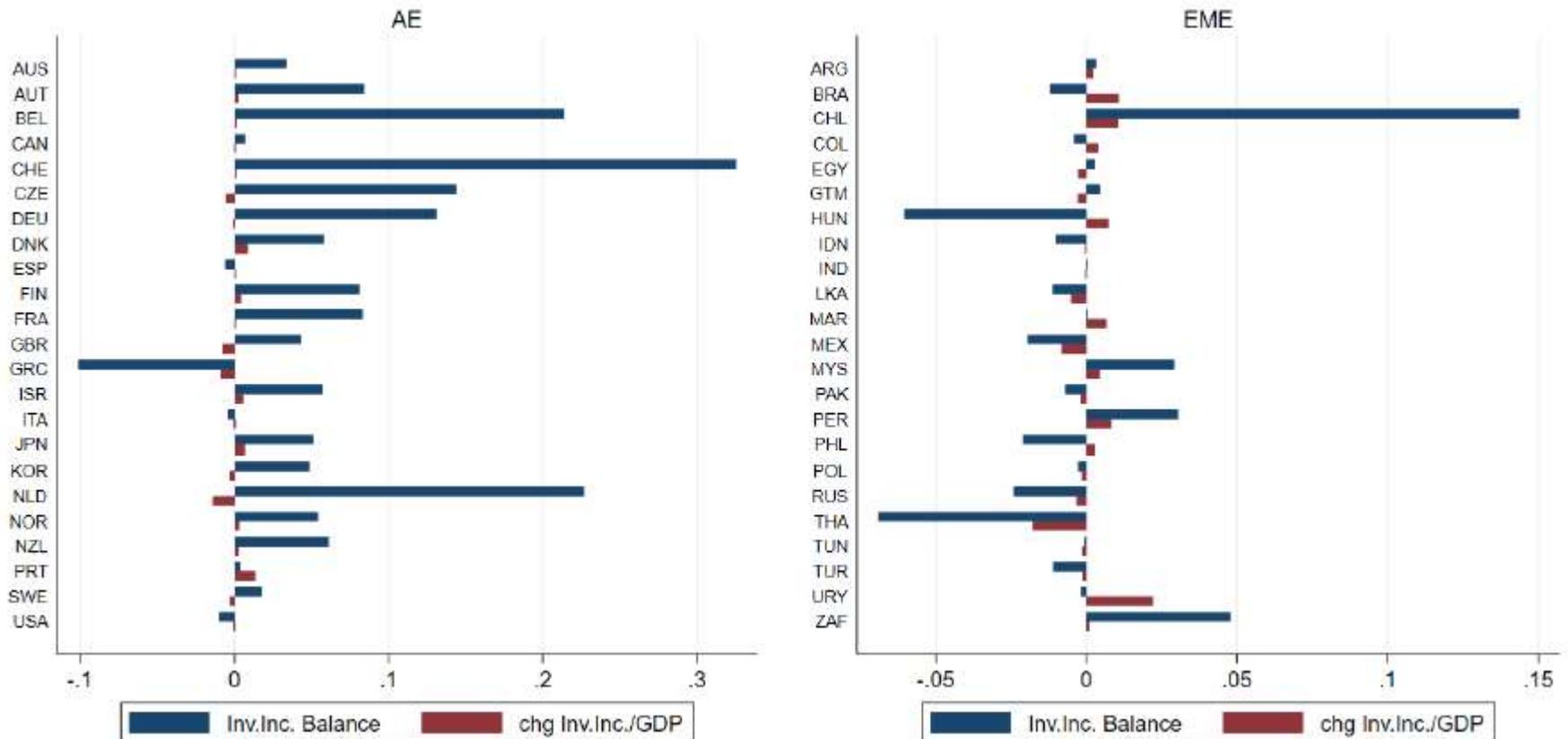
# Case studies of interest rates

- 2013 taper tantrum: rapid increase in long-term rate, not short-term.
  - Limited estimated effect, even smaller actual change in net income.
- Current cycle of rising rates.
  - 2021 as the initial period.
  - Actual value until mid-2023, projections until 2025 (interest rates in US, major economies, and inflation).
  - Higher US rates reduce emerging economies net asset income, more so as time passes.
  - Initial (2023) effect more favorable and contrasted in advanced economies, but then worsens.
  - Higher domestic rates (advanced) worsen net income.
  - Higher inflation worsens net income in 2023.

# Taper tantrum

- Fitted effect from higher US rates (long-term rate).
  - Moderate increase in advanced countries, heterogeneous in emerging.
- Actual change even smaller).

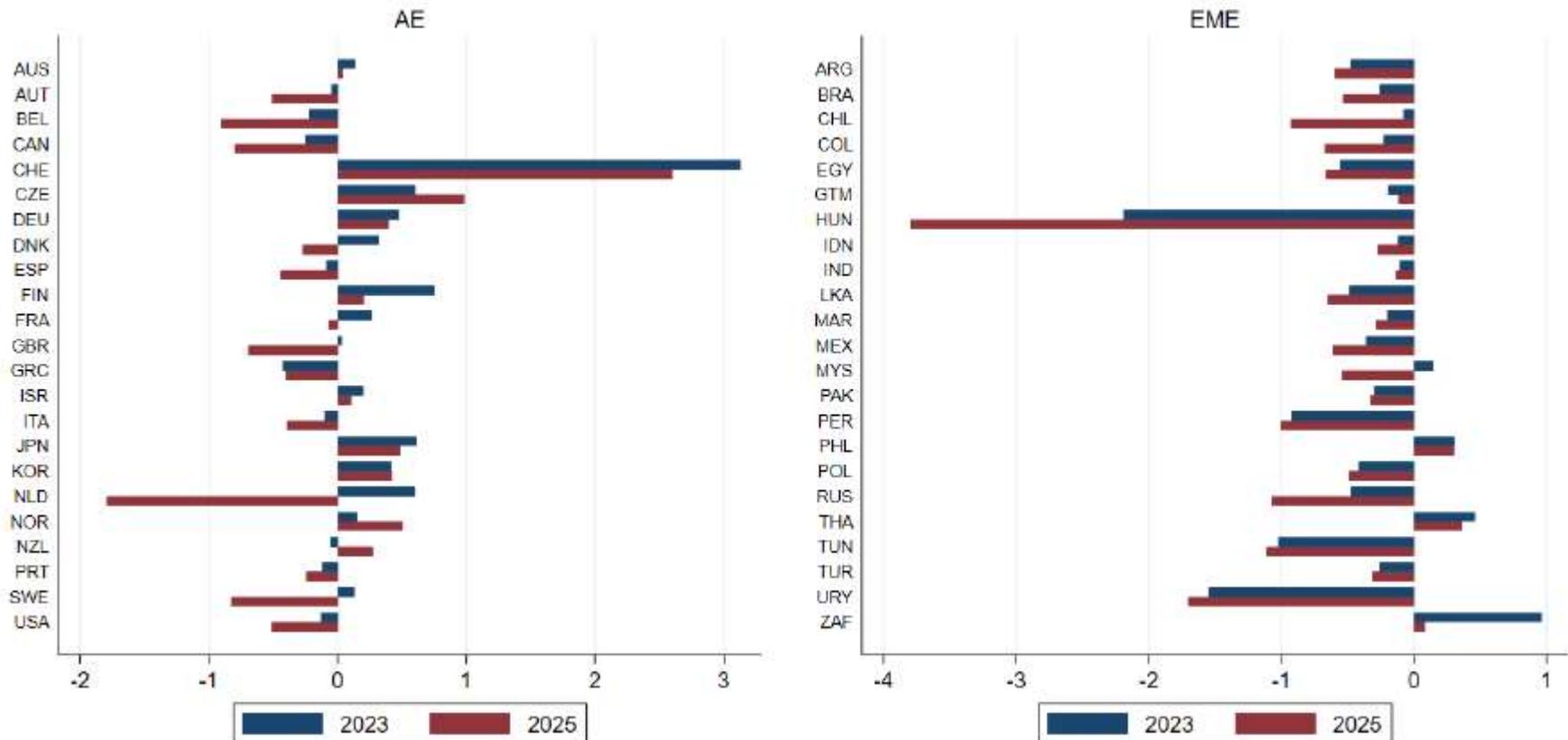
Fitted (from interest rates) and actual change in net asset income (% GDP)



# Current rise: US rates

- Heterogenous in advanced, with shift towards more negative by as time passes).
- Negative, and growingly sow, in emerging countries.

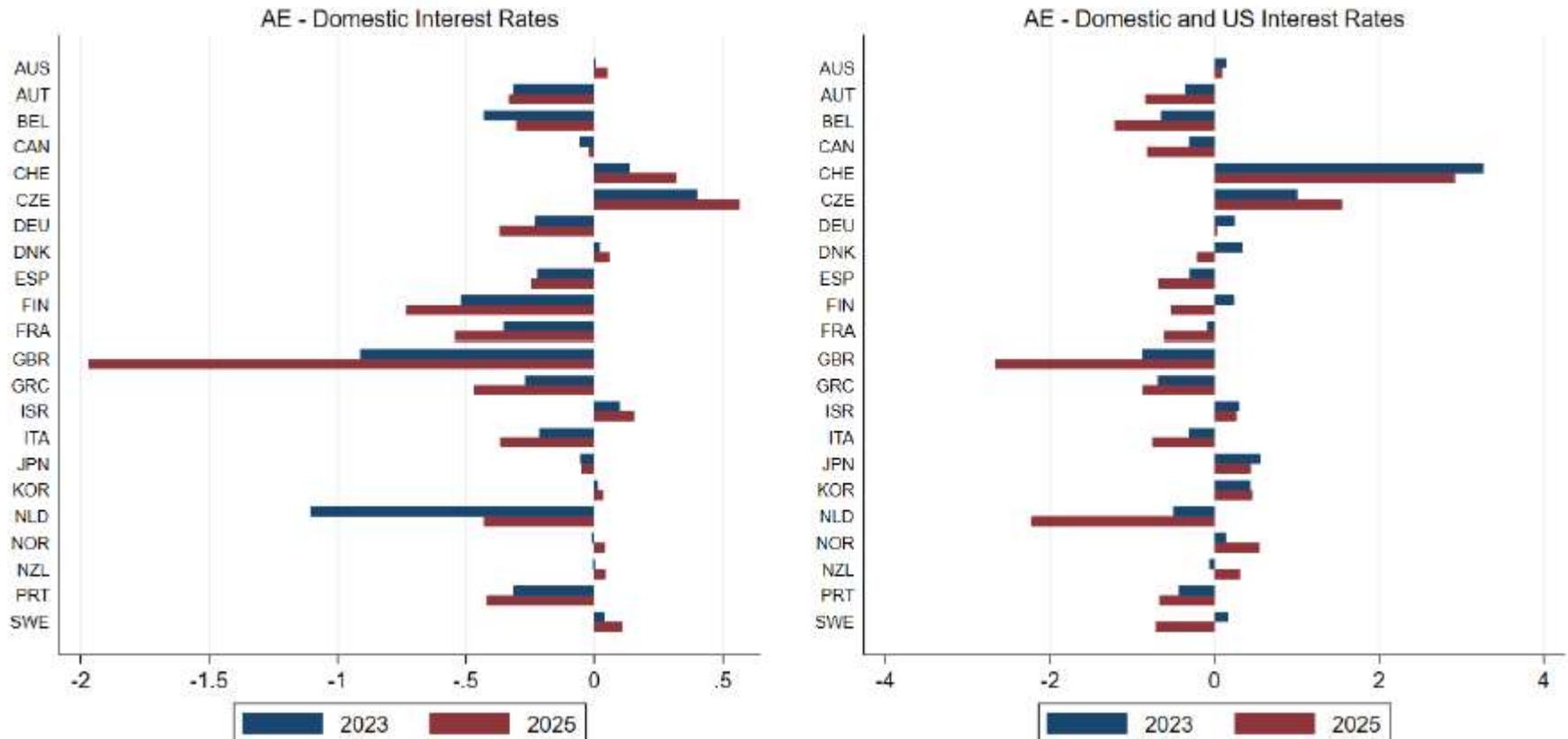
Effect of US rates (2021-2023 and 2021-2025) on net asset income (% GDP)



# Current rise: US and domestic rates

- Focus on advanced countries.
- Domestic rates worsen the net asset income.
- Overall effect of higher US and domestic rates shifted towards negative.

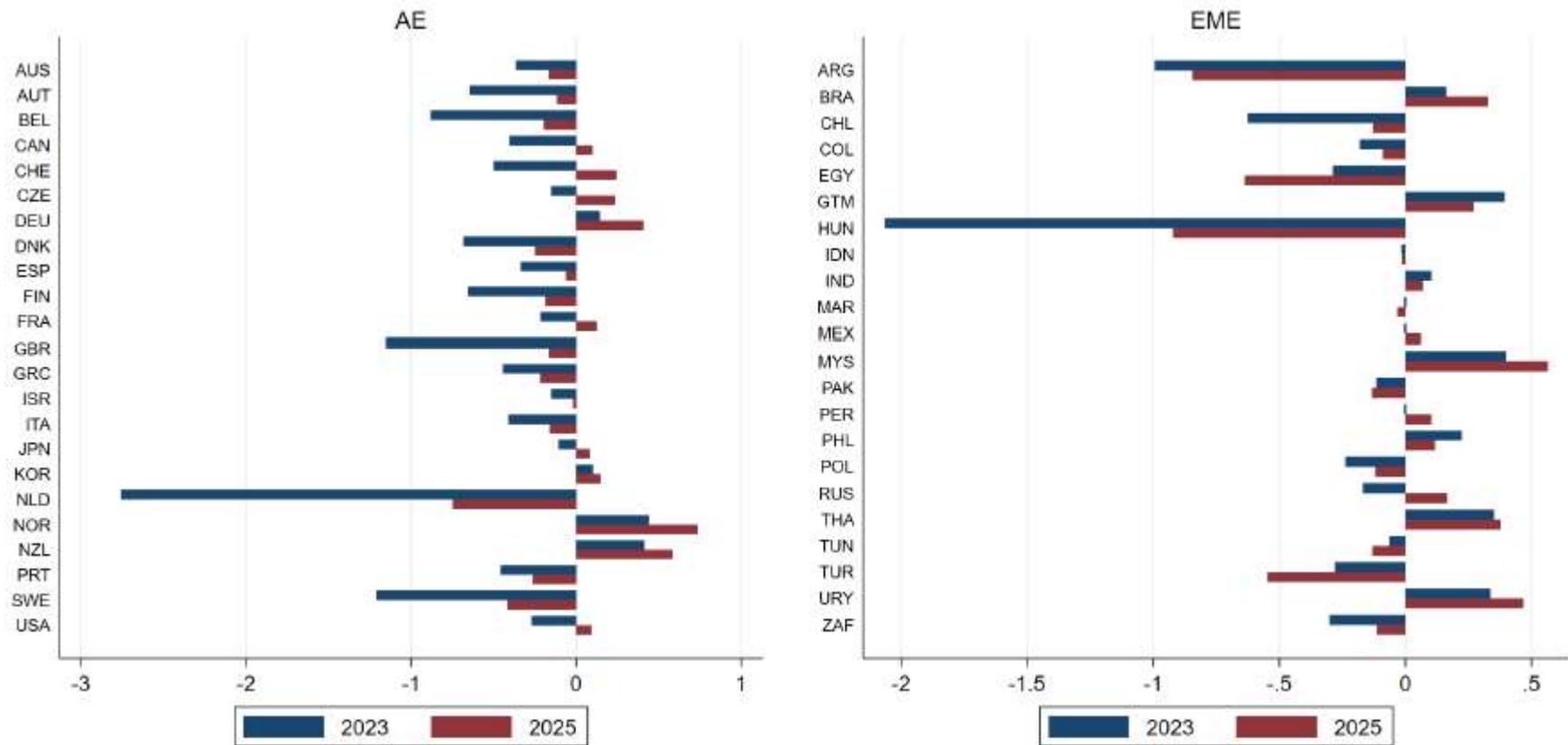
Effect of rates (2021-2023 and 2021-2025) on net asset income (% GDP)



# Current rise: inflation

- Inflation temporarily worsens net asset income in advanced.
- More heterogeneous in emerging.

Effect of inflation (2021-2023 and 2021-2025) on net asset income (% GDP)



# Conclusion

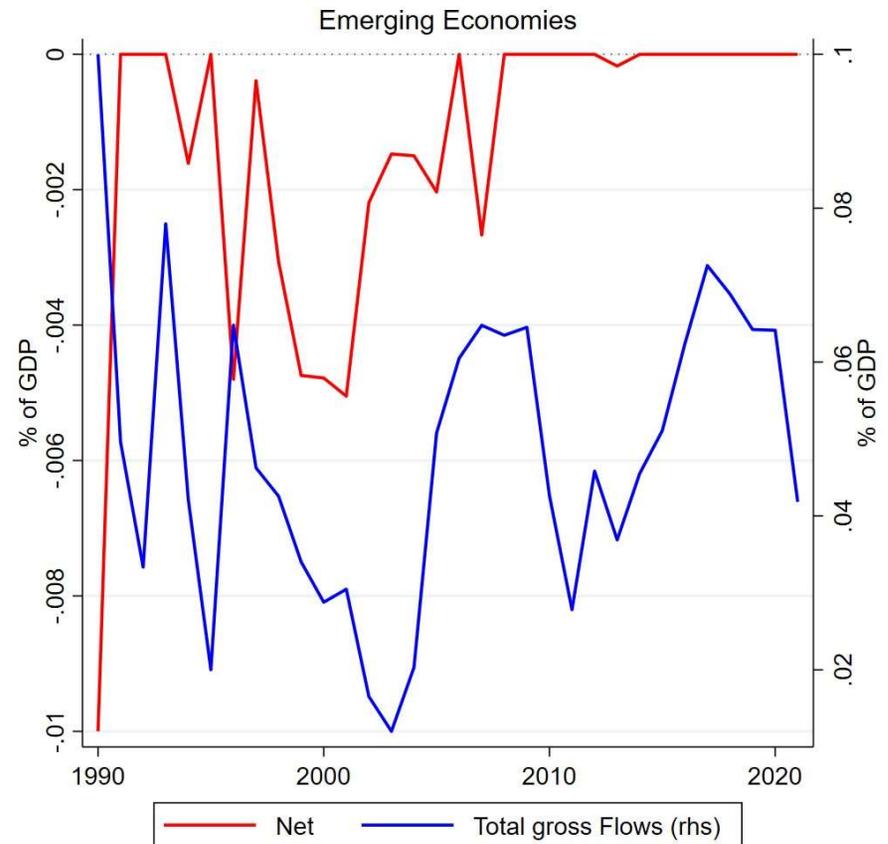
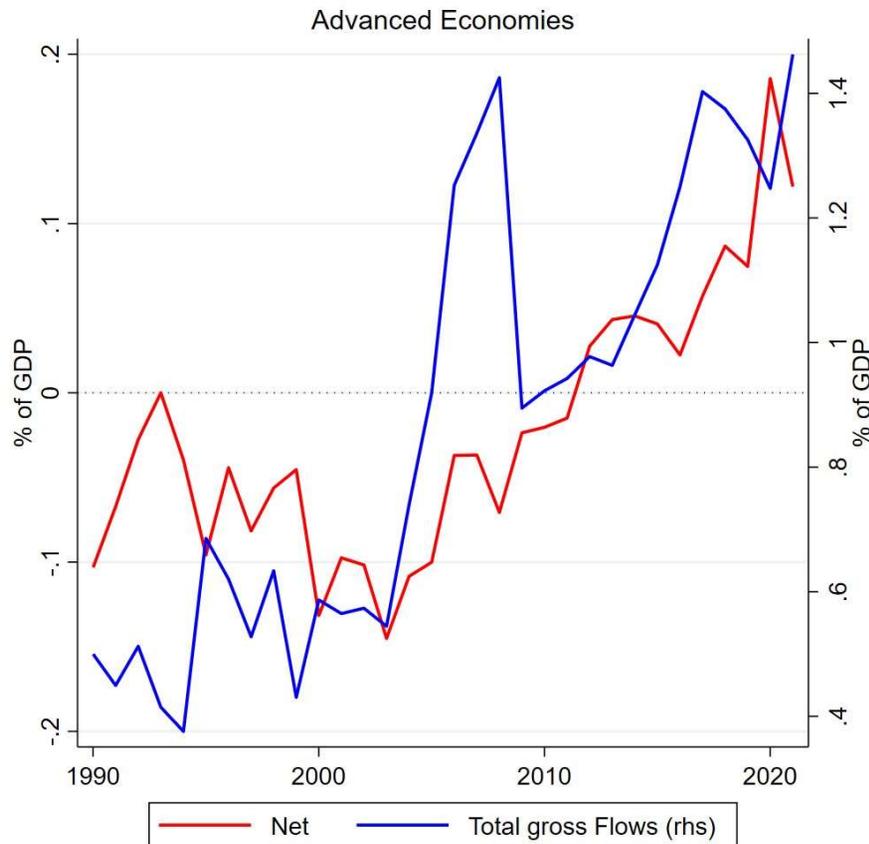
- Financial globalisation should have boosted the role of primary asset income in the current account.
  - Indeed the case for FDI and equity, not so for debt and other due to offsetting trend reduction in interest rates.
- Panel analysis over several drivers on yields.
  - Contrasted across economies group, and across types of assets.
  - Impact on both receipts and payments.
  - Contrasted impact on net asset income, due to heterogenous assets and liabilities (size, composition).
  - Limited impact of higher rates in taper tantrum, but more pronounced in the current phase.
- Contribution to growing literature on asset income flows, areas of future work.
  - Improve data on currency composition.
  - Adding up constraints.
  - Models of shocks impact on dividends, interest rates, and exchange rate.

# ADDITIONAL SLIDES

# Equity income flows

- Rising gross flows in advanced economies, remain moderate beyond.
  - Switch into surplus for advanced.

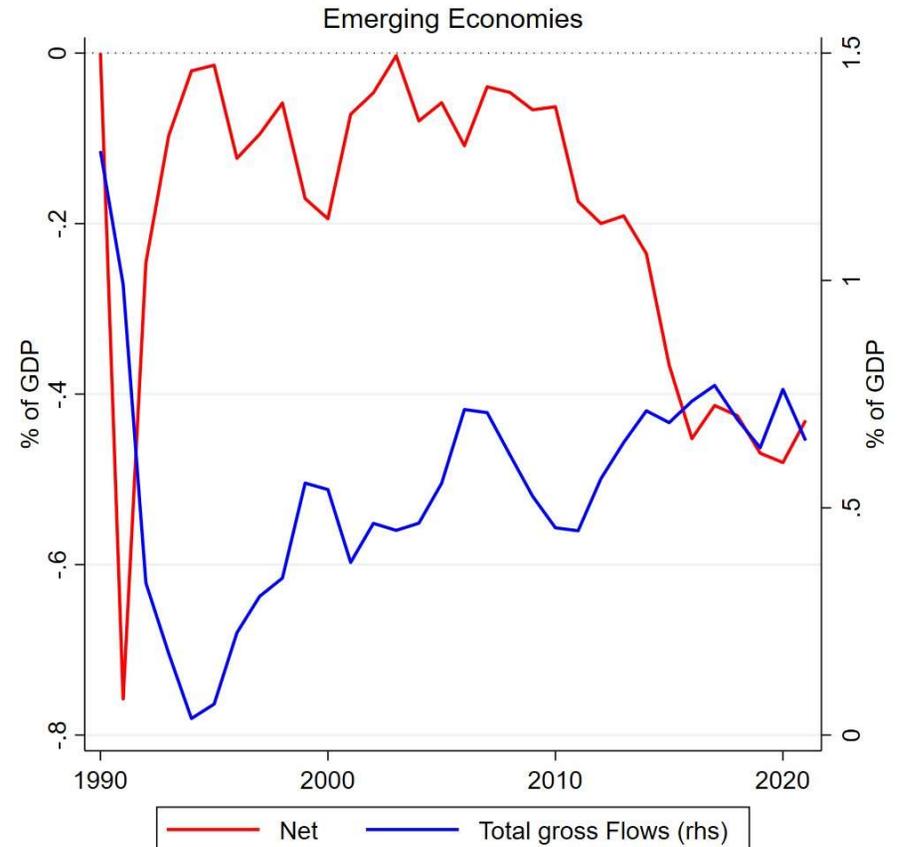
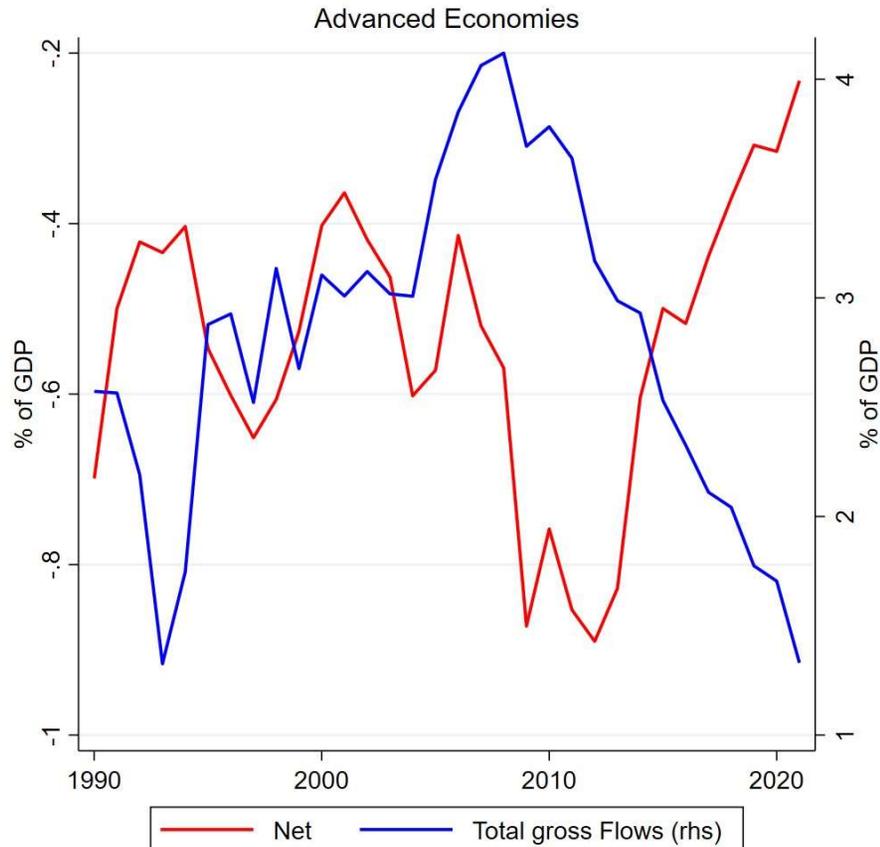
Portfolio equity asset income (%GDP, median)



# Portfolio debt income flows

- Gross flows increased until 2008, with subsequent decrease in advanced.
- Growing advanced surplus and emerging deficit in recent years.

Portfolio debt asset income (%GDP, median)



# VIX

- Higher VIX leads to a **broad decrease** in yields.
  - On receipts and payments, with no clear effect in net terms (at this stage).
  - Stronger in **equity** and **other** investment.

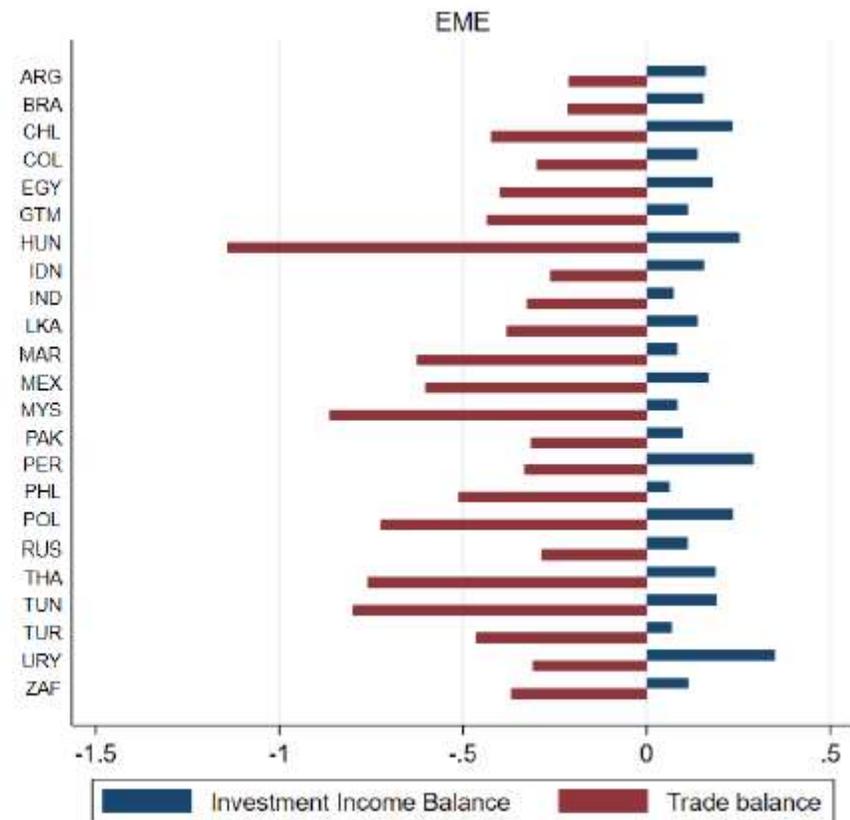
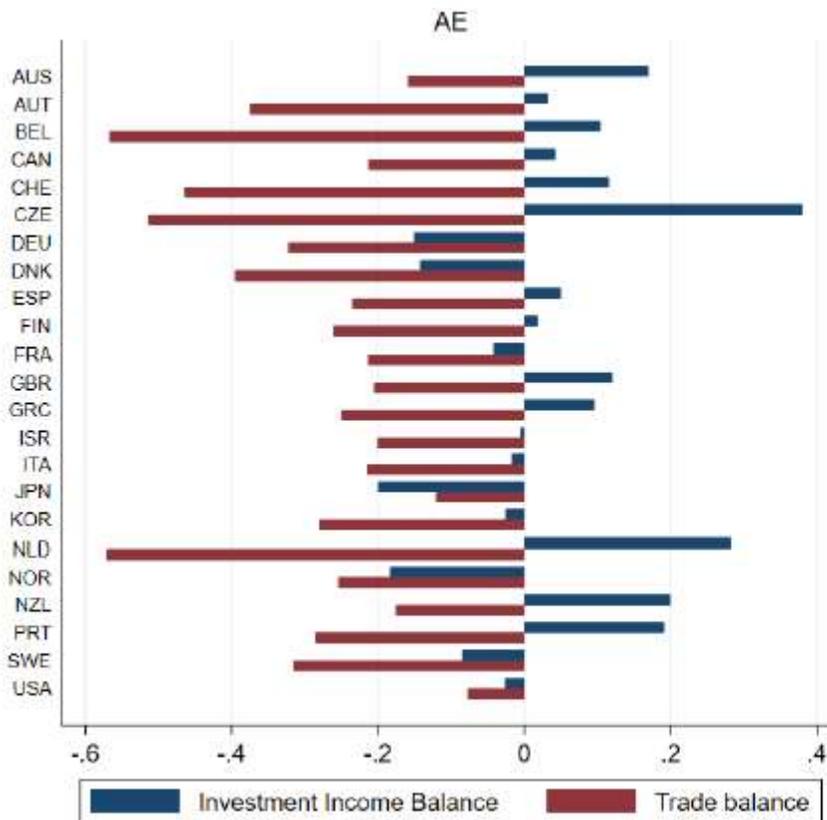
VIX (normalized)

	Total		FDI		Equity	
	Receipt	Payment	Receipt	Payment	Receipt	Payment
All	-0.0636***	-0.0583***	-0.0255	-0.0899***	0.0319	-0.154***
ADV	-0.0542***	-0.0622***	-0.0530**	-0.0867***	-0.0931***	-0.168***
EME	-0.0691**	-0.0582**	0.00322	-0.0936***	0.243	-0.202**
	Debt		Other investment		FX res.	
	Receipt	Payment	Receipt	Payment	Receipt	
All	-0.121***	-0.0435**	-0.202***	-0.0907***	-0.140***	
ADV	-0.0657***	-0.0318	-0.151***	-0.113***	-0.0960**	
EME	-0.161*	-0.0381	-0.248***	-0.0755**	-0.193***	

# VIX and net income

- Higher VIX reduces yields, but more strongly for payments.
- Increase in net income, partial offset of effect on trade balance.

Impact of 1 std error VIX increase on net **trade** and **asset** income (% GDP)



# Real growth

- Stronger growth raises yields.
  - Epecially in FDI and equity (advanced).
  - Offsetting effects on receipts and payments.
  - Reduces yields on reserves.

Real GDP growth

	Total		FDI		Equity	
	Receipt	Payment	Receipt	Payment	Receipt	Payment
All	0.0285***	0.458	0.0741***	1.941***	0.000664	-0.222
ADV	0.0264***	1.212***	0.0482***	2.801***	0.0191**	1.200**
EME	0.0307**	0.24	0.0940***	2.044***	-0.0007	-1.104
	Debt		Other investment		FX res.	
	Receipt	Payment	Receipt	Payment	Receipt	
All	-0.0136	-0.317	-0.0414***	-0.392	-0.0499***	
ADV	-0.0186***	0.799	-0.0451***	-0.883	-0.0422**	
EME	-0.0023	-0.453	-0.0357	0.104	-0.0629***	