



FDI-led Growth Models: Sraffian Supermultiplier Models of Export Platforms and Tax Havens

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Contents

1. Motivation: Notions of FDI-led Growth in CPE
2. Tangible FDI-led growth model
3. Intangible FDI-led growth model
4. Empirics: Identifying Different FDI-led Growth Models
5. Conclusions

FDI-led Growth in Comparative Political Economy

CPE describes different but related kinds of growth models led/driven by foreign-owned MNCs

- “export-oriented, FDI-led development”
(Fink 2006)
- “dependent market economies”
(Nölke & Vliegenthart 2009)
- “foreign-led”
(Drahokoupil 2009, Bohle & Greskovitz 2012)
- “dependent catching-up”
(Stockhammer et al. 2016)
- “dependent export-led”
(Bohle 2017)
- “FDI-led growth”
(Regan & Brazys 2017a, 2017b; Bohle & Regan 2021)

Coalesces around a common set of example economies, most typically those of central and eastern European countries as well as Ireland

This literature has a rich analysis of the social blocs, institutional complementarities and the ***growth drivers*** in such countries, including the role of outward-looking, competitive and sovereignty-commercialising policies (Palan 2002, Woodgate 2021)...

... but the full ***demand and growth regime*** remains less well understood.

PK Demand & Growth Regimes

Taken from Akcay et al. (2021, p. 9)

Table 1: Shift of demand and growth regimes according to five studies on developed capitalist economies (DCEs)					
		Post 2007-09 crisis			
		Debt-led private demand (boom) (DLPD)	Domestic demand-led with high public sector deficits (DDL (PD))	Weakly export-led (WEL)	Export-led mercantilist (ELM)
Pre-2007-09 crisis	Debt-led private demand (boom) (DLPD)		New Zealand (Hea) UK (Dea, H, Hea) USA (Dea, H, Hea) South Africa (Dea)	Australia (Hea) Greece (Dea, Hea, H/M) Portugal (Hea) Slovakia (Hea) Spain (Hea)	Estonia (Dea, D/H, Hea) Hungary (Hea) Ireland (Hea, H/M) Hungary (Dea) Latvia (D/H) Spain (H, H/M)
	Domestic demand led (DDL)	Turkey (Dea)	France (Dea, H, Hea, H/M)	Italy (Dea, Hea) Poland (Dea, Hea) Portugal (Dea, H/M)	EA-12 (H, H/M) Italy (H/M)
	Weakly export-led (WEL)		Canada (Hea)	Czech Rep. (Hea) Iceland (Hea) Norway (Hea)	Denmark (D/H, Hea) Slovenia (Hea)
	Export-led mercantilist (ELM)		Finland (Hea, H/M)	Austria (Hea) Belgium (H/M) Japan (Dea, Hea) Sweden (Dea, H, Hea)	Austria (H/M) Belgium (Hea) Germany (Dea, H, Hea, H/M) Korea (Hea) Luxembourg (Hea) Netherlands (Hea, H/M) Switzerland (Hea)
Notes: Dea: Dodig et al. (2016), 2001-08, 2008-14; H: Hein (2019), 1999-2007, 2008-16; D/H: Dünhaupt and Hein (2019), 1995-2008, 2009-16; Hea: Hein et al. (2020), 2000-08, 2009-16; H/M: Hein and Martschin (2020), 2001-09, 2010-19.					
Sources: Dodig et al. (2016), Hein (2019), Dünhaupt and Hein (2019), Hein et al. (2020), Hein and Martschin (2020), our presentation.					

Bohle & Regan's FDI-led Growth Model: A Bridge Between CPE and PKE?

Bohle & Regan (2021, p. 82):

- “FDI-led growth models are particular cases of export-oriented growth, because the major exporting firms are foreign-owned. This is typically the case in small and late-developing countries, which rely on foreign investment to modernize their industry...”
- “FDI-led growth implies that countries, rather than having to develop their industrial base from their own resources, import raw material, components, or other parts of the value chain; process them; and export them to bigger or more developed markets. It thus differs from the export-led growth model of advanced capitalist countries, such as Germany, where the export industry is less import-dependent...”
- “[T]here are different variants of foreign export-led growth, depending on what exactly is being produced and exported: textile or low-tech goods, medium-tech goods, or high-tech goods and services.”

Ireland and Hungary given as examples with caveat that “both countries are part of a broader universe of cases” in which they are similar in that “they attract FDI to generate the conditions for export-led growth”, but “differ in the type of FDI they attract and the extent to which FDI has penetrated the broader economy” (ibid. p.97, emphasis in original).

Is FDI-led Growth Really a Subtype of Export-led Growth?

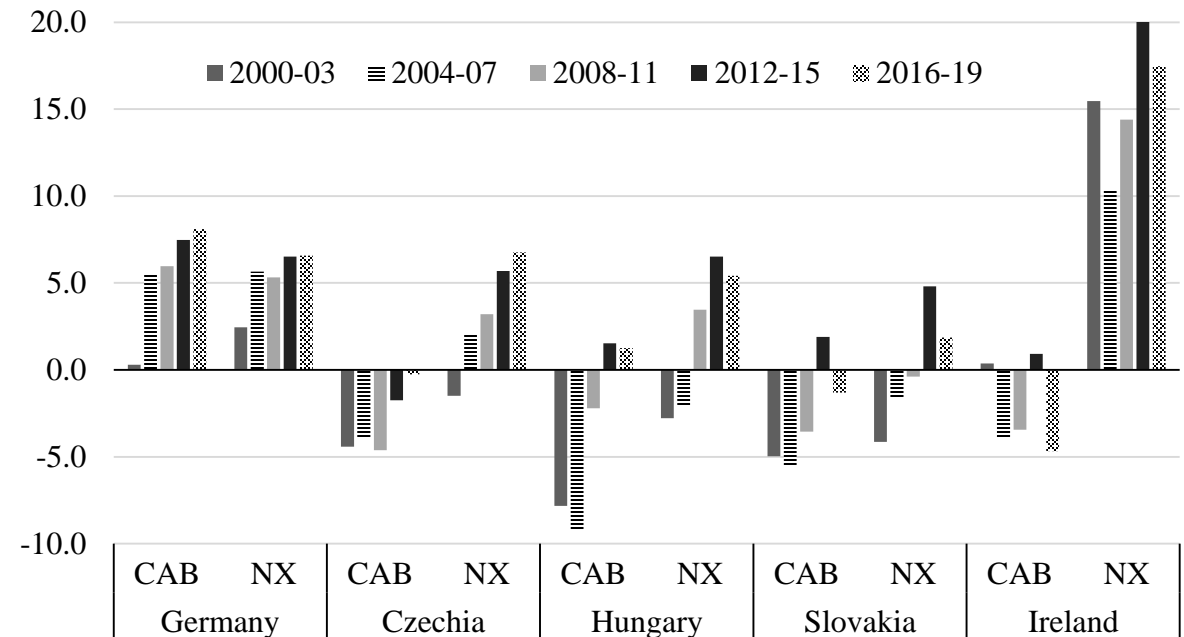
Difference #1: FDI-led economies tend to have positive net exports, but negative CABs

- Non-mercantilist net exporters
- What does this mean for the FDI-led growth model?

Difference #2: The “net exports” of tax havens like Ireland are, in large part, **not** net exports

- Distortions arising due to profit shifting
- E.g. IRL 2015: $NX/GDP=31\%$, NX/GDP corrected for profit shifting = **- 5.8%** (Tørsløv et al. 2018)
- If “net exports” do not reflect genuine employment and value added, how does this growth model work? Is it actually so similar to CEE economies?

Figure 1. Current account balances and net exports (% of GDP), period averages



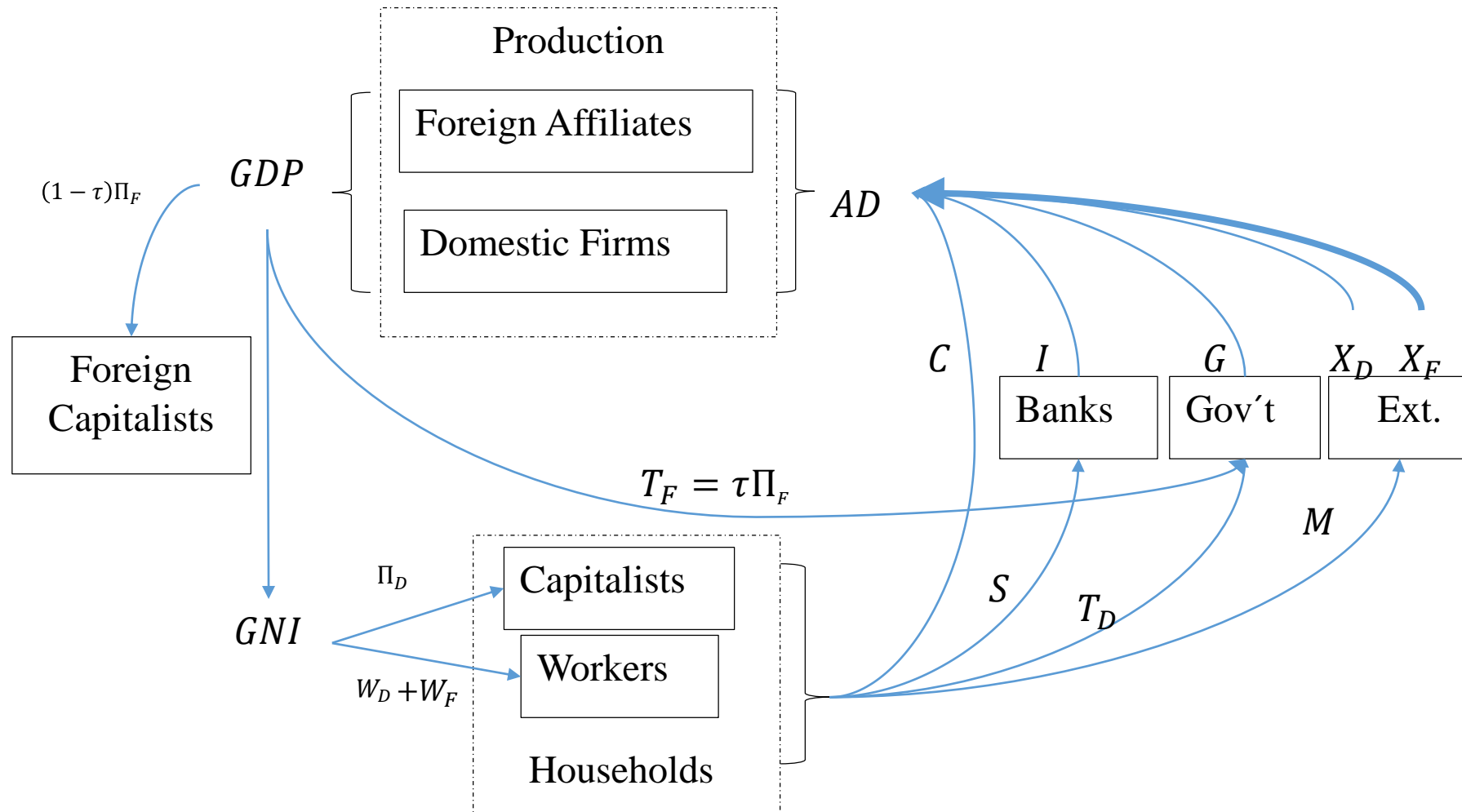
Modelling FDI-led Growth Models: Sraffian Supermultiplier Models

- Sraffian supermultiplier models (Serrano 1995a, 1995b) → growth and capital accumulation are determined by the growth of autonomous expenditures in the long run
- Z : Autonomous demand (e.g. exports, government spending, and debt-financed consumption, etc.) which does not depend on current income nor directly increase productive capacity.
- μ : Supermultiplier comprised of the parameters associated with induced parts of demand
- $Y = \mu Z \rightarrow \widehat{Y}^{LR} = \widehat{Z}^{LR}$ since $\widehat{\mu}^{LR} = 0$
- Used throughout PKE to analyse different autonomous demand growth drivers as well as questions of financial and macroeconomic stability (e.g. Freitas & Serrano 2015, Allain 2015, Lavoie 2016, Pariboni 2016, Nah & Lavoie 2017, Hein 2018, Brochier & Macedo e Silva 2019, Palley 2019, Fazzari et al. 2020, Hein & Woodgate 2021, Morlin 2022)

Modelling FDI-led Growth Models: The Usefulness of Sraffian Supermultiplier Models for CPE

- Critics (e.g. Blecker & Setterfield 2019, ch. 7.5): Supermultiplier models are exogenous growth theories → Do not analyse the ultimate drivers of growth in detail
- However, I agree with Morlin et al. (2022, p.6) who write that:
 - “Exogeneity, for the critics of this approach, is considered an indictment. However, we believe that it is a strength that makes the supermultiplier particularly useful for CPE studies, inasmuch the ultimate causes of growth in the supermultiplier are not found in the intricacies of economic modeling but in the political and social determinants of autonomous demand components.”
- CPE already has a great handle on the growth drivers behind FDI-led growth. We can use SSM models to understand the channels to demand and the growth regimes.

Circular Flow Diagram of the... “Export Platform FDI-led” / “Foreign Export-led” Growth Model



The Export Platform FDI-led Growth Model

Simplifying assumptions:

- $\widehat{X}_F > \widehat{X}_D$ in every period
- $\sigma = X_F/X \rightarrow 1$ in the LR
- FA sells abroad $Y_F = X_F$
- Constant profit share in FA VA
 $\rightarrow \Pi_F = \pi_F Y_F = \pi_F X_F$

Short-Run Eq'm GDP & GNI

$$Y^* = \mu X \quad ; \quad Y_{GNI}^* = lX$$

$$\mu = \frac{1-c(1-\tau)\pi_F\sigma}{1-c(1-\tau)-b\tau-h+m}; \quad l = \frac{1-\pi_F\sigma(1-b\tau-h+m)}{1-c(1-\tau)-b\tau-h+m}$$

The “less-than-super” multipliers

Model Structure

- $C = c(1-\tau)(Y - \Pi_F)$
 $\rightarrow C = c(1-\tau)(Y - \pi_F\sigma X)$
- $I = hY$
- $T = \tau Y$
- $G = bT = b\tau Y$
- $NX = X - mY$
- $X = X_F + X_D$ (both autonomous)

Dynamics

- $g_K = I/K = hu/v$
- $\dot{h} = h\gamma(u - u_n)$
- $\dot{u} = u(g - g_K)$
- $\dot{\sigma} = \sigma(1-\sigma)(\widehat{X}_F - \widehat{X}_D)$

Growth

$$\hat{Y} = \hat{\mu} + \hat{X}$$

$$\hat{\mu} = \frac{\dot{h}-c\pi_F(1-\tau)\dot{\sigma}/\mu}{1-c(1-\tau)-b\tau-h+m};$$

$$\hat{X} = \sigma\widehat{X}_F + (1-\sigma)\widehat{X}_D$$

$$\hat{Y}^{LR} = \hat{Y}_{GNI}^{LR} = \hat{X}_F$$

The Export Platform FDI-led Growth Model: Results

Stability

Model is stable under same conditions as seen elsewhere in the literature (Freitas & Serrano 2015, Morlin 2022): $\gamma v < 1 - c(1 - \tau) - b\tau - h + m$

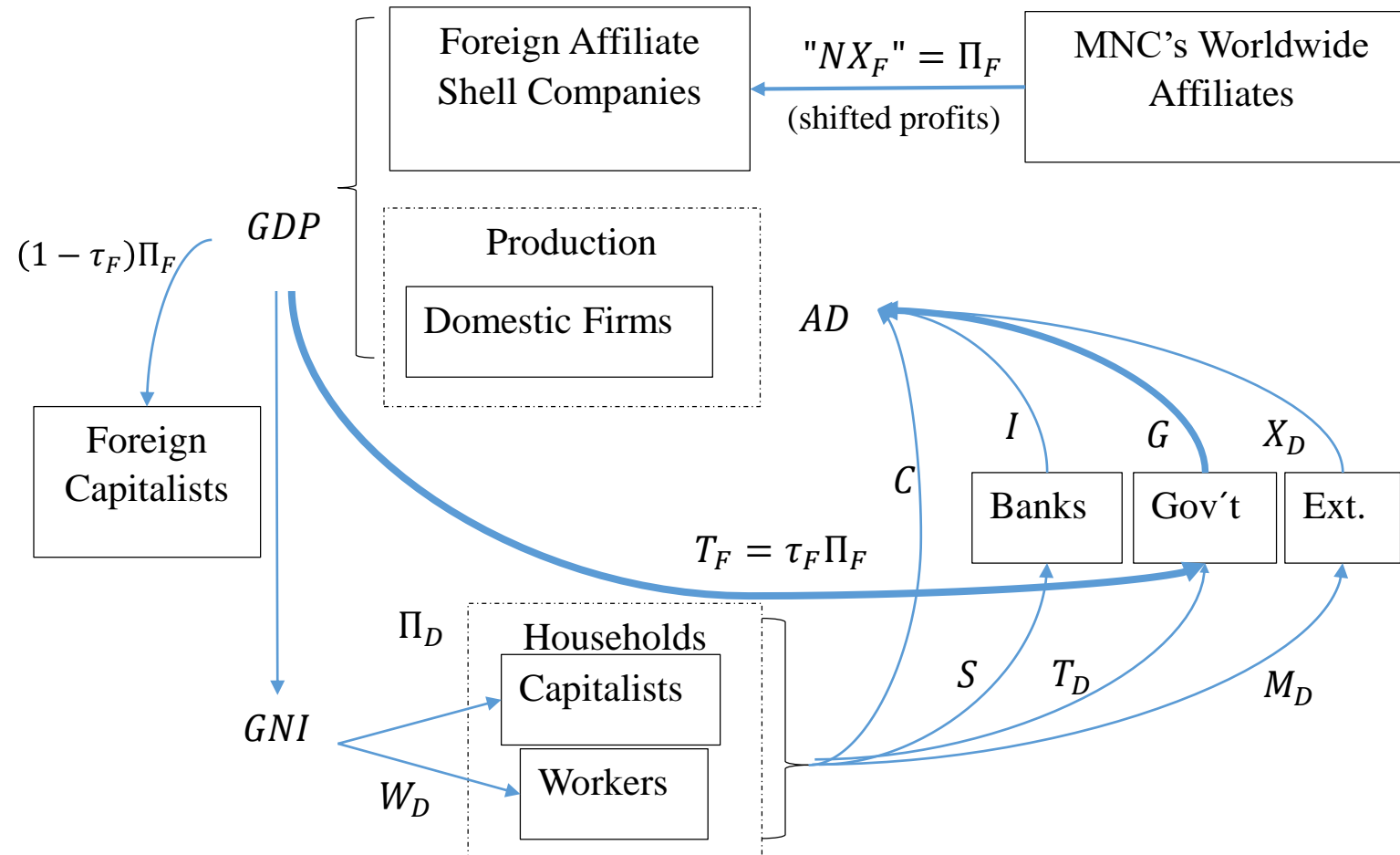
Increasing Dominance of Foreign Affiliate Exports Increases Growth and Net Exports and Decreases CAB

$$\frac{\partial g}{\partial \sigma} = \frac{(\widehat{X}_F - \widehat{X}_D)(1 - c\pi_F(1 - \tau))}{(1 - c\pi_F(1 - \tau)\sigma)^2} > 0$$

$$\frac{\partial NX}{\partial \sigma} = \frac{Xmc(1 - \tau)\pi_F}{1 - c(1 - \tau) - b\tau - h + m} > 0$$

$$\frac{\partial CAB}{\partial \sigma} = -\frac{X(1 - \tau)\pi_F[1 - c(1 - \tau) - b\tau - h + m(1 - c)]}{1 - c(1 - \tau) - b\tau - h + m} < 0$$

Circular Flow Diagram of the... “Tax Haven FDI-led” / “Tribute-led” Growth Model



The Tax Haven FDI-led Growth Model

Y reflects **genuine** value-added & income (i.e. no foreign profits)

Simplifying assumptions:

- $\widehat{\Pi}_F > \widehat{X}_D$ in every period
- $Z = b\tau_F\Pi_F + X_D$
- $\sigma = b\tau_F\Pi_F/Z \rightarrow 1$ in the LR

Model Structure

- $C = c(1 - \tau_D)Y$
- $I = hY$
- $T = \tau_D Y + \tau_F \Pi_F$
- $G = bT = b(\tau_D Y + \tau_F \Pi_F)$
- $NX_D = X_D - mY$

Dynamics

- $g_K = I/K = hu/v$
- $\dot{h} = h\gamma(u - u_n)$
- $\dot{u} = u(g - g_K)$
- $\dot{\sigma} = \sigma(1 - \sigma)(\widehat{\Pi}_F - \widehat{X}_D)$

Short-Run Eq'm GDP

$$Y^* = \mu Z$$

$$\mu = \frac{1}{1 - c(1 - \tau_D) - b\tau_D - h + m}$$

Growth

$$\hat{Y} = \hat{\mu} + \hat{Z}$$

$$\hat{\mu} = \frac{\dot{h}}{1 - c(1 - \tau_D) - b\tau_D - h + m};$$

$$\hat{Z} = \sigma \widehat{\Pi}_F + (1 - \sigma) \widehat{X}_D$$

$$\hat{Y}^{LR} = \widehat{\Pi}_F$$

The Haven FDI-led Growth Model: Results

Stability

Model is stable under same conditions as seen elsewhere in the literature (Freitas & Serrano 2015, Morlin 2022): $\gamma v < 1 - c(1 - \tau) - b\tau - h + m$

Increasing Dominance of Foreign Affiliate Exports Increases Growth and Net Exports and Decreases CAB

$$\frac{\partial g}{\partial \sigma} = (\widehat{\Pi_F} - \widehat{X_D}) > 0$$

$$\frac{\partial "NX"}{\partial \sigma} = \frac{Z(1-b\tau_F)}{b\tau_F} > 0 \quad \text{assuming } 1 > b\tau_F$$

$$\frac{\partial "CAB"}{\partial \sigma} = \frac{Z(1-b)}{b} \quad \text{negative if gov't tends to run deficits}$$

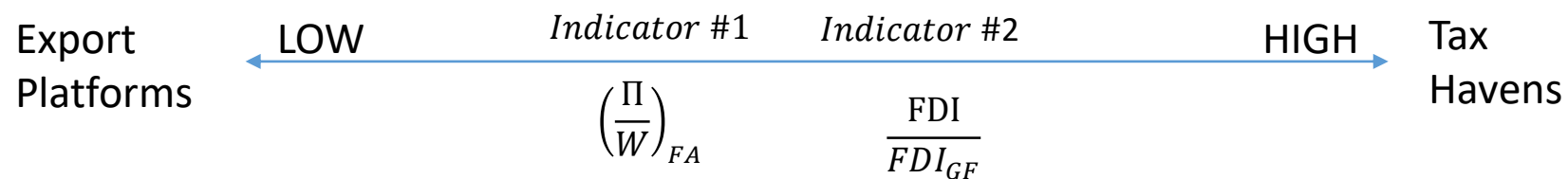
Empirics: How do we know if an economy is tax haven FDI-led or export platform FDI-led?

Growth contributions and financial balances from national accounts are distorted and do not tell us about ownership/structure of foreign-dominated economy

→ Usual approach limited

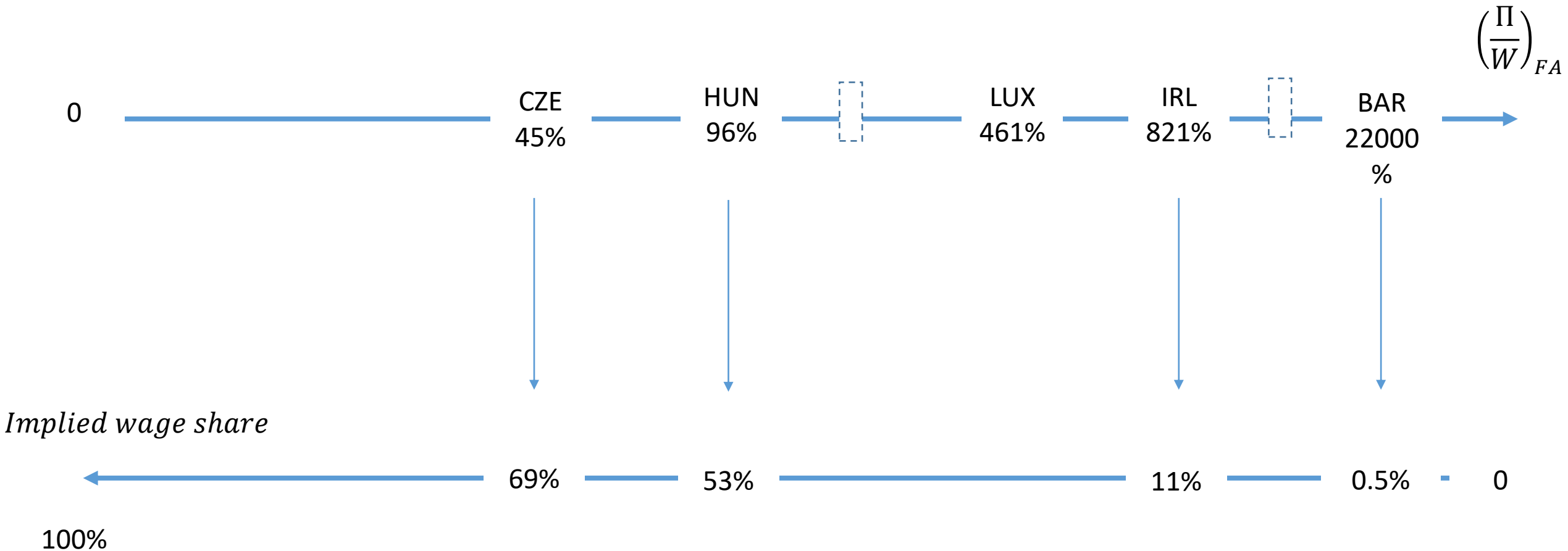
Our theory suggests some indicators...

- ... for FDI-led growth overall:
 - High values of X_F/X or Y_F/X
 - $NX > 0$ but $CAB < 0$
- ... to differentiate between THs and EPs: A few indicators, but 2 in particular...



A Spectrum of FDI-led Growth

Profit/Wage Ratio at Foreign Affiliates (2017)



Data source: BEA (2021)

Conclusion

- FDI-led growth models are similar in appearance...
 - High FDI/GDP ratios
 - High NX
 - Low/Negative CAB
- ...and in some of their growth drivers...
 - E.g. Active role of the competitive/commercialised state
- ... but may achieve growth via very different channels (also see Woodgate 2021)
 - One is a kind of export-led growth (EP FDI-led), albeit with pos. very different growth drivers
 - The other is not (TH FDI-led)
 - Implications for policy, esp. wage policies!
- The models presented here help explain why FDI-led economies ...
 - can be expected to have trade surpluses and CA deficits
 - are among the fastest growing in the age of neoliberal globalisation ($\widehat{\Pi}_F \gg 0$)
- But what we see here is not an *exhaustive* list of kinds of FDI-led Growth Models, but a start
 - Market-access FDI? FDI-burdened regimes, as in Singer (1950)