

STRUCTURAL TRANSFORMATION AND DYNAMIC EFFICIENCY

José Antonio Ocampo
Banco de la República de Colombia

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São Paulo School of Economics
Getulio Vargas Foundation

STRUCTURAL TRANSFORMATION AND DYNAMIC EFFICIENCY (1)

- ❖ Underlying rationale for targeted/deliberate production sector strategies: conflict between static (resource allocation) and dynamic efficiency (changes in the structure of production).
- ❖ Analytical innovations include revival of ideas of classical, neo-Schumpeterian, structuralist and evolutionary economics that emphasize economies of scale and agglomeration, learning and accumulation.
- ❖ Contrast with policy dominance of neo-liberalism (which may be weakening).

STRUCTURAL TRANSFORMATION AND DYNAMIC EFFICIENCY (2)

- ❖ Disappointment with effects of more open, less interventionist economies on growth (e.g. Latin America).
- ❖ More attention needed to linkages between growth and productivity (Kaldor) and between firms and sectors (Hirschman's backward and forward linkages).
- ❖ Successful development is essentially a process of structural change. It depends on dynamics of production structures and related policies and institutions.

SYTLIZED FACTS

STYLIZED FACTS (1): THE INTERNATIONAL ECONOMY IS AN UNLEVELED PLAYING FIELD

- ❖ There is a world economic hierarchy.
- ❖ Very few new entrants into the top club.
- ❖ “Dual divergence” rather than convergence, with the past decade as a historical exception (which may be partly over).
- ❖ High variance of growth experiences in the developing world (divergence, stagnation at low or middle-income levels, truncated convergence).
- ❖ This reflects the agglomeration forces generated by static or dynamic economies of scale.

**STYLIZED FACTS (1):
THE INTERNATIONAL ECONOMY IS AN UNLEVELED PLAYING
FIELD (cont.)**

- ❖ Basic financial/macroeconomic asymmetries: different degrees of autonomy to adopt countercyclical macroeconomic policies.
- ❖ Very large (prohibitive?) entry costs into the club of technology leaders.
- ❖ Strong dynamic economies of scale that characterize sectors with high technological content.
- ❖ Spatial agglomeration generated by static or dynamic economies of scale: entry costs into mature sectors.
- ❖ Asymmetries between firms that control and suppliers in global production chains.

STYLIZED FACTS (2): STRUCTURAL CHANGE IS THE ESSENCE OF ECONOMIC GROWTH

- ❖ “Balloon” vs. “structural” views of economic growth
 - ❖ Ability to generate new dynamic activities/innovations
 - ❖ Patterns of international specialization matter
 - ❖ Repetitive phenomenon of creative destruction
- ⇒ Success in structural change is the key to successful economic development

STYLIZED FACTS (3): PATH DEPENDENCE ASSOCIATED TO LEARNING PROCESSES

- ❖ Dynamic economies of scale associated with learning.
- ❖ Opportunities determined by production experience.
- ⇒ Comparative advantages can be created
- ⇒ The loss of productive experience can have adverse long-term effects on growth (which may come with a lag, particularly in economies experiencing commodity booms)

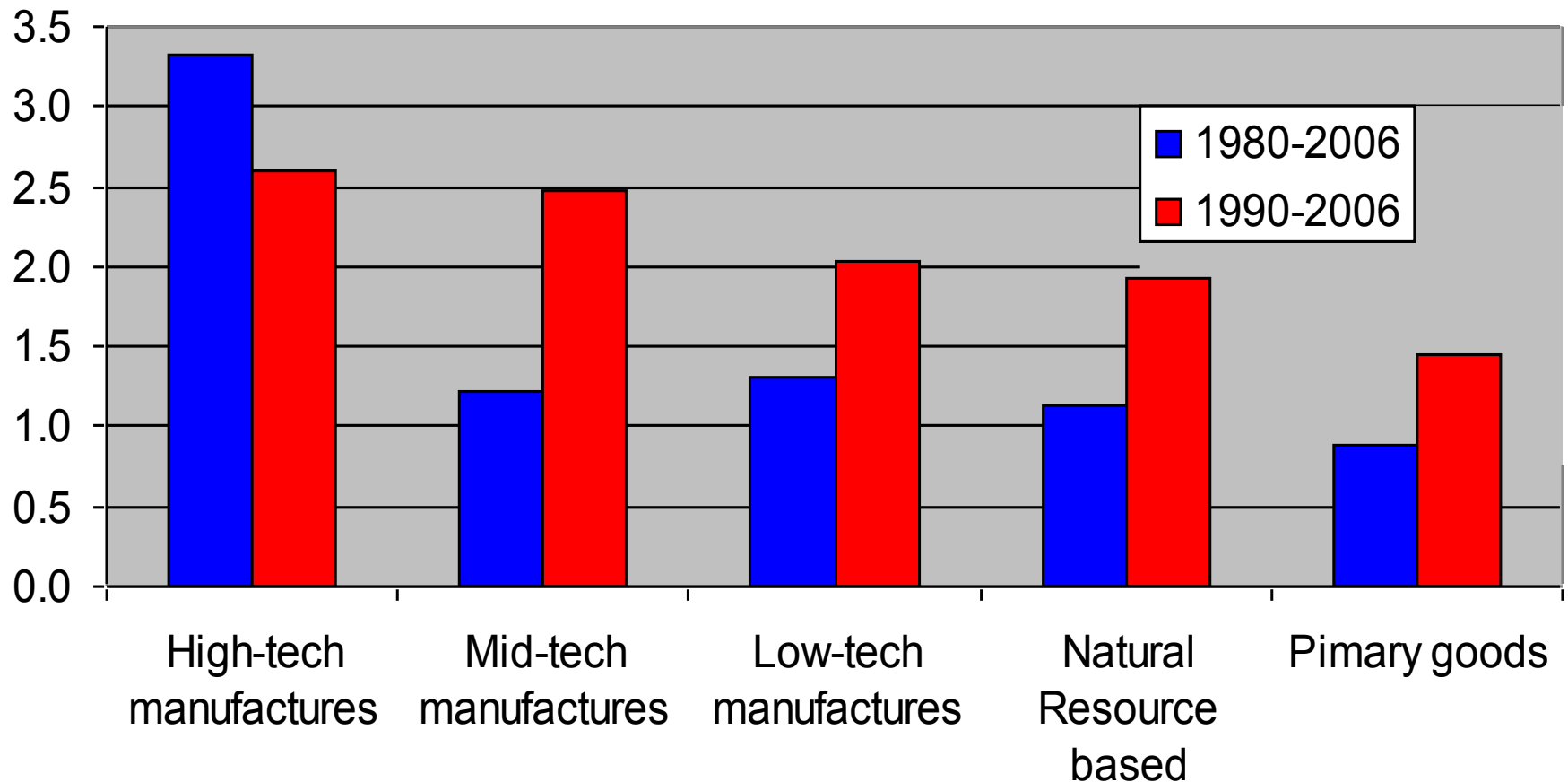
SPECIALIZATION PATTERNS MATTER

- ❖ Most countries that have failed in increasing market shares are exporters of primary goods and natural resource-intensive manufactures.
- ❖ Non-dynamic markets face “fallacy of composition” effects (typical of commodity markets).
- ❖ There are countries that have extracted fair growth out of a specialization pattern based on natural-resources or low-tech manufactures.
- ❖ But most developing countries that have grown fast have been increasing market shares in mid or high-technology exports
- ❖ The East Asian regional cluster has an effect on top of those captured by the patterns of export diversification (huge contrast with Latin America).

SPECIALIZATION PATTERNS MATTER

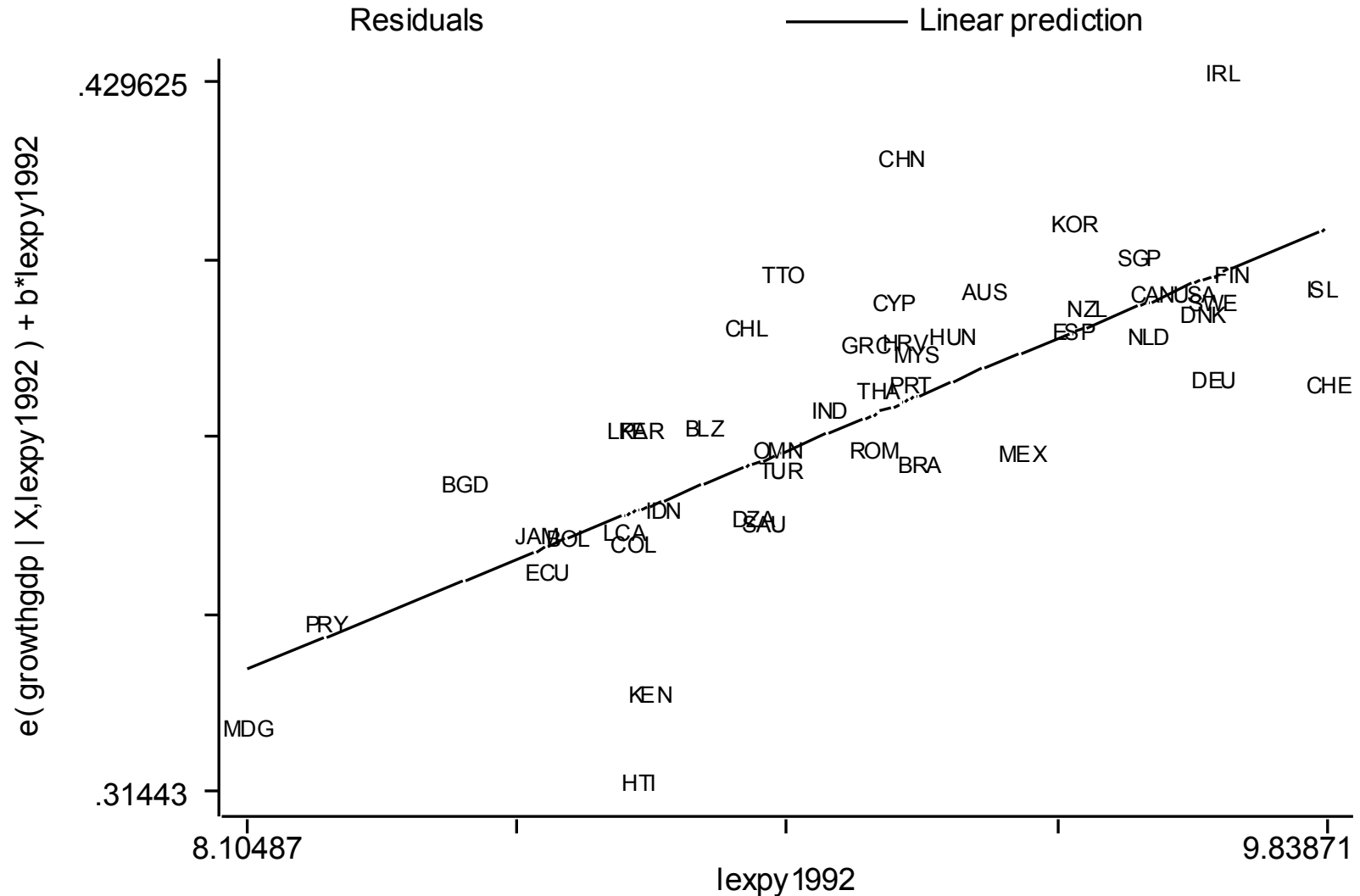
(Ocampo-Parra)

Per capita GDP growth according to specialization pattern

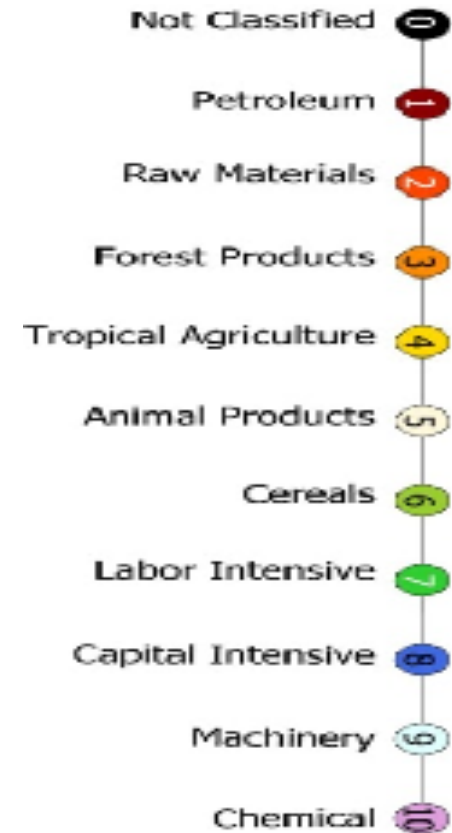
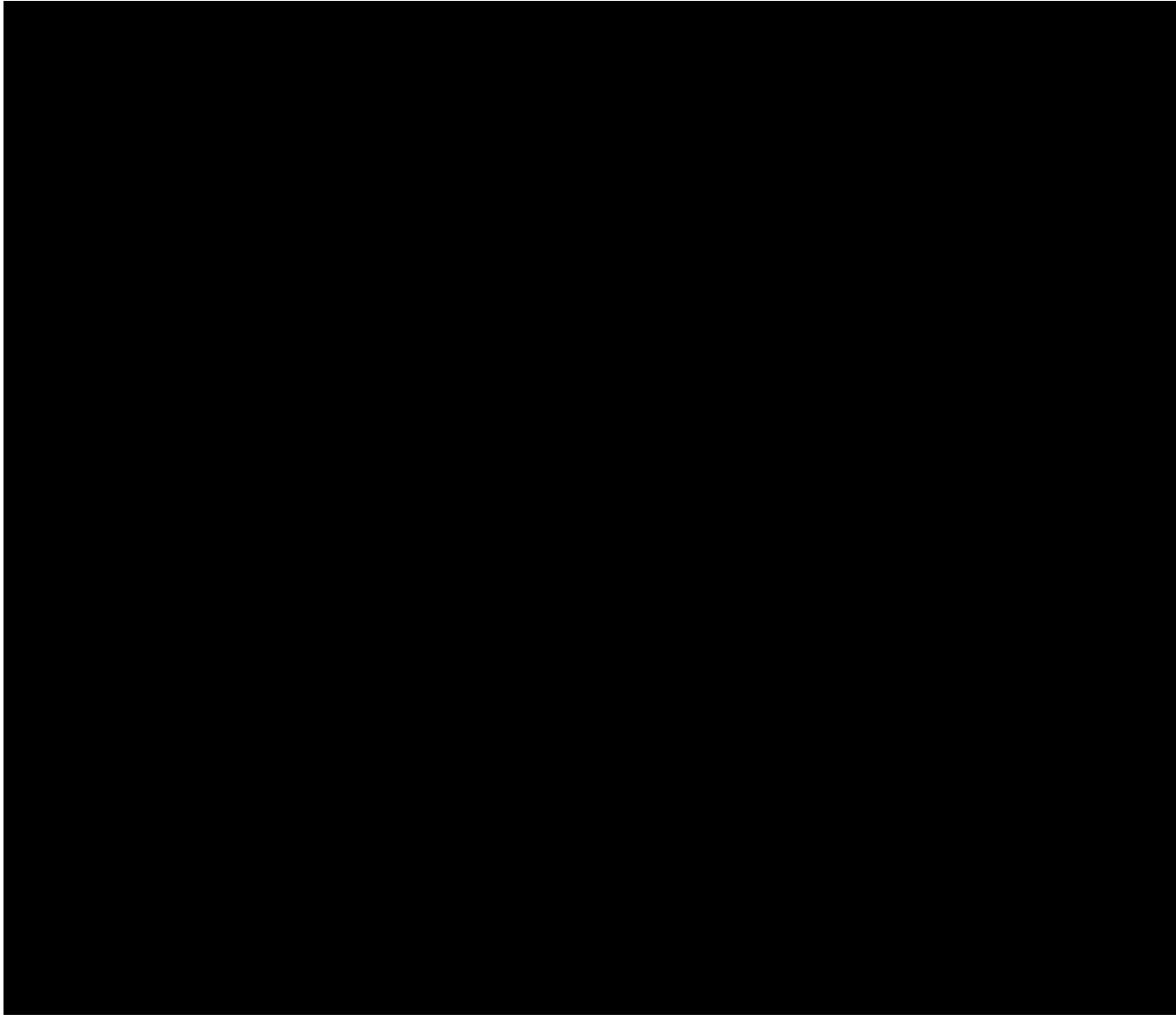


SPECIALIZATION PATTERNS MATTER

(Hausmann-Hwang-Rodrik)



A RELATED CONCEPT: THE “PRODUCT SPACE” (Hausman-Hidalgo-Klinger)



DYNAMICS OF PRODUCTION STRUCTURES AND ECONOMIC GROWTH

DYNAMICS OF PRODUCTION STRUCTURES

Interaction between two basic forces:

- ❖ **Innovations**: New activities and new ways of doing previous activities and the **learning processes** that characterize the materialization of their potentialities
- ❖ **Complementarities** (linkages or networks) among firms and production activities and the **institutions** required for the full development of such complementarities
- ❖ A complementary factor: Elastic factor supplies for innovative activities

INNOVATIONS AND ASSOCIATED LEARNING PROCESSES (1)

- ❖ Critical mix between creation and destruction, or between substitution vs. complementary effects of innovations.
- ❖ In the industrialized world, technical change is the engine.
- ❖ In the developing world, transfer of sectors from the industrialized world plays that role.
- ❖ How this process generates the accumulation of technological capabilities is crucial.

INNOVATIONS AND ASSOCIATED LEARNING PROCESSES (2)

- ❖ Climbing up the ladder in the world hierarchy entails shortening transfer periods and gradually becoming a more active participant in the generation of technology.
- ❖ Attributes of technical change, organizational and commercial knowledge:
 - ✓ Incompletely available and imperfectly tradable
 - ✓ Proficiency cannot be detached from production experience
 - ✓ Private-public attributes

COMPLEMENTARITIES AND INSTITUTIONAL DEVELOPMENT (1)

- ❖ Development of networks of suppliers of goods and specialized services, marketing channels, and organizations and institutions that disseminate information and provide coordination among agents
- ❖ Demand effects: macroeconomic multipliers
- ❖ Supply effects: positive externalities, basis of mesoeconomic dynamic economies of scale that determine competitiveness of production activities

COMPLEMENTARITIES AND INSTITUTIONAL DEVELOPMENT (2)

- ❖ Efficient provision of non-tradable inputs and specialized services
 - ✓ Knowledge, logistic and marketing services
 - ✓ Specialized financial services
 - ✓ Adequate infrastructure
- ❖ Institution-building is non-tradable (at best imperfectly tradable, as there is room for imitation), closely associated with experience and has dominant public good attributes

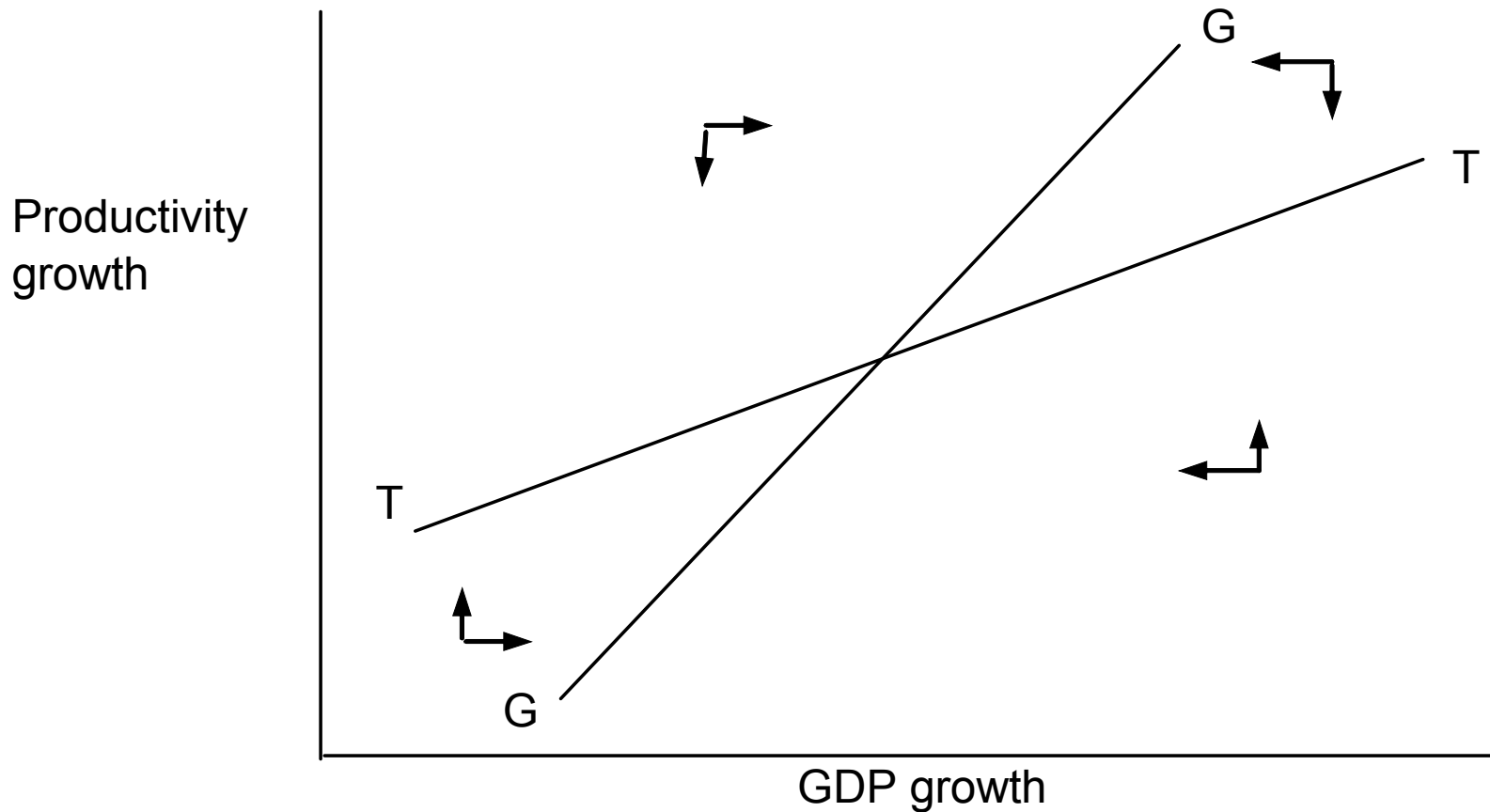
INTERPLAY OF INNOVATIONS AND COMPLEMENTARITIES

Learning process	Complementarities	
	Strong	Weak
Strong	Deep	Short breath
Weak	Labor absorbing	Shallow

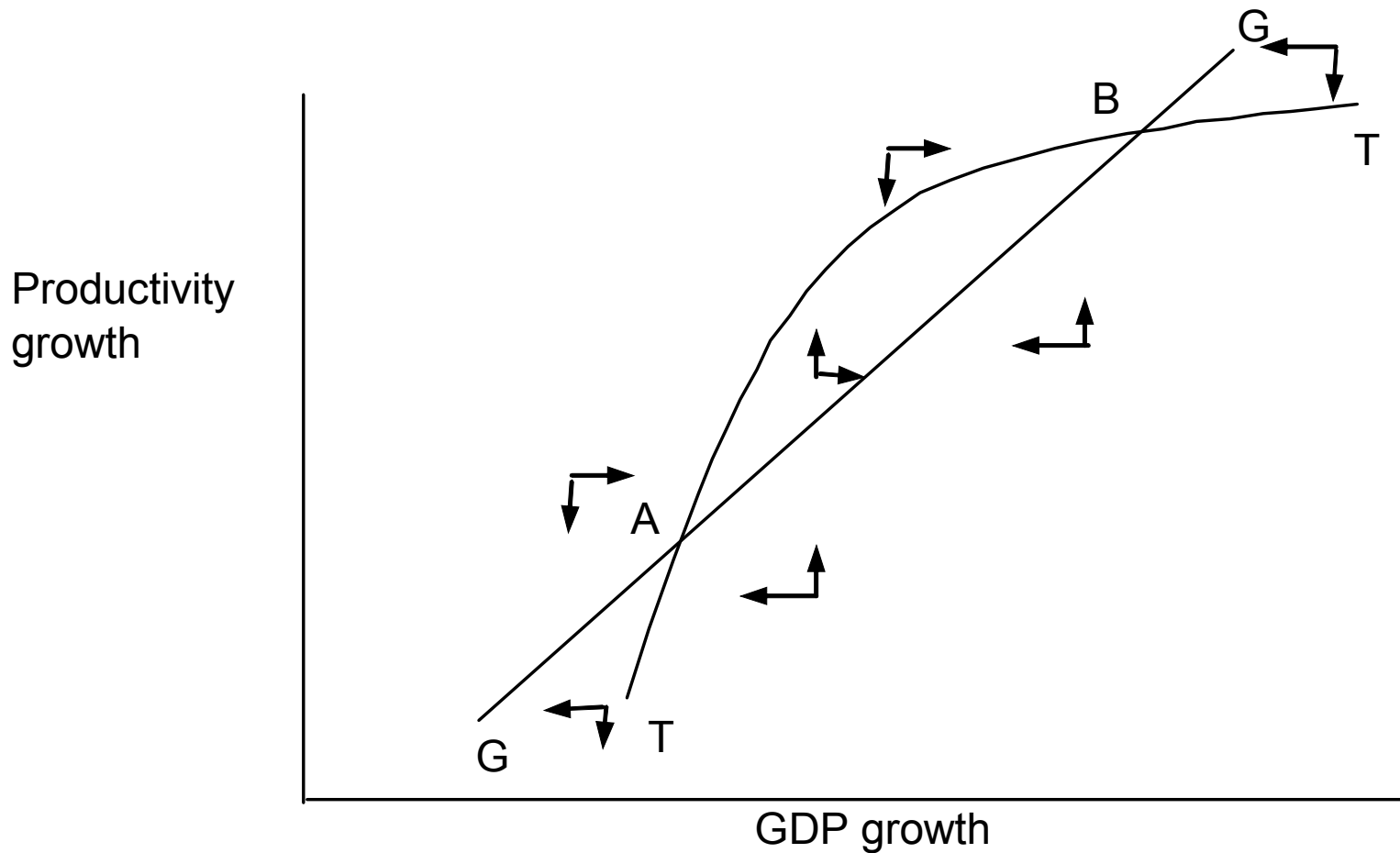
ELASTIC FACTOR SUPPLIES

- ❖ Crucial role of availability of finance for innovative activities.
- ❖ Structural heterogeneity (coexistence of firms with different productivity levels) guarantees an elastic supply of labor in the developing world.
- ❖ Rapid development is the result of reallocation of labor towards high-productivity activities subject to increasing returns to scale.
- ❖ Kaldor-Verdoorn growth-productivity links.
- ❖ This implies that the dynamics of aggregate productivity is a largely a result of dynamic economic growth, rather than a cause.

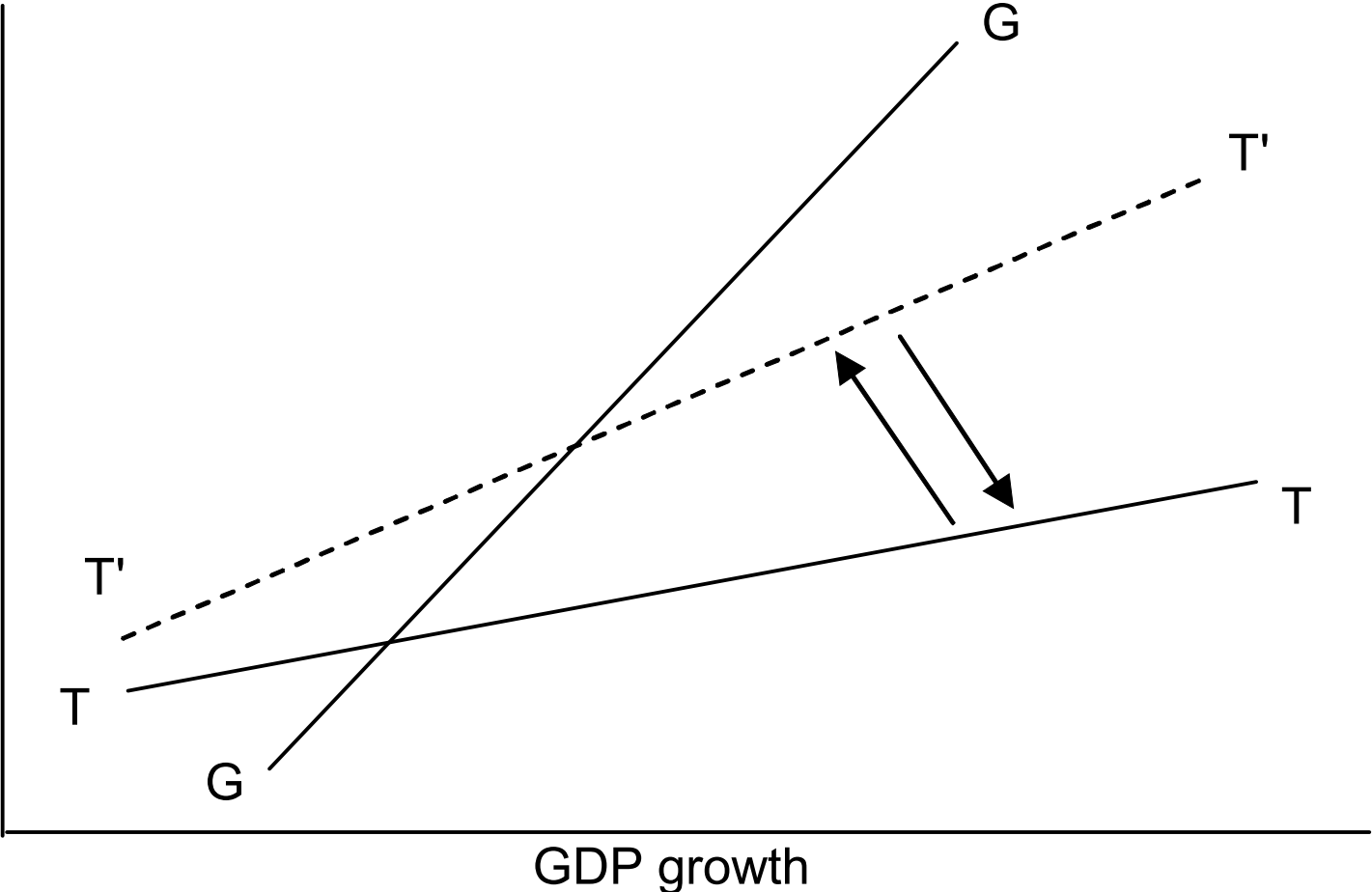
LINKS BETWEEN STRUCTURAL AND MACROECONOMIC DYNAMICS: SINGLE EQUILIBRIUM



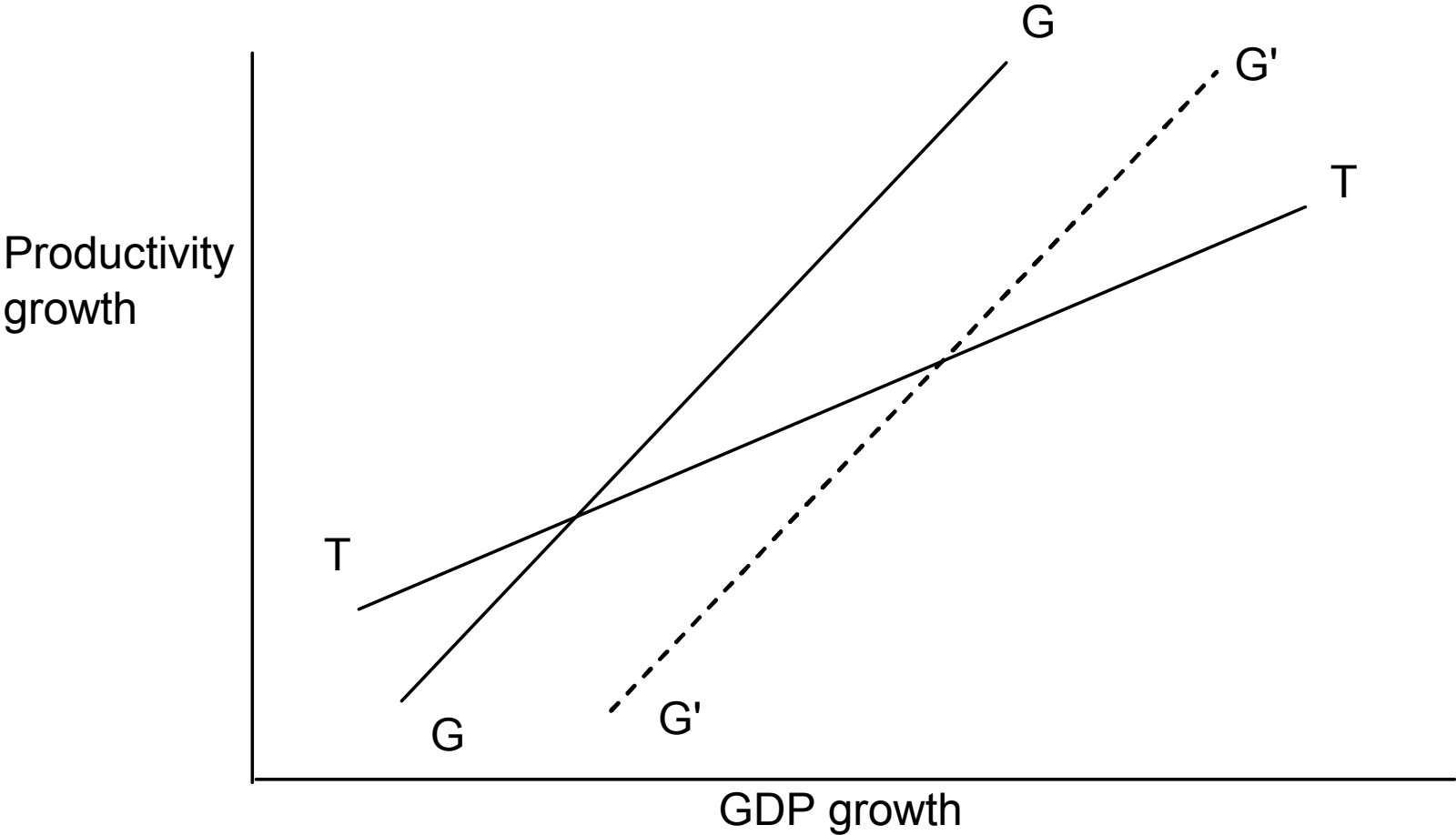
MULTIPLE EQUILIBRIA



EFFECTS OF A NEW WAVE OF INNOVATIONS



EFFECTS OF A FAVOURABLE MACROECONOMIC SHOCK



PRODUCTION SECTOR STRATEGIES (1)

- ❖ Competitiveness vs. industrial (production sector) policies. The latter aim at diversification toward activities with higher technological contents
- ❖ The sectorial focus will depend on national conditions: past trajectory, resources, size.
- ❖ The basic ingredients:
 - ✓ *Innovation*: increasing technological contents, new business practices.
 - ✓ *Complementarities*: there should be externalities, particularly through value chains.
 - ✓ Technological activities and tasks, but sectorial policies may be the only possibility.
 - ✓ *Internationalization* (and therefore competitiveness), but don't overlook the possibilities offered by domestic/ regional markets.

PRODUCTION SECTOR STRATEGIES (2)

- ❖ Horizontal instruments (background conditions):
 - ✓ Education and vocational/technical training.
 - ✓ Infrastructure.
 - ✓ Science and technology system as the focus of special attention.
 - ✓ Financing: development banks, private institutions than play that role (investment banks, private equity).
- ❖ Selective/sectorial strategies:
 - ✓ Promote new activities/sectors. [Not quite “picking winners” but “building up winners”].
 - ✓ Improve competitiveness of existing industries, with a focus on value/supply chains.
 - ✓ Add value to existing export activities, including natural resources.

**SPECIAL ISSUES:
COMMODITY SPECIALIZATION
AND EXPORT STRATEGIES**

IS COMMODITY SPECIALIZATION A PROBLEM?

- ❖ Long debate on the “Dutch disease”
- ❖ Problems associated with the economic *structure*. The clue here is the exploitation of the production linkages and technological upgrading.
- ❖ *Macroeconomic vulnerability* due to commodity price volatility and associated fluctuations in capital flows. The clue here is counter-cyclical policies, and in particular avoiding exchange rate volatility.
- ❖ *Political economy problems*: rents generate a perverse political economy + rent-seeking and possibly corruption + conflict in oil/mining areas.

THE CASE FOR NATURAL RESOURCE-BASED INDUSTRIALIZACION TODAY

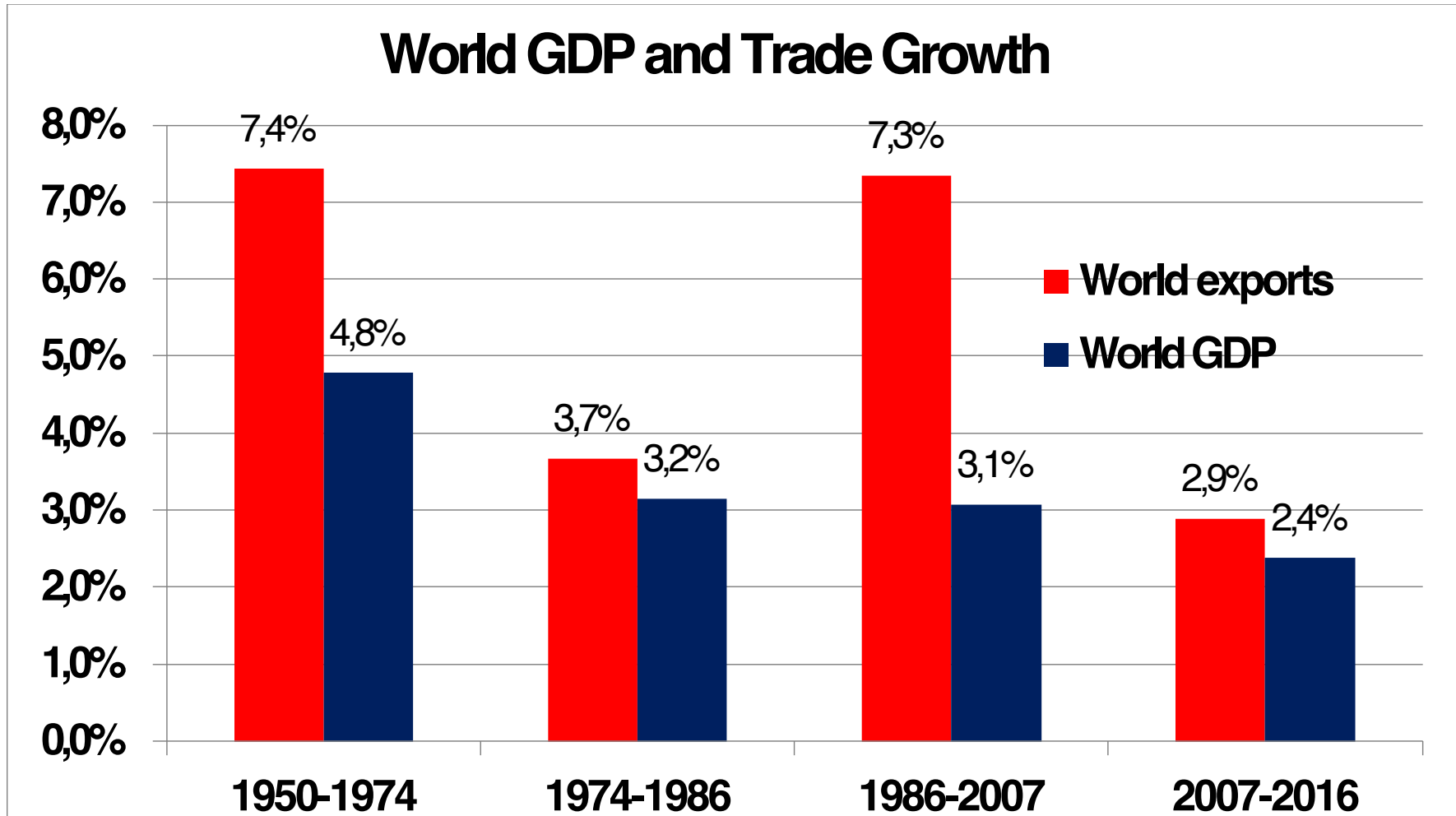
(Carlota Perez)

- ❖ Latin America already lost the train in manufacturing of ICT products + it is not a low-wage region for low-cost manufacturing.
- ❖ Complementarities with East Asia.
- ❖ Opportunities in natural-resource based industrialization
 - ✓ Technological: biotechnology, nanotechnology, environmentally-friendly products.
 - ✓ New market opportunities: differentiated and customized products.
 - ✓ High Asian demands + prices (now questionable)
- ❖ Need to exploit the whole network + social (Fair Trade) and environmentally-friendly opportunities.

EXPORT STRATEGIES

- ❖ Increasing market shares in sectors where a specific country has an established position.
- ❖ Diversifying into higher technology products.
- ❖ The first strategy is widely available. The second will be available only to a limited number of developing countries
- ❖ Individual countries can succeed in any of these strategies, but as a group developing countries can only succeed in the first if developed countries lose market shares (or if the demand is very elastic).
- ❖ Different markets provide different opportunities (N-S, S-S with China at the center, intraregional).
- ❖ Domestic markets are still attractive!

STRONG SLOWDOWN OF INTERNATIONAL TRADE MAKES DOMESTIC/REGIONAL MARKETS MORE ATTRACTIVE



ANCHORED VS. SHALLOW INDUSTRIES

- ❖ The development impact of the strategy of a given country depends on the capacity to capture a high or small share of the value added.
- ❖ This is in a sense obvious and even tautological, as GDP is nothing else but “value added”
- ❖ But can have broader implications, as those activities with limited value added (e.g., maquila) are likely to be footloose
- ❖ Unless the industries are firmly “anchored” in the domestic economy, their growth-enhancing capacity evaporates: “shallow” specialization.

SUCCESS IN INCREASING MARKET SHARES AND SPECIALIZATION PATTERNS

- ❖ The conclusions are not necessarily encouraging.
- ❖ Diversifying into mid- and high-technology exports is not available for many developing countries, and there may be agglomeration forces at work that benefit the East Asian regional cluster
- ❖ So, most developing countries would have to compete in primary goods, natural resource or low tech manufacturing exports, where they are likely to face “fallacy of composition” effects
- ❖ The best option in this case is continued opening of the markets for these products by industrial countries (unlikely in the future).

POLICY IMPLICATIONS

POLICY IMPLICATIONS

- ❖ Combine strategies of structural transformation with appropriate real macroeconomic stability.
- ❖ Strategy of diversification of the production structure: mix of horizontal and selective policies + reciprocal control mechanisms.
- ❖ The strategy has to take into account country-specific conditions (size, history, resources)
- ❖ Structural transformation is not a once and for all process
- ❖ It is not smooth (destruction is a companion of creation)
- ❖ Structural heterogeneity is a persistent feature

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