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Commodity Chains, Unequal Exchange and Uneven Development

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Abstract:

Research shows an uneven partition of value added along commodity chains between transnational firms and producers in developing countries. This paper briefly discusses how such a distribution occurs and how it leads to unequal exchange in trade. A North-South trade model reveals the uneven development consequences of this exchange. The terms of trade between North and South help maintain a gap in capital accumulation between the two regions. The model reveals that capital flows covering the trade deficit of the South with the North may help stimulate the unrequited transfer of real resources from South to North.

Introduction

One of the forces promoting trade liberalization has been the globalization of production, driven by transnational companies' strategies to minimize production costs by relocating phases of production of commodities across borders. The commodity chain/value chain literature that has proliferated in the last twenty years studies the international relocation of phases of production from the microeconomic aspects of technology transfer, power relations, competition and concentration, quality standards etc. (e.g. Gereffi and Korzeniewicz 1994; Gereffi 1994a; Kenney and Florida 1994; Raikes *et al.* 2000; Schmitz and Knorriga 2000; Kaplinsky 2000). Studies reveal that "there has been a lack of correspondence between the growing global spread of economic activities associated with meeting global demands and the

incomes which arise from these activities" (Kaplinsky and Morris 2000, 41). The

relocation of phases of production yields more than incremental advantages to the

transnational companies; it entails conspicuous imbalances in the partition of the final

value added of the commodities in favor of transnational companies and other

institutions in the developed countries (in "the North", i.e. the center of the world-

system), relative to the producers of the commodities located in developing countries

("the South" i.e. the periphery of the system).

A few observations may serve to illustrate the argument. Gereffi (1989, 525)

has observed that "[t]he distributors' margins in the footwear industry in the United

States … averaged 50% in the mid-1970s, but were closer to 60% for imported

goods... ." In another study Gereffi reported that "[o]f the $75 billion spent on U.S.

apparel imports … $25 billion corresponded to the foreign-port value of imported

clothing, $14 billion to landing, distribution, and other costs, and $36 billion to the

retailers' average mark-up of 48 percent on imported goods… . The consumer's retail

price thus amounts to three times the overseas factory cost for imported clothing"

(1994b, 102-3). According to Feenstra, the export price of Barbie dolls produced in

China and exported from Hong Kong is two dollars, and "[t]he dolls sell for about $10

in the United States, of which Mattel earns at least $1, and the rest covers

transportation, marketing, wholesaling and retailing in the United Sates. The majority

of value-added is therefore from U.S. activity" (1998, 36). Kaplan and Kaplinsky

(1999, 1794) have found that South African producers received 43 percent of the

market value of canned peaches that they export to European markets. Chossudovsky

(1998, 88-90) reports that five percent of the market value of shirts sewn in a

Bangladeshi factory (from imported inputs) and marketed in the US accrued to

Bangladesh in 1992. Shirts sewn in El Salvador for 18-19 cents a piece are sold in the

US for between 12-20 dollars (Figueroa 1996, 37, 39). According to Talbot (1997, 18)[1] "from the early 1960s to the late 1980s roughly half of the total surplus generated along the entire [coffee] chain was retained in the producing countries", but after 1986 with the collapse of the International Coffee Agreement "there was a massive shift of surplus from the coffee producing countries to TNCs in the core, who used their market power to hold down the price of green coffee while inflating the price of coffee processed for final consumption." Chossudovsky (1998, 87-88) indicates that only 10 percent of the value of coffee sold in the US accrued to the producing countries in the early 1990s. Dikmen (2000, 215, 243) found that in 1999 manufacturers in Istanbul and Denizli (Turkey) producing garments for foreign firms earned between 20-25 percent of the price of their products in the final destination.

Few studies of commodity chains devote attention to the macroeconomic and growth implications of this imbalanced partition of value added. Kaplinsky (2000, 129) states the problem:

> …when production occurs in the context of falling global product prices, national accounting systems may reflect a growth in activity and value which does not correspond with the international purchasing power of this sectoral activity. The problem is particularly acute when decisions about *national* resoource allocation - affecting income streams over time - are made without reference to *global* dynamics of returns to different activities in the chain.

This paper presents a North-South trade model to study the problem described by Kaplinsky - the consequences of the partitioning of value added in commodity chains for the terms of trade between the North and the South and for the rates of

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[1] Page number on internet version.

capital accumulation in the two regions. We first briefly discuss the determinants of the partition of value added in commodity chains in Section I. In Section II a North-South trade model is presented to study the macroeconomic implications of global value chains. Section III analyzes the interaction between capital flows from North to South that finance Southern trade deficits, and the unrequited real transfers (through value transfers along commodity chains) in the reverse direction, from the South to the North. Section IV studies how the value added partitioning contributes to uneven development in the longer term. The last section concludes.

I. Commodity chains and unequal exchange

Distribution of value added along commodity chains may relate to the fact that developing economies that have 'opened up' and increased their share in world trade have not been enjoying a concomitant increase in their share of world income (Kaplinsky 2000, 118-9). It is observed that "the share of the developed countries in world income (in current dollars) increased from less than 73% in 1980 to 77% in 1999" (UNCTAD 2002, 51). The share of manufactures in developing countries' exports has been increasing, displacing production based on unskilled labor in the North (Wood 1994). The share of the developed countries in world exports of manufactured goods has been declining, and their share in world manufactured value added has been increasing (UNCTAD 2002, 51-52).

Evidence on the deteriorating terms of trade for developing countries may possibly be reflecting these trends. One investigation has found that, over 1979-1995 the average price of manufactured exports of developing countries to the European Union increased annually by an average of 2.0 percent, while the average price of manufactured exports of the European Union to the developing countries increased

annually by an average of 4.2 percent, resulting in an annual average 2.2 percent

deterioration of net barter terms of trade in manufactures over the fifteen years

(Maizels 1996; UNCTAD 1996, 148). Another investigation reveals an average

annual deterioration of terms of trade for non-oil exporting developing countries of

1.3 percent over 1982-1988 and of 1.5 percent over 1989-1996 (UNCTAD 1999, 85).[2]

Although these trends are obviously not solely due to distribution along value chains,

there is reason to suspect that pricing within value chains is involved.

One explanation for this pricing imbalance and its possible terms of trade

effects is the differences in competition and market power (analogous to the

propositions by Prebisch and Singer in the context of the terms of trade deterioration

between primary commodity exporters and manufactured goods exporters in the early

post-war years). The export-led growth strategy adopted by an increasing number of

developing countries in the last couple of decades has pitted millions of producers in

manufacturing and services in the South and their governments against each other in

competition for subcontracting orders and foreign investment by reducing production

costs, mainly by devaluing labor[3], natural resources and public services (through

fiscal incentives). By contrast the Northern transnational companies[4] that decide on

the locations of production do not face such stiff competition thanks to their

concentration in the sectors and to their control over technology, financial resources,

marketing skills and access to Northern markets. Hence the transnationals are in a

stronger position to control their purchase and sales prices (Gibbon 2001, 351; Fitter

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[2] This evidence does not exclude the possibility that some developing countries may experience an improvement in their barter terms of trade as they increase their manufactured exports (Athukorala 2000).

[3] The competition to reduce labor costs is conducted by compelling workers to devise ways to survive on low real wages (moonlighting, sending children to work, increasing women's home production etc.) or by employing people (e.g. peasants) who already produce their essential means of subsistence and are willing to do manufacturing at home in their villages for low wages (Föbel (1988) provides a general framework; Thongyou (2003) studies an instance of rural sub-contracting).

[4] Northern because the great majority of TNCs are based in and owned by shareholders in the developed countries (Nolan 2003).

and Kaplinsky 2001, 24-27).[5] Moreover, the concentration of global market power

appears to be on an increasing trend in many sectors (Nolan 2003, 302-310).

The resultant high returns to these 'lead firms' organizing global production are

analyzed as rents. Kaplinsky and Morris list the various forms of economic rents,

some endogenous and some exogenous to the chains, arising from "differential

productivity of factors (including entrepreneurship) *and* barriers to entry (that is,

scarcity)"(2000, 26).[6] They explain the most crucial barrier in the following words:

> … perhaps one of the most important factors explaining patterns of
>
> global inter-country income distribution, are controls against
>
> immigration. It is for this reason that incomes in rich country
>
> supermarkets are higher than those in the East African farm producing
>
> the vegetables they sell. The supermarkets themselves have to be located
>
> in rich countries, but the wages of these workers are protected by
>
> immigration controls and are defined by the incomes of workers in the
>
> broader economy which result from complementary economic activities
>
> external to the chain. (Kaplinsky and Morris 2000, 43).

The restrictions on international mobility of labor, unskilled labor in particular,

comprise (literally) an entry barrier into Northern labor markets which sustains the

spatial segmentation of world labor markets. This barrier explains the wage

differences between labor of comparable qualifications between the North and the

South, differences which are an important source of rent in commodity chains.

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[5] Even small global corporations that outsource production in developing countries have the clout to "keep production costs as a low percentage of the retail prices of products" by switching between producers on the basis of price, and thanks to their "exclusive power to place the product in the market" (Clark 1993, 314).

[6] These are enumerated as technological rents, human resource rents, organisational rents (superior forms of internal organization), marketing rents (related to marketing capabilities and brand names), relational rents (having superior quality relationships with suppliers and customers), natural resource rents, policy rents (related to government support or efficiency), infrastructural rents (access to high quality infrastructural inputs) and financial rents (Kaplinsky and Morris 2000, 28).

In addition to the suppression of production costs, competition for subcontracts and for other forms of cooperation with TNCs is also conducted through competitive undervaluation of developing countries' currencies vis-à-vis the reserve currencies. Comparison of exchange rates and purchasing power parities reveals that the market dollar exchange rates of the national currencies of countries in the South exhibit a regular tendency to remain above their dollar purchasing power parities (in other words, the market exchange rates undervalue these currencies) (Köhler 1998; Köhler and Tausch 2002, ch. 2). The purchasing power parity of a currency is calculated by comparing the local currency cost of a comprehensive basket of goods and services in that country and its dollar cost in the United States. Hence the purchasing power parity of a currency with the US dollar is the 'fair' rate such that a certain sum of money can purchase similar goods (close substitutes) in equal quantities in the United States and the other country if conversion between the currency and dollars is done at this rate. If the computed dollar purchasing power parity of the currency of a developing country is one half that of the market exchange rate for the dollar, then that country's exports to the US will earn roughly one half of the value of those exports in the US market, implying that roughly one half of the exports are unrequited.

The market dollar exchange rates of the currencies of the high-income OECD countries appear not to diverge from their dollar purchasing power parities by proportions comparable to those of developing country currencies. Hence it appears that trade between the developing countries and the other high-income OECD countries also involves unrequited transfers.[7] In other words, producers in the South receive for their exports to the North remuneration that is below the value of their

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[7] Kaplinsky and Morris also opine that purchasing power parities are the most appropriate measure to use when analyzing distribution along value chains (2000, 83).

exports in Northern markets by greater differences than can be attributed to transport and distribution costs.

Köhler (1998, 150; also in Köhler and Tausch 2002, 50) found a negative correlation between the exchange rate distortion and the per capita GDP for 120 countries in the year 1995; i.e. a positive relationship between the exchange rate distortions and the poverty of nations.[8] In Köhler's estimation for 1995 the unremunerated part of exports of non-OECD countries to the OECD countries amounted to 8 percent of the GNP of the importing OECD countries, and to 24 percent of the GNP of the exporting non-OECD countries (1998, 162). The same estimation for 1993 yielded a transfer equal to 5.7 percent of the GDP of the OECD countries and to 21.2 percent of that of the non-OECD (Köhler and Tausch 2002, 57).

These exchange rate distortions may be associated with the policy switch to convertibility and international financial integration among developing countries. Such policies induce a strong demand for the reserve currencies in the developing countries as a store of private wealth (e.g. currency substitution) and in the form of official reserve accumulation to ward off balance of payments crises that short-term capital flows are prone to wreak.[9] Thus financial deregulation policies and export competition converge to generate exchange rate configurations that facilitate skewed distributions of value added along commodity chains.

Thus the competitive suppression of production costs and the undervaluation of currencies relative to their purchasing power parities are two methods of competition

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[8] The correlation was between GNP per capita in 1995 US dollars (in market exchange rates) and the distortion factor. The latter was calculated as the quotient of GNP per capita in 1995 'international dollars' to GNP per capita in 1995 US dollars (i.e. per capita GNP in dollars by the market exchange rate)(Köhler 1998, 150).

[9] Patnaik (2002) provides a theoretical argument for and evidence on a secular tendency for the real US dollar exchange rate of developing country currencies to rise, which corresponds to a dynamic tendency for these currencies to become increasingly undervalued with respect to their purchasing power.

in the South that make the imbalanced partition of value added with the North possible and provide goods manufactured in the South to the North at prices well below their values in Northern markets. The suppression of wages in the South can be conceived in terms of Southern goods and services. The exchange rate distortion, on the other hand, reduces Southern incomes (wages and profits) in terms of Northern goods and services.

The next section presents a model aiming to shed light upon the macroeconomic and growth consequences of developing countries' integration into world trade on the basis of wage suppression and exchange rate distortion. It follows the tradition of North-South trade modelling along the lines of Taylor (1981) and Dutt (1992).

II. A North-South trade model

A. The North

We consider a world comprising two groups of countries or regions, the North and the South. The North produces a composite good that can be used for consumption or for investment. National product is distributed as profits and wages among two social classes, capitalists and workers. Northern capitalists and workers save a given proportion of their profit and wage incomes.

The macroeconomic balances in the North can be written

$$X_n = C_n + I_n + E_n - M_n$$

(1)

where X_n is the national product of the North, C_n is aggregate consumption, I_n is aggregate investment, E_n is the exports of the North to the South; M_n is the importation from the South organized by transnational companies. These imports

from the South displace some economic activities in the North and hence appear in its macroeconomic balance with a minus sign. The volume of imports is linked to the level of Northern output:

$$M_n = m\, X_n$$

(2) where we treat m as exogenous, determined largely by trade policies and transnational companies' production strategies.

Consumption in the North is a function of national income:

$$C_n = c\, X_n$$

(3)

where c is the average propensity to consume.

The price level in the North is determined by:

$$P_n = (1 + t)(P_n\, w_n\, a_n + m P_s)\,.$$

(4)

P_n is the unit price of the Northern output, t the mark-up rate, a_n the labor-output ratio, w_n the real wage of a unit of labor. t and w_n are exogenously given. m is the input coefficient for the imported input and P_s is its unit price.

Imperfect competition among Northern firms enables them to price their goods applying a mark-up on their unit production costs. Production costs include wages and inputs imported from the South. These imported inputs may be finished goods or semi-finished goods. They may include payments for the assembly in the South of components imported from the North into commodities which are then re-exported to the North. The market price of output in the North comprises the cost of such imports plus value added (profits and wages) accruing to Northern importers, transporters, manufacturers, wholesale dealers, retailers, advertisers and other commercial services (part of which is mere 'conceptual value-added' realized by creating brand images

and marketing -Knutsen 2003, 231). Note the dual nature of these imports: they displace Northern productive activity because they could have been produced there, but they also enter a "value chain" and generate incomes in the North because of production cost differentials.

The balance of payments of the North is

$$P_n E_n - P_s M_n - P_n H = 0$$

(5)

where H is the exogenously determined trade surplus of the North in real terms.

Aggregate investment in the North is determined by the profit rate and the capacity utilization rate:

$$\frac{I_n}{K_n} = g_n(r_n, u_n).$$

(6)

r_n is the profit rate and u_n ($= X_n/K_n$) is the capacity utilization rate. K_n represents the Northern capital stock, given in the short term, and also its productive capacity[10]. The profit rate is calculated as:

$$r_n = \frac{(P_n X_n - P_n w_n a_n X_n - P_s m X_n)}{P_n K_n} = \frac{t}{1+t} \frac{X_n}{K_n} = \frac{t}{1+t} u_n$$

(7)

We have now seven equations with eight unknown variables: X_n, C_n, I_n, E_n, M_n, r_n, P_n and P_s. With the determination of P_s the macroeconomic balance of the North should be determined.

Aggregate saving generated in the North is $X_n - C_n = I_n + E_n - M_n$. Expanding this expression with substitutions from equations (1), (3) and (5) yields:

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[10] This assumption merely helps avoid encumbering the notation with the addition of a fixed technical output-capital ratio.

$$\left(\frac{P_n - P_s}{P_n}\right)M_n + (1-c)X_n = I_n + H$$

(8)   The left hand side of (8) shows the total disposable saving of the North, which comprises the saving transferred from the South to the North through the unrequited part of imports, and the domestic saving of the North. The right hand side shows the Northern disposal of the saving.

Substituting (6a) in equation (8) and dividing by the capital stock K_n, the equilibrium condition for the goods' markets can be written:

$$\left[\left(\frac{P_n - P_s}{P_n}\right)m + 1 - c\right]u_n = g_n\left(\frac{t}{1+t}u_n, u_n\right) + h$$

(9)

where $h = H/K_n$. The capacity utilization rate u_n^* that satisfies this equation balances output and aggregate demand in the North. Taking the derivative with respect to the capacity utilization rate gives the stability condition for the equilibrium:

$$\left[\left(\frac{P_n - P_s}{P_n}\right)m + 1 - c\right] > g_{n1}\frac{t}{1+t} + g_{n2}$$

(10)

where g_{ni} represents the partial derivative of g_n with respect to the ith argument. Stability requires that saving should be more responsive to changes in the Northern capacity utilization rate compared to investment. We assume this stability condition holds, so the Northern economies tend towards their macroeconomic equilibrium.

B. The South

The South produces an output which its workers and capitalists consume and which is also exported. This output cannot be used for investment. The South's investment depends entirely on importation of Northern products.

The capitalists in the South save a part of their profit incomes. They allocate part of their consumption expenditure to imported Northern goods. Workers do not save and do not consume imported goods.

The price of the Southern output is determined by costs of production[11] :

$$P_s = (1 + e)W_s\, a_s.$$

(11)

W_s is the given nominal wage in the South, a_s is the labor-output ratio and e is a given distribution parameter showing profits. It should be noted that this price formulation does not necessarily imply oligopolistic pricing, but a stable distribution of income between wage earners and profit earners in the South.[12]

The macroeconomic balance of the Southern group of countries can be written:

$$P_s X_s = W_s\, a_s\, X_s + (1 - s_s)\, j\, e\, W_s\, a_s\, X_s + P_s M_n$$

(12)

where s_s is the Southern capitalists' saving rate and j is the share of the Southern output in their consumption. The terms on the right are the Southern workers' consumption, the Southern capitalists' consumption of the domestic output, and exportation to the North respectively.

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[11] It is usual for such models to be closed by assuming that the South has a constant level of output X_s determined by the productive capacity of the economy, and that changes in the price of the output P_s balance supply and demand (cf. Taylor 1981, Dutt 1992). This modelling seems to describe primary commodity prices which are more flexible compared to those of manufactured goods, and a primary commodity supply linked to a stable natural resource base. Recent post-Bretton Woods crises in the 'emerging markets' that resulted in severe contracions give grounds to question the assumption of stability of capacity utilization and of real GDP in many developing countries whose exports include manufactures and services.

[12] If the share of profits in national income is a stable fraction $\varepsilon = (PX – WaX)/PX$, then the price equation (11) merely implies a distribution of value added by the rule $P = (1/(1-\varepsilon))Wa$ (cf. Dutt 1992, 1161, eq. 5). In our model the share of profits in national income is $\varepsilon = e/(1 + e)$.

Adding equations (11) and (12) to (1)-(7) and the unknown X_s to the previously introduced eight endogenous variables makes the number of equations and endogenous variables nine.

The solution of (12) for X_s yields a multiplier relationship (13) for the only autonomous expenditure in the demand for the Southern output which happens to be exports to the North.[13]

$$X_s = \left(\frac{1}{1 - \dfrac{1}{1+e}\left(1 + (1 - s_s)je\right)} \right) M_n$$

(13)

Let us abbreviate the multiplier in parenthesis as α. Clearly $\dfrac{\partial \alpha}{\partial e}$ and $\dfrac{\partial \alpha}{\partial s_s}$ are negative and $\dfrac{\partial \alpha}{\partial j}$ is positive. A redistribution of income in favor of the social class that is able to save, a rise in the saving propensity of this class and a decrease in its preference for domestic consumer goods all make for reducing the multiplier, and hence reduce Southern output for any given level of autonomous expenditure.

Substituting from (2), (3) and the definition of u_n, (13) can be written $X_s = \alpha m u_n K_n$. Let us define the Southern capacity utilization rate as $u_s = X_s/K_s$, and the ratio of capital stocks (hence of productive capacities) as $\lambda = K_n/K_s$. The latter can be taken as constant in the short term. Then one can formulate the dependence of Southern economic activity on Northern economic activity: $u_s = \alpha m \lambda \, u_n$. The business cycles in the North generate similar cycles in the South through the linkage of economic activities in the short run.

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[13] The inclusion of other items of autonomous expenditures in the South would merely encumber the notation without providing any additional insights.

Capital formation in the South is determined by the supply of investment goods from the North:

$$I_s = E_n - \frac{(1-j)(1-s_s)eW_s a_s X_s}{P_n}.$$

(14)

E_n is total exports of the North to the South. The second term on the right hand side of (14) is the part of imports from the North allocated to Southern capitalists' consumption.

Substituting from (5) and rearranging terms, (14) becomes:

$$I_s = \frac{P_s}{P_n}\left[mX_n - (1-j)(1-s_s)\frac{e}{1+e}X_s \right] + H .$$

(15)

The dependence of the Southern investment rate on Northern economic activity is obvious (X_s itself is influenced by X_n). If we assume that Southern expenditure (in terms of Southern goods) on the consumption of imported goods does not exceed the South's exports, the expression in brackets on the right hand side of (15) will be positive. In that case, deterioration of the South's terms of trade constrains its capital formation. The positive effect on Southern investment of the Southern capitalists' saving rate and the negative effect of Southern capitalists' preference for imported consumption goods are also apparent. The trade surplus of the North with the South also enhances the South's investment. Only in the perverse situation where the real expenditure on consumption of imported goods exceeded the South's exports (i.e. when the bracketed term in (15) were negative) would a deterioration of the Southern terms of trade enhance the investment possibilities for the South. In that case, the consumption of Northern imports exceeds what is imported by Southern export earnings, so that the deterioration of the terms of trade makes a

positive impact on Southern investment by reducing the consumption drain on investment resources provided by the Northern trade surplus.

The Southern terms of trade are affected by the distribution and productivity parameters and the import propensity of the North:

$$\frac{P_s}{P_n} = \frac{1 - (1+t)w_n a_n}{(1+t)m}.$$

(16)

Thus the South does not appear to have an influence over the terms of trade.

III. Global macroeconomic interactions

The South's exports to the North include goods that compete with Northern goods of market value P_n. Then equation (4) partially reflects the (mostly 'conceptual') marking up of value added in the North on Southern goods imported cheaply for P_s and the market value of which is P_n in the North. In the extreme (stylized) case where all of Southern exports are cheap substitutes for Northern goods, the money value of the South's loss from this unequal trade is $(P_n - P_s)M_n$. With substitutions from (3) and (16), this loss in terms of Northern goods is found to be:

$$\left(\frac{P_n - P_s}{P_n}\right)M_n = \frac{(1+t)(m + w_n a_n) - 1}{1+t}X_n.$$

(17)

The possible consequences of a decline in P_s through competition or of its increase through collective action can be analyzed by dividing the pricing equation (4) of the North by P_n:

$$1 = w_n a_n + m\frac{P_s}{P_n} + t\left(w_n a_n + m\frac{P_s}{P_n}\right)$$

(18)

The terms on the right in (18) show respectively the shares of Northern labor, of the South and of Northern capitalists in the unit value of Northern output. A gradual decrease in P_s may induce (and be balanced by) a proportionate increase in m. Or it may be reflected in higher value added in the North (higher real wages and/or profits). A hike in P_s can be neutralized by an increase in P_n or a reduction of imports. Otherwise Northern wages or profits would have to accommodate for the increase in import prices. The evidence summarized in Section I suggests that P_n has been actually increasing at a higher rate than P_s, and that this deterioration in Southern terms of trade is balanced by increases in m and in Northern value added.

Up to this point we have been focussing on unrecorded real transfers from the South to the North arising from the terms of trade consequences of unbalanced pricing power along commodity chains. Now the recorded Northern trade surplus with the South implies real transfers from North to South. So the question naturally arises as to how these flows interact, and whether there is a causal relation between them.

Multiplying (9) by K_n, the Northern macroeconomic balance equation showing saving and investment can be converted into

$$\left[\left(\frac{P_n - P_s}{P_n}\right) m + 1 - c\right] X_n = K_n g_n \left(\frac{t}{1+t} u_n, u_n\right) + H .$$

(19)

Taking total differentials in (19) with respect to X_n and H (and invoking the implicit function theorem) we get:

$$\frac{dX_n}{dH} = \frac{1}{1 + \dfrac{P_n - P_s}{P_n} m - c - g_{n1} \dfrac{t}{1+t} - g_{n2}}$$

(20)

which is positive (contingent on the stability assumption for the Northern economies shown in Equation (10)). More importantly, (20) may be smaller than or greater than one.

This last equation yields a crucial finding. Since unrequited transfers to the North increase with expanding Northern output and since the Northern trade surplus increases Northern output, *the trade surplus of the North with the South may be priming the pump for unrequited real transfers from South to North.*[14]

The relative magnitudes of H (North-South transfer) and $[(P_n–P_s)/P_n]M_n$ (South-North transfer), i.e. the direction of the *net* transfers, depends on the magnitude of the multiplier:

$$\frac{d\left(\dfrac{P_n - P_s}{P_n}\right)M_n}{dH} = \frac{P_n - P_s}{P_n} m \left[\frac{1}{1 + \dfrac{P_n - P_s}{P_n} m - c - g_{n1}\dfrac{t}{1+t} - g_{n2}}\right]$$

(21)

The expression in brackets on the right in (21) is positive by the stability assumption. It is multiplied by two positive coefficients each of which is smaller than one. The multiplier on the right hand side of (21) may be smaller or greater than one. If it is smaller than one, a unit increase in the North's trade surplus stimulates imports such that the expanded trade with the South compensates for part of the surplus through an increase in unrequited transfers, a compensation which is not recorded. *If the multiplier is greater than one, a unit increase in the North's trade surplus may stimulate imports such as to expand the unrequited transfers from the South by more than one unit of Northern goods.*

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[14] Somel (2003, 929-30) presents an empirical calculation of unrequited transfers exceeding current account deficits for a single country.

IV. Uneven development

In the long term steady state the ratio of capital stock of the North to that of the South will depends on their capital growth rates.

The capital growth function for the South (corresponding to (6) for the North) is derived by dividing (15) by K_s:

$$\frac{I_s}{K_s} = \left(\frac{P_s}{P_n} mu_n + h \right) \lambda - (1-j)(1-s_s)\frac{e}{1+e}\frac{P_s}{P_n}u_s$$

(22)

where $h = H/K_n$. Hence from the definition $\lambda = \dfrac{K_n}{K_s}$ one can derive $\hat{\lambda} = \hat{K}_n - \hat{K}_s$,

where a circumflex denotes growth rate. Substituting therein from (22) and from (6a), one obtains the proportional rate of change of the North-South capital ratio :

$$\hat{\lambda} = g_n\left(\frac{t}{1+t}u_n, u_n \right) - \left(\frac{P_s}{P_n}mu_n + h \right)\lambda + (1-j)(1-s_s)\frac{e}{1+e}u_s\frac{P_s}{P_n}.$$

(23)

In the long run we assume that the capacity utilization rates in both North and South fluctuate around long term averages, which we take to be given. Hence the long term analysis need focus only on the connection between $\hat{\lambda}$ and λ in (23). The solution λ^* to the equation $\hat{\lambda} = 0$ is the steady state ratio of the Northern capital stock to that of the South. If the coefficient of λ on the right hand side of (23) is negative, the steady state equilibrium λ^* is stable. It will be stable unless the South runs a surplus in its trade with the North (a negative valued H) which exceeds its exports to the North in real terms $((P_s/P_n)mX_n)$.

A higher propensity to import from the South (more liberal Northern import policies) increases the ratio of Southern capital stock to the Northern.

The increase in Northern real wages (cf. (16)) raises the Northern terms of trade and increases the capital stock ratio in favor of the North (assuming, again, that Southern expenditure on the consumption of imported goods does not exceed the South's exports (cf. (15) and (23)). Similarly, under the assumption of a stable capacity utilization rate in the North, (23) indicates that an increase in the Northern mark-up rate increases the growth rate of Northern capital and decreases that of the South through the terms of trade effect.

If the liberalization of imports and pervasion of consumerist culture in the South abets increasing importation of non-essential consumption goods, this can contribute to the rise of the capital ratio in favor of the North (through a decrease of j). If the liberalization of the activities of domestic financial institutions paves the way for a continuous expansion of consumption credit, this may weaken the Southern saving effort (reducing s_s) and contribute to raising the capital ratio. Should Southern mark-up rates benefit from the repression of wages in the South (an increase in e) this

income redistribution in favor of the classes with a higher propensity to consume imported goods will exacerbate the capital ratio in favor of the North.

If the capacity utilization rates in the North and the South fluctuate around their respective long term averages, an increase in the capital ratio will be reflected in greater GDP gaps. If we consider that population growth rates are generally higher in the South relative to the North, then even a stable capital ratio (and a deteriorating capital ratio *a fortiori*) imply an widening gap in per capita incomes between North and South and an increasing global income polarization.

Finally the case of a trade deficit of the North with the South merits consideration. According to the World Bank's online data, low and middle income countries as a group have posted aggregate current account surpluses in the three years 2000-2002. In the model, if the North obliges the South to undertake stress exportation for debt repayment or exhorts it to grow by exporting, this reduces H (and h), increasing the steady state capital ratio λ^* and the capital accumulation gap. If the North's trade deficit with the South should rise to make h a sufficiently large negative value, the present model shows that it may render the system unstable and start an endogenous divergence process between the capital stocks in the two regions, K_n and K_s (by equation (23)), entailing a continuous process of polarization.

The model presented has an important limitation. The assumption that the Southern product enters a value-adding process in the North implies a rigid terms of trade between the Northern and Southern products that depends only on Northern distribution, productivity and import policy parameters (16). But Northern profits and wages may be endogenously enhanced by the endeavour of Southern producers to cut costs and devalue their currencies. An investigation of such a causality would require

treating *Pn – Ps* as gross profits accruing to transnational companies organizing

buyer-driven chains.

Conclusion

The commodity/value chain literature focuses mostly on how to improve the

capability of developing country producers to upgrade their production activities and

to increase their shares of value added along value chains. It has been suggested that

global commodity/value chain studies may be an "embryonic theory of development"

(Pelupessy 2000, 9). The macroeconomic assessment of the globalization of

production presented above questions the validity of such a development perspective.

The steady state of the North-South model presented above involves a steady

growth of unrequited resource transfers from the South to the North. It implies equal

rates of capital accumulation, a stable long term ratio in national incomes between

North and South, and an increasing difference in incomes between the two regions (in

absolute terms). Such a steady state appears socially untenable. Globalization of the

mass media has made living and working conditions in the North the standard for a

decent life, to which all societies compare themselves. The global income distribution

of the steady state also implies that a large share of Southern exports must be

perpetually aimed at Northern markets, which shores Northern transnational

companies' control over value chains.

The theoretical steady state is based on the assumptions that the propensity to

consume and their preference for imported Northern goods among the privileged

classes in the South are constant. Deterioration in these variables may spell an

increasing divergence between Northern and Southern capital accumulation levels and

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incomes. The incidence of cyclical slowdowns or contractions in the Northern economies also falls heavily on the South, as the transnational firms are able to pass costs of adjustment onto the producers in the developing countries.

The trends question the wisdom of envisaging export-led growth and upgrading within commodity chains as the main thrust of a development strategy for developing countries. Moreover, such a general strategy may entail a fallacy of composition, as intensified efforts to enhance productivity, quality, flexibility, punctuality etc. on the part of the producers in developing countries would probably result in the producers delivering goods at lower prices and higher quality to Northern transnational companies with more flexible and punctual accommodation to changing orders, but would not provide any substantial changes in the market power relations between Northern firms and Southern producers and hence in the partition of value added along commodity chains.

These considerations suggest that the developing countries should complement the endeavor to improve their positions in commodity chains with greater effort to reduce their dependence on export earnings through commodity chains. The latter would involve greater exertion to learn to produce essential imports, to manage the allocation of foreign exchange earnings more judiciously for the developmental objective and to increase trade among developing countries. Finally, it would involve more international effort to reform the structures of the global trade and financial system that favor the profitability concerns of transnational companies over the developmental needs of poor countries.

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