

## FEATURES OF THE HIDDEN ECONOMY IN THE NETHERLANDS

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This paper presents survey results on the size and structure of the hidden labour market in The Netherlands. According to the results total income from hidden work is at least 1 percent of national income. The hidden income is shared by more than one million participants (nearly 12 percent of the corresponding population). This result is lower than various other estimates of the magnitude of the hidden economy. Some definitional and methodological issues are discussed in order to explain the difference from the other estimates.

The most notable results of the survey refer to the structure of the hidden labour market. At one end of this market are people with a high wage rate, working relatively few hours. They have the characteristics which given them a favourable position in the formal labour market. At the other end are people with low hidden wages, who work more hours. They have difficulty in finding a formal job. The income from hidden labour is distributed in very much the same way as income from formal activities. There is no evidence that the hidden labour market compensates those who are worse off in the formal economy.

### 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 not assumed 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 (see for example Carson, 1984).

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 gradually becoming more acceptable in the public opinion, surveys may be expected to generate reliable information, provided they use

*Note:* The views expressed in this paper are those of the authors and do not necessarily reflect the views of The Netherlands Central Bureau of Statistics. An earlier version of this paper was presented at the Twentieth General Conference of the International Association for Research in Income and Wealth, August 23-29, Rocca di Papa, Italy.

well-designed interview methods and representative samples. The relatively high costs of survey studies, not their possible lack of validity, may well be a more important reason for their scarcity. This article presents the results of extensive and rigorous survey research into the hidden labour market in The Netherlands.

In Section 2 we will discuss several issues involved in the definition and operation of the concept "hidden economy" and we present various estimates of the size of the hidden economy in The Netherlands. Section 3 gives methodological information about the survey and evaluates the limited validity of its results. Section 4 presents survey results on the nature and magnitude of hidden work; it also describes several opinions about hidden activities. The (dis)incentives, opportunities and other characteristics that determine involvement in the hidden labour market are analyzed in Section 5. In Section 6 the involvement of several socio-economic groups is compared. One of the conclusions in Section 7 is, that the same characteristics that determine success in the formal labour market also explain the size of hidden labour income and that the majority of those involved already have a formal job. This is in contradiction to theories that state that the hidden labour market serves as a reservoir for those who become redundant in the formal economy in times of economic recession.

## 2. DEFINITION AND SIZE OF THE HIDDEN ECONOMY

### 2.1. *Definition of the Hidden Economy*

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 (Van Eck, 1983). Various methods of research have been used to obtain information on different concepts 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. Statistical bureaus which produce national accounts, for example, use discrepancy methods to deduce which part of published national income can be attributed to hidden activities (MacAfee, 1980; Begeer and Van Tuinen, 1985). Monetary economists use the transactions approach to estimate which part of total current monetary transactions is not accounted for in official GNP (see Feige, 1979; Boeschoten and Fase, 1984), 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 (ISMO, 1985).

In defining the hidden economy on an operational level, two aspects should be considered. Firstly "the economy" has to be defined, and secondly it has to be determined which of the economic activities are defined as "hidden." For an operational description of the economic process we use the (Dutch) national accounts. The production boundary in these accounts determines which activities are eventually considered to be "economic." Not all transactions covered by the

national accounts are subject of our study. Only the generation and the distribution of income directly resulting from productive activities comprise transactions that are relevant for our study. Incomes which are received, because a part of the income from production is redistributed on other grounds, for example as social payments, are not considered.

Income is the variable for which the distinction between “hidden” and “not hidden” is defined. Income is defined as “hidden” if, for transactions which are a direct result of productive activity, obligations to register this income are not observed. Only obligations in respect to taxation or the collection of social security premiums and for obtaining social security and welfare benefits are considered.

In summary, subjects undertake activities. According to national accounts’ criteria, these activities are or are not productive. Productive activities generate various transactions (e.g. the generation, (re)distribution and spending of income). Only transactions in the processes of production and the resulting distribution of income are considered here. Various obligations exist to have these transactions registered (e.g. for taxation or when obtaining social benefits) and these obligations are or are not observed. If, for a certain amount of income, at least one obligation is not observed, this income is defined as hidden.

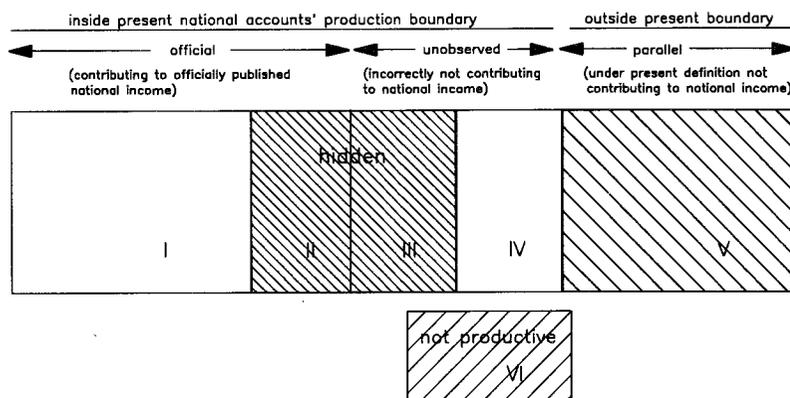


Figure 1. Hidden activities and alternative production boundaries

In Figure 1, parts II and III cover the hidden economy as we defined it.<sup>1</sup> Part II of this hidden economy is already included in the officially published national product. Part III contains activities which are omitted from it due to intentional misreporting, e.g. underreporting of income or product or overreporting of intermediate inputs. Part IV is omitted because of statistical-technical imperfections other than intentional misreporting. The activities in parts I, II, III and IV are within the present production boundary. The activities in V, do-it-yourself work, services performed within the household and volunteer work, would only be productive under a broader criterion for defining productive activities. The third-party criterion (see Hawrylyshyn, 1977) is such a criterion. Part VI contains activities which are sometimes, but not here, considered as

<sup>1</sup>The OECD uses an analogous definition for “concealed employment” (OECD, 1986).

hidden. Such activities would not contribute to national income under any of the criteria mentioned above.

Sometimes constructions to avoid taxation are 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 defined as hidden here because the institutions that pay the benefits usually see to it that the payments are properly registered. Labour income which is hidden in order to remain eligible for social benefits is, on the other hand, defined as hidden.

## 2.2. *The Size of the Hidden Economy in The Netherlands*

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.

Bruyn-Hundt uses *time budget* data to estimate the magnitude of unpaid services within the household. The estimate differs from the other estimates in Table 1 because it is primarily concerned with a broader definition of economic activities and does not particularly aim to include activities which we defined as hidden. In the *discrepany method*, national accounts data on household income are compared with fiscal data, after adjusting for definitional incompatibilities. These two types of data are for the greater part independent, because much of the Dutch national accounts data is obtained directly from production units, not from the tax office. The production estimate exceeds the income estimate and the adjusted difference may be attributed to income not reported to tax authorities, but included in the national accounts. It is not certain how accurate this measurement is for calculating hidden income. This depends on the precision with which the initial definition incompatibilities between the fiscal and the production estimates can be accounted for. In the *sensitivity analysis* by Broesterhuizen 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. There has been some discussion on which fraud rates can be considered feasible for these components. A group of experts from government departments and other institutions (ISMO) combined estimates based on well-defined methods which ad hoc information. The combinations were selected carefully to avoid overlapping and exclusion of parts of the hidden economy. This “*collage method*” uses results on 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

TABLE 1  
ESTIMATES OF THE SIZE OF THE HIDDEN ECONOMY IN THE NETHERLANDS

Method	Estimate (% of NNI)	Year	Coverage <sup>a</sup>	Reference	Type of Institution
1. Time budget study	65-115	1980	V	Bryn-Hundt (1983)	University
2. Discrepancy method	5-10	1977	II	Kazemier c.s. (1984)	Bureau of Statistics
3. Sensitivity analysis	<6	1979	III	Broesterhuizen (1983)	Bureau of Statistics
4. Collage method	5.5-7	1982-1983	II+III+VI <sub>pt</sub>	ISMO (1985)	Government Departments
5. Transactions method	8-22	1980	III+IV	Boeschoten and Fase (1984)	Central Bank
6. Unobserved variables	11	1978	II+III	Frey and Pommerehne (1984)	University
7. Journalistic	>20	1980	II+III	Heertje and Cohen (1980)	Private
8. Survey method	>1	1983	(II+III) <sub>pt</sub>	Van Eck and Kazemier (1985)	Bureau of Statistics

<sup>a</sup>The Roman numerals refer to groups of hidden activities described in Figure 1.

income earned by individuals engaged in the hidden production of goods and services and income from criminal activities are also considered. This “collage method” is probably not complete in its coverage of the hidden economy, while some of its constituent estimates have been described as tentative by the authors. The Central Bank used several variants of the well known *transactions approach* (Feige, 1979). The resulting estimates vary between 8 and 22 percent of national income. This shows how sensitive results from this method are for alternative model assumptions. In the *unobserved variables approach* by Frey and Pommerhne several observable determinants are assumed to have an effect on the size of the hidden economy. This size cannot be observed directly, but is reflected in various observable indicators. Only the relative size of the hidden economy in the various countries can be estimated directly with this method; the absolute size can be estimated if for two countries benchmark levels are taken using estimates from a different method. However, some of the data used for estimation does not fit the defined model variables very well. The *journalistic 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 experts and of participants in the hidden economy. Therefore it depends very much on the “sound judgment” of the researcher. 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. However, surveys can only have limited coverage and are susceptible to selective non-response and underreporting.

### 3. SURVEY DESIGN AND SURVEY LIMITATIONS

#### 3.1. *Survey Limitations*

The surveys from which the 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 probability of success, it was considered too difficult to measure hidden income from other sources systematically. The time spent working for pay may be remembered with some degree of accuracy. For *regular* hidden employment such time use is part of 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 books sales” and “padding of expenses”. If this income is not used to pay hidden 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 hidden work.

In interpreting the results of this survey on hidden work-source income, the question arises whether all forms of hidden labour are effectively represented. We distinguish two main types of hidden labour to facilitate answering this question:

- (i) *independent hidden 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 hidden labour will often have as their customers, relatives, friends, neighbours and other acquaintances.
- (ii) *hidden labour involving enterprises* includes 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 hidden 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 this type of labour, because it mainly involves incidental, non-essential earnings. In addition there is no need to protect an employer (the formal employer is punishable by law 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 many hours of work, which are necessary to exceed that “guaranteed” official income. Workers on the side will be more effectively covered in the survey than people who are full time engaged in hidden work. 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.

### 3.2. *Methodology and Design*

Surveys on sensitive topics require that special attention be given to the survey and questionnaire design. The tendency to refuse cooperation 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 (see for example Sudman and Bradburn, 1974). 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 media (face-to-face, mail and telephone) both a direct approach and a more gradual introduction of the key topic were employed. The gradual face-to-face method yielded 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. Around June 1983, 5,599 persons of 16 years and over (approximately 900 persons per survey method) were randomly selected from comparable municipalities. Of the persons selected 2,403 responded adequately. No replacements were used in the case of initial non-response. The response is low in comparison to surveys on others topics. The difference can be explained by the sensitivity of this specific topic. People who work on the side probably refuse participation in the survey more often than those not involved in the hidden labour market (selective non-response). It may also be expected that respondents who are actually involved in the hidden labour market, sometimes deny having any hidden income, or report less than they actually receive (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 representativeness of the survey respondents, several background characteristics were compared with population data. The comparison showed that the urbanization categories of respondents 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. For the results on the size and type of hidden work (section 4.1 only) weighted data are used. Weighting makes some difference here. For the results which describe the determinants of hidden activities and their relation with those activities, weighting hardly has any effect. These results are therefore based on unweighted data. Complications, especially in the multivariate analyses, can then be avoided.

#### 4. THE HIDDEN LABOUR MARKET; OPINIONS AND ESTIMATES

##### 4.1. *Estimates*

Based on the most effective survey method, the minimum number of participants in the hidden labour market is estimated at approximately 1.2 million (nearly 12 percent of the population of 16 and older). Together they occupy the equivalent of at least 100,000 full-time jobs and earn over 3,000 million guilders<sup>2</sup>

<sup>2</sup>At the time of the survey 1 guilder was approximately 2.7 U.S. dollar.

(1 percent of national income). The average participant earns approximately 2,300 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 percent participation estimate will probably be more accurate than the estimate of 3,000 million guilders for income from hidden work. In the distribution of hidden income, 55 percent of those involved in hidden work earned less than 1,500 guilders per year, 41 percent received between 1,500 and 7,000 guilders, while only 4 percent had hidden incomes of more than 7,000 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. Many jobs require technical skills, but 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.

TABLE 2  
CATEGORIES OF HIDDEN ACTIVITIES: WEIGHTED: STUDENTS INCLUDED

Activity	No. of Persons Involved <sup>a</sup>	Average Hourly Wage	Average Hours Worked	Average Hidden Income
		gld.	hrs./year	gld./year
Office jobs <sup>b</sup>	29	29	105	2,800
Blue collar jobs <sup>c</sup>	67	14	130	1,450
Household work and cleaning	16	10	185	1,750
Retail, hotels, restaurants and cafes	24	12	205	2,450
Other <sup>d</sup>	43	14	110	1,300

<sup>a</sup>If more than one activity was reported only the activity on which most time was spent is included.

<sup>b</sup>Business and fiscal consulting, music and remedial teaching, designers, authors and typists.

<sup>c</sup>Home maintenance, repair of cars and consumer durables, construction work, factory and agricultural work.

<sup>d</sup>Personal care, child care, various and unknown.

#### 4.2. Opinions on the Hidden Labour Market

Most respondents think that hidden employment 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 mention various other motives or do not know. 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 40 percent had not noticed any change, more than 20 percent had been asked for jobs more often, 25 percent reported a reduction in work, while nearly 15 percent did not answer the question. 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 hidden work was attributed to the substitution of previously formal activities by hidden labour. The objective of reducing costs in times of economic recession apparently causes two movements of labour with respect to the hidden labour market. Some people cut expenditure by using hidden instead of formal labour: this makes the hidden labour market grow. Others can, for some services, reduce costs even further 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. Personal opinions about the seriousness of hidden work 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 preception of the judicature's judgement. Figure 2 describes the relative seriousness of the various activities

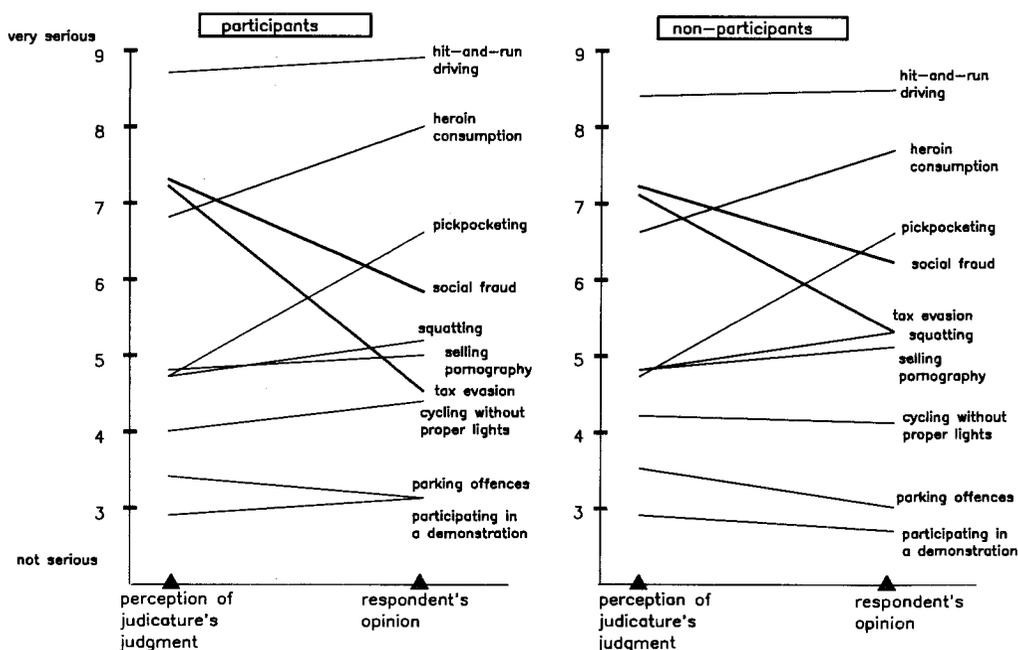


Figure 2. Ranking of ten controversial activities by participants and non-participants; 1982/1983; not weighted

for participants and for non-participants in the hidden labour market. 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 pick-

pocketing on the one hand and for hidden activities like social fraud and concealed employment 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 hidden work: 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.

## 5. DETERMINANTS

### 5.1. *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, 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 (see for example Allingham and Sandmo, 1972). 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, not only objective economic motives play a role, but psychological and social incentives and disincentives are involved as well (see for example Lewis, 1982). 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 attitude is positive, other determinants can, up to a certain point (for example: as long as no serious financial problems occur) be irrelevant. In this view, models that compare costs and benefits of tax evasion only apply to people with a negative or flexible tax mentality.

### 5.2. *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* to find work (does one have the opportunities). People must be both willing and able before they will participate 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*. Other motives, frequently mentioned in the literature, are: dissatisfaction with the means and goals of government, the existence of regulations and prohibitions, normative considerations and the wish to have a job. Economic factors like the probability of detection, sanctions and the attitude towards risk are mentioned as well. The *opportunity* to find 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” is a supply factor. 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. determine opportunities and, to a lesser extent, motives.

To get a more balanced picture of the determinants of hidden work students have been excluded from the data from which the following bivariate relationships have been derived. Students form a separate category with a relatively high reported participation rate (nearly 20 percent). This high participation has specific causes. First, 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 for students 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 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, is such a variable. It is not included in Figure 3, because according to the survey results it is not a significant factor at all. 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. Variables which measure the attitude towards government are also not included in Figure 3 because they fail to show a significant relationship with working “on the side.” For example, 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 to find hidden work. In fact, especially people without financial problems participate. To a limited extent, however, their financial health might have been gained with hidden income. A high probability of detection is apparently a very strong disincentive for participation; people

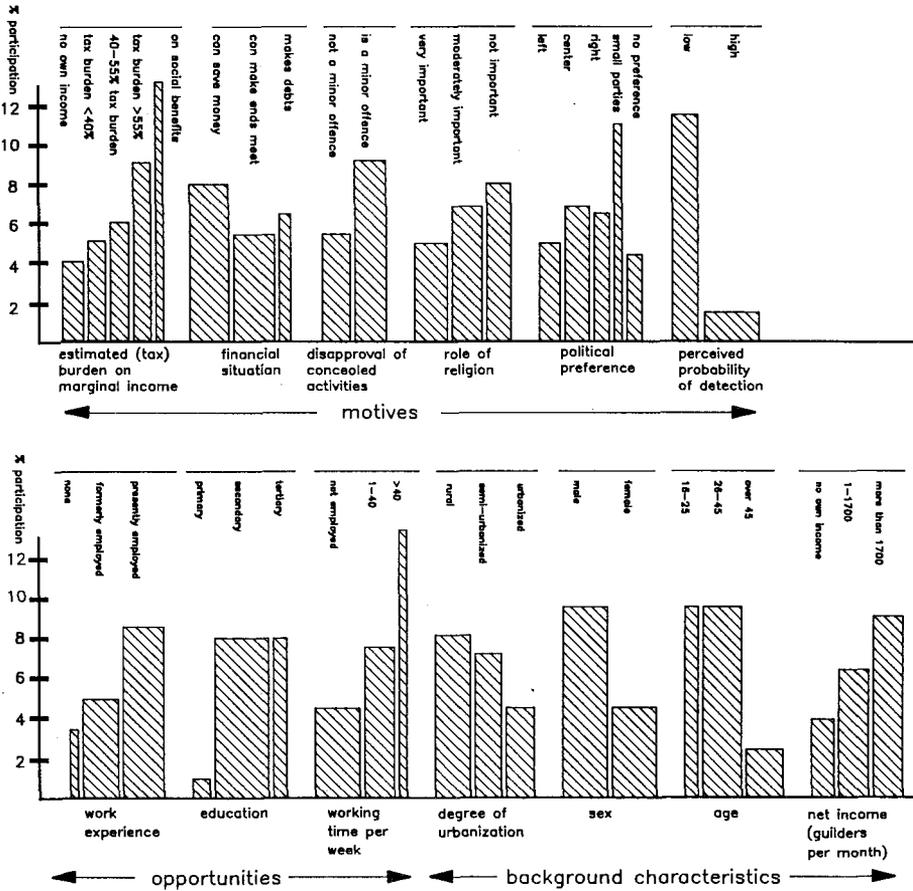


Figure 3. Motives, opportunities and background characteristics for participation in the hidden labour market; students excluded

Note: The column width gives an indication of the number of respondents in each category. With respect to education, for example, the majority has a secondary education, while equal minorities approximately have primary and tertiary education, respectively. The category "unknown" is excluded for all characteristics.

also report hidden employment 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 also Figure 2) gives an indication of the perceived seriousness of such hidden activities. Figure 3 shows that the participation rate is considerably higher when the activities are not more harshly condemned than minor traffic offences. The (tax) burden on marginal income is often considered as one of the main determinants for the explanation of tax evasion behaviour. The survey results indicate the expected positive relationship between the tax burden and participation.<sup>3</sup>

<sup>3</sup>In surveys done one year later, this relationship did not exist for people with an income from sources other than social benefits.

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 (1986) calls this phenomenon the "poverty trap." One of its effects is demonstrated in Figure 3: people on social benefits are involved in hidden work more often than any other category (this high participation does not necessarily imply greater benefits, because their wage rate is relatively low). The survey results also show that most persons do not have a very accurate picture of his or her tax burden. The tax burden as *perceived* by earners of income (other than social benefits) deviates for over half of the respondents by more than 10 percent from the estimated "*actual*" burden.

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. However, the kind of work experience one has makes a difference: technical work experience is considerably more beneficial than experience in office jobs. The higher participation rate of people with longer regular working time is unexpected. It can be explained by the interaction of this variable 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 not to have the characteristics that give them the chance to use that time for hidden work. If such interactions are taken into account, as they are in the multivariate analyses in the next subsection, the working time or available leisure time no longer affect participation.

With respect to the *background characteristics* we see that males, people younger than mid-forty 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 hidden wages (nearly twenty guilders per hour) and work relatively few hours on the side. The latter reflects the limited availability of time and the high marginal utility of leisure. Females, people over 45 years of age and the low income brackets are less successful in the formal labour market. The low participation rates show that they are also in a less favourable position for getting jobs "on the side." Such participants usually have a low hidden wage rate (approximately 12 guilders per hour), which is compensated by working more hours. They have the opportunity to do so, because of the often greater flexibility in their allocation of time.

A greater inclination to do jobs on the side is not the only possible explanation for the higher reported participation of people on the upper end of the scale. This high reported participation may, to a certain extent, reflect a greater willingness to report hidden work in a survey by this group. Especially people with a higher education have proven to be more willing to take part in surveys on difficult or sensitive issues.

### 5.3. *Motives, Opportunities and Background Characteristics; Joint Effects*

From Figure 3 one might conclude that people without a job are less often involved in hidden work than officially employed persons. Such a conclusion

seems to contradict the finding 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, work experience, age and education. If these differences are taken into account, then inactive people with work experience participate more often than comparable active persons and even more often than people on social benefits. 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 on participation logit analysis is used. The hidden 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:

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

Most of the  $x_i$ 's are dummy variables. For "age," the only continuous variable, a quadratic relationship was assumed (Isachsen, Samuelson and Strøm, 1985, did the same). In a first step of the logit analysis all variables discussed in the previous section were included, but in successive steps variables were excluded if none of their classes contributed to the explanation ( $|t| > 1$ ). The results of the final step are presented in Table 3. Estimated coefficients for dummy variables indicate deviations from the reference group. The coefficient of  $-0.42$  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 on average are more tolerant of tax evasion. If a person in the reference group is 30 years of age, there is a 8.5 percent probability of participation. For a 30 year old woman with all other characteristics of the reference group this probability is 4.8 percent and for a student of the same age who thinks that the probability of detection is low and whose other characteristics are those of the reference group, this probability is 43 percent (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 of it 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 are also interested in getting 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

TABLE 3  
PARTICIPATION IN THE HIDDEN LABOUR MARKET, LOGIT ANALYSIS: 1982/1983

	Type of Variable <sup>a</sup>	Estimated Coefficient	t-value
<i>Motives</i>			
Disapproval of tax evasion			
relatively strong	d	-0.42	(-1.9)
not very strong	d	0.16	(0.9)
unknown	R	—	—
Poverty trap			
on social benefit	d	1.0	(4.1)
other	R	—	—
Probability of detection			
high	R	—	—
low	d	0.89	(5.3)
<i>Opportunity Variables</i>			
Work experience			
none	d	-0.50	(-1.3)
in technical jobs	d	0.30	(1.5)
other	R	—	—
Education			
primary	d	-1.4	(-2.7)
secondary, tertiary	R	—	—
<i>Background Characteristics</i>			
Sex			
male	R	—	—
female	d	-0.62	(-3.3)
Age			
years/100	c	5.7	(1.3)
(year/100) squared	c	-10.9	(-2.1)
Student?			
yes	d	1.2	(2.8)
no	R	—	—
Constant		-3.1	(-3.6)
chi-square	175	(11 degrees of freedom)	
n	2403		

<sup>a</sup>d = dummy variable, c = continuous variable, R = reference group.

involvement, measured in hours worked. The two equations can be combined to estimate the hidden income received.

Wage differentials exist in the hidden labour market just as they do with formal employment. Various, mainly qualitative, analyses of the hidden labour market in The Netherlands describe factors affecting the wage level. Luttikhuizen (1985) mentions the type of work, the work experience, the type of connections for getting jobs and the level of training. Sometimes price discrimination occurs because the price that participants ask depends more or less 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. However, the difference in wages might also be explained by better remuneration of market-type jobs compared to household-type jobs.

TABLE 4  
INTERMEDIARIES FOR JOBS ON THE SIDE: 1982/1983, UNWEIGHTED,  
STUDENTS EXCLUDED

Connection for Finding Hidden Work	Number of Participants	Average Wages (Guilders per Hour)
Employers, colleagues	28	27
Family, acquaintances	98	14
Unknown	22	15

Participants in the hidden labour market for which data were incomplete or unreliable are omitted in the estimation of the wage equation. For the 126 remaining observations logarithms are taken for the dependent variable, while age is again specified quadratically. A stepwise procedure was used to retain only variables with *t*-values exceeding 1. The final results are:

$$\ln(p_{hi}) = 0.74 + 0.47*d_{prof} + 0.24*d_{educ} - 0.22*d_{stud} - 0.16*d_{sex} \\ (t =) \quad (1.4) \quad (3.7) \quad (2.2) \quad (-1.2) \quad (-1.4) \\ + 0.24*d_{inc} + 0.30*d_{urb} + 8.1*age - 9.5*age^2 \\ (2.0) \quad (2.8) \quad (2.9) \quad (-2.8) \\ R^2 = 0.43 \quad n = 126.$$

Where

- $\ln(p_{hi})$  = the natural logarithm of the wage rate for hidden work (guilders per hour)
- $d_{prof}$  = 1: for jobs via employers or colleagues  
0: for jobs via family of acquaintances
- $d_{educ}$  = 1: for people with a tertiary education  
0: for people with less than a tertiary education
- $d_{stud}$  = 1: for students  
0: for non-students
- $d_{sex}$  = 1: for females  
0: for males
- $d_{inc}$  = 1: for people with a net income of over 1700 guilders per month  
0: for people with lower incomes
- $d_{urb}$  = 1: for people living in urban areas  
0: for people from non-urban areas
- age = age/100, a continuous variable

Jobs with colleagues or employers as intermediaries have wage rates which are more than one and a half times as high as jobs obtained via family or acquaintances. A high education and a high formal income go together with a relatively high hidden wage rate. The compensation in urban areas is better than elsewhere. The remuneration increases with age till approximately 40 and decreases from

then on. Students and older people receive low wages in the hidden economy. Students seem willing to compete for a job with their wage rate, 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 wages.

In the formal labour market many people work approximately 40 hours each 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 logarithm of) the hidden market wage rate is included as an explanatory variable.<sup>4</sup> The number of observations is 112. Compared with the estimation of the wage equation, some observations have been excluded. In these cases the hidden work had an occasional character with an only 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 the dependent variable and a stepwise procedure was followed.

$$\ln(t_{hi}) = 4.9 - 0.20 \cdot \ln(p_{hi}) - 0.21 \cdot d_{single} + 0.37 \cdot d_{sex} + 0.52 \cdot d_{stud} - 0.25 \cdot d_{desk}$$

$$(t = ) \quad (13.6) \quad (-1.5) \quad (-0.9) \quad (2.3) \quad (2.5) \quad (-1.1)$$

$$R^2 = 0.20 \quad n = 112.$$

Where

$\ln(t_{hi})$  = the natural logarithm of time spent on hidden work  
(hours per year)

$\ln(p_{hi})$  = the natural logarithm of the wage rate for  
hidden work (guilders per hour)

$d_{single}$  = 1: for people from single person households  
0: for people from larger households

$d_{sex}$  = 1: for females  
0: for males

$d_{stud}$  = 1: for students  
0: for non-students

$d_{desk}$  = 1: for white collar hidden jobs  
0: for other hidden jobs

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 hidden wages. They 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.

<sup>4</sup>The equations for the hidden wage rate and the hours worked presented here are independently estimated with the ordinary least-squares method. Simultaneous estimation via two stage least squares gives very similar results.



are distinguished according to sex, work experience and education. These characteristics are taken to indicate one's opportunities in 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 hidden work 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* make the general conclusion that people with limited opportunities in the formal economy are compensated by income from hidden jobs. However, people who do not have a formal job, but who have work experience and at least a secondary education seem to get some compensation from the hidden labour market. Not many men with good opportunities (category 1) are not presently employed. But this small group has a 20 percent participation in the hidden labour market, although their per capita hidden income is about the same as that of men with a formal job. Over half of the women with secondary education and with work experience (category 4) is not presently employed. They use their time and capacities to earn nearly twice as much with hidden work as women with a formal job.

The overall results indicate that success in the formal labour market generates opportunities in the hidden economy. This corresponds to one of the conclusions of a study by the OECD (1986), which states the inequalities of formal employment are often carried over into concealed employment. Structural rather than cyclical phenomena may explain the participation in the hidden labour market (see also O'Higgins, 1985).

## 7. CONCLUSIONS

After a period of intensive research in the hidden economy, it is still difficult to come to terms on any definition of the subject. We define the "hidden economy" within the framework of national accounts. There we confine ourselves to income which is generated as a direct consequence of productive activities. This income is defined as "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 explicitly evade a formal obligation to have their income recorded.

In The Netherlands, and not only there, many estimates have been made for alternative definitions of the hidden economy, using different estimation methods. These estimates vary considerably, but the survey method yields the lowest estimate. This has to do with the limited scope of the survey research: only hidden income from labour is measured. Income earned in the hidden labour market constitutes only a (minor) part of total income earned in the hidden economy. By using the survey method one must accept its limited scope: research must be directed at the hidden labour market. But one can do more than only estimate the size of the hidden labour market: surveys are a very useful instrument to obtain information on its structure. The survey method makes it possible to discover which factors determine whether, and to what extent people participate in the hidden labour market. The empirical results presented in this paper are

based on research in which several survey methods were applied in an attempt to overcome some of the problems associated with interviews on sensitive topics. Special attention was given to the introduction of the interview, the selection, formulation and ordering of the questions, the degree of directness during the interview and the anonymity of the respondents.

The size of the hidden labour market can only be described by lower bounds: nearly 12 per cent for the participation rate and 1 percent 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 education and experience, particularly in technical jobs, and by *background characteristics* like sex and age. From the multivariate results one might conclude that a 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 "job searchers": often female participants, receiving low hourly wages, but working relatively many hours. They tend to get unskilled jobs, which are found via friends and acquaintances and they have limited opportunities in the formal economy. At the other end are the "second jobbers": predominantly male participants who receive relatively high hidden wages, but have limited time for work on the side. They find skilled jobs in the hidden labour market, partly via employers or colleagues. In the formal economy they are also well qualified to find work. This distinction between categories is also reflected in the estimated wage equation in which jobs found via employers or colleagues pay higher wages, especially if they are done by well-educated men. Income and urbanization, in addition, have a positive effect on the hidden wage rate. Age is quadratically related with the wage rate: the highest wages are earned at approximately 40. Pensioners work for lower wages, probably because financial gain is not their dominant motive for working on the side, and students are willing to compete with their wage rate if that is necessary 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 with higher hidden wages and in administrative hidden jobs 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 participants 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, just over half had noticed a reduction of jobs on the side and nearly half had seen an increase. Given the causes mentioned for the changing market situation, 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 consumers doing the work themselves, postponing

jobs or putting them off entirely, instead of using hidden labour. In all, flows between the formal, hidden and household economies, the participants in the hidden labour market saw the reduction of costs as the consumer's prime motive.

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