

A post-Keynesian Perspective on Capital Mobility, Exchange rate Dynamics and BoP crises in Developing Countries

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Outline of the presentation

1. The real economy, the domestic productive structure and the BoP in developing countries.
2. The financial side of Washington Consensus, financial account liberalization and BoP current account imbalances: an inverse relationship
3. A theoretical model on Dutch disease cum financialization
4. Policy implications: monetary-fiscal policy mix and exchange rate management

1. The real economy, the domestic productive structure and the BoP in developing countries

The standard national accounting of open economies:

$$Y = C + G + I + EX - IMP$$

$$Y + NR + NIP = C + G + I + EX - IMP + NR + NIP$$

$$(Y + NR + NIP) - T = C + G + I + EX - IMP + NR + NIP - T$$

$$YD = C - (T - G) + I^{pub} + I^{priv} + CA \rightarrow YD - C = -(T - G) + I^{pub} + I^{priv} + CA$$

$$(S^{pub} - I^{pub}) + (S^{priv} - I^{priv}) = CA$$

1. The real economy, the domestic productive structure and the BoP in developing countries

Macroeconomic equilibrium and the BoP: $CA + FA - \Delta FR = 0$

Some examples: There are two economies only (Italy and the USA) and two economic actors only (Sergio Marchionne, FIAT's CEO, and Bill Gates). Take the perspective of Italy's BoP.

Case 1: FIAT sells a FIAT 500 car to Bill Gates, whose value is 10000\$, and Bill gates sells a new Microsoft package to FIAT for 10000\$

Case 1	Current account		Financial account		Foreign Reserves	BoP equilibrium
	Export	Import	Financial inflows	Financial outflows	Variations in FR	Total
	10000\$	10000\$	0	0	0	0
	0		0		0	0

1. The real economy, the domestic productive structure and the BoP in developing countries

Macroeconomic equilibrium and the BoP: $CA + FA - \Delta FR = 0$

Case 2: FIAT sells a FIAT 500 car to Bill Gates, whose value is 10000\$, and Bill gates sells a new Microsoft package to FIAT for 5000\$

Bill Gates does not have money enough to fill immediately the gap. He asks FIAT to pay in 6 month time. FIAT agrees.

	Current account		Financial account		Foreign Reserves	BoP equilibrium
Case 2	Export	Import	Financial inflows	Financial outflows	Variations in FR	Total
	10000\$	5000\$	0	5000\$	0	0
	+5000\$		-5000\$		0	0

Financial inflows: foreign actors buy domestic liabilities (ex: US citizens buy Italian government bonds) or domestic citizens sell foreign assets (ex: Italian citizens sell a US company equity).

Financial outflows: domestic actors buy foreign assets (ex: IT citizens buy US government bonds) or foreign citizens sell domestic liabilities (ex: US citizens sell a Italian government bond).

1. The real economy, the domestic productive structure and the BoP in developing countries

Macroeconomic equilibrium and the BoP:

$$CA + FA - \Delta FR = 0$$

Case 3: FIAT sells a FIAT 500 car to Bill Gates, whose value is 10000\$, and Bill gates sells a new Microsoft package to FIAT for 5000\$

Bill Gates pays the gap by accrediting 5000\$ on FIAT bank account at Bank of New York.

Case 3	Current account		Financial account		Foreign Reserves	BoP equilibrium
	Export	Import	Financial inflows	Financial outflows	Variations in FR	Total
	10000\$	5000\$	0	5000\$	0	0
	+5000\$		-5000\$		0	0

1. The real economy, the domestic productive structure and the BoP in developing countries

Macroeconomic equilibrium and the BoP: $CA + FA - \Delta FR = 0$

Case 4: FIAT sells a FIAT 500 car to Bill Gates, whose value is 10000\$, and Bill gates sells a new Microsoft package to FIAT for 5000\$.

Bill Gates pays the gap by accrediting 5000\$ cash.

FIAT then tries to sell 5000\$ on the FX market to buy euros in order to meet some payment commitments (say pay wages).

	Current account		Financial account		Foreign Reserves	BoP equilibrium
Case 4	Export	Import	Financial inflows	Financial outflows	Variations in FR	Total
t1 (e \$/€=1)	10000\$	5000\$	0	5000\$	0	0
	+5000\$		-5000\$		0	0
t2 (e \$/€=0,95)	0	0	4761,9€	5000\$	0	0
	0		0		0	0

1. The real economy, the domestic productive structure and the BoP in developing countries

Macroeconomic equilibrium and the BoP: $CA + FA - \Delta FR = 0$

Case 5: FIAT sells a FIAT 500 car to Bill Gates, whose value is 10000\$, and Bill gates sells a new Microsoft package to FIAT for 5000\$.

Bill Gates pays the gap by accrediting 5000\$ cash.

FIAT then tries to sell 5000\$ on the FX market to buy euros in order to meet some payment commitments (say pay wages).

The ECB intervenes and buys the 5000\$ in order to avoid changes in the FX.

Case 5	Current account		Financial account		Foreign Reserves	BoP equilibrium
	Export	Import	Financial inflows	Financial outflows	Variations in FR	Total
t1 (e \$/€ =1)	10000\$	5000\$	0	5000\$	0	0
	+5000\$		-5000\$		0	0
t2 (e \$/€ =1)	0	0	5000		5000\$	0
	0		+5000\$		+5000\$	0

1. The real economy, the domestic productive structure and the BoP in developing countries

Interpreting the relationship between internal balance and external balance:

$$(S^{pub} - I^{pub}) + (S^{priv} - I^{priv}) = CA \quad \text{and} \quad CA + FA - \Delta FR = 0$$

1. Excessive domestic absorption (excessive domestic demand) may cause CA deficits.
2. CA deficits matched by FA surpluses. FA surpluses mean increasing the accumulation of external liabilities (i.e. external debt)
3. Standard orthodox interpretation: Public budget imbalances at the roots of external imbalances, twin deficits and twin crises.

Heterodox reply: Very often the private sector comes first in foreign saving-driven booms (Taylor, 1998).

2. The financial side of Washington Consensus, FA liberalization and BoP CA imbalances: an inverse relationship

The standard Washington Consensus (WC) monetary package after the 1982 debt crisis in the 80s and the 90s

1. Financial liberalization: removal of all financial controls and market-driven interest rates in order to avoid “fiscal dominance” and establish “market-driven discipline”
2. Independent central bank: in line with point 1) and to impede deficit monetization
3. Fixed exchange rate (“ e ” given): nominal anchor against inflation (this point not explicitly raised in the initial WC package but recognized afterwards as useful tool to curb inflation)
4. Privatization of publicly-owned banks and companies (together with other market-oriented reforms)

2. The financial side of Washington Consensus, FA liberalization and BoP CA imbalances: an inverse relationship

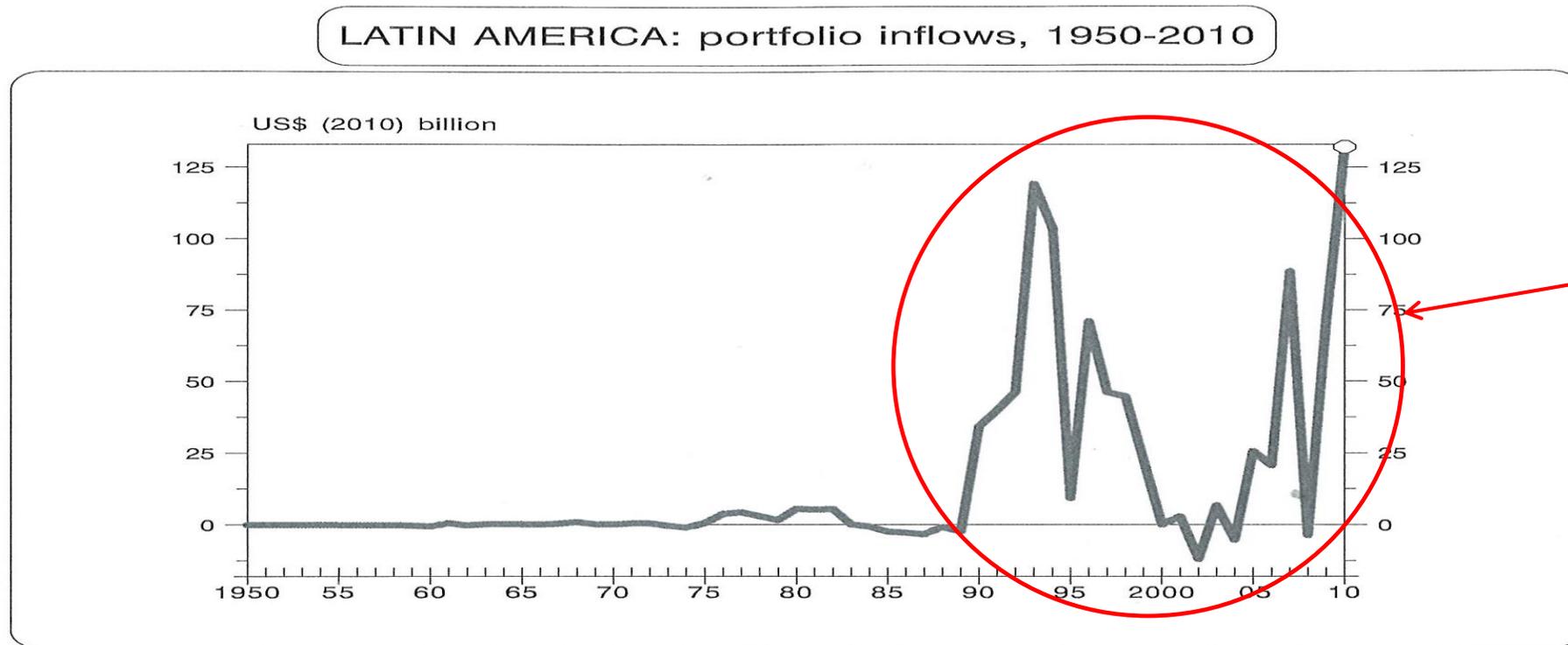
After those reforms (plus all other micro and macro reforms...) were launched, international investors believed that great new opportunities to invest would have opened in reforming economies. Indeed, in those economies (in particular, after fixing the exchange rate risk and reducing country-specific institutional or macroeconomic risks...):

$$i_H = i_{int} + \Delta e^A/e + \sigma_1 \quad \longrightarrow \quad i_H > i_{int} + \cancel{\Delta e^A/e} + \sigma_2 \quad \text{with } \sigma_2 < \sigma_1$$

Highly profitable to invest in now allegedly safer and more reliable developing countries adopting the neoliberal IMF-WB reform package

2. The financial side of Washington Consensus, FA liberalization and BoP CA imbalances: an inverse relationship

Large capital inflows thanks to (allegedly) new great investment opportunities and attractive interest rates (Taylor, 1998; Palma, 2013)



Highly
volatile and
destabilizing
capital flows

• **Source:** ECLAC (2011; total portfolio inflows).

2. The financial side of Washington Consensus, FA liberalization and BoP CA imbalances: an inverse relationship

Financial flow-led BoP cycles/1

STEP 1. $CA = 0$; $FA > 0$; $\Delta FR > 0$: Easy loans on international capital markets (in foreign currency) to finance consumption/investment projects. Foreign currency is exchanged against domestic currency. Foreign currency-denominated external debt accumulates, foreign reserves increase and liquidity expands

STEP 2. $Y_H \uparrow$; $\pi_H \downarrow$ but $P_H \uparrow$ more than P_F so that $q = (eP_F/P_H) \downarrow$ (real exchange rate appreciation)
 $IMP \uparrow$ more than EXP and $CA < 0$ (the usual problem in developing countries with poor productive structures)

$FA > 0$ and $\Delta FR = 0$: The economy expands and prices increase. Trade imbalances appear. New foreign debt ($FA > 0$) accumulated to finance emerging trade imbalances

2. The financial side of Washington Consensus, FA liberalization and BoP CA imbalances: an inverse relationship

Financial flow-led BoP cycles/2

STEP 3. $D_f \uparrow\uparrow$ more than $FR \uparrow$; $\sigma \uparrow$: Financial investors start to fear that foreign currency reserves not enough to meet payment commitments. The country-factor risk increases

STEP 4. $CA < 0$; $FA < 0$; $\Delta FR \ll 0$: Sudden stops, capital reversals and contraction of foreign reserves (the domestic CB tries to maintain the exchange rate peg)

STEP 5. $FR \approx 0$; $e \uparrow$: foreign reserves close to zero and the domestic CB gives up. The exchange rate “ e ” devaluates. Foreign debt (in foreign currency!) cannot be repaid. This is a BoP, currency and financial crisis

2. The financial side of Washington Consensus, FA liberalization and BoP CA imbalances: an inverse relationship

Case studies/1

Table 1. *Chile: selected macroeconomic variables, 1977–1983*

	1977	1978	1979	1980	1981	1982	1983
Gross domestic product (GDP) growth	8.7	7.5	8.7	8.1	4.7	-10.3	-3.8
Trade balance (% of GDP)	-1.8	-3.3	-2.8	-4.2	-10.3	-1.9	2.7
Current account (% of GDP)	-4.1	-7.1	-5.7	-7.1	-14.5	-9.5	-5.6
Capital account (% of GDP)	4.6	12.0	12.0	12.2	13.8	4.2	5.7
Central bank's FX reserves (absolute variation) ^a	66	753	1,314	1,409	-238	-1,292	22
Domestic credit to private sector (% of GDP)	20.0	28.9	36.3	46.9	53.2	84.1	75.3
Deposit interest rate (%)	94.9	63.5	45.2	37.7	40.9	48.7	28.0
US lending interest rate (%)	6.8	9.1	12.7	15.3	18.9	14.9	10.8
Exchange rate variation (%) ^b	65.1	47.0	17.7	4.7	0.0	30.5	54.8
Ex-post spread ^c	23.0	7.4	14.8	17.7	22.0	3.3	-37.6
Real exchange rate ^d	100.0	108.9	95.6	83.0	83.4	105.1	125.6
External debt (% gross national income)	42.8	49.5	46.7	45.5	50.4	77.6	99.7
Fiscal balance (% of GDP)	-1.1	-0.1	4.8	5.4	2.6	-1.0	-2.6

Column in bold text indicates the year in which Chile abandoned its fixed exchange rate regime.

^aIn millions of US dollars.

^bNominal exchange rate defined as the domestic price of the US dollar: (+) depreciation; (-) appreciation.

^cSpread = deposit interest rate - (US lending interest rate + exchange rate variation).

^dNominal exchange rate deflated by the relative consumer price index inflation: (+) depreciation; (-) appreciation.

Source: World Development Indicators, World Bank.

2. The financial side of Washington Consensus, FA liberalization and BoP CA imbalances: an inverse relationship

Case studies/2

Table 2. *Mexico: selected macroeconomic variables, 1988–1995*

	1988	1989	1990	1991	1992	1993	1994	1995
Gross domestic product (GDP) growth	1.2	4.2	5.1	4.2	3.6	2.0	4.4	-6.2
Trade balance (% of GDP)	1.4	-0.1	-1.1	-2.9	-5.0	-3.9	-4.8	2.7
Current account (% of GDP)	-1.3	-2.6	-2.8	-4.7	-6.7	-5.8	-7.0	-0.5
Capital account (% of GDP)	-2.7	2.8	4.1	7.2	7.0	7.3	2.6	4.2
Central bank's FX reserves (absolute variation) ^a	-7,365	414	3,476	7,836	1,119	6,127	-18,857	10,604
Domestic credit to private sector (% of GDP)	11.1	15.6	17.5	20.9	28.0	31.7	38.7	29.2
Deposit interest rate (%)	55.2	33.4	30.4	18.0	15.9	16.7	15.1	39.8
US lending interest rate (%)	9.3	10.9	10.0	8.5	6.3	6.0	7.1	8.8
Exchange rate variation (%) ^b	64.5	8.4	14.2	7.5	2.3	1.0	8.3	89.9
Ex-post spread ^c	-18.6	14.1	6.2	2.0	7.3	9.7	-0.3	-58.9
Real exchange rate ^d	100.0	94.6	89.9	82.0	75.0	70.8	73.6	106.6
External debt (% gross national income)	56.4	43.7	41.1	37.3	31.7	33.3	33.9	60.5
Fiscal balance (% of GDP)	-8.9	-4.6	-2.5	2.9	4.1	0.5	0.0	-0.5

Column in bold text indicates the year in which Mexico abandoned its fixed exchange rate regime.

^aIn millions of US dollars.

^bNominal exchange rate defined as the domestic price of the US dollar: (+) depreciation; (-) appreciation.

^cSpread = deposit interest rate - (US lending interest rate + exchange rate variation).

^dNominal exchange rate deflated by the relative consumer price index inflation: (+) depreciation; (-) appreciation.

Source: World Development Indicators, World Bank.

2. The financial side of Washington Consensus, FA liberalization and BoP CA imbalances: an inverse relationship

Case studies/3

Table 4. *Korea: selected macroeconomic variables, 1990–1998*

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Gross domestic product (GDP) growth	9.2	9.4	5.9	6.1	8.5	9.2	7.0	4.7	-6.9
Trade balance (% of GDP)	-1.1	-2.7	-1.2	0.4	-0.7	-1.1	-3.5	-0.6	12.9
Current account (% of GDP)	-0.8	-2.7	-1.2	0.2	-1.0	-1.7	-4.2	-1.6	11.7
Capital account (% of GDP)	0.6	2.3	2.3	0.6	2.2	3.1	4.5	-1.0	-2.5
Central bank's FX reserves (absolute variation) ^a	-425	-1,102	3,414	3,126	5,409	7,041	1,353	-13,692	31,634
Domestic credit to private sector (% of GDP)	62.8	62.5	61.2	61.4	62.2	61.2	65.0	72.7	80.3
Deposit interest rate (%)	10.0	10.0	10.0	8.6	8.5	8.8	7.5	10.8	13.3
US lending interest rate (%)	10.0	8.5	6.3	6.0	7.1	8.8	8.3	8.4	8.4
Exchange rate variation (%) ^b	5.4	3.6	6.4	2.8	0.1	-4.0	4.3	18.3	47.3
Ex-post spread ^c	-5.4	-2.1	-2.7	-0.2	1.3	4.0	-5.1	-15.9	-42.4
Real exchange rate ^d	100.0	98.9	102.1	103.1	99.7	94.2	96.3	108.4	155.5
External debt (% gross national income)	13.8	13.5	14.0	13.7	18.0	17.5	22.3	28.7	43.9
Fiscal balance (% of GDP)	-0.7	-1.6	-0.5	0.6	0.3	0.3	0.5	0.3	-3.8

Column in bold text indicates the year in which Korea abandoned its fixed exchange rate regime.

^aIn millions of US dollars.

^bNominal exchange rate defined as the domestic price of the US dollar: (+) depreciation; (-) appreciation.

^cSpread = deposit interest rate - (US lending interest rate + exchange rate variation).

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Source: World Development Indicators, World Bank.

2. The financial side of Washington Consensus, FA liberalization and BoP CA imbalances: an inverse relationship

Post-1990s and post-WC evolutions

1. Hike in commodity prices helping developing countries to avoid CA deficits
2. Inflation targeting monetary policy and (fully) **flexible** nominal exchange rate
3. Anti-cyclical fiscal policies in periods of financial 'bonanza' and when windfall revenues high
4. Flexible and deregulated economy (wage moderation) and public investments to improve productivity, export promotion and (possibly) export diversification

3. A Theoretical model on Dutch disease cum financialization

The Colombian case

Inductive approach based on the most recent Colombian development pattern – the ‘locomotora minero-energetica’ (see Botta, Godin, Missaglia (2016)):

1. Huge natural resource-oriented FDI since mid 2000s
2. Strong nominal (and hence real) appreciation of the Colombian currencies
3. Financial euphoria: relevant portfolio capital inflows and further appreciation
4. De-industrialization and increased dependence on the “mining-energy sector”
5. Increasing foreign capital-financed current account imbalances

3. A Theoretical model on Dutch disease cum financialization

What's new from the point of view of economic theory

1. Monetary aspects of Dutch disease: *nominal* exchange rate determination and implications for external balance dynamics
2. Theoretical merge between long-run dynamics (Dutch disease, permanent appreciation of q and de-industrialization) and medium-run Minskyan cycles (heightened macroeconomic instability)
3. Description of a complex Dutch disease-cum-financialization phenomenon

3. A Theoretical model on Dutch disease cum financialization

Theoretical Framework:

1. Small resource-abundant developing country attracting natural resource-oriented FDI
2. Liberalized trade and capital accounts
3. Inflation targeting monetary policy, i.e. *flexible* exchange rate regime

Assumptions:

1. FDI concentrates in the natural resource sector
2. Portfolio investment consists of short/medium-term foreign currency-denominated bonds

3. A Theoretical model on Dutch disease cum financialization

Differential equations and economic dynamics

1. Exchange rate dynamics linked to deficits/surpluses in the BoP:

$$\dot{e} = e \left\{ \left[\text{imp}_M(e) - \frac{\text{exp}_M(e)}{e} \right] - \text{exp}_{NR} + i_H D + \pi_{NR} + \dot{R} - KA_{PI}(i_H - i_F - \sigma(e, D)) - KA_{FDI}(N) \right\}$$

1. External debt dynamics linked to portfolio investment:

$$\dot{D} = KA_{PI}(i_H - i_F - \sigma(e, D))$$

3. A Theoretical model on Dutch disease cum financialization

In order to analyse the dynamics of the dynamic system, we take partial derivatives (evaluated at the steady state) and we compose the Jacobian matrix J:

$$\left. \frac{\partial \dot{e}}{\partial e} \right|_{\dot{e}=0} = \frac{exp_M}{e} \{ \eta_{imp_M}^e \chi - \eta_{exp_M}^e + 1 \} - e \frac{\partial KA^{PI}}{\partial \sigma} \frac{\partial \sigma}{\partial e}$$

$$\left. \frac{\partial \dot{e}}{\partial D} \right|_{\dot{e}=0} = ei_H - e \frac{\partial WA_{PI}}{\partial \sigma} \frac{\partial \sigma}{\partial D} > 0$$

$$\left. \frac{\partial \dot{D}}{\partial e} \right|_{\dot{D}=0} = \frac{\partial WA_{PI}}{\partial \sigma} \frac{\partial e}{\partial D} < 0$$

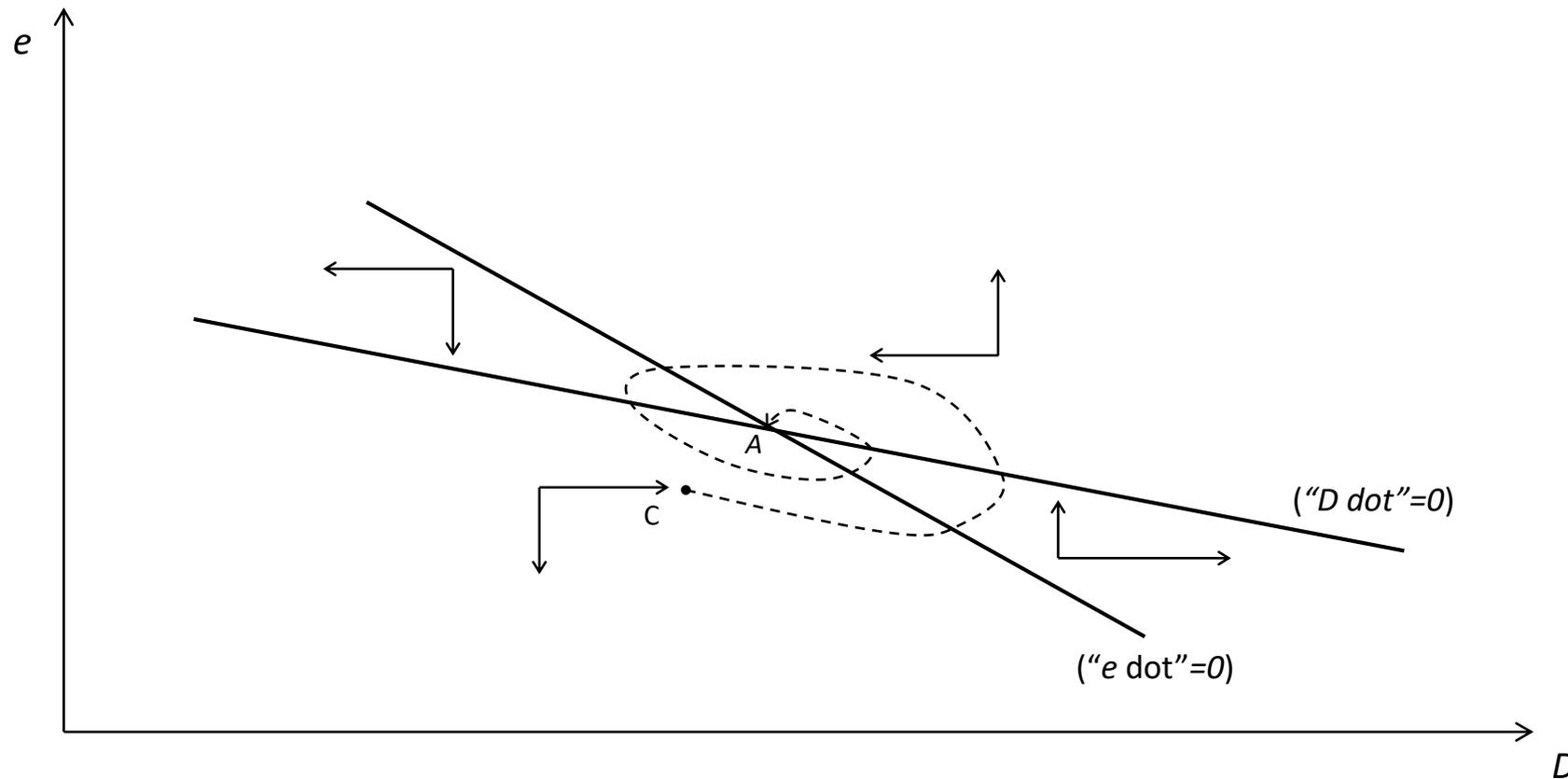
$$\left. \frac{\partial \dot{D}}{\partial D} \right|_{\dot{D}=0} = \frac{\partial WA_{PI}}{\partial \sigma} \frac{\partial \sigma}{\partial D} < 0$$

In a context of highly mobile financial flows in which international capital may be highly sensitive to variations in the exchange rate, we may have:

$$J = \begin{matrix} \dot{e} & e & D \\ \dot{D} & \left[\begin{matrix} + & + \\ - & - \end{matrix} \right] \end{matrix}$$

3. A Theoretical model on Dutch disease cum financialization

Under certain parametric settings, The “ $\dot{e} = 0$ ” locus may be steeper, in absolute values, than the “ $\dot{D} = 0$ ” locus. Hence, cyclical dynamics emerge in the $(e-D)$ space:

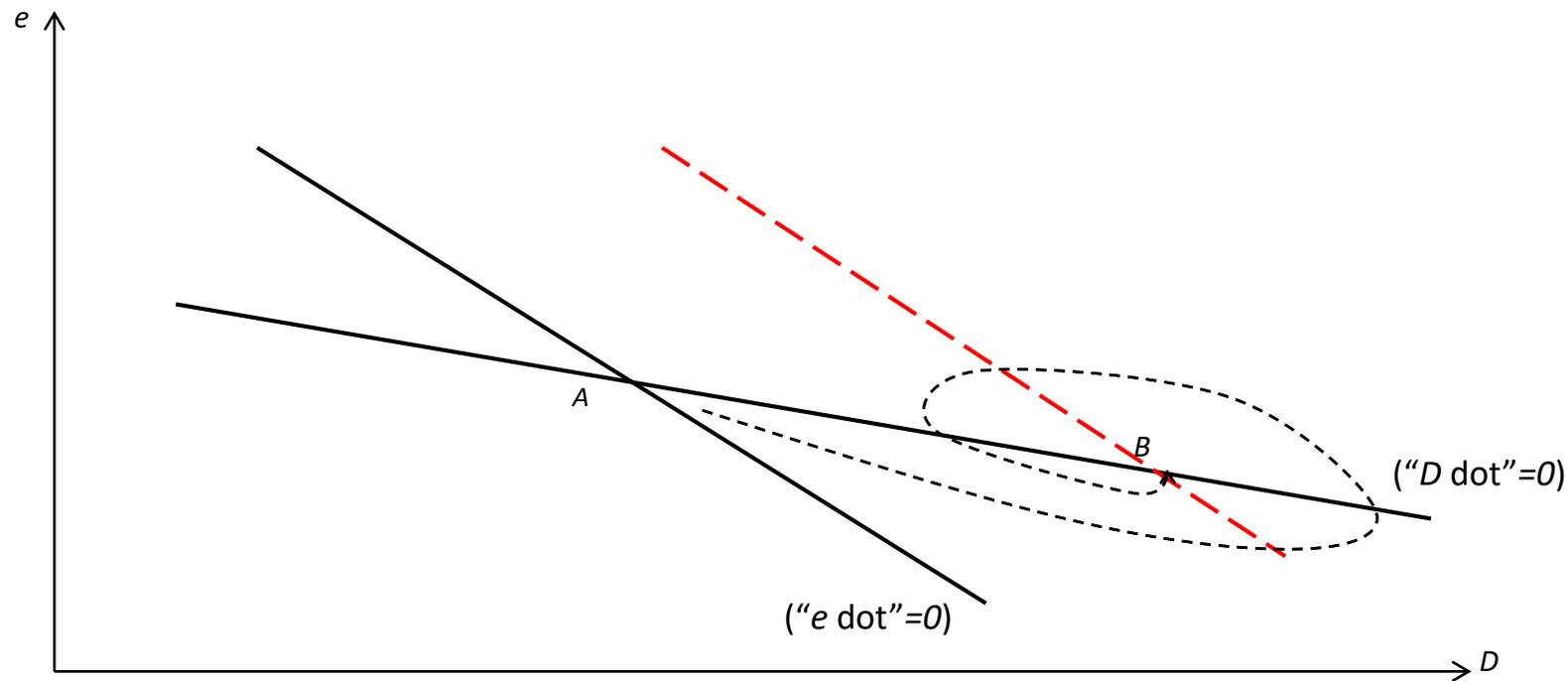


3. A Theoretical model on Dutch disease cum financialization

Initial surge in natural resource-oriented FDI

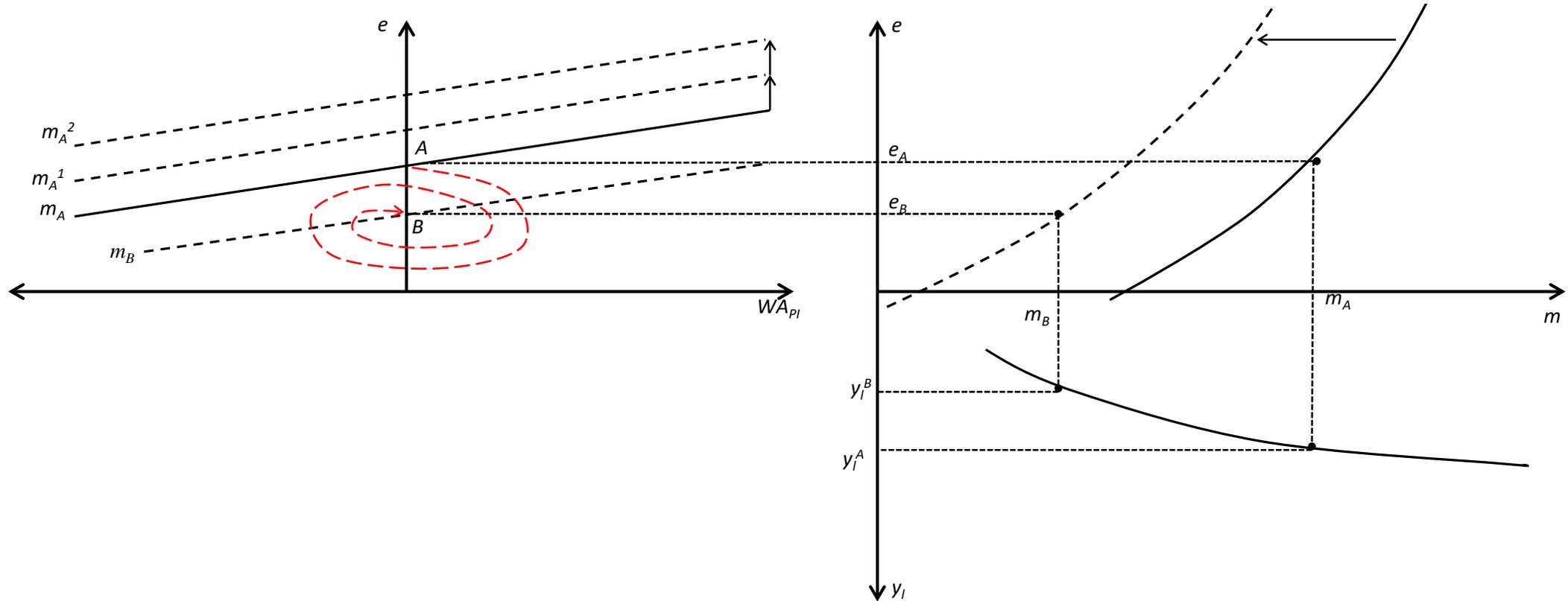
The “ $\dot{e} = 0$ ” locus moves rightward

Medium-run macroeconomic outcome: sudden-stops, capital reversals, exchange rate volatility and macroeconomic instability



3. A Theoretical model on Dutch disease cum financialization

Long-run development outcome: Premature de-industrialization + permanent slowdown in the labor productivity growth rate



4. Policy Implications

How to deal with and weaken this constrain

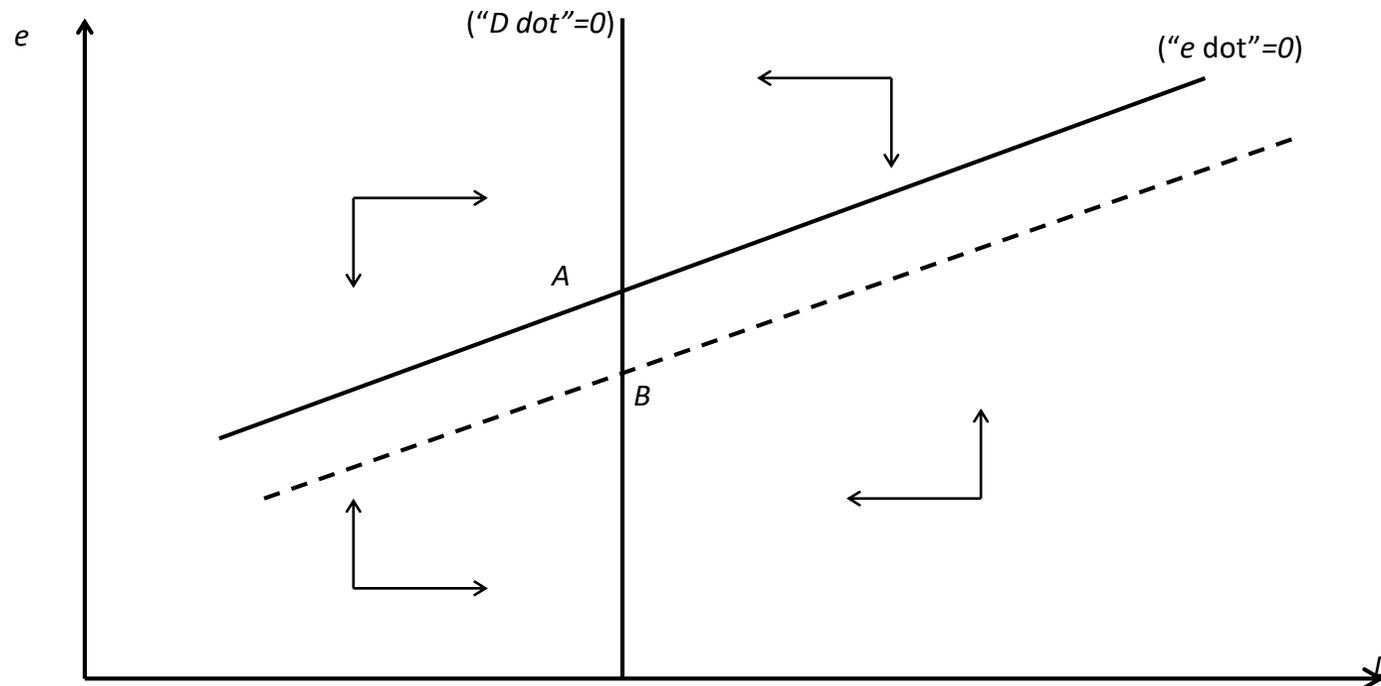
Orthodox OECD prescriptions for Colombia given market-determined nominal exchange rate + free trade and capital movements:

1. Counter-cyclical policies: restrictive fiscal and monetary stances in period of economic bonanza to curb possible appreciation of the RER (q)
2. Reduction of labour costs: eliminate high minimum wage standards and extensive deregulation of labour market
3. Public investments: in infrastructure to increase TFP (and maintain ' q ' competitive)
4. Productive and export diversification: Through *horizontal* industrial policy

4. Policy Implications

Heterodox alternative/1

1. Tight capital controls: de-link exchange rate dynamics from capital flows and avoid macroeconomic instability



4. Policy Implications

Heterodox alternative/2

2. Active management of nominal exchange rate by CB on currency market: keep nominal and real exchange rate depreciated by accumulating foreign reserves directly
 - 2.1. Managed exchange rate to be preferred to both pegged exchange rate (in the 90s) and fully flexible exchange rates (in the 2000s)
 - 2.2. Developmentalist monetary policy: competitive-constant ' q ' alternative to 'pure' inflation targeting
3. Policy coordination: Inflation control through monetary-fiscal-social policy coordination
4. Active industrial policy: funded with windfall revenues and based on dynamic comparative advantages. Start from what you have and then diversify

Some References

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Thank you

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