Social Security System Financing: Charges on the net value added and other alternatives in the Netherlands

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Résumé à la p. 121

The Dutch social security system has been developed on an ad hoc basis over the past three decades and is still being modified. There has been a good deal of discussion about improving the system, but the coordination of the programmes has been haphazard. The fast economic growth of the 1960's and the Netherlands' new natural gas wealth made it possible to absorb the cost of the inconsistencies and inefficiencies, but the decline in economic growth during the 1970's and the rise in unemployment have forced a reconsideration of the social security system and in particular, its financing.

Under the present system contributions are calculated on wages; this payroll tax system has recently been subjected to close scrutiny in

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various countries stressing the long run financial viability of it (1). Several different financing systems have been proposed in the literature. General revenue financing, graduation of premium charges according to the total sum of wages per enterprise and charges on the net value-added are the most important possibilities. In this article we shall give more attention to the last alternative because theoretically it avoids the destabilizing macro-economic effects of the present payroll tax better than the other two do. During a recession three mechanisms destabilize the system. First, as employment and real wages are lowered, the payroll tax revenue also declines. Second, the unpromising labour

(1) In the Netherlands a.o.: 


In the United States a.o.: 


In France a.o.: 


In Belgium a.o. 


Maatregelen die een meer harmonieuze verdeling van de R.M.Z.-lasten in verhouding tot de loonlast van de ondernemingen mogelijk maken, Belgisch Tijdschrift voor Sociale Zekerheid, 1976, nr. 5-6, p. 471-551.

MATIELIAN, J., Alternatieve financieringswijzen van de sociale zekerheid, Belgisch Tijdschrift voor Sociale Zekerheid, 1976, nr. 10.
market prompts more workers to leave the labour force and seek social security payments (2). Third, contributions calculated on wages influence employment negatively: the current financing system in the Netherlands distributes the cost unequally among labour intensive and capital intensive firms – the resulting differences in the burden of labour cost in turn are responsible for the diminishing opportunities for employment in certain industries.

This paper will compare the properties and consequences of the payroll tax system in the Netherlands with a hypothetical system in which contributions would be calculated on the basis of value added. We shall also discuss the possibilities and the difficulties of implementing such a system in the Netherlands and compare it with the other alternatives.

The results of the analysis confirm the hypothesis that labour intensive industries bear an unfair burden in the current system.

The following section briefly describes the properties of the social security system in the Netherlands and its consequent distortions. The second section contains an examination of the other possibilities. The method of calculation is largely derived from a study of Deleeck, de Decker and Huybrechs for Belgium (3). The third section discusses the results of the analysis and the last section assesses the feasibility of this financing system and compares it with the others.

I. THE DUTCH SOCIAL SECURITY SYSTEM

The Dutch social security system distinguishes two different kinds of benefits: social insurance benefits and social welfare benefits. The latter are completely financed by the government: their purpose is to guarantee minimum subsistence to all citizens. Assistance is rendered according to need.

Social insurance benefits are financed by contributions imposed on workers and employers or all citizens (depending on the act under

(2) See also MUNNEL, A.H., op. cit.,

consideration): government contributes marginally, though increasingly out of general revenue. Social insurance benefits are divided into two major groups: workers’ insurance acts and general insurance acts. In the first type the working population (or a part of it) benefits, in the second the entire population may benefit (4).

When the workers’ insurance acts were introduced, the levy was (in that era) considered a contribution for insurance as a kind of lifetime compulsory saving; general insurance acts, on the other hand were considered to be a redistributional transfer to people in need. Recent policy shows a strong tendency towards a generalization of all insurance acts i.e. lifetime contribution—benefit linkage considerations are replaced by social adequacy — and redistributional considerations. More and more social security is interpreted as a public good rather than as compulsory saving (2) (6).

The actual financing system for the social insurance in the Netherlands distributes the costs unequally among the firms. The causes of this unequal distribution are threefold:

a. Contributions per firm are based on the total number of people employed.

b. As a result labour intensive and low wage processes are penalised.

Empirical evidence has indicated that there is a strong positive relationship between labour-intensity and low wages (7). The premiums are proportional to the wages up to a maximum ceiling.

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(4) Workers insurance includes: Unemployment Act (WW), Health Insurance Act (ZE), Disability Insurance Act (WAO), Sick Fund Act (ZWF), General insurance includes: General Disability Act (AAW – since 1st Oct. 1976), Specific Health Insurance Act (AWBZ), Old Age Pension Act (AOW), Widow’s Pension Act (AWW), Family Allowance Acts (AKW, KWL and KWZ).

(5) The administration of all workers insurance acts (except ZFW) and of the General Disability Insurance Act (AAW) is executed by “Bedrijfswerkverenigingen (executive bodies governed by the relevant unions and employer organizations); the administration of the general insurance acts is executed by the “Social Insurance Bank” (Sociale Verzekeringen Bank) (AOW, AWW) and by the “Labour Councils” (Raden van Arbeid) (AKW, KWL, KWZ). Contributions for the workers insurance acts by employers only exclude the contributions to AOW and WWW, that are paid by all citizens (aged 15 to 65) who earn an income. (These are general rules; some exceptions in case of self-employed workers exist).


c. The third problem of social insurance tax incidence arises because insurance administration is organised by industry. Workers and firms are divided into 26 industries; there is an executive body for each separate industry, governed by the relevant unions and employers' organizations. These bodies are responsible for the execution of the Health Insurance Act, the Disability Insurance Act and the Unemployment Act and can fix the pertinent premia autonomously. They do so by experience-rating. This system results in differential insurance premia for various industries, e.g. the construction industry rate is a good deal higher than that for banking and insurance (8).

The distribution of the total insurance cost (in the following paragraphs "social insurances" and "social security" are treated as synonyms) among workers and employers is about 45%–55% respectively. It should be noted that the shares differ depending on the law under consideration: this in fact, in combination with the former remarks, complicates the calculation of "workers contributions" to social insurance. We shall discuss this complication in section II.

II. A COMPARISON BETWEEN THE EXISTING SYSTEM AND ONE BASED ON NET VALUE ADDED FINANCING

In the previous section we argued that three causes are responsible for the unequal distribution of the social security costs among firms:
- a system that exacts charges on labour employed;
- the existence of maximum taxable limits;
- difference in tariffs due to experience rating.

In this section we calculate the extent and the direction of skewness in the distribution. This will be done by comparing the outcome of the actual financing system with the outcome of a hypothetical system basing charges upon net value added. Under this system contributions would be calculated yearly as a proportion of the net value-added. This system avoids the distortions in the present because it favors the use of neither capital nor labour, and since premium limits and other tariff-differences are no longer relevant.

A basic assumption in the calculations is that this new financing system will not affect the total expenditures, and hence that total charges

under the present system will equal the charges required in this new system. Because the data are not available at the company level, we (and Deleeck et. al.) \(^\text{(*)}\) confine ourselves to an analysis of differences at the industry level. This means that differences tend to be underestimated because they are calculated as averages.

Deleeck et. al. calculated the hypothetical premium per industry by formula (1):

\[
SZ_i^A = \frac{w_{g_{tot}} + w_{n_{tot}}}{BTW_{tot}} \cdot BTW_i
\]

Where \(SZ_i^A\) = social security contribution of industry i under the net value-added system;

\(w_{g_{tot}}\) = total of employers contributions under the present system;

\(w_{n_{tot}}\) = total of employees contributions under the present system;

\(BTW_{tot}\) = total Gross Value Added;

\(BTW_i\) = Gross Value Added for industry i;

The difference between the present and the net value added system is given by

\[(w_{g_i} + w_{n_i}) - SZ_i^A\]

(2)

where \(w_{g_i}\) = employers contributions in industry i under the present system;

\(w_{n_i}\) = employees contributions in industry i under the present system.

For Belgium data are available on

\[BTW_{tot}, BTW_i, w_{g_{tot}} \text{ and } w_{g_i}\]

\(w_{n_{tot}}\) and \(w_{n_i}\) were calculated as follows:

\[w_{n_{tot}} = w_{g_{tot}} \cdot \frac{b}{a}\]  
(3)

\[w_{n_i} = w_{g_i} \cdot \frac{b}{a}\]  
(4)

\(^{(*)}\) Deleeck, H. et al., \textit{op. cit.}
where \( a = \) estimated premium of the employee (\%); 
\( b = \) estimated premium of the employer (\%).

The exact application of the formula (1) (2) (3) and (4) for the Netherlands was impossible, because the Dutch system is more complicated than the Belgian one. Because of these complications we could not calculate \( w_n \); the employees contributions in industry \( i \) under the present system are not known per industry.

It was also impossible to adopt a similar estimation procedure for \( w_n \) as used by Deleeck et al., since the charges in the Netherlands differ considerably because of tariff-differentiation (see previous section). Our analysis will therefore be confined to the study of the differences in the employers contributions \( (w_g) \) to most of the social insurance acts. (WW, WAO, ZW, ZFW, AWBZ, KWL). Another complication arises because of the fact that National Accounts include pensions-contributions in the total for social security contributions. Pension contributions do not influence the distribution of social security contribution systematically.

In contrast with the Belgian study, we used net value-added at factor cost per industry, instead of the gross value-added at factor cost per industry since “depreciation” must be considered as the value of the capital used up in any given production period. This argument was also recognised by Deleeck et al., but the Belgian data on depreciation were not available per industry. We preferred using the value-added at factor cost instead of the value-added at market prices, because the former includes neither indirect taxes nor subsidies. The contributions based on charges upon the net value-added are calculated by (5):

\[
wgA_i = \frac{w_g \text{tot}}{NVA_{\text{tot}}} \cdot NVA_i
\]  

(5)

where \( wgA_i \) = social security contributions of industry \( i \) under the net value-added system;

\( w_g \text{tot} \) = total contributions under the actual system;

\( NVA_{\text{tot}} \) = total Net Value Added at factor cost;

\( NVA_i \) = Net Value Added at factor cost in industry \( i \).

The data were obtained from the National Accounts 1975 (10).

The *results* of the analysis are summarized in Table 1. The first column shows the net value-added for each industry (in billion guilders); the second column shows the contributions of employers according to the present financing system (wgi); the third column gives the contributions of employers as computed under the hypothetical system – charges on the net value added (wgiA); the fourth column lists the differences between the contributions under the current and the hypothetical system (column 2-3).

Restricting ourselves to these columns, two results are apparent: In the first place an impressive number of industries would contribute less under the hypothetical than under the present system (25 out of the 33 industries). Only Agriculture, Forestry and Fishing, Mineral extraction, Oil and natural gas, State enterprise, Trade (wholesale and retail), Communications industries, Housing property and Culture and recreation would pay more, only three would account for the vast part: 1. Agriculture, forestry and fishery; 2. Oil and natural gas and 3. Housing property.

These remarkable shifts raise the question: which are the determinants responsible for the differences between the contributions of an industry in the current and the value-added financing scheme? We distinguish three factors: 1) the ratio self-employed – employed workers in an industry; 2) the height of the Net Value Added per *man year* (as an indication of the capital intensity) and 3) the height of the current contribution per worker.

**ad 1:** In an industry characterized by a high ratio of self-employed to employed workers, the actual contribution forms only a small part of the net value added. Examples are the industry 1 (Agriculture, forestry and fishery) and 22 (Trade: wholesale and retail). F.e. \( \frac{wg\ 22}{NVA\ 22} = 13.4\% \) against 16% average.

**ad 2:** It is clear that if the current system calculates the contributions on the man years employed, while the alternative system calculates the contributions on the net value added, the differences between the former and the latter increase to the extent that the fraction increases. Column 7 of table 1 gives the differences between the two systems per manyear.

**ad 3:** The last column of table 1 (column 8) gives some rough indication of the actual contribution per manyear, expressed as \( \frac{wgi}{wages} \). Differences in contributions are due to experience rating
### Contributions to social insurance acts under the actual payroll tax system and under a net-value-added-charges system per industry; year 1975

<table>
<thead>
<tr>
<th>Industry Description</th>
<th>(1) Net Value Added $1000,000 NVA</th>
<th>(2) Actual Contr. $1000,000 wgi</th>
<th>(3) Alternative Contr. $1000,000 wgiA</th>
<th>(4) Alternative $32</th>
<th>(5) Alternative corrected contr. $1000,000 wgiA</th>
<th>(6) $52 man/year</th>
<th>(7) $6 Actual contr. wages</th>
</tr>
</thead>
<tbody>
<tr>
<td>agric., forestry, fishery</td>
<td>8564</td>
<td>303</td>
<td>1242</td>
<td>+ 939</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>mining and quarrying</td>
<td>242</td>
<td>31</td>
<td>35</td>
<td>+ 4</td>
<td>38</td>
<td>+ 7</td>
<td>+1750</td>
</tr>
<tr>
<td>food manufacturing</td>
<td>2050</td>
<td>539</td>
<td>297</td>
<td>- 62</td>
<td>323</td>
<td>- 36</td>
<td>-720</td>
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<tr>
<td>other good manufacturing</td>
<td>3937</td>
<td>614</td>
<td>571</td>
<td>- 43</td>
<td>620</td>
<td>+ 6</td>
<td>+70</td>
</tr>
<tr>
<td>beverages, tobacco</td>
<td>1284</td>
<td>192</td>
<td>186</td>
<td>- 6</td>
<td>202</td>
<td>+ 10</td>
<td>+400</td>
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<td>textile</td>
<td>1354</td>
<td>295</td>
<td>196</td>
<td>- 99</td>
<td>213</td>
<td>- 82</td>
<td>-1547</td>
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<tr>
<td>clothing</td>
<td>597</td>
<td>137</td>
<td>87</td>
<td>- 50</td>
<td>94</td>
<td>- 43</td>
<td>-1303</td>
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<td>leather, shoes</td>
<td>242</td>
<td>59</td>
<td>35</td>
<td>- 24</td>
<td>38</td>
<td>- 21</td>
<td>-2333</td>
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<tr>
<td>wood and furniture</td>
<td>1530</td>
<td>274</td>
<td>222</td>
<td>- 52</td>
<td>241</td>
<td>- 33</td>
<td>-647</td>
</tr>
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<td>paper</td>
<td>957</td>
<td>215</td>
<td>139</td>
<td>- 76</td>
<td>151</td>
<td>- 64</td>
<td>-2065</td>
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<td>graphic industry</td>
<td>2840</td>
<td>486</td>
<td>412</td>
<td>- 74</td>
<td>448</td>
<td>- 38</td>
<td>-507</td>
</tr>
<tr>
<td>oil, natural gas</td>
<td>8684</td>
<td>194</td>
<td>1254</td>
<td>+1060</td>
<td>1368</td>
<td>+1174</td>
<td>+83857</td>
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<td>chemical industry</td>
<td>5908</td>
<td>977</td>
<td>857</td>
<td>- 120</td>
<td>931</td>
<td>- 46</td>
<td>-380</td>
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<tr>
<td>manufact. of constr. metals</td>
<td>1625</td>
<td>285</td>
<td>236</td>
<td>- 49</td>
<td>256</td>
<td>- 29</td>
<td>-674</td>
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<tr>
<td>basic metal</td>
<td>1462</td>
<td>340</td>
<td>212</td>
<td>- 128</td>
<td>230</td>
<td>- 110</td>
<td>-2973</td>
</tr>
<tr>
<td>manufact. of metal prod.</td>
<td>7530</td>
<td>1315</td>
<td>1092</td>
<td>- 223</td>
<td>1187</td>
<td>- 128</td>
<td>-587</td>
</tr>
<tr>
<td>electronic industry</td>
<td>4905</td>
<td>990</td>
<td>711</td>
<td>- 279</td>
<td>773</td>
<td>- 217</td>
<td>-1937</td>
</tr>
<tr>
<td>means of transportation</td>
<td>2955</td>
<td>569</td>
<td>429</td>
<td>- 140</td>
<td>466</td>
<td>- 103</td>
<td>-1304</td>
</tr>
<tr>
<td>optical</td>
<td>722</td>
<td>110</td>
<td>105</td>
<td>- 5</td>
<td>114</td>
<td>+ 4</td>
<td>—</td>
</tr>
<tr>
<td>state enterprise</td>
<td>3161</td>
<td>322</td>
<td>458</td>
<td>+ 136</td>
<td>498</td>
<td>+ 176</td>
<td>+3911</td>
</tr>
<tr>
<td>construction</td>
<td>12792</td>
<td>2753</td>
<td>1855</td>
<td>- 898</td>
<td>2016</td>
<td>- 737</td>
<td>-1934</td>
</tr>
<tr>
<td>wholesale and retail trade</td>
<td>21140</td>
<td>2830</td>
<td>3065</td>
<td>+ 235</td>
<td>3334</td>
<td>+ 501</td>
<td>+921</td>
</tr>
<tr>
<td>hotels, cafés, restaurants</td>
<td>1469</td>
<td>220</td>
<td>213</td>
<td>- 7</td>
<td>231</td>
<td>+ 11</td>
<td>+216</td>
</tr>
<tr>
<td>professional services</td>
<td>2242</td>
<td>369</td>
<td>325</td>
<td>- 44</td>
<td>353</td>
<td>- 16</td>
<td>-229</td>
</tr>
<tr>
<td>shipping and aviation</td>
<td>1648</td>
<td>305</td>
<td>239</td>
<td>- 66</td>
<td>260</td>
<td>- 45</td>
<td>-1286</td>
</tr>
<tr>
<td>other transport</td>
<td>6814</td>
<td>1250</td>
<td>988</td>
<td>- 262</td>
<td>1074</td>
<td>+ 176</td>
<td>+983</td>
</tr>
<tr>
<td>communications</td>
<td>3435</td>
<td>471</td>
<td>498</td>
<td>+ 27</td>
<td>541</td>
<td>+ 70</td>
<td>+1029</td>
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<tr>
<td>banking and insurance</td>
<td>8238</td>
<td>1291</td>
<td>1195</td>
<td>- 96</td>
<td>1298</td>
<td>+ 7</td>
<td>+50</td>
</tr>
<tr>
<td>housing property</td>
<td>5441</td>
<td>—</td>
<td>787</td>
<td>+ 787</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>services</td>
<td>5554</td>
<td>808</td>
<td>805</td>
<td>- 3</td>
<td>875</td>
<td>+ 67</td>
<td>+532</td>
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<td>medical services</td>
<td>10080</td>
<td>1517</td>
<td>1462</td>
<td>- 55</td>
<td>1588</td>
<td>+ 71</td>
<td>+316</td>
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<tr>
<td>culture and recreation</td>
<td>1339</td>
<td>166</td>
<td>194</td>
<td>+ 28</td>
<td>211</td>
<td>+ 45</td>
<td>+1552</td>
</tr>
<tr>
<td>other services</td>
<td>6910</td>
<td>1316</td>
<td>1002</td>
<td>- 314</td>
<td>1089</td>
<td>- 227</td>
<td>-707</td>
</tr>
</tbody>
</table>

**Source:** Calculated on basis of National Accounts, Staatsuitgeverij, The Hague, 1977.
and differences in mean wage level per industry (see section 2). The influence of experience rating is very large in the Construction industry for instance.

The calculations of columns 3 and 4 show an important, though inevitable inaccuracy: the total amount of expenditures account only for the wage-earners while the contributions are computed on the basis of all firms and industries, including enterprises with only self-employed workers. To obtain more accurate results, it would be necessary to either add the expenditures for self-employed workers on one side, or exclude the self-employed workers from contributions on the other side; both solutions introduce serious data-problems.

Nevertheless, in order to get an impression of the shifts in contributions that would occur if it would be possible to exclude the self-employed-worker-firms from contributions, we repeated the calculations of the contributions in a system of charges on the value added, omitting the sectors 1 (Agriculture, forestry and fishery) and 29 (Housing property). Sector 29 contains exclusively individuals without employees; the sector is not charged under the current system, and it is unlikely that it would be under another system (although the strict application of a value-added based charge would require that). The Agricultural industry and the like is assumed to contain a large number of self-employed individuals and a small number of wage-earners (compared to the other industries). The same could be said about the Wholesale and Retail Trade (22); we, however, judged it more sensible to include this industry in the analysis, partly because a number of large firms belongs to this industry, and partly to compensate for the exclusion of a number of agricultural, etc. firms with employees. The reader has, anyway, to be careful in interpreting the data for this sector, since the calculations will overestimate the contributions.

Columns 5 and 6 of table 1 give the results of the second analysis; the direction of the shifts is generally the same as that of the first analysis, though the positive differences are less widely distributed. The Oil and natural gas-industry still accounts for about 50% of the positive differences; Trade (Wholesale and retail) would pay £301 million more than under the present system. The following industries would pay considerably more: 26 (Other Transport), 20 (State Enterprise), 27 (Communications Industries), 30 (Services), 31 (Medical Services) and 32 (culture and Recreation); while 2 (Mining and Quarrying), 4 (Other Food Manufacturing Industry), 5 (Beverages and Tobacco products), 11 (Hotels, cafés, restaurants) and 28 (Banking and Insurance) would
contribute marginally more. The value-added financing system would introduce significant lowering of costs for the Construction Industry (21) would favour 6 (Textile), 10 (Paper), 15 (Basic Metal), 16 (Manufacture of metal products), 17 (The electronic Industry), 18 (Manufacture of means of transportation) and 33 (Other Services) in a considerable way. The remaining industries (7. Clothing, 8. Leather, shoes, 9. Wood and furniture, 11. Graphic industry, 13. Chemical Industry, 14. Manufacture of construction metals, 24. Professional services and 25. Shipping and Aviation) would contribute 20 to 50 milion per year less than they do under the current system.

The results obtained for the Netherlands are similar to those of Deleeck et al. for Belgium. The remarkable upward shift of the contribution of the first (Agriculture, forestry and fishing) and the 12th sector (Oil and Natural Gas) conforms to a similar shift in Belgium in sectors a.b.c (Agriculture, Cattle-breeding and Fishing) and sector 8 (Oil refineries). In Belgium, as in the Netherlands, a decrease in contributions can be established for nearly all industrial sectors (except for the pharmaceutical Industry in Belgium and the State Enterprise in the Netherlands). Almost all services account for the complementary increase in contributions in both countries.

At the end of the previous section we discussed the causes responsible for an unequal distribution of the costs of the social security system among the firms. By comparing the actual contributions of industries by a hypothetical contribution under a system of charges on the value added, we tried to calculate the extent of skewness in distribution and to investigate whether the directions of the skewness assumed are confirmed by the empirical evidence.

The extent of the skewness can be said to be serious and systematic enough to justify a reform of the social security system. The results also indicate that labour intensive industries are disproportionately highly charged under the current system compared to the capital intensive industries. Examples can be found in the Construction Industry and the Oil- and Gas Industry. Nor is it very surprising to find that Services (e.g. communications, professional and medical services) tend to pay more under the value-added than under the current system, while the opposite is true for the "old" industrial activities such as the textile, paper, basic metal, leather, clothing, wood and furniture industries. The position of the Construction Industry, the Electronic Industry, and the Basic Metal Manufacturing is also strongly influenced by the quoted experience rating for the Health Insurance Act and the Unemploy-
ment Act. Sector 22 (wholesale and retail trade) still is problematic; the high ratio of self-employed to employed workers clearly has an important disturbing effect. The results for the relative capital intensive Chemical, Shipping, and Aviation Industries can only be explained by an unfavourable economic performance of these sectors in 1975 (see section III), or as an artifact of the industrial classification used (heterogeneity concerning labour intensity).

The system is to be applied at the company-level: the available data, however, do not permit an analysis by company. It is even impossible to calculate a typical example for each type of firm, because the contributions of the workers are only known per occupational group.

Nevertheless, in order to give some insight into the changes at the company-level, we chose two industries – (4) Food manufacturing industry other products and (26) other transport – for which we calculated the contribution of the workers on the basis of the contributions of the employees. In the two industries selected, the premium per worker more or less equals the average for the economy. By doing so, we avoided the problems of diversification of the tariffs between the industries (see section II). Wage levels are also very similar in both industries. Table 2 gives the results of the analysis: column 1 lists the averages for the economy, column 2 and 3 list the results for industry 4 and 26 respectively.

The differences in contribution per man year between the two financing systems (row 4 and 5) are given in row 6; a “typical” employer in the Good manufacturing industry would pay roughly £393, more per man year under the value-added system; a “typical” employer in the Transport industry would pay about £1878, less per man year. One can easily conclude that the application of the value-added financing system implies important shifts at the company level. The calculated results are even underestimated because they compute the averages. One may expect that the differences for “real” employers can be considerably larger, due to the fact that each industry contains firms of different economic performance.

In general we can conclude that the figures in table 1 suggest that the present social security financing interferes with the economy especially with cyclical stability and with a fair distribution of costs. The problem becomes more pressing as we find that a lot of the relatively “overcharged” industries may be considered structurally weak; to the extent that the weakness is caused by an important increase in the real labour
cost, a decrease charges by reforming the financing scheme of social security would improve the economic lot in these industries and so improve the national employment prospects in general. Charges on the value-added is an appropriate system to avoid the disturbances mentioned, since it favors neither capital nor labour (11). Nevertheless, it should not be denied that the choice of a system is in the end a political decision: whether policy-makers would rather stimulate a long term capital-labour substitution or preserve present employment we shall not discuss here. However, we think social security policy is an inappropriate instrument for these targets. In any case, any effect should be set by deliberate and clearly formulated policy rather than as an accidental result of the tax calculation formula.

| TABLE 2 |
|-----------------|-----------------|-----------------|
|                   | Total           | Industry 4      | Industry 26     |
|                  | average         | other food      | other transport |
|                  |                   | industry        | industry        |
|                  | economy         |                  |                 |
| 1. \frac{\text{wages}}{\text{man year}} | 23363           | 27046           | 26268           |
| 2. \frac{\text{wgi}}{\text{wages}}    | 27.5            | 27.0            | 26.6            |
| 3. \frac{\text{wgi}}{\text{man year}} | 6436            | 7139            | 6983            |
| 4. \frac{\text{wgi} + \text{wni}}{\text{man year}} | 13554           | 15034           | 14706           |
| 5. \frac{\text{wgiA} + \text{wniA}}{\text{man year}} | 15427           | 12828           |                 |
| 6. \text{5) - 4): mutation}    | + 393           |                 | - 1878          |


III. THE VIABILITY OF ALTERNATIVE FINANCING SYSTEMS IN THE NETHERLANDS

The financing of the social security system has led to many debates, especially about how it is done and how adequately it is done. In the

(11) See Deleeck, H. et al., op. cit.
discussions different types of taxes have been proposed: the most
important are the payroll tax, general revenue financing (or fiscaliza-
tion), the progressive graduation of premium charges according to the
total sum of wages per enterprise and a levy on the net value added per
enterprise.

So far we emphasized cyclical aspects to illustrate the properties of
the present system, to advocate its reform and to study the consequn-
ences of a value-added tax. In the final sections we shall first explore the
more general arguments against and in favour of the present system.
Subsequently we shall discuss the merits of the net-value-added-
charges system for the Netherlands; when relevant, we shall refer to
other possible systems and compare them with it.

When the first social security acts were introduced, they resembled a
private insurance plan in which individual equity was the leading prin-
ciple. The levy was considered a contribution to insurance and its fair-
ness was judged in the context of the entire social security tax and bene-
fit system. As the system was extended to include different kinds of
settlements for different social groups, including persons not involved
(that is, not yet, or no longer) in the production process, universal and
compulsory protection became the goal, while social adequacy was the
organizing principle. "Social adequacy" is a welfare criterion which
measures benefits not against lifetime contributions but rather against
a standard of living below which society feels no one should fall.

An overall evaluation of the tax system cannot be separated from
one's view of the goals of the social security system. Recent practise in
the Netherlands, especially the new social security laws and the central
government's contributions in the costs of these new laws, is in keeping
with the trend towards the social adequacy and the "social-security-as-
public-good"-philosophy.

In the light of this development a payroll tax system has serious
disadvantages:

a. Payroll violates the social adequacy criterion because it affects only
wages and excludes all income from capital (a source whose impor-
tance increases as income increases) and because it exempts wages
over the maximum. For these reasons a payroll tax is extremely re-
gressive and thus inappropriate for a redistributional policy (12).

(12) See USA: MUNNEL, A.H., op. cit., p. 91. Belgium: DELEECK, H., Sociale Ze-
b. Payroll tax violates the ability-to-pay-criterion because the tax is levied without provisions for the number of dependents.

c. Payroll tax violates the public good principle since the system is managed by several independent organizations, each responsible for a certain type of insurance. The overall system is chaotic for the individual beneficiary and inefficient, uncontrollable and unmanageable for government and parliament. This issue has been strongly emphasized in recent discussions in the Netherlands (13). The economic recession of the 1970's has increased the attention given to it: a growth in the number of beneficiaries has raised the non-active population ratio (all ages, both sexes) from 1 to 6.8 in 1968 to 1 to 3.5 in 1977 (14). Little argument need be added to conclude that this development has serious economic (and in the long run social) consequences: the growth of social security expenditures threatens to overtake economic growth; since the short term impact of volume-manipulations of the number of beneficiaries has to be considered negligible (15), the maintenance of the social security system seems to depend on a more efficient organization.

kerheid en inkomensherverdeling, Economisch en Sociaal Tijdschrift, 29 (1975), nr. 4, (Pre-advis voorgedragen op de jaarlijkse studiedag van de Nederlandse vereniging voor de staathuishoudkunde, 7 december 1974: Sociale zekerheid – Enige kwantitatieve, economisch-theoretische en beleidsmatige beschouwingen over de toekomstige ontwikkeling van de sociale zekerheid.


Bakhoven, A.F. en Ypma, Y.M., Kwantitatieve en instrumentele betekenis van de sociale zekerheid; pre-advis voor de vereniging voor Staathuishoudkunde, Den Haag, 1974, blz. 32.

Nussen, A.M. van, Het stelsel van de sociale verzekeringen in Nederland, Maand- schrift Economie, 1979, nr. 7/8, pp. 321-344 en nr. 9, pp. 379-403.


Special issue of Sociaal Maandblad Arbeid, nov. 1979, 34, nr. 11.

(14) WRR, Wetenschappelijke Raad voor het Regeringsbeleid, Maken wij er werk van, Den Haag, Staatsuitgeverij, 1977.

(15) "... short term impact on the volume of beneficaries has to be considered as negligible ..."
d. Payroll tax affects the production structure, and tends to raise structural unemployment, as shown in the previous sections.

On the other hand, maintaining of the link between benefits and contributions and the defining (implicitly) the social security system as an insurance plan are based on two arguments:

a. Payroll tax has a social advantage since the workers' perception of contributions is more sound when the link between payroll tax contributions and future benefits is preserved. Contributions are interpreted as savings rather than as taxes, hence distortions in labour supply are avoided.

b. Payroll tax has a political advantage because of the assurance that the funds will be available since payroll tax revenues are earmarked for benefits; programmes financed by general revenue tax bear a year to year uncertainty about actual appropriations.

The last argument does not apply to all the possibilities, especially not to value added charges. Moreover one may wonder if it would be impossible to construct a regulation in which the availability of the funds is guaranteed, even under a system of general revenue financing. The first argument in favor of a payroll tax becomes, in our opinion, less apparent when the economy is confronted with an excess supply of labour (or with a long lasting shortage of jobs). The number of beneficiaries is increasing sharply under that condition (this applies not only to the number of beneficiaries of the Unemployment Act, but also to those of the Disability Insurance Act, the Health Insurance Act and the Pension Acts) \(^{(16)}\). Therefore the workers will gradually interpret their contributions not as "private" savings but rather as income transfers to other citizens (in spite of the link between taxes and lifetime benefits).

Among the previously indicated possibilities, general revenue charging is the most obvious and the most efficient if one accepts social

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ACW/AWW (Old-age pension act, Widow's pension act) are assessed by demographic factors. AKW/KWL and KWZ (Family allowance acts) also WW (Unemployment act) is inversely related to economic growth, i.e. a lower growth rate means more unemployed. ZW/ZFW and AWBZ (Sick-fund act, Health insurance act) are only manageable in the long run (also inversely related to growth).

adequacy as the organising principle for the social security system. The introduction of this financing system, however, requires rather radical changes, especially for workers' insurance. Charges on the net value-added are less drastic in this respect since they maintain the immediate production as a levy-basis (and not the incomes out of it as is done in the case of a real fiscalization; therefore it is also incorrect to define this financing scheme as a type of fiscalization) (17).

Social security charges on the net value added has three other advantages; these are particularly important in a period of persistent recession. First the system avoids the inequality in charges that is typical of the existing system: charges on the value added do not favor the use of either capital or labour. Secondly, its introduction would imply a considerable relief for the labour-intensive industries (companies). We therefore may assume a short term positive effect on aggregate employment (under the assumption that the system will be introduced gradually to permit relative capital-intensive industries (companies) to adjust the production process according to the new price-ratio). Thirdly, the financing system can be a valid policy-instrument, especially when a more selective policy is intended. The simplicity of the calculations permit the manipulation of the "social security rate" for certain industries, or types of firms i.e. policy makers may charge different rates to different industries or types of firms. Obviously charge-rate manipulations must be restricted to well defined situations, otherwise the central philosophy of the system would be abandoned.

The value added based financing also has, nevertheless, serious drawbacks. The levy is proportional to the value added and takes on the character of an overhead-cost. Although a valid estimation of the shifts in costs at the company level is very difficult, the examples in section II suggest that a change in the financing system of social security implies important differences in the cost-calculation within separate firms.

The system would also counteract cyclical movements, since lower economic performance in an industry will lead to a lower value-added and a lower value-added in an industry means lower contributions.

DELECK, et al., op. cit., p. 465, note (23).
Figures 1 to 2 demonstrate this consequence. These figures compare the actual share of the social security contributions to the net value-added for each industry, $\frac{wg_{i}}{NVA_{i}}$, with the $\frac{wg_{tot}}{NVA_{tot}}$ for the whole economy, which equals the level that would be uniform for all industries under the hypothetical system (since $wg_{A_i} NVA_{i} \times \frac{wg_{tot}}{NVA_{tot}}$).

A large positive discrepancy measured along the Y-axis between the actual share and the average share indicates that the amount that an industry contribute "too much" relative to its cyclical economic position: an unfavourable cyclical position is reflected by a fall in the net value-added; hence under the actual financing system, this means a rise in the share of the more-or-less fixed social security contributions (*).

The alternative financing system would avoid these pro-cyclical discrepancies in the downward swing since the share of the contributions in the net value-added will be uniform in all industries: a decrease in the net value-added in an industry will result in a decrease in the real social security contribution for that industry. This may be considered a positive property of the value-added based financing system in the downward swing of the cycle; it counteracts, however, also upward cyclical movements and economic growth: a company (industry) with a recovering c.q. growing net value-added will immediately face higher social security charges. As far as the cyclical movements are concerned one may theoretically assume that this consequence is not a very weighty one, since the same company was, in the downward phase, favoured by a decrease in charges; the overall effect may still be preferable to the actual situation in which a company faces the same social security costs throughout the cycle. The hypothetical system immediately adjusts the social security costs to the economic situation while under the present system a lowering of the social security costs can only be realised by a reduction in employment. The overall effects upon macro-economic growth, on the other hand, may be negative. Negative, because (new) fast growing industries/companies will be confronted with a growing social security cost; one cannot exclude the possibility that this type of financing will discourage new investments.

(*) fixed on the short term.
FIGURE 1-2
Current contribution to social security of sector 21 - 23 / 18 - 27 and mean contribution in % of the Net Value-Added 1965-1975.

1971 : No data available.
A final disadvantage to net value-added charges is the considerable institutional reform that would be necessary. Apart from a long transition period that is required (for a change in the social security financing system implies a change in the relative prices of the production factors) (18), the organisation and management of such a system can only be accomplished on a central level; administrative tasks could be delegated to the regional level. The central directory council could be either controlled by the parliament or by the employers and workers in parity. Although the latter construction is the most realistic one, the philosophy of the system (social security is a public good) suggests parliamentary control to be the most logical. The disappearance of the different insurance programs on the financing-side of the system can be combined with a similar simplification on the benefit-side. The administrative simplification would certainly lower the overall costs of the system. Moreover, centralisation and simplification would make the system clearer and improve the management of the system. Vested interests of employers organizations, unions and civil servants, however, render institutional changes very difficult, if not impossible (19).

(18) It is necessary to develop a method in which the contributions can be shifted gradually, both positively and negatively. As the current system only charges labour and the new system is neutral to capital and labour, a transitional system may be found by using weights by which labour and capital would be multiplied, in order to calculate the contributions. In the present system the labour coefficient is 1.0 and the capital coefficient 0.0. One could gradually change these weights until neutrality is reached and the system equals the alternative based on the value-added. Once the system is operating, a yearly adjustment will be necessary in order to calculate the contribution as a share of the net value-added. The procedure may be simplified by computing production trends to calculate provisional charges, which can be corrected ex post facto.

(19) Since the necessity of a simplification of the social security system has already been urged so many times, one may wonder why the actual system seems so persistent. Already in the mid-sixties the government introduced the idea of reforming the social security system. In 1970 the Social Economic Council (SER) assigned to the research agency Berenschot and Bosboom the task of developing proposals for a reform of the system. The “Report of Alternatives” (“alternatieveen report”) formulated in 1972, chose the financing and organization system similar to the one described in this article; the unions and the employer organizations, however, did not agree with the proposed alternative and asked the agency to reformulate the proposition in such a way that the administrative autonomy of the “bedrijfsverenigingen” and the “labour councils” would be guaranteed (the “bedrijfsverenigingen” and the “labour councils” are governed by the unions and the employer organizations, without direct control of the parliament). The new proposal of the research-agency, in fact, guarantees the required autonomy and focuses upon regional co-operation between the existing organizations. This forced retreat in fact brings to attention the most serious obstacle towards a reorganization of the Dutch social security system. Vested interests of employers organization, labour unions and civil servants interfere with the choice of an optimal system.

Serious institutional obstacles of the same type are also met when the introduction of general revenue financing is considered. Employers' organizations, unions and civil servants regard every proposal as an attack on their influence on the present system, even on their very existence (in the case of the civil servants). This is especially true for the financing systems that make centralisation, simplification and parliamentary control desirable. In this respect the remaining possibility – progressive graduation in charges according to the total sum of wages per company – is more realistic, because it doesn't require drastic changes in the organisational framework. This proposal has, in our opinion, undesirable economic and social consequences: under that system firms are stimulated to hire more low-paid unskilled labour. Since technological innovation implies more highly skilled labour, this incentive may delay innovative investment. From a social point of view, one may wonder if it is acceptable to stimulate the hiring of low-paid unskilled labour in a society where educational qualifications constantly rise. Moreover, this system would increase the chances for industrial conflicts, since a rise in wages may cause a disproportional increase in total labour cost.

IV. SUMMARY AND CONCLUSIONS

Designing a new tax system is difficult in the technical sense and requires the resolution of a number of fundamental issues about the nature of the social security program and its related management structure. In this paper we have placed the greatest stress on a financing system that calculates taxes on the net value-added per enterprise. We have discussed the consequences of this system and compared it with the present financing system (payroll tax) and with two other choices (general revenue financing and progressive graduation of premium charges according to the total sum of wages).

A comparison of the contributions per industry under the present system and those under a hypothetical system of charges on the net value-added in section II, clearly demonstrated that:

a. labour-intensive industries are unequally highly charged under the current system relative to capital-intensive industries, and
b. differences due to experience rating and differential tariffs are also responsible for an unequal distribution of the costs among industries.

The comparison also illustrated the benefits of a system that calcula-
tes the contribution on the basis of the net value-added. These benefits bear a particular cyclical character and therefore are highly relevant during recessions. The introduction of the system would bring a considerable relief to labour-intensive industries (companies); hence, a short term positive effect on aggregate employment may be assumed. Manipulation of the charge-rates can also be considered as a valid policy-instrument both for structural and cyclical purposes.

The value-added based financing system has nevertheless serious disadvantages especially related to its uncertain long-term growth effects. Moreover, its introduction would require a considerable institutional reform; a need that is also met when general revenue financing is considered. The system that avoids similar radical reforms (progressive graduation according to the total sum of wages) has, however, undesirable economic and social consequences.

Although, we believe that the ongoing practise in the Netherlands has adopted redistributonal social adequacy considerations in place of the initial insurance-plan-philosophy and that this development has to be translated into financing and management system, consistent with it, it is not yet clear whether general revenue financing or net value-added tax is the most appropriate alternative. The first is self-evident (given social adequacy as an organising principle) and is somewhat more closely associated with other tax practises; the latter is especially appealing from a cyclical point of view but its long term effects are uncertain. Both would require considerable and difficult institutional reforms. The present social security financing system however, has distinct disadvantages in its managerial aspects as well as in its economic consequences.

**RESUME**

Dans cet article nous avons discuté d'un système de financement de la sécurité sociale basé sur une taxation de la valeur ajoutée nette. Nous avons analysé les conséquences d'un tel système et nous les avons comparés avec celles du système courant et avec celles de deux systèmes alternatifs (financement par revenus généraux et cotisations progressives sur la valeur totale des salaires par entreprise).

La comparaison entre les contributions actuelles par branche industrielle et les contributions sous un système de TVA-nette (par. II) a clairement démontré que

a. sous le système courant les industries à haute intensité de travail sont
taxées disproportionnellement vis-à-vis des industries à haute intensité de capital;
b. aussi les divergences de la hauteur des primes sont responsables pour la distribution inégale des coûts parmi les industries.
Notre analyse empirique décrit les désavantages économiques du financement actuel de la sécurité sociale.
Un système basé sur TVA prouverait particulièrement utile en temps de récessions; l'incertitude des effets sur la croissance à long terme et la nécessité d'une réforme fondamentale institutionelle sont les principaux désavantages.