

SEMINAR ON UNDECLARED WORK 2003

*"The shadow economy in Germany, Great Britain and
Scandinavia"*

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- 1. Paper for presentation**
- 2. Presentation**

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- **Background**

When writing the book *The Shadow Economy in Western Europe. Measurement and Results* (Study no. 5 from The Rockwool Foundation Research Unit) in 1997/98 - trying to compare the size of the shadow economy in different Western countries - I soon realised how difficult it was to compare since people use different measurement methods and also different definitions.

Almost at the same time, the Swedish National Audit Office contacted us at the Rockwool Foundation Research Unit in order to use our questionnaire method to measure the size of the shadow economy in Sweden.

I succeeded in getting funds from The Rockwool Foundation to use the same questionnaires in Norway, Germany, and Great Britain.

- **Terms used**

As you all know, there are a lot of different definitions and words used to cover “Undeclared work” as the EU calls it or the “NON-observed Economy” as the OECD calls it.

In our research we have used the term “black economy”, since we are using questionnaires to the general public. In Denmark, Norway, and Sweden the general public is familiar with the words “sort arbejde”. In Germany it is called “Schwarzarbeit”. I am not quite sure of what is the most commonly understood name for it in English.

In our research, we define the black economy as totally legal activities where both the seller and buyer are aware of the activity not being declared, so both parties have an advantage and they “so too speak” share the tax and VAT saved.

When starting our survey in Germany, I realised that there is a “Law against Schwarzarbeit” but I also soon realised that it covers more than just the TAX EVASION aspect which I am interested in. Under “The Law against Schwarzarbeit” it is forbidden to carry out work or services of any great extent without first informing the relevant authorities.

We do not cover “simple” tax evasion where only the one part – the doer – knows about the activity not being declared.

Neither do we cover social fraud or tax evasion in the form of declaring too large deductions so - along with OECD - we are within the PRODUCTION BOUNDARY in the National Accounts.

- **The Results**

We have, as I mentioned collected data through questionnaires using the same formulation of the questions in all the countries but of course adapted to the legislation of the respective countries.

There is a difference between the countries regarding what is taxable and what is not, especially when it comes to activities where there is no money involved but where it is barter or payment in kind.

We conducted almost 1,900 interviews in Denmark and almost 6,400 in Germany through representative surveys in each country. We used the National Statistical Offices' interviewer corps except from in Germany where we used Infratest Sozialforschung in Munich which, by the way, is the most competent interviewer company I have ever worked with. They are really professionals.

Response rates were pretty good with 64% of the gross sample in Denmark as the lowest and almost 73% in Sweden as the highest.

Figure 1 shows – at least to my knowledge - for the first time comparable figures for these five countries of the part of the population that has carried out black activities within the last year.

In Denmark: 20% Norway 17% Sweden 11% Germany 10% and Great Britain almost 8%.

In Figure 1, it is also possible to see the gender dimension and it is quite clear that men are far more active than women. I have also done special statistical tests in order to correct for all kinds of differences, and there is a statistically significant difference between men and women in all the countries except from in Great Britain, which might also be seen in Figure 1.

If we take a look at the age of the undeclared worker, it is quite clear from **Figure 2** that it is mainly the young people in each of the five countries who are actually working in the black economy.

Regarding the occupational structure in **Figure 3**, the pattern it is not so clear in all the countries. The general impression from the figure is that mainly the self-employed, skilled

workers - i.e. craftsmen f.i. bricklayers, carpenters, painters etc. - and also students carries out such activities.

Regarding the unemployed, it can be seen that neither in Denmark, or Sweden nor Great Britain do they work more in the black economy than the average of the whole population. In Norway, they are a bit above the average of the whole population but this is not statistically significant. In Germany, however, the unemployed are much more active and they also work more hours in the black economy once they have decided to engage in such work.

When people have admitted they are working in the black economy we also asked to their hourly wages. **Figure 4** presents the hourly wages in Euro in 2001 with the highest wages in Norway followed by Denmark and with the lowest level in Germany.

It is interesting to see the difference between Denmark and Germany since wages in the formal part of the economy are not that different which should lead one to expect there would not be such a great difference on the black market.

I think the difference perhaps could be explained by the fact that Germany presumably has more illegal immigrants working in the black economy thus pressing wages on the black market. That's the only explanation I can come up with

Again looking at the gender differences it is quite clear that men get much better paid than women. I am right now working on improved econometric methods to measure the gender wage Gap when controlling for differences in occupation, work experience, educational skills and so on. And my preliminary results (no to be quoted) indicate a gender wage gap in Germany of 19% and about 16% in Denmark.

Note that it is the wage gap for the same type of undeclared work, so there is clearly no equal payments on the black market in these two countries.

- **Extent of the black Economy**

The number of weekly average working hours differs somehow from country to country:

DK:	a bit over 5 hours per week
Norway:	over 4 hours per week
Sweden:	over 4 hours 40 minutes per week
Germany:	over 8 hours per week
GB:	3 hours 50 minutes

Knowing how many people who are active doing undeclared work and for how many hours a week you can quite easily calculate the total amount of hours worked in the black economy.

The next figure shows black hours worked as proportion of total hours worked in the formal economy. If one assumes that productivity is the same in the black economy as in the formal economy – and I know that that assumption is questionable – you have here an estimate of the extent of the black economy.

However, earlier Danish data from 1996 indicates that this difference in productivity might not be so great: When analysing wages in the formal part of the economy it was shown that men who carried out black activities earned about 5 pct. less than men not working in the black economy. For women there was no statistically significant differences in wages in the formal part of the economy between women working in the black economy and women working in the formal economy.

So this is a measure of what the black economy would be worth were it performed in the formal economy with invoice and so on.

If I were a national accountant statistician, I would use the actual black hourly wages paid, and I would thus get much lower figures of 1,8% in DK and 1,3% in Germany – again with the lowest level in Great Britain.

It is important to note that these figures are not saying that national accounts are underestimated by these amounts since the national accounts do cover some of the black activities in the way the national accountant statisticians collect data.

In Denmark, for instance, value added in Agriculture is measured by price times volume calculations so if prices and volumes are known precisely also any black activity is measured here.

- **Black activities by industry**

Doing the same kind of calculations as in figure 5 but divided by industry gives an idea of how widespread the black economy is in different industries.

As can be seen from **Figure 6**, in all countries except Germany, most black activities are carried out in the “**construction industry**”. Thus, in Denmark, black hours worked are no less than 25% of “white” hours worked. Norway is at a slightly lower level, black hours being almost 17% of white hours. Germany, Sweden, and Great Britain come next, black hours as a proportion of white hours being 13%, 9%, and 5% respectively.

It is important to remember here that, while black hours worked in, for example, Denmark are 25% of white hours worked, they are carried out not just by craftsmen, but also by others whose

main “white” employment is in another industry, but who also have the skills required to carry out black activities in the construction industry. The same applies to the other countries and industries.

- Finally: A note on other methods with special emphasis on the monetary methods

- There are, of course, other methods to measure undeclared labour, e.g.
 - Audits of tax returns
 - Differences in expenditures at the household level
 - Discrepancies in the National Accounts
 - Differences between officially measured participation rates and actual participation rates
 - Monetary methods
 - The so-called model approach

- As mentioned, I will concentrate on the monetary methods since they always attract a lot of attention, especially in the media
- The monetary methods produce much higher estimates than other methods:
 - The questionnaires presented here for the five countries lie in the range of 2-6% of GDP including ordinary tax evasion
 - The monetary methods produce figures in the range of 12-19% of GDP for the same countries, according to Friedrich Schneider

Monetary methods are based on 4 assumptions:

- Transactions in the shadow economy are based on cash only
- The extent of the shadow economy is 0 in a given base year
- The size of the shadow economy is only influenced by taxes
- The income velocity in the shadow economy is the same as in the formal part of the economy

That only cash is used in the shadow economy is highly questionable

- In Denmark only 44 pct. of the transactions are paid for in cash
- Norway: 49%
- Sweden: 70%
- Germany: 68%
- Great Britain: 45%

This indicates that the size of the shadow economy is even bigger than the monetary methods suggest

The extent of the shadow economy is 0 in a given base year

- In Denmark, for instance, there was a currency reform in 1945 right after the war
- According to Gunnar Viby Mogensen, *Skattesnyderiets historie* (2003) 3 billion DKK came to the light after the currency reform
- This corresponds to 1/3 of annual personal income
- This is not reflecting underdeclaration in one single year but it shows that the assumption does not hold
- The base year in the monetary methods used depends on how long back in time you can get data and not on a more theoretic approach where one could argue that in this or that year there would probably be no taxes

That the size of the shadow economy is only influenced by taxes is also questionable

- In the Danish case I have been so fortunate to be able to combine my questionnaire data with administrative data from the tax authorities under the Research Scheme in Statistics Denmark

Table 1 here is showing that both average taxes and marginal taxes are actually higher for those not participating in undeclared work compared to those who are active.

This also holds for skilled workers who are particularly active doing black activities

In a new and extremely detailed book *Skattesnyderiets historie* with an English summary about the history of tax evasion in Denmark, Gunnar Viby Mogensen (2003) has made new calculations of the discrepancy based on the national accounts, cf. **Figure 7**.

Viby Mogensen is comparing total personal incomes according to tax statistics with total personal net incomes based on the national accounts. This comparison shows that the figure for incomes according to the tax statistics is less than that derived from the national accounts statistics.

After an increase in tax evasion after the war it has been declining ever since. Note that this decrease has occurred together with a rising tax burden.

What we have here I find very, very interesting also in light of the report presented here by Inregia and Regioplan, since the same correlation seems to hold for the new member states.

- How can that be explained in the Danish case?

Viby Mogensen gives several explanations

1. It could reflect that taxpayers gradually get used to paying taxes.
 2. People realise they do get some welfare for the money they are paying
 3. The development from an agricultural based economy with a lot of barter or payment in kind with many small self-employed persons to a more sophisticated and also regulated economy with larger companies and fewer and fewer self-employed
 4. Including gradually more and more skilled tax authorities at the expense on locally elected politicians
- So maybe the presumably paradox of no correlation between the amount of undeclared work and the tax pressure is after all not a paradox
 - Finally I have got an idea which I have not tried in practise but which could turn out to be a fruitful way of progressing if one wants to collect data about undeclared work in countries where this has not been done before
 - In 1998 the Rockwool Foundation carried out a large survey about “Citizens and the laws” in Denmark
 - In this survey we asked a lot of questions but one of the questions – which actually was a lot of questions - had the formulation:
 - To what extent do you accept the following activity
 - Here the respondent could answer on a scale from 1 to 10
 - 1 meaning I do not accept at all
 - 10 I fully accept
 - We asked this questions regarding a lot of different activities
 - The results are shown here in the last FIGURE
 - We did not ask about the acceptance of f.i. violent attacks or killing another person
 - But as you can see in the figure the absolute worst thing in Denmark one can do is stealing a car
 - Also shoplifting is pretty bad and stealing a bicycle
 - Cheating with the taxes are also not acceptable

- But it is highly acceptable to carry out black activities
- Carrying out black activities is more acceptable than crossing a red light when walking if there is no cars coming
- And it is even more acceptable to buy black activities
- So I thought this might be a way of getting an impression on how willing people are to answer questions about black activities
- These questions could be asked in pilot surveys before running larger scale surveys

The Shadow Economy in Germany, Great Britain and Scandinavia. A measurement based on questionnaire surveys

- Background
- Definition of terms used: "The Shadow Economy", "Black Economy" etc.
- Results for the five countries
 - Characteristics of participants in the black economy
- Wages in the black economy in the five countries
- Extent of the black economy
 - Measured as a proportion of working hours in the formal part of the economy
 - Based on actual black wages paid
 - Extent of the black economy by industry
- Finally: A note on the monetary methods

Figure 1. Proportion of the population in the 18-74 age group who have carried out black activities within the last year in Germany, Great Britain and Scandinavia by sex

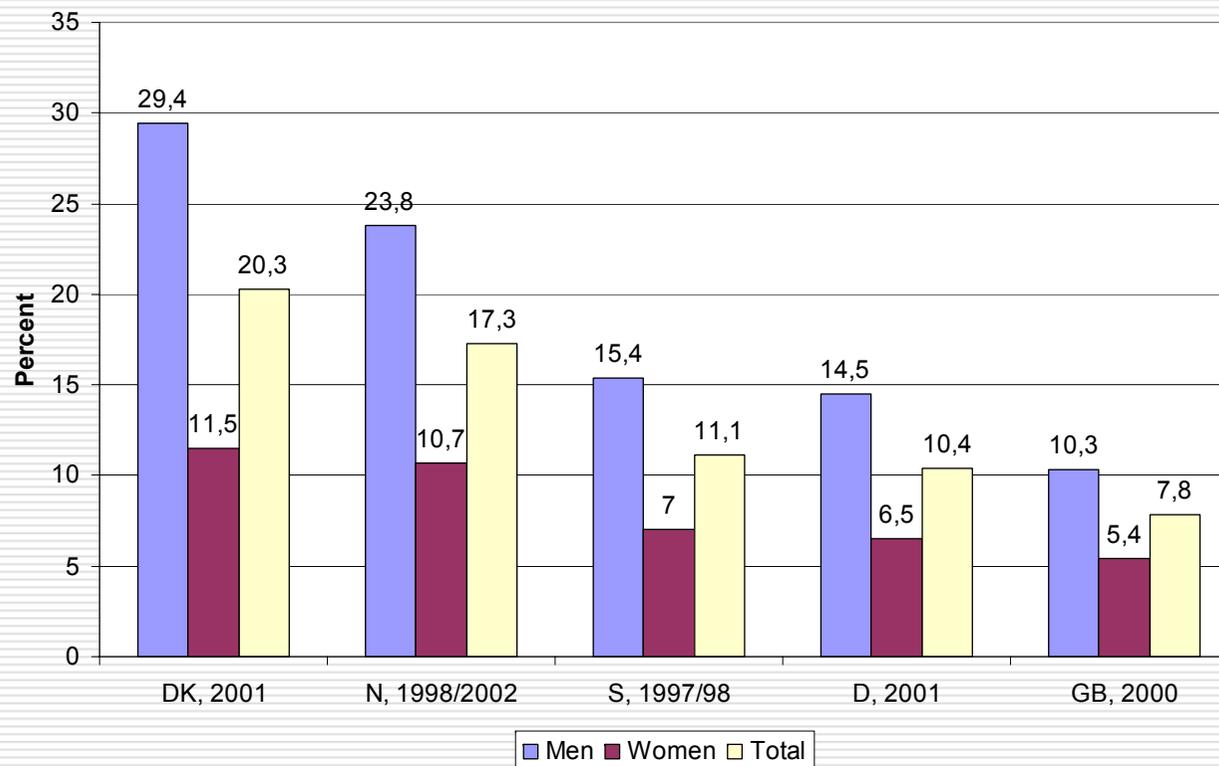


Figure 2. Proportion of the population in the 18-74 age group who have carried out black activities within the last year in Germany, Great Britain and Scandinavia by age

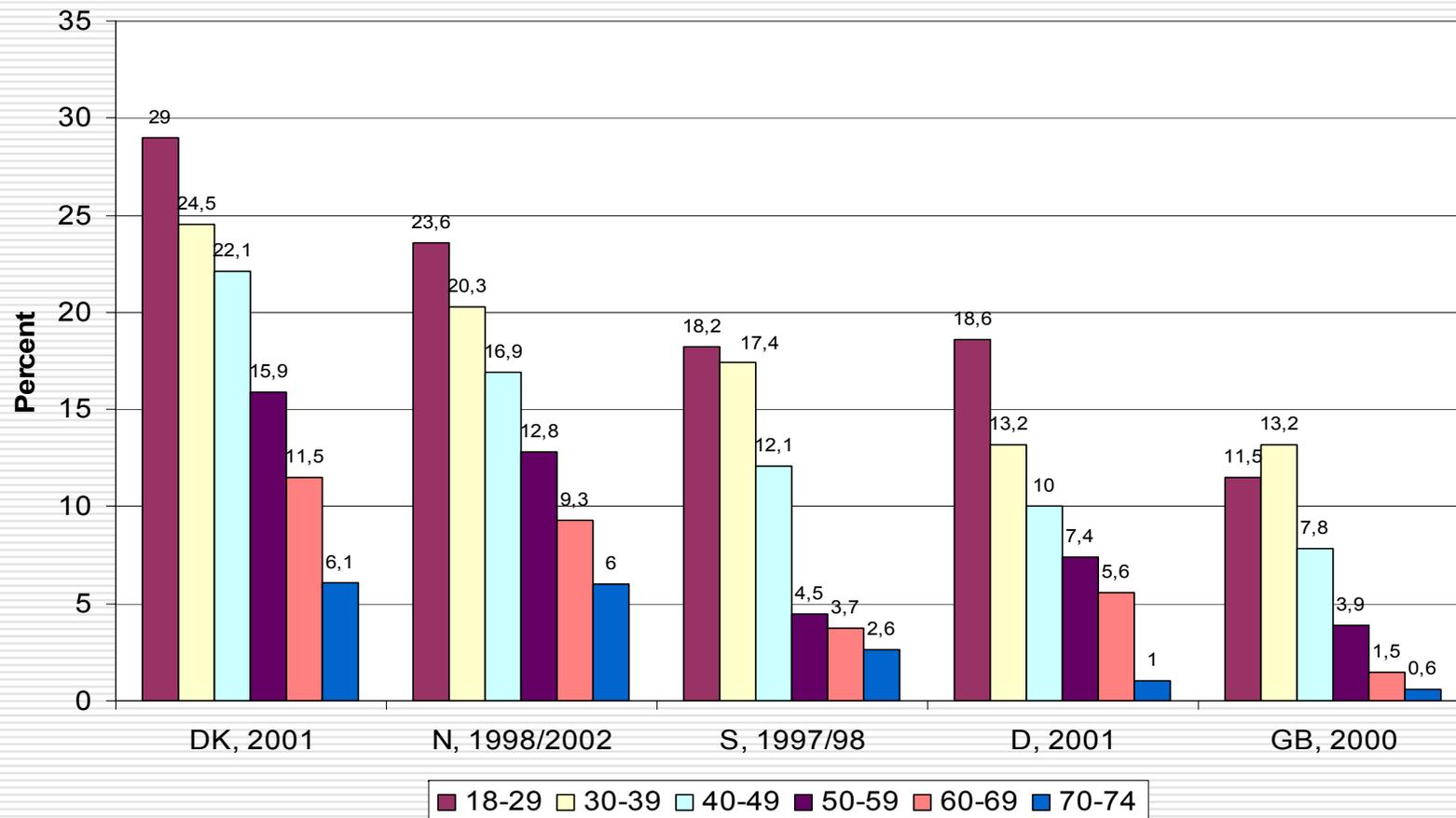


Figure 3. Proportion of the population in the 18-74 age group who have carried out black activities within the last year in Germany, Great Britain and Scandinavia by occupation

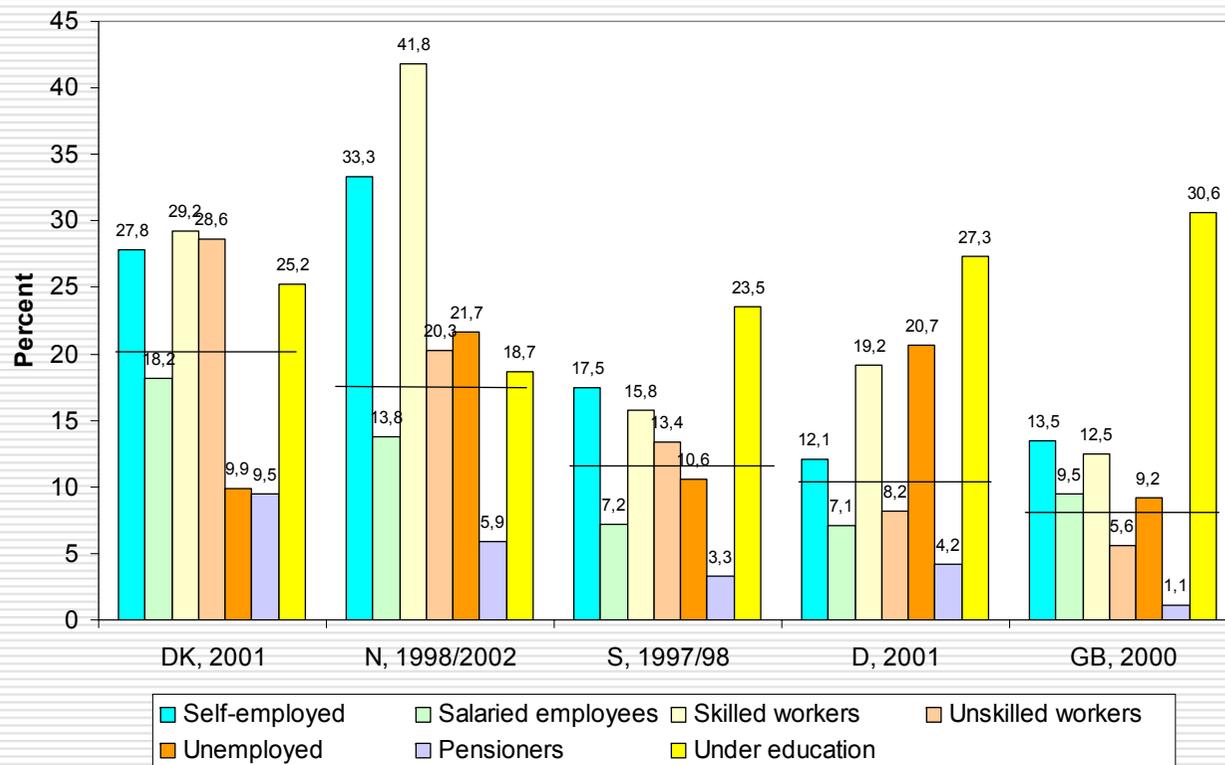


Figure 4. Average black hourly wages in Germany, Great Britain and Scandinavia by sex. 2001 prices in Euro.

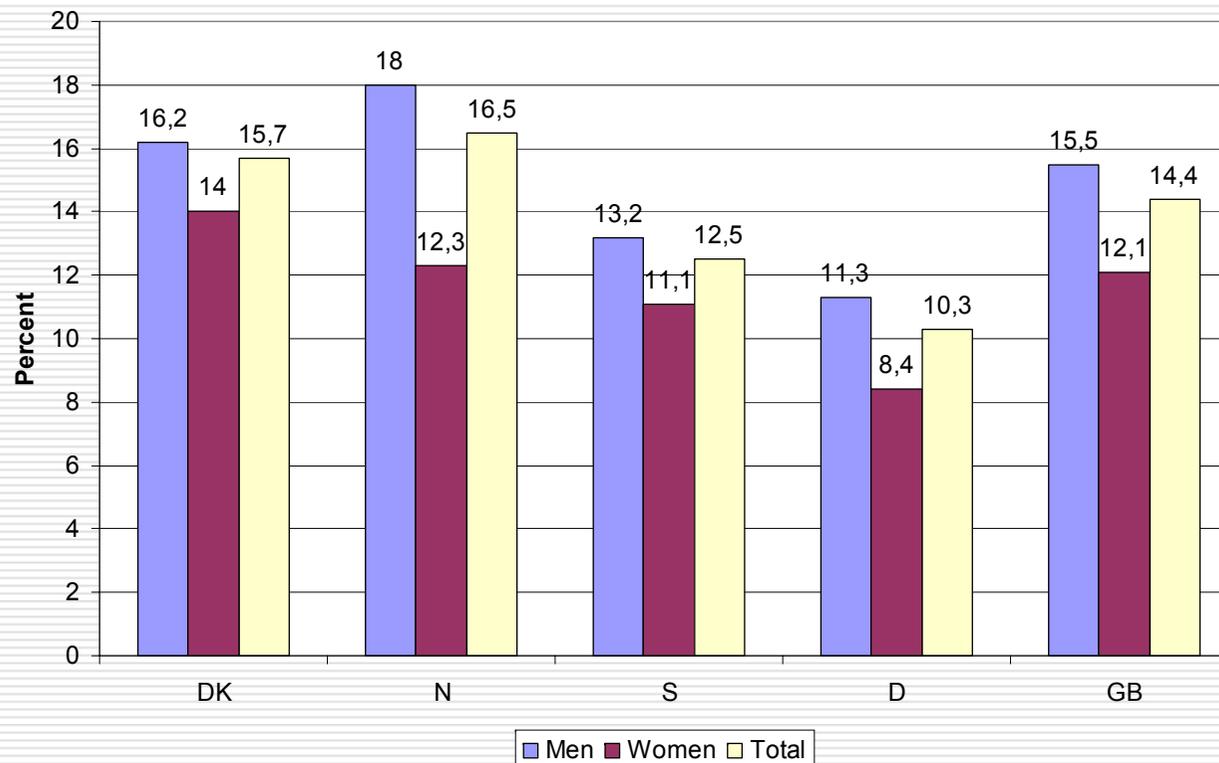


Figure 5. Extent of black activities in Germany, Great Britain and Scandinavia

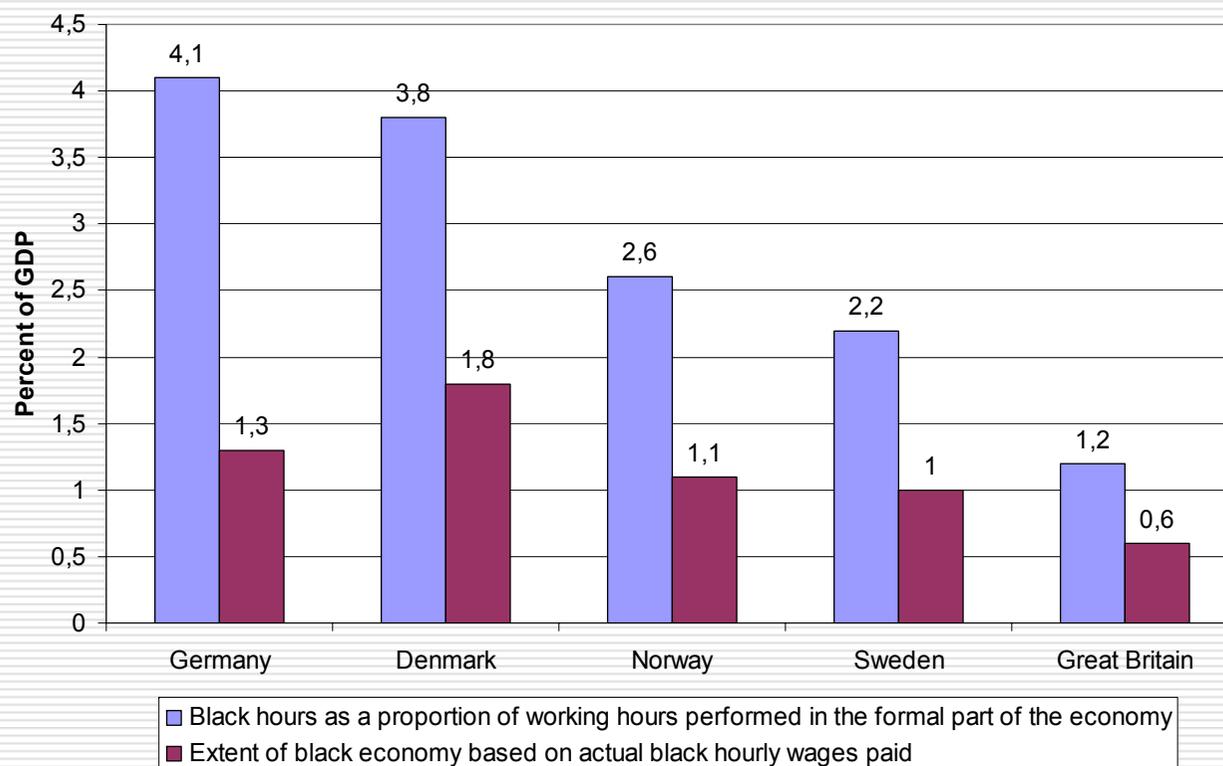
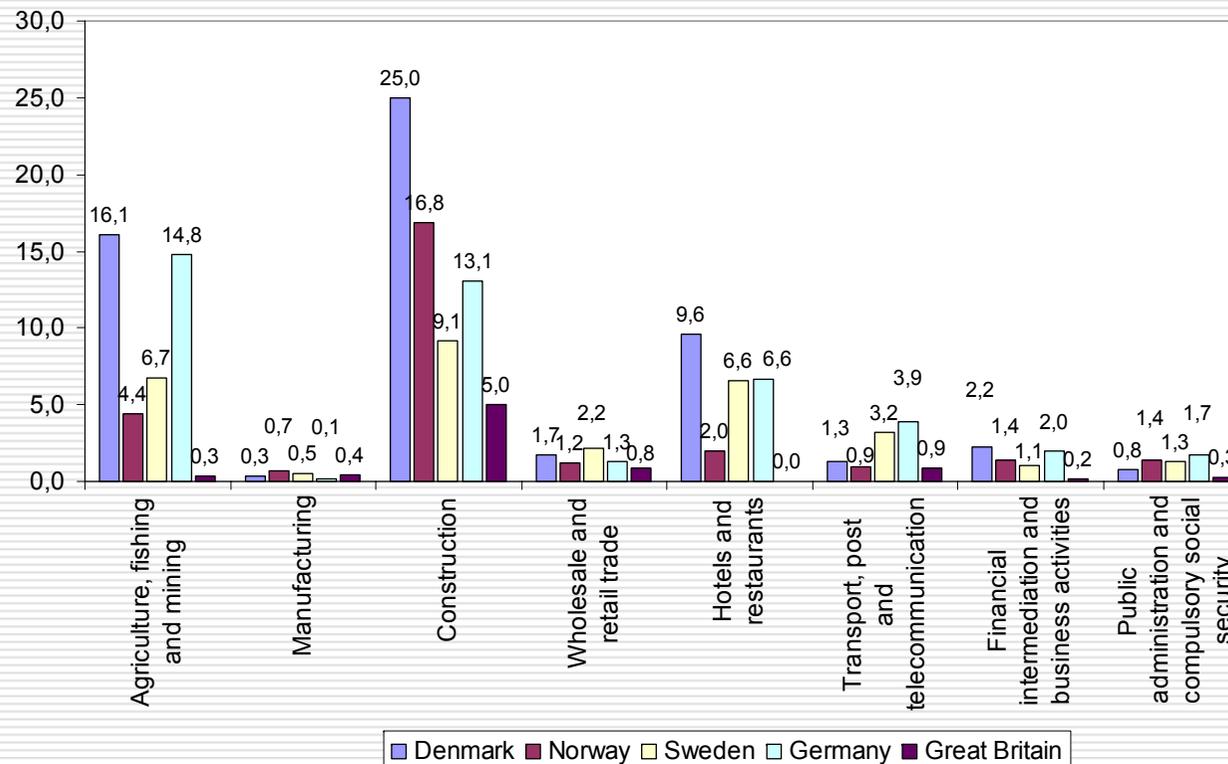


Figure 6. Black hours worked as a proportion of working hours in the formal part of the economy in the five countries by industry.



Monetary methods compared with questionnaires:

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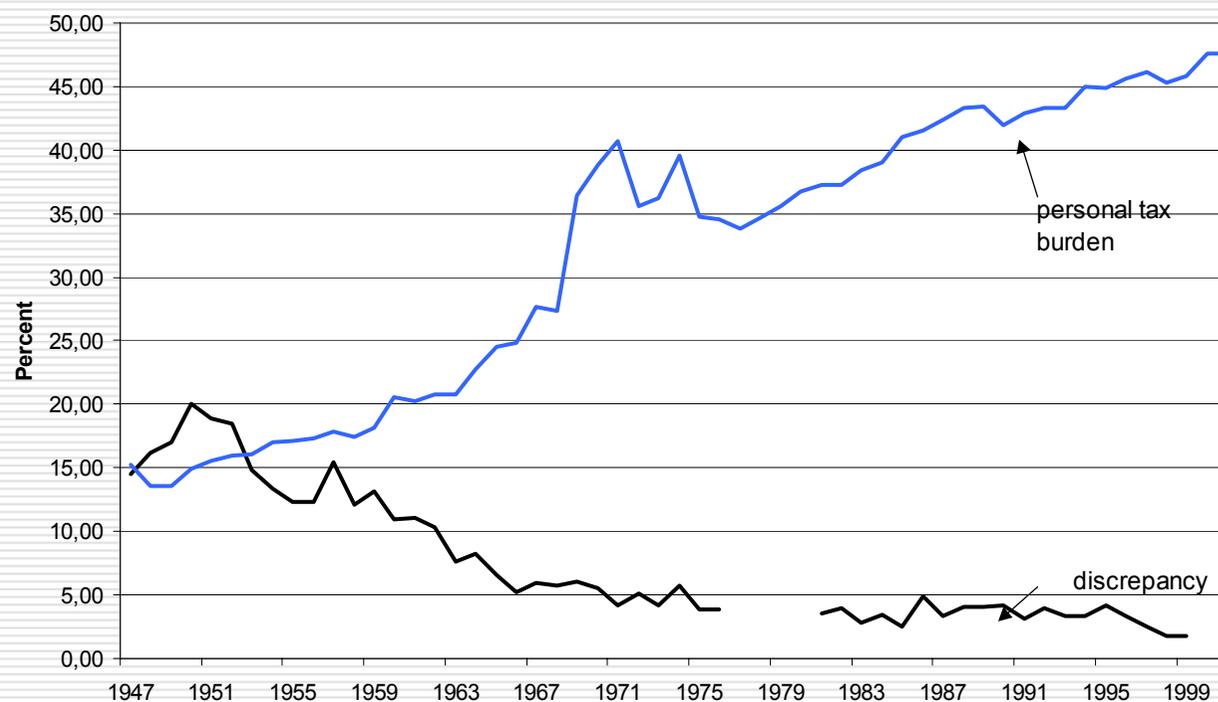
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Figure 7. That the size of the shadow economy is only influenced by taxes is also questionable



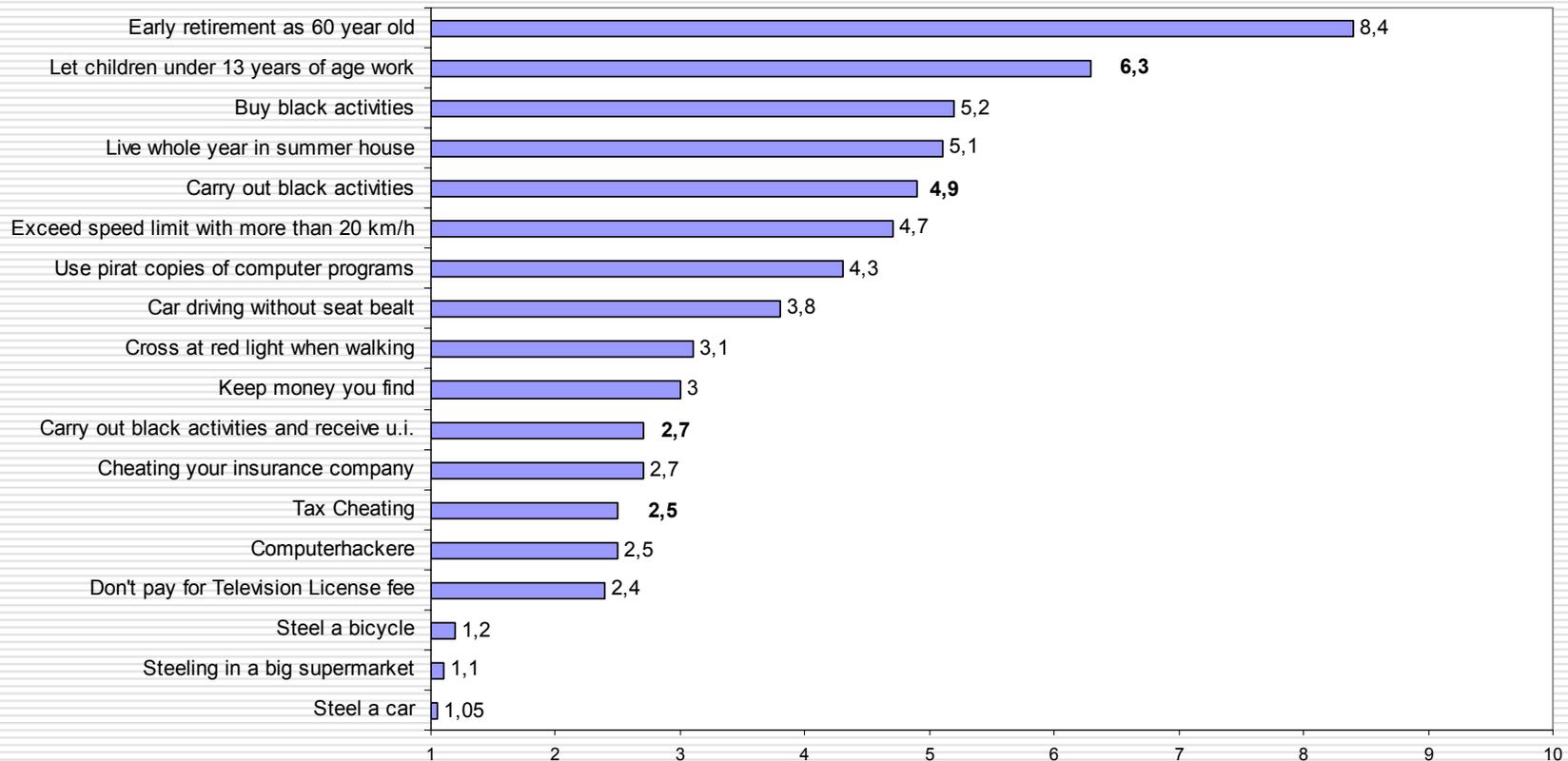
Source: Gunnar Viby Mogensen, 2003, *Skattesnyderiets historie*

Table 1. The size of the shadow economy is only influenced by taxes is also questionable

Average and actual marginal taxes (%) according to whether the respondents have carried out black activities or not in Denmark 2001

	All occupational groups				Skilled workers	
	Men		Women		Men and women	
	Carried out black activities	No black activities	Carried out black activities	No black activities	Carried out black activities	No black activities
Average tax	36.4	37.6	30.3	33.5	37.0	37.9
Marginal tax	51.4	52.9	46.9	47.5	50.7	51.1

The attitude to various activities in 1998 in Denmark: Average of questions on a scale from 1-10, where 1 indicates that you do not accept the activity at all



Average calculation on selected questions in Jørgen Goul Andersen "Borgerne og lovene" ("The citizens and the laws") figure 3.2 page 108-109