

40 years of quasi-stagnation in Latin-America: New Perspectives and Interpretations

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Theoretical Background

LAC Structuralism: Center-Periphery system. Uneven production of technology. Developing countries face long-term deterioration in terms of trade for primary commodity exports compared to manufactured goods.

Post-Keynesianism: Macroeconomics - Importance of *demand* in macro, fallacy of composition. Role of government intervention, particularly through fiscal policy, to mitigate economic downturns and promote economic stability.

Neo-Schumpeterian: Microeconomics - dynamic nature of economies and the role of disruptive innovation. Role of innovation, entrepreneurship, and technological progress as primary drivers of economic growth and *structural change*.

Challenges on Development Traps

- Economic specialization in production/exports of products with low added value (Botta, 2009).
- Premature deindustrialization (Andreoni & Tregenna, 2020; Rodrik, 2017).
- Lack of endogenous mechanisms that stimulate economic diversification. (Caldentey & Vernengo, 2010; Botta, 2009; Ocampo, 2002)
- Lack of technological capabilities and learning conditions that increase the quality of goods produced (Verspagen, 1992; Stiglitz, 2000).
- Dutch Disease (Bresser, 2020) and the real cost of external constraints (Bresser, 2023)

Challenges on Development Traps

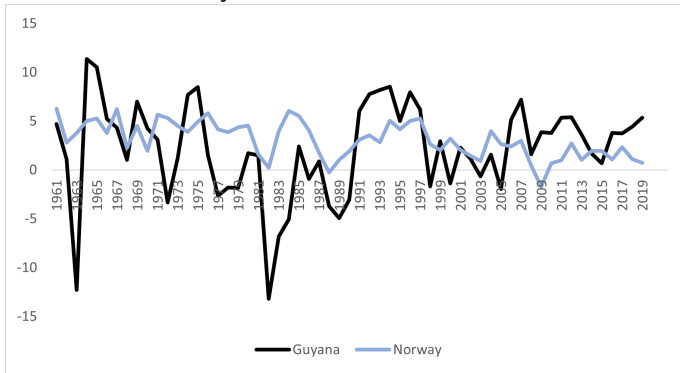
- High technological gap between periphery and center of the international economic system ([Lavopa, 2015](#)).
- Central role of the external sector in defining the possibilities of economic development. Tendency for endogenous crises in the Balance of Payments (BP) ([Thirlwall, 2014](#)).
- Commodity price volatility and the instability of financial flows affect short-term growth possibilities. ([Erten & Ocampo, 2013](#)).
- Income elasticity of imports and exports defines the long-term economic growth rate. ([Araujo, 2007](#); [Spinola, 2020](#))

Section 1

Volatility

Volatility in terms of GDP growth

Periods of unstable growth affect the whole economic behavior of economic agents and it have effects on the development of the structure of an economy.



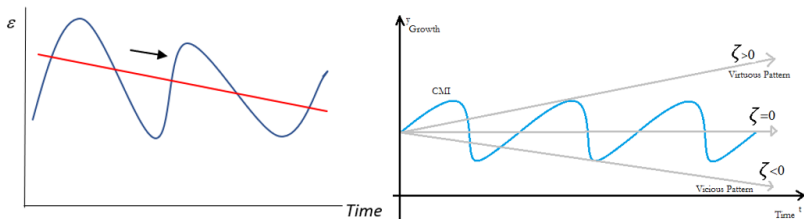
Volatility Channels on Growth

- Increases uncertainty, affecting economic agents' decisions (short- and long-run). investment projects (capital immobilization) less interesting, reducing marginal capital efficiency (Keynes, 1936; Davidson, 1999). Less investment, impacting aggregate demand (reducing economic growth).
- Instability in the external account. Relevance for developing countries as virtuous catching-up strategy demands access to capital goods (machinery) situated in the technology frontier (Stiglitz, 2000).
- Exogenous price volatility on RER of a country. Increasing oscillation in the exchange rate raises uncertainty, which may generate higher arbitration and speculation, in a pro-cyclical pattern (Andrade & Prates, 2013).

Problems with Volatility

- Uncertainty affects consumption (Precautionary Savings). (Dow, 2006).
- Increased uncertainty affects agents' defenses by protecting their Mark-up (Steindl, 1979), increasing prices. Volatility has an inflationary mechanism.
- Fall in investments leading to a reduction in productivity (Kaldor, 1975; McCombie & Spreafico, 2015)
- Stability is a requirement to learning, which is central for innovation processes (Pietrobelli & Rabelotti, 2011).

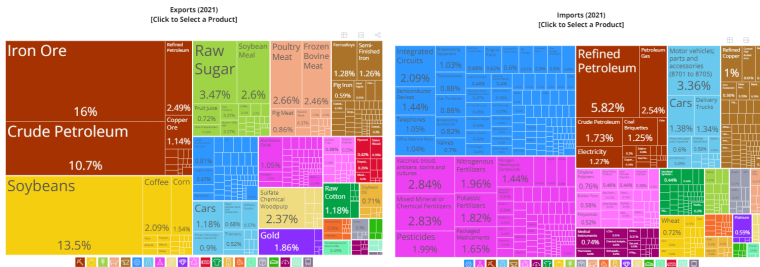
Volatility and Hysteresis



Section 2

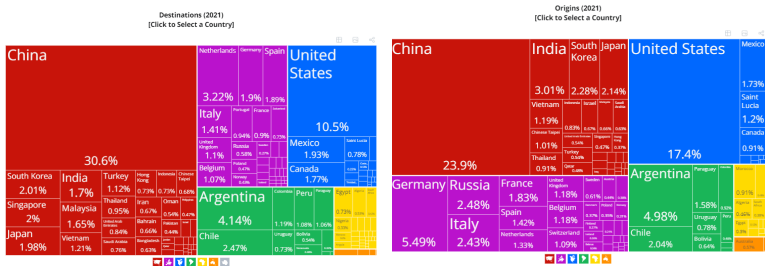
Economic Structure

Economic Structure - Brazil



Source: Observatory of Economic Complexity

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Income Elasticity of Demand

- As the world increases its income (GDP growth) what kind of products are people more willing to consume?
- Income Elasticity of Demand for Exports (ϵ): As the world gets richer, how more willing is it to consume "my" products?
- The answer depends, among many elements, on technology paradigms and on the degree of diversification of an economy.
- Low-tech and natural resource products tend to have a smaller income elasticity of demand in the long-run.

Economic structures and Structuralism

- Sectoral composition defining the pattern of interaction with the international dynamics ([Prebisch, 1950](#))
- Modern and Traditional sectors in the economy ([Lewis, 1954](#); [Lavopa, 2014](#)) and the role of informality.

Section 3

Balance of Payments Constraints

Balance of Payments Constraints (BPC)

- Growth constrained by its external conditions ([McCombie & Thirlwall, 2016](#)), especially in developing countries ("chicken flight pattern") ([Caldentey & Moreno-Brid, 2021](#); [Blecker, 2016](#)).
- BPC model: sustains that countries cannot grow in the long run at a higher rate than the growth rate compatible with the stability of its balance of payments (BP).
- When actual growth rate has higher rate than the BP compatible one, we have imbalances in the current account, leading the economy to an external crisis. Balance of payments dominance ([Ocampo, 2016](#); [Blecker, 2022](#))

Model derivation

- BPCM model derived from export and import functions (Dutt, 2002)

$$X = \theta_X q^\nu (Y_f)^\varepsilon \quad (1)$$

$$M = \theta_M \left(\frac{1}{q}\right)^\mu (Y)^\pi \quad (2)$$

- In growth rates:

$$\hat{X} = \nu \hat{q} + \varepsilon \hat{Y}_f \quad (3)$$

$$\hat{M} = -\mu \hat{q} + \pi \hat{Y} \quad (4)$$

- The equilibrium condition for the external sector requires

$$PX + F = M \quad (5)$$

- From explicit model of X and M, using the equilibrium condition ($Y^{\hat{BP}} = \hat{Y}$), then the **short-run**:

$$Y^{\hat{BP}} = \left(\frac{1}{\pi}\right) \left\{ (1 - \mu - \nu)\bar{q} + \left[1 - \left(\frac{F}{M}\right)\right] \varepsilon \hat{Y}_f + \left(\frac{F}{X}\right) [\hat{F} - (1 - \nu)\hat{P}] \right\} \quad (6)$$

- In the **long-run** as price-effects re neutral in the long-run, we have the Thirlwall law ([Thirlwall, 1979](#); [Blecker, 2021](#))

$$Y^{\hat{BP}} = \frac{\varepsilon}{\pi} \hat{Y}_f \quad (7)$$

RER and growth in the BOP-constrained growth model

- Link income elasticities with the pattern of diversification of the productive structure (Araujo, 2007)
- A more diversified economy tends to have a higher income elasticity.
- Income elasticity ratio of demand of exports and imports ($\frac{\varepsilon}{\pi}$) is a function of the specialization pattern. Countries specialized in goods with higher technological intensity show a higher ratio.
- In the long run the RER should be stable, and hence $\dot{q} = 0$ (Thirlwall 1979). RER only matters for growth in the transitional dynamics from one equilibrium position to another.

Section 4

Kaldorian Regimes

Kaldorian Regimes

Demand Regime

considers between the effective rate and the rate restricted by BP.

Productivity Regime

Learning by doing (Kaldor-Verdoorn law) and international knowledge spillovers is considered. There is the convergence between the natural growth rate and the effective demand.

Structural Change Regime

Pattern of specialization evolves as a result of technological change.

Setterfield (2002), Porcile & Spinola (2018):

- Supply (Natural Rate):

$$y_n = n + z \quad (8)$$

- Demand (Effective Rate):

$$y_e = \alpha a + \beta x \quad (9)$$

- Balance of Payments (Equilibrium Rate) Short run:

$$y_B = \left(\frac{1}{\pi}\right) \left\{ (1 - \mu - \nu) \hat{q} + \left[1 - \frac{F}{M}\right] \varepsilon g + \left(\frac{F}{X}\right) [\hat{F} - (1 - \nu) \hat{P}] \right\} \quad (10)$$

Long-run (Thirlwall, 1979):

$$y_B = \left(\frac{\varepsilon}{\pi}\right) g \quad (11)$$

Adjustments

Adjustment of the demand rate to the BP rate

$$\dot{a} = \lambda(y_B - y_e) \quad (12)$$

Adjustment of the supply rate to the demand rate

$$e = y_e - y_n \quad (13)$$

Non-price competitiveness

$$\frac{\varepsilon}{\pi} = \varepsilon(T), \varepsilon_T < 0 \quad (14)$$

In which T represents the technology gap, which is also present in the **productivity** equation:

$$z = z(E, \varepsilon, T, s) \quad (15)$$

E is the employment rate, ε is the income elasticity of exports, T is the technology gap, and s is a shift parameter that represents domestic efforts at technological learning (NIS)

Technological Gap and Systems of Innovation

- The technological gap (T) co-evolves with the pattern of specialization (ε) and the employment rate (E) so that the sides of supply and demand interact by shaping the effective growth rate and the natural growth rate.

Central role of the National Innovation System to enable the economy to grow the productivity rate and change the standard of specialization (Lundvall et al, 2008).

technology gap

$$T = \frac{t_N}{t_S} \quad (16)$$

T is the technological gap. This equation defines the Structural Change Regime. Backward economies could benefit from technological spillovers from countries at the border. Growth rate of the technological gap:

$$t = \lambda[t^N - t^S] \quad (17)$$

Catching-up ($t < 0$) and falling behind ($t > 0$).

Learning and Systems of Innovation

$$t^s = s(T) + bE + \nu\varepsilon(T) \quad (18)$$

Learning to learn

- A linear form for the Technology Gap relationship in [Fagerberg \(1988\)](#), by which the larger the initial level of the technology gap the lower is the rate of change of the technology gap - and the higher the rate of catching up with the leader (i.e. $s_t < 0$) - is attractive for its simplicity;
- The evidence, however, favors a nonlinear specification ([Fagerberg & Verspagen, 2002](#)): spillovers increase with the gap up to a certain critical point of T , after which spillovers decrease with T .

Section 5

Hysteresis

Kaldorian cumulative causation

Deep path-dependence (Setterfield & Cornwall, 2002): parameters change as the economy moves towards its long-run equilibrium.

Centre-periphery system: centre is the technological leader and the periphery is specialized in sectors with lower income-elasticity of exports (commodities).

Challenge of the periphery: transform its pattern of specialization using the exchange rate and industrial policies.

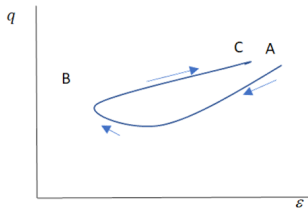
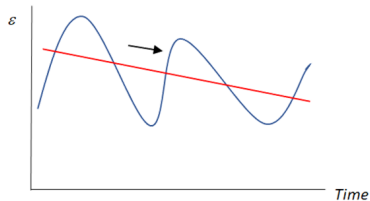
Hysteresis effect

$$\dot{\varepsilon} = \left(\frac{\alpha}{1 + \beta_1} \right) \frac{\gamma}{\pi} \dot{q}, \text{ if } \dot{q} > 0 \quad (19)$$

$$\dot{\varepsilon} = \left(\frac{\alpha}{1 + \beta_2} \right) \frac{\gamma}{\pi} \dot{q}, \text{ if } \dot{q} < 0 \quad (20)$$

As $\beta_1 > \beta_2$, inertial forces are stronger when the economy is recovering than when the economy is losing capabilities.

The hysteresis scenario that hinders structural transformation and leads to regressive structural change after each appreciation-depreciation cycle of the RER.

Hysteresis in the evolution of ε Cycles and trend in ε over time

The dynamic system in the financialization scenario.

Conclusions

- Important challenges to development: weak structures, volatility, immature innovation systems and external constraints.
- Necessary for more research in this field, with the perspective from a peripheral laggard economy embedded in the international dynamics.

Thank You!