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9. ABSTRACT

This paper reports the results of a study designed to (1) determine the magnitude and direction of employment changes among major industry groups and economic regions of the Philippines; (2) explain the causes of employment growth in terms of three broad categories of factors: the national growth component, the industrial mix growth components, and the regional share growth component. Employment data for the years 1970 and 1974, classified by major industry groups and economic regions, were used. Those years were chosen to show employment patterns two years before and two years after martial law was imposed. The study results show that substantial changes have taken place in the Philippine economy since the government embraced the concept of a mixed economy and gave the National Economic Planning and Development Authority absolute powers to plan, implement, coordinate and regulate all programs of government agencies and private businesses. National employment has increased by 2,018,000, or 17.3%. The industries that have grown faster than the national average include Government, Agriculture, Commerce, Utilities, and Sanitation Services. Industries that have grown slower than the national average include Manufacturing, Construction, Services, Mining, and "Not Reported" industried. Why Construction and Mining lagged behind other industries is not clear. Nor is it clear whether the policies of the NEPDA have accelerated economic development. More detailed research involving less aggregated data--research on specific industries at the provincial level--is needed to assess such issues.

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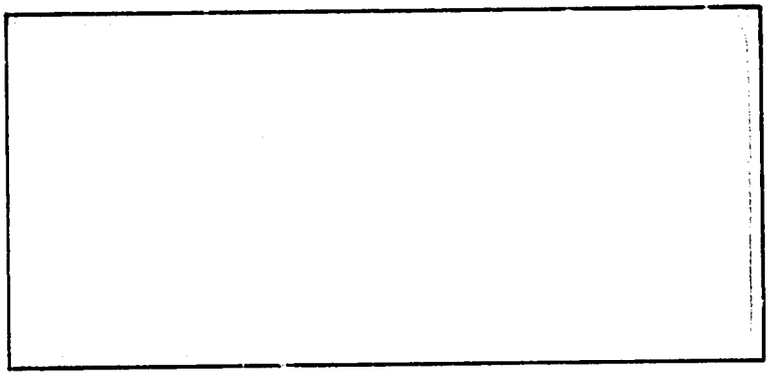

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SERIES #110-76

REGIONAL AND INDUSTRIAL CHANGES IN EMPLOYMENT IN THE PHILIPPINES, 1970-74

BY

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FOREWORD

The Unemployment and Underemployment Institute was created to coordinate all international economic development activities of the 211(d) grant at Southern University.

In 1972, the Agency for International Development (AID) approved a five year grant to Southern University to strengthen and increase its capacity in economic/agricultural economics to enhance Southern's capabilities to contribute to the resolution of problems of rural unemployment and underemployment in developing countries.

The general objectives of the Institute are (a) to develop and coordinate the activities of the University for greater participation in international economic development programs; (b) to make available the capacities and expertise thus developed to public and private agencies involved in industrial development programs; and (c) to conduct research, seminars, and workshops on domestic and international development problems including cooperatives, manpower utilization, small farmers, housing, population, nutrition, leadership training, and community development.

In keeping with objective (a), the University supports several faculty members working towards advanced degrees in the area of economic development and related disciplines, supports undergraduate scholarships to foreign and U. S. nationals in the Department of Agricultural Economics and Economics, provides travel to professional seminars for faculty, foreign exposure to development experiences, and special training on techniques of program design and evaluation.

In keeping with objective (b), the Institute sponsors an International Development Seminar Series, Student-Faculty & Staff Seminar Series, and hosts foreign individuals and groups interested in economic development programs at Southern University.

Results of research projects consistent with the objectives of this program are published under the Institute's Faculty-Staff Research Paper Series. Papers published under this series reflects the diversity of interests and specialties of our faculty and staff.

The above activities of the Institute demonstrate the capacities and expertise of Southern University developed through the 211(d) program. As a result of the 211(d) grant, the Unemployment-Underemployment Institute at Southern University is in a position to offer expert and technical personnel to private and public agencies involved in international economic development programs.

T. T. Williams
Director

REGIONAL AND INDUSTRIAL CHANGES IN EMPLOYMENT IN THE PHILIPPINES, 1970-74

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INTRODUCTION:

The Republic of the Philippines is located about six hundred miles southeast of the Asian mainland, bounded by Borneo in the south, Indo-China Peninsula in the west, and the Pacific Ocean in the east. It consists of approximately seven thousand islands scattered over a length of 1153 statute miles from north to south and 688 miles from east to west. Its land area is approximately 116,000 square miles, subdivided into three major geographic groups of which Luzon is the largest with 54,000 square miles, followed by Mindanao with 37,000 square miles, and the Visayan Islands with 25,000 square miles. It has a coastline of 11,400 statute miles, sixty natural harbors, and an extensive network of rivers and inland waterways.

The differences in the ethnic origins and the cultural heritage of the 42.8 million people; in the natural resources, geographic and economic characteristics; and in the institutional infra-structures among the eleven regions of the country have caused substantial disparities in income, employment, and economic development.

The form of political and economic systems that the Filipinos adopted for the Republic when it gained independence from the United States in 1946 was patterned after the American system--a democratic form of government and capitalistic economic system.

Since independence, the Philippines has never been able to attain a high state of economic development and political stability. This is so despite several decades of American tutelage in the art of self government, abundance of natural resources, and highly educated population. The economic and political systems that have worked so well in a country with a strong and highly literate middle-class such as the United States seem to be inappropriate in the Philippines where a vast majority of the population is poor and where the economic and political powers are concentrated among the few.

The Philippines embraced a different political philosophy and orientation when President Marcos proclaimed in 1973, the ratification of a new constitution providing for a parliamentary form of government where the legislative power is vested in the National Assembly, the executive power is vested in the Prime Minister, and the judicial power is vested in the Supreme Court. However, because of the continuing political instability, internal insurrection, widespread and pervasive graft and corruption in the government, martial law was declared in 1972 and full implementation of the new constitution was delayed indefinitely.

Presently, the Philippines has a presidential form of government under a martial law. While the martial law was declared primarily to deal with the problems relating to peace and order, it has also provided an environment conducive to economic development within the framework of a mixed economy. Within this system, privately owned public utility companies and major business enterprises are operated by the government in the interest of public welfare and economic development, yet fully committed to the principles of free enterprise elsewhere in the economy.

Instrumental to the development efforts is the National Economic Development Authority (NEDA). It is the highest economic policy making and implementation agency of the government whose functions, among others, include the formulation of guidelines within which executive departments plan their respective programs of development, determination of priorities of departmental projects and deciding on the appropriate funding plan for each, and regulating development activities of businesses in the private sector. Within this setup, economic planning becomes more integrated and better organized with a minimum of political interference.

Substantial changes in economic activities have occurred in the Philippines since NEDA took over the function of planning and implementing major development programs. To the extent that the level of employment reflects the level of economic activities, changes in industrial employment also indicates the changes in philosophy and priorities of development.

Objectives of the Study:

The objectives of this study are: (1) to determine the magnitude and direction of employment changes among the major industry groups and among economic regions of the Philippines, and (2) to explain the causes or sources of employment growth in terms of three broad categories of factors, namely, the national growth component, the industrial mix growth component, and the regional share growth component.

Employment data for the years 1970 and 1974 classified by major industry groups and economic regions were used. This period was chosen to show employment patterns two years before and two years after the martial law was imposed. It is believed that this period is sufficiently long enough to provide the direction of current economic activities. However, this period may not be long enough to reflect the employment impact of long term development programs.

The data have several limitations. First, the industrial classification used is too broad for precise identification of employment gains, losses and shifts in specific industries, e.g., food processing, textile manufacturing, retail trade. Second, employment series in certain industries, particularly in government, not reported categories, and services, are not exactly comparable, due to changes in employment classification and statistical reporting systems. For these reasons, adjustments in the data were made. For example, the 1970 government employment, which was not reported separately, was estimated based on the 1974 aggregate national employment growth rate and regional employment distribution. Employment statistics for certain regions and for specific industry groups that were missing in 1970, although reported in 1974, were left out in the analysis.

Although these limitations are important from the industry point of view, their effects on aggregate regional employment changes is believed to be insignificant.

Procedure and Method:

Shift share analysis is the main analytical tool used in this study. It is a powerful tool which enables the investigator to look through masses of statistical data and acquaint himself with the basic facts regarding the multiplicity of relationships among industries and regions. It has been proven effective in regional development studies particularly in the identification of slow growth and fast growth industries, or progressive and depressed regions.

The procedure is conceptually simple, based on common sense logic rather than profound theory. It does not make impossible demands on the data and is applicable to any level of economic aggregation. The computational procedures are simple which can be programmed easily in a computer or worked out in a calculator.

The analysis proceeds on the assumption that the employment growth of a region depends on three growth components, namely, the national growth component (NG), the industrial mix growth component (IMG), and the regional share growth component (RSG).

A region's growth in employment attributable to the general employment growth in the nation is known as the national growth component. This growth component reflects the effects of national economic policies affecting industrial and regional employment more or less uniformly. Assuming no regional and industrial differences in economic characteristics, employment among regions and among industries would grow at a rate equal to the national growth rate, and so maintain over time, their respective share of the nation's total. The national growth component is computed by applying to each industry's employment in the base year the nation's percentage increase in employment and the product obtained indicates the change in employment due to the national growth component.

The industrial mix growth component arises from differences in the employment growth rates among different industries in the nation. These differences occur because of the differences in the demand for and supply of factors and products facing each industry. The employment change due to industry mix component is computed by applying to each industry employment in the base year the difference between the industry growth rate and the aggregate national growth rate. If the difference is negative, the industry is said to be a slow growth industry and its impact on the region's employment is negative. Conversely, a positive difference indicates a fast growth industry, exerting a positive influence in the region's total employment. To the extent that a major proportion of a region's employment is

engaged in fast growth industries, employment in that region expands at a rate faster than the national average.

The regional share growth component arises from the fact that a region's employment is expanding or contracting vis-a-vis (other regions engaged in the same activity). A region's employment growth may be faster or slower than other regions depending upon its access to factor and product markets, abundance, or scarcity of resources, and its comparative advantage for that industry relative to other regions. Thus, it reflects the region's competitive position. It is measured by applying to each industry employment in the base year the differential employment growth rate of a particular industry in the region and its counterpart in the nation.

If for a particular industry, the differential growth between the region and the nation is negative, the region shows a negative regional share growth component, and is said to have a weak competitive position, resulting to net employment shift from that region to other regions. If the difference is positive, the region will attract employment, other things being equal.

The Model:

Let there be ten industry groups (i = 1, 2, 3, ...10) and eleven regions (j = 1, 2, 3, ...11) in the Philippines. Also, let E_{ij} and E'_{ij} be the employment of the ith industry in the jth region for the years 1970 and 1974 respectively. From these basis variables, we establish the following computational relationships:

$E_{i.} = \sum_{j=1}^{n} E_{ij}$ = national employment for the ith industry in 1970,

$E'_{i.} = \sum_{j=1}^{n} E'_{ij}$ = national employment for the ith industry in 1974,

$E_{..} = \sum_{i=1}^{m} \sum_{j=1}^{n} E_{ij}$ = aggregate national employment for 1970,

$E'_{..} = \sum_{i=1}^{m} \sum_{j=1}^{n} E'_{ij}$ = aggregate national employment for 1974,

$r_{ij} = E'_{ij} / E_{ij}$ = 1974 to 1970 employment ratio for the ith industry in the jth region,

$R_i = E'_{i.} / E_{i.}$ = 1974 to 1970 employment ratio for the ith industry in the nation,

$R_a = E'_{..} / E_{..}$ = 1974 to 1970 aggregate employment ratio.

Using the above notations, and in line with the assumption, the change in employment for 1970 to 1974 for the ith industry in the jth region can be factored as follows:

(1) $E'_{ij} - E_{ij} = E_{ij}(R_a - 1) + E_{ij}(R_i - R_a) + E_{ij}(r_i - R_i)$

where:

$E_{ij}(R_a - 1)$ = national growth component,

$E_{ij}(R_i - R_a)$ = industrial mix growth component, and

$E_{ij}(r_i - R_i)$ = regional share growth component.

The above equation shows that the change in employment from one period to another consists of three components, the national growth component, the industrial mix growth component, and the regional share growth component. Dividing equation (1) by E_{ij} and multiplying the quotient by 100 yields the percent change in employment as shown in equation (2).

(2) $r_i - 1 = (R_a - 1) + (R_i - R_a) + (r_i - R_i)$

where:

$r_i - 1$ = percent change in employment for the ith industry in the jthe region,

$R_a - 1$ = percent change in employment due to national growth component,

$R_i - R_a$ = percent change in employment due to industry mix growth compcnent, and

$r_i - R_i$ = percent change in employment due to regional share growth component.

The industrial summation of employment (summation all over the ith ith index) for any region yields the change in employment for that regio as shown in equation (3).

(3) $E'_{.j} - E_{.j} = E_{.j}(R_a - 1) + E_{.j}(R_i - R_a) + E_{.J}(r_i - R_i)$

Results:

Regional shifts in employment were observed. Geographical distribution of the 13,685, 700 workers in 1974 ranks Southern Tagalog first with approximately twenty-four percent of total employment; followed by Central Luzon with about ten percent; Western Visayas, Central Visayas, and Southern Mindanao, with approximately nine percent each; Northern Mindanao with over eight percent; Eastern Visayas with six percent;Ilocos and Bicol with about seven percent each; and Cagayan and Western Mindanao with over four percent each.

The 2,018,800 employment increase from 1970 to 1974 is similarly distributed except for Northern Mindanao exceeding the percent employment increase for Central Luzon and Western Mindanao showing an employment decrease of 1.82%. (SEE TABLE I).

While Table 1 shows the 1974 regional distribution of employment and 1970-1974 employment change, it does not indicate the sources of, or the causes of these changes. Therefore, in accordance with the assumption of the model, the employment changes for each region were identified into three components: the national growth component (NG), the industrial mix growth component (IMG), and the regional share growth component (RSG). (SEE TABLE 2).

Consider the Ilocos region for example. Of the 78,300 employment increase in Ilocos, representing 8.05% above the 1970 employment level, 168,160 or 17.30% was due to national growth component, 970 or .10% was due to industry mix growth component, and -90,830 or -9.35% was due to regional share growth component. The net shift (NS), obtained by adding the industry mix and regional share growth components equal to -89,860 or -9.25%, indicates the extent to which employment increase in Ilocos fell short of the 17.30% national rate of growth.

In interpreting the result for Ilocos, it appears that the principal source of employment change was the national growth component contributing 17.30%. The fact that the industry mix component is positive indicates that employment increases in the fast growth industries had more than offset employment losses in the slow growth industries. The negative regional share growth component suggests that the competitive position of Ilocos region is weak, resulting to net outflow of labor from Ilocos to other regions of the country.

It is important to analyze the sources of employment change in the manner discussed above because it provides for a basis upon which policy decisions are made affecting employment. Thus for Ilocos, it would seem necessary that for employment to increase, the competitive posture of the region should be improved. This may be accomplished by providing incentives

Table 1: Regional Distribution of 1974 Employment and 1970-1974 Employment Change

Regions	Employment 1970	Employment 1974	Change	% of 1974 Employment	% of Employment Change
			1000 Employees		
Ilocos	971.8	1050.1	78.3	7.67	3.88
Cagayan Valley	606.6	643.4	36.8	4.70	1.82
Central Luzon	1092.0	1355.4	263.4	9.90	13.05
Southern Tagalog	2422.3	3223.8	801.5	23.56	39.70
Bicol	955.4	1053.0	97.2	7.69	4.81
Western Visayas	1214.5	1271.0	56.5	9.29	2.80
Central Visayas	1107.7	1258.1	150.4	9.19	7.45
Eastern Visayas	736.6	834.9	98.3	6.10	4.87
Western Mindanao	650.3	613.5	-36.8	4.48	-1.82
Northern Mindanao	852.8	1141.8	289.0	8.34	14.32
Southern Mindanao	1056.5	1240.7	184.2	9.08	9.12
TOTAL	11666.9	13685.7	2018.8	100.0	100.0

for entrepreneurs to locate new industries and expand existing ones through (a) government guaranteed, low interest loans; (b) tax breaks for labor, intensive local resources using industries; (c) improved marketing, communication and transportation facilities; (d) providing for a system of vocational education oriented towards the needs of the industry; and (e) maintenance of peace and order.

Perhaps it is easier to evaluate and compare the results for the eleven regions if the component changes of employment for each region are expressed as percent of 1970 employment and plotted in an IMG-RSG coordinate system. As in algebra, the IMG-RSG coordinate system has four quadrants. The first quadrant shows the positive effects of both the industrial mix and regional share growth components; the second quadrant shows positive regional share growth and negative industrial mix growth; the third quadrant shows negative

regional share growth and negative industrial mix growth; and the fourth quadrant shows positive industrial mix growth and negative regional share growth. (SEE FIGURE 1).

The diagonal line passing through the origin and bisecting the fourth and second quadrants represents the national growth rate. Points above or below this line represents the net shift, or the percentage to which a region's growth exceeded (above the line) or fell short (below the line) or the national average. The magnitude of the net shift can be determined by inspection as the vertical distance between the point representing each region and the diagonal line representing the average national growth rate.

The actual percent change in employment can also be determined by inspection, by adding the net shift and the national growth component. For example, the actual employment growth rate for Ilocos was 8.05%, obtained by taking the algebraic sum of the national growth component of 17.30% and the net shift of -9.25%. The same percentage is obtained by subtracting the 1970 employment from the 1974 employment, dividing the difference by the 1970 employment and multiplying the quotient by one hundred.

While the actual employment change is important, we are more interested in the magnitude and direction of the net shift. Figure 1 shows the regions with positive net shifts, or regions which exceeded the 17.30% national growth rate. These regions include Southern Tagalog with a net shift of 15.79%, Northern Mindanao with 16.59%, Central Luzon with 6.82%, and Southern Mindanao with .13%.

Northern Mindanao is the only region with positive industry mix and regional share growth components, indicating favorable industry mix and strong competitive position. The positive regional share growth component of Southern Tagalog and Central Luzon reflecting employment gains due to

strong competitive position has exceeded employment losses due to unfavorable industry mix. The employment gains for Southern Mindanao due to favorable industry mix has been offset by about an equal magnitude of employment loss due to negative regional share growth component.

The regions with negative net shifts or regions with growth rates less than the 17.30% national average include Western Mindanao with -22.96%, Western Visayas with -12.65%, Cagayan Valley with -11.23%, Ilocos with -9.25%, Bicol with -7.13%, Eastern Visayas with -3.96%, and Central Visayas with -3.73%. Note that all of these regions exhibit positive industry mix, suggesting employment gains in the fast growth industries have exceeded employment losses in the slow growth industries. However, because of the negative regional share growth component, these regions cannot compete effectively with other regions, resulting in a net outflow of labor from them to more competetive regions such as Northern and Southern Mindanao, Southern Tagalog, and Central Luzon. (SEE FIGURES 2 & 3).

There was an observed industrial shift in employment. Agriculture is by far the biggest source of employment in the Philippines providing over fifty-five percent of the 13,685,700 jobs in 1974. Ranking poor second and third respectively, are Commerce and Manufacturing, which, when combined with Agriculture, account for more than seventy-five percent of the 1974 total employment.

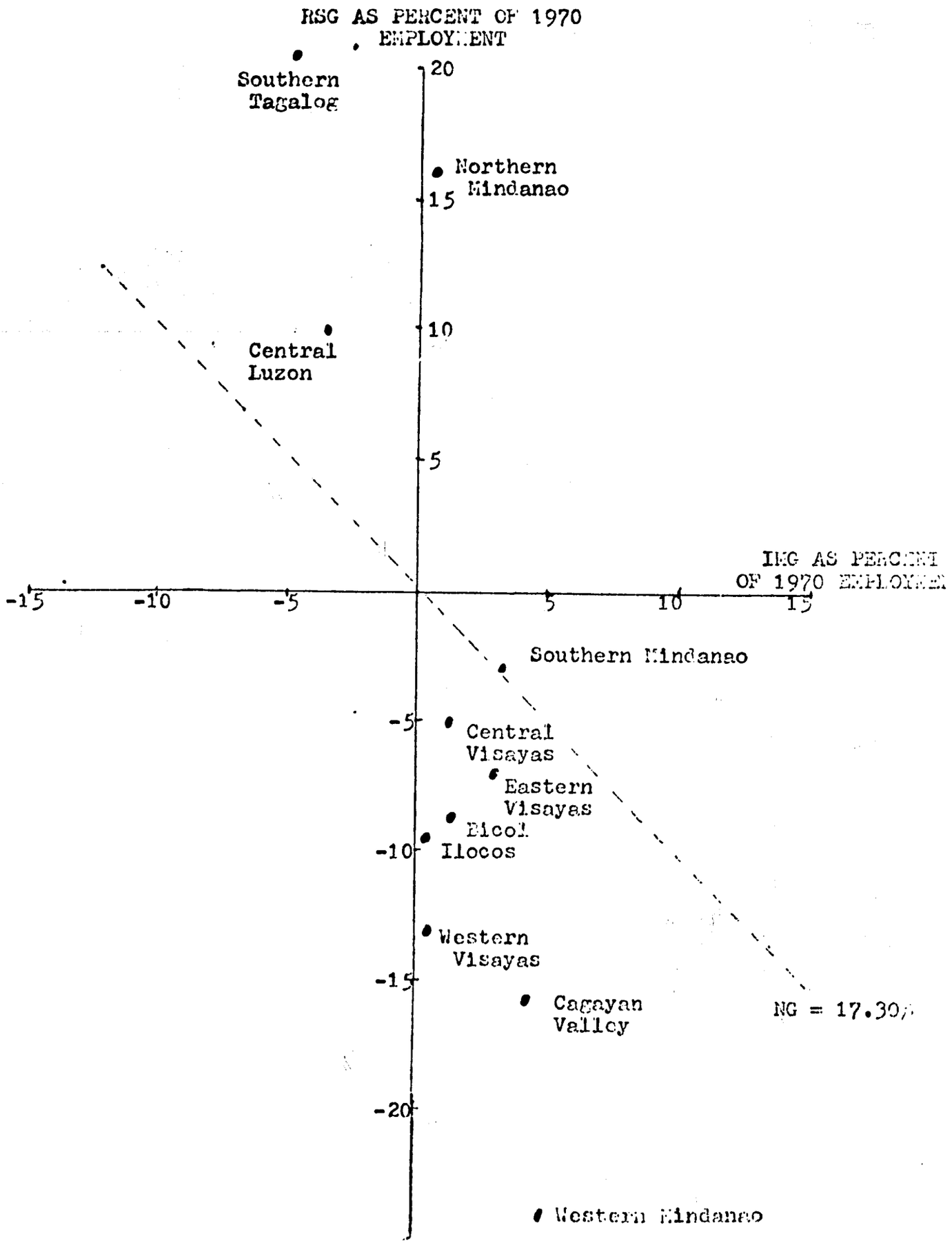
The increase in employment follows a distributional pattern similar to that of the 1974 total employment. About seventy-nine percent of the total employment increase went to Agriculture, thirty-nine percent to Commerce, and fourteen percent to Government. (SEE TABLE 3).

Table 2: Components of Regional Changes in Employment 1970-1974

Regions	Employment		Change	Components of Change			
	1970	1974		NG	IMG	RSG	NS
			1000 Employees				
Ilocos	971.1	1050.1	78.3	168.16	.97	- 90.83	- 89.86
Cagayan Valley	606.8	643.4	36.8	104.96	25.96	- 94.09	- 68.03
Central Luzon	1092.0	1355.4	263.4	188.95	- 34.35	108.78	74.43
Southern Tagalog	2422.3	3223.8	801.5	419.15	-115.75	498.10	382.35
Bicol	955.8	1053.0	97.2	165.39	12.62	- 80.81	- 68.19
Western Visayas	1214.5	1271.0	56.5	210.15	3.28	-156.90	-153.60
Central Visayas	1107.7	1258.1	150.4	191.67	12.84	- 54.12	- 41.28
Eastern Visayas	736.6	834.9	98.3	127.46	22.17	- 51.32	- 29.15
Western Mindanao	650.3	613.5	-36.8	112.53	32.65	-182.00	-149.30
Northern Mindanao	852.8	1141.8	289.0	147.57	5.07	136.37	141.44
Southern Mindanao	1056.5	1240.7	184.2	182.81	34.39	- 33.00	1.39
TOTAL[a]	11666.9	13685.7	2018.8	2018.8	0	0	0
			Percent of 1970 Employment				
Ilocos			8.05	17.30	.10	- 9.35	- 9.25
Cagayan Valley			6.07	17.30	4.28	-15.51	-11.23
Central Luzon			24.12	17.30	-3.15	9.97	6.82
Southern Tagalog			33.09	17.30	-4.78	20.57	15.79
Bicol			10.17	17.30	1.32	- 8.45	- 7.13
Western Visayas			4.65	17.30	.27	-12.92	-12.65
Central Visayas			13.57	17.30	1.16	- 4.89	- 3.73
Eastern Visayas			13.34	17.30	3.01	- 6.97	- 3.96
Western Mindanao			-5.66	17.30	5.02	-27.98	-22.96
Northern Mindanao			33.89	17.30	.59	16.00	16.59
Southern Mindanao			17.43	17.30	3.25	- 3.12	.13
TOTAL			17.30	17.30	0	0	0

[a] Details may not add to total due to rounding.

Figure 1: Components of Employment Changes in the Philippines, 1970-1974



To determine the industrial employment shift, it is necessary to consider the Philippines as a single region, thus holding regional employment shift to zero, while allowing national growth rate to increase at a constant rate of 17.30%. This procedure isolates industrial shift independent of the combined effects of the national growth and the regional share growth components. (SEE TABLE 4).

The results show that employment have been shifting to Commerce, Agriculture, and Government; away from Services, Manufacturing, Construction, and Not Reported Industries. Commerce showed a net employment increase of eighty-eight percent; Electric, Gas, Water, and Sanitation Services at forty-nine percent; Government at thirteen percent; and Agriculture at nine percent. On the other hand, net employment losses occurred in Not Reported Industries at ninety-two percent, reflecting improvements in the system of employment classification and statistical reporting techniques. This is followed by Services at sixty-one[2] percent; Construction at sixteen percent; Manufacturing at eight percent; Mining at six percent; Transportation and Communication at less than one percent.

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[2] Employment in domestic services has decreased substantially as a result of presidential decree requiring payment of minimum wage, social security and hospitalization insurance, paid vacation, and decent working conditions for domestic help.

Figure 2: Regional Changes in Employment, 1970-1974

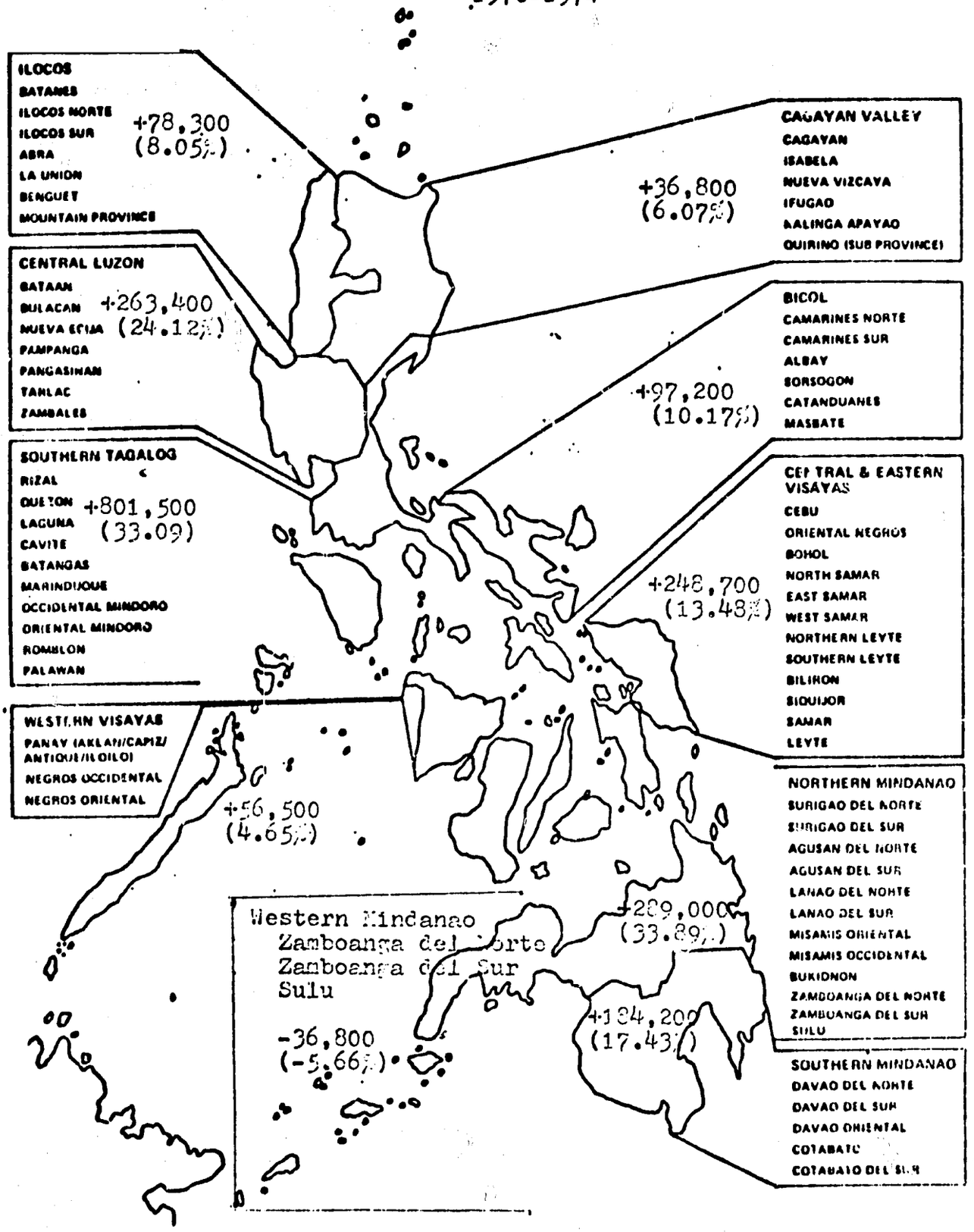

Figure 3: Regional Net Employment Shift, 1970-1974

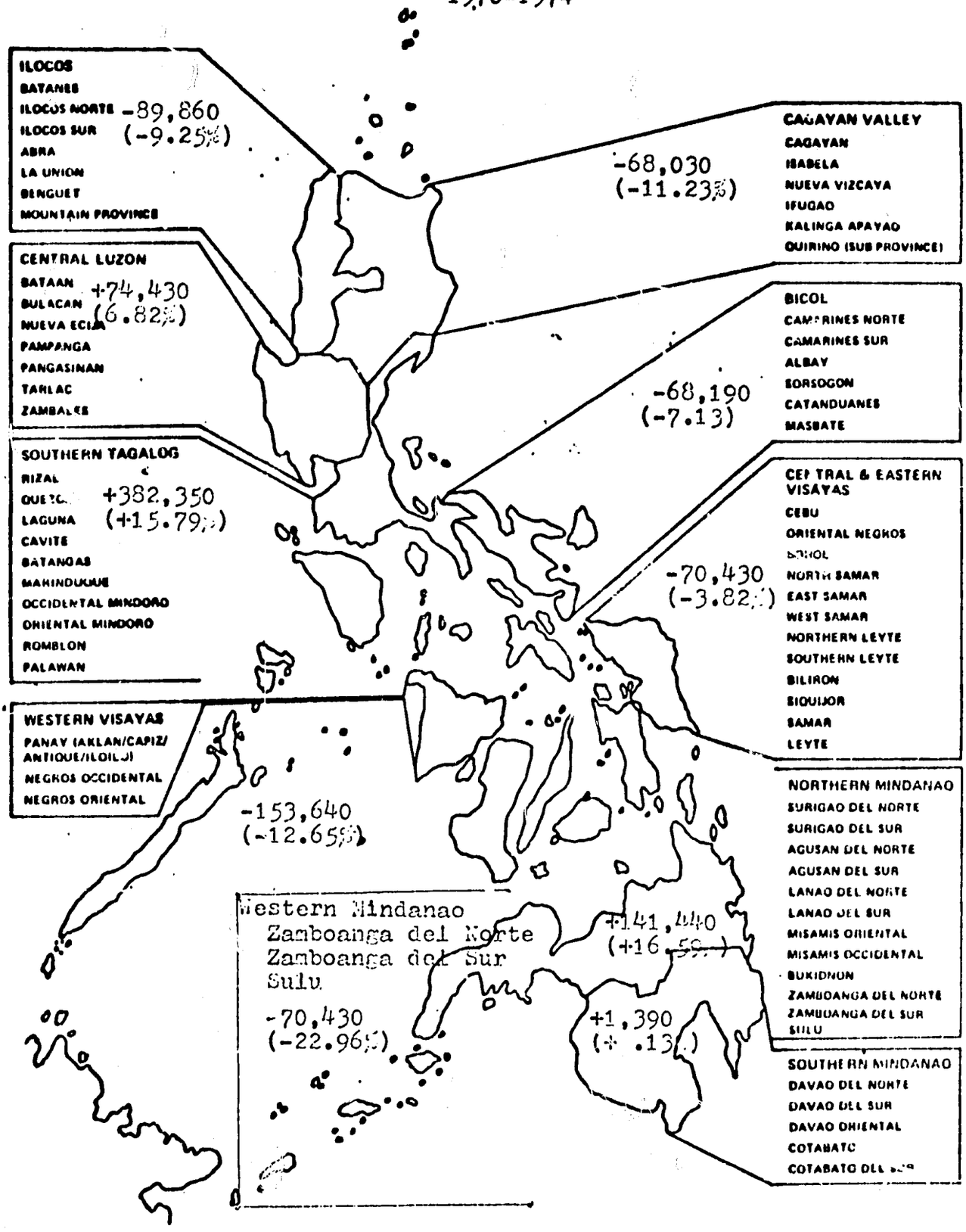

Table 3:Industrial Distribution of Employment and 1970-1974 Employment Change

Industry	Employment 1970	Employment 1974	Change	1974 Emplmt As Percent of Total	Emplmt Change As Percent of 1970 Emplmt
	1000 Employees				
Agriculture	5957.2	7547.3	1590.1	55.15	78.76
Manufacturing	1268.3	1384.8	116.5	10.12	5.77
Elec.,Gas,Water	29.7	49.4	19.7	.36	.95
Construction	401.1	406.8	5.3	2.97	.26
Commerce	753.7	1547.4	793.7	11.31	39.32
Transportation	448.8	525.8	77.0	3.84	3.81
Services	1685.3	949.9	-735.4	6.94	-36.93
Government	904.8	1180.4	275.6	8.63	13.65
Mining	47.0	52.2	5.2	.38	.26
Not Reported	170.6	41.7	-128.9	.30	- 6.38
Total	11665.9	13685.7	2018.8	100.0	100.00

Table 4: Industrial Employment Shifts,
1970-1974

Industry	Employment 1970	Employment 1974	Change	Components of Change NG	Components of Change ING	Components of Change RSG	ING As Percent of 1974
	1000 Employees						
Agriculture	5957.2	7547.3	1590.1	1030.82	559.18	0	9.39
Manufacturing	1268.3	1384.8	116.5	219.48	- 103.07	0	- 8.13
Elec., Gas & Water	29.7	49.4	19.7	5.14	14.55	0	48.99
Construction	401.5	406.8	5.3	69.46	- 64.17	0	-15.98
Commerce	753.7	1547.4	793.7	130.42	663.27	0	99.00
Trans. & Commo.	448.8	535.8	77.0	77.65	- .65	0	- .14
Services	1685.3	949.9	-735.4	291.60	-1027.02	0	-60.94
Government	904.3	1180.4	275.6	156.56	119.03	0	13.16
Mining	47.0	52.2	5.2	8.14	- 2.94	0	- 6.26
Not Reported	170.6	41.7	-128.9	29.50	- 158.43	0	-92.37
TOTAL	11666.9	13685.8	2018.8	2018.8	0	0	

Summary and Conclusion:

In terms of employment, substantial changes in economic activities have occurred since the Philippines embraced the concept of mixed economy. Instrumental to these changes is the National Economic Planning and Development Authority's super-agency of the government vested with absolute powers drawn from the martial law to plan, implement, coordinate and regulate all programs of governmental agencies and private businesses towards a systematic, consistent, and organized plan of economic development.

In this study, we have attempted to determine the magnitude and direction of regional and industrial changes in employment over a period that would reflect changes in economic activities before and after the declaration of the martial law. Also, we have attempted to determine the sources of these changes in terms of broad categories of factors, namely; the national growth component, the industrial mix growth component, and the regional share growth component. Results of this study are summarized below:

1. National employment has increased by 2,018,00, representing 17.30% above the 11,666,900 employment level in 1970.

2. The above increase has not been distributed uniformly across the board among the ten industry groups and eleven economic regions of the country. The regions to which employment appears to have shifted, probably because of favorable industry mix, or strong competitive position brought about by comparative advantage, access to factor and/or product markets, or superior institutional infra-structures include Northern Mindanao, Southern Tagalog, Central Luzon, and Southern Mindanao, in that order. The remaining seven regions from which employment has shifted include Ilocos; Cagayan; Bicol; Eastern, Central, and Western Visayas, and Western Mindanao.

3. Because of the differences in the factor and product markets within which each industry operates, some industries naturally grow faster than others. The fast growth industries or industries with growth rates higher than the national average include Government, Agriculture, Commerce, and Electric-Water-Gas, and Sanitation Services. On the other hand, employment in slow growth industries and from which employment has shifted include Manufacturing, Construction, Services, Mining, and Not Reported industries.

4. **The regional share growth component appears to exert a stronger influence over the industry mix growth on the redistribution of employment among regions of the country.**

While the analysis is essentially descriptive and the results exploratory and too broad for policy purposes, they are useful in evaluating the direction of economic activities insofar as redistribution of employment adequately reflects changes in economic activities.

This study may have raised more questions than it has attempted to answer. For example, an interesting question that may be raised as a result of this study is why Construction and Manufacturing lagged behind other industries, or has the emphasis in Agriculture and Commerce, particularly the retail trade of the sari-sari store variety compromised the growth of the capital generating industries?

Last and most importantly, the question may be asked: Have the recent economic policies of the National Economic Development Authority accelerated economic development? Experiences of developing and highly developed economies have shown that as a country becomes more developed, agricultural employment declines in proportion to total employment. This has not been the case in the Philippines-- in fact the opposite has been true.

Perhaps, these and other policy related questions may never be answered. Certainly, research along these lines, preferably on a less aggregated level, e.g., specific industries in the provincial level are needed if policy issues are to be resolved.

BIBLIOGRAPHY

Ashby, L. D., "The Geographical Distribution of Employment: An Examination of the Element of Change". Survey of Current Business, Vol. 44, Oct., 1964.

Brown, H. J., "Shift and Share Projections of Regional Econo-Growth: An Empirical Test:. Journal of Regional Science, Vol. 9, April, 1969.

Curtiss, W. C., "Shift-Share Analysis as a Technique in Rural Development Research". American Journal of Agricultural Economics, 53(2), May, 1972.

Dunn, E. S., "A Statistical and Analytical Technique for Regional Analysis". Papers: Regional Science Association Vol. 6, 1960.

Garrison, E. B., "Industrial Growth in the Tennessee Valley Region, 1959-1968", American Journal of Agricultural Economics, 56(1), Feb., 1974.

Hale, C. W., "Shift-Share Analysis as a Descriptive Tool in Regional Analysis". Mississippi Valley Journal of Business and Economics, Vol. 6, Spring, 1971.

Houston, D. B., "Shift and Share Analysis of Regional Growth", Southern Economic Journal, Vol. 33, April, 1967.

Lucas, E. C., "Redistribution of Employment in the United States, 1940-1972", Cornell Agricultural Economics Staff Papers No. 75-14, Department of Agricultural Economics, Cornell University, August, 1975.

____, "Redistribution of Employment in Louisiana, 1940-1972", Proceedings: Third Annual Conference of the Academy of Louisiana Economists, Department of Economics and Finance, University of New Orleans, Summer, 1976.

Perloff, H. S., E. S. Dunn, E. E. Lampard, and R. F. Muth, Regions, Resources and Economic Growth, University of Nebraska Press, 1967.

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