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Labor Market Disequilibrium and the Scope for Work-Sharing:  
A Case Study of the Netherlands

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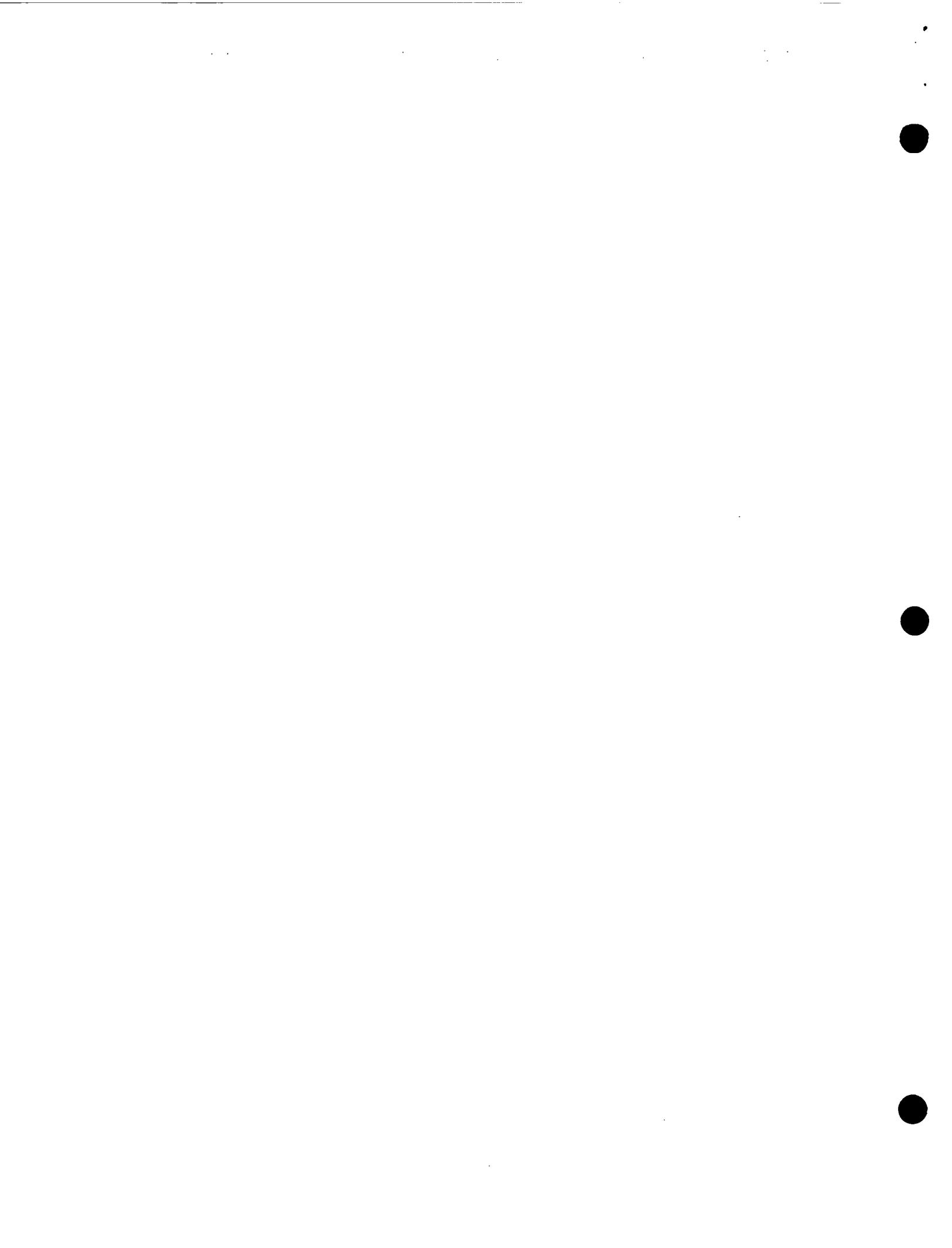
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## I. Introduction

Unemployment in the Netherlands, at between 13 and 14 percent of the labor force in the past two years, has been among the highest in industrial countries. In addressing the unemployment problem, the Dutch authorities have relied on wage restraint and on direct and selective labor market measures, including measures that are commonly referred to as work-sharing measures. Work-sharing initiatives for the private sector started in 1982 when the suspension of index-linked wage increases was linked to the plan for a reduction in annual working time of 5 percent by end-1985. 1/ Although this plan was not accompanied by an obligation of private sector employers to raise employment, it was hoped that some increase in employment would result. 2/ In the public sector, a 5 percent reduction in working time was expected to be reached by August 1985. Moreover, the authorities decided that 30 percent of all vacancies that required no special work experience should be filled by persons working a maximum of 32 hours a week.

The purpose of this study is to assess what responses the work-sharing initiatives of the authorities have elicited and, more generally, to investigate what are the principal preconditions for a success of work-sharing arrangements in alleviating the unemployment problem. For this purpose, data describing the Dutch labor market situation will be examined in some detail. To put the situation in the Netherlands in some perspective, data on Sweden will also be presented. Sweden is a country that shares many characteristics of the Dutch economy, most notably a generous welfare system, but that has fared considerably better in terms of the usual measures of unemployment (Table 1). Finally, to the extent that comparable information is available, data for the Netherlands will also be juxtaposed to data for the European OECD member countries. 3/

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1/ No specific provisions were made as to the type of the reduction in annual working time. Thus, any of the following solutions could be agreed upon between the social partners: short-time working schemes, job splitting, longer holidays, sabbaticals and a general cut in the working week. A proposal by the trade union confederation went beyond the government proposal and called for a reduction in working time to a standard 32-hour work-week by 1990.

2/ It was estimated that in the private sector at most 1/4 of the reduction in hours worked had by mid-1985 been offset by an increase in the number of persons employed. However, the replacement ratio was expected to increase over time with both the completion of the structural adjustment process (viz. elimination of excess workforce) and a pickup in activity.

3/ For international comparability, standardized data of the OECD will be used. They often differ considerably from Dutch sources because of differences in the definition of (full-time) employment. Where appropriate, the OECD data will be supplemented by information from national sources.

## II. Labor Market Disequilibrium and Work-Sharing

Unemployment is the reflection of a disequilibrium between the level or the structure of labor demand and supply, or both. On the demand side, the principal decision concerns total labor input, while the distribution between average working hours and employment is subordinate. If labor inputs were homogeneous in productivity and costs, an employer would have no preference for the distribution of labor input between persons employed and average hours worked per person. However, homogeneity rarely exists; instead, at least over a certain range of the employment/working-hour spectrum, there exists a trade-off between the productivity effect and the cost effect following a substitution of persons employed for average hours per person. For example, an increase in employment that is combined with a reduction in average working hours may raise labor productivity and thereby reduce unit production costs. However, this favorable productivity effect on costs may be outweighed by the rise in fixed employment costs that may result from the increase in employment. For employers, the trade-off between employment and working hours is primarily influenced by the relative importance and characteristics of variable labor costs, the existence of fixed employment costs, the progressivity of costs of overtime (including employment taxes) and finally, the divisibility of labor and other characteristics of the production function. An equally large and diverse number of variables influence decisions on the labor supply side. The decision to enter the labor market and the number of work hours that an individual would like to work are primarily influenced by leisure preferences, own wages, spouse income, nonwage income, family status and age, but also by the characteristics of government income support schemes.

Given these divergent determinants of the decisions on employment and working hours for employers on the one side and for employees on the other, work-sharing schemes could be thought of having beneficial effects for the rate of unemployment. <sup>1/</sup> This would especially be the case if, on the labor demand side, the cost and productivity structure were originally suboptimal at the legal working week, leading to a preference of employers for overtime, while, on the labor supply side, employees had developed a preference for shorter working hours. However, the existence of divergent determinants for employees on the one hand and employers on the other as to the appropriate

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<sup>1/</sup> Unlike in some countries where work-sharing measures are considered a vehicle to reduce labor market disequilibrium even in the longer term, in the Netherlands the current work-sharing schemes are primarily considered a short-run solution, albeit with longer-term consequences. The belief prevails that the longer-term demand for total labor inputs is predominantly a function of overall economic activity and of the relative price of labor. This explains the prime emphasis of the Netherlands authorities on wage restraint as an employment policy.

employment/working-hour balance also implies that fairly specific additional conditions would need to be fulfilled in the labor markets to make work-sharing work. 1/

1. Labor supply and work-sharing 2/

Up to the late 1970s, the growth in the working age population was considerably higher in the Netherlands than in OECD-Europe (Table 2). Since then, the differential has disappeared but the growth in the labor force has remained relatively high, 3/ because, unlike in most European OECD countries, the participation rate in the Netherlands has continued to increase owing primarily to the strong growth in female participation rates. 4/

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1/ The subsequent analysis will concentrate on the direct effects on labor supply and demand. Indirect employment effects from work-sharing which arise from shifts in domestic aggregate demand and which include also effects on inflation, competitiveness, investment, fiscal balance and interest rates, are not discussed in this paper. For a recent overview of models that incorporate these effects in various ways, see Wouter van Ginneken, "Employment and the Reduction of the Work-Week: A Comparison of Seven European Macro-economic Models"; in International Labor Review, Vol. 123, No. 1 (January-February, 1984), pp. 35-52.

2/ Labor supply can be decomposed into (a) the working age population; (b) the participation rate; (c) the employment rate; and (d) average hours worked per employed person. Moreover, the labor force is the product of the working age population and the participation rate and employment is the product of the labor force and the employment rate. The latter, in turn is equal to one minus the unemployment rate.

3/ The ratio of the labor force to the working age population (about 59 percent in the Netherlands) remained nevertheless considerably below that in Sweden (81 percent). Data on the ratio of employment to the working age population (Netherlands: 53 percent; Sweden: 78 1/2 percent) corroborate the observation that a very considerable proportion of the Dutch working age population has thus far not entered the labor market or has already left it again and that the unemployment rate could still rise strongly in the future, should persons who are outside the labor force decide to enter or re-enter it.

4/ Despite this growth in participation rates in the Netherlands and the simultaneous decline in most other industrial countries, the overall participation rate was in 1984 still considerably lower in the Netherlands than in OECD countries. Indeed, throughout the period under investigation, the overall participation rate in the Netherlands has been the lowest of all OECD countries, except Greece. The male participation rate has dropped much in line with developments in OECD-Europe and is now about 5 percentage points lower than in Sweden, having been marginally higher in 1968-73.

The untypical increase in the participation rate in the Netherlands during 1979-83 coincides with a period of strong reductions in real disposable incomes, the latter not least due to wage restraint. There are firm indications that the two developments are not unrelated and that important changes in labor supply decisions have taken place during the recent years of wage restraint. Because wage restraint was introduced with a view of alleviating the unemployment problem, partly through worksharing, this aspect needs to be examined in some more detail.

The effects of a reduction in wages on labor supply are ambiguous. Substitution and income effects affect labor supply decisions in opposite directions. For example, a cut in wages reduces the price of leisure and thus invites a substitution of leisure for work. The substitution effect is therefore positive, implying a reduction in labor supply in the case of a reduction in wages. By contrast, the income effect is negative as long as leisure is a normal good, i.e., as long as demand for it rises as its price falls. Which of the two effects will dominate is not clear a priori. <sup>1/</sup>

The interaction of the substitution and the income effect and the implication of various assumptions about their relative strength for labor supply can best be demonstrated in a graph, in which total time available for work and leisure is given on the abscissa and income from work on the ordinate (Chart 1). Initial equilibrium labor supply of the individual is given by  $E_1$ , where the indifference curve  $I_1$ , is tangent to the income line AZ. Working hours are given by AB and leisure hours by OB. The wage rate is given by the slope of the income line. If the wage rate is reduced so that the income line is now represented by AX, a new labor supply equilibrium  $E_2$  will result from the interaction of income and substitution effects. In Chart 1, the income effect raises labor supply from AB to AD while the substitution effect lowers labor supply from AD to AF. On balance, labor supply is reduced to AF. However, with a different preference pattern, the negative income effect might well be stronger than the positive substitution effect. In this case, the indifference curve would be tangent to the new income line to the left of B, say at  $E_3$ . Compared with  $E_2$ , the equilibrium point  $E_3$  indicates a greater "income preference" and a lower "leisure preference" of the individual concerned. If individuals are "income preferers," their labor supply is thus likely to increase in a situation of reductions in incomes.

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<sup>1/</sup> On the labor demand side, a cut in wages has an unambiguous effect. The related reduction in the relative price of labor invites a substitution of labor for capital. At the same time, increased profitability (entrepreneurial income) invites an increase in productive capacities. However, because a decision on employment typically involves a simultaneous decision on volume and type of investment, the lags can be long.

The above presentation of labor supply decisions normally applies to individuals but can be expanded to cover labor supply decisions in a household context in which at least one other actual or potential income earner is present. In this case,  $A_0$  represents the maximum amount of time available for work by all actual or potential income earners in the household, and AB represents the total labor time supplied by the household, however split up between its working members. <sup>1/</sup> The indifference curve now reflects the maximization of a household utility function instead of an individual utility. In the household context, changes in wage rates will entail a decision on working hours or on participation, or on both. In the initial situation there is by assumption only one income earner in the household who supplies AB hours of work. The work-leisure preferences of the household are depicted by the indifference curve  $I_1$ . After the decline in the wage rate, the new income line is given by AX and it is assumed that  $I_3$  is the household indifference curve so that  $E_3$  depicts the new equilibrium income/leisure combination, a combination, which implies a strong income preference. In this case, the household needs to increase joint working hours from AB to AG to earn the desired level of income OH. This can be achieved either by additional working-hours of the original income earner or by the addition of a second income earner in the household or by a combination of both. Which decision will ultimately be taken depends (a) on preferences on the labor supply side--which will now involve complex cross substitution and income effects between household members--and (b) on work opportunities and the structure of labor demand in the labor markets. If, for example, the working time of the original income earner in the household cannot be extended because labor demand of the employer has remained unchanged, the participation of an additional member of the household is inevitable. This situation is sometimes referred to as the "added worker effect" because a new member is added to the labor force. Under the added worker effect, people who would not normally be in the labor force will enter the labor market even during recessions or other periods of income slowdowns or losses with a view to maintaining or supplementing household incomes. This effect is particularly forceful if households have a high share of "committed income"; i.e., income that is committed to recurrent payment obligations. An opposite effect on the labor force is exercised by the "discouraged worker effect." Under the discouraged worker effect, people will leave the labor force during recessions because the chances of finding a job are minimal. If, in a situation of wage restraint, slack growth, and high unemployment, the added worker effect predominates, wage restraint will in the short run result in a perverse effect on unemployment, an effect that may be compounded by the adverse effect of wage restraint on real disposable income and on domestic demand. The relative importance of the two effects appears to be influenced inter alia by the existence and characteristics of unemployment compensation schemes. The discouraged worker effect is typically weakened by easy qualifying criteria and

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<sup>1/</sup> For simplicity it is assumed here that the wage rate is the same for all working members of the family.

generous benefits under these schemes. Moreover, to the extent that official employment programs raise the probability of finding a job and thereby qualify for unemployment compensation later, the added worker effect tends to be strengthened.

The data on participation rates in the Netherlands suggest that the added worker effect has largely dominated the discouraged worker effect in recent years. This has been especially true for women as is indicated by the sharp increase in their participation rate from 33.4 percent in 1979 to 39.8 percent in 1983. This increase represents a sharp acceleration in the rate of growth of the female participation rate from an annual rate of 1.8 percent during 1970-79 to a rate of 4.4 percent during 1979-83. Moreover, over the period 1979-83, the earlier strong decline in the male participation rate partly reversed itself when the rate increased from 79 to 80.1 percent. It is striking that these developments coincided with a prolonged period of wage restraint. <sup>1/</sup> As was suspected earlier, this coincidence suggests indeed that growing financial constraints that accompanied wage restraint have entailed considerable changes in labor supply preferences. <sup>2/</sup> More specifically, it suggests that the majority of households in the Netherlands are currently income preferers instead of leisure preferers. In such a situation, the net effect of a decline in wage rates is an increase in labor supply to a point such as  $E_3$  in Chart 1 instead of the more normal long-term result of a decline to a point such as  $E_2$ .

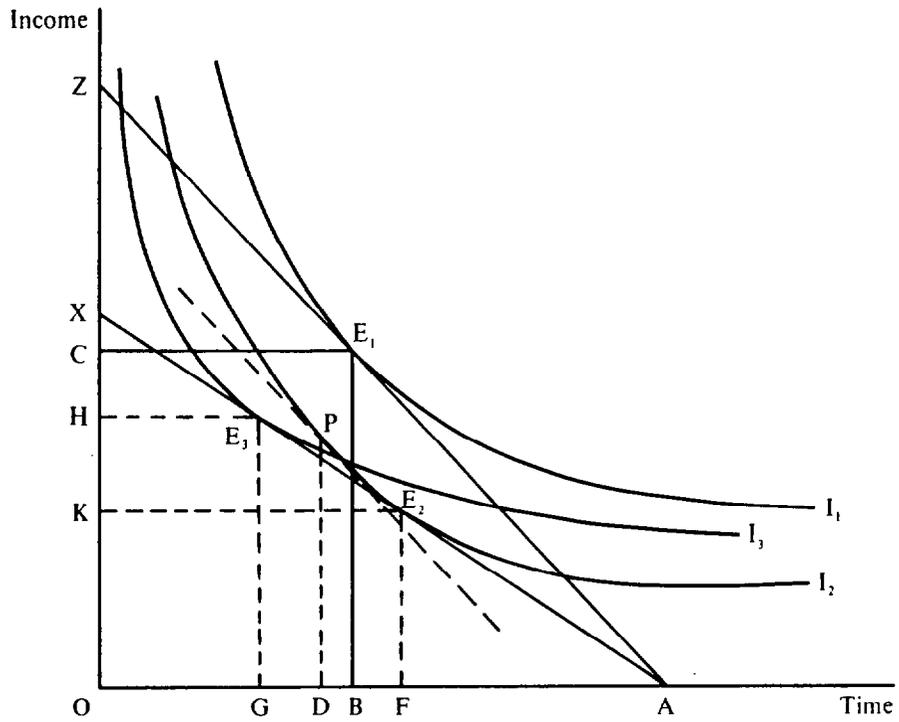
The suggestion that wage restraint tends initially to increase household labor supply appears to be corroborated by the observation that the preparedness to work overtime has--during the period of wage restraint--been high and rising in the Netherlands. For example, the

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<sup>1/</sup> Apart from their income and labor supply effects, which are shown below to be detrimental for work-sharing in the short-run, the wage restraint measures have also implied a move toward greater real wage flexibility. As will be shown later, the beneficial effects of this development will be felt only with a considerable lag.

<sup>2/</sup> Between 1979 and 1983, real wages and salaries per employee declined by 3 percent, compared with a 13 percent increase during 1975-79. Obviously, reasons other than income considerations have also played an important role in labor supply decisions. For women, better and longer education, growing emancipation, changes in the relative costs of remaining a housewife and shifts in family situation and fertility have apparently been important determinants. Some of these have resulted in a weakening of the substitution effect while others have contributed to a strengthening of the income effect; on balance, workers have been added to the labor force. However, it is unlikely that these determinants could have changed enough during the short period under consideration to explain the strong acceleration in female participation rates. The aim to maintain a given real family income therefore appears to have dominated decisions on participation in recent years.

CHART 1  
INCOME AND SUBSTITUTION EFFECTS ON LABOR SUPPLY





elasticity of women's supply of working hours with respect to the husband's wage, that was already quite high in 1979 (-0.277), 1/ has increased sharply in the following years. A similar development is reported for men. But an even stronger indication of the apparent income preference of households is the unusually sharp rise in female participation rates in recent years, which confirms the finding of a fairly high negative participation elasticity of married women with respect to the husband's wage of between -0.26 and -0.33 in 1979. 2/ As was the case for the working hours elasticity, it is very likely that the subsequent years of income restraint have raised this participation elasticity. Falling incomes also are likely to have raised the participation elasticity of other members of a household, particularly that of school-leavers still living in their parents' household. This would help explain both the sharp rise in youth unemployment and the *exceptionally strong growth of female participation in the younger age groups.*

In examining labor supply responses to changes in incomes, a distinction needs to be made between long-term and short-term responses. The revealed preference structure that is implicit in recent developments in labor supply may reflect a short-term response to current economic conditions and may well be subject to change over time. Given the abrupt, unexpected and large change in income trends after 1979, it is quite possible that labor supply behavior was primarily a reflection of pressing financial constraints, which derived from recurrent payment obligations that could not be altered in the short-term. 3/

It can be demonstrated that the existence of financial constraints can lead, in the short term, to labor supply decisions that are sub-

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1/ Compare J. Hartog and J. Theeuwes, "Participation and Hours of Work: Two Stages in the Life-Cycle of Married Women," Erasmus University Papers, No. 8415/G (May 1984).

2/ Compare P.S.A. Renaud and J.J. Siegers, "Income and Substitution Effects in Family Labor Supply," De Economist, Vol. 132, No. 3 (1984), pp. 350-66. Their research, which leads to an elasticity of -0.26, is based on a model in which individual utility functions are maximized for a given family budget constraint and a spouse time-budget restriction. Compare also the result obtained by Hartog and Theeuwes (-0.33). In a recent study on Belgian data, it was found that the cross elasticity of a wife's labor supply with respect to the husband's income is as large in absolute terms as the elasticity with respect to the own income, suggesting a strong substitution effect between the two incomes. Compare G. van Rompuy, "The Effect of Unemployment Legislation on Labor Supply Decisions," Tijdschrift voor Economie en Management, Vol. XXXIX, Nr. 2 (1984), pp. 217-31.

3/ Among these obligations, mortgage payments are of particular importance. For the Netherlands, it was found "that high mortgage payments are associated with a high probability for the wife [...] to be at work." Compare J. Hartog and J. Theeuwes; op. cit.

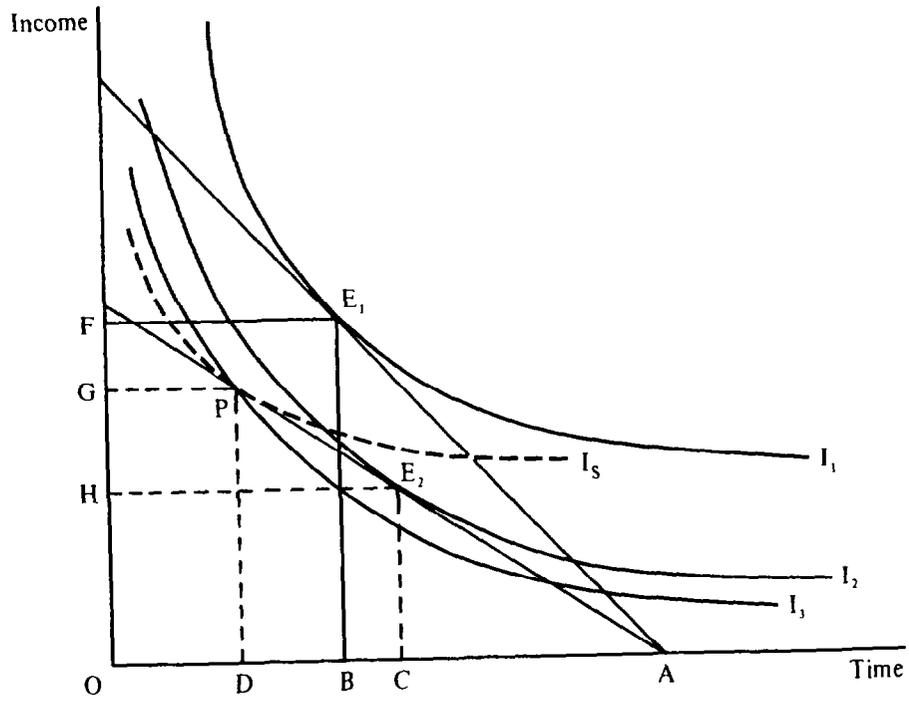
optimal in the long term. In Chart 2, long-term indifference curves are given by  $I_1$ ,  $I_2$  and  $I_3$ . After the reduction in wages, people would want to move from the old equilibrium income/leisure combination  $E_1$  to the new combination  $E_2$ , at which the supply of labor is reduced from AB to AC. However, because of recurrent payment obligations of an amount equivalent to OG--obligations that by assumption cannot be altered in the short-term--the new long-term equilibrium cannot be reached immediately. <sup>1/</sup> Instead, the household is forced to increase its labor supply from  $\overline{AB}$  to AD to meet these obligations. The corresponding short-term equilibrium point P is suboptimal in the longer term, because the long-term indifference curve  $I_3$  intersects the income line. Over time, the income/leisure balance will therefore be adjusted toward point  $E_2$ . However, as long as financial constraints exist, households will remain "income preferers" with the consequence of higher than "normal" participation rates and/or a higher preparedness to work overtime. Both consequences are detrimental to a successful introduction of work-sharing in the short-term. After these constraints are eliminated, households are likely to return to their long-term work-leisure preference pattern which is likely to involve a move toward a position of "leisure preferer," so that work-sharing could become effective in the long term. However, it is not clear a priori whether the move toward leisure preference would over time result in the sharing of working-time between members of a household, a result that would support the success in line with the intentions of work-sharing proposals, or in the withdrawal of a part-time worker from the labor market and the search for a full-time job of the principal income earner of the household. In this case, labor supply preferences would be in conflict with the reduction of average working hours under work-sharing.

Data on the structure of employment are ambiguous as to the scope for a successful introduction of work-sharing. The increase in the share of service sector employment in total employment seems to point to an increased scope for part-time employment. However, data on recent developments in part-time employment (Table 3) suggest that employers have not yet developed a preference for this type of employment. Moreover, the increase in the preparedness of employees to work overtime indicates that there is currently also no preference for shorter hours among the employed. Data on the structure of unemployment (Table 4) are equally ambiguous. On the one hand, there are adult males, comprising mostly heads of households, a group that is typically searching for full-time employment and is unlikely to be satisfied with reduced working-time jobs. On the other hand, there are unemployed women, many of whom--notably married and older women--might well be satisfied with a part-time job at a lower than the full-time income. This would also seem to apply to selected groups of young people.

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1/ Consumer theory suggests that a certain "ratchet effect" exists in private consumption in the short-term. This by itself would explain a divergence between short-term and long-term work/leisure preferences. Financial constraints would tend to strengthen this effect on short-term labor supply decisions.

CHART 2  
SHORT-TERM AND LONG-TERM ADJUSTMENTS IN LABOR SUPPLY





## 2. Labor demand and work-sharing

On the labor demand side, the scope for work-sharing depends on its implications for productivity and costs. Both productivity and costs will be affected by a substitution of employment for working hours that results from work-sharing. The net effects of this substitution on developments in unit labor costs will determine whether work-sharing will ultimately be a success.

Demand functions for employment and average working hours usually postulate the following relationships: 1/

- (1)  $E^* = E^*(RFLC, OFLC, Q, R, SWW, SWR, PWO, SSS, Y)$   
with  $E_i^* < 0$  for  $i = 1, \dots, 4$ ;  $E_i^* > 0$  for  $i = 5, \dots, 9$
- (2)  $AHW^* = AHW^*(RFLC, OFLC, Q, R, SWW, SWR, PWO, SSS, Y)$   
with  $AHW_i^* > 0$  for  $i = 1, \dots, 4$ ;  $AHW_i^* < 0$  for  $i = 5, \dots, 8$   
 $AHW_9^* \geq 0$  for  $i = 9$

where:

$E^*$  = desired employment  
 $AHW^*$  = desired average working hours  
 $RFLC$  = recurring fixed labor costs; e.g., holidays, training, recreation, etc.  
 $OFLC$  = once-over fixed labor costs; e.g., hiring and redundancy payments.  
 $Q$  = quit rate  
 $R$  = opportunity cost of capital  
 $SWW$  = standard workweek  
 $SWR$  = standard wage rate  
 $PWO$  = premium wage on overtime  
 $SSS$  = social security supplement  
 $Y$  = output (also: type and characteristics of the production function).

These functional relationships point to a number of important aspects concerning the scope for achieving an increase in employment through work-sharing. More specifically, a number of factors that characterize the labor cost structure of enterprises are intrinsically detrimental to a success of work-sharing. First, high recurrent and/or once-over fixed labor costs are detrimental to work-sharing because they raise the production costs per employed person. Second, an unstable actual or expected economic environment with a high actual or expected quit rate is detrimental to work-sharing because it entails the repeated incurrance of once-over fixed labor costs. Third, a reduction in the standard workweek is detrimental to raising employment and thus to the success of work-sharing in the longer term because it reduces the proportion of working time that can be purchased at the cost of the

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1/ Compare Robert A. Hart, "Worksharing and Factor Prices" in European Economic Review, Vol. 24 (1984), pp. 165-188.

standard wage rate combined with a given per-person fixed cost element. <sup>1/</sup> Apart from these examples, there are numerous other functional relationships that can be detrimental to the success of work-sharing. Their negative effects are often amplified if they occur in combination with each other. Moreover, rigid labor laws and inflexible work arrangements between social partners, slow administrative and labor litigation procedures and other rigidities tend to enhance the importance of many of the above cost components.

A striking feature of recent developments in the split between employment and working hours in the Netherlands has been that employers have apparently preferred increases in average working hours over increases in employment. For example, during 1982-83, employment dropped by an average 0.8 percent per annum, while average working hours increased by an average 0.65 percent per annum (Table 5). This development is in stark contrast to the period 1968-79, when employment increased by an annual average of 0.5 percent and working hours dropped by 1.7 percent. It suggests that, under given wage-cost levels and structures, relative productivity developments, wage taxes, fixed employment costs and regulations governing employment and layoffs, employers have tended to prefer a composition of employment and average working hours, which is opposite to that which is sought by work-sharing schemes. <sup>2/</sup> Apparently, it is still less costly to employers to pay overtime than to hire new people. Judging by the functional relationships established in equations (1) and (2) above, this observation can be linked primarily to the existence of high fixed employment costs, actual or expected in the face of uncertain demand developments. Of particular importance appear to be redundancy costs, flat-rate employment costs and severance pay. <sup>3/</sup> However, it is also possible that in the current labor market situation with its apparent mismatches of job qualifications, the marginal productivity of additional working hours is higher than that of additional employment.

To investigate the importance of cost and productivity factors as well as of rigidities in the labor market for employment decisions, developments in labor inputs for the manufacturing sectors of the Netherlands have been compared with those in seven of her most important trading partners. In connection with the estimation of a small model

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<sup>1/</sup> Unless the progressivity of overtime wages is very steep, an increase in overtime becomes the preferred solution, especially in economies with a predominance of small- and medium-scale enterprises like the Netherlands and in periods of economic slack.

<sup>2/</sup> Recent developments in the distribution between employment and average working hours in the Netherlands contrast sharply with those in the average of European OECD member countries, while in Sweden a development similar to that in the Netherlands has taken place in 1982-83 (Table 5).

<sup>3/</sup> Although there are no legal regulations about severance pay in the Netherlands, labor contracts often call for such payments. Moreover, sometimes lengthy procedures for dismissals raise the level of redundancy costs.

for labor demand, particular attention has been paid to short-term and long-term responses of employment and working hours to changing economic conditions.

The model starts from a production function, which is assumed to be of the variable elasticity of substitution (VES) type. In its general form, the function can be written as:

$$(3) Y = Y(L, K, T)$$

in which Y is output, L is total labor input, K is capital and T is time. Differentiating the equation with respect to labor input and making the usual profit maximization assumption, which requires that the marginal product of labor inputs equals real wage costs, the equation can be solved for the desired labor input  $L^*$ . Expressing all variables with the exception of the time trend T, in natural logarithms, the desired labor input  $L^*$  is determined as follows:

$$(4) L^* = a_0 + a_1 Y + a_2 RW + a_3 T$$

where RW is real wage costs and the parameters  $a_1$ , and  $a_2$  measure the elasticities of labor input with respect to output and real wages, respectively, while parameter  $a_3$  measures the semi-elasticity of labor input with respect to the time trend. The coefficient  $a_1$  is expected to be positive, the coefficient  $a_2$  to be negative and the coefficient  $a_3$  to be either positive or negative, depending on technological developments. Any work-sharing scheme that reduced real wage costs is thus expected to entail a positive "scale effect" on labor demand and, consequently, to raise total labor input. It is less clear whether such a scheme will also entail a "switch effect" on labor input such that more employment is substituted for shorter average working hours. This switch is, however, at the heart of work-sharing initiatives and the success of work-sharing schemes is therefore more appropriately measured by observed developments in the share of employment in total labor input than by developments in the level of total labor input.

By definition, the desired labor input is the product of desired employment  $E^*$  and desired average working hours  $AHW^*$ . Thus, when expressed in logarithms it holds that:

$$(5) L^* = AHW^* + E^*$$

The desired split between working hours and employment is given by:

$$(6) AHW^* = g + b L^* \text{ and}$$

$$(7) E^* = -g + (1-b)L^*$$

where g is a scale variable which generalizes the split function and b is a coefficient, which incorporates the net effect of the determinants in equations (1) and (2) on the employment/ working-hour balance. In

addition, the coefficient  $b$  captures those influences that emanate from nonwage cost factors such as labor market regulations and rigidities. 1/

Assuming that the adjustment toward desired levels of working hours and employment takes place with a lag, it follows for the observed levels of employment and working-hours that:

$$(8) \Delta AHW = c (AHW^* - AHW_{t-1}) \text{ and}$$

$$(9) \Delta E = d (E^* - E_{t-1})$$

where  $c$  and  $d$  measure the speeds of adjustment.

Using equations (3) and (6) and (8) and solving for AHW yields:

$$(10) AHW = (a_0 b + g)c + a_1 bc Y + a_2 bc RW + a_3 bc T + (1-c) AHW_{t-1}$$

Using equations (3) and (7) and (9) and solving for  $E$  yields:

$$(11) E = [a_0(1-b) - g] d + a_1(1-b)d Y + a_2(1-b)d RW + a_3(1-b)d T + (1-d) E_{t-1}$$

Equations (10) and (11) can then be estimated simultaneously by a minimum distance estimator to obtain the parameter values.

For the period 1970-84, the results of the econometric estimation are given in Table 6. 2/ They indicate that rigidities in the labor markets, which give rise to labor costs other than the recurrent direct wage costs, have been quite important in the Netherlands. These rigidities and costs appear to have sharply reduced the speed with which firms have adjusted both employment and working hours. The adjustment coefficient for employment of 0.12 was only about 1/3 of that observed for the United States. Thus, adjustment of employment toward the desired level took more than eight quarters in the Netherlands, compared with barely three quarters in the United States. The adjustment in working hours was even slower; with an adjustment speed of 0.08, it was only 1/6 as fast as in Germany, which recorded the most rapid adjustment of all countries in the sample. Because of the long-term consequences of contractual employment decisions, rigidities in the labor market will have more severe cost consequences in the case of changes in employment than in the case of changes of working hours. These rigidities therefore bias decisions on labor inputs in favor of working-hour adjustments.

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1/ Data on the determinants of the split as given by equations (1) and (2), which could have permitted the estimation of their individual influence on the split, were not available. The analysis is therefore restricted to measuring the net effect of their combined influences.

2/ The estimation is restricted to data on the manufacturing sector.

The interpretation of the speed of adjustment of labor inputs is, however, somewhat ambiguous. A low adjustment speed for either or both of the components of labor input does not necessarily indicate a low degree of flexibility in the labor markets. Where the price of labor inputs can adjust with great ease and speed, the need for volume adjustments for cost reasons is small and the coefficients measuring the adjustment speed will tend to be small, if only because the benefits of keeping an experienced work-force intact will increase in this situation and will influence employment decisions accordingly. 1/ This appears to be the case in Japan, although the speed of adjustment of the components of labor input is almost as low as in the Netherlands. However, as has been shown in a recent OECD study on labor market flexibility, 2/ the swiftness with which nominal wage costs adjust, especially in response to unemployment, is extremely high in Japan, thus leading to a low degree of "real wage rigidity". 3/ This is in marked contrast to the Netherlands, where a high degree of real wage rigidity has been measured by the study, notwithstanding the recent decline in real wages in connection with wage restraint. In contrast to Japan, the low speed of adjustment in the volume of labor inputs can therefore in the case of the Netherlands not be explained by a high degree of flexibility in the price of labor. Instead, it points to a high degree of labor market rigidity and to a combination of relative productivity and cost factors in the employment/working-time trade-off that is inimical to work-sharing and long-term employment growth.

The observation of adverse conditions for employment growth in the Netherlands is substantiated by the estimate of the split coefficient *b*. The coefficient value of 0.2 is significantly greater than zero, a fact which suggests that an incentive existed in longer-term labor input decisions toward a substitution of working hours for employment. Longer-term adjustments in labor inputs to changes in production should normally be expected to completely take the form of adjustments in employment because, in the long run, homogeneity of employment is

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1/ In the absence of cyclical savings, these benefits would, of course, evaporate over time. However, with regular cyclical savings, the need to minimize adjustment costs is a permanent optimization problem for enterprises.

2/ Compare OECD, Economic Outlook, Vol. 37 (June 1985), pp. 29-34.

3/ Real wage rigidity is defined as the responsiveness of nominal wages to price shocks relative to their responsiveness to changes in unemployment.

probable while the marginal productivity of additional working hours will eventually become negative. 1/ The results for the Netherlands suggest, by contrast, that important cost and noncost factors existed that worked against a full adjustment of labor inputs in the form of employment. It appears that fixed labor costs of all sorts, including social premia, the number of paid holidays, and hiring, training and redundancy costs, have been high in the Netherlands, especially relative to the premium on overtime. They have influenced employment decisions in favor of adjustments in working hours and have therefore impinged upon an adjustment in employment in line with output and direct wage-cost growth. The characteristics of the (aggregate) production function of the manufacturing sector may also have played a role. As suggested earlier, these characteristics are influenced inter alia by the relative importance of small scale enterprises in an economy. These enterprises typically have a more limited scope for adjustments in full-time employment. Moreover, if fixed costs that do not vary in line with the type of employment, viz. reduced-time versus full-time employment are important for these enterprises, the scope for work-sharing is reduced even further. Both aspects appear to have been important in the Netherlands. Moreover, the preference of Dutch enterprises for adjustments in working hours was seemingly also strongly influenced by the fact that in situations of a slowdown in production, short-time work could be introduced at considerable savings to employers because the costs of hours during which production was halted for economic reasons was largely paid by an insurance scheme. 2/ Finally, there are indications that a replacement of working hours by additional employment would have involved a considerable loss in productivity in a number of industries. Data on the structure of unemployment (Table 4) show an unusually high degree of youth and long-term unemployment in the Netherlands. The marginal productivity of these unemployed must in most cases be assumed to be lower than that of the experienced work force, at least in the short run. 3/

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1/ In the short run, homogeneity of the existing labor force on the one hand and of the newly employed on the other, is unlikely to exist because of differences in training and experience. However, long-run homogeneity can usually be assumed for the average of employed workers. As to productivity, a decline in the marginal productivity of working hours is a standard assumption in economics.

2/ In cases of part-time work owing to slack demand and production in industry, a large part (80 percent) of the compensation of employees for lost income is carried by an insurance board and does not proportionally burden individual enterprises affected by part-time work.

3/ This evidence pointed to a fairly high degree of job mismatches.

The econometric results also indicate that there has been a fairly strong trend toward labor-saving investments in the Netherlands. The estimate of the time trend variable, which is indicative of the trend development of total labor input in the production function, is one of the largest of all the countries in the sample (-0.0104). This suggests that factors such as the relative price of labor as well as labor market rigidities in the form of a low degree of both wage-cost flexibility and labor-input flexibility have been high and have biased adjustments in production capacities toward labor-saving investments. More often than not, labor-saving investments entail higher initial training costs than labor-intensive investments and, as a result, they raise the relative costs of new employment compared with adjustments in average working hours. Labor-saving investments are therefore detrimental to work-sharing or part-time employment.

A comparison of the results of the empirical investigation for the sub-period 1970-78 with those for the sub-period 1979-84 suggests that in the Netherlands important changes have taken place in the determinants of the employment/working-hour split (Tables 7 and 8). The speed of adjustment of employment almost doubled between the two subperiods. This suggests that important obstacles to employment adjustment have been removed. Obviously, these developments have been strongly influenced by the large-scale promotion of early retirement schemes, the eased admission of surplus labor to disability schemes, and the spreading of official schemes for the resorption of surplus labor. These measures have strongly reduced severance costs to enterprises and have thereby facilitated the shedding of labor. <sup>1/</sup> The importance of these influences is indicated by the fact that the "split coefficient" *b*, which was highly positive in the earlier period, has turned negative in the later period, albeit without becoming statistically significant. The proclivity toward seeking, in the longer run, a large proportion of labor input adjustments in the form of adjustments in working hours rather than employment has therefore apparently been reduced by the

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<sup>1/</sup> The employment policy of the authorities which thus benefited enterprises has *eo ipso* entailed important budgetary consequences. Some enterprises nevertheless maintain that the costs of reducing excess labor remain high and that the early retirement schemes did not always affect those workers whom the enterprises wanted to see go.

measures taken by the authorities. 1/ This development underlines the importance of fixed labor costs in enterprises' decisions on the employment/working-hour balance.

Another quite important development in the Netherlands has been the sharp drop in the propensity to introduce labor-saving investments, as indicated by the decline in the estimate of the coefficient for the time trend from -0.0255 in 1970-78 to -0.0077 in 1979-84. This decline suggests that the longer-term prospects for employment have improved in recent years. A key determinant for this development must have been the high and prolonged degree of wage restraint which has sharply reduced, if not inverted the trend increase in the relative price of labor during earlier years. This seems to have removed much of the pressure on employers to introduce labor-saving investments. 2/ With the return to more labor intensive investments, the longer-term scope for work-sharing has also improved.

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1/ This finding is not in conflict with the observation that in recent years average hours worked have increased while employment has dropped considerably (Table 5). Given the recent removal of a number of obstacles to adjusting the labor force to desired levels, given also the importance of surplus labor in many firms at a time of uncertain developments of demand, it is natural that firms should seek to adjust with priority their labor force to the desired level. The observed increase in average working-hours is then a technical reaction to this adjustment. The development in recent years must therefore be interpreted as a move toward desired levels of employment and working hours, a move that had apparently long been impaired by rigid labor market policies. By contrast, the "split coefficient" measures the desired long-term split between levels of employment and work hours.

2/ Tables 6-8 also suggest some interesting developments for other countries. For example, in Japan and the United States the speed of adjustment of employment increased sharply, while the speed of adjustment of working-hours declined. In Japan, this development may have been influenced by the increase in the share of employment in large enterprises which do not typically have the "lifetime employment policy" of small-scale enterprises. In the United States, the shift may have been influenced by the apparent increase in overtime premia coupled with a greater ease and reduced costs of hiring and firing. Moreover, low increases in real wage rates in the United States have during 1979-84 seemingly also further reduced the propensity to introduce labor-saving technology as is indicated by the reduction in the size of the coefficient for the time variable. In Belgium, France and Germany, the speed of adjustment of employment declined in the later period even below the already low level of the earlier period, suggesting that the momentum of legislative and other regulations on job security, as well as relative cost factors have tended to slow down adjustments in employment.

### III. Summary and policy conclusions

Work-sharing arrangements that are introduced with a view to alleviating the pressing labor market problems are no substitute for global macroeconomic policies. The Dutch authorities have therefore emphasized growth-oriented policies as well as policies that tend to reduce the relative price of labor and have considered work-sharing schemes as only supplementary measures. The wage restraint measures of the past years have improved overall employment prospects and, to the extent that they have reduced the propensity to introduce labor-saving investments, have also supported the move toward work-sharing. However, other conditions in the labor market have been, and are still less favorable to work-sharing. Even as a temporary or supplementary policy, work-sharing schemes therefore are likely to meet with only modest success in the Netherlands, given the present characteristics of the labor market and other pertinent factors that bear on employment decisions. Most households currently appear to be "income preferers" and would rather work more hours to maintain a given level of consumption than to have more leisure time. There are indications that this preference has been generated or strengthened by the rather abrupt drop in the growth rate of real wages and salaries, which produced severe financial tightness especially in households with a high share of committed income. In the short-term, the introduction of work-sharing is therefore likely to result in either or both a rise in participation rates and an increase in the preparedness to work overtime. Both would lead to a perverse effect on unemployment, especially because there is still a very large potential for an increase in the female labor force. However, in the longer term, work/leisure preferences are likely to revert to a more normal pattern. Whether this will result in the preference of shared employment within the household at shorter working hours of each employed member of the household or in the withdrawal of a member of the household from the labor market, a withdrawal that is combined with the search for a full-time position for the head of household, is hard to predict. Only the first result would mean that, looking at it from the labor supply side, work-sharing would be successful in the longer term.

On the labor demand side, underlying cost and productivity considerations still appear to be detrimental to a fast and widespread success of work-sharing arrangements in the Netherlands. Data on the split of labor input between employment and working hours suggest that employers have, in recent years, preferred increases in average working-hours over new employment, a pattern of behavior that ran counter to the one promoted under work-sharing initiatives. If, in contrast, the econometric research has for the recent years indicated a decline in the size of the "split coefficient" for the employment/working-hour balance and an increase in the speed of adjustment of employment, these developments appear to reflect primarily the large-scale introduction of early retirement and of other labor market schemes. A continuation of these schemes at the past rate of expansion is unsustainable, if only for the budgetary costs involved. Discounting therefore the effects of the past

measures on the decline in severance and other fixed employment costs and thereby on the split coefficient and the speed of adjustment, it still appears true that cost and productivity neutrality of work-sharing schemes is unlikely to hold in the short and the medium term and that a reduction in legal working hours will continue to run counter to the employment/working-hour split that is favored by employers.

The decline in fixed employment costs that resulted from official labor market measures in recent years distorts the information on the underlying scope for work-sharing. However, at the same time, the strong reaction of both the split coefficient and the speed of adjustment of employment to these measures underscores the importance of fixed cost in employment decisions. It suggests that further changes in conditions that govern the level and structure of labor costs will need to accompany work-sharing schemes if, over the longer term, employment is to be raised relative to working hours and if the still high propensity to substitute capital for labor is to be reduced. Especially recurrent and the onceover fixed nonwage labor costs are a strong impediment toward an expansion of the share of employment in total labor inputs, unless the progressivity of overtime premia is very strong and/or the marginal productivity of employment is considerably higher than that of overtime. There are strong indications that neither of these two conditions is currently met in the Netherlands. The difficult labor market situation has depressed overtime pay. In fact, overtime is probably paid at normal wage rates, especially in small- and medium-sized enterprises. As to relative productivity, most characteristics of unemployment point to a growing dominance of "problem groups" such as youth unemployment and long-term unemployment among the unemployed. A substitution of employment from the ranks of the currently unemployed for working hours is therefore unlikely to be productivity and cost-neutral--at least not in the short run--because skilled and experienced worker-hours would be replaced by the employment of relatively unskilled and inexperienced persons. The related drop in overall productivity and the accompanying rise in unit labor costs are a strong impediment against the success of work-sharing. Therefore, specific incentives for employers, including measures aimed at reducing employment costs for selected "problem groups," will need to accompany work-sharing measures before a substantial reduction in the unemployment rate of these groups can be expected. 1/

Because relative productivity between employment and working hours and the progressivity of pay for overtime are currently adverse to a successful implementation of work-sharing schemes, any reduction in nonwage labor costs would need to be even more important in the short term than in the long term to make work-sharing work. However, to the extent that (a) patterns of overtime costs, (b) relative productivity between

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1/ Some measures in this direction have already been taken by the authorities, they concentrate on alleviating the problem of youth unemployment.

employment and working hours, and (c) the importance of fixed non-wage costs are of a short-term and/or cyclical character, selected employment subsidies of limited duration may suffice to overcome the adverse structure of labor input preferences of employers. On the other hand, where a more lasting structure of relative costs and productivity is adverse to a substitution of employment for working hours, more fundamental adjustments in labor cost determinants will have to take place to favor employment over working hours.

Apart from the likely duration of influences on employment choices, the need for, and the appropriateness of measures to support work-sharing schemes is influenced by a great number of additional factors. Obviously, an improved and more stable overall economic situation--or even the expectation of it--would be an important exogenous factor that could improve the chances of work-sharing schemes, if only because the quit rate would decline and the frequency and level of hiring and firing costs and of training costs would drop. Among recurrent nonwage labor costs, the number of holidays at full pay and a great number of fringe benefits, but also employment-security regulations and other legal rules stand out as particularly inimical to work-sharing. Many of these costs are the result of agreements between the social partners and are thus not susceptible to direct government intervention. However, if work-sharing is an agreed-upon goal of the social partners, the importance and justification of these costs must be examined and the factors that govern them must become part of the wage negotiations, replacing the almost exclusive focus on direct labor costs.

Finally, the importance of fixed labor costs and of costs that are related to labor market regulations and agreements between the social partners is not indifferent to the type of work-sharing schemes. Nor is it indifferent to sector-specific production functions that determine the degree of divisibility of labor and thus the marginal productivity of employment. A generalized work-sharing scheme, such as a reduction in the standard working week, is therefore unlikely to meet the priorities of the majority of either employers or employees. Any work-sharing scheme that is proposed should therefore leave as much discretion as possible to the social partners as to the specific form in which it is to be implemented. Above all, a rise in wage costs per unit of output must be prevented. The related negative "scale effect" of work-sharing on overall demand for labor input would tend to outweigh the positive "switch effect" on the distribution of labor input between employment and working hours. On balance, prospects for long-term employment growth would be impaired.

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Table 1. Netherlands: International Comparison of Selected Macroeconomic Indicators

(In percent annual averages) 1/

	1968-73	1973-79	1979-82	1982	1983	1984 2/
<b>Netherlands</b>						
GDP	5.3	2.5	-0.5	-1.7	0.5	2.2
GDP per capita	4.2	1.7	-1.2	-2.0	0.5	1.6
Public sector net lending 3/	-0.3	-2.2	-5.5	-7.4	-6.6	-6.0
Public sector expenditure 3/	46.7	55.5	61.4	63.7	64.9	63.9
Social transfers 3/	18.1	23.9	26.9	28.3	29.0	28.0
Consumer price index	6.9	7.2	6.4	6.0	2.8	3.3
Current account	0.9	1.2	1.1	1.1	3.0	4.0
Unemployment rate	1.5	4.9	8.7	11.4	13.7	14.0
<b>Sweden</b>						
GDP	3.9	1.8	0.5	0.8	2.5	3.0
GDP per capita	3.3	1.5	0.4	0.8	2.4	3.0
Public sector net lending 3/	4.4	1.3	-5.0	-6.2	-5.0	-3.5
Public sector expenditure 3/	44.5	54.8	64.9	67.3	67.4	67.2
Social transfers 3/	11.6	15.9	18.3	18.6	18.9	...
Consumer price index	6.0	9.8	11.4	8.6	8.9	8.0
Current account	0.5	-1.4	-3.2	-3.6	-1.0	0.1
Unemployment rate	2.2	1.9	2.5	3.1	3.5	3.1
<b>OECD-Europe</b>						
GDP	4.9	2.4	0.6	0.7	1.4	2.4
GDP per capita	4.0	1.9	0.1	0.2	0.9	2.1
Public sector net lending 3/	-0.1	-2.8	-3.9	-4.4	...	...
Public sector expenditure 3/	37.6	44.2	48.8	50.7	50.8	...
Social transfers 3/	12.7	16.2	18.2	19.0	...	...
Consumer price index	6.2	11.4	12.3	10.5	8.3	7.6
Current account	0.5	-0.5	-1.0	-0.6	--	0.3
Unemployment rate	3.4	5.4	7.8	9.0	10.1	10.8

Sources: OECD, Historical Statistics 1960-83, and Employment Outlook, 1983, 1984, and 1985.

1/ GDP, GDP per capita, and consumer price index are measured in percentage growth rates; all other series are measured as a percentage of GDP.

2/ Partly estimated.

3/ In percent of GNP/GDP.

Table 2. Netherlands: International Comparison of Demographic Developments and Employment

(Changes in percent and ratios; annual averages)

	1968-73	1973-79	1979-82	1982	1983	1984 <u>1/</u>
<b>Netherlands</b>						
Working age population <u>2/</u>	1.3	1.4	1.3	1.1	1.1	1.2
Participation rate <u>3/</u>	58.9	56.8	58.9	59.9	60.2	59.5
Male	89.1	81.4	80.0	80.5	80.1	...
Female	28.3	31.7	37.2	38.8	39.8	...
Labor force	0.6	1.1	3.3	2.8	1.6	0.1
Male	--	0.1	2.0	1.9	0.6	...
Female	2.5	3.6	6.5	4.8	3.7	...
Employment <u>4/</u>	0.5	0.5	1.1	-0.4	-2.1	-0.6
<b>Sweden</b>						
Working age population <u>2/</u>	0.2	0.1	0.4	0.3	0.3	0.1
Participation rate <u>3/</u>	74.5	78.9	81.1	81.2	81.3	81.5
Male	88.8	88.4	86.9	86.3	85.9	85.5
Female	59.9	69.2	75.1	75.9	76.6	77.4
Labor force	0.8	1.2	0.7	0.6	0.4@	0.4
Male	-0.1	0.1	-0.2	--	-0.2	...
Female	2.3	2.7	1.8	1.2	1.1	...
Employment <u>4/</u>	0.7	1.3	0.3	-0.1	0.2	0.8
<b>OECD-Europe</b>						
Working age population <u>2/</u>	0.7	0.9	1.2	1.2	1.2	1.0
Participation rate <u>3/</u>	67.4	67.1	66.5	65.8	65.4	65.2
Male	91.2	87.1	84.4	82.9	81.8	...
Female	44.3	47.3	48.7	49.7	49.8	...
Labor force	0.7	0.7	0.9	0.7	0.2	0.6
Male	0.2	0.2	0.6	0.4	-0.1	...
Female	1.6	1.6	1.5	1.3	0.8	...
Employment <u>4/</u>	0.6	0.2	-0.4	0.1	-1.2	--

Sources: OECD, Historical Statistics 1960-83; and Employment Outlook, 1983, 1984, and 1985.

1/ Partly estimated.

2/ Population aged 15 to 64.

3/ Labor force as a percentage of population aged 15 to 64.

4/ Total employment in the economy.

Table 3. Netherlands: International Comparison of Structure of Employment  
(Changes in percent and ratios; annual averages) <sup>1/</sup>

	1968-73	1973-79	1979-82	1982	1983	1984
<b>Netherlands</b>						
Male	...	0.3 <sup>2/</sup>	-0.4	-3.2	-2.3	...
Female	...	2.7 <sup>2/</sup>	4.7	2.2	-1.7	...
Private sector	0.5	0.5	1.0	-0.6	-2.1	...
Public sector	2.2	2.5	1.4	0.5	-0.4	...
Share in total	12.4	14.1	15.3	15.8	16.2	...
Service sector	1.8	1.8	3.3	1.2	0.2	...
Share in total	55.6	60.7	65.0	66.3	67.1	...
Part-time employment	...	5.0	...	...	-2.3 <sup>3/</sup>	...
Share in total employment	8.7 <sup>4/</sup>	...	19.4 <sup>5/</sup>	...	21.1	...
Share of women in part-time work	80.4	...	67.6 <sup>5/</sup>	...	78.4	...
<b>Sweden</b>						
Male	...	-0.3 <sup>2/</sup>	-0.6	-0.7	-0.6	0.1
Female	...	2.0 <sup>2/</sup>	1.4	0.5	0.9	1.4
Private sector	-0.8	-0.1	-0.6	-0.5	...	...
Public sector	6.3	4.9	2.4	0.8	...	...
Share in total	21.2	27.3	31.3	31.8	...	...
Service sector	3.2	2.9	1.6	1.5	1.5	...
Share in total	53.4	59.0	63.1	64.1	64.7	...
Part-time employment	...	6.3	2.6 <sup>6/</sup>	...	0.4 <sup>3/</sup>	...
Share in total employment	18.0 <sup>4/</sup>	...	25.2 <sup>5/</sup>	...	25.4	...
Share in women in part-time work	88.0 <sup>4/</sup>	...	84.5 <sup>5/</sup>	...	84.6	...
<b>OECD-Europe</b>						
Male	...	-0.1 <sup>2/</sup>	-0.9	-1.2	-1.2	...
Female	...	1.2 <sup>2/</sup>	0.4	0.2	0.1	...
Private sector	0.1	-0.2	-0.7	-0.9	...	...
Public sector	3.6	2.4	1.1	0.8	...	...
Share in total	13.3	15.8	17.0	17.4	...	...
Service sector	2.2	1.8	1.3	1.2	0.9	...
Share in total	43.2	47.6	51.1	52.0	53.2	...

Sources: OECD, Historical Statistics 1960-83; and Employment Outlook, 1983, 1984, and 1985.

<sup>1/</sup> Data on part-time work are not available for OECD-Europe.

<sup>2/</sup> 1975-79.

<sup>3/</sup> 1981-83.

<sup>4/</sup> 1973.

<sup>5/</sup> 1981.

<sup>6/</sup> 1979-81.

Table 4. Netherlands: International Comparison of Unemployment

(Annual averages in percent) 1/

	1968-73	1974-79	1980-82	1982	1983	1984
<b>Netherlands</b>						
Total	1.5	4.9	8.7	11.4	13.7	14.0
Male	1.7	4.8	8.4	11.4	14.0	...
Female	1.1	5.2	9.2	11.4	13.2	...
Share in total	16.6	28.5	33.7	31.9	31.1	...
Youth 2/	36.9	...	40.5	41.8	42.2	...
Long term 3/	12.5	20.7	26.5	31.6	43.7	55.5
Average duration 4/	...	...	8.2	9.3	10.9	...
Youth	...	...	6.9	8.4	9.8	...
Adult	...	...	9.4	10.2	11.9	...
<b>Sweden</b>						
Total	2.2	1.9	2.5	3.1	3.5	3.1
Male	2.1	1.9	2.5	3.1	3.4	3.0
Female	2.4	2.2	2.8	3.4	3.5	3.3
Share in total	43.1	51.8	50.5	48.9	49.2	...
Youth 2/	35.2	39.1	39.9	38.0	36.4	34.0
Long term 3/	...	5.8	6.6	8.4	10.3	12.3
Average duration 4/	...	...	3.8	4.1	4.4	...
Youth	...	...	2.8	3.1	3.0	...
Adult	...	...	4.7	5.2	5.8	...
<b>OECD-Europe</b>						
Total	3.4	5.4	7.8	8.9	10.0	10.8
Male	2.0	3.5	5.8	7.1	8.9	...
Female	2.6	5.1	8.0	9.1	11.0	...
Share in total	60.9	58.6	56.4	54.2	54.8	...

Sources: OECD, Historical Statistics 1960-83, and Employment Outlook, 1983, 1984 and 1985.

1/ Comparable data on youth and long-term unemployment as well as average duration of unemployment are not available for OECD-Europe.

2/ Youth unemployment (less than 25) as a percentage of total unemployment.

3/ Long-term unemployment (12 months and over) as a percentage of total unemployment. Partly estimated.

4/ In months.

Table 5. Netherlands: International Comparison of Growth and Productivity  
(Annual average changes in percent)

	1968-73	1973-79	1979-82	1982	1983 <u>1/</u>	1984 <u>1/</u>
Netherlands						
GDP, real	5.3	2.5	-0.5	-1.7	0.6	2.1
Employment	0.5	0.5	1.1	-0.4	-1.1	-0.6
Average hours worked <u>2/</u>	-1.5	-1.9	0.6	0.7	0.6	...
Index, 1975=100	...	98.2 <u>3/</u>	95.1	95.7	96.0	...
Productivity per employed <u>4/</u>	4.8	2.0	-1.6	-1.3	1.6	2.3
Productivity per hour <u>5/</u>	6.4	4.0	-2.2	-2.0	1.0	...
Sweden						
GDP, real	3.9	1.8	0.5	0.4	2.3	2.8
Employment	0.7	1.3	0.3	-0.1	0.2	0.8
Average hours worked <u>2/</u>	-1.2	-1.2	-0.2	0.9	0.8	...
Index, 1975=100	...	98.3 <u>3/</u>	94.8	95.3	95.8	...
Productivity per employed <u>4/</u>	3.1	0.5	0.2	0.6	2.1	2.0
Productivity per hour <u>5/</u>	4.4	1.7	0.4	-0.4	1.3	...
OECD-Europe						
GDP, real	4.9	2.4	0.6	0.6	1.3	2.4
Employment	0.6	0.2	-0.4	-0.7	-0.5	...
Average hours worked <u>2/6/</u>	-1.5	-0.9	-1.1	-1.1	-0.5	...
Index, 1975=100	...	...	...	...	...	...
Productivity per employed <u>4/</u>	4.3	2.2	1.0	1.2	1.9	2.4
Productivity per hour <u>5/</u>	5.9	3.1	2.1	2.4	2.3	...

Sources: OECD, Historical Statistics 1960-83, and Employment Outlook, 1983 and 1984.

- 1/ Partly estimated.  
2/ In small- and medium-sized enterprises.  
3/ 1975-79.  
4/ Real GDP per employed person.  
5/ Calculated as a residual from productivity per employed person and average hours worked. 1968-73 estimated.  
6/ Four major European countries.

Table 6. Netherlands: International Comparison of Employment and Work-hour Responses in Manufacturing

(Quarterly data; Q1, 1970 - Q3, 1984)

Country	Constant (a <sub>0</sub> )	Output (a <sub>1</sub> )	Real wages (a <sub>2</sub> )	Time (a <sub>3</sub> )	AHW/E Split 2/ (b)	Speed of adjustment of:		Scale variable 3/ (g)	R-squared SEE	R-squared	
						Hours worked (c)	Employ- ment (d)			Hours worked	Employ- ment
Belgium	0.27 (1.60)	2.29 (3.02)**	-1.34 (-2.15)*	-0.0087 (-2.74)**	0.20 (4.35)**	0.10 (3.47)**	0.10 (2.59)*		0.007	0.98	0.99
France	0.40 (9.10)**	1.14 (7.52)**	-0.35 (1.97)*	-0.0108 (-11.32)**	0.35 (11.60)**	0.10 (5.75)**	0.12 (5.35)**		0.003	0.99	0.99
Germany	0.10 (2.14)	1.44 (6.58)**	-0.91 (-5.47)**	-0.0032 (-3.11)**	0.31 (12.12)**	0.52 (5.13)**	0.17 (4.94)**	0.021 (7.05)**	0.009	0.93	0.99
Japan	0.50 (1.49)	0.63 (1.48)	0.05 (0.78)	-0.0113 (1.47)	-0.12 (-0.17)	0.08 (1.65)	0.17 (5.16)**	-0.011 (-0.69)	0.006	0.90	0.96
Netherlands	0.36 (7.20)**	0.52 (1.55)	-0.08 (-0.50)	-0.0104 (-8.40)**	0.20 (5.20)**	0.08 (4.48)**	0.12 (2.26)**		0.005	0.90	0.96
Sweden	0.17 (4.05)**	0.47 (2.75)**	0.21 (2.86)**	-0.0046 (-4.11)**	-0.09 (-0.36)	0.04 (6.11)**	0.24 (3.66)**		0.006	0.99	0.98
United Kingdom	-0.32 (-2.31)**	2.18 (7.02)**	-1.20 (-3.53)**	0.0034 (1.22)	0.13 (6.85)	0.40 (4.93)**	0.09 (6.03)**	0.031 (7.27)**	0.010	0.84	0.99
United States	0.19 (8.12)**	1.02 (11.21)**	-0.25 (-1.47)	-0.0050 (-9.04)**	0.10 (1.78)	0.21 (2.44)*	0.34 (11.96)**	0.013 (3.08)**	0.007	0.75	0.97

Source: International Monetary Fund, International Financial Statistics; and staff calculations.

1/ Data in parentheses give the values of the asymptotic normal distribution. One asterisk indicates significance at a 95 percent level, two asterisks significance at a 99 percent level.

2/ Desired split of labor input between changes in working hours and employment.

3/ Constant factor "g" in equation for desired working hours and employment as a share of total desired labor input.

Table 7. Netherlands: Employment and Work-Hour Responses in Manufacturing

(Quarterly data; Q1, 1970 - Q4, 1978)

Country	Constant (a <sub>0</sub> )	Output (a <sub>1</sub> )	Real wages (a <sub>2</sub> )	Time (a <sub>3</sub> )	AHW/E Split <u>2/</u> (b)	Speed of adjustment of:		Scale variable <u>3/</u> (g)	SEE	R-squared	
						Hours worked (c)	Employ- ment (d)			Hours worked	Employ- ment
Belgium	0.76 (3.58)**	0.57 (2.85)**	0.54 (2.65)**	-0.0187 (-3.58)*	-0.00 (-0.00)	0.08 (1.45)	0.46 (4.01)**		0.009	0.95	0.99
France	0.69 (1.86)	1.34 (2.12)*	0.33 (1.46)	-0.0208 (-2.09)*	0.38 (1.25)	0.02 (1.16)	0.19 (7.65)**	-0.067 (-0.97)	0.002	0.99	0.99
Germany	-0.11 (-0.50)	1.22 (5.27)**	-1.25 (-2.65)	0.0021 (0.39)	0.33 (10.12)**	0.69 (5.12)	0.19 (3.79)**	0.022 (5.05)**	0.008	0.89	0.98
Japan	0.22 (0.87)	0.75 (1.25)	-0.60 (-1.25)	-0.0133 (-0.62)	0.25 (1.42)	0.80 (8.21)**	0.06 (1.36)	-0.006 (-1.22)	0.006	0.92	0.93
Netherlands	0.92 (2.23)*	0.42 (1.39)	0.60 (1.83)	-0.0255 (-2.22)**	0.57 (3.10)**	-0.03 (-0.84)	0.36 (3.45)**		0.004	0.99	0.99
Sweden	0.22 (1.02)	1.53 (1.30)	-0.29 (-0.41)	-0.0095 (-1.30)	0.44 (2.05)*	0.04 (2.58)*	0.07 (0.95)		0.008	0.99	0.84
United Kingdom	-0.08 (-1.34)	0.94 (5.96)**	-0.83 (-4.93)**	0.0003 (0.20)	0.34 (23.17)**	0.67 (5.56)*	0.20 (6.68)**		0.0095	0.79	0.99
United States	0.26 (4.13)**	1.057 (10.83)**	0.25 (0.47)	-0.0073 (-3.38)**	0.13 (6.05)**	0.62 (4.38)**	0.34 (7.97)**	0.020 (13.64)*	0.0063	0.72	0.97

Source: International Monetary Fund, International Financial Statistics; and staff calculations.

1/ Data in parentheses give the values of the asymptotic normal distribution. One asterisk indicates significance at a 95 percent level, two asterisks significance at a 99 percent level.

2/ Desired split of labor input between changes in working hours and employment.

3/ Constant factor "g" in equation for desired working hours and employment as a share of total desired labor input.

Table 8. Netherlands: Employment and Work-Hour Responses in Manufacturing

(Quarterly data, Q1, 1979 - Q3, 1984)

Country	Constant (a <sub>0</sub> )	Output (a <sub>1</sub> )	Real wages (a <sub>2</sub> )	Time (a <sub>3</sub> )	AHW/E Split <u>2/</u> (b)	Speed of adjustment of:		Scale variable <u>3/</u> (g)	SEE	R-squared	
						Hours worked (c)	Employ- ment (d)			Hours worked	Employ- ment
Belgium	0.40 (10.9)**	1.34 (7.43)**	-1.21 (-5.98)**	-0.0039 (-16.6)**	0.22 (8.98)**	0.74 (5.43)**	0.18 (4.67)**	0.012 (2.73)*	0.005	0.92	0.99
France	-0.08 (-0.08)	-0.46 (-1.58)	-2.40 (-3.93)**	0.0039 (1.59)	0.44 (6.75)**	0.36 (5.04)**	-0.08 (-1.92)	-0.034 (-1.86)	0.003	0.99	0.99
Germany	-0.15 (-0.36)	5.85 (0.94)	-5.69 (-0.86)	0.0016 (0.19)	0.05 (0.99)	0.94 (6.16)**	0.03 (0.86)	0.0051 (1.41)	0.006	0.68	0.99
Japan	-0.31 (-1.62)	-0.13 (-0.75)	-0.89 (.82)	0.0077 (1.65)	0.11 (0.59)	0.29 (1.99)**	0.31 (2.23)*	-0.0026 (-0.46)	0.004	0.53	0.98
Netherlands	0.32 (6.56)**	0.03 (0.53)	-0.63 (-3.34)**	-0.0077 (-6.56)**	-0.14 (-0.80)	-0.14 (-1.82)	0.65 (5.13)**		0.005	0.93	0.99
Sweden	0.24 (3.97)**	0.86 (2.79)**	1.22 (2.00)*	-0.0061 (-4.43)**	-0.09 (-1.50)	0.16 (2.62)*	0.13 (2.91)**		0.003	0.88	0.99
United Kingdom	0.20 (3.63)**	0.99 (7.72)**	-0.55 (-3.20)**	-0.0067 (-5.43)**	0.00 (0.02)	0.15 (1.43)	0.24 (8.71)**		0.005	0.71	0.99
United States	0.21 (2.93)**	0.52 (2.89)**	-0.50 (-2.64)	-0.0051 (-2.94)**	-0.16 (-0.41)	0.13 (1.07)	0.73 (13.83)*		0.006	0.72	0.99

Source: International Monetary Fund, International Financial Statistics; and staff calculations.

1/ Data in parentheses give the values of the asymptotic normal distribution. One asterisk indicates significance at a 95 percent level, two asterisks significance at a 99 percent level.

2/ Desired split of labor input between changes in working hours and employment.

3/ Constant factor "g" in equation for desired working hours and employment as a share of total desired labor input.

