Demand and growth regimes of the BRICs countries – the national income and financial accounting approach and an autonomous demand growth perspective

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Outline

1. *Demand and growth regimes and growth drivers in PKE and CPE*

2. *The Sraffian supermultiplier autonomous demand-led growth decomposition as a bridge between the national income and financial accounting approach and growth drivers*

3. *Growth decompositions for the BRICs countries before and after 2007-09 crises*

4. *Political economy of autonomous demand components and the SSM*

5. *Final considerations and conclusions*

1. Demand and growth regimes and growth drivers in PKE and CPE

- Contribution to the debate in post-Keynesian economics (PKE), Comparative Political Economy (CPE) and International Political Economy (IPE) on growth regimes/models.
- **Demand and growth regimes in PKE** derived from the study of the macroeconomic effects of financialization in advanced capitalist economies (Hein 2011, 2012, Stockhammer 2015).
- **National income and financial accounting based method**: information regarding the sources of demand and growth, or the lack of these, and the financing of demand. Four demand and growth regimes are defined by looking at growth contributions of aggregate demand and the financial balances of macroeconomic sectors:

  1. Export-led mercantilist (ELM)
  2. Weakly export-led (WEL)
  3. Domestic demand-led (DDL)
  4. Debt-led private demand boom (DLPD)

1. Demand and growth regimes and growth drivers in PKE and CPE

- Growth regime shifts following the 2007-09 crises (Akcay et al. 2022, Hein 2019, Hein and Martschin 2020, Hein et al. 2021):
  - Advanced ELM economies largely maintained their regime
  - European DLPD economies: rather export-led or DDL stabilized by high public deficits
  - Large emerging economies: tendency to remain DDL or even become DLPD

→ What drives these shifts in previously DLPD economies?

- private deleveraging + ability/willingness to run deficit-financed stabilising fiscal policies

National income and financial accounting approach only provides information on the demand sources of growth but not on its causal drivers → Analysis of **growth drivers** (Kohler and Stockhammer 2021) and **macroeconomic policy regimes** (Hein and Martschin 2021)

1. Demand and growth regimes and growth drivers in PKE and CPE

- Kohler and Stockhammer (2021): **growth drivers** for 30 OECD countries pre- and post 2007-09 crises.
  - Financial factors: a strong but cyclically growth driver
  - Expansionary fiscal policy became important post crisis
  - Price competitiveness has not been a cross-country driver.
  - Previous regime distinction discarded for the post-crisis period: may generate misleading categories when growth drivers change.

- Hein and Martschin (2021): keep the regime typology and analyse **macroeconomic policy regimes** (fiscal, monetary and wage policy and open economy conditions) of Germany, France, Italy and Spain, relating them to their demand and growth trajectories.

- Inspired by the work of Freitas and Dweck (2013), Girardi and Pariboni (2016) and Morlin et al. (2022) **we establish a systematic link between the national income/financial accounting and the growth drivers/economic policy levels of analysis by means of applying an autonomous demand growth perspective on the issue.**

2. The supermultiplier decomposition as a bridge between DGR and growth drivers

- Sraffian Supermultiplier model (Serrano, 1995; Freitas & Serrano, 2015): growth is driven by autonomous to current income non-capacity creating expenditures (Z) - public consumption (G) and investment (Ig), exports (X), private consumption financed by credit (CC) and household residential investment (Ih). That induces private corporate investment, household consumption out of current income, and imports.

$$Y_t = C_t + I_t + G_t + X_t - M_t$$

$$Z_t = G_t + I_{G,t} + X_t + CC_t + I_{H,t}$$

$$Y_t = \frac{Z_t}{1-c-h+m} = \alpha_t Z_t$$

- Systematic analysis of autonomous and induced components provides **ground for political economy and economic policy analyses** (Morlin et al., 2022).
- Middle ground between national income/financial accounting analyses and identification of growth "drivers".

2. The supermultiplier decomposition as a bridge between DGR and growth drivers

- SSM accounting method as alternative to orthodox growth accounting (Freitas & Dweck, 2013; Girardi & Pariboni, 2016; Morlin et al., 2022)
- Method based on Freitas and Dweck (2013):

$$g = \alpha(1)\frac{G(0)}{Y(0)}g_G + \alpha(1)\frac{I_G(0)}{Y(0)}g_{I_G} + \alpha(1)\frac{X(0)}{Y(0)}g_X + \alpha(1)\frac{CC(0)}{Y(0)}g_{CC} + \alpha(1)\frac{I_H(0)}{Y(0)}g_{I_H} +$$

$$\alpha(1)\frac{C(0)}{Y(0)}g_c + \alpha(1)\frac{M(0)}{Y(0)}g_m + \alpha(1)\frac{I_C(0)}{Y(0)}g_h + \alpha(1)\frac{E(0)}{Y(0)}g_E$$

- No differentiation between state-owned companies' investment and private investment due to lack of data.
- Adaptation on propensity to import and consumer credit based on Girardi and Pariboni (2016).

3. Growth Decomposition for the BRICs countries

- We test this approach empirically for the BRICs countries (Brazil, Russia, India and China) for the two periods 2001-10 and 2011-19

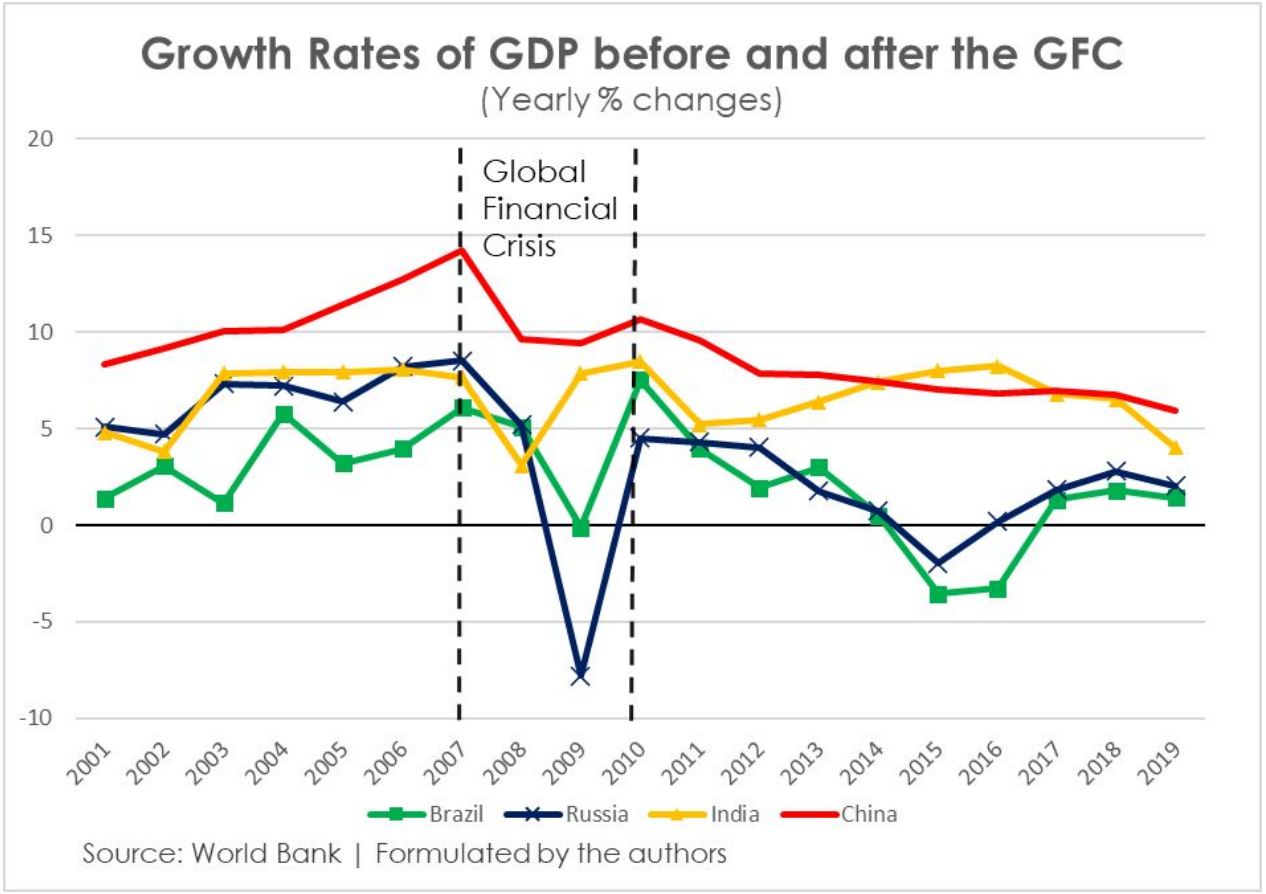
1. National income/financial accounting approach is applied and the demand and growth regime examined

2. Growth is decomposed distinguishing the autonomous demand components and the induced ones

3. Autonomous and induced demand component dynamics are related to growth regime development

4. Political economy analysis to make sense of the autonomous and induced demand component dynamics

3. Growth Decomposition for the BRICs countries



3. Growth Decomposition for the BRICs countries - Brazil

Table 2. Demand and growth regimes in Brazil, Russia, India and China. Annual averages for the periods 2001-2010 and 2011-2019.

	Brazil		Russia		India		China	
	2001-2010	2011-2019	2001-2010	2011-2019	2001-2010	2011-2019	2001-2010	2011-2019
Real GDP growth, percent	3.71	0.79	4.93	1.74	6.75	6.46	10.56	7.34
Growth contributions by main demand aggregates, percentage points (1)								
Domestic demand, including changes in inventories	3.84	0.76	5.81	1.57	7.36	6.31	10.13	7.40
Private consumption	2.24	0.92	3.72	1.20	3.28	3.86	3.37	3.05
Public consumption	0.61	0.11	0.33	0.11	0.64	0.62	1.55	1.34
Investment	0.93	-0.25	1.66	0.31	2.87	2.09	4.87	3.10
Inventories	0.06	-0.02	0.10	-0.05	0.56	-0.25	0.34	-0.09
Net exports of goods and services	-0.08	0.19	-0.85	0.27	-0.49	-0.03	0.48	-0.01
Exports	0.65	0.25	1.47	0.69	2.31	1.10	2.76	1.23
Imports	-0.73	-0.06	-2.31	-0.42	-2.81	-1.13	-2.28	-1.24
Balance of goods and services as share of nominal GDP, percent	1.01	-0.78	10.69	6.97	-2.95	-3.63	0.00	0.00
Sectoral financial balances as share of nominal GDP, percent								
Private sector	2.63	3.19	4.56	4.02	7.98	5.07	6.59	4.26
Public sector	-3.40	-6.01	2.60	-0.45	-8.74	-7.14	-1.40	-2.61
External sector	0.78	2.82	-7.16	-3.57	0.75	2.07	-5.19	-1.65
Demand and growth regime (2)	DDL	WEL	WEL	ELM	DDL	DDL	ELM	WEL

(1) Contributions may not sum to the growth rate of real GDP because of rounding, aproximmation and not included statistical discrepancies in expenditure estimates of GDP.
Note: a statistical discrepancy usually arises in GDP measurement due to independent estimations by industrial origin and by expenditure categories. The inclusion of this discrepancy ensures GDP from the expenditure side equals GDP measured by the income or output approach (World Bank, 2021)

(2) Demand and growth regimes: Export-led mercantilist (ELM), Weakly export-led (WEL), Domestic demand-led (DDL), Debt-led private demand boom (DLPD).

Source: IMF (2021a), IMF (2021b), World Bank (2021), author's calculations and presentation.

3. Growth Decomposition for the BRICs countries - the SM approach for Brazil

		Brazil	
		2001-2010	2011-2019
	GDP	3.71	0.79
	Total Z	4.07	0.24
Autonomous components growth contribution	G	1.42	0.25
	I_G	0.45	-0.34
	X	1.50	0.60
	I_H	0.30	0.02
	CC	0.41	-0.29
	Total Induced	-0.33	0.98
Induced components growth contribution	C_H	0.05	1.38
	M	-0.85	0.13
	I_C	0.46	-0.53
	Inventories	-0.03	-0.43
	Total	3.71	0.79

	Brazil	
	2001-2010	2011-2019
GDP	3.71	0.79
Domestic Sector	3.06	0.06
Private Sector	1.19	0.15
C_H	0.05	1.38
I_C	0.46	-0.53
CC	0.41	-0.29
I_H	0.30	0.02
Inventories	-0.03	-0.43
Public Sector	1.87	-0.09
G	1.42	0.25
I_G	0.45	-0.34
External Sector	0.65	0.73
X	1.50	0.60
M	-0.85	0.13
Total	3.71	0.79

Note: Statistical discrepancy added as part of inventory changes in World Bank data. See Appendix of preliminary working paper for the methodology on consumer credit and residential investment calculations.

Source: BIS (2021), IMF (2021a), OECD (2022), World Bank (2021), authors' calculations and presentation

3. Growth Decomposition for the BRICs countries - China

Table 2. Demand and growth regimes in Brazil, Russia, India and China. Annual averages for the periods 2001-2010 and 2011-2019.

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Public consumption	0.61	0.11	0.33	0.11	0.64	0.62	1.55	1.34
Investment	0.93	-0.25	1.66	0.31	2.87	2.09	4.87	3.10
Inventories	0.06	-0.02	0.10	-0.05	0.56	-0.25	0.34	-0.09
Net exports of goods and services	-0.08	0.19	-0.85	0.27	-0.49	-0.03	0.48	-0.01
Exports	0.65	0.25	1.47	0.69	2.31	1.10	2.76	1.23
Imports	-0.73	-0.06	-2.31	-0.42	-2.81	-1.13	-2.28	-1.24
Balance of goods and services as share of nominal GDP, percent	1.01	-0.78	10.69	6.97	-2.95	-3.63	0.00	0.00
Sectoral financial balances as share of nominal GDP, percent								
Private sector	2.63	3.19	4.56	4.02	7.98	5.07	6.59	4.26
Public sector	-3.40	-6.01	2.60	-0.45	-8.74	-7.14	-1.40	-2.61
External sector	0.78	2.82	-7.16	-3.57	0.75	2.07	-5.19	-1.65
Demand and growth regime (2)	DDL	WEL	WEL	ELM	DDL	DDL	ELM	WEL

(1) Contributions may not sum to the growth rate of real GDP because of rounding, aproximmation and not included statistical discrepancies in expenditure estimates of GDP.
Note: a statistical discrepancy usually arises in GDP measurement due to independent estimations by industrial origin and by expenditure categories. The inclusion of this discrepancy ensures GDP from the expenditure side equals GDP measured by the income or output approach (World Bank, 2021)

(2) Demand and growth regimes: Export-led mercantilist (ELM), Weakly export-led (WEL), Domestic demand-led (DDL), Debt-led private demand boom (DLPD).

Source: IMF (2021a), IMF (2021b), World Bank (2021), author's calculations and presentation.

3. Growth Decomposition for the BRICs countries - the SM approach for China

		China 2001-2010	China 2011-2019
	GDP	10.56	7.34
	Total Z	13.00	6.36
Autonomous components growth contribution	G	2.66	2.13
	I_G	0.98	0.53
	X	4.84	1.94
	I_H	3.10	1.05
	CC	1.42	0.71
	Total Induced	-2.90	1.21
Induced components growth contribution	C_H	-2.21	0.49
	M	-1.08	0.16
	I_C	0.40	0.55
	Inventories	0.46	-0.23
	Total	10.56	7.34

	China 2001-2010	China 2011-2019
GDP	10.56	7.34
Domestic Sector	6.80	5.23
Private Sector	3.17	2.57
C_H	-2.21	0.49
I_C	0.40	0.55
CC	1.42	0.71
I_H	3.10	1.05
Inventories	0.46	-0.23
Public Sector	3.64	2.66
G	2.66	2.13
I_G	0.98	0.53
External Sector	3.76	2.11
X	4.84	1.94
M	-1.08	0.16
Total	10.56	7.34

Note: Statistical discrepancy added as part of inventory changes in World Bank data. See Appendix of preliminary working paper for the methodology on consumer credit and residential investment calculations.

Source: BIS (2021), IMF (2021a), OECD (2022), World Bank (2021), authors' calculations and presentation

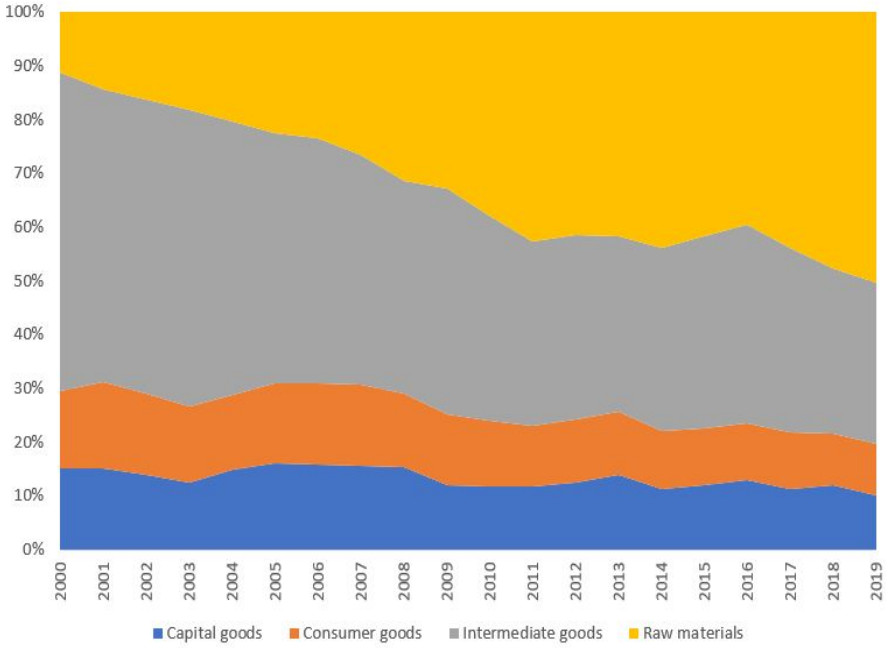
4. Political economy of autonomous demand components and the SSM

		Brazil		Russia		India		China	
		2001-2010	2011-2019	2001-2010	2011-2019	2001-2010	2011-2019	2001-2010	2011-2019
	GDP	3.71	0.79	4.93	1.74	6.75	6.46	10.56	7.34
	Total Z	4.07	0.24	3.94	1.82	8.63	4.13	13.00	6.36
Autonomous components growth contribution	G	1.42	0.25	0.51	0.18	1.13	1.13	2.66	2.13
	I_G	0.45	-0.34	0.43	0.29	0.52	0.47	0.98	0.53
	X	1.50	0.60	2.27	1.22	4.17	1.83	4.84	1.94
	I_H	0.30	0.02	0.46	-0.20	1.88	0.97	3.10	1.05
	CC	0.41	-0.29	0.27	0.33	0.94	-0.27	1.42	0.71
	Total Induced	-0.33	0.98	1.14	0.23	-2.58	2.47	-2.90	1.21
Induced components growth contribution	C_H	0.05	1.38	2.41	0.02	-1.48	1.05	-2.21	0.49
	M	-0.85	0.13	-1.91	0.29	-2.43	1.05	-1.08	0.16
	I_C	0.46	-0.53	0.64	-0.08	1.32	0.38	0.40	0.55
	Inventories	-0.03	-0.43	-0.16	-0.31	0.71	-0.14	0.46	-0.23
	Total	3.71	0.79	4.93	1.74	6.75	6.46	10.56	7.34
	Demand and growth regime	DDL	WEL	WEL	ELM	DDL	DDL	ELM	WEL

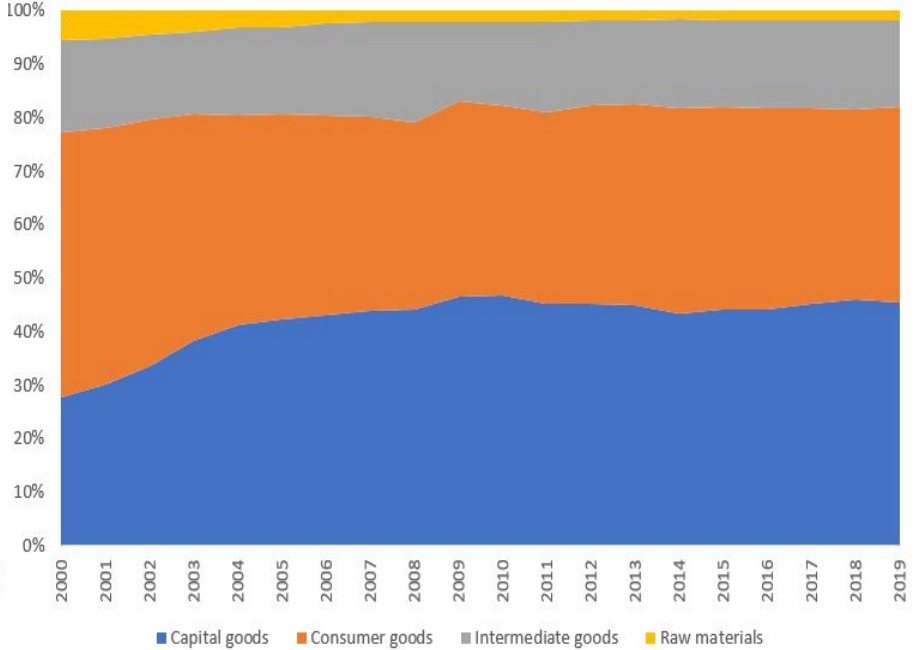
4. Political economy of autonomous demand components and the SSM

Exports by product group as percentage of total exports in real terms

Brazil



China



4. Political economy of autonomous demand components and the SSM

	Brazil		Russia		India		China	
	2001-2010	2011-2019	2001-2010	2011-2019	2001-2010	2011-2019	2001-2010	2011-2019
GDP	3.71	0.79	4.93	1.74	6.75	6.46	10.56	7.34
Domestic Sector	3.06	0.06	4.57	0.23	5.01	3.58	6.80	5.23
Private Sector	1.19	0.15	3.63	-0.23	3.37	1.99	3.17	2.57
C_H	0.05	1.38	2.41	0.02	-1.48	1.05	-2.21	0.49
I_C	0.46	-0.53	0.64	-0.08	1.32	0.38	0.40	0.55
CC	0.41	-0.29	0.27	0.33	0.94	-0.27	1.42	0.71
I_H	0.30	0.02	0.46	-0.20	1.88	0.97	3.10	1.05
Inventories	-0.03	-0.43	-0.16	-0.31	0.71	-0.14	0.46	-0.23
Public Sector	1.87	-0.09	0.94	0.47	1.64	1.59	3.64	2.66
G	1.42	0.25	0.51	0.18	1.13	1.13	2.66	2.13
I_G	0.45	-0.34	0.43	0.29	0.52	0.47	0.98	0.53
External Sector	0.65	0.73	0.36	1.51	1.74	2.87	3.76	2.11
X	1.50	0.60	2.27	1.22	4.17	1.83	4.84	1.94
M	-0.85	0.13	-1.91	0.29	-2.43	1.05	-1.08	0.16
Total	3.71	0.79	4.93	1.74	6.75	6.46	10.56	7.34

4. Political economy of autonomous demand components and the SSM - Distribution

Table 4. Distribution trends.

Country	Period	Wage share*	Gini coefficient of disposable income
Brazil	2001-2010	+	-
	2011-2019	+	+
China	2001-2010	-	+
	2011-2019	+	-

Notes: Distribution indicators refer to the changes within the period, "+" indicates an increase, "-"a decrease, "0" no change. Wage shares are adjusted and provided in nominal terms. *Due to data availability, the first period for the wage share only covers the years 2004-2010.

Sources: ILO (2022), Solt (2020), our calculations and presentation.

4. Final considerations and conclusions

Considerations about the Political Economy analysis:

- Differentiation between autonomous demand and induced components open space for broader investigation on **dynamics of income distribution, sectoral structure of production, external conditions, financial relations, and economic policy shifts**, opening space for relation with the macroeconomic policy regimes literature (see Hein and Martschin, 2021)
- Political economy analysis should come with deeper comprehension of institutions, political conditions, and socio-economic formation of countries

Conclusions:

- The national income and financial accounting approach and the SSM decomposition methodology are **compatible**, helping explain shifts in demand regimes with exercises that do not require complex inferences.
- **The combination of both methods can be useful to give insights of countries growth and distribution dynamics both for Post-Keynesian Economics and for Comparative Political Economy**

Thank you for the attention!

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