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A COMPARATIVE ANALYSIS OF THE IMPACT ON SOCIAL FACTORS ON PRODUCTION COSTS AND PRODUCTIVITY IN THE NETHERLANDS, MEXICO, AND THE UNITED STATES

A dissertation
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ABSTRACT OF A DPS DISSERTATION

A COMPARATIVE ANALYSIS OF THE IMPACT ON SOCIAL FACTORS ON PRODUCTION COSTS AND PRODUCTIVITY IN THE NETHERLANDS, MEXICO, AND THE UNITED STATES

The escalation of social programs and their subsequent impact on manufacturing costs and productivity has become a matter of increasing concern to companies operating in Europe. Legislated and voluntary benefits have become a growing factor in product cost, especially in countries who have extensive social welfare programs such as the Netherlands.

Social costs have also added to the tax burden on individuals in those countries. The differential between take home pay and the benefits from social programs has diminished; thus lowering the incentive to work .

This paper is a micro-economic analysis of the impact of social programs on manufacturing cost and productivity in three countries: The Netherlands, Mexico, and the United States. These countries represent examples of a highly socialistic country, a

rapidly developing country, and a large industrial country. A common electromechanical product which was manufactured in three plants located in the countries was used as the vehicle for comparison. The three plants were part of a selected multinational corporation headquartered in the United States.

An index method is used to present the data. Index charts are employed to compare product cost, landed cost, productivity, wage rates, and social costs. Social costs are displayed by type of programs in the three countries. The base year for the data is 1979. Other factors which had an indirect impact on manufacturing costs or productivity are also discussed. These include industrial democracy, tax rates, absenteeism, and worker attitudes.

The study concludes that Dutch social benefits and labor costs were significantly higher than the United States, while direct worker productivity was significantly lower. As expected, Mexican labor rates were significantly lower than the U.S. or the Netherlands. However, benefits costs formed a higher proportion of total payroll costs in Mexico than in the U.S. or the Netherlands. Mexican benefits costs were also growing faster. Absenteeism in the Mexican plant was the lowest of the three plants studied. The nationally

legislated profit sharing plan in Mexico provided a powerful economic incentive for good attendance on the part of low level workers in a profitable company.

Social programs had a significant bearing on product cost and productivity in all three countries. A company should consider these factors in its investment decisions.

R. Grant Tate

CONTENTS

TABLES

FIGURES

CHAPTER 1

STATEMENT OF THE PROBLEM

The problem was to compare the impact of social factors on direct worker productivity and product cost in certain manufacturing operations in the Netherlands, Mexico and the United States.

Specific Problems

The first problem was to set a standard basis of comparison for direct worker productivity and product cost among the three countries.

The second problem was to define the social programs in the three manufacturing plants and countries that affect cost of manufacturing.

The third problem was to compare the costs of a specific product line which was manufactured in the three countries.

The fourth problem was to compare direct worker productivity among the three plants in the respective countries.

The fifth problem was to compare the impacts of social programs on direct labor productivity and product costs relative to the product studied.

Definition of Terms

The following definitions were used for the purpose of this

study:

A <u>direct worker</u> was defined as a person who performed functions which could be identified specifically as contributing to the fabrication of a particular product; for example, machinists or assemblers were direct workers.

An <u>indirect worker</u> was a person who performed functions which contributed to the general operation of the manufacturing plant or its products, but whose functions did not contribute specifically to the fabrication of a particular product; for example tool engineers, accountants, managers were indirect workers.

<u>Direct worker productivity</u> was defined as the number of product units produced per direct worker per unit time.

<u>Social programs</u> included those programs designed to improve the welfare of workers or their families and whose costs contributed directly or indirectly to the cost of manufacturing in the country. This included three categories of programs. (These categories were not mutually exclusive.):

1. Those company benefits which may not have been required by law but were granted at the discretion of the particular company; for instance, paid holidays, vacation plans, retirement plans.

2. Those programs which were required by law in a particular country; for example, social security taxes.

3. Those factors which were a result of the particular sociological environment of the country in which a plant was located; for example, absenteeism or sickness rates.

Delimitations

The research was limited to studies of one particular product line of a selected U.S. multi-national company. The product was an electro-mechanical unit which was being produced in relatively high quantities in plants located in the Netherlands, Mexico, and the United States.

Productivity analyses were limited to direct worker productivity. A comparison of indirect worker productivity was beyond the scope of this study.

The Need for the Study

In a multi-national company, the selection of manufacturing sources to produce products for the appropriate market was an important factor in profit optimization. This trend was noted as far back as the early 1970's. A Business International study stated:

> One of the newest frontiers of world business is multi-country sourcing, the determination of the source of products for a given market on an organized and regional or worldwide basis. This concept was developed for many reasons, for example, growing competition within a world corporate system by different plants owned by the same company, inflation in home countries forcing switches to hold certain markets, increasing pressure from various governments to boost exports, easier and cheaper transport and communications[1].

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[1] Business International Corporation, Solving Worldwide Sourcing Problems (New York: Business International Corporation, 1971), p. 1.

The Business International study also concentrated on the process of deciding whether to shift production from one location to another as cost factors changed. This point was summarized later in their study:

> ... the ability to shift production from one location to another to meet a changing business environment can greatly enhance a company's competitive stance[2].

The ability to shift production from one location to another was obtained only if the tooling, skills, transportation and other factors of production were available in alternate locations or could be made available within acceptable cost limits. This meant that duplicate manufacturing facilities had to be available in other parts of the world. Obviously, such a plan would have required relatively high volume of production in order to have been a low cost producer.

Many companies have "rationalized" their processes. Yves L. Doz wrote:

> Rationalization means shifting from a set of local for local plants, each serving its own national market with a broad product range to an integrated network of large scale production specialized plants serving the world market[3].

Rationaliztion of the complete product line would have negated a company's flexibility of shifting production from one location to another. However, for products where there was

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[2]Business International, op. cit., p. 34.

[3]Yves L. Doz, "Managing Manufacturing Rationalization Within Multinational Companies", Colombia Journal of World Business, (Fall, 1978), p. 82--93.

sufficient market demand or where transportation costs were a significant portion of landed costs, several sources of a given product may have been warranted.

During the period of 1977, 1978 and 1979, management of the U.S. multi-national company whose product was the basis for this study, became increasingly concerned about escalating product costs at its plant in the Netherlands. These costs were measured in relation to the costs of similar products manufactured in Mexico and the United States. Many factors contributed to the concern. The cost of labor, materials and energy were typical; but increasing impacts of the social environment exacerbated by shifts in exchange rates created the deepest worry. Social conditions were having serious impacts on costs as well as management flexibility; and it appeared to be a long range trend.

The concern reached beyond a single corporation. Pieter Korteweg expressed the problem this way:

> The growth of taxation and the welfare state in the Netherlands and the redistribution of income from capital to labor accompanying it, have not been without consequences. The rising burden of social security taxes borne by producers has raised their unit labor costs much faster than prices, thereby draining their profits.
>
> ... The rising tax wedge between gross and net wages and the dwindling wedge between income from work and income from welfare reduces people's inclination to offer and accept work, and induces them to register as unemployed, ill, or disabled.
>
> ... Sick leave rates have jumped from around 5% in the early sixties to around 12% in the late seventies, with some industries (notably shipbuilding and car manufacturing) reporting sick leave rates up to 30%.[4]

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[4] Pieter Korteweg, "Cost of Unlocking the Tax Floodgates in the Netherlands", The Wall Street Journal, September 14, 1979, p. 8.

A Business International study of companies' attitudes toward Europe in the eighties provided the following:

> The combination of domestic inflation and currency appreciation has radically altered the pattern of relative production between Europe and other areas, notably the U.S. As a U.S. packaging executive put it, "Europe is a high price zone today: the currency is too high, wage costs have skyrocketed and the indirect social costs are too high".[5]

Later in the same Business International study, the general impact of social cost was sized:

> Much of the difference is due to higher fringe costs in Europe -- longer vacations and heavier social charges, particularly -- which add between 50% and 90% to base pay against only 25-30% in the U.S.
>
> ... During this period (1970-1977), the steepest rise of hourly compensation in dollar terms occurred in Belgium and the Netherlands, two countries with currencies linked to the D-mark but with higher inflation than Germany.[6]

There was a need to examine the productivity, labor costs, social programs and their impact on product cost in each of the alternate sources of production (the Netherlands, Mexico, and the United States).

The purpose of the paper is to provide a detailed analysis of the way social programs can impact product cost and productivity

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[5]Business International Corporation, Europe in the 1980's, Corporate Forecasts and Strategies, (New York: Business International Corporation, February, 1979), p. 17.

[6]Business International Corporation, op. cit., p. 60.

factors which are important ingredients in investment decisions. Although the paper is limited to one product of one multi-national corporation and three specific countries, it is intended to be useful to organizations who will be confronted with strategic investment decisions.

Summary

Deciding where to manufacture products for various markets served by a multi-national firm was an important contributor to profit optimization. This analysis will provide new insight into the comparative impacts of social factors in three differing country environments.

CHAPTER 2

RELATED READING

Pertinent sources which related to the creation of the environment in the Netherlands and Mexico which led to imposition of the social programs of 1979 were reviewed. A historical perspective of the environment in the United States is not treated in this chapter.

There were numerous sources which traced the development of the welfare system in the Netherlands and its relationship to the macro-economic structure of the country. From these sources, several were chosen to illustrate the trend of social programs.

The Organization for Economic Cooperation and Development (OECD) provided a historical perspective in its March, 1979 economic survey.[1] This pamphlet presented evidence that the Netherlands was losing its competitive position in the world markets and thus its share of the international trade markets. Three factors were listed as being particularly important: (1) the increasing size of the public sector and its policy orientation; (2) income developments; and, (3) membership in the EEC currency agreements from 1972 onward.

The trend of these developments could be traced to the end of World War II. With the help of the Marshall Plan, the Netherlands

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[1]OECD, Economic Surveys -- Netherlands (Paris, France: Organization for Economic Cooperation and Development, March 1979).

experienced unprecedented recovery and industrialization. During the 1950's, Dutch exports gained an increasing share of an active and growing world market. Unemployment in the Netherlands was below 2 percent. The Dutch government controlled prices and wages with a centralized price and incomes policy. As export expansion continued into the 1960's, unemployment continued at low levels and the country enjoyed a positive balance of trade. These positive factors led to labor demands for greater share in the prosperity.

Wages began to increase in the mid-60's as the centralized incomes policy yielded to the demands of labor. Income increases averaged 15 percent in 1963, for example. Even with the development of the worldwide recession of the mid-70's and increasing unemployment levels, pressure for wage increases continued.

At the same time, income redistribution became a national policy. This policy was reflected in the progressive income taxes and increasing governmental involvement in the economy. Public expenditure grew to 60.5 percent of net national income in 1977, led only by Sweden at 66.6 percent. By comparison, the United States registered 33 percent.

The development of new sources of natural gas in the Netherlands and price increases of energy during the mid-70's were major factors in the Dutch economy. Energy income grew to ten percent of government receipts by 1977. These developments helped sustain the pressure for wage increases and income redistribution. Gas income helped the government finance its social policies.

Johan de Vries summarized the dilemma of the Dutch economy:

> High returns in the Sixties stimulated investment and employment, which led to a tense situation in the labor market

> and rocketing wages and prices. This was followed by a sharp decline in profits, especially in 1974 and 1975, while the share of labor in the national income continued to increase. In addition, of course, the country suffered the effects of increased oil prices and growing competition on world markets. These factors, together with several revaluations of the guilder, made possible by exports of natural gas, produced an unprecedented deterioration of the nation's competitive power.[2]

An extensive review of the wage policy of the Netherlands during the early Seventies is contained in an OECD report "Socially Responsible Wage Policies and Inflation".[3]

Theodore Geiger in his study of the effects of welfare on national efficiency, suggested several indications of negative-sum reactions to the welfare system in the Netherlands. Among these were: the rapid increase of Dutch investment in the United States makers:

> Both the problem which measures have to overcome and the difficulty of instituting them spring fundamentally from the same source. This is the wide-spread commitment in contemporary Dutch society to increasing welfare and equality with too little regard to the effects on efficiency and international competitiveness.[4]

Although numerous sources have described the macro-economic problem facing the Netherlands, few have addressed the impact of

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[2]Johan de Vries, The Netherlands in the Twentieth Century (Assen, The Netherlands: Van Gorcum, 1978), p. 121.

[3]OECD, Socially Responsible Wage Policies and Inflation (Paris, France: Organization for Economic Development and Cooperation, 1975), p. 24--32.

[4]Theodore Geiger, assisted by Frances M. Geiger, Welfare and Efficiency: Their Interactions in Western Europe and Implications for International Economic Relations (Washington, D.C.: National Planning Association, 1978), p. 92.

Although numerous sources have described the macro-economic problem facing the Netherlands, few have addressed the impact of social costs on micro-economic decisions. Geiger cited the lack of statistical data at the micro-economic level:

> Statistical data on adverse welfare/efficiency interactions at the micro level -- that is, for individual productive enterprises -- are even more difficult to obtain. Such indicators would reflect the extent to which the taxation of, and the legally required welfare benefits provided by, market-sector enterprises lowered their efficiency by raising their real costs faster than productivity growth; or by reducing the latter through disincentives to work, save, innovate, and invest; or by slowing down their decision-making processes, thereby resulting in missed opportunities.[5]

The literature is replete with sources citing the high cost of manufacturing in Europe and, in particular, the Netherlands. James R. Basche, Jr., of The Conference Board, documented the comments of business executives in three monographs.[6,7,8] High labor costs, cost of social programs, national work rules (as they affect worker performance and productivity), and absenteeism were some of the frequent concerns cited.

Business International in its extensive survey of over 200 international companies also found a deep concern about European

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[5] Ibid., p. 19.

[6] James R. Basche, Jr. and Michael G. Duer. Experience with Foreign Production Work Forces (New York: The Conference Board, 1975).

[7] Basche, Foreign Production Costs: A Survey of Recent Trends and Their Effects on Business Policy (New York: The Conference Board, 1976).

[8] Basche, Production Cost Trends and Outlook: A Study of International Experience (New York: The Conference Board, 1977).