output. It has the added advantage in that the I-O transactions table could be used also to provide information on the indirect effect of output expansion on labor cost; this indirect component is often neglected in the estimation of the employment repercussions of export growth. Finally, if the employment problem is viewed in the context of existing disparities in income, compensation to labor seems the more appropriate measure (than the number of laborers in varying levels of underemployment) that can be related directly to any improvement in the earning capacity of a large part of the working poor.

Changes in the number of employed workers attributable to the growth of manufactured exports of the Philippines will also be estimated in this study to provide the basis for evaluating the potential contribution of future export expansion in manufactures. The objections raised above on the appropriateness of assuming a proportional relationship between the number of laborers and output produced probably least apply to the organized manufacturing industries, from which all manufactured exports are assumed to have been produced. This is because production laborers in large manufacturing establishments are generally hired for full-time work.[5] At any rate it is of some interest, in view of the current emphasis on "outward-looking" industrialization policies, to obtain numerical orders of magnitude that

indicate the employment effects of manufacturing export growth and compositional change in terms of the amount of additional employment opportunities generated.

III

The benchmark year for the purposes of this study is 1965. The choice is dictated by data availability more than anything else, the 97-sector input-output table prepared by the Bureau of the Census and Statistics being a major consideration.[6] Our first task is to examine the composition of exports in 1965 and the extent to which the production of each export commodity has contributed directly and indirectly to employment (compensation of employees) in that year. Since input-output tables are not available for other years at such detailed level of disaggregation, the input coefficients for 1965 will be used in later analysis to determine how the growth and changing pattern of exports over the years has contributed to employment generation.

Table 2 lists the 29 export commodity-producing industries accounting for nearly all merchandise exports (more than 99 per cent of total export earnings) in 1965. The heavy concentration of exports on a few industries is evident: 5 sectors account for nearly three-fourths (75.6 per cent) of the total export earnings. The principal export commodities can be identified readily from foreign

LE 2: 1965 Value of output, exports and compensation of employees in export-producing sectors, in thousand pesos

| I-O o. | Name of I-O Sector | Value of Output | Value of Exports | Compensat of Emplo |
|---|---|---|---|---|
| 3 | Coconut and copra | 1,885,127 | 627,853 | |
| 4 | Abaca and other fibers | 153,785 | 87,254 | |
| 5 | Tobacco | 133,276 | 18,891 | |
| 6 | Fruits and vegetables | 924,577 | 2,631 | |
| 7 | Forestry | 911,499 | 520,435 | |
| 8 | Fishing | 1,131,396 | 1,440 | |
| 12 | Metallic mining | 350,537 | 295,390 | |
| 15 | Processed fruits and vegetables | 144,746 | 40,367 | |
| 18 | Grain mill products | 2,191,198 | 8,103 | |
| 19 | Sugar and confectioneries | 1,096,216 | 504,708 | |
| 20 | Other food products | 1,207,623 | 2,946 | |
| 22 | Brewery and malt products | 165,569 | 2,264 | |
| 24 | Tobacco products | 359,034 | 17,509 | |
| 25 | Knitting and textile mill products | 806,120 | 3,335 | |
| 26 | Cordage and other native textiles | 144,069 | 6,581 | |
| 27 | Footwear | 114,432 | 232 | |
| 28 | Made-up textile products | 865,695 | 98,002 | |
| 29 | Lumber | 266,835 | 20,346 | |
| 32 | Plywood and veneer | 170,385 | 98,999 | |
| 33 | Wood furniture | 57,068 | 968 | |
| 34 | Other wood products | 47,662 | 3,806 | |
| 42 | Paints and related compounds | 79,333 | 1,088 | |
| 43 | Medical and pharmaceutical products | 180,103 | 2,140 | |
| 44 | Washing and cleaning compounds | 193,734 | 3,038 | |
| 45 | Desiccated and other coconut products | 569,156 | 365,625 | |
| 46 | Petroleum refinery products | 773,226 | 8,630 | |
| 47 | Other metal products | 110,203 | 2,599 | |
| * | Professional, scientific equipment and parts | 28,506 | 2,405 | 13,21 |
| | Other manufactured products | 117,379 | 2,750 | 45,96 |
| | T O T A L | 15,178,489 | 2,750,136 | 3,056,07 |

ce: Mijares (1971).

trade statistics published by the Central Bank. Of the total merchandise export earnings of $767 million (f.o.b. value) in 1965, $578 million were contributed by the following commodities: copra ($170 million), logs and lumber ($163 million), sugar ($132 million), coconut oil ($68 million), and copper concentrates ($46 million).

From Table 2 the value of output attributable to the 29 export-producing industries was ₱14.4 billion in 1965, representing about one-fifth (20.6 per cent) of total production in the economy. These industries exported less than one-fifth of their output. Thus total exports constitute only about 4 per cent of the total value of output in 1965.

Direct compensation of employees (for brevity, wages) amounted to ₱3.1 billion in 1965, which is 28.8 per cent for all sectors combined. Including the indirect wage component[7] yields ₱5.3 billion that is attributable to these export sectors. The direct wage content of output exported amounted to ₱571 million,[8] comprising only 19.0 per cent of that for the entire output of the export industries and 5.5 per cent of total wage payments in 1965. Finally, exports accounted for direct and indirect wages of ₱864 million, indicating that the indirect component is slightly over one-half (51.3 per cent) of the direct wage content.

The distribution of exports shows an extreme dependence on the primary producing sectors. Agriculture, forestry and fishing together contributed directly close to one-half (45.8 per cent) of the total value of exports from the 29 export industries. Moreover, most of the other industries with substantial export shares are agriculturally-based, e.g., sugar and confectionery, dessicated and other coconut products, etc. in that agricultural inputs bulk large in their production. An aggregate measure of such flow of agricultural inputs into the industries producing manufactured exports is given by the direct and indirect agricultural input content of exports from the manufacturing sector. This is obtained by multiplying the inverse coefficient matrix (nxn) by a column vector of exports (nxl) containing zero values for the non-manufacturing sectors. The elements of the resulting column vector can then be grouped and totalled as follows:

| | | |
|---|---|---|
| Agriculture, forestry and fishing | ₱ 738,697 | thousand |
| Mining | 1,630 | |
| Manufacturing | 238,014 | (net) |
| Construction | 3,249 | |
| Transportation and Communication | 46,248 | |
| Commerce | 105,496 | |
| Services | 75,753 | |
| T O T A L | ₱1,209.087 | thousand |

The total value of manufactured exports in 1965 is ₱1,196 million. Thus every peso of manufactured product exported has an agricultural content (direct and indirect) of ₱.62. It is also striking that inter-industry requirements within the manufacturing sector are very small: only ₱.20 worth of manufactured inputs goes directly and indirectly into every peso of manufactured export, and this is despite the high degree of disaggregation of the manufacturing industries.[9] Thus the backward linkage of the export-oriented manufacturing industries in terms of their material inputs impinges largely on the agricultural sector. Among the tertiary industries, Commerce and Services are seen to contribute significantly to the direct and indirect requirements in the production of manufactured exports. Overall, what may be called the manufactured export multiplier is 1.011, representing the net peso value of output directly and indirectly induced by each peso of manufactured exports (under the usual assumptions of input-output analysis).

The 29 export-producing sectors are arranged in Table 3 in the order of decreasing share of total exports with the values of their wage coefficients also presented. A strong positive correlation between sectoral export share and the two wage coefficients is not discernible from a cursory examination. Linear regression of the sectoral

TABLE 3: Sectoral export shares and labor coefficients, 1965

| BCS I-O No. | Name of I-O Sector | Per cent share of total exports* | Direct wage coefficient | Direct and indirect wage coefficient |
|---|---|---|---|---|
| 03 | Coconut and copra | 20.25 | .1769 | .3818 |
| 09 | Forestry | 16.79 | .3658 | .4463 |
| 19 | Sugar and confectioneries | 16.28 | .0839 | .3516 |
| 45 | Desiccated and other coconut products | 11.79 | .1465 | .3929 |
| 12 | Metallic mining | 9.53 | .2146 | .3104 |
| 31 | Plywood and veneer | 3.19 | .1649 | .3882 |
| 29 | Made-up textile products | 3.16 | .1008 | .2701 |
| 04 | Abaca and other fibers | 2.81 | .2488 | .3333 |
| 15 | Processed fruits and vegetables | 1.30 | .1408 | .2986 |
| 30 | Lumber | .66 | .2331 | .4303 |
| 05 | Tobacco | .60 | .2623 | .3490 |
| 24 | Tobacco products | .56 | .1747 | .3529 |
| 48 | Petroleum refinery products | .28 | .0414 | .0610 |
| 17 | Grain mill products | .26 | .1623 | .4977 |
| 26 | Cordage and other native textiles | .21 | .2359 | .3612 |
| 35 | Other wood products | .12 | .2173 | .4216 |
| 25 | Knitting and textile mill products | .11 | .2352 | .3116 |
| 44 | Washing and cleaning compounds | .10 | .1784 | .3316 |
| 20 | Other food products | .10 | .2282 | .4292 |
| 71 | Other manufactured products | .09 | .2591 | .3316 |
| 06 | Fruits and vegetables | .09 | .3119 | .3970 |
| 58 | Other metal products | .08 | .2228 | .3303 |
| 70 | Professional, scientific eqpt. and parts | .07 | .4637 | .4932 |
| 22 | Brewery and malt products | .07 | .1880 | .2770 |
| 43 | Medical and pharmaceutical products | .07 | .1628 | .2621 |
| 10 | Fishing | .05 | .3470 | .4008 |
| 42 | Paints and related cmpds. | .03 | .1612 | .3117 |
| 32 | Wood furnitures | .03 | .2105 | .3783 |
| 28 | Footwear | .01 | .2058 | .3761 |

*Including non-merchandise exports.

SOURCE: Mijares (1971).