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DEPENDENCY OR DIFFERENTIATION? REGIONS AND INDUSTRIALIZATION IN COLOMBIA

by

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Introduction

Over the last five to ten years the framework in which processes of regional development are analyzed has considerably changed, not only in level and scope but also in terms of the kinds of variables considered. The first wave of regional theory contributions, of which the readers by Friedmann & Alonso of 1964 and 1975 are fairly representative, studied regions in their respective national contexts. These was very little regard for the international dimensions of the development process. It is the considerable contribution of the dependency perspective that the regional / interregional effects of external international integration became directly part of regional analysis and theory. For a recent discussion see Ettema (1983). The scope of analysis changed. So did the kind of variables considered. Political economy questions came more and more to the fore, displacing conventional economic growth and employment issues. Multiplier analysis gave way to the study of ownership and control. The conceptual apparatus became very large indeed and for many reasons little weeding out took place through empirical testing. What happened was more like a 'crowding out' of theories.

In this article a partial attempt will be made to evaluate empirically some theoretical propositions on the basis of the Colombian regional industrialization process since the Second World War.

Industrialization in Colombia went through various and different processes of industrial growth. The first stage of import substitution was more or less completed in the 1950s. The production of consumer durables and of intermediate products were the main sources of output growth in the sixties. The opening up of the economy to foreign investment and firms played an important role in this respect. At the end of the sixties and in the seventies a number of impulses were given to stimulate a drive for export so as to revive again the industrialization process, first from a sheltered home base, later – after 1975 – under neo-liberal policies. In the first period, industry was protected from external or foreign competition, and almost entirely undertaken by Colombian industrialists. In contrast, in the third and last period not only had foreign investment and TNCs become important, and were exports becoming a significant source of accumulation, but also imports were liberalized (after 1975), extending therefore external influences on the industrialization process. The second period is something of an intermediate period, in which the role of external factors had increased (foreign investment, TNCs), but in which the industrialization process was still inwardly oriented.

Our analysis of the pattern of regional industrial development takes the above features into account by the adoption of the following periodization: a) 1945-1958; b) 1958-1967; c) 1967-1980. A 'shift and share analysis' is carried out for each period (cf. Armstrong & Taylor 1978). Before presenting this analysis, some testable propositions will be formulated for some theories of regional development. Against the back-

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ground of the described regional industrialization, these propositions will be quantified and some conclusions will be drawn.

Dependency or growth: an export base assessment

In the literature on regional development considerable attention is given to the role of regional exports. The importance of the export staple was first systematically treated by Douglass North in his widely known 1955 article (D. North 1955). In his view, the long run development of a regional economy depends on the success of its export base. Furthermore, and as 'a region's income grows, indigenous savings will tend to spill over into new kinds of activities. At first, these activities satisfy local demand, but ultimately some of them will become export industries.' ... 'As a result the export base of regions tend to become more diversified...' (North, *In:* Friedmann *et al.* 1964, p. 255). Through the diversification of its export base a regional economy will be able to develop further.

In contrast to North, Myrdal's cumulative imbalance theory explicitly includes the analysis of the consequences of the failure to develop a viable export base, in relation to the success in other regions (Myrdal 1957). His propositions are somewhat general and difficult to translate into precise statements. Holland (1976) has presented an export-led growth and decline model that incorporates cumulative causation mechanisms so characteristic of Myrdal's theory (accelerators, migration and multipliers). This revised formulation is also not specific with regard to the patterns of regional specialization. Much in the same line of argument of 'success breeds success', it is interpreted here in the following way. The center has a growing export sector which, because of trade-led growth dynamics, diversifies itself. The periphery, however, stagnates and remains little diversified.

Dependency views show great resemblance to Myrdal, but differ on an essential and important respect. Integration of a peripheral region into the larger (inter)national economy produces not just decline but a fundamental restructuring of its economy (Slater 1975). The integration is partial, i.e. only *some* export products are needed, therefore stimulated and grow. Furthermore, export dependence increases, as a consequence of the restructuring. Export growth and general stagnation together constitute regional underdevelopment.

While dependency theory is elaborate on what happens to the peripheral regions and less so regarding its national core – as the latter is an intermediate element in the international relations of dependence –, domination theory poses a superior structure of the (national) center (Hilhorst 1971). The center is diversified and less dependent on exports, while the periphery depends more on its exports as a source of growth. Moreover, it has an undiversified basis. Vertical trade integration is said to exist where individual peripheral regions specialize in export of raw materials and imports and the center produces and exports final products.

These unequal trade structures stand in sharp contrast to the interregional application of neoclassical international trade theory, which points to an interregional specialization by *both* trading partners with mutual gains and growth from it. Since regions are, however, not self-contained, it is not comparative but absolute advantage that would rule interregional trade.

Unfortunately, only very rarely is survey data available on regional trade, which would allow us to make an assessment of the kind of trade structures that exist and, above all, how they change over time. The only alternative, therefore, is to have recourse to estimates. One way to approximate a region's export structure and performance is the analysis of its economic or export base. The concept of export base has a wider definition as it includes not only final output for external demand, but also related production destined for export industries.

For the estimation of a region's export base a number of methods have been developed (Pleeter, ed. 1980). One of the most widely used methods in impact analysis is one based on the location coefficient (Lq_i) for the purpose of identifying the export base component of each sector. The coefficient is a quotient of the regional share and the national share of a sector (output, employment). If $Lq_i > 1$, then sector i is more than proportionally represented in the region. The region is said to be specialized in this particular sector and in view of this would be able to cater for its internal demand and export the more than proportional share of its output (O_i) to other regions or abroad. The export component (OB_i) can in this way be taken to be

$$OB_i = \frac{Lq_i - 1}{Lq_i} \quad O_i \text{ for } Lq_i > 1 \qquad (1)$$

If $Lq_i < 1$, then the sector concerned would in comparison to the national average be under-

represented. In such cases exports are expected to be absent ($OB_i = 0$). The latter result is also obtained for $Lq_i = 1$. Some industries depend a lot on exports, others very little. For the region as a whole we are now in a position to define its 'export dependence' (E_r) which is defined as follows:

$$E_R = \sum_i OB_i / \sum_i O_i \times 100 \qquad (2)$$

The index E_R – which is the inverse of the base multiplier – expresses the share of export base production in the total of regional industrial output.

For the purpose of measuring the diversification in a region's export base, the Gibbs-Martin index of trade diversification is used. This index is defined as follows:

$$GM_R = 1 - \frac{\Sigma OB_i^2}{(\Sigma OB_i)^2} \qquad (3)$$

Its upper boundary varies with the adopted number of sectors (Hammond & McCullagh 1974).

We are now in a position to evaluate the size and composition of the industrial export base of the Colombian regions. Before doing so we will first describe the regional industrialization process.

Regional participation in the Colombian industrialization process

Early industrialization in Colombia effectively started after the 'War of a Thousand Days' (1899-1902). This civil war centered around the decentralization issue (federalism versus centralism), and was settled in favor of a centralized system of government. The war marked, in a way, the beginning of the process of political integration of the Colombian nation state, which was a necessary condition to bring about the economic integration of the country.

The early industrialization meant a gradual move away from the agrarian export economy which had slowly developed in the 19th century, first in tobacco and quinine and later more securely on coffee (Bejarano 1979). In the first decade of the present century, coffee came to constitute around one third of total Colombian exports. Partly due to the changing world market for coffee in favor of the fast growing post-WW-I US economy, Colombian coffee exports rose rapidly to constitute around 70% of total Colombian exports in the 1920s. This share went down during the Great Depression only to recover its importance immediately after WW-II (McGreevey 1975).

Without doubt it was the growth of coffee production and exports that in various ways enabled industrialization to take place (Urrutia 1979). First of all, the structure of coffee production was much less concentrated than in the other agricultural sectors, generating a more favorable distribution of (monetary) income, and thus constituted an important source of demand for manufactured products. Secondly, the growing coffee exports generated the foreign exchange necessary to finance the imports of industrial machinery and raw materials. To this, one may add as a third point that coffee exports stimulated the creation of transport infrastructure, which enabled the physical entry and movement of industrial equipment. Particularly during the 1920s great advances were made in the expansion of the various railway networks in the country. Finally, the emergence of the industrial bourgeoisie is related (though not exclusively) to the development of coffee production and trade (Arango 1977; Brew 1977).

In addition to coffee, several other factors should be kept in mind which assisted the establishment and consolidation (as from 1930) of the industrial sector. First of all the temporal interruption of foreign competition, particularly during the First and Second World Wars, and during the Great Depression when protective measures, made necessary because of the reduced capacity to import, created a similar effect. A further factor of importance was the import of foreign loans and capital, particularly during the 1920s, with which the public works in transport were partly financed. Foreign (US) capital concentrated particularly in oil extraction (Bejarano 1979).

The main branches of manufacturing activities were food, beverages, textiles and clothing, complemented with other basic consumer good production. It was estimated that these branches increased their share in industrial employment from 40% in 1925 to 56% in 1945. The development of the sector as a whole was largely based on internal final demand and continued to rely heavily on the imports of intermediate and capital goods (Bejarano 1978).

Initially, it developed as small scale competitive industry, with only gradual increases in size of firms. Nevertheless, there was a clear tendency to formation of oligopolistic structures, first on a regional and later on a national scale, particularly in textiles, beer and some food products like,

for instance, chocolate and tobacco. Periods of reduction of competitive imports marked great spurts in the process of oligopoly formation by means of absorption of competing firms, followed by periods of incorporation of new technical progress leading to larger size of plants, which in its turn led to a further consolidation of these marked structures.

Industrialization was not a generalized regional phenomenon. In the first three decades it basically developed in the Caldas / Antioquia coffee region (Medellín, and to some extent in Pereira and Manizales), in the eastern coffee region, Cundinamarca (Bogota) and in port cities like Barranquilla and Cartagena. By 1945 the four departments concerned approximately 70% of the industrial labor force and 76% of total manufacturing output.

The change from the period of early industrialization to the next was marked by a spectacular investment boom immediately after the Second World War (1945-50), during which annual growth rates were achieved on the order of 11% (Poveda 1967, 1970).

The period 1950-1968 is one in which the nature of industrialization underwent various and fundamental changes. Its pattern followed very closely the import substitution model. Periods of boom and recession followed each other as a function of the import capacity of exports (coffee).

Government responded to balance of payments problems with new protectionist measures, which stimulated the emergence of new sectors. It is particularly this feature of recurrent and in many respects systematic government intervention which marked an important difference from the previous period.

Whereas in the beginning of the period the traditional industries showed marked rates of growth and continued to employ the majority of the industrial workers, the growth of manufacturing industry was achieved more and more by the emergence and expansion of new sectors producing consumer durables, intermediate and capital goods, such that import substitution was extended further into new products but on a more and more narrow market of domestic demand.

1945-1958 – In the first period considered here, 1945-1958, the sectors that experienced the highest rates of growth were paper, paper products, oil refining, rubber, other manufacturing and tobacco.

Table 1 summarizes the results of the shift and share analysis carried out for this period. The first two columns give the value added generated by the manufacturing industries in 1945 and 1958, respectively. For each region the expected level of net output was calculated for 1958. This level was found by applying the national growth rate to each region. It expresses a situation in which no further regional differentiation would have occurred during that period. The difference between the actual value at the end of the period and this estimated value constitutes the 'net shift'

Table 1. *Regional industrial output and growth in Colombia: 1945-1958.*

Region	Output (VA)* 1945	Output (VA)* 1958	Net shift	Relative distribution –	Relative distribution +	Comparative shift	Decomposition Industrial composition	Net shift Regional residual
Antioquia	36,475.	801,884.	–13,458.	5.3	–	–1.7	–101,265.	87,808.
Atlántico	18,882.	292,570.	–129,508.	51.2	–	–30.7	–30.097	–99,411.
Bolívar	4,759	93,569.	–12,811.	5.1	–	–12.0	–8,390	–4,421.
Boyaca	3,173.	74,124	3,197.	–	1.3	4.5	–2,502.	5,699.
Caldas	8,693.	168,280.	–26,038.	10.3	–	–13.4	–23,245.	–2,794.
Cauca	1,564.	22,738.	–12,223.	4.8	–	–35.0	3,216.	–15,439.
Cundinamarca	36,601.	875,945.	57,787.	–	22.8	7.1	–73,858.	131,644.
Huila	506.	11,864.	553.	–	0.2	4.9	–1,914.	2,467.
Magdalena	1,326.	20,051.	–9,590.	3.8	–	–32.4	–2,306.	–7,284.
Nariño	970.	18,202.	–3,481.	1.4	–	–16.1	–2,267.	–1,214.
Norte Sant.	1,623.	29,674.	–6,606.	2.6	–	–18.2	–4,461.	–2,145.
Santander	7,665.	172,464.	1,125.	–	0.4	0.7	240,866.	–239,742.
Tolima	3,916.	48,143.	–39,393.	15.6	–	–45.0	–715.	–38,679.
Valle	18,242.	598,216.	190,445.	–	75.2	46.7	6,936.	183,509.
Total	144,395.	3.227,724.	0.	100.0	100.0	0	–	0

* ($\times 10^3$) current Col. pesos. *Sources:* See appendix.

of regional output change vis-à-vis the national average. This figure is presented in column 3. In the fourth column the percentage distribution of the total negative and of the total positive net shifts are presented. In the fifth column the net shift is expressed in terms of the 'expected level' of net output, so as to have an indication about its importance for each region. In the sixth and seventh columns the net shift of each region is decomposed into the industrial mix and the residual regional share effect.

The regional pattern of output growth in this period reveals some very clear changes. Whereas industry in Antioquia, the 'oldest' industrial area, grows slightly below the national average, Cali (Valle) becomes firmly established as the third industrial center. The extraordinary growth of output in Cali can to a large extent be explained by the expansion of the Buena Ventura harbor at the Pacific coast which made Cali an attractive location as a transhipment point, at the cost of Barranquilla (Atlántico) which in consequence fell behind. A second important reason is found in the development of agro-processing, particularly sugar refining. Valle together with the capital city region Cundinamarca contained almost the entire positive shift.

There were significant processes of concentration going on in favor of the 'established' industrial regions, but within the latter a reallocation took place away from Barranquilla (Atlántico) and towards Cali (Valle).

This regional restructuring of output growth is also clearly reflected in the decomposition of the net shift of each region. Only in the case of the Valle department are the mix and share effects positive. In other words, not only had this department a favorable sectoral composition or mix (proportionally more of fast growing sectors), but these did grow faster as well.

Peripheral regions such as Nariño, Norte Santander, Tolima and Magdalena have not only a relatively unfavorable industrial structure, but these performed also worse than elsewhere. The same also applies to regions that do not have a clear peripheral status such as Bolivar, and Viejo Caldas. On Atlántico we have already commented above. Of the remaining departments, perhaps the most noteworthy is Antioquia, which experienced a small negative net shift.

Given the fact that the period concerned is one of industrial protection from foreign imports, one could interpret the relative interregional changes as in a zero sum context. That is to say that there is a direct relation between the high growth of the central industrial regions and the relatively poor industrial growth performance in the periphery.

Administrative divisions of Colombia.

1958-1967 – Whereas early industrialization was largely undertaken and controlled by Colombian groups, in this period, particularly from 1961 onwards, foreign investment and multinational firms became more important. The basically open attitude towards foreign enterprise was related to the fact that Colombian industrial expansion was now heavily based on development of intermediate goods, consumer durables and some capital goods production, to which foreign enterprise can be clearly associated (Bejarano 1978). The fastest growing sectors were Furniture, Metal Products, Non-electrical machinery, Electrical machinery and appliances, Rubber, and Oil and oil derivatives. Basic consumer goods industries clearly fell behind in this period.

Table 2 summarizes the pattern of regional growth in this period. Within the industrial core of the county the above sectoral pattern reflected itself in a minor relative decline (–4.3) in Antioquia where the slow growth of 'first stage' sectors, most notably textiles, expressed itself in a large negative industrial mix component, and in Cundinamarca where the growth of 'second

Table 2. *Regional industrial output and growth in Colombia: 1958-1967.*

Region	Output (VA)* 1958	Output (VA)* 1967	Net shift	Relative distribution –	Relative distribution +	Comparative shift	Decomposition Industrial composition	Net shift Regional residual
Antioquia	801,884.	3.590,703.	-161,499.	26.3	–	-4.3	-400,898.	239,399.
Atlántico	292,570.	1.258,480.	-110,523.	18.0	–	-8.1	53,602.	-164,125.
Bolívar	88,633.	566,920.	152,186.	–	24.8	36.7	-34,871.	187,056.
Boyaca	74,124.	383,258.	36,415.	–	5.9	10.5	-25,447.	61,861.
Caldas	168,280.	691,919.	-95,502.	15.6	–	-12.1	-29,041.	-66,462.
Cauca	22,738.	119,483.	13,087.	–	2.1	12.3	-4,331.	17,418.
Córdoba	4,936.	24,438.	1,341.	–	0.2	5.8	-1,916.	3,257.
Cundinamarca	875,945.	3.908,677.	-190,074.	31.0	–	-4.6	98,410.	-288,484.
Huila	11,864.	57,441.	1,927.	–	0.3	3.6	-3,222.	5,148.
Magdalena	20,051.	151,833.	58,010.	–	9.5	61.8	-6,739.	64,749.
Meta	5,072.	56,199.	32,466.	–	5.3	136.8	-1,510.	33,975.
Nariño	18,202.	94,164.	8,993.	–	1.5	10.6	-6,227.	15,220.
Norte Sant.	29,674.	135,879.	-2,973.	0.5	–	-2.1	-9,965.	6,993.
Santander	172,464.	839,426.	32,427.	–	5.3	4.0	120,206.	-87,779.
Tolima	48,143.	172,114.	-53,158.	8.7	–	-23.6	-8,799.	-44,359.
Valle	598,216.	3.076,071.	276,879.	–	45.1	9.9	260,747.	16,132.
Total	3.232,796.	15.127,005.	0.	100.0	100.0	–	–	–

* ($\times 10^3$) current Col. pesos. *Sources:* See appendix.

stage' sectors (oil and oil derivatives, metal products and transport) did not compensate entirely for the relatively heavy decline of beverages, tobacco, and clothing industries. The third industrial region, Valle, clearly benefited from the sectoral expansion in intermediate production that had already started in the previous period. Valle alone accounted for 45% of the positive net shifts in this period. Only two regions experienced negative mix and share effects. Most peripheral regions, notwithstanding their unfavorable industrial structures, managed to expand, some even considerably (e.g. Magdalena and Meta). The considerable expansion of Bolivar should be seen in the context of the political decision to establish the petrochemical complex in Cartagena instead of in Santander.

On the whole, it seems reasonable to conclude that regional differentiation was not only less marked than in the previous period, but it took also different directions. Whereas in the previous period regional differentiation tended to be more on a straightforward center-periphery model (with some clear exceptions such as Atlántico-Valle switch), now differentiation is more *within* the industrial core (Antioquia, Cundinamarca, Valle), and *within* the periphery.

1967-1980 – This period was characterized by a clear tendency towards reorientation of the economy. The economic reforms of 1968 aimed at exports as a prime generator of accumulation and growth, and to this end, a structural adjustment of the economy was an imperative. Key elements of the reforms were as follows: (a) A new exchange rate regime. The existing system of relatively stable but multiple exchange rates was replaced by a flexible exchange rate. With frequent small devaluations, serious balance of payment problems were avoided. Furthermore, some liberalization of imports took place. (b) Fiscal incentives for exports were increased; first only for manufacturers but later (1970) also for non-traditional agricultural products (corporate tax reduction certificates. (c) New export oriented institutions were created like the export promotion fund; free trade zones were established in main cities. Finally, (d) the Andean Pact with its common external tariffs gave additional market leeway (Bejarano 1978).

In 1975 this export model was further consolidated by further import tariff liberalization and increased export and credit facilities.

The growth of industrial production increased up to a real average of 8% in the first five years (1968-1973), to slow down again when the effects of the international recession started to be felt. Manufactured exports had increased from 3.4% of gross industrial production in 1970 to almost 10% in 1974, and declined to 8% in 1978.

Clearly, there were considerable differences among the various industrial groupings. Sectors like furniture, leather, clothing and professional equipment, for which exports came to constitute more than 20% of their output, still represented a small share, whereas for large sectors such as food and textiles, which were the largest exporters, external demand still constituted no more than 10% of total gross output. Furthermore, there was an important element of transnationalization, in so far as it was firms with foreign ownership that played an important role in this seemingly rapid export success.

In the 1960s foreign investment in manufacturing industry had already expanded considerably. The 1968 reforms gave renewed inputs to foreign owned industrialization. By 1974 firms with major or minor foreign participation contributed no less that 45% of total exports. Foreign participation was strongest in intermediate and capital goods sectors such as paper, chemicals, rubber, glass, non-ferrous metal and transport machinery (Arango 1976). The most important change with respect to the previous period was, however, the growth of foreign control of ownership. Whereas in 1969 only 45% of foreign participation concerned major firms ($\geq 50\%$), in 1974 this figure had risen to 72%.

The four major growth sectors in this period were chemicals, printing and publishing, basic metallurgical, and transport industries. In other words, the main increase in output originated most importantly in the intermediate and capital goods industries. In contrast, it can be added that the traditionally most important and consumer goods industries lagged relatively behind in growth. This sectoral reorientation of the economy clearly produced a new tendency towards interregional differentiation.

Table 3 summarizes these changes. First, it can be concluded that *within* the industrial core a 're-centralization' occurred favoring Bogotá (Cundinamarca). The Calí region in particular lagged behind (more than Antioquia). In addition, it is important to note that during the period of 'export drive', the Barranquilla department (Atlántico) did not benefit. On the contrary, as in the previous periods, Atlántico continued to trail behind and was responsible for 28% of the total negative shift.

The trend already discussed in the previous period of 'differentiation within the periphery' continued very clearly in this period. Bolivar and Santander together accounted for 65% of the total positive shift. In both cases it is almost entirely due to their insertion as producer of intermediate resource based output (chemicals, oil and oil derivatives).

Only Cundinamarca had a favorable industrial structure but also experienced above average sectoral rates of growth. Five departments had opposite characteristics; Cauca, Nariño, Magdalena, Tolima and also Córdoba and Meta remained behind and acquired definite peripheral status.

With regard to foreign investment, it is important to observe that according to the data available for 1974, 80% of net output of firms with foreign participation was concentrated in the three industrial core regions. This is well in ex-

Table 3. *Regional industrial output and growth in Colombia: 1967-1980.*

Region	Output (VA)* 1967	Output (VA)* 1980	Net shift	Relative distribution –	Relative distribution +	Comparative shift	Decomposition Industrial composition	Net shift Regional residual
Antioquia	3.590,703.	76.276,976.	-3.683,832.	15.1	–	-4.6	-4.197.454.	513,625.
Atlántico	1.258,480.	21.060,216.	-6.964,680.	28.5	–	-24.9	-1.952,347.	-5.012,336.
Bolívar	566,920.	20.930,328.	8.305,675.	–	34.0	65.8	-1.518,665.	9.824,335.
Boyaca	383,258.	8.630,374.	95,661.	–	0.4	1.1	2.827,111.	-2.731,449.
Caldas	691,919.	16.441,389.	1.033,152.	–	4.2	6.7	-1.040,275.	2.073,428.
Cauca	119,483.	2.088,794.	-571,954.	2.3	–	-21.5	-258,510.	-313,444.
Córdoba	24,438.	506,274.	-37,932.	0.2	–	-7.0	-54,886.	16,954.
Cundinamarca	3.908,677.	94.267,728.	7.226,008.	–	29.6	8.3	6.604,916.	621,078.
Huila	57,441.	1.230,992.	-48,153.	0.2	–	-3.8	48,424.	-96,577.
Magdalena	151,833.	2.106,994.	-1.274,152.	5.2	–	-37.7	-140,162.	-1.133,989.
Meta	56,199.	1.222,996.	-28,491.	0.1	–	-2.3	-41,606.	13,115.
Nariño	94,164.	1.330,215.	-766,709	3.1	–	-36.6	-40,515.	-726,194.
Norte Sant.	135,879.	3.264,395.	238,527.	–	1.0	7.9	-70,898.	309,425.
Santander	839,426.	26.212,662.	7.519,614.	–	38.0	40.2	-1.389,029.	8.908,638.
Tolima	172,114.	3.620,486.	-212,294.	0.9	–	-5.5	-195,388.	-16,906.
Valle	3.076,071.	57.670,088.	-10.830,456.	44.4	–	-15.8	1.419,255.	-12.249,718.
Total	15.127,005.	336.860,928.	0.	100.0	100.0	–	–	–

* ($\times 10^3$) current Col. pesos. *Sources:* See appendix.

cess of the participation of these regions in total net output (68% in 1975). It cannot be concluded, however, that foreign investment simply accentuated the general trend to re-centralization formulated above. In this context it is striking to observe that foreign investment became much more important for Antioquiá and Valle than for Cundinamarca.

The shift and share analyses conducted over the 1945-80 period appear to support the conclusion that already in the 1945-1958 period (and before) the basis was laid for the industrial dominance of the Bogotá region (Cundinamarca). This position stabilized or weakened a bit during the transitional period, only to be consolidated further in the export orientation period. This in itself is an important finding and its theoretical implications call for attention. Whether the economy was growing on the basis of internal demand or was developing on external sources of growth, the tendency of further concentration in the Bogotá region continued, only to be interrupted during the transitional period.

A second major conclusion is that in the period of import substitution and (autonomous) development of a protected national market, regional differentiation appeared to be much more a process of generating a regional dualism of an industrializing core and a stagnating periphery. In the later periods the pattern of interregional change was much less unilinear and straightforward. The development of resource based production in intermediate goods (oil derivatives, chemicals and agro-processing) seems to have greatly contributed to differentiation within the periphery. The remarkable performance of industries in Bolivar and Santander can be largely explained in this way. Similar but definitely less spectacular cases of industrial revival in Viejo Caldas and Norte Santander may be explained in a similar fashion.

Although it would perhaps have been feasible to decentralize industrial development via foreign investment policy, quite the opposite result came about without such a policy (Jimenez & Sideri 1983).

Patterns of specialization

So far we have given a broad description of the patterns of regional industrialization. In this section, we will analyze the pattern of regional specialization and diversification with the aid of the indices elaborated in the first part of this paper.

In Table 4 the export base dependence index is calculated for the Colombian departments.

Table 4. *Export base dependence, by region, 1945-1980.*

	Series A		Series B		
	1945	1958	1958	1967	1980
Cundinamarca	18	18	19	21	22
Antioquia	25	32	33	32	30
Valle	15	28	29	30	32
Atlántico	25	18	20	22	25
Bolívar	33	35	35	53	63
Córdoba	(1)	(1)	55	58	59
Magdalena	40	54	55	61	51
Meta	n.a.	n.a.	56	64	73
Santander	44	59	59	53	63
Norte Sant.	32	43	46	54	51
Boyaca	46	57	64	69	71
Caldas	33	39	39	36	24
Tolima	39	48	48	54	40
Huila	38	49	51	56	69
Cauca	45	60	60	61	62
Nariño	18	41	41	58	70
Total	25	29	30	32	34

(1) included in Bolívar; n.a. = not available.

A number of conclusions may be drawn from it. First of all, it is interesting to observe that the index for the total gradually increased from 25% in 1945 to 34% in 1980. The integration of the country brought about increased trade, something which in general is consistent with the theories exposed above. Secondly, and comparing the regions, it can be seen that the absolute range of values increased from 27 in 1945 and 42 in 1958 to 51 percentage points in 1980. A clear regional divergence took place in the development of the industrial export base.

The more industrialized regions (Cundinamarca, Antioquia, Valle and Atlántico) have, as could be expected, in view of the growth of their respective internal market size, lower levels of dependence on exports than the other regions. For the industrial regions the index did not go down but increased slightly (except for Antioquia). However, in the more peripheral regions, the importance of the export base grew much more rapidly to levels ranging from 50% to 70%. With the exception of Cáldas (coffee region) and Tolima, the specialization index went up consistently. Also the two 'intermediate' regions Bolivar and Santander underwent a similar process.

It is of particular interest to recall the historical fact that international exports of manufactured products were almost entirely absent during the 1945-1958 period. Thus, changes in export base can be seen *entirely* in the context of interregional trade and the process of national integration that, in its basic form, was completed during this period (Misas 1975). All regions, except Atlántico and Cundinamarca, experienced a growing dependence on their respective industrial export bases.

From Table 1 it could be discerned that only four regions experienced positive comparative shifts, of which Cundinamarca and Valle stand out. Most peripheral regions experienced large (>10%) negative comparative shifts. In other words, predominantly center regions gained from interregional trade through above average growth.

A fourth major conclusion may be drawn from Table 5, which records the levels of sectoral diversification of the export base.

In 1945 the majority of the regions (10 out of 14) had a relatively diversified industrial export base ($GM_R > 0.50$). However, while the industrial core regions maintained high levels of diversification (except Antioquia), almost all the peripheral regions experienced reductions in export diversification.

The relation between the two indices is summarized in Fig. 1.

The above analysis seems to support the hypothesis that in the period of national market integration (1945-1958) the peripheral regions were negatively affected. Negative shifts, increased export dependence, and reduced levels of export diversification normally went together. For almost all regions E_R increased and GM_R went down. When they became more integrated in the national market, they specialized: more integrated, but on a narrower basis. From Table 1 it can be recalled that all these regions (with the exceptions of Boyaca, Huila and Santander) experienced negative comparative shifts. In other words, trade integration and specialization did not result in (more than) proportional rates of growth.

Table 5. *Sectoral diversification of industrial export base, by region, 1945-1980.*

	Series A		Series B		
	1945	1958	1958	1967	1980
Cundinamarca	0.66	0.83	0.85	0.80	0.89
Antioquia	0.20	0.24	0.26	0.32	0.37
Valle	0.75	0.67	0.69	0.72	0.72
Atlántico	0.73	0.62	0.79	0.83	0.78
Bolívar	0.79	0.59	0.59	0.55	0.24
Córdoba	(1)	(1)	0.57	0.31	0.38
Magdalena	0.27	0.02	0.07	0.49	0.16
Meta	n.a.	n.a.	0.24	0.45	0.00
Santander	0.79	0.59	0.41	0.38	0.02
Norte Sant.	0.69	0.47	0.52	0.52	0.50
Boyaca	0.52	0.36	0.33	0.51	0.29
Caldas	0.13	0.40	0.40	0.60	0.80
Tolima	0.39	0.50	0.51	0.52	0.57
Huila	0.46	0.41	0.45	0.24	0.21
Cauca	0.56	0.48	0.48	0.44	0.27
Nariño	0.69	0.66	0.66	0.59	0.01
Total	0.86	0.88	0.89	0.90	0.88
Range	$0 < GM < 0.93$		$0 < GM < 0.95$		

(1) Included in Bolívar; n.a. Not available.

The changes in the industrialized core regions were more heterogeneous. Only Cundinamarca diversified its industrial export base without starting to depend more on external demand. At the same time, it gained from the integration process with above average rates of growth, and consolidated thereby its industrial dominance.

The period (1958-1967) of second stage import substitution and large inflow of foreign investment and enterprise was a kind of intermediate period in which various tendencies occurred simultaneously. Export base dependence increased in all peripheral regions, and in most of these with above average rates of growth of total output. However, at the same time, in some peripheral regions the export base diversified, while in others the opposite occurred. A similar internal differentiation was already noted for the industrial core of the country.

The pattern of change in the third period (1967-1980) no doubt was affected by the growing importance of international as against interregional exports. On the basis of our data it is, however, impossible to isolate interregional from international export base activities. In other words, we cannot separately assess the impact of each on the pattern of regional change. As regards the overall pattern of change, three conclusions can be drawn. In the first place, there is a very strong tendency towards specialization (reduction of diversification) in the industrial export base activities in the peripheral regions, as well as an increased dependence on export base activities. Secondly, with regard to the industrial core regions no such phenomenon can be observed. Export activities become more diversified (except in Atlántico) and export dependence only goes up slightly. Thirdly, not all regions within either center or periphery appeared equally affected by the increased international exposure. Within the industrial core only Cundinamarca experienced a high relative rate of growth, whereas in the periphery particularly Santander and Bolivar, and to a lesser extent four other departments, experienced high rates of growth while six others stagnated.

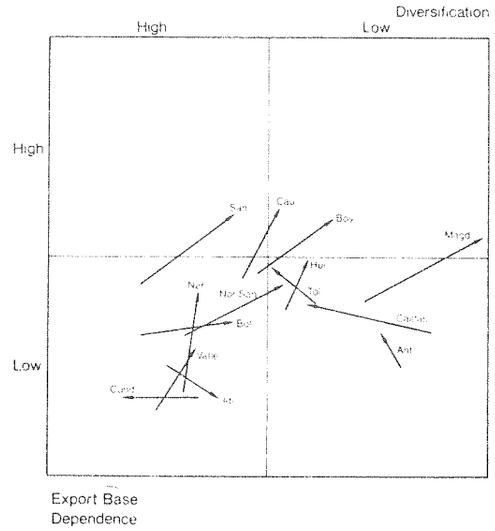

Fig. 1. *Changes in the industrial export base of Colombian regions, 1945-1958.*

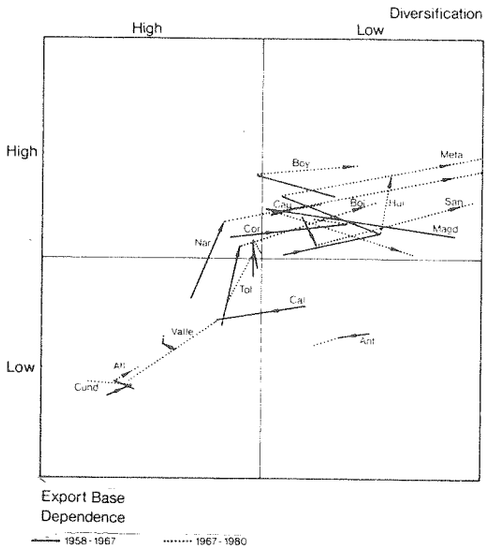

Fig. 2. *Changes in the industrial export base of Colombian regions, 1958-1967-1980.*

Some implications for theory

It seems reasonable to conclude that in the first period examined, when industrialization almost exclusively took place within the context of the domestic market, the interregional pattern of change was a relatively straightforward case of center-periphery polarization (with the exception of Valle). In the later periods the pattern of change was much less uni-linear. Second stage import substituting industrialization and subsequent internationalization each had differential effects upon the various regions, both with the industrial core as well as with the periphery.

Gradually a new interregional industrial division of labor emerged, characterized by an increasingly and more and more narrowly specialized exporting periphery, internally differentiated into an agro-based and a mineral resource based industry, and a core of mutually complementary regions, but heavily dominated by an increasingly diversified capital region. (The number of industrial sectors in which Cundinamarca alone contributed more than 50% of the total sector's exports went up from 3 in 1945 to 8 in 1980.)

The conclusions stand in quite some contrast to the theoretical propositions that were briefly reviewed at the beginning of this article. A number of interesting theoretical implications can be drawn. In doing so, one should of course not lose sight of the limitations of our analysis that were exposed earlier.

The analysis of the Colombian pattern of regional growth raises considerable doubt about the original long term propositions of Douglass North. Increased integration and trade reduced rather than increased diversification of export base activities in peripheral regions. Certainly in the period of a 'closed economy' with only interregional trade in manufactures, it is difficult to maintain this theory, as also the gap between centers and periphery widened. In a similar fashion there are enough indications to reject the neoclassical gains from trade argument. Neither did all regions specialize, nor did specialization necessarily give rise to growth. Those regions that grew most actually remained highly diversified. Only some heavily specializing regions experienced considerable above-average growth (particularly in the second and third periods), but other equally specializing regions stagnated throughout.

These conclusions may seem to give support – in a negative sense – to Myrdal's cumulative causation theory. Indeed there appear to be quite a number of indications in that direction. Many peripheral regions specialize *and* stagnate, while the industrial core continues to grow faster (though with some interruptions), and remains highly diversified in its export base activities. However, it is also important to stress the internal differentiation within both center *and* peripheral regions. It is difficult to explain these with cumulative causation mechanisms only.

The analysis of the Colombian patterns of change seems to give more support to the unequal structures identified by dependency as well as domination theory. Processes of specialization in peripheral regions may induce growth or stagnation, depending on its relation to the industrial core. The latter had, and consolidated further, its industrial dominance. It is difficult, however, to explain the differentiation *within* the industrial core by means of either theory.

Although the proposition of dependency theory that increased international exposure and integration produces further interregional differentiation cannot be disproven, it is perhaps striking to observe, as we have seen above, that the greatest interregional differences were produced in the 1945-1958 period in which domestic manufacturing production was protected from international forces of competition.

Certainly, our aggregate quantitative analysis cannot capture important qualitative changes that have taken place and that have an important bearing on regional development, e.g. economic and financial concentration, transnationalization of industry, and the industrialization of agriculture (Helmsing 1983a), etc. Notwithstanding these and other limitations it seems clear that the impact of national and international changes on regional development is or has become far more complicated than is assumed in current regional theory.

Appendix on empirical sources:

The 1945 census data are published by Ospina Vasquez (1974). However, only sectoral and regional breakdowns of employment and gross and net output are given (Ospina Vasquez 1974, Tables 2 and 3), but not the regional distribution of each sector, except for gross output (*ibid,* Table 5). As a consequence it became necessary to estimate value added by sector and region. The problem at hand can be visualized as a matrix with empty cells and a row and column of totals. The problem therefore is to generate a distribution over the individual cells such that its corresponding row and column totals coincide with the given row and column totals. This problem is a familiar one in input-output analysis and the so-called 'RAS iterative procedure' can be utilized to solve it, using the regional distribution of gross output by sector as the initial distribution. The data for 1958 and 1969 are found in CID (1970). Finally, the 1980 figures are taken from the census of manufacturing industry (DANE 1982). During the period that is analyzed here, the conventions concerning classification of manufacturing activity changed. Moreover, and as a consequence of new administrative conditions, there are changes in regional breakdown. Both required a number of adjustments so as to create comparable (uniform) sets of data. The problem of sector classification is particularly real when use is made of the 1945 census which is not based on the standard industrial classification. Two sets of data were prepared. One (series A) based on the 1945 format, was used for the analysis of the 1945-1958 period. The second (series B) which is the same throughout the remainder of the period, adopts the 1958 format. These data adjustments and RAS procedure are described in detail elsewhere (Helmsing 1983b).

Since it was virtually impossible to obtain price indices for the entire period and discriminated by region, it was decided to use current value of output. This in itself constitutes an important restriction as it implies the assumption that the terms of trade between sectors and regions remained constant.

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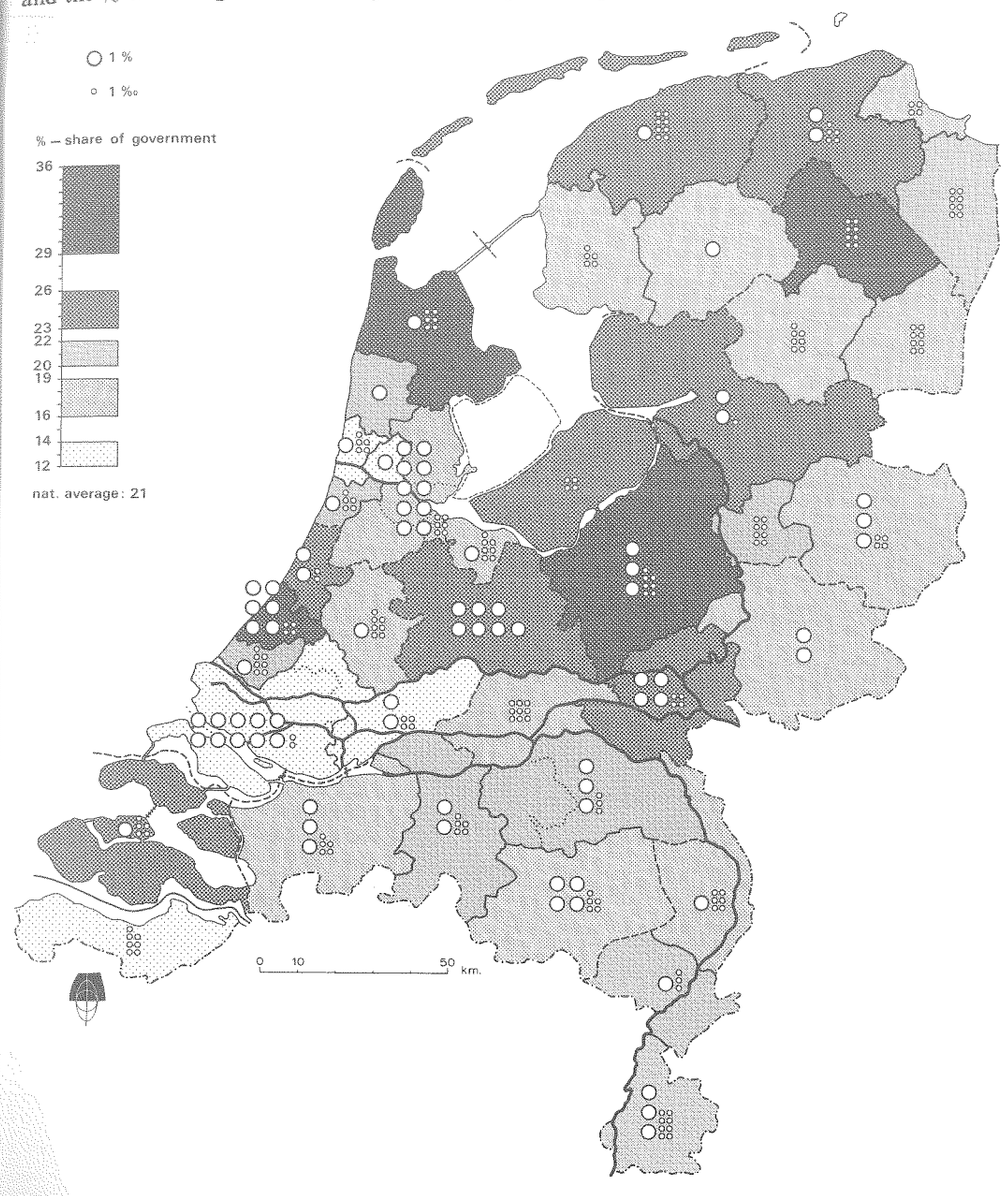
THE NETHERLANDS IN MAPS

Regional per thousand share in national total of wages* paid to employees (Dfl. 151,465 million), and the %-share of government wages in each region's wage total, in 1980



Basic source: Central Bureau of Statistics.

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*excl. premiums for insurance etc. paid by employer