Global Trade Analysis Project

Refining Savings in the GTAP Data Base

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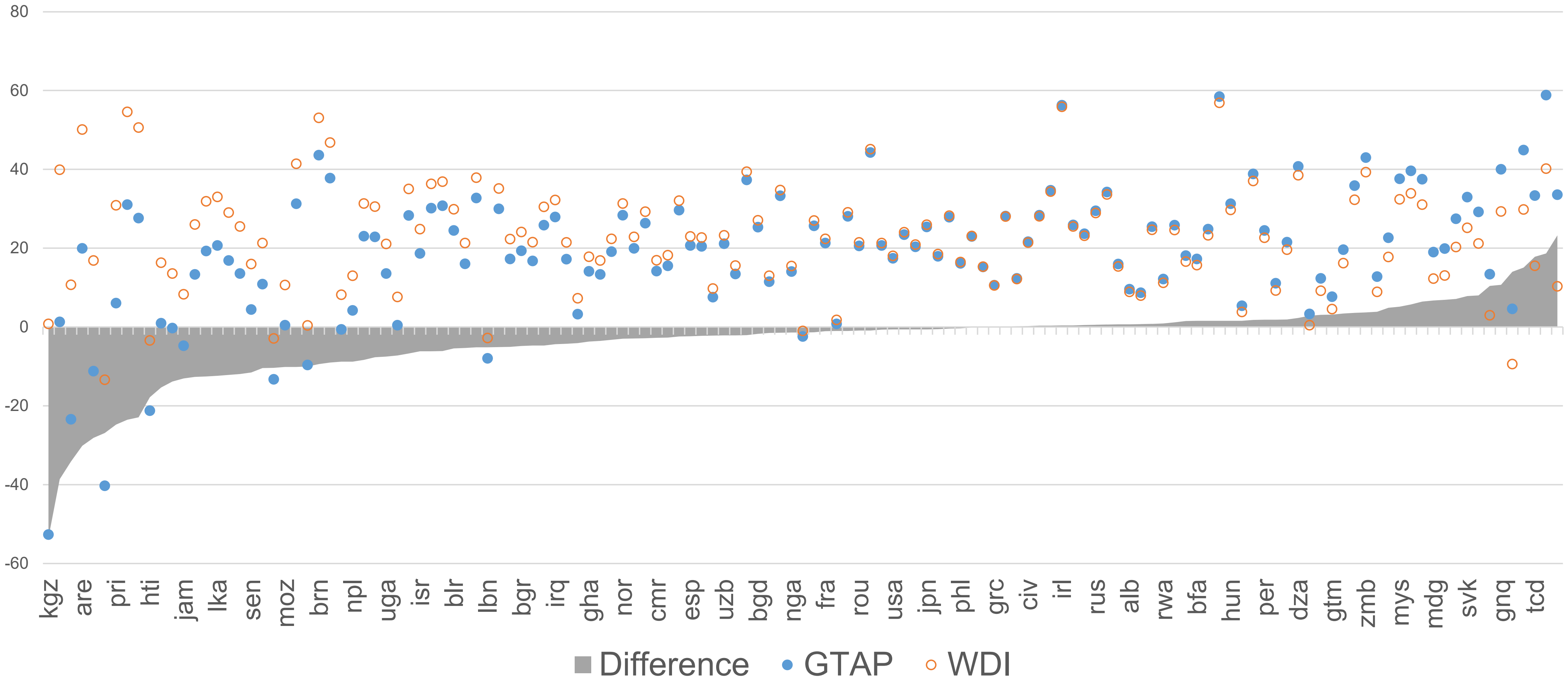
Outline

- Background
- Issue and objective
- Data sources comparison
- Implications and takeaway

Macroeconomic condition

- **GDP = C + G + I + X - M**
  - Where Gross Domestic Product and trade values (eXports and iMports) are targets
  - Other final expenditures need to adjust (private Consumption, Government consumption and Investment)
  - Trade values are balanced for merchandise and services
  - Note there are no stock changes or statistical discrepancies
- **Can compute Gross Domestic Savings**
  - GDP – Final consumption (C+G)
  - Contrast GTAP against WB

2017 Gross Domestic Savings (% of GDP)



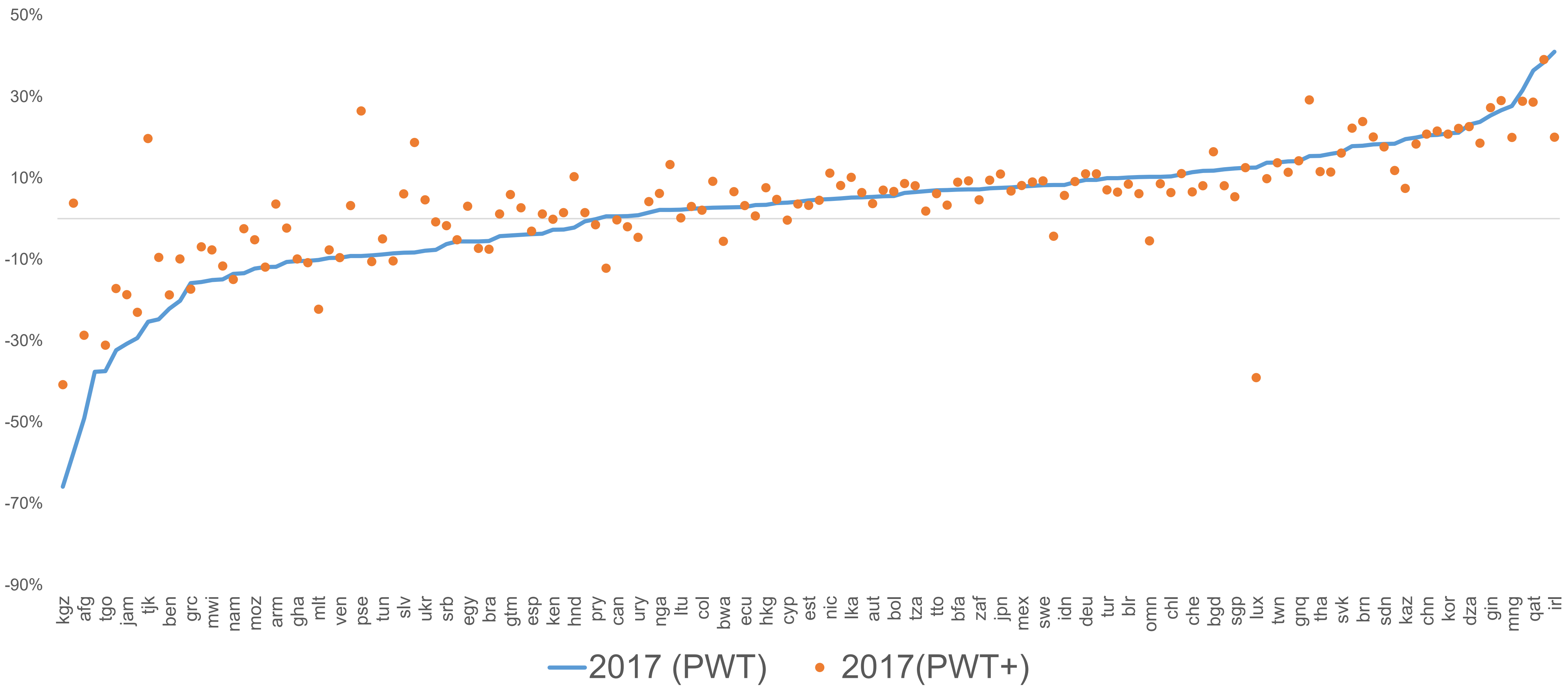
Net Saving, computed as a residual

- **S – I = X – M**
  - Where S is net saving, I is investment, net of depreciation
- **S – I = X – M + REMI – REMO + FINCR – FINCP + AIDI – AIDO**
  - Where remittances in and out are REMI, REMO
  - Foreign income receipts and payments are FINCR, FINCP
  - Foreign aid inflows and outflows are AIDI, AIDO

Data Sources and definitions

- **Remittances (Knomad–WB)**
  - Data are the sum of two items defined in the sixth edition of the IMF's BOP Current Account: personal transfers and compensation of employees.
- **Foreign Receipts (IMF)**
  - Investment Income Credit and Debit, under Current Account's Primary Income.
- **Foreign Aid (OECD)**
  - Official Development Assistance (ODA), gross disbursements

Net Saving, by region (% of GDP)



Depreciation and capital stock

- **Depreciation rate is 4% of capital stock**
  - Calibrated from the Penn World Tables, using capital stock to GDP ratio
  - Heterogenous depreciation rates
- **Alternative source IMF**
  - Also developed using perpetual inventory method, different depreciation
  - Private and public capital stock, which was combined

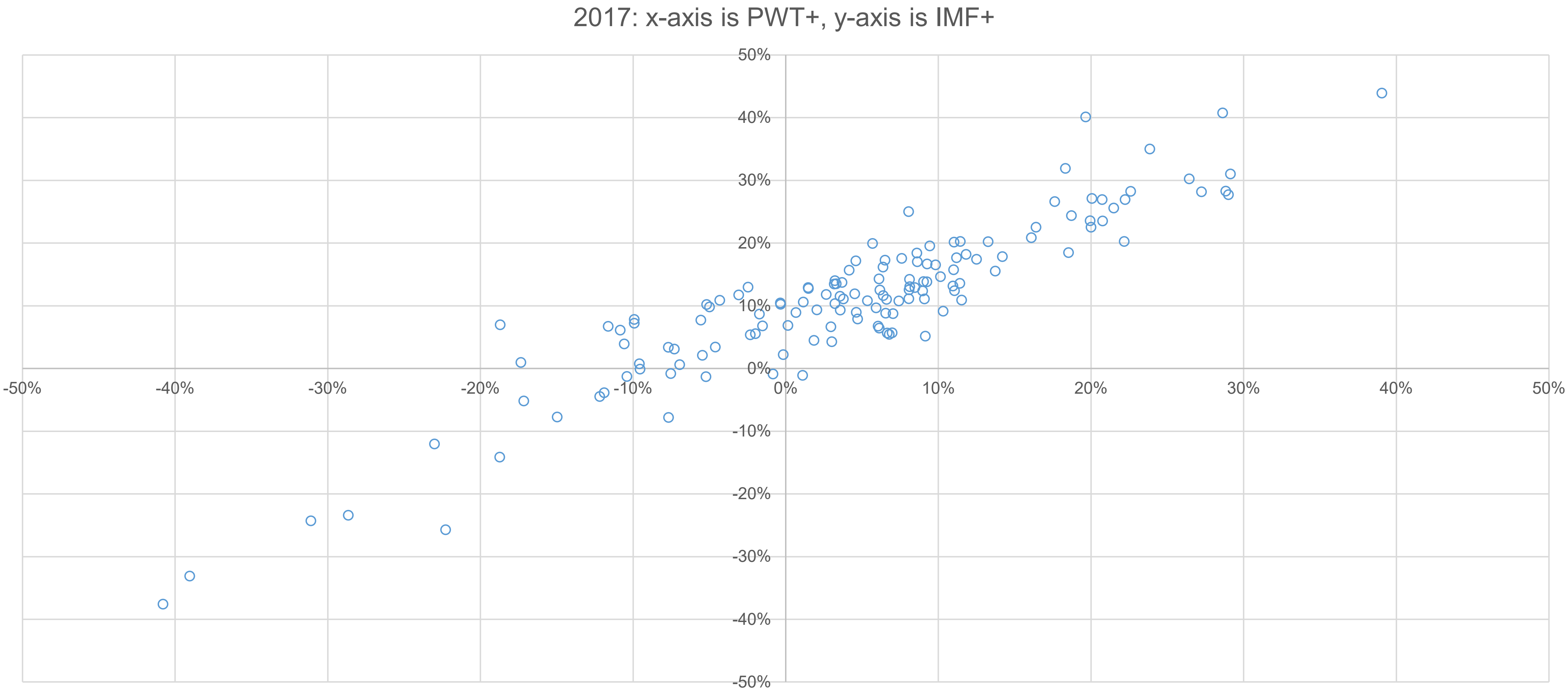
Selected countries' indicators (% of GDP)

	Gross domestic savings		Capital Stock	Net Savings	
	WB	GTAP	To GDP ratio	GTAP	GTAP+BOP
lux	50.59	27.65	3.77	12.57	-39.05
are	50.12	19.96	4.85	0.55	-12.18
gbr	16.90	13.36	4.74	-5.59	-7.29

Selected countries indicators (% of GDP)

	GDS		Capital Stock		Net Savings (PWT)		Net Savings	
	WB	GTAP	PWT	IMF	GTAP	+BOP	IMF	+BOP
lux	50.59	27.65	3.77	**1.89**	12.57	-39.05	**18.52**	**-33.10**
are	50.12	19.96	4.85	**3.09**	0.55	-12.18	**8.25**	**-4.48**
gbr	16.90	13.36	4.74	**2.19**	-5.59	-7.29	**4.79**	**3.09**

Net Saving to GDP ratio (w/ BOP)



Implications to model results

- **Even in static model**
  - Investment is savings driven
- **With updated capital stock and depreciation**
  - Lower rental and rate of return to capital
- **Of more relevance for dynamic modelling**
  - Pending implementation

Takeaways

- **Difference of indicators can be a potential source of misunderstanding:**
  - **WORLD BANK:** Gross domestic savings (negatives exist)
  - **GTAP:** value of savings net of depreciation
- **Other elements of the BOP matter**
  - To be included in the standard GTAP framework
- **Capital stock and depreciation**
  - To be updated with IMF data

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Questions or comments

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