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FEATURES OF THE HIDDEN ECONOMY IN THE NETHERLANDS

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## 1. Introduction

Until the mid-seventies the existence of a hidden economy was not considered a major issue by press, public, politicians or economists. The prevailing opinion was that its magnitude was small and its growth rate was assumed not to exceed that of the formal economy. Until that time hardly any methods existed with which its size could be estimated systematically. In recent years, however, the hidden economy has caught the attention of politicians. It has become a topic in popular publications and a major field of research covered by several disciplines using various theoretical perspectives. A vast body of literature has resulted and the problem is no longer that methods or estimates are not available, but rather how to decide on the theoretical and practical validity of a wide variety of methods and the value of an even greater number of estimates.<sup>1)</sup>

Although many studies now reveal the quantitative relevance of the hidden economy, still only a few give detailed information on its structure: which socio-economic categories are involved, what are the motives and the opportunities and how is hidden income distributed? Surveys offer the opportunity of obtaining such detailed information, but because of the reliance on voluntary replies, they may sometimes have the disadvantage that involvement in the hidden economy is underestimated. However, particularly for categories of hidden activities that are becoming less and less undesirable in the public opinion, surveys may be expected to generate reliable information, provided they use well-designed interview methods and representative samples. The relatively high costs may well be a more important reason for the scarcity of such survey studies than their possible lack of validity. This article presents the results of extensive and rigorous survey research into the black labour market in the Netherlands.

Section 2 will discuss several issues involved in the definition and operationalization of the concept 'hidden economy'. In section 3 various estimates of the size of the hidden economy in the Netherlands are presented and the methods that generated these estimates are discussed. Section 4 gives methodological information about the survey and discusses the limited validity of its results. Section 5 presents survey results on the nature and magnitude of hidden work ('moonlighting'); it also describes several opinions about hidden activities. Section 6 discusses (dis)incentives, opportunities and other characteristics that determine involvement in the black labour market. In section 7 the involvement of several socio-economic groups is compared. It is concluded that the same characteristics that determine success in the formal labour market also explain the size of black labour income and that the majority of those involved already have a formal job. This is in contradiction with theories stating that the black labour market serves as a reservoir for those who become redundant in the formal economy in times of economic recession.

## 2. Definition of the hidden economy

### 2.1 What has to be defined?

Studying the literature on the hidden economy soon makes it evident that there is no uniform conceptual framework covering the subject. A wide variety of terms is used for numerous definitions or less accurate descriptions of the phenomenon. Terms and definitions do not always correspond. Sometimes the same term is used for different concepts and sometimes several terms describe the same concept. Various methods of research have been used to obtain information on one concept or another of the hidden economy. The choice of methodology often determines which part of the hidden economy can be covered. This explains why institutions or researchers interested in a specific definition and a specific coverage of the hidden economy tend to use related methodology. National accounts departments, for example, use discrepancy methods to deduce which part of published national income could be attributed to hidden activities (see MacAfee, Begeer and Van Tuinen). Monetary economists use the transactions approach to estimate which part of total current monetary transactions is not accounted for in official GNP (see Feige, Boeschoten and Fase), while fiscal authorities use tax compliance methods to infer how much income should be, but is not, reported or which part of taxes payable is not collected.

In defining the hidden economy on an operational level, two aspects should be considered. Firstly 'the economy' has to be defined. This requires a decision on the type of elements to be considered and a criterion that selects the relevant elements from all elements considered. Secondly, it has to be determined which of the elements that are relevant for 'the economy' are defined as 'hidden'.

### 2.2 Operationalization of 'the economy'

In order to give a statistical description of the economic process theoretical concepts like production, income and consumption have to be made operational. One might call this the economic accounts dimension of the definition of the hidden economy. 'The economy' can be described in various ways, but we adhere to the description in the (Dutch) system of national accounts. These accounts

aim to give a systematic and complete description of the economic transactions<sup>2)</sup> of all residents. Several subprocesses are distinguished, such as the production of goods and services (the generation of income), the distribution and redistribution of income, consumption and saving, and financial transactions.

Production is a fundamental concept in describing the economy. Once production is defined, other concepts like income, consumption and saving have to fall in behind since they describe different aspects of the same circular flow process. With the determination of the production boundary 'the economy' is defined. From various options for determining the production boundary the (Dutch) national accounts focus on those activities which result in a monetary compensation of the production factors. In accordance with international recommendations some well-defined non-market activities are also included, e.g. agricultural production for own use, own-account production of investment goods and the services of owner-occupied dwellings.

For the purpose of this study only the economic subprocesses of production and income distribution are considered, in so far as they correspond with activities within the given production boundary. Goods and services are produced using the services of factors of production and the input of intermediate goods and services; this generates income. This income is distributed among the factors of production. In the present paper we include this distribution in the term 'process of income distribution'. The national accounts distinguish in this context the compensation of employees from the operating surplus.

### 2.3 Defining 'hidden' activities

All activities which are defined as productive generate income<sup>3)</sup>. This income, together with the corresponding productive activities and value added, is defined as 'hidden' if in the process of income generation or distribution, obligations to register this income are not observed. Only obligations in respect of taxation or the collection of social security premiums and for obtaining social security and welfare benefits are considered. This may be called the statutory dimension in defining the hidden economy. This definition of 'hidden' applies to various forms of evading registration. Therefore a certain quantity of value added may be hidden for one obligation (e.g. registration for income taxes), while other

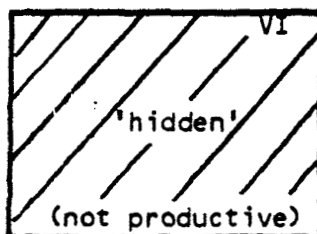
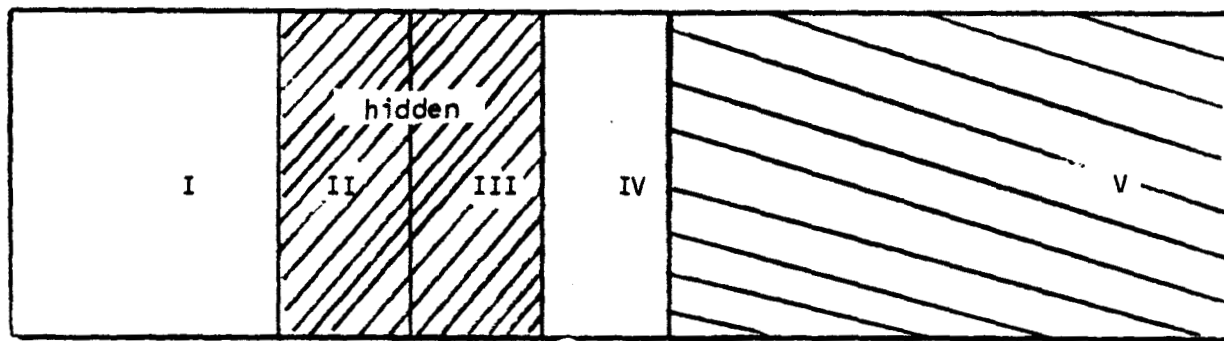
obligations are not evaded (e.g. registration for VAT). As soon as at least one obligation is not observed the income for which it is evaded is 'hidden'.




#### 2.4 Implications of the definition of the hidden economy for specific categories of activities

Our definition of the 'hidden economy' can be described schematically. Subjects undertake activities. According to the criterion of the national accounts these activities are or are not productive. The productive activities generate various transactions (e.g. selling goods or services, paying employees or expenditure of earned income). Only the transactions in the processes of production (the generation of income) and the distribution of income are considered here. Various obligations exist to have these transactions registered (e.g. for taxation or obtaining social benefits) and these obligations are or are not observed. If, for a certain quantity of income (and the corresponding value added), at least one obligation is not observed, this income (and the corresponding value added) is defined as hidden.

Figure 1. Alternative production boundaries and hidden activities

inside present production boundary		outside present production boundary
official	unobserved	parallel
(contributing to officially published National Income)	(incorrectly not contributing to National Income)	(under present definition not contributing to National Income)



-  = Activities that would contribute to National Income under an alternative definition of the production boundary (V)
-  = Activities which are hidden according to our definition (II + III)
-  = Activities which are sometimes, but not here, considered as hidden (VI). Such activities would generally not contribute to National Income under any definition.

N.B. The size of the diagram components does not give an indication of their relative magnitude.



In figure 1 parts II and III cover the hidden economy as we defined it. Part II of this hidden economy is already included in the officially published national product. Part III contains activities which are not registered with respect of taxation and the collection of social security premiums, and which are concurrently omitted from the officially published national product due to intentional misreporting, e.g. underreporting of income or product or overreporting of intermediate inputs. Part IV, however, is omitted because of statistical-technical imperfections. The activities in parts I, II, III and IV are within the present production boundary. The activities in V (services performed within the household, volunteer work and do-it-yourself activities) would only be productive under a broader criterion for defining productive activities, like the third-party criterion<sup>4)</sup>. Part VI contains among others the evasion of taxes on transactions which are not covered by the national accounts (for example land transactions). It also contains criminal activities like theft or extortion, which are illegal in themselves (as opposed to for example income tax evasion where the activity which earns the income is generally legal, but where the obligation to report transactions resulting from the activity is evaded). The activities mentioned are outside the selected production boundary and as a consequence are not covered by our definition of the hidden economy. The reason for this is that the transactions involved are illegally enforced.

Constructions to avoid taxation are sometimes defined as 'hidden'. In using loopholes in tax laws, however, the registration of transactions is not evaded. The essence of tax avoidance is to organize transactions in such a way that tax liability is minimized, while tax laws are not transgressed. Loopholes in tax laws leave room for acting against the intention of the law, without making it necessary to evade registration. Some authors include unwarranted enjoyment of social security and welfare benefits in the 'hidden' activities. These activities are not considered as hidden here because the institutions that pay the benefits usually see to it that the payments are properly registered. Income from other sources, which is hidden in order to become eligible for social benefits is, on the other hand, defined as hidden.

3. The size of the hidden economy

3.1 Estimates of the 'hidden' economy in the Netherlands

Table 1. Estimates of the size of the 'hidden' economy in the Netherlands

Approach	Year	Reference	Coverage*)	% of NMI	Type of study	Institution
1. Time budget study	1980	Bruyn-Hundt (1983)	V	65-115	total income	University
2. Discrepancy method	1977	Van Tuinen (1984)	II	5-10	national accounts	Bureau of Statistics
3. Sensitivity analysis	1979	Broesterhuizen (1983)	III	<6	national accounts	Bureau of Statistics
4. Collage method	1982-1983	ISMO (1985)	II+III+VIpt	5.5-7	government budget	Government Department
5. Transactions method	1980	Boeschoten and Fase (1984)	III+IV	8-22	monetary transactions	Central Bank
6. Unobserved variables	1978	Frey and Pommerehne (1984)	II+III	11	macro-economic	University
7. Impressionistic approach	1981	Heertje (1981)	II+III?	20-30	verbal, journalistic	Private
8. Survey method	1982	Van Eck and Kazemier (1985)	(II+III)pt	>1	labour market	Bureau of Statistics

\*)The roman characters refer to parts of the hidden economy described in figure 1.

Table 1 presents a number of estimates of the size of the 'hidden' economy in the Netherlands. The estimates vary in their coverage of hidden activities in the methodology used and in the time period they refer to. They are hardly comparable because of the different coverage; estimates sometimes even pertain to disjunct sets of activities.

There is a wide variety of sometimes ingenious research methods and imaginative terms; 'collage method' and 'impressionistic approach' even give the idea that we are dealing with a form of art.

Bruyn-Hundt uses time budget data to estimate the magnitude of unpaid services within the household. These informal household activities would be productive under a wider criterion than the one used in the national accounts. Their magnitude is estimated by imputing a monetary value to time spent on relevant activities like domestic work, cooking, cleaning, shopping, child care and do-it-yourself (volunteer activity is excluded in this estimate). Four types of valuation were used: the minimum wage, the average wage, the wage for household help and corresponding market wages for the separate household activities. The valuations were made both with and without employer's contributions to social security. The resulting estimates vary between 65 and 115 percent of national income, which is high compared to estimates for other countries. This might be explained by the inclusion of children from the age of 12, the broad definition of informal activities and the use of valuations which include employers' contributions in the payment of social premiums. The Bruyn-Hundt estimate differs from the other estimates in table 1 because it is primarily concerned with a broader definition of economic activities (the economic accounts dimension) and does not particularly aim to include activities which we defined as hidden (the statutory dimension).

In the discrepancy method, national accounts data on household income are compared with fiscal data (Kazemier, Van der Laan and Van Tuinen, 1984). These two types of data are for the greater part independent, because much of the Dutch national accounts data is obtained directly from producers. The production estimate exceeds the income estimate and the difference may be attributed to income not reported to tax authorities, but included in the national accounts. Van Tuinen (1984) concludes that it is possible that between 5 and 10 percent of income in the national accounts is generated by hidden activities. Kazemier (1984) focused on the interest component of the discrepancy and found that nearly 50% of interest received by households is not reported. In 1981 this amounts to approximately 2 percent of national income.

The sensitivity analysis establishes an upper bound for the underestimation of income in the national accounts. Only underestimation caused by fraud is considered; fraud consists of underreporting of income or product and overreporting of intermediate inputs. Various GDP components are classified according to their susceptibility to fraud. This classification shows that a major part of GDP consists of components that are not likely to have a fraud bias. Subsequently, various fraud percentages are assigned to each of the GDP components. The selected fraud rates range from low to extremely high and are corrected for the fraud already explicitly included in the national accounts. If the fraud rates remain in the range which is still considered as feasible then the underestimation of GDP is less than 5%, and consequently that of national income less than 6%. Begeer and Van Tuinen (1984) infer from the results of the discrepancy method and the sensitivity analysis that the size of the hidden economy in the Netherlands may well be 10-15 percent of national income.

A group of experts from government departments and other institutions (ISMO) combined estimates based on well-defined methods with ad hoc information. The combinations were selected carefully to avoid overlapping and exclusion of parts of the hidden economy. This 'collage method' uses the interest component of the discrepancy method described above, together with tax auditing data on the compliance of the self-employed. In addition, estimates of evasion by wage earners and non-interest evasion by others than the self-employed are included. Estimates of hidden income earned by individuals engaged in the informal production of goods and services and income from criminal activities are also considered. The entire combination yields a 5.5-7 percent 'hidden' economy. The ISMO estimate includes criminal activities like theft, burglary and extortion. These activities are not covered by our definition of the hidden economy.

The Central Bank used several variants of Feige's (1979, 1980) transactions approach. In this approach a constant relationship between GNP and corresponding current monetary transactions (currency and giral) is assumed. For a number of successive years, GNP in the national accounts is compared with monetary transactions estimated with data from financial institutions.<sup>6)</sup> In a selected base year the relationship is assumed to hold exactly and if in other years observed GNP is lower than would be expected from the relationship, the difference is attributed to hidden transactions. In this study by

Boeschoten and Fase, the year with the lowest ratio between monetary transactions and GNP, 1976, was selected as the base year. The variants consider successive exclusions of non-income generation monetary transactions, a 5 instead of a 0 percent 'hidden' economy in the base year, alternative estimates of the giral transactions and alternative assumptions about the velocity of currency turnovers, the average lifetime of currency and the use of currency as the exclusive medium of exchange in the 'hidden' economy. In some additional variants the relationship between real transactions (e.g. industrial sales, trade turnover and wage receipts) and current monetary transactions was taken as a starting point instead of that between GNP and current monetary transactions. The resulting estimates, which vary between 8 and 22 percent of national income, do not only cover transactions which are omitted from observed national income due to their clandestine nature, but also transactions that are omitted due to statistical-technical imprecision. The latter are not contained in our definition of the hidden economy.

In the unobserved variables approach used by Frey and Pommerehne several observable determinants have an effect on the size of the hidden economy. This size cannot be observed directly, but is reflected in various observable indicators. The LISREL estimation procedure<sup>7)</sup> shows that 'the burden of direct taxes', 'the burden of regulation' and 'the tax immorality' have a significant effect on the size of the hidden economy. The male participation rate and the hours worked are important indicators for that size. The growth of GDP is not a very effective indicator. Cross-nation and time-series data were used to arrive at these results. The procedure provides an indication of the relative size of the hidden economy in the various countries, but does not yield estimates of their absolute size. The relative size of the hidden economies in the various countries can be derived from the estimated relationship between the determinants and the unknown hidden economy. To estimate the absolute size of the hidden economy in each country it is necessary to take estimates from a different method as benchmark levels for two of the countries considered. The estimate for the Netherlands is 9.2 percent of GNP (approximately 11 percent of net national income at factor costs). Like the other estimates using this method this result is determined for a large part by the choice of the benchmarks, which are estimates for Sweden and Norway based on currency demand equations estimated by Klovland (1980).

The impressionistic approach does not use one well-defined estimation method; it is based on personal interpretations of the various pieces of available information, including opinions of professional experts and of participants in the hidden economy. Heertje was one of the first economists in the Netherlands who, more than a decade ago, pointed out the importance of the hidden economy. He used information from various sources to get indications for the existence and the effects of hidden activities. In Heertje and Cohen (1980) 10 percent is considered as too low an estimate for the hidden economy. Later Heertje mentioned 20-30 percent of national income in various discussions. Because of the nature of impressionistic estimates it is not quite clear which activities are covered, but it seems likely that coverage of something similar to parts II and III in figure 1 is suggested.

In the survey method a, preferably representative, sample of the population is interviewed about their participation in the hidden economy. Participants are asked about their motives and how and to what extent they are involved. Some surveys focus on the buyers of unregistered services and goods, because these participants of the hidden economy are not evading registration themselves and are less likely to refuse co-operation for that reason or to give biased answers. Other surveys cover both buyers and sellers, which makes it possible to confront estimates of the magnitude of hidden activities from the demand and from the supply side. Our survey was exclusively directed at earners of hidden income. The results of the most successful interview method indicate that a minimum of 1% of national income is hidden due to work on the side. Only part of components II and III in figure 1 is covered. Firstly, the scope of the survey was limited to work-source income and secondly, only very few respondents had extensive hidden incomes. This makes it likely that people who have the hidden economy as their main source of income refused co-operation more than others or gave biased answers. Consequently the survey results mainly pertain to people who earn something extra by working on the side. Numerically they constitute the majority of those who have a hidden income, but probably they earn just a minor part of total income in the hidden economy.

### 3.2 A review of estimation methods

The methods used to describe the hidden economy are classified in direct, indirect and mixed methods<sup>8)</sup>. Time-budget studies, the survey method and tax auditing are examples of direct methods. The discrepancy method, the unobserved variables approach, the transactions method sensitivity analysis and the currency demand method are indirect methods and the collage method and the impressionistic approach are classified as mixed methods. In direct methods the data are collected from participants in the hidden economy and refer directly to the object of research. Because the data are obtained at the micro level, hidden phenomena can be observed in combination with many other variables. Not only can the magnitude and distribution of hidden activities be studied, but some insight in the structure and working of (components of) the hidden economy can also be gained. The concealment of hidden activities is an important cause for errors in direct methods. The bias varies with the type of activity: large scale and other sensitive activities are, for example, more susceptible to underestimation than more commonly accepted involvement like working on the side for a few hours a month. Because of their coverage, time-budget studies will be considerably less affected by this type of bias than surveys on unreported income. The willingness of respondents to report various categories of hidden activities is affected by factors such as the possibility of gaining from underreporting and the effectiveness of the interview design in overcoming the respondent's aversion to report sensitive activities. The filling in of tax forms is an example of a direct survey in which financial benefits and risks are connected to underreporting. The survey presented here is an example of a study in which several interview designs are used in an attempt to overcome the possible aversion of respondents to report on sensitive issues.

In indirect methods, a well-defined model describes how information on hidden activities can be derived from observations on other, 'indirect' variables. Data is presented at some aggregate level, often the macro-level. Indirect methods produce estimates of the magnitude of the hidden economy, they sometimes give some insight in its structure but generally fail to describe how it works. Errors can occur in various ways: (1) the model that describes relationships between hidden activities and the 'indirect' observations may be inadequate, (2) it may be impossible to operationalize model variables, or (3) data for 'indirect' variables may not be available. For some indirect methods, which are theoretically interesting and indeed innovative, both the adequacy of the model and the relevance of the 'indirect' data for the formulated model have been criticized and one might ask whether such indirect methods really

measure what they purport to measure. Mixed methods use both direct and indirect data to describe the hidden economy. The collage method, for example, couples tax auditing data to results from the discrepancy method and the impressionistic approach employs various research findings with information from interviews with participants in the hidden economy. Errors can occur in mixed methods if estimates via constituent methods do not cover the entire hidden economy or if double counting occurs. Errors in the constituent methods also affect the quality of estimates via mixed methods.

We shall give a brief review of some of the criticism on the methods presented in table 1 in terms of the factors that may cause errors as described above. Time-budget studies do not suffer primarily from systematic underreporting of sensitive issues, the main problems are the delimitation of 'productive' activities and the valuation of 'productive' non-market activities. The survey method has a limited coverage a priori, because only work-source income was considered a suitable interview subject. The very limited occurrence of large-scale moonlighters among the respondents, probably due to the sensitive nature of their activities, further reduces the effective coverage. In the accounting model of the discrepancy method it is assumed that differences in definition and other causes for incomparability between the fiscal data and the national accounts figures can be removed or at least kept within bounds. For some components of the discrepancy estimate of the hidden economy, these bounds may be so wide that, for example, the lower bound for the corresponding hidden activities does not exceed zero. The classification of GDP components according to their susceptibility to fraud in the sensitivity analysis has not been a subject of discussion, but the selection of feasible fraud rates for the various components has been criticized. The transactions method assumes a constant relationship between current monetary transactions and GNP. The compression of the production column in the past decades makes it plausible that the relationship has not been constant over time. The quality of data on monetary transactions in general is uncertain and estimates of non-current monetary transactions have been described as tentative even by researchers applying the transactions method. In the unobserved variables approach the distinction between determinants and indicators can be questioned. Why, for example, is the variable which measures the time worked in a formal job classified as an indicator and not as a determinant for involvement in the hidden economy. In some cases the data used for estimation are inadequate given the definition of the model variables. The collage method is probably not complete in its estimation of the hidden economy and some of the constituent estimates have been described as tentative. Estimates via the impressionistic approach depend on the 'sound judgment' of the



researcher. They are made plausible by qualitative arguments but are not based on a well defined method. Verification is not possible because the estimates cannot be reproduced.

#### 4. Survey design

##### 4.1 Survey limitations

The surveys whose results are presented here are limited in scope. Only part of the previously defined hidden economy is covered. While information on work-source income can be obtained with a reasonable chance of success, it was considered too difficult to measure hidden income from other sources systematically. The time spent working for pay may be recollected with some degree of accuracy. For regular black work such time use is part of the daily routine and in the case of temporary work it interferes with it in such a way that it is likely to be remembered. Neither of these effects apply to obtaining e.g. interest income. Saving money and receiving a compensation for it are occasional and primarily administrative events. Not many survey respondents would be able to state on the spot how much interest they received in the past year. Hidden income is also earned through concealed activities of entrepreneurs like off-the-book sales and the padding of expenses. If this income is not used to pay black labour, it can only be measured in a survey by interviewing someone who has sufficient insight into the business accounts. One problem is that not many such persons will be found in a randomly selected sample; more important, however, is the lack of willingness to share information about concealed business activities with an interviewer. It may be expected that entrepreneurs are very reluctant to give this sort of information, for one reason because concealed business activities are condemned more strongly in public opinion than moonlighting.

In interpreting the results of this survey on hidden work-source income, the question rises whether all forms of hidden labour are effectively represented. We distinguish several types of hidden labour<sup>9)</sup> in order to make it easier to answer this question:

- (i) independent black labour involves the informal paid activities by individuals for other individuals. Such activities include hairdressing, domestic service, removals, plumbing, painting and car repair. People involved in autonomous black labour will often have their customers among relatives, friends, neighbours and other acquaintances.

(ii) black labour involving enterprises involves work of individuals for enterprises. This work may be done with or without a formal labour contract. Examples of the first subcategory are unreported overtime or other partial registration of the working time of a formally registered employee. Examples of the second subcategory are home work, recruited labour in construction, peak time assistance in the retail trade or in cafés and restaurants.

We expect to be able to measure the first category better than the second. Independent black labour is widely accepted, not in the least because many people have made use of it in one form or another. Furthermore, one feels safe talking about it because one knows that this type of hidden work is very difficult to trace by the tax office. In an interview people might be willing to report their independent black labour because it mainly involves incidental, non-essential earnings. In addition there is no need to protect an employer (the formal employer is punishable if he does not satisfy employment regulations, whereas the individual user of independent services is not).

Another distinction is the one between limited, occasional extra earnings and extensive, recurrent hidden income. The number of people for which the hidden income from work is so extensive, that it forms the major part of their entire income is probably small in the Netherlands. This can be explained by the high level of 'guaranteed' welfare income and the large number of working hours needed to exceed that 'guaranteed' official income. Workers on the side will be more effectively covered in the survey than full-time moonlighters. Despite the limited coverage of the survey, the information about earners of small incomes will give important insights. Firstly, this group dominates the hidden labour market and can therefore provide important information about it. Secondly, we shall learn which factors make a large number of people transgress the tax law. Some of these factors are also likely to apply to the smaller number of large-scale evaders.

#### 4.2 Methodology and design

In surveys on sensitive topics special attention must be given to the survey and questionnaire design. The tendency to refuse co-operation or to give biased answers makes it difficult to judge the validity of the survey results. Experts in the field of research methodology have stated that many characteristics of the survey method may affect the results<sup>10)</sup>. Such characteristics are, for example, the introduction of the survey, the medium of communication between

researcher and respondent, the selection, phrasing and order of the questions on the sensitive subject, and the perceived anonymity, both towards the interviewer and to the outside world.

Six survey methods were used in a study by the Netherlands Central Bureau of Statistics. For each of three interview mediums (face-to-face, mail and telephone) both a direct approach and a more gradual introduction of the key subject were employed. The gradual face-to-face method yields the highest magnitude of hidden activities. In the measurement of other variables and their relationship with hidden activities, the various methods are by and large comparable. In the middle of 1983 5560 persons of 16 years and over (approximately 900 persons per survey method) were randomly selected from comparable municipalities.<sup>11)</sup> From the 5560 persons selected, 2403 responded adequately. No replacements were used in the case of non-response. The response is low in comparison with most other surveys. The difference can be explained by the sensitivity of the subject. This probably caused moonlighters to refuse participation in the survey more often than people who are not involved in the hidden labour market (selective non-response). It may also be expected that participating moonlighters sometimes denied having any hidden income or reported less than they actually received (underreporting). For these reasons, results on the magnitude of hidden labour income must, even for the most effective survey method, be interpreted as lower bounds.

To check the representativity of the survey respondents, several background characteristics were compared with population data. The comparison showed that the urbanization categories of respondents in particular do not reflect the population situation. This was caused by the selection of a relatively large number of rural municipalities. The prime criterion for the selection of municipalities was the comparability of the various survey methods and for practical reasons small rural communities are overrepresented. Correction for this and for other minor biases can be achieved by weighting procedures. The effect of weighting on the results is small.<sup>12)</sup> For this reason, and to ensure comparability of univariate and unweighted multivariate results, all results presented here are unweighted.

## 5. The hidden labour market; opinions and estimates

### 5.1 Estimates

Based on the most effective survey method, the minimum number of participants in the hidden labour market is estimated at 1.2 million (12% of the population over 16). Together they occupy the equivalent of at least 100,000 full-time jobs and earn over 3000 million guilders (1% of national income). This implies that the average participant earns approximately 2500 guilders per year in roughly one tenth of a full-time job. The figures presented here have a downward bias if selective non-response or underreporting occurred. But the 12% participation estimate will probably be more accurate than the estimate of 3000 million guilders for income from work on-the-side. In the distribution of hidden income, 57 percent of the moonlighters earned less than 1500 guilders per year, 39 percent received between 1500 and 7000 guilders, while only 4 percent had hidden incomes of more than 7000 guilders.

Table 2 describes the type of jobs done in the hidden labour market and presents information about the wages, hours worked and income earned in the various categories.

Table 2. Categories of hidden activities

Activity	No. of persons involved	Average hourly wage	Average hours worked	Average hidden income
		guilders	hours/year	guilders/year
Office jobs	27	29	105	2800
business and fiscal consulting				
music and remedial teaching				
designers, authors and typists				
Blue collar jobs	70	14	130	1450
home maintenance				
repair of cars and consumer durables				
construction work, factory work				
agriculture				
Household work and cleaning	18	10	185	1750
Retail, hotels, restaurants and cafes	19	12	205	2450
Other	40	14	110	1300
personal care, child care				
various				
unknown				

If more than one activity was reported only the activity on which most time was spent is included.

People with technical skills appear to be able to find work relatively easy, while administrative jobs earn higher wages in the hidden labour market. Jobs that do not require specific schooling, like cleaning or household work, earn relatively low wages.

## 5.2 Opinions

Most respondents think that moonlighting is widespread. As possible motives, one third mention the high tax burden, another third refer to 'selfishness', one sixth point to financial problems and the remaining sixth do not know or mention various other motives. People who report participation in the hidden economy respond to this question in almost the same way as respondents who report non-participation. Participants were asked whether there had been more or less work for them in the previous years. Nearly half of them had not noticed any change, a quarter had been asked for jobs more often, while just over a quarter reported a reduction in work. Changing market conditions were attributed to the economic recession. A reduction in job opportunities was said to be caused by consumers rather doing the work themselves, postponing it or putting it off altogether. Increased availability of moonlight jobs was attributed to the behaviour of those consumers who reduce costs by substituting hidden for formal labour. The objective of reducing costs in times of economic recession apparently causes two movements of labour with respect to the hidden labour market. Initially costs are reduced by substituting hidden for official labour: this makes the hidden labour market grow. A further cost reduction can, for some services, be attained by using household or volunteer activities instead of hidden labour. This causes a contraction of the hidden labour market.

Participation in the hidden labour market is not seen as a very serious offence by the respondents in our survey. This can be deduced from answers on questions about the seriousness of ten selected activities. Opinions about the seriousness of moonlighting do not say everything; it is also important to know whether the personal opinion deviates from the perceived attitude of central authority. If too much tension exists, the regulations and laws that should govern people's actions cannot effectively be maintained. Therefore not only the own opinion of respondents was asked, but also their perception of the judicature's judgement. Figure 2 describes the relative seriousness of the various activities by participants and non-participants in the hidden labour market respectively. More serious activities are higher on the scale and downward sloping lines indicate that respondents are more tolerant about a particular activity than they would expect a judge to be. The personal opinion deviates considerably from the perceived judgement of the judiciary for activities such as heroin use and pickpocketing on the one hand and for hidden activities like social fraud and working on the side on the other. Respondents personally condemn heroin consumption and pickpocketing more harshly. This might indicate that they believe that these activities are not effectively

dealt with by the judiciary. For the hidden activities mentioned, respondents are more tolerant than the judiciary is thought to be. Respondents are particularly tolerant about moonlighting: they say it is only marginally more serious than for example cycling without adequate lights (in the Netherlands one must have lights on a bike after dark). This means that hidden work is certainly not automatically repressed by people's opinions.

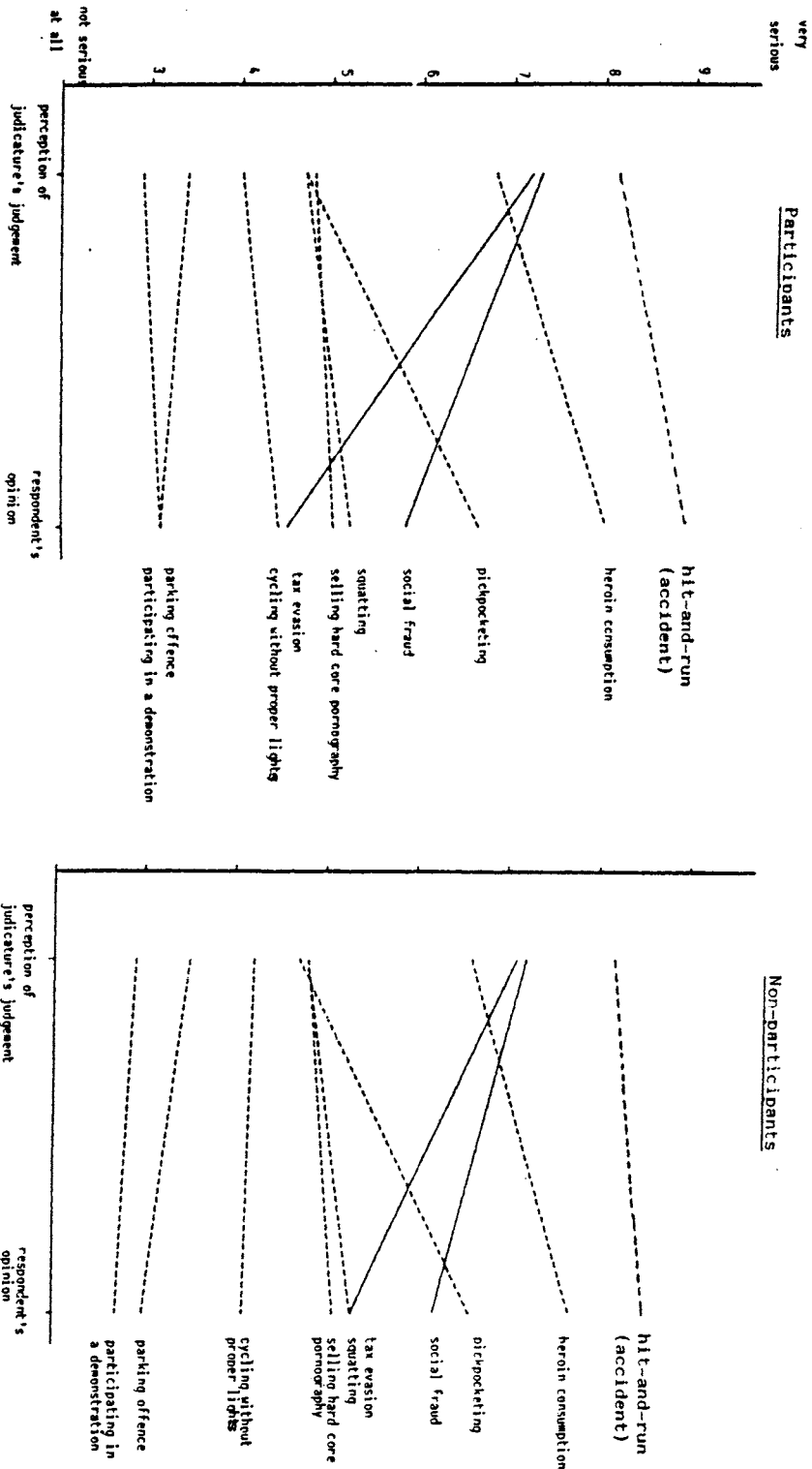


Figure 2. Ranking of ten controversial activities by participants and non-participants in the hidden labour market, 1982/83; unweighted



## 6. Determinants

### 6.1 Economic and psychological factors

In some analyses of tax behaviour, economic factors exclusively determine whether and how much people work 'on the side'. The pursuit of financial gain, motivated by financial problems or mere 'selfishness', may lead to evasion of the payment of taxes or social premiums. In such an economic analysis,<sup>13)</sup> the decision to evade depends on factors like the level of taxes and premiums, the probability of detection, the severeness of sanctions, the attitude towards risk and the availability of more auspicious alternatives to avoid or evade taxes. In some situations tax evasion is not the purpose but a necessary side-effect of another irregular activity. This applies for example if one decides to evade regulations which prohibit the establishment of a business or the employment of certain types of labour. Here, the motives for tax evasion are not exclusively financial and it will be difficult to value the non-financial gains in an economic model of evasion.

From a fiscal-psychological point of view,<sup>14)</sup> not only objective economic motives play a role, but psychological and social incentives and disincentives are involved as well. The tax system and the way in which tax laws are upheld may be considered as unfair. Dissatisfaction with the means or goals of government could make people decide to enter the hidden economy. The psychological and economic points of view can be connected to some extent. Social and psychological factors affect the tax attitude. If this mentality is positive, other determinants are irrelevant, sometimes only up to a certain point (if for example serious financial problems occur). In this view models that compare costs and benefits of tax evasion only apply to people with a negative or flexible tax mentality.

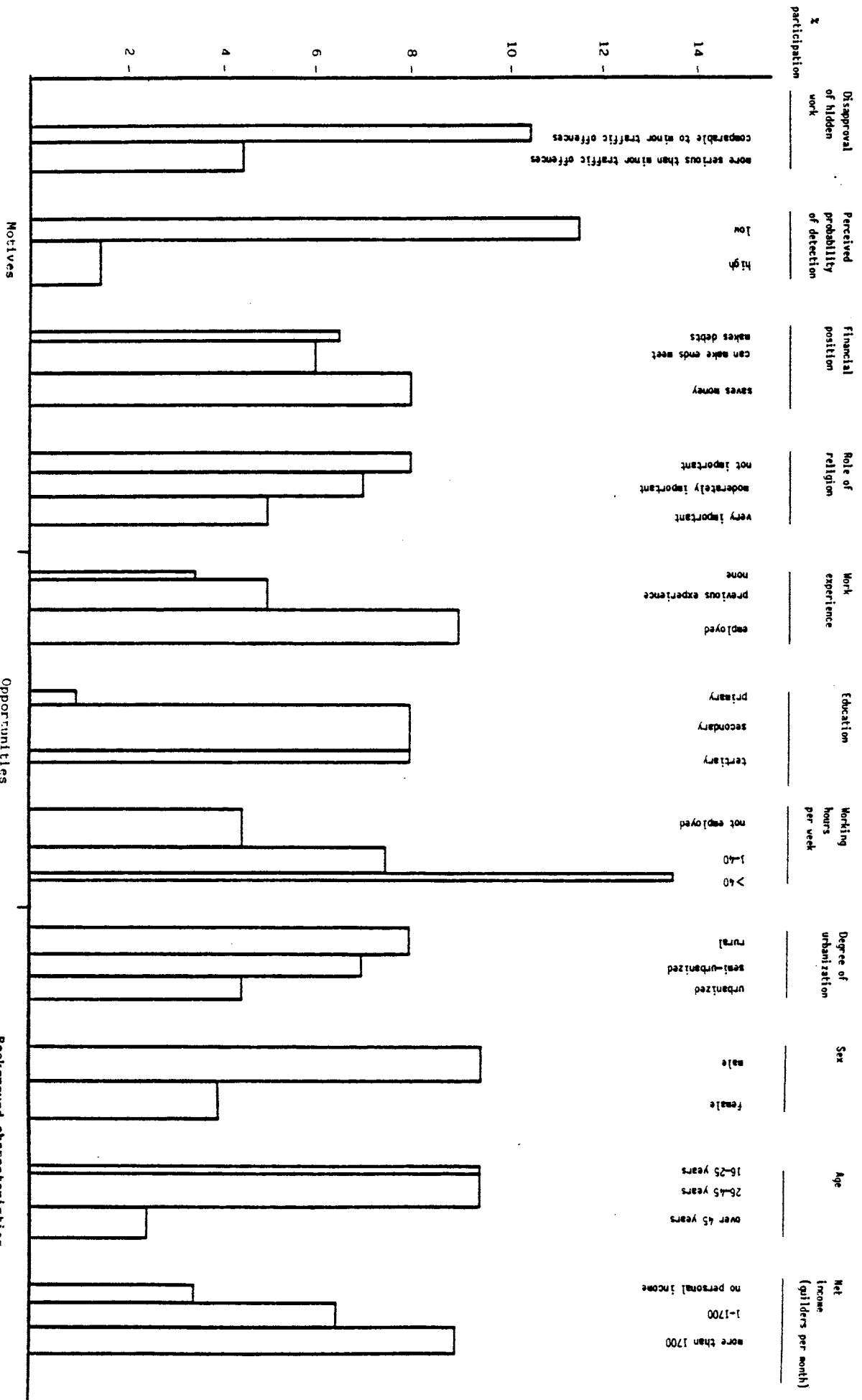
## 6.2 Motives, opportunities and background characteristics: individual effects

Participation in the hidden labour market is governed by two main factors: firstly the willingness to work 'on the side' (does one have incentives or motives), and secondly the possibility of finding work (does one have the opportunities). People must be both willing and able to find a job in the hidden labour market.

In the surveys, financial problems, dissatisfaction with the (tax) burden on marginal income and 'selfishness' are frequently mentioned as motives. In the literature, dissatisfaction with the means and goals of government, the existence of regulations and prohibitions, normative considerations and the wish to have a job are mentioned as motives together with economic variables like the probability of detection, sanctions and the attitude towards risk. The opportunity of finding a job 'on the side' depends on both demand and supply factors. The type of labour offered is an example of a demand factor; the time available for work 'on the side' and the access to it (does one know the right people) are supply factors. Because not all motives and opportunity factors can be adequately operationalized several background characteristics of the respondents are included in the analysis. Characteristics like sex, age and income partly determine opportunities, and to a lesser extent, motives.

To get a more balanced picture of the determinants of working 'on the side' students have been excluded from the data from which the following bivariate relationships are derived. Students form a separate category with a relatively high reported participation rate (more than 20%). This high participation probably has specific causes. Firstly, many students have 'on the side' jobs in their summer vacation, not primarily because they want to evade taxes (no taxes are due if annual income is below a certain level), but rather to remain eligible for maximum financial support during their study or because such temporary work is only offered in the form of informally paid jobs. Secondly, working on the side is probably a more generally accepted phenomenon among students than among other categories. This would make it easier to report such activities in a survey and would therefore result in a relatively low bias due to selective non-response or underreporting.

Figure 3. Participation in the hidden labour market for various categories of respondents, 1982/'83: unweighted, students excluded



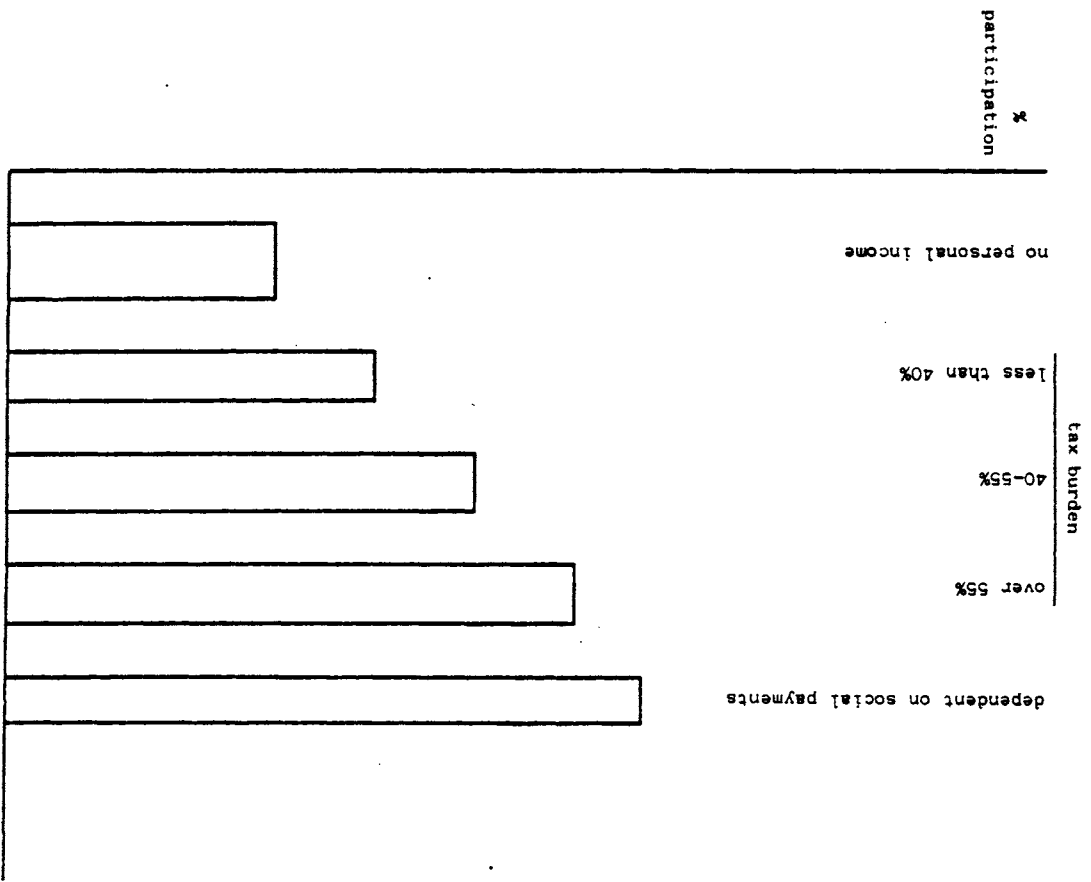
M.B. The width of the columns describes the distribution of respondents over the various categories. With respect to education, for example, the majority of respondents have a secondary education, while approximately equal minorities have primary and tertiary education respectively. The category 'unknown'

Figure 3 presents the participation rates for various categories of respondents. Several motives, opportunity factors and background characteristics are considered. Some of the motives that are frequently mentioned in the literature do not have the expected effect on participation. The perceived fairness of the tax system, for example, does not seem to be a significant factor in 'moonlighting' behaviour. A majority of the Dutch support the present system (they agree with progressive taxation of income, consider the number of expense categories as adequate and do not exclusively mention their income bracket if asked which categories should gain from a tax cut). People who disagree with (aspects of) the tax system do not show significantly higher participation in the hidden labour market. It is remarkable that the theoretically most important variable, the perceived (marginal or average) tax burden, has no effect on participation either. Only the (estimated) actual marginal tax rate has some effect, as will be shown in figure 4. Variables which measure the attitude towards government do not show a significant relationship with working 'on the side'. Disaffection with government spending or with the role of the government as maintainer of economic welfare is not reflected in higher participation rates.

According to the results presented in figure 3, a moderate or bad financial position does not seem to be an incentive for moonlighting. Especially people without financial problems participate. It is not clear to what extent their financial health is gained with hidden income. A high probability of detection is apparently a very strong disincentive for participation; people also report moonlighting less often if religion plays an important role in their lives. A comparison of a hidden activity like working on the side with fairly innocent traffic violations like incorrect parking and cycling without proper lights (see figure 2) gives an indication of the perceived seriousness of such hidden activities. Figure 3 shows that the participation rate is considerably higher when they are not condemned stronger than minor traffic offences.

Figure 4 shows the relationship between the participation rate and the (estimated) burden on marginal income. Generally, a higher income implies a higher burden, but for receivers of social benefits this mechanism does not apply. Much, or even all, of self-earned income is deducted from the social benefit. This makes the burden on marginal income very high for this low income group. Gershuny calls this phenomenon the 'poverty trap'. One of its effects is demonstrated in figure 4: people on social benefits are involved in

Figure 4. Participation in the hidden labour market and the burden on marginal income, 1982/'83; unweighted, students excluded



N.B. See figure 3.

moonlighting more often than any other category (this high participation does however not imply greater benefits, because their wage rate is relatively low). The survey results also showed that one does not have a very accurate picture of his or her tax burden. This explains the different explanatory power of the perceived versus the actual tax burden, but it is puzzling why the actual tax burden affects participation where the perceived tax burden, a key variable in many theoretical explanations, does not.

Work experience and education are opportunity factors which contribute to the quality of labour. They have a significant effect on the possibility to find 'on the side' jobs (see figure 3). It matters however what kind of work experience one has: technical work experience is considerably more beneficial than experience in office jobs. The higher participation rate of people with more regular working hours is unexpected. It can be explained by the interaction with determinants that have a positive effect on participation. People with a long regular working week obviously have recent work experience and they generally have above average education while people with more free time tend to miss the characteristics that give them the chance to use that time for work 'on the side'. If such interactions are taken into account, like for example in the multivariate analyses in the next subsection, the working time or free time does no longer affect participation.

With respect to the background characteristics we see that males, people aged from end twenties till mid forties and people with high personal income who as a group tend to have a strong position in the formal labour market also have a high participation in the hidden economy. As 'second jobbers' they earn high black wages (nearly twenty guilders per hour) and work relatively few hours on the side, which reflects the limited availability of time and the high marginal utility of leisure. Females, people under 26 years of age and the low income brackets are less successful in the formal labour market. They are also in a less favourable position for getting jobs 'on the side'. With the exception of younger people, the participation rate is relatively low. Participants have low black wages (approximately 12 guilders per hour), which are compensated by working more hours. This is possible given the often greater flexibility in the allocation of time.

A greater inclination to do jobs on the side is not the only possible explanation for the higher participation rates of people on the upper end of the scale. It might also reflect a greater willingness to report hidden work in a survey. This is quite a common phenomenon in surveys about sensitive issues, especially for higher educated people.

### 6.3 Motives, opportunities and background characteristics; joint effects

From figure 3 one might conclude that people without a job are, even when they have work experience, less often involved in hidden work than officially employed persons. Such a conclusion seems to contradict the finding in figure 4 that receivers of social benefits have a higher participation rate. The conclusion, however, does not take into account the difference between the two groups in, for example, age and education. If these differences are taken into account, then inactive people with work experience participate more often than comparable active persons. This would follow from a multivariate analysis in which all determinants jointly explain the behaviour with respect to participation in the hidden labour market. For the purpose of explaining joint effects logit analysis was used. The black wages and the time spent on hidden work are explained in regression analyses.

In a logit analysis, the probability  $p$  that a person works 'on the side' is a non-linear function of several of that person's characteristics  $x_i$ . The value of this function is always between 0 and 1:

$$p = [1 + \exp-(a_0 + \sum_{i=1}^n a_i x_i)]^{-1}$$

Most of the  $x_i$ 's are dummy variables; age and income are the only continuous variables.<sup>15)</sup> In a first step of the logit analysis the variables discussed in the previous section were included, but in successive steps variables were excluded if none of their classes contributed to the explanation ( $|t| > 1$ ). Table 3 presents the results of the final step. Estimated coefficients for dummy variables indicate deviations from the reference group. The coefficient of -0.37 in the first row, for example, indicates that people who strongly disapprove of tax evasion tend to work less often 'on the side' than people in the reference group, who are more tolerant of tax evasion. If a person in

Table 3. Participation in the hidden labour market, logit analysis; 1982/83

	type of variable <sup>*)</sup>	estimated coefficient	t-value
<b>MOTIVES</b>			
<u>Disapproval of Tax Evasion</u>			
- relatively strong	d	-0.37	(-1.8 )
- not very strong	R	-----	-----
<u>Poverty trap</u>			
- on social benefit	d	0.94	( 4.1 )
- other	R	-----	-----
<u>Probability of detection</u>			
- high	R	-----	-----
- low	d	0.87	( 5.2 )
<b>OPPORTUNITY VARIABLES</b>			
<u>Work experience</u>			
- none	d	-0.21	(-0.5 )
- in technical jobs	d	0.49	( 1.8 )
- in office jobs	R	-----	-----
- other (including unskilled jobs)	d	0.32	( 1.3 )
<u>Education</u>			
- primary	d	-1.24	(-2.5 )
- secondary, tertiary	R	-----	-----
<b>BACKGROUND CHARACTERISTICS</b>			
<u>Sex</u>			
- male	R	-----	-----
- female	d	-0.55	(-2.6 )
<u>Age</u>			
- years/100	c	5.38	( 1.2 )
- (years/100) squared	c	-10.88	(-2.1 )
<u>Net monthly income</u>			
- guilders/1000	c	0.16	( 1.7 )
<u>Student?</u>			
- yes	d	1.40	( 3.1 )
- no	R	-----	-----
<u>Degree of urbanization</u>			
- rural	d	0.24	( 1.2 )
- semi-urbanized	R	-----	-----
- urbanized	d	-0.22	(-1.0 )
<u>Constant</u>			
		-3.51	(-3.9 )

\*) d = dummy variable, c = continuous variable, R = reference group



the reference group is 30 years of age and earns 2000 guilders per month, there is a 4% probability of participation. If one has a tertiary education and a technical job this probability is 10% (as can be seen by substituting table values in the logit formula). The logit analysis largely confirms the results presented in the previous section. Fear of detection is a disincentive for participation in the hidden labour market, while the high burden on marginal income is a motive for receivers of social benefits. People who associate tax evasion with minor traffic offences tend to participate more often than those who disapprove more strongly. Opportunity factors are important in determining whether one works on the side or not. Well educated males in a technical job have relevant qualities for getting hidden work and they actually seem to get it. Students form a separate category with a high incidence of hidden work.

One question is: who gets involved in the hidden labour market. The results of the logit analysis show who is more and who is less likely to participate. A second question is about the nature of the involvement. How much time does a participant spend working on the side, what are the wage rates and how much income is received. In the first place, a wage equation is estimated. This equation describes the relationship between the reported wage rate in the hidden economy and its determining factors. Next an equation is estimated for the extent of the involvement, measured in hours worked. The two equations can be combined to estimate the hidden income received.

Wage differentials occur in the hidden labour market just as they do in the formal economy. Various, mainly qualitative, analyses of the hidden labour market in the Netherlands describe factors affecting the wage level. Luttikhuisen (1985) mentions for example the type of work, the work experience and the level of training. Sometimes price discrimination occurs because moonlighters ask for more or less depending on their relation with the people for whom they work. Relatives and acquaintances are charged less for the same job than strangers or formal enterprises. The survey results presented in table 4 might demonstrate this differential treatment. But the difference in wages can also be explained by a better remuneration of market-type jobs compared to household-type jobs.

Table 4. Intermediaries for jobs on the side; 1982/83, unweighted, students excluded

	Number of participants	Average wage
Connection with hidden job		
		guilders per hour
employers, colleagues	28	27
family, acquaintances	98	14
unknown	22	15

Moonlighters for which data were incomplete or unreliable are omitted in the estimation of the wage equation. For the 125 remaining observations logarithms are taken for all continuous variables. A stepwise procedure was used to retain only variables with t-values exceeding 1. Results are presented in table 5. Jobs with colleagues or employers as intermediaries have considerably higher wage rates, office jobs earn more than unskilled jobs and the compensation in urban areas is higher than elsewhere. Students and older people receive low wages in the hidden economy. Students seem to be willing to compete with their wage rate for a job, whereas financial gain is often not the prime motive for older people. Older people usually do the work for family or friends and would in many cases do it even without payment. In summarizing the results on the wage rates it is concluded that various factors which affect wage rates in the formal economy, also play a role in the explanation of hidden market wages.

In the formal labour market many people work around 40 hours a week. The investment of time in the hidden labour market is considerably smaller, but shows greater variation. A regression equation is estimated to determine which factors explain these variations. In addition to opportunity variables and background characteristics, the hidden market wage rate is included as an

Table 5. Wages in the hidden labour market, regression analysis; 1982/'83

	type of variable <sup>*)</sup>	estimated coefficient	t-value
<u>Education</u>			
- primary, secondary	R	-----	-----
- tertiary	d	0.18	( 1.4 )
<u>Connection with hidden job</u>			
- employer, colleagues	d	0.48	( 3.7 )
- friends, acquaintances	R	-----	-----
<u>Type of hidden job</u>			
- office jobs	d	0.24	( 1.5 )
- technical jobs	R	-----	-----
- other (including unskilled jobs)	d	-0.26	(-1.6 )
<u>Sex</u>			
- male	R	-----	-----
- female	d	-0.16	(-1.5 )
<u>Age (logarithm)</u>			
	c	0.37	( 1.8 )
<u>Household size</u>			
- 1 person	d	0.20	( 1.3 )
- more persons	R	-----	-----
<u>Student?</u>			
- yes	d	-0.50	(-2.9 )
- no	R	-----	-----
<u>Inactive because of age?</u>			
- older than 65, pensioners and early retirements	d	-1.86	(-3.4 )
- other	R	-----	-----
<u>Degree of urbanization</u>			
- rural, semi-urbanized	R	-----	-----
- urbanized	d	0.29	( 2.7 )
<u>Receiving social benefits?</u>			
- yes	d	-0.20	(-1.5 )
- no	R	-----	-----
<u>Constant</u>			
		1.15	( 1.6 )
<u>R<sup>2</sup></u>		0.46	

\*) d = dummy, c = continuous variable, R = reference group

Table 6. Time spent in the hidden labour market, regression analysis; 1982/'83

	type of variable*)	estimated coefficient	t-value
<u>Hidden wage rate</u> (logarithm)	c	-0.26	(-2.1 )
<u>Sex</u>			
- male	R	-----	-----
- female	d	0.40	( 2.6 )
<u>Household size</u>			
- single person	d	-0.36	(-1.6 )
- more persons	R	-----	-----
<u>Student?</u>			
- yes	d	0.57	( 2.9 )
- no	R	-----	-----
<u>Constant</u>		4.95	(14.6 )
<u>R<sup>2</sup></u>			0.24

explanatory variable.<sup>16)</sup> The number of observations is 110. Compared with the estimation of the wage equation, some observations have been excluded. In these cases the hidden work had a very occasional character with only a marginal investment of time. For this small group of participants different factors are assumed to determine the extent of their involvement. Just as in the estimation of the wage equation, natural logarithms were taken of continuous variables on both sides of the equation and a stepwise procedure was followed. The result of the final regression is presented in table 6. Most conspicuous is the significant negative relationship between hours worked and the wage rate. The marginal utility of leisure time seems to be higher for people with high black wages. People with high black wages tend to work more hours in the formal economy and as a consequence have less time for leisure. They are less inclined to trade their remaining leisure time for working time in the hidden economy.

## 7. Distribution of hidden labour income

In a cyclical theory of the hidden labour market the formal economy uses the hidden labour market as a reservoir. In times of economic recession the people who are redundant in the formal labour market or who do not have access to formal jobs are shunted in informal jobs. In times of economic growth the formal economy recruits people from the hidden labour market. According to this 'buffer theory' one would, in times of economic recession, expect a hidden labour market dominated by people who are in a disadvantageous position with respect to the formal labour market. Hidden jobs would compensate those who are worse off in the formal economy. An attempt is made here to answer the question whether this compensation really exists.

For several socio-economic categories with varying opportunities in the formal labour market, estimates are made of the financial benefits from hidden work. For each category a participation rate is estimated from the logit analysis and the hidden labour income per participant is determined from the regression results on wage rates and hours worked in the hidden labour market. These estimates are combined to calculate the per capita hidden income for each socio-economic category.<sup>17)</sup> In table 7 six main categories are distinguished according to sex, work experience and education. These characteristics are taken to indicate one's opportunities on the formal labour market. Students and pensioners are excluded from the analysis as they have not yet entered or have already left the formal labour market.

The results in the table show that both for men and women the per capita income from moonlighting decreases with diminishing work experience and education. In addition, the income level is consistently lower for women than for men. We shall therefore certainly not conclude that people with limited opportunities in the formal economy are compensated by income from hidden jobs. The results would rather indicate that success in the formal labour market generates opportunities in the hidden economy.

Table 7. Opportunities in the formal labour market and hidden labour income; estimates<sup>\*</sup>)

opportunity characteristics <sup>**)</sup>			number of res- pondents	partici- pation rate	wage rate	hours worked per par- ticipant	per capita hidden income
sex	work experience	education					
+	+ or o	+	700	11 <sup>***)</sup>	17 <sup>***)</sup>	60 <sup>***)</sup>	110 <sup>***)</sup>
+	-	+	135	12	12	55	85
+	+	-	40	3	12	80	30
+	o or -	-					
-	+ or o	+	398	5	12	105	65
-	-	+	432	6	11	95	60
-	+	-					
-	o or -	-	121	1	9	90	5

<sup>\*</sup>) Students and pensioners excluded. Estimates based on the results of the logit and regression analyses.

<sup>\*\*)</sup> sex : + = male; - = female

work experience: + = employed; o = previous work experience;  
- = no work experience

education : + = secondary and higher; - = primary education

Consequently, plus signs indicate better opportunities in the formal labour market.

<sup>\*\*\*)</sup> Participation rates and wage rates are rounded off to integers and hours worked and per capita hidden income to quintuples.

## 8. Summary and conclusions

Alternative concepts of the 'hidden economy' are studied from various points of view. This is one of the reasons for the many different terms and the wide range of estimates. Tax Offices, national accounts statisticians and Departments of Employment, for example, want to know which activities each of them fail to register due to concealment by people involved in these activities. To a certain extent the institutions register common activities, but overall they register different things. They sometimes use incompatible concepts, different coverage or incomparable classifications. Still, estimates of the hidden economy are compared without reference to these differences and invalid conclusions are drawn from individual estimates or studies. In various studies a loose definition of the specific concept of 'the hidden economy' used, contributes to these misinterpretations. Here, a national accounts definition of production and of corresponding income delimits which 'production' or 'income' could possibly be considered. Income is called 'hidden' if it is not registered by the tax office or by the institutions responsible for the payment of social benefits. In addition, the non-registration must have been caused by people who evade a formal obligation to do so.

The empirical results presented here are based on survey research in which several methods were applied in an attempt to overcome some of the problems associated with interviews concerning sensitive issues. Special attention was given to the introduction of the survey, the selection, formulation and ordering of the questions, the degree of directness of the interview and the anonymity of the respondents. For each method a random sample was drawn and together more than 5500 people of 16 years and over were selected of which more than 2400 responded. The survey was directed at the part of hidden income which is a compensation for work. The exclusion of non-labour income has to do with the assumed limited capability of surveys in obtaining information about the hidden economy. Even within the limitation to hidden income from work it is unrealistic to expect that all such income will be measured. The best of the selected survey methods is still susceptible to underreporting and selective non-response. The small category of large-scale moonlighters is underrepresented, but the survey results do bear upon the large remaining group of workers on the side. If one were to assume that the behaviour of both groups is governed by the same factors, the relationships presented here would



receive a more general interpretation. Summarizing, the level of hidden labour income may be underestimated, but the role of determinants of moonlighting behaviour is probably described more accurately.

The level of moonlighting activity can only be described by lower bounds: 10% for the participation rate and 1% of national income for the hidden labour income. Participation in the hidden labour market is determined by incentives like a low probability of detection and a tolerant attitude towards tax evasion, by opportunity factors like experience, particularly in technical jobs, and education and by background characteristics like sex and age. The high tax burden is not as important a motive for working on the side as many theories on the hidden economy suggest.

At one end of the hidden labour market is a category of, often female, participants that receive low hourly wages, but work relatively many hours, often in unskilled jobs. They find their jobs via friends and acquaintances and have few opportunities in the formal economy. At the other end there are the mainly male participants who receive relatively high wages, but have limited time for moonlighting. They find skilled jobs on the side, partly via employers or colleagues, and are also well qualified for formal jobs. This distinction between categories is also reflected in the estimated wage equation in which skilled (office) jobs and jobs found via employers or colleagues pay higher wages, especially if they are done by men. Age and urbanization, in addition, have a positive effect on the black wage rate. Pensioners work for lower wages, probably because financial gain is not their dominant motive for working on the side, and students because they are willing to accept lower pay to get a job. The estimated equation for time spent in the hidden labour market also supports the above distinction in categories. Males and people on higher black wages work fewer hours. In addition, students work more and people from single person households work less.

In studying the distribution of hidden labour income over various socio-economic categories, no support is found for the hypothesis that the hidden labour market compensates those who are in an unfavourable position with respect to the formal labour market. The survey results would give more support to the hypothesis that the hidden labour market is especially beneficial to

people who are already qualified to earn money in the formal economy. This makes it implausible that a pure buffer theory of the hidden labour market applies.

Observations by moonlighting respondents with respect to the development of the hidden labour market over the past years give no indication of an explosive growth. Of the respondents that had seen any change, approximately half had noticed a reduction of jobs on the side and the other half had seen an increase. Given the causes mentioned for the changes, it is concluded that there was an inflow of work from the formal economy, but that an outflow existed at the same time. The latter was caused by substitution of household work for work on the hidden labour market or by postponing jobs or putting them off entirely. In all flows between formal, hidden and household economy the moonlighters saw the reduction of costs as the consumer's prime motive.

## Notes

- 1) See for example Carson (1984)
- 2) Transactions have a wider interpretation in the national accounts than usual. Not only the transfer of goods and services, money and other assets between economic agents is considered, but also economic activities in which no other parties are involved like the consumption of fixed capital, the use of available stocks, etcetera result in transactions. See CBS (1985).
- 3) For the included non-market activities (agricultural production for own use, etcetera) an income is imputed.
- 4) See O. Hawrylyshyn (1977). The criterion states that activities are productive if they may be done with the same results by someone else than the person benefitting therefrom (in other words: if hired labour can achieve the same results).
- 5) Monetary transactions which do not generate income, such as purely financial transactions, current and capital transfers, must be excluded.
- 6) Some non-market activities which are relevant for the determination of GNP are not included in these estimates.
- 7) See K.G. Joereskog, 1969, 'A General Approach to Confirmatory Maximum Likelihood Factor Analysis', Psychometrica 34, pp. 183-202
- 8) A similar distinction between direct and indirect estimation methods is made by Van Eck (1983) for the methods used to describe the official economy in the National accounts. Van Eck also discusses possibilities for distortion in the various methods of measurement.
- 9) Gershuny (1986) and Lambooy and Renooy (1985) make similar but more detailed distinctions.
- 10) See for example S. Sudman and N.M. Bradburn, 1974, Response Effects in Surveys: A Review and Synthesis (Aldine, Chicago).

Notes (continued)

- 11) Additional surveys on the same topic were held in 1984. In these surveys with alternative survey methods, 1408 people responded.
- 12) In Van Eck and Kazemier (1985) such weighted results were presented.
- 13) See for example Allingham and Sandmo (1972)
- 14) See for example Lewis (1982)
- 15) Following Isachsen, Samuelson and Strøm (1985) a quadratic relationship was assumed for age. Here this results in maximum participation at approximately 25 years of age.
- 16) This equation and the wage equation are independently estimated with the ordinary least squares method (OLS). Alternative estimation via two-stage least squares (2SLS) gave very similar results.
- 17) The resulting estimates will have wide statistical margins because the margins in the estimated probability of participation, the estimated wage rate and the hours worked accumulate. Therefore the estimates for hidden income per person must be interpreted cautiously.

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