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Equality, Market, Profit, Growth - Small-Scale Industry and the Expansion of Mass Markets with Reference to an Empirical Research in Algeria

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SOME THEORETICAL ARGUMENTS IN FAVOUR OF EQUALITY AS A PRECONDITION OF ECONOMIC DEVELOPMENT.

The argument in favour of income redistribution in order to favour economic growth has been widely discussed in development literature. Most empirical works of research conclude that greater income equality generally leads to higher long-term growth¹.

Standard neo-classical theory places great emphasis on savings as a financial source of investments. Profits are considered to be saved at least to a large extent. An increase in the share of profits in the national income facilitates investment. It however leads to greater income inequality. The argument in favour of greater income inequality underlines the efficiency of investment. The products the poor consume are simpler than those consumed by the rich². Historically, industrialisation started with two quality products. (Ashton, 1954: 59; Jevons, 1865: 197; Parry, 1975: 209; Thirsk, 1978; Nef, 1958: 125ff.. Products to satisfy the needs of the poor will be produced in larger quantities and simpler technologies because of lower quality requirements than those in demand by the rich. Larger quantities allow standardization. Standardization allows production in large quantities and special purpose machinery. This facilitates the division of labour as described by Adam Smith's Pin Makers

¹ Early on: Wagemann, 1935: 20; Phelps, 1939: 245; Gilboy 1932: 625 quoting Pillai; Furnivall, 1937: 446; Hansen, 1945: 185; League of Nations, 1945: 121; Triantis, 1953: 636; Boh, 1956: 183; Myrdal, 1957: 41; Hickey, 1958: 61 quoting Woytinsky; Hoselitz, 1960: 89; Mandelbaum, 1961: 4; González-Casanova, 1969: 187; Griffin, 1969: 183; Leon, 1969: 260; Furtado and de Sousa, 1970; Thomas, 1970; Giocomin, 1995: quoting Boisguilbert

For a variety of all those who supported the argument: Alamgir, 1980: 426; Anell, 1980: 153; Attaf, 1988: 58; Barbour, 1980: 92; Baron, 1982: 684; Benachenhou, 1980: 18; Bequele and Freedman, 1979: 315-329; Bergsman and Morley, 1969: 102; Bergsman, 1979: 103; Bhagwati, 1984: 23-38; Bhorat, 1991: 31ff.; Bitar and Moyano, 1975: 223-252; Bohnet and Betz, 1976: 12-22; Braun, 1970: 39; Cheema and Malik, 1984: 352; Chenery, 1980: 16; Chinn, 1974: 139ff.; Effects, 1972: 61; Elsenhans, 1975: 293-313; Fajnzylber, 1976: 367, 1985: 365, 1989: 80-91; Faroque and Butterfield, 1987: 161-193; Felix, 1982: 291; Figueroa, 1972: 227-256, 1977: 905; Fishlow, 1976: 76; Fitzgerald, 1978: 274; Foxley and Muñoz, 1976: 1036; Furtado, 1973: 117; Green, 1987: 374; Griffin, 1970: 93; Gupta, 1975: 290; Gupta, 1977: 6ff.; Hicks, 1980: 17; Hinkelammert, 1983: 180; Hymer, 1979: 89; James, 1977: 83; Johnson, 1970: 52; Koo, 1984: 1036; Lafaiete, 1972: 189-226; Lal, 1976: 736; Land and Soligo1, 1974: 77; Laski, 1970: 124; Lecaillon and Germidis, 1974; Lefeber, 1974: 3; Leightner, 1992: 68; Lisk and Werneke, 1976: 10; Mehmet, 1978: 51; Miotti, 1985: 13; Müller-Plantenberg and Hinkelammert, 1973: 225; Murphy et al, 1989: 537-564; Nayyar, 1978: 1277; Nowak, 1988: 14; Oshima, 1971: 161-183; Oshima, 1977: 563; 1984: 104; Palmer, 1973: 24; Park, 1996: 87-94; Pashardes, 1980: 224-245; Pinto, 1971: 62; Ranis, 1989: 1447; Sachs and Laski, 1970: 44; Sautter, 1987: 481; Schwarz, 1980: 384-385; Seers, 1973: 9; Shams, 1976: 340ff.; Shourie, 1973: 345; Sideri, 1972: 16; Singh and Singh, 1978: 119; Sinha et al. 1979: 118: Skolka et al. 1976: 77: Stewart and Streeten, 1971: 146-186: Strassmann, 1956: 425-440: Sunman, 1974: ? Swift, 1971: 89; Thorbecke, 1973: 421ff.; Tyler, 1973: 321-336; Ul Haq, 1973: 101; UNIDO, 1974; Vos, 1988: 335, 93; Ward, 1977: 116; Watanabe, 1978: 108

² Anderson and Khambata, 1981: 126; Burch, 1987: 11; Byerlee/ Eicher/ Liedholm, 1983: 335; Carbonetto, 1984: 118; Chakravarty, 1979: 1229-1249; Dell, 1979: 306; Eglin, 1978: 122; Grabowski, 1991; Hicks, 1979: 992; House, 1981: 347; International Labour Office, 1974: 56; Islam, 1991; Liedholm and Chuta, 1976: 118; Mathur, 1990; Nihan/ Demol/ Jondoh, 1979: 634; Nordcliffe and Freeman, 1984: 22; Ranis and Steward, 1993; Rio-Report, 1976: 130; Snodgrass, 1979: 45; Steel and Tagaki, 1978: 18; Thirsk, 1979: 61

(Smith, 1776, 1979) and as supported by Boulton's (1769) quote (according to Williams, 1964, 131)

" It would not be worth, my world to be made of three countries only, but I find it very worthwhile to make it for the whole world" (i.e. the steam engine, H.E.).

A labour surplus, which exists according to most development thinking (Lewis, 1952; Fei and Ranis, 1964; Georgescu-Roegen, 1960; Dandekar, 1962), can be mobilized in case of a more equal distribution of income in order to produce simple investment goods (products) in large quantities³. The production of larger quantities makes production of machinery possible. Larger batches of machinery allow for economies of scale enabling the production of special purpose machinery. Special purpose machinery allows more cost reductions than generalpurpose machinery⁴. The larger the series of consumption goods produced, the higher the cost reductions through special purpose machinery as opposed to the use of general purpose machinery. The larger the share of goods in mass demand, the higher the incentive to produce machinery, especially general-purpose machinery.

Beyond the limited economies of scale in the machinery production (small batches as evidenced by the importance of small enterprises in machinery production in Germany and in the rest of the world) a diversified machinery production presents advantages as described in the industrial zone literature following the discovery of *Emilia-Romagna*. Some of the challenges in machinery production are not dependent on the special type of machinery but rather on machinery production as such, as any machinery constitutes an assembly of processed metal parts that transform energy into repetitive movements of a tool. The skills to be acquired for machine building are partly specific to a particular machine, but also partly applicable in the design and construction of any machine-type mechanisms for transferring power onto a tool. From the foregoing therefore, greater equality of income reduces the obstacles for the use of machinery and creates incentives for local production of machinery.

The comparative development of industrial countries in the 19th century can be cited as proof for the equation between homogeneity of demand as a result of relative equality of income distribution. The overtaking of Great Britain by the United States (Romer, 1996) and

³ Allal and Chuta, 1982, 14; Gerry , 1979: 129; Ghai, 1979: 116; Lachaud , 1985: 142; Le Brun and Gerry, 1975: 29; Liedholm and Mead, 1987: 183; Musson, 1978: 17; Myint, 1971: 345; Sethuraman, 1981: 40; Shetty, 1963: 152; Steward, 1987: 289; Van Dijk, 1986: 103

⁴ Amsden, 1977: 229-230; Kuzmin, 1979: 175; Schlesinger, 1925: 48; Young, 1928: 530

the differentials in the development of Australia in comparison to Argentina⁵, are the standard examples quoted. Neoclassical economics has been kept from invalidation by the argument on the differences in development according to initial equality⁶, i.e. the initial distribution of assets, so that economies with great inequality of distribution of land have poor growth rates. Growth as the result of initial equality does not negate the increase of inequality during the development process, so that maintaining low levels of inequality in order to promote growth is not necessary. High levels of inequalities can be dealt with as proof of the neo-classical inequality-growth equation in cases of development as well as in cases of stagnation as a result of pre-existing inequality.

Moreover, the link between equality and development becomes more important for technologically backward countries (hereinafter TBCs) than for the forerunners of industrialization, if there is technological progress in the production of machinery and the technology is applied in the non-machinery and machinery producing economic branches. Let us assume that the contribution to technological progress that cannot be dealt with by the accumulation of physical capital has to be largely explained by better knowledge about how to design machinery. This machinery can be applied in most social economic environments of the world economy, provided that some skills and infrastructure that are accessible to most of the TBCs exist. TBCs will be able to apply machinery with a physical productivity comparable to that in the technologically advanced economies. TBCs will however not share in the disembodied factors of technical progress in machinery production. According to comparative cost advantage, TBCs will specialize in the branches of production that use imported machinery. Even in the export-oriented industrialization East Asian cases, the entry into machinery production for highly performing economic branches required state interventionism⁷.

Let us now follow the argument that initial equality is important. We therefore may have two types of technologically backward economies. The first type is characterized by important achievements and progress in civilization without having been capable of transforming itself into capitalism. In this case, the most authoritative examples are ancient India and ancient China. These Asiatic economies are often called tributary modes of production. They were already rich in the 19th century. Because of their wealth, they enjoyed

⁵ Ehrensaft and Armstrong, 1978: 356; Ferrer, 1980: 156; Fogarty, 1979: 39; Fowerakker, 1981: 22-24; Habakkuk, 1962: 35ff.; Leff, 1972: 499; Lewis, 1978: 25; Mariategui, 1928: 49; Moran, 1970: 74; Nicholls, 1964: 17; Persson and Tabellini, 1994: 600-619; Petrecolla, 1979: 229; Pincus, 1987: 301; Saul, 1960: 85; Wheelwright, 1974: 291

⁶ Adelman and Taft: 1978: 231-324; Adelman, 1980: 223ff.; Li et al., 1998

⁷ Holtgrave, 1987: 70-81; Haggard, 1983: 280-283; Mytelka, 1985: 13ff.

comparative advantages in luxuries (e.g. silk, cotton and chinaware) or luxury raw materials (e.g. spices and gold), which the industrializing Europe of the 16th to the 18th centuries bought at high prices. Industrial Europe specialized in low quality but cheap products for which it enlarged its overseas market in the tributary modes of production through forced openings of their markets (e.g. the colonial conquest of India in the 18th century, or the "opium war" between the Great Britain and China -1840) and deteriorating terms of trade. Because of capitalism's capacity to promote development the specialization in old-time luxuries and later in raw materials no longer creates important earning possibilities. The world demand for these products is sluggish. By increasing household incomes for all social classes, capitalism has allowed the launch of new products that at first could be bought only by the richer classes, and which later on were democratised by becoming accessible to the households en mass (Nef, 1958: 137). Further rises in mass incomes and lower unit prices because of mechanization are at the basis of the process. The technologically leading economies dispose of new products that replace traditional luxury goods in the TBCs of the first type (Elsenhans, 2001: 31-45).

The second type of TBCs is characterised by generalized poverty. Any development process has to face a scarcity of well-trained labour. More modern technology is in competition with backward local technology. The employment of modern technology, which provides increases in productivity (although initially limited to some sectors of production) is hindered by the scarcity of appropriately skilled labour. Sector limited productivity increases and scarcity of skills favour the emergence of rents. The modernisation of poor economies under the condition of the availability of modern technologies (which in comparison to the performance-cost of locally available technologies is cheaper) allows for rapid increases in productivity whose contribution to the national income and to the existing skills, leads to a worsening of income distribution and in case of the non-availability of locally produced luxuries, to the orientation of high-income consumers to imported luxuries. Obviously, the rise in the income of people of economically scarcity will attract many other claimants who dispose of non-economic assets for rent seeking. This will lead to the politicisation of the economy.

Both types of underdeveloped economies will end up in dependency because they are able to import luxuries for a tiny group of the population so that new products do not lead to the development of local skills in technology production but only in technology application. The transformation of labour surplus can be achieved only through the capacity to make ones own labour internationally competitive through devaluation, which may imply a decrease in income inequality.

There are therefore two mechanisms put forward for rejecting the neo-classical equation between inequality and development. Firstly, by changing the structure of final demand, those goods are in higher demand which can be locally produced without facing the bottleneck of the balance of trade. Secondly, the higher demand for locally produced goods together with an increasing share of simple locally produced investment goods allows for the gradual absorption of local surplus labour. This may ultimately lead to full employment as it has done in South Korea and Taiwan on the basis of a mixture of import substitution and export orientation (Menzel, 1985: 122-130). In that case, labour becomes scarce and can impose the emergence of the standard neo-classical mechanism of wages rising in line with scarcity (Fields, 1994; Bai, 1981: 135; Aitken, Harrison and Lipsey, 1996). This shows from where the characteristics of the equation equality and growth have to be drawn. A more equal distribution of income allows the elimination of high household incomes, which are based on market imperfections. The new composition of final demand allows the mobilization of hitherto unemployed labour, for the products for there had been no demand because of the pattern of income distribution. Equality of demand may allow the easing of the transition to capitalism by reducing rent and labour surplus.

The access to local investment goods production and the increase of employment by means of adapting demand to the still existing weak technical capacities is an instrument for combating rents on the basis of properly channelled rents (Elsenhans, 2004). This entails increasing productivity of investment goods production (by mastering technologies) on the basis of increasing employment in the production of simple manufactured goods and machinery. The two decisive empirical questions of our project (Elsenhans, Dreves and Kleiner, 2001) have therefore been: Firstly, is consumption by poorer households, apart from food, more concentrated in simple goods than the consumption by richer households, and are the products for the poor accessible to production by means of initially locally produced simple equipment? Secondly, there are small and medium scale enterprises, which flexibly react to market signals. Are these enterprises capable of using standard technology productively, especially if this technology is locally produced?

THE DATA

We disposed of four sets of data (two of which we generated ourselves). We accessed the other two through the Planning Ministry under the direction of Algeria's former ambassador to Germany, Ali Oubouzar who greatly supported our study. By the end of the presidency of Houari Boumediene, Algeria's central planning office had delivered by allowing the investment of high amounts of oil rent through the instrument of the mammoth state-owned enterprises (which was responsible for all sectors), but had however failed to create productive enterprises. So there was a considerable interest in "Ordnungspolitik" (Ministère de la Planification et de l'Amenagement du Territoire 1980).

The four sets of data consisted of:

- a survey of household expenditures on the basis of about 9,000 urban and rural households that we found in the data 7,009. It was executed in 1979 by the National Office of Statistics in Algiers. A considerable number of households were missing. No reason could be traced for that.
- a survey of urban households' expenditure for consumer durables based on random selection of some randomly chosen municipalities of greater Algiers that we ourselves executed in 1984-85.
- the 1979 *Tableau des échanges interindustrielles*, a Leontief matrix of the Algerian industry for 1979.
- a survey of 250 small-scale enterprises that we ourselves executed during 1984-85.
 The number of units in the sample were fixed according to the contribution of seven branches of manufacturing to net added value of manufacturing. Within each branch, enterprises were selected on the basis of random choice of municipalities in the greater Algiers and random choice of enterprises situated in those municipalities and active in those branches.

We further had access to the Algerian national account data at the disposal of the National Statistical office and the Planning Ministry.

The survey of 101 households and their consumer expenditure was not appropriate for being used in the modellization. Households were extremely reluctant to reply. They usually denied having bought any consumer durables during the observation time. The attempt to get reliable data by asking if certain consumer durables were available in the household was met with suspicion. Only a few households were ready to give access to their dwellings to a sufficient degree. Where the existence of TV sets was obvious, it was denied that they had been bought at all. It was often claimed that they had been given by some relatives or inherited together with the furniture. Although these data could not be used for the modellisation, various attempts into the structure of the data provided us with important insights.

By plotting the data according to both total expenditure and expenditure for specific items, we got clusters of observations with relatively large deviations from possible averages in relative distance to the zero point. The clusters were closer to zero in the cases of furniture and electrical household equipment where the most important item was the refrigerator.

The clusters only started at higher expenditures and were less scattered in cases of vehicles, radio sets, TV sets and cameras. We conclude that there is a hierarchy in the demand for consumer durables that makes some products more appropriate than others for import-substituting industrialisation⁸.

The 1979 Algerian survey of household expenditures could only be used in an aggregate form. The Algerian authorities denied us access to the original data for reasons of data protection, although a more detailed analysis would have required the entry of these data into our computer under individual households. The upgraded raw data in the position of the consumption expenditure curve consisted of 713 products out of 967. We therefore had the expenditure on an particular item for the poorest and the richest households that bought a product at all, a mean expenditure for the product and the mean income of the households, the intersection of the regression line with the y-line, the gradient of the regression line, the r^2 for the variance and the probability of the rejection of the zero hypothesis. The promise to get at least the same data for the sector and other groupings of the products derived from the consumptive behaviour of households according to their level income was not kept.

Because the high degree of de-aggregation of spending items, we had to solve the following problem: With the exception of especially food items (which were extremely detailed in the enquiry probably due to the administration's interest in data for authoritarian planning of agricultural production) products were either consumed or not consumed, and if consumed at all, household expenditures did not vary largely. Part of the households happened to buy a particular product in the year of investigation. Others were already in possession of the product and appeared in the data as not consuming it at all. The gradient of the consumption expenditure line for a particular product is low. The answer to our question about the propensity to consume for example textiles would have required access to the

⁸ Banskota, 1985: 166; Hammouda, 1984: 72-75; Lemke, 1980: 173; Meo et al, 1985: 56

original expenditure data of households, in order to group the total expenditure of a specific household for the whole range of textiles. Such data would have shown for example how expenditure for textiles increased in line with rising incomes.

Regression lines in the linear model for single products would intersect with the y-line in the positive range. Regression curves in the logarithmical model intersect at zero. In both cases an overestimation of consumption inevitably occurred.

We had to arrive at an aggregation of the available data for products in order to reach, realistic estimations of expenditure for groups of products (from the aggregated data). We proceeded as follows: we divided all expenditures by the number of all the households we had in our data. We then multiplied these calculated expenditures by the number of households reported in our data as having consumed the item.

Due to the fact that some households bought pairs of trousers and others T-shirts in the respective period, the degree of certainty for the original curves for expenditure on specific items was necessarily low.

Because of the persistent overstatement of expenditure by low-income households, total spending for products and groups of products was still too high. In order to integrate the data into a model, we calculated consumption functions for each product on the basis of the linear consumption expenditure function, which we had been given in a parabolic form and in a linear form. The parabolic line passed zero and the centre of gravity of the linear consumption – expenditure line with the gradient on the consumption and expenditure of that product.

These consumption functions could be summarized with each other in order to obtain consumption functions for groups of products of our choice (grouping the products according to branches, specialisations, sizes of industrial enterprises and income groups for the demand of these products). The aggregation of all consumption functions to total consumptions allowed to check the results of our data adjustment with average and total household consumption expenditures. The aggregated consumption of our adjusted data differed very little from the average and total household expenditure shown by the Algerian data to which we had access. Because of little evidence to the contrary in the F-statistics for the product per product consumption functions, we concluded that the consumption functions that we had arrived at by adjustment, were fairly appropriate for integration into the model. The procedure obviously led to a high r² because the data of departure already represented means.

Before starting the model, we further looked into the details of our products. A certain number of products was characterised by declining slopes of their demand line in the linear model as well as rising slopes in the logarithmic model. According to the r^2 we chose. We could then distinguish inferior (ϵ <O) and prestige goods with consumption rising drastically more rapidly than expenditure of the households (ϵ >1), and assessed the results according to plausibility. Inferior goods comprised of food, products of low technology requirements (which were difficult to interpret) and products linked to further in-house preparation such as cotton for knitting.

Prestige products comprised of high quality food (canned food, fruit), household utensils, cutlery, locally produced typically higher income items (wine, sports articles, balls, holiday trips, etc.), household items (like furniture or paintings), textiles for diversified consumption (pullover, sewing elements including fees for tailors) and low technology higher income items (bicycle, stoves etc). From this qualitative examination of the items we draw the following conclusions in classifying products as possible growth products in case of rising mass incomes:

- food items, which demonstrate diversification and improvement of food intake in cases of better income.
- Low technology items for better housing quality in apartments and kitchens
- means of transport (other than private cars) and communication such as bicycles and collective transport (spending on busses and trains, taxi, mail, telephone, insurance)
- low technology products for child rearing and holidays.

Some products, the consumption of which could not be suppressed by administrative measures, such as underwear or cigarettes were luxuries.

In summarizing those prestige products with low intersections on the x-axis and those with high income elasticity (ϵ), we observed a diversification of consumption especially in textiles, furniture, non-electrical household equipment, educational and entertainment products, especially for children as well as collective equipment in regard to whose production we did not observe technological obstacles in Algeria. Imports are preferred to products of local origin depending on relative prices. An appropriately low exchange rate should therefore allow Algeria to launch import substituting industrialisation without protectionist barriers. The major impediment to such a policy, which we did not investigate further, was seen in the food sector, as well as the absence of any preparedness to fight "Dutch disease" caused by the high Algerian export of hydrocarbons (crude oil, liquefied natural gas).

The two main bottlenecks for industrial development in Algeria are her resource richness and her food dependency.

The enquiry of small and medium industries concentrated on investment, capital stocks, output, profit and employment. Enterprises comprised of units in old areas of industrial production in the centre of greater Algiers, which obviously suffered especially from lack of space, small mainly consumption oriented units in the older area of middle income market-oriented units in the western suburbs of greater Algiers, and units in new industrialisation zones in the East of Algiers, which were characterized by a relative degree of modernity.

We visited all units at least twice. The interview teams presented an "ordre de mission", which identified them as members of the Ce.N.E.A.P, a government-owned research institute for the promotion of small and medium scale private enterprise. During the first visit, it was usually observed that some businessmen mostly preferred to deal with the German interviewers because of their identification with the international concept of market-driven economy so that they considered the German interviewers as potential support for pushing the government more towards market orientation. On the other hand there were some entrepreneurs who talked more freely to the Algerian interviewers out of national pride. The latter group businessmen showed their attachment to Islam to a considerable degree. Their clothing, behaviour and their ideological references were proof of this.

It was extremely difficult to collect questionnaires due to the delays emanating from the above obstacles. Many businessmen did not fill the questionnaires themselves but referred to their tax consultants whom they used for accounting purposes. Some clearly indicated that the data were wilfully distorted in order to escape fiscal investigation. The capital stock was always checked by an inspection of the premises. In all enterprises only simple machinery was found, which already at that date was produced locally in countries like India or Bangladesh, which members of the group knew through personal experience. Various adaptations of the capital stock data were necessary. Because of the age of the equipment, the existing capital stock was already amortised. The entrepreneurs often did not know the market price of a machine, as the machine had been acquired through immigrants attending trade fairs under very special conditions. Entrepreneurs had rarely a perspective of expansion and did not know the replacement price of their equipment. Nevertheless we reached satisfactory CES functions for our enquired small and middle industries.

| | Small and medium industrie s | Total Indus- tries | ISMM -E SMI | ISMM E total. | Building materials SMI | Building materials total | Chemi- cals SMI | Chemi- cals total | Food Indus- tries SMI | Food Indus- tries total | Textiles SMI | Textiles total | Wood wor- king SMI | Wood wor- king total |
|-----|--|--------------------------|-------------------|---------------------|------------------------------|--------------------------------|-----------------------|-------------------------|--------------------------------|----------------------------------|-----------------|-------------------|-----------------------------|-------------------------------|
| C/Y | 0,878 | 2,655 | 0,683 | 10,240 | 1,307 | 7,100 | 1,216 | 12,590 | 0,694 | 1,620 | 1,010 | 3,850 | 0,736 | 2,340 |
| Y/C | 1,138 | 0,377 | 1,465 | 0,098 | 0,765 | 0,141 | 0,822 | 0,079 | 1,440 | 0,618 | 0,988 | 0,260 | 1,358 | 0,427 |
| Y/L | 50.488 | 50.438 | 64.413 | 49.089 | 93.506 | 46.042 | 56.975 | 32.877 | 113.578 | 59.520 | 63.445 | 37.302 | 40.369 | 29.752 |
| C/L | 44.359 | 133.900 | 43.968 | 502.650 | 59.774 | 326.840 | 69.294 | 413.850 | 78.852 | 96.350 | 64.200 | 143.530 | 29.728 | 69.730 |

Table 1:Economic reference numbers for small and medium scale industries in Algeria (our
inquiry) and for total industries

We fitted our data into the Algerian table of inter-industrial exchanges, (the latest available of which was based on the 1979 data) which we extrapolated as far as possible for economic branches, by the rates of increase of production and the wholesale price indices available. From the totals of industrial production, we withdrew the non-public sector, as we assumed that public enterprises were mostly large scale enterprises and that private enterprise was predominantly small and medium scale.

This allowed us to calculate the production function for six out of seven industrial branches for which we had data. The category of "diverse industries" was too heterogeneous in our sample to yield production functions.

Upon comparing the public sector of Algerian industry with our small and medium scale enterprises, we arrived at the following results:

- SMIs were characterised by high capital productivity and low amounts of the capital employed.
- SMIs had the same and sometimes higher labour productivity. Even if the overestimation of SMI output in our data had been 30%, labour productivity in SMIs would still have been as high as in the public sector. In case of disproportional growth of SMI food and building material industries, the two branches (according to the consumption data) would have had to care for an increasing demand in case of rising incomes, the advance of SMIs over large public-sector enterprises in labour productivity would have been even larger.
- The capital output ratio of SMIs is low especially in the metal working industry. From the supply side, its expansion depends especially on the creation of skills.

- Public sector capital output ratios are high even in those industrial branches where normally capital output ratios are low such as metal working and textiles.
- The reliability of the CES functions for those industrial branches which are close to final consumption, such as food and textiles were best. We attribute this homogeneity to higher intensity in competition in the industrial branches close to final demand. The said competition does not allow entrepreneurs to stock machinery and other items with a view to possible higher demand in the future, for which they have to prepare despite incurring costs of hoarding factors of production caused by the inflexibility of supply.

We conclude with the high degree of the flexibility of the Algerian SMIs. In order to corroborate this finding, we presented our list of machinery from the SMIs that we had visited, to a technology consultancy firm that specialised in the evaluation of technological complexities of machinery. The consultancy applied criteria linked especially to the degree of automation of the machinery, such as handling and movement of working pieces. We asked the entrepreneurs about the consultants' criteria, complementing this information wherever possible by the name of the producer, the type and the production year of the machinery. The evaluation of the machinery found that none of the machinery in the Algerian SMIs went beyond complexity level two on a scale of one to six. Algeria's SMIs apply standard machinery which is already produced in newly industrialising countries but less produced in technologically leading industrial countries. Algerian and Indian toolmakers' skills differ very little from those of the Bangladeshi and Korean toolmakers, although there is no systematic evaluation of skill levels in the various underdeveloped economies that have succeeded in their transition to the level of newly industrialized countries that we can use to compare with the skill levels in countries with low levels of development that have not succeeded in this transition. The hypothesis, that it is low skills but effective demand that has allowed the breakthrough of some of the underdeveloped countries especially of East and Southeast Asia and of Latin America to self-sustained industrial growth is however corroborated, as machineparts production in Algeria satisfies the same standards of precision and resistance as in India or Bangladesh. Appropriate exchange rates allow benefits from the world market and will eventually protect the leading investment goods-sector. Internal reforms including access by hitherto marginalized populations to land (land reform, internal colonisation) allows the intensification of the multiplier effect of additional exports and additional investment in the export sectors on the local levels of employment income and growth.

RUNNING THE MODEL

The model into which we integrated the data was a flexible Social Accounting Matrix (hereinafter SAM) based on the UN System of National Accounts.

Our SAM consisted of:

- 13 Products accounts according to the Algerian classification of the *Nomenclature des Biens et Services*,
- 21 Production accounts according to the Algerian classification of *Nomenclature des Activités,*
- 2 Factor accounts (labour and capital)
- 2 Household accounts (urban and rural households)
- 2 Accounts for activities defined in the Algerian Statistics as unproductive such as public administration and non-productive services (financial services, social security)
- 2 Accounts for capital formation (capital formation by entrepreneurs and by the state)
- 1 Account for foreign economic relations
- 1 Account for the monetary sector comprising of net indebtedness and the balance of foreign exchange on the spending side and net liabilities on the income side.

This was a matrix of 44 columns and 44 rows. Economic reactions can be analysed by looking at the interfaces between the various blocks of accounts. We note that not all interfaces are zero matrixes. 25 interfaces have their own values. In the integrated social account matrix the economic importance of particular changes can be described.

Table 2: The Aggregated Social Accounting Matrix (SAM)

| | Goods | Production | Factors | Households | Non- productive sectors | Capital formation | Foreign sector | Monetary sector |
|-------------------------------|-------------------------------------|----------------|------------------------------------|-----------------------------|-------------------------------|---|--------------------------------------|---|
| Goods | | | | Private consump- tion | | | | |
| Production | Production according to goods | | | | State consump- tion | Investments | Exports | |
| Factors | | Added value | | | | | Factor income from abroad | |
| private households | | | Factor incomes of household | | State transfers | Capital transfers to households | Transfers to foreign countries | |
| Non- productive sectors | | Indirect taxes | | Direct taxes | | | Transfers from abroad | |
| Capital formation | | | | Saving | Budget deficit | | Capital transfers from abroad | Net indebtedne ss |
| Foreign sectors | | Imports | Transfers to foreign factors | Transfers to abroad | | Capital transfers to foreign countries | | Balance of foreign exchange operations |
| Monetary sector | | | | | | Net obligations | | |

From this formal matrix, we developed a model of multipliers consisting of endogenous accounts among each other, endogenous accounts with exogenous accounts, correlations between exogenous accounts and endogenous accounts, injections and transactions between exogenous accounts (compensation items). The model we applied to Algeria consisted of a multiplier model, a consumption sub-model and a production submodel. The system had the following technical characteristics: comparative static and price neutral.

A strict assumption of linearity guaranteed a non-ambiguous solution for a system of simultaneous equations. The model did not contain time-determined functions, because we did not have reliable time-series. The model is therefore not an econometrical model. The results of the simulation can be compared with this situation of departure in a statistical way. The system assumes relations of quantities, which are representative rates of prices. These relations can be changed autonomously for the purpose of simulations. This step was omitted in our work, because we did not have data about cost-reduction in case of large series under

the condition of a more homogenous demand. The model did not contain the endogenous price-quantity relations.

In calculating multiplier effects of injections or structural changes the effects of such changes on all other items of the economic system can be observed. The results of different simulations can be compared to each other, so that conclusions about their impact can be made. It would be possible to start from a desirable state of the system in order to estimate the necessary changes to be injected into the actual state. The multiplier model is appropriate for short-term and mid-term comparative statistical analysis, which can do with the assumption of linearity in the functions of behaviour. For some research problems, these characteristics seemed to be sufficient, as we were asking for largely economic structures that we enquired without any consideration for time-bound processes. The databases of our model have not been time-series, but data of a basic annual parameter deduced from analysis of these years. Dynamic aspects can already however be made evident in a comparative static analysis. By successively changing important parameters, a sort of sensitivity analysis is possible. Under certain restrictions, several simulations can be realised successively by taking the results of one simulation as point of departure for the next one. If it is considered as the result of a one year period, a sort of growth and development analysis with a time aspect can be simulated. Extrapolated time-series for exogenous variables can be used as a medium for dynamization. In our simulations we concentrated on the rise of the incomes of households or changes in the share of the consumption of individual items without raising the total demand by private households. A combination of both followed.

We could not simulate a change in the structure of production in the wake of changes in the import coefficients, although such a change had been considered important on the basis of our hypothesis on quality requirements. We however have no data on imports, to the difference of investment. Particularly, the customs administration data we got was utterly insufficient. Products were classified according to the branch-wide public enterprise in Algeria and not according to its proper characteristics. The branch-wide enterprises had the monopoly for importation for their industrial branch and could therefore decide on car imports, which were considered to be electrical equipment, if the electrical equipment company imported cars.

Any simulation of the level and the composition of household incomes changes the branch structure of demand. Some branches face a higher household demand than others, depending on the level of total demand and the composition of the demand according to differences in income distribution. Accordingly, the intermediate demand was adjusted on the basis of the coefficients between various branches. We were unable to introduce time-series for these coefficients, as we had no data on the question how in the time process coefficients would vary. The possibility of starting production in the wake of larger demand could not be integrated into the simulation, as the data were characterised by fixed import coefficients. Nevertheless a change in the structure of household demands for particular branches leads to changes in intermediate demand, which the model analyses on the basis of the coefficients drawn from the *tableau des echanges interindustriels*. This leads to higher production rates for some branches which lead to higher employment and therefore to changes in the level of household incomes.

The whole system adapts according to a model of adaptation in various rounds until all accounts of the model are once more equilibrated. Whether the Algerian industry will react to such a change in the demand by proportional increases in production can not be deduced from this simulation. However our complementary investigations about the technology requirements would make us rather confident that the Algerian economy reacts flexibly to these changes.

Our model is deficient in respect to two important hypotheses: the changes in consumption structure in the wake of changes in the distribution of household incomes as well as in the level of household incomes should normally lead to changes in the share of imports so that overall effects on employment and production-runs have to be investigated. Likewise, the effect of quality requirement and technology requirement on the local investment goods production and the resulting changes in production should both be investigated. To that effect, import coefficients in the local investment goods production as well as changes in the coefficients of interconnection between the investment goods producing branches and the investment goods using branches should have been made more flexible. As there were no empirical data for this type of effects, we could not enter them into the model.

Nevertheless, the model gives some important insights in favour of the thesis of equality and development at least in the industrial sector (higher mass incomes in Algeria being constrained by the possibilities of the Algerian agriculture).

We give an overview of the results of the simulations in table 3 below.

| Simulation Distr. Dis | | before | +10 | +20 | Norw | Norw | Norw | Imp | Fac |
|--|---|----------|-------|-------|-------------|-------------|-----------|-------------|----------|
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | 10 | 120 | | | | | |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | Sindanon | | | 21501. | | | onn. | 0 |
| 2 Clothing 5119,10 6,04 17,24 5,29 11,87 24,09 22,05 2,44 3 Shelter, Heating 3008,60 7,45 2,127 -4,54 2,44 15,38 22,05 2,44 4 Furniture 839,30 6,94 19,82 -28,56 -24,57 -17,18 22,05 2,44 5 Textile household 951,70 5,79 16,53 0,87 6,75 17,66 22,05 2,44 equipment - 10,62 17,61 30,76 22,05 2,44 9 Velncise 2378,7 6,89 19,67 -41,43 -38,83 -34,01 22,05 2,44 10 Transport and 1381,1 5,36 15,31 184,04 208,46 233,75 22,05 2,45 12 Radia, TV, Photo 648,20 7,34 22,30 0,61 4,95 13,01 16,03 1,33 15 Matr, energy 133,06 4,2 | 1 Food | 28996 50 | 6 2 5 | 17.83 | 7 07 | | | 22.05 | 2 44 |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | , | | | | | |
| 4 Furniture 839,30 6,94 19,82 -28,56 -24,57 -17,18 22,05 2,44 5 Textile household 951,70 5,79 16,53 0,87 6,75 17,66 22,05 2,44 equipment - 1 - | | | , | , | · · · · · · | | | | |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | , _, , | | | | | | | | |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | | | | | · · · | |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | ,70 | 5,17 | 10,55 | 0,07 | 0,75 | 17,00 | 22,03 | 2,73 |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | 1 1 | 552.30 | 7.84 | 22.38 | _10.42 | _3.66 | 8 88 | 22.05 | 2 14 |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | | 552,50 | 7,04 | 22,30 | -10,42 | -5,00 | 0,00 | 22,03 | 2,44 |
| 8 Health, Hygiene 1565,00 6,35 18,13 4,04 10,81 23,37 22,05 2,44 9 Vehicles 2378,7 6,89 19,67 -41,43 -58,83 -34,01 22,05 2,45 10 Transport and communikation 1381,1 5,36 15,31 184,04 208,46 253,75 22,05 2,44 11 Education and culture 1060,1 7,94 22,68 -2,32 5,39 19,67 22,05 2,44 13 Diverse 10008,30 5,92 16,90 18,13 25,92 40,39 22,05 2,44 14 Agriculture 25503,00 5,54 15,81 7,91 14,27 26,06 19,73 2,18 15 Water, energy 1353,60 4,28 12,200 0,61 4,95 13,01 16,03 1,33 16 Hydrocarbonate 49205,80 0,44 1,25 -0,03 0,23 0,72 1,19 0,08 | | 438 70 | 6.00 | 17.13 | 10.52 | 17.61 | 30.76 | 22.05 | 2 4 5 |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | | | | | | | | | |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | | | , | | | | |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | | | | | | |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | 1501,1 | 5,50 | 15,51 | 164,04 | 200,40 | 235,75 | 22,03 | 2,44 |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | | 1060.1 | 7.04 | 22.68 | 2 2 2 | 5 20 | 10.67 | 22.05 | 2.45 |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$ | | | | | | | | | |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | | | , | | · · · · · · | | | · · · | , |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ | | | , | , | | · · · · · · | · · · | | , |
| 16 Hydrocarbonates 49205,80 0,44 1,25 -0,05 0,39 1,19 1,98 0,13 17 Services for hydrocarbonate production 12930,30 0,26 0,76 -0,03 0,23 0,72 1,19 0,08 18 Mining 1510,20 0,85 2,44 0,51 1,41 3,09 11,78 0,28 19 Electrical, mechanical & metal working industry 34596,20 1,06 3,02 -0,72 0,26 2,09 51,14 0,31 20 Building materials 3177,60 0,79 2,25 1,06 1,96 3,63 3,97 0,24 21 Construction 24009,30 0,14 0,40 0,03 0,17 0,44 0,67 0,04 22 Chemicals and plastics 6509,60 4,01 11,45 6,33 11,00 19,66 17,34 1,44 23 Food industries 1337,00 5,54 16,49 5,31 113,97 26,10 20,50 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | | | | | | | | | |
| 17 Services for hydrocarbonate production 12930,30 0,26 0,76 -0,03 0,23 0,72 1,19 0,08 18 Mining 1510,20 0,85 2,44 0,51 1,41 3,09 11,78 0,28 19 Electrical, mechanical & metal working industry 34596,20 1,06 3,02 -0,72 0,26 2,09 51,14 0,31 20 Building materials 3177,60 0,79 2,25 1,06 1,96 3,63 3,97 0,24 21 Construction 2409,30 0,14 0,40 0,03 0,17 0,44 0,67 0,04 22 Chemicals and plastics 6509,60 4,01 11,45 6,33 11,00 19,66 17,34 1,44 23 Food industries 23775,40 5,57 16,48 7,43 13,97 26,10 20,50 2,26 24 Textile industries 8374,90 5,33 14,77 4,81 10,63 21,43 19,75 2,15 25 Leather, shoes 1334,00 5,54 16,49 5,31 11,39 22,69 20,14 2,23 | | | | | , , | · · · · · · | | | |
| hydrocarbonate production 1 <td></td> <td></td> <td>,</td> <td>,</td> <td></td> <td>· · · · · ·</td> <td></td> <td></td> <td></td> | | | , | , | | · · · · · · | | | |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | 12930,30 | 0,20 | 0,70 | -0,03 | 0,23 | 0,72 | 1,19 | 0,08 |
| 18 Mining 1510,20 0,85 2,44 0,51 1,41 3,09 11,78 0,28 19 Electrical, mechanical & metal working industry 34596,20 1,06 3,02 -0,72 0,26 2,09 51,14 0,31 20 Building materials 3177,60 0,79 2,25 1,06 1,96 3,63 3,97 0,24 21 Construction 24009,30 0,14 0,40 0,03 0,17 0,44 0,67 0,04 22 Chemicals and plastics 6509,60 4,01 11,45 6,33 11,00 19,66 17,34 1,44 23 Food industries 23775,40 5,77 16,48 7,43 13,97 26,10 20,50 2,26 24 Textile industries 8374,90 5,33 14,77 4,81 10,63 21,43 19,75 2,15 25 Leather, shoes 1334,00 5,54 16,49 5,31 11,39 22,69 20,14 2,23 26 Wood 3307,30 2,63 7,50 -8, | | | | | | | | | |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | | 1510.20 | 0.85 | 2.44 | 0.51 | 1 / 1 | 2.00 | 11 79 | 0.28 |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | | | | | | |
| 20 Building materials 3177,60 0,79 2,25 1,06 1,96 3,63 3,97 0,24 21 Construction 24009,30 0,14 0,40 0,03 0,17 0,44 0,67 0,04 22 Chemicals and plastics 6509,60 4,01 11,45 6,33 11,00 19,66 17,34 1,44 23 Food industries 23775,40 5,77 16,48 7,43 13,97 26,10 20,50 2,26 24 Textile industries 8374,90 5,33 14,77 4,81 10,63 21,43 19,75 2,15 25 Leather, shoes 1334,00 5,54 16,49 5,31 11,39 22,69 20,14 2,23 26 Wood 3307,30 2,63 7,50 -8,40 -6,64 -3,38 9,25 0,95 27 Paper 1863,90 3,02 8,62 5,34 8,91 15,54 11,96 0,83 29 Transport, Communication 10460,80 2,93 8,37 27,90 33 | | 54590,20 | 1,00 | 5,02 | -0,72 | 0,20 | 2,09 | 51,14 | 0,51 |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$ | metal working mdustry | | | | | | | | |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$ | 20 Building materials | 3177,60 | 0,79 | 2,25 | 1,06 | 1,96 | 3,63 | 3,97 | 0,24 |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | | | 0,14 | 0,40 | 0,03 | | 0,44 | | |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | 22 Chemicals and plastics | | 4,01 | | | | | 17,34 | |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | | | | | | | | | 2,26 |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | | | | | | | | | , |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | 25 Leather, shoes | | | | | | | | |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | | | | | | -6,64 | | 9,25 | 0,95 |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | 27 Paper | | | | 5,34 | | | | |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | | | | | | | | | |
| Communication21014,004,3012,284,999,8118,7522,67-1,8531 Hotels, Restaurants2577,304,5613,018,6814,1324,2516,091,6032 enterprise related services10888,700,651,861,171,943,385,250,0533 household related services2670,705,2114,872,858,3618,5719,211,8634 Transformation of products8369,700,661,870,611,332,664,880,17Total 1–1356947,606,3017,999,3816,6530,1422,052,44Total 14–34254865,002,407,433,476,2311,3516,260,56Total18631,40-4,27-12,1817,8115,3910,90-18,05-1,42 | | | , | , | | · · · · · · | | | <i>.</i> |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | | , | , | , | , | , | , | , | , |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$ | | 21014,00 | 4,30 | 12,28 | 4,99 | 9,81 | 18,75 | 22,67 | -1,85 |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | | | | | , | | | | , |
| 33 household related services 2670,70 5,21 14,87 2,85 8,36 18,57 19,21 1,86 34 Transformation of products 8369,70 0,66 1,87 0,61 1,33 2,66 4,88 0,17 Total 1–13 56947,60 6,30 17,99 9,38 16,65 30,14 22,05 2,44 Total 14–34 254865,00 2,40 7,43 3,47 6,23 11,35 16,26 0,56 Total 18631,40 -4,27 -12,18 17,81 15,39 10,90 -18,05 -1,42 | · · · · · · · · · · · · · · · · · · · | | , | , | , | <i>,</i> | · · · · · | · · · · · · | , |
| 34 Transformation of products 8369,70 0,66 1,87 0,61 1,33 2,66 4,88 0,17 Total 1–13 56947,60 6,30 17,99 9,38 16,65 30,14 22,05 2,44 Total 14–34 254865,00 2,40 7,43 3,47 6,23 11,35 16,26 0,56 Total 18631,40 -4,27 -12,18 17,81 15,39 10,90 -18,05 -1,42 | | | | | | | | · · · · · | |
| products 7 7 7 9 9 38 16,65 30,14 22,05 2,44 Total 1-13 56947,60 6,30 17,99 9,38 16,65 30,14 22,05 2,44 Total 14-34 254865,00 2,40 7,43 3,47 6,23 11,35 16,26 0,56 Total 18631,40 -4,27 -12,18 17,81 15,39 10,90 -18,05 -1,42 | | | | | | | | | |
| Total 1-1356947,606,3017,999,3816,6530,1422,052,44Total 14-34254865,002,407,433,476,2311,3516,260,56Total18631,40-4,27-12,1817,8115,3910,90-18,05-1,42 | | | ., | -,-, | -, | -, | _, | ., | -,-, |
| Total 14-34254865,002,407,433,476,2311,3516,260,56Total18631,40-4,27-12,1817,8115,3910,90-18,05-1,42 | 1 | 56947.60 | 6.30 | 17.99 | 9.38 | 16.65 | 30.14 | 22.05 | 2.44 |
| Total 18631,40 -4,27 -12,18 17,81 15,39 10,90 -18,05 -1,42 | | , | | | | <i>,</i> | | | |
| | | , | | | | | | , | , |
| ער דאר אין דיררא דעראד אאא אין דערא דעראד דעראט דער אין | Export – Import | -6025,60 | 16,95 | 48,37 | 28,68 | 48,59 | 85,53 | 93,58 | 5,49 |

 Table 3: An overview of the results of the simulation (percentage increases except in the first column)

In case of a ten percent increase in the incomes of all urban households, a considerable amount of the additional income would be absorbed by the public sector. The demand rises especially for luxuries like shelter and heating (+7.45%), electrical household equipment (+7.84%), cars (+6.9%), education and culture (+7.94%), radio, TV, photo (+7.34%), whereas the industrial branches with the high share in the consumption of the poor, such as clothing (+6.04%), table-ware (+6.0%) and diverse industries (+5.92%) expand much less.

In the second simulation, transfer-payments to urban households increased by 20% of the initial household incomes. The result does not change considerably.

In changing the distribution between the different households according to the Norwegian household income distribution, the structure of consumption changes considerably. Agriculture increases by 7.07%, clothing by 5.29%, table-ware (+2.52%), transportation (+184.04%), diverse industries (+18.13%).

Most visible is the reduction in the demand for furniture (-28.5%), a branch which normally is mentioned to show that the rich households are creating jobs for the poor, electrical household equipment (-10.2%), vehicles (-41.43%), whereas the demand for radio, TV and photo (-1.91%) and education and culture (-2.23%) only slightly diminishes.

The Norway distribution simulation shows, that the public transportation system, agriculture and labour-intensive industries for mass consumption besides radio and TV, constitute those branches, which in case of an increase of mass incomes, would have to increase their production. The redistribution seemed so favourable for growth incentives (when we combined the Norway distribution simulation with an increase of the incomes of all households by 10%) for industrial productions. Once more, food, clothing and table-ware show the highest increases. In relation to the simple redistribution in the Norway model, the reduction of the demand for cars and furniture is less. These consumer durables are important elements of a strategy which aims at equality and growth. State policy should concentrate on improving agriculture and public infrastructure. It is difficult to see, why in these areas the availability of technology should be decisive, especially in countries like Algeria which dispose of financial resources, which are not yet sufficiently used.

It might be alleged that one of the great tragedies of the twentieth century was the introduction of the green revolution without complimentary re-distributive measures, so that the green revolution could have led to considerable deceleration of demographic growth in the wake of rising mass incomes on the basis of a re-orientation of the industrial productive structure.

CONCLUDING REMARKS

Our simulation runs are in support of our first hypothesis. A more egalitarian distribution of incomes leads to changes in the composition of demand, which favour those products which can be produced locally.

Obviously the simulations do not confirm that redistribution of incomes will actually increase production. The homogeneity of production functions in those branches of production that were close to final demand, however constitutes a clear indication of the flexibility of this sector of SMI. The low levels of capacity utilisation indicates also that most enterprises would react flexibly to an increase in this demand.

In an uncoordinated way, during the visits to the enterprises, the businessmen we talked to were ready to engage in overall discussions about the situation of the Algerian economy and their business. Entrepreneurs were asked under what conditions they would employ locally produced equipment. The most visible case was the technology for aluminium pot making. There exists a simple procedure not more complicated than a knife grinder. The aluminium plate is pinned on a tool by using an iron bar. The next level is the replacement of the bar through some hydraulic mechanism. A revolutionary change would be the application of presses. The entrepreneurs had only vague ideas about the profitability of simpler technologies. We conclude that only really existing examples of locally produced technologies will infer an interest in their use. Simulated profitability on the basis of subsidies or customs duties will lead entrepreneurs consistently to attempt to circumvent these legal provisions. Where they are profitable, such simple technologies are in wide use, they are constantly re-used and also the entrepreneurs know a variety of mechanics for maintanance. There is also competition in prices and in quality in the mechanical parts production. In addition, the SMIs have a lot of unused capacities. One would assume that there are probably more bottlenecks in the production of basic materials such as steel or chemicals, than in the production of simple machinery.

On the basis of the equation equality-development, our research gives indications on the use of rents, which in an oil-exporting country inevitably emerge, but also in other countries during their transition from underdevelopment to development. Defending the lowest classes of households – as they are marginal – in their subsistence is the condition for maintaining the bargaining power of labour and hence for the working of basic mechanisms considered as universally given by neoclassical economics. As the chain simple product in large series leads to simple technology, provided the general skills are promoted and exchange rates are low enough, the strategy proposed will lead to multiplier effects of the standard macroeconomic model.

The rent generating sector has to be isolated from the rest of the economy in order not to drive up the exchange rate. It has to be put under the control of the government as the rent collector. It can be used for supporting mass consumption of the marginal population as well as to import strategically important investment goods and the skills to master it. There can be a trade off between the use of rent for launching mass consumption and for investment and the problem of optimisation of the use of rent.

The standard controversy about import substituting industrialisation and export oriented industrialisation are meaningless according to our analysis. The contact with the world market is an important instrument for disciplining business, including the import substituting sector. Import substituting industrialisation can be an important element for contributing to the emergence of a networked industry. Appropriate exchange rates are a better instrument than any other administrative regulation. With appropriate exchange rates and export taxes on rent generating products, rent becomes visible as an item of accounting. This will make democratic control easier and favour export orientation as well as import substitution by making evident the elements of subsidy.

Such a mixed strategy and its theoretical foundation demonstrate that the age old controversies in development theory between the market and the state, import substitution and export orientation, exploitation and dependency are less as a result of a familiarity with the object of analysis but rather the result of a state class type of rivalry about the capture of rents, in this case research money and academic jobs. It is therefore not surprising, that mainstream development thinking has led to a sycophantic race for how to best describe the problems of development and international relations as constructively constructed phantasm of our minds, which will create similar cooperation driven disposition in the minds of target groups. According to relevant literature, the target groups become more and more inclined to break the fetters of good behaviour, so that the motherly acting international NGOs no longer impose on them such rules. Their failure translates in difficulties in transforming their own rents at the highest possible price by selling to ignorant buyers of good conscience certificates about Potemkin-like successes. Against the obscurantism of the new Tetzel, reforming eclecticism in order to reach synergies as well as the interdisciplinary political economic approach to the development problem are in demand.

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