

Tax Gap Map for Sweden

How was it created and how can it be used?

Report 2008:1B



Swedish National Tax Agency

Preface

It is important that private individuals and companies pay the taxes decided by the riksdag and the local authorities in order to maintain confidence in social institutions generally and the tax system in particular.

It is the duty of the National Tax Agency to ensure that those taxes that have been democratically decided are also paid. One way of assessing how well the National Tax Agency performs this duty is by measuring the tax gap. The tax gap is the difference between the tax that would have been determined if all those liable for tax reported all their activities and transactions correctly and the tax that is determined in practice after the compliance-checking measures of the Tax Agency.

During 2007 the National Tax Agency has tried to calculate the size of the tax gap and has developed a *Tax Gap Map* that shows the breakdown of the tax gap between different areas and different groups of taxpayers.

As well as giving a general picture of how well the National Tax Agency has succeeded in its task of determining the *correct* tax, the Tax Gap Map may also help to improve the Agency's risk management. The preparation of the Tax Gap Map has more clearly identified areas in which the Agency has a good knowledge of the tax gap and areas where we ought to try to improve our knowledge of the extent and causes of the tax gap. The National Tax Agency does not have the resources to check everything and everybody. More detailed knowledge of the form of the tax gap and the driving forces conducive to cooperation with the tax system will make us better placed to use our resources where they have the greatest effect on the tax gap.

The tax gap has been estimated with the aid of information from a number of different sources and with data from several years. The tax gap map is not, therefore, a snapshot of the tax gap – it shows *the knowledge of the tax gap that we have today*. The tax gap map is not therefore an appropriate tool for measuring changes in the tax gap over time.

Anna Hansson and Katrin Wallberg at the Tax Agency's research unit have been responsible for the preparation of the report. Åsa Hagman at the unit has taken part in the preparatory information retrieval. The authors are themselves responsible for the contents and conclusions.

Solna, February 2008

Jan-Erik Bäckman
Director of the Research Unit

Contents

SUMMARY	5
1 INTRODUCTION	9
1.1 Background	9
1.2 Purpose	10
1.3 Limitations	10
1.4 Procedure	10
1.5 Problems	11
1.6 The English version of the report	11
2 EARLIER CALCULATIONS OF THE TAX GAP IN SWEDEN	12
3 DEFINITION OF THE TAX GAP	16
3.1 There is a new tax gap every year	16
3.2 How are collection losses treated?	17
3.3 Inclusive or exclusive compliance work?	17
3.4 Changes in the tax rules	20
3.5 Consideration of dynamic effects?	21
3.6 The tax gap map and the “true” tax gap	21
4 METHODS OF ESTIMATING THE TAX GAP	22
4.1 Introduction	22
4.2 Macro methods	22
4.2.1 What is a macro method?.....	22
4.2.2 What does a macro method measure?.....	22
4.2.3 How are the tax effects calculated using a macro method?.....	22
4.2.4 Which areas can be calculated with a macro method?.....	24
4.3 Undeclared work survey	24
4.3.1 How to calculate tax on hidden income?.....	26
4.4 VAT and excise duty	27
4.4.1 Introduction.....	27
4.4.2 How can the VAT gap be defined?.....	27
4.4.3 Calculations in Sweden.....	29
4.5 Individuals’ savings abroad	32
4.6 Micro methods	33
4.6.1 How are macro methods and micro methods related?.....	36
5 DESIGN OF A TAX GAP MAP	38
5.1 Division of taxpayers into groups	39
5.2 Division of tax gap by area of error	44
5.3 Division of tax gap by type of tax	46

5.4	Other ways of dividing the tax gap	46
6	SIZE AND BREAKDOWN OF THE TAX GAP	48
6.1	General basis of the calculations	48
6.1.1	Tax rates	48
6.1.2	Errors in allocation to particular periods	49
6.2	Tax gap by area of error	50
6.2.1	International	50
6.2.2	Undeclared work	52
6.2.3	Other national tax gap	56
6.3	Tax gap per type of tax	59
6.3.1	Total tax gap by type of tax and area of error	59
6.3.2	Tax gap related to reported tax	60
6.3.3	Tax gap in respective type of tax	61
7	UPDATING OF THE TAX GAP MAP	65
7.1	Need for fact-finding surveys in various areas	65
7.2	Increase the value of risk management	69
7.3	Should the tax gap map be updated?	70

Summary

The overriding objective of the tax assessment work of the National Tax Agency is that taxes and contributions should be determined in such a way that the difference between the tax determined and the amounts theoretically correct (the tax gap) is as small as possible.

During 2007 the Tax Agency has been preparing a coherent picture of the tax gap with a view to communicating questions concerning the size and causes of the gap both internally and externally. The result of this work is the *Tax Gap Map* that was presented in October 2007 and that is appended to the cover of this report.

This report gives a more detailed account of the contents of the tax gap map. The report describes how the tax gap has been defined, the methods that have been used to calculate the different parts of the tax gap and the uncertainties surrounding the calculations. The report also contains a review of earlier calculations of the tax gap. There is also a discussion of which areas require further clarification and how the information yielded by our compliance projects can be used in updating the tax gap map.

Definition of the tax gap

In the tax gap map we have defined the tax gap as the difference between the tax that would have been determined if all those liable for tax reported all their business and their transactions correctly and the tax that actually is determined after the efforts of the National Tax Agency to ensure compliance. In other words the calculation of the tax gap takes no account of whether the tax has been paid or not.

Size and distribution of the tax gap

The total tax gap has been computed to be SEK 133 bn, which is equivalent to 5 per cent of GDP or 10 % of the tax determined. The tax gap has been divided into three main categories based on the character of the gap: “undeclared work”, “international” and “other national”. The tax gap can also be divided by group of taxpayers and by type of tax.

Tax gap on undeclared work

Undeclared work accounts for approximately half, or around SEK 66 bn, of the total tax gap. The greater part of the undeclared work is done in micro companies (SEK 42 bn). If the tax gap is divided by types of tax it is clear that by far the greatest gap is in the area of social security contributions (both employers’ and self-employed persons’ contributions). VAT and income tax on income from employment also represent a large part of the gap. The tax gap for undeclared work includes payment for work done that should be taxed in Sweden but which is not reported. The definition is broad and encompasses both undeclared wage payments and undeclared sales in companies as well as unreported withdrawals and private expenses deducted in the company.

The international tax gap

We have assigned to the “international” tax gap category all tax gaps with an international connection. They may involve foreign individuals with income in Sweden, Swedes with income from abroad or other forms of transactions between Sweden and another country. The international tax gap constitutes 35 per cent of the total tax gap, or SEK 46 bn. Large companies and small and medium-sized companies account for the greater part of the

international tax gap. If the gap is divided by type of tax the greater part of the gap consists of income tax in business activity (largely company tax) and VAT.

Other national tax gap

Just under a sixth (SEK 21 bn) of the tax gap has been assigned to the category “other national”. Large companies and small and medium-sized companies are responsible for a large part of the gap. If the tax gap is divided into different types of tax it is clear that the greatest gaps are in income tax on income from business activities (including company tax) and VAT. All types of gaps that do not have an international connection and that do not constitute undeclared income belong to the category “other national”. Examples of tax gaps in this group include incorrect deductions, incorrect calculation of capital gains, incorrect depreciation, incorrect VAT rates etc.

Calculation of the tax gap

The tax gap connected with undeclared work has been calculated from the survey of undeclared work carried out by the National Tax Agency in 2006 (Report 2006:4). The total undeclared work is calculated using a macro method that involves comparing the household sector expenditure calculated in the National Accounts with the total income actually declared. Using various micro methods (result of the National Tax Agency audits, questionnaires to both purchasers and sellers, surveys of particular sectors etc.) the tax gap on undeclared work is broken down into different groups of taxpayers. In this way the great majority of the total undeclared work can be explained. What remains goes under the heading “undistributed”.

It is not possible to do macro calculations of the other parts of the tax gap. Instead the calculations have had to be done with a micro perspective based on both internal and external sources, such as random compliance controls, the result of targeted compliance controls, risk analyses, surveys of particular sectors and occurrences etc. When possible, several different sources and calculations have been compared for the same area. In cases where there has been no material on which to base a calculation an estimate has instead been made based on a reasonability assessment. The assessments often take the form of arithmetical examples where a tax gap is calculated from various different assumptions.

Uncertainty in the calculations

The uncertainty in the calculations is large in all respects. The uncertainty is least in areas where the material has consisted of results of compliance controls based on random samples. However these have only been available in a few limited areas. The uncertainty is considered greatest with regard to the tax gap with international connections and the tax gap for large companies, where there is a not insignificant amount of tax avoidance. In addition to the difficulty of calculating the size of the gap that exists it is in many respects difficult to decide what is a tax gap. The aim of the companies’ measures is often to put themselves in a grey area where there is no clear answer to whether it is right or wrong. Depending on the assumptions made in the calculations the result may vary by several billion kronor.

In view of the great uncertainty in the calculations the tax gap map should be used with caution.

Need for research

From an analysis of the size of the tax gap and the uncertainty in the estimates it is very clear that there are five priority areas in the tax gap map with regard to future research:

- International tax gap for large companies
- International tax gap for small and medium-sized companies
- International tax gap for private individuals
- International tax gap for micro companies
- Other national tax gap for large companies

However knowledge of the different areas is not homogeneous. Within one and the same area there may be both tax gap areas that we know a lot about and tax gap areas which we know extremely little. There are also areas where the National Tax Agency has done extensive surveys and where there is a lot of knowledge of the tax gap, but where the uncertainty is still high with regard to quantifying the gap. In these cases it is doubtful whether further surveys lead to more reliable calculations: some parts of the tax gap simply are very hard to calculate!

If instead the need for surveys is considered by type of tax, VAT emerges as the area where the need for knowledge is greatest, both because knowledge of the tax gap is inadequate and because the total gap for that type of tax is great.

Updates of the tax gap map

The tax gap has been estimated with the aid of a number of different sources and with data from a number of years. The tax gap map does not therefore give a snapshot of the tax gap but rather shows *what knowledge of the tax gap we have today*. The map is not therefore a suitable tool for measuring changes in the tax gap over time. To measure changes in the tax gap we would need snapshots of the tax gap at two different times calculated in the same manner.

Although the tax gap map produced now is not the right tool for measuring changes in the tax gap, it may nevertheless be desirable to update it. The main reason for updating the map is to improve accuracy in areas where there is at present great uncertainty. Moreover there may be reason for an updating if there is a substantial shift of the tax gap between different areas.

One way of improving the possibility of updating the tax gap map is to develop the reporting of different compliance projects and surveys. Today the main purpose of these reports is to describe a risk area qualitatively, not to make specific estimates of the tax gap. We consider that within risk assessment it ought to be useful not only to describe different risk areas but also to quantify them from the point of view of their significance for the tax gap. By providing the projects with the information indicated below we ought also to be able to make use of the inspection reports carried out for updating the tax gap map.

- **Population:** A description of the taxpayers to whom the tax gap area inspected applies and how many taxpayers are affected.
- **Sample:** For it to be possible to assess the tax gap, information is required on which criteria have formed the basis for the sample.

- **Result of compliance controls:** There ought to be information on the number of taxpayers examined, the number with amendments and the amount of the amendments (broken down by type of tax).
- **Accuracy:** If the sample is not random, the accuracy of the compliance controls has to be assessed.
- **Tax gap:** An estimate of the size of the total tax gap in the whole country for the area inspected.

1 Introduction

1.1 Background

According to its spending authorization the general aim of the National Tax Agency's taxation activities is to ensure that taxes and charges are determined so that the difference between the amounts determined and those theoretically correct (the tax gap) is as small as possible. The National Tax Agency must also be able to report on how the tax gap changes over time. As a stage in its progress towards the general aims the National Tax Agency has set a long-term goal of halving the tax gap by 2012.

In practice the goal of halving the tax gap leads to a greater insistence that all our measures should contribute to a reduction of the gap. The National Tax Agency assesses results and controls activities by examining the effects they have on the long-term goals. In order to be able to assess the extent to which the Agency has succeeded in attaining the goal of halving the tax gap we now have to develop methods of measuring and monitoring the tax gap over time. As a first stage such an approach requires the Tax Agency to ascertain what we know about the tax gap today.

In these circumstances it has become necessary to develop the presentation of the tax gap, for example in order to give a better general picture of the gap. An instructive view of the tax gap, in the form of a "tax gap map", gives us an instrument with which to communicate general information on the size and causes of the tax gap, both internally and externally.

The National Tax Agency also benefits generally in its dealings with politicians, interest groups and taxpayers at large from being able to demonstrate how the tax system works in practice. The tax gap map can be a useful tool in such discussions. If the Tax Agency wishes to change legislation or tackle a problem in a new manner it may be easier to find an audience for new ideas if we can also show in kronor the extent of the problem and compare different areas. A large tax gap relative to the tax base in a particular area indicates that the tax system is not working.

In international contexts, for example in the EU or the OECD, comparisons are made between the tax administrations of different countries. In such contexts, too, there are distinct advantages in having access to a composite picture of the tax gap.

It is probable that the tax gap map that has now been prepared will become a general starting point in most contexts where the tax gap is discussed internally. Even if there is a considerable degree of uncertainty, there are many advantages for the organization in having a general picture of the tax gap. For example, work on the tax gap map may show areas where there is a need for greater depth and fact-finding. By improving our knowledge of how the tax system works we can in the long run gain a clearer picture of the tax gap.

As well as in identifying "knowledge gaps", there are several other areas in which the tax gap map may play a part in the work of the National Tax Agency:

- Information on the size of the tax gap and its causes is an important part of risk analysis. Estimates of the tax gap may confirm or query the level of risk in various risk areas and enable new areas of risk to be identified.

- A total picture of the tax gap may give us a new perspective on the harm done by different gaps and the relative risk, compared with the view we obtain if we discuss the tax gap or the risk in one area at a time.
- The tax gap map can be used as material to stimulate discussion of how the Tax Agency uses its resources.
- It may be possible to use the results to estimate the effect of trying to reduce the tax gap within a particular risk area or in total.

1.2 Purpose

The main purpose in drawing up a tax gap map is to create a general and informative presentation of the tax gap. An analysis of the tax gap and its components gives us a better view of what we know today and what areas we need to know more about. An analysis of the tax gap and its components also gives a better ability to judge what we need to know in order to follow the trend in the tax gap over time.

1.3 Limitations

The tax gap map has been prepared without making any new tax compliance controls designed to calculate the size of the tax gap. Instead, existing information has been collated, structured and analysed. The availability of measurements carried out has been crucial in determining how well it has been possible to pin down the tax gap. The tax gap map does not give a snapshot of the size of the tax gap but contains data from the last 5-10 years. A snapshot would require an immense amount of compliance work for the purpose of obtaining information. The tax gap map does not therefore answer the question of how the tax gap has developed, which would require comprehensive snapshots from at least two occasions.

1.4 Procedure

The work of preparing the tax gap map has been made up of the following steps:

- Finding out and reporting how other countries have worked on defining and systematizing the tax gap
- Going through all the studies (both internal and external) of different components of the tax gap that have been made during the last 5-10 years
- Working out a suitable structure for the component elements of the tax gap
- As far as has been possible introducing measurements carried out in the selected structure
- Converting all measurements to tax
- Relating the gaps in the different sub-areas to the total tax for the respective sub-area

To get this work done in a relatively short time we have made use of the assistance of several employees of the Tax Agency. They have participated to varying extents and contributed specialist knowledge in their specialist areas. This means that use has been made of knowledge in areas that are not documented in reports and in studies carried out. We have also been able to compare different studies that have been carried out within the National Tax Agency.

1.5 Problems

There have been several difficulties in the production of the tax gap map that we have dealt with in the course of the work. The measurements that have been available have differed in structure: some are based on groups of persons liable for tax, others on types of tax and yet another group on particular areas of error. The material we have used has related to different groups of persons liable for tax which in part overlap, and data that permit an alternative categorization are often lacking.

The biggest problem in calculating the tax gap has been the lack of basic data. Available information from compliance controls and risk analyses seldom contains any estimate of the tax gap. The tax gap is described in most cases simply in terms such as extensive or large. There is therefore a knowledge that a tax gap exists, but no quantification. It has also been difficult to calculate the tax gap on the basis of the reports as there has been no information on population, sampling method, calculations and totals of material or similar.

Many areas that we have studied have also overlapped, which has made it difficult to summarize the results of different measurements. The creation of tax gap areas that are mutually exclusive has been problematical. There is more in Chapter 6 on the methods and calculations on which the tax gap map has been based.

In view of the problems that have been described we wish to show that the tax gap map has been constructed with the aid of many uncertain assumptions. The total tax gap has been calculated with great uncertainty and thus in some respects has the character of an example. The results must therefore be used with caution.

1.6 The English version of the report

The English translation is a somewhat abbreviated version of the original report. Most of our main report is included in the translated version. Most of what we have omitted consists of discussion of the National Tax Agency's target of halving the tax gap and how possible it is to measure changes in the tax gap. In addition the original version also contains quite extensive appendices, showing calculations of different parts of the tax gap.

2 Earlier calculations of the tax gap in Sweden

Over the last ten years several authorities and organizations have studied the black economy and the tax gap. We have gone through a large part of this material in order to be able to make comparisons with the calculations that we have done ourselves.

The National Tax Agency has carried out a series of surveys of the tax gap in different areas. The most detailed reports are:

- Skattefel och skattefusk – en värdering av skattekontrollen 1992-1997. [Tax gap and tax fraud – an assessment of compliance checks 1992-1997.] RSV report 1998:3
- Oroliga skattebaser: Riskområden för skattefel med internationell anknytning. [Uncertain tax bases. Risk areas for tax gaps with international connections.] RSV Report 2002:2
- A number of minor studies of limited areas, e.g. sales of shares, travel to and from work etc. have been made for individual years

The Tax Agency has also made an extensive study of undeclared work, which has been of great value to us in our estimation of the tax gap in that area.

- Svartköp och svartjobb i Sverige. Del 1: Undersökningsresultat. [Purchasing and Performing Undeclared Work in Sweden. Part 1: Results of studies.] Report 2006:4.

Here follows a brief description of methods and levels of the tax gap in some of the more extensive reports that we have studied.

In the report *Skattefel och skattefusk* published in 1998, the total tax gap was estimated at between SEK 80 and 90 bn. The report was commissioned by the government, which instructed RSV (the National Tax Board) to report on the development of compliance checking during the years 1992-1997. The results of this work were analysed and conclusions were then drawn concerning the extent and distribution of tax evasion. In this study tax gap is defined as all types of error, both deliberate fraud and unintentional mistakes. The study reached a total tax gap of around SEK 80-90 bn, which is equivalent to almost five per cent of GDP or ten per cent of the total tax collected in 1996.

Table 1: Schematic calculation of the size of the tax gap, 1997

	Amount in SEK bn	Proportion of total in per cent
Tax on undeclared and unreported company income – income tax, VAT and employers' contributions	60.4	72 %
Audit results – primarily incorrect costs and other forms of incorrect accounting	40.8	49 %
Minus: Tax gap not including undeclared income	-20.4	-24 %
Excise duty	3.0	4 %
Total tax gap in SEK bn	83.8	100 %
Tax gap as proportion of GDP	4.7 %	
Tax gap as proportion of public sector tax revenue	8.8 %	

The report *Oroliga skattebaser* published in 2002 contains an estimate of the tax gap in the international area that ends up at SEK 20-35 bn. After this study the Tax Agency updated its estimate of the total tax gap to SEK 100 bn.

The report is of fact-finding character and is in two parts. The first part concentrates on placing Sweden on the “map” by means of comparison with other countries concerning tax fraud and the functioning of the tax administration. The second part of the report surveys the tax gap with international connections broken down by type of tax. The report also looks ahead and contains an opinion on how the Tax Agency believes the tax gap with international connections will develop over the next ten years. The report was prepared in close collaboration with the evaluation “*Kontrollinformation i utlandsfrågor*” [Information on compliance checks in foreign cases] (RSV Rapport 2002:1), an evaluation that focused on how available information and contact routes for compliance controls abroad could be used more efficiently.

Table 2: Tax gap with international connections, 2002

Type of gap	Amount (SEK bn)
Excise duty	2-4
VAT	5-10
Tax on capital	at least 8
Tax haven transactions with some type of company connection	2-5
Other (transfer pricing, electronic trading, social security contributions)	?
Total	20-35

The report states that it is not obvious where the line should be drawn between national tax gap and tax gaps with an international element. In the study it was decided to include all types of tax gaps that to some extent are based on a connection with other countries or with rules on international taxation.

In the report it is estimated that the tax gap connected with Swedes’ financial investments abroad amounts to at least SEK 8 bn. This estimate is based on the residual item for households in the Financial Accounts (1990: approx. SEK 250 bn) and uses it as an indicator of household financial investments abroad. The picture that emerges is that household capital investments abroad increased in the late 1980s and early 1990s. In the latter part of the 1990s the development of the residual item in the Financial Accounts may be interpreted as transfers of Swedish household financial investments for management abroad as having stopped, at least temporarily. However the report points out that the uncertainty in the statistics is great. Together with the international VAT gap, the tax gaps on assets invested by individuals abroad constitutes the greatest tax gap quantitatively.

In the report *Svartköp och svartjobb i Sverige* [Purchasing and Performing Undeclared Work in Sweden], published in 2006, undeclared work has been estimated at SEK 115-120 bn in income for the year 2006. If this is translated into tax this means approximately SEK 66 bn. In this report a macro method has been used to calculate the undeclared work. This has taken the form of a comparison of the estimate of all household expenditure in the National Accounts with the income that has actually been reported. A number of different sources have been used to shed light on large parts of the content of the undeclared work and to distribute them between groups of taxpayers. Examples of such sources include the audit results of the Tax Agency, interviews with those who buy undeclared services and goods, interviews with those who sell undeclared services, and the Tax Agency’s own branch surveys.

A somewhat earlier measurement of the tax gap was made by Åke Tengblad (former head of the National Accounts) in the early 1990s: *Beräkning av svart ekonomi och skatteundandragande i Sverige 1980-1991*¹ [Calculation of the black economy and tax evasion in Sweden 1980-1991]. The study was carried out in the course of the evaluation of the major tax reform of the early 1990s. Measurement of the tax gap is in two parts: a calculation of the black-market sector and a calculation of the total VAT gap. The estimate of the black-market sector is based on the discrepancy in the National Accounts between the statistics for household expenditure and officially reported income for the household sector. It is the same kind of estimate as the National Tax Agency has used in “Fel- och fuskrapporten” [Tax gap and Tax Fraud] in 1997 and in the undeclared income survey of 2006 and the method is described in more detail in Chapter 4.

Table 3: Rough calculation of tax evasion 1991, SEK bn

Type of income	Tax base	Rough estimate of tax shortfall
Undeclared wages	11.1	7.5
Income residual item	15.0	10.1
Entrepreneurial income	41.1	27.5
Interest and dividends	3.8	1.1
Total	71.0	46.2
Of which		
-VAT		13.5
-social security charges		18.8
-income tax		12.8
-tax on capital		1.1
Tax shortfall as % of GDP		3.2%

Note: The estimates of the tax gap are based on the hypothetical assumption that price and volume effects cancel out when transferred to the legitimate sector.

The estimate of the total VAT gap is also based on the National Accounts and shows figures for the difference between theoretical and actually reported VAT. The method involves the calculation of a “theoretical VAT” in the National Accounts with the aid of input-output matrices covering product group flows up to end use. This theoretical VAT is then compared with VAT actually reported. Tengblad’s calculations covered the period 1980-1991 and indicated a significant difference between the VAT calculated theoretically and the VAT actually collected throughout the 1980s. The average difference was 11.6 per cent of theoretically calculated VAT but there were large variations between individual years. The reason for the up-and-down movements between the years was said to be problems in allocation to periods. But even when the fluctuations are disregarded, there was also uncertainty around the level as such. There was uncertainty around the effect of reduced tax rates and exceptions and of adjustments of trade margins and operating surpluses.

¹ Published in Malmer, Håkan, Persson, Annika and Tengblad, Åke: “Århundradets skattereform – Uppföljning av skattereformen 1990-1991”, Fritzes, 1994

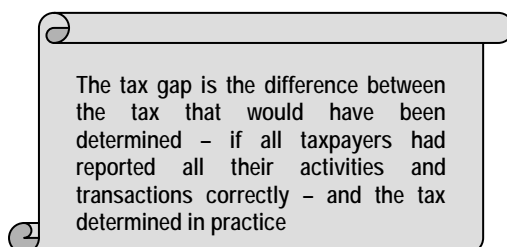
Table 4: Comparisons between VAT calculated theoretically from the National Accounts and actually collected in 1991, SEK bn at current prices

	1980	1985	1989	1990	1991
VAT estimated from National Accounts	39.5	67.9	100.1	128.1	149.0
VAT actually paid	34.6	60.5	93.3	112.4	127.4
VAT discrepancy	4.8	7.4	6.8	15.7	21.6
VAT discrepancy as % of					
- theoretically calculated	12.2 %	10.9 %	6.8 %	12.3 %	14.5 %
VAT					
- GDP	0.9 %	0.9 %	0.6 %	1.2 %	1.5 %

3 **Definition of the tax gap**

There are many views on the design of the tax system and the size of different taxes. The political question of whether our taxes in Sweden are too high or too low and whether they are correctly directed is not touched upon in the tax gap map; the map is intended only to reveal to what extent the taxes democratically decided are really reported.

It is often mentioned that there is a lot of *tax fraud*. However it is important to make it clear that the tax gap that was estimated does not represent the occurrence of tax fraud. An error in the accounting for tax may arise from various causes. Complicated tax rules or ignorance of the rules that apply may lead to errors in a tax return that are made by mistake. Such errors are usually described as *unintentional errors*. Errors may be made *intentionally* in order to reduce the amount of tax. For example a deduction may be made larger than the true cost to which it relates or an item of income may be left unreported.



The tax gap is the difference between the tax that would have been determined – if all taxpayers had reported all their activities and transactions correctly – and the tax determined in practice

Even after the tax gap has been defined there remain a lot of questions concerning the borderlines of what ought to be included as a tax gap.

3.1 **There is a new tax gap every year**

Tax assessment takes place in the form of a yearly cycle. The income year is the year in which an income is earned and usually coincides with the calendar year. In the following year the tax on the income is determined in the tax assessment and that year has been designated the tax assessment year. VAT and employers' contributions may indeed be reported monthly but they are nevertheless subject to an annual reconciliation in the company's annual accounts. The total tax revenue for the whole country is totalled in the National Accounts and the central public accounts. In this way a new total amount is calculated every year for the taxes determined for the year. The total tax determined will also differ somewhat every year from the tax that would have been determined if there had been no errors in the tax returns (no undeclared work, no incorrect deductions, no incorrect calculations of income or profits etc.).

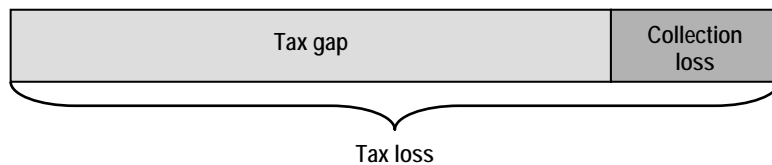
The tax gap is not therefore a permanent condition – it is a gap that arises every year. This means that we get a new tax gap every year, which may differ in amount from the tax gap of the previous year. If we had comprehensive information we would be able to determine the exact tax gap each year in the same way as we determine the total taxes every year. If we had total comprehensive information we would however use this information when we determined the taxes, which means that the tax gap would be eliminated.

Now we do not have comprehensive information, and there is a tax gap every year and we do not have an adequate material for computing it. For practical reasons we are obliged to simplify reality and instead of estimating a new tax gap every year to try to estimate the approximate level of the annual tax gap on the basis of information from several different years. What we do is therefore an estimate of an average annual tax gap.

3.2 How are collection losses treated?

The greater part of the taxes determined are paid in (on time or after some delay). However certain taxes are not paid at all, although enforcement measures are taken. There are thus collection losses. It may be interesting to measure the taxes that actually are paid in, not those that are only reported as a figure on a tax return. On that basis the tax gap ought to consist of the difference between taxes actually paid and the taxes that ought to have been reported and paid if there had been no mistakes. However there is a big difference between the responsibility for determining the taxes and the responsibility for getting those liable to pay their tax debts. There are various measures that can be taken to deal with the various problems. The tax gap is hidden, whereas we have full information on the losses in collection and can follow them separately. It therefore becomes logical to distinguish between the gap that arise in connection with the determining of the tax – *the tax gap* – and the gap that arises in conjunction with the payment of the tax – *collection losses*. Adding the tax gap and the collection losses gives the total *tax loss*.

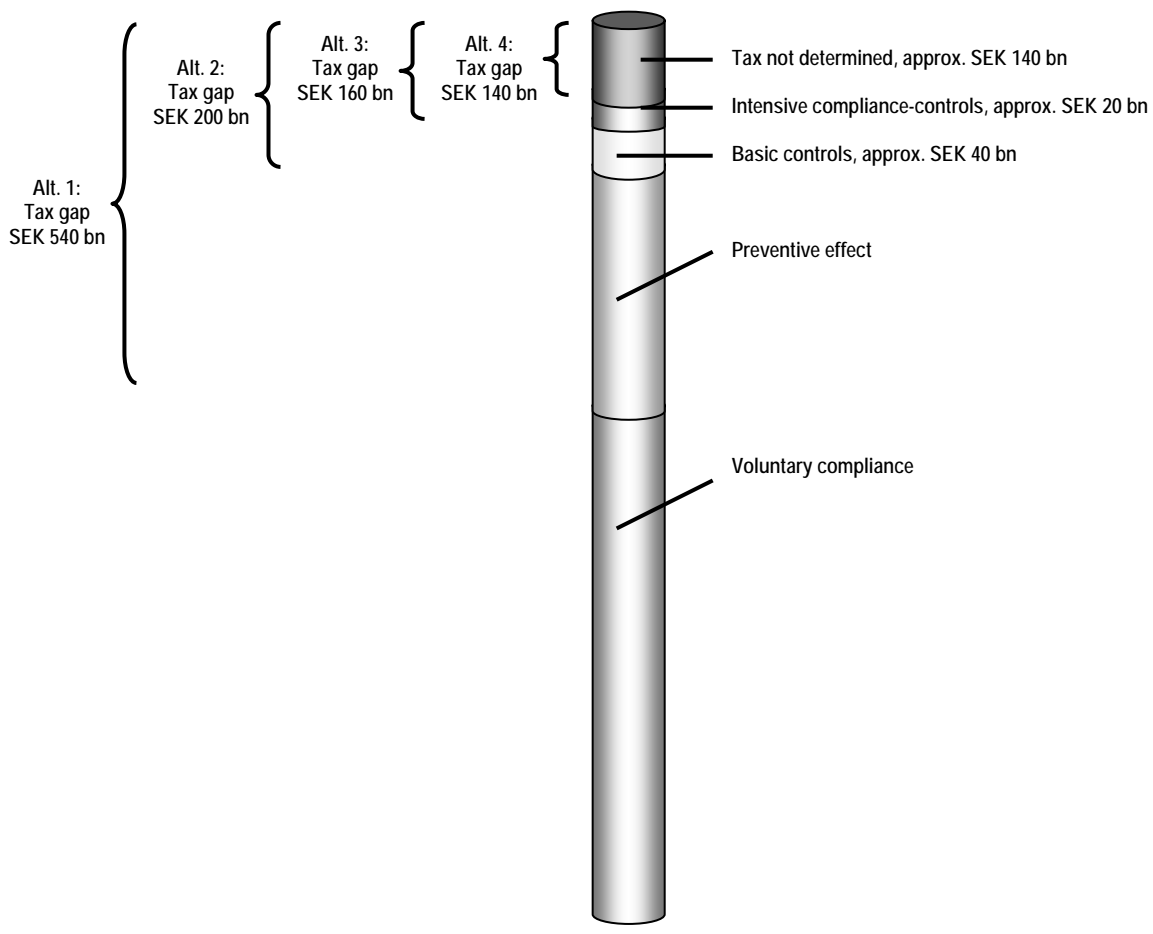
Fig. 1 Tax gap, collection loss and tax loss, in diagram form



3.3 Inclusive or exclusive compliance work?


There are various conceivable boundaries to what represents a tax gap. One important and not entirely obvious question is that of how to deal with the tax that comes in as a result of various kinds of compliance work.

Fig. 2 The connection between the tax gap and compliance-controls




Alternative 1: The tax gap could be defined as *the gap that would occur if the National Tax Agency did not exist*. This would mean eliminating all effects – direct and indirect – that are produced in the short or the long term by the work of the Tax Agency. This means that the tax that is paid in as a result of the preventive effect of compliance controls and various information measures should be included in the tax gap. This definition of the tax gap is both cumbersome and relatively impractical. It is in practice impossible to entirely isolate the effects on tax income of the work of the Tax Agency in the long run. Nor is this particularly interesting, because in a society with taxation one must always maintain a certain level of basic service.

Alternative 2: One alternative is to define the tax gap as *all the errors that exist when tax returns come into the Tax Agency*. This does not, then, include the preventive effects of service and compliance-checking, but all direct monetary effects of the tax compliance controls. In that case a large part of the tax gap would consist of formal errors (incorrect additions etc.). The most efficient way of reducing the tax gap would then presumably be to get more people to submit their returns via the Internet and to build into the Internet automatic reconciliation that corrects most formal errors before the taxpayer can submit the tax return.



Alternative 3: Another delimitation would be to regard the tax gap as *all remaining errors that it requires more intensive controls to correct*. The disadvantage is that our definition of what represents basic controls and what is intensive controls changes over time, which would also lead to a change in the tax gap. If the main purpose of the tax gap map were to provide material for the planning of controls and information measures this definition would probably be the most appropriate. Therefore it is not remarkable that most of those who work on compliance-controls prefer this definition of the tax gap – the gap that we face when we begin controlling.

One effect of including the result of controls in the tax gap is that we cannot reduce the tax gap during the current year with the aid of the compliance control. With this definition the tax gap remains, regardless of how much of it we manage to correct. It is instead by means of preventive work that we can affect the size of the tax gap. Information measures of various kinds enable us to reduce next year's tax gap, by encouraging more taxpayers to do it right from the outset. The preventive effect of the controls also influences next year's tax gap. This definition occurs, and it is then usually said that *the tax gap is stated gross*, inclusive of more intensive controls.



Alternative 4: If instead the tax gap is reported *net*, it consists of *the gap that remains after all the efforts of the National Tax Agency*. From a socioeconomic perspective this is the most appropriate definition of the tax gap. In that case it is of no interest what measures the Tax Agency takes to reduce the tax gap (whether amended tax rules, better administrative systems, preventive work or checking). What is interesting is instead how great a gap remains and thus constitutes a loss of tax by society. This is perhaps also the definition of the tax gap that is easiest for the outsider to understand. What is corrected (even if it has been done by compliance-controls) is of course no longer incorrect and ought then not to be included in the tax gap.

If we look at how the tax gap is defined in other countries we can find that the first definition does not seem to occur at all. It is probably too theoretical and only possible to use in a hypothetical reasoning around how things would look if there were no tax administration. On the other hand there are both cases where the tax gap is reported gross (including result of controls) and net (not including controls). Where the tax gap is reported gross differing levels of intensive controls and basic controls may be included, depending on how controls are designed and organized. There is therefore no sharp and generally accepted boundary between the second and the third alternative definitions; the boundaries are different in different countries.

In Sweden we have been making various – very rough – estimates of the tax gap for about twenty years. We have in this connection always had a socioeconomic perspective and reported the tax gap net, not including compliance controls.

The main aim of this tax gap map is to be able to communicate the tax gap externally, both within the country and in various international contexts. It is then most informative to use a net reporting of the tax gap. It is easiest to communicate the picture of the tax gap as the gap that the Tax Agency has been unable to rectify. This also eliminates the need to explain the change in the size of the gap that would arise as a result of a change in definition compared with previous estimates of the tax gap. This definition also permits the best international comparisons, as it is not affected by boundaries between basic controls and increased controls.

What creates a problem is that we may want to be able to use the tax gap map internally as well, as a basis for discussion in our operational planning. For this, a gross report of the gap would be more practical. However the difference between net and gross reporting should not be exaggerated. The monetary effect of more increased controls amounts only to approx. 16 per cent of the net reported tax gap. The estimates of the tax gap contain so much uncertainty that the margin of error generally is considerably greater than that. In general therefore, a net reported tax gap would seem likely to give an adequate picture of the size and breakdown of the tax gap for internal needs as well. The only problem that can arise is if the monetary effect of the controls is extremely high in a particular area in relation to the tax gap. This may for example be the case with regard to certain tax avoidance schemes in which a small number of large companies may be involved. Should the tax gap be reported net, therefore, there may be a need for supplementary information on the tax controls in a few areas in order to give a more comprehensive basis for decisions.

One alternative would be to show the tax gap both net and gross in the tax gap map. This undoubtedly gives more information and the map is geared to all the different needs. The greatest drawback is that it is less easy to read. The main aim is to prepare a tax gap map that gives an instructive and easily communicated picture of the tax gap. There is therefore a risk in introducing more different definitions of the tax gap in the map. Another disadvantage is that a debate might easily arise about how much of the tax gap it has been possible to deal with by direct control measures in various areas. The Tax Agency does not otherwise monitor its work by measuring the direct result of compliance-controls, as there is a conviction that it is the preventive effects that are important. To produce a picture where the result of compliance-controls in several different areas is compared with the tax gap gives entirely the wrong signals to both employees and the outside world.

All in all, this means that the tax gap in this estimate is reported net, as the gap that remains after all the efforts made by the National Tax Agency in the form of information, controls and audits etc. For the total tax gap a comparison is made with the monetary effect of the controls. In those areas where the results of compliance-controls are of great significance for the tax gap, the amount of it is reported in conjunction with the report on how the tax gap for the area concerned has been calculated.

3.4 Changes in the tax rules

Purely theoretically a tax gap that exists today, but disappears because a particular tax is done away with, ought to be included in the tax gap. The most correct situation would of course be if the tax gap reflected the situation at a certain point in time (for example that we now estimate the tax gap that existed in 2006). However it is not practical to create such a snapshot. In many areas we use material that is a year or more old and sometimes we use material from several different years to obtain information about a particular tax gap. We accept this in order to enable us to make any estimates at all. Where a tax that is soon to disappear is concerned, it is possible to reason in the same manner, although there one is comparing with a number of years forwards in time instead of backwards. It is also possible to argue that if there is any point in producing a tax gap map we should find it in some way useful. There is nothing useful in our knowing the tax gap for a tax that does not exist. It is therefore unnecessary to spend time on such parts of the tax gap. But at the same time an assessment must be made in the individual case, and account must be taken of when the tax is to disappear and how certain it is that it actually *will* disappear. The wealth tax is such a tax for which we have chosen not to estimate a tax gap.

3.5 Consideration of dynamic effects?

The main purpose of the tax system is to finance public expenditure. As well as influencing the use of resources between private and public sector it also affects the efficiency of the private use of resources. This concerns the balance between consumption and saving, between different kinds of saving and consumption, between work and leisure and between different kinds of investment projects. Most taxes have the effect of exerting a degree of influence on the choices made by households and companies between different activities. This control influences the efficiency of society's use of different resources. In some cases these controlling effects may be intentional. This is the case, for example, with environmentally related taxes and alcohol and tobacco taxes. But taxes also generally give rise to unintentional control and efficiency losses, for example by a reduced supply of labour resulting from the taxation of work. The size of these efficiency losses depends both on the level of the tax rate and how price-sensitive demand and supply are on the market concerned.

The effects of taxation on consumption, saving, work and investment mean that changes in the tax gap also have an effect on behaviour. Certain activities that take place undeclared may almost cease if they are taxed. This is often considered to apply to, for example, certain domestic services. The argument there is that the services would become so expensive if they were taxed that many people would instead decide to do the work themselves. Other activities would hardly be affected at all if the tax gap changed. Here one example is the tax gap on capital gains from the selling of private residential properties. Even if the tax gap in this field were entirely eliminated, properties would continue to be sold to a virtually unaltered extent. Between these extremes there are a great many areas that may possibly to a greater or lesser degree be affected by changes in the tax gap.

It is quite possible to discuss the effect of the tax gap on the extent of different activities. However it is extremely difficult to quantify the effects. In this estimate of the size and breakdown of the tax gap we have therefore entirely disregarded all the dynamic effects of changes in the tax gap. The calculations of the tax gap have therefore been made totally statically, i.e. assuming that everything else will remain unchanged.

3.6 The tax gap map and the "true" tax gap

When preparing the tax gap map we have striven to make the calculated tax gap as comprehensive as possible and thus to estimate a true tax gap. However it is impossible to disregard the fact that the calculations are influenced by our knowledge and our access to information in the area concerned. There are areas where we suspect that there may be a really large tax gap, but where we have no material at all with which to verify this. When this has been the case we have deliberately estimated the tax gap as quite a low amount. If future research shows that the tax gap is larger, the calculation will have to be updated and adjusted to take account of the knowledge and information that is then available. There are no doubt also certain tax gaps of which we are currently completely unaware and which we have therefore been unable to consider in our calculations. Therefore it is not really the true tax gap that we have shown in the tax gap map – the map shows what knowledge of the tax gap the National Tax Agency possesses today. The more knowledge we obtain about the tax gap, the more comprehensive the tax gap map can become. New knowledge may also change the estimated level of the tax gap and its breakdown into different areas.

4 Methods of estimating the tax gap

4.1 Introduction

The tax gap is made up of a number of different activities and transactions which ought to be taxed but which for various reasons are not subjected to taxation. The tax gap is hidden by definition. As it is hidden there are no simple ways of going in and measuring the size of the gap. Instead it is necessary to try to estimate the size of the tax gap using various methods. It is customary to divide the attempts to estimate the size of the tax gap into two kinds of methods: macro or topdown methods on the one hand and micro or bottom-up methods on the other. In this chapter we describe how the methods work, what they measure and the areas in which they can be used. The chapter therefore contains a discussion of the advantages and disadvantages of the different methods.

4.2 Macro methods

4.2.1 What is a macro method?

One way of trying to estimate the size of the tax gap is by making use of various macro or topdown methods. Sometimes they are also referred to as indirect methods of estimating the tax gap. When a macro method or macro model is used, we try to specify how much tax ought to be payable in a certain area with the aid of data that is independent of the data obtained in the taxation process. These estimates are then compared with the tax that has actually been received in order to obtain a tax gap. The macro model thus creates an absolute limit for the gap, within which different types of error with certain common characteristics can then be assigned. Often it involves using discrepancies in macroeconomic data, for example data in the National Accounts or Financial Accounts, to estimate how large a proportion of a particular activity is escaping taxation. One example of such a discrepancy is the discrepancy that arises in the National Accounts when household expenditure and income are compared, and this can be used to home in on hidden income from employment in the domestic sector. Another example is the possibility of using the information on production flows in the National Accounts in order to calculate a theoretical VAT, which is then compared with actual VAT revenue. Later in this chapter we will describe these models in more detail.

4.2.2 What does a macro method measure?

The question that a macro method may, ideally, answer concerns the size of the area or the activity that is escaping taxation. On the other hand a macro method seldom gives an answer to the question of what the tax gap depends on, i.e. the reasons for the fact that the area or the activity is not taxed. Most often the macro method does not give any guidance in explaining the distribution of the gap between different parts of the area that is being measured.

4.2.3 How are the tax effects calculated using a macro method?

If it has been possible using a macro method to spotlight the size of a particular taxable activity that escapes taxation this does not mean that the tax gap has been identified. Identifying how much of a particular activity or a particular area is not being taxed is only a first stage in identifying the tax gap. In order to be able to prepare a tax gap we must calculate the fiscal affects to which the activity would give rise if it were fully reported. Such a calculation presents three main problems.

The macro method does not explain the content of the tax gap

The first problem concerns the fact that macro methods seldom give any detailed information on the contents of the activity or the area that the method has identified. In order to be able to work out the tax effects of the move of an activity from hidden to reported, detailed knowledge of the contents of the activities and the areas that are to be measured is often required. Some examples will illustrate the complexity.

Let us quite hypothetically assume that we have been able, using a macromethod, to identify the total extent of all the undeclared services in Sweden. One problem that arises is that of identifying to what extent the undeclared services have been provided by private individuals and to what extent by entrepreneurs. The taxation consequences will differ depending on who has carried out the undeclared service. We also need knowledge of the total salary income (i.e. both undeclared and declared wages) of those receiving undeclared wages in order to determine the marginal effect of the taxation.

We find another example in the field of VAT. Let us assume that we have succeeded in identifying all undeclared sale of goods and that we are now interested in calculating how much VAT ought to have been paid on these sales. As we do not have a uniform rate of VAT we must have information on which goods have been sold undeclared and to what extent. If we move on from the problem of the VAT rate that should be payable and assume that we have been able to identify an average rate of VAT, there remains the purely technical question of how to calculate the VAT. There are several ways of reasoning. One is to apply VAT to the full value of the undeclared sales. Another is to assume that the VAT may be regarded as forming part of the purchase and that it is then a part of the total sales value. Depending on which assumptions are made the tax gap will differ.²

The tax system is complex

Another difficulty in estimating the tax effects of the non-taxation of an activity is the inherent complexity of the tax system. An error at one point in taxation often leads to taxation consequences at other places in the tax system. When estimating the tax gap it can be difficult to grasp and take into account all these consequences. If for example an entrepreneur with a sole-trader activity pays an undeclared wage to an employee a tax gap arises with the employee in the form of unpaid income tax and a tax gap with the employer for unpaid employers' contributions. In addition a payment of the employers' social security contributions would mean that the owner's self-employed contributions and income tax would be reduced. Furthermore the undeclared wage may come from an undeclared sale, which means that there is probably also a VAT gap. The amount of the tax gap will vary depending on which consequences are taken into account.

Overlap between macro methods

Yet another problem if we try to make a total estimate of the size of the tax gap is the fact that different macrocalculations may overlap. There is therefore a risk of double counting of certain types of tax gap. As we have seen earlier, undeclared sales cause a VAT gap. This gap will be present both in a macrocalculation of hidden income from work and in a calculation of the total VAT that has been described. The gap may also occur in a calculation of the fraud with goods subject to excise duty.

As the examples above illustrate, detailed knowledge is needed, both of the area being measured and of the tax system as a whole in order to be able to calculate the tax gap in an

² These problems will be described in greater detail in the section on VAT and excise duty.

area. Macro methods can often explain only the scope of an activity, not its content in detail. To explain the composition or appearance of the area or the activity being measured it is therefore usually necessary to make use of other methods.

Dynamic effects

It is probable that many untaxed activities would never take place or would change in character if we were able to tax them. To be able to calculate a true tax gap we would need a knowledge of how demand for and supply of these activities would change, known as dynamic effects, if we were able to ensure that no gaps arose. As these effects are difficult to calculate and such an estimate would be highly hypothetical we have defined the tax gap (as explained in the previous chapter) as a static gap. We thus totally ignore any changes in demand and supply from the taxation of an activity.

4.2.4 Which areas can be calculated with a macro method?

As described above, macro methods often use macroeconomic data to try to identify the size of areas that escape taxation. However macroeconomic data cannot explain all types of tax gaps in the tax system. For example a macro method cannot be used to examine the size of the gap when different types of deductions are involved, or how many companies are using the wrong VAT rate. In simple terms, macro methods can only be used for areas or activities that somehow leave traces in the macroeconomic statistics. If anyone makes an incorrect deduction there is no link between this event and the economic statistics. The following three sections describe three different areas where macro methods have been used for tax gap calculations.

4.3 Undeclared work survey

The National Tax Agency recently carried out an extensive survey of the extent of undeclared work.³ The discrepancy in the National Accounts between statistics of household expenditure and officially reported income of the household sector is used as the basis for the survey. The discrepancy gives a measure of how much of the income at the disposal of households is “missing” in the official statistics. The discrepancy picks up both income that consists in fraud in the bookkeeping and also fraud that is entirely outside the bookkeeping. The discrepancy covers both payment to employees (wages) and undeclared income of entrepreneurs (income from business activities in private companies). The discrepancy in Sweden has been calculated using this method as approx. 5 per cent of GDP, which is equivalent to hidden employment income of SEK 115-120 bn.

Using the discrepancy in the National Accounts has therefore made it possible to establish an absolute limit to all the undeclared income that arises in connection with productive activity in the country. However this limit gives no reply to the question of how this hidden employment income is divided between, for example, different types of companies and different sectors. Nor is it impossible that there are shortcomings in the statistical basis of the National Accounts which might mean that the absolute limit calculated is too big or too small.

To ascertain the structure of the hidden employment income and to verify that the extent lies on an accurate level we have used a series of other methods to explain what the discrepancy consists of. In total it has been possible using different methods to explain approx. SEK 90 bn

³ “Svartköp och svartjobb i Sverige”, Del 1: Undersökningsresultat, Rapport 2006:4, Skatteverket [National Tax Agency]

of the total of SEK 115-120 bn discrepancy in the National Accounts. The methods used are described briefly below.

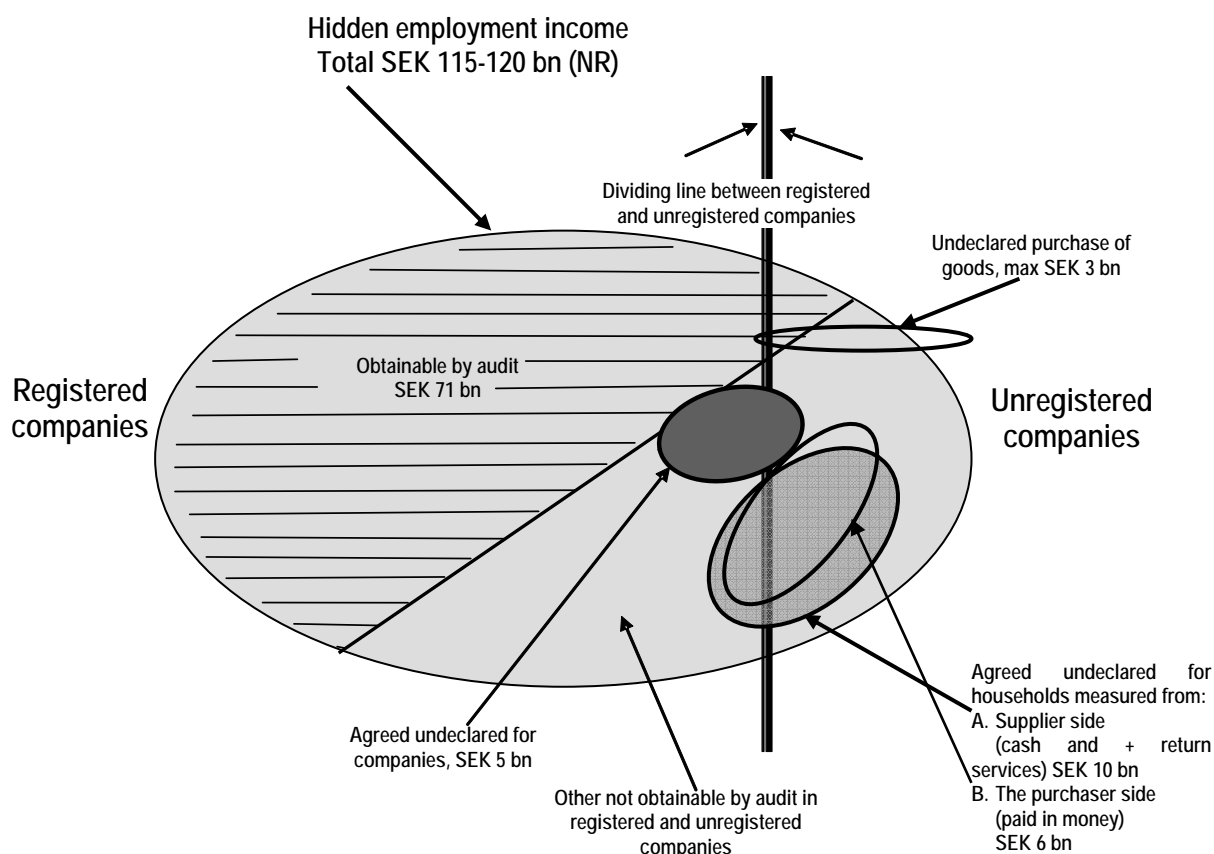
The audit method

By going through the National Tax Agency's audits of income tax for the years 1995 to 2003 with a focus on amendments in income from employment and income from business activity for self-employed persons it has been possible to create a picture of the structure of the hidden employment income that can be audited. By extrapolating from the results of the audits to the whole business population we have been able to explain and give structure to approx. SEK 71 bn or 60 per cent of the hidden income according to the discrepancy in the National Accounts. To counteract the effect of the fact that the audit sample is not random the companies audited have been stratified according to type of company, size of company and sector. For the same reason taxation is based only on 90 per cent of the audits for the small companies because five per cent of the highest and five per cent of the lowest amendments have been removed from the size of the amendments. For the figure of just over 200 groups of companies that arise by stratification an average amendment per company has been calculated. The average amendment has then been matched with the total number of companies in the group. The large number of strata mean that possible extreme values will have a limited impact on total estimate.

As mentioned above the audit method gives a picture of *auditable* hidden employment income which deals first and foremost with hidden employment income in registered companies. As the difficulty of discovering hidden employment income varies between industries, the audit method cannot alone state the ratio of hidden employment income between different sectors. To cover a larger part of the discrepancy and to obtain a better picture of the distribution of the hidden employment income between sectors and different types of companies the following methods have also been used in the undeclared work survey:

To examine the indication given by the audit method that hidden employment income is to be found primarily in small companies a number of studies have been made, based on comparisons between companies and private individuals with regard to median incomes, standards of living and estimation of withheld income from the level of food consumption. In addition to this, there have also been interview studies of households on their purchases and the performance of undeclared services and also the undeclared purchase of goods. In total it has been possible to explain by these methods approx. SEK 90 bn of the hidden income shown by the discrepancy in the National Accounts.

Fig. 3 Diagrammatic representation of undeclared work



Source: “Svartköp och svartjobb i Sverige”, Del 1: Undersökningsresultat, Rapport 2006:4, Skatteverket [Purchasing and Performing Undeclared Work in Sweden, Part 1: Result of study, Report 2006:4, the National Tax Agency]

In the survey it is confirmed that even if the methods together have not been able to explain the whole discrepancy it cannot be assumed that the level of the discrepancy in the National Accounts is erroneous. There are a series of reasons for the fact that there remains an unexplained part. Not everything emerges from the interviews and not everything can be covered by audits. There is also a lack of awareness of what is actually undeclared.

4.3.1 How to calculate tax on hidden income?

In the undeclared work survey a macro method, namely that of using the discrepancy in the National Accounts, has been used to show that approximately SEK 115-120 bn in hidden employment income escapes taxation every year. There is however no general tax to be imposed on this income for the purpose of calculating a tax gap but depending on the type of income the taxation implications will be different. As we have mentioned earlier, it has been possible to use various micro methods to explain and give structure to approx. SEK 90 bn of this income. Calculations of the tax gap in other areas have also yielded information that makes it possible to identify the content of further additional areas of the undeclared work. Altogether we have been able to identify where 91 per cent of the tax gap in undeclared work lies. It is with the aid of the descriptions of the appearance of the tax gap in these micro methods that it has been possible to calculate the tax gap.

4.4 VAT and excise duty

4.4.1 Introduction

Macro methods are used in several countries to estimate the tax gap in the field of VAT and excise duty.⁴ The information in the National Accounts on production flows is used to try and estimate the total consumption of goods and services. A “theoretical” VAT is then calculated, i.e. what the VAT income ought to be if all the goods and services were taxed. To obtain the theoretical VAT an average VAT rate is usually used which tries to take into account the fact that not all goods and services are taxed at the same rate and that certain goods are exempted from VAT. The theoretical tax is then compared with the actual VAT collected to obtain a tax gap. In the same way, the excise duty gap can be calculated.

The reliability of the calculations of the VAT gap or the VAT discrepancy is thus based in part on the assumption that the National Accounts really cover all productive activity and that the calculated average VAT rate really reflects the true pattern of consumption. The way, purely “technically”, in which the hypothetical VAT is calculated has a crucial bearing on the size of the tax gap. This question, i.e. the way in which the hypothetical VAT is calculated, is discussed exhaustively in a current study of VAT fraud in the EU’s member countries.

Calculations of the VAT gap in EU member countries

There is a great interest in the EU in creating knowledge of “the VAT gap” in the member countries. The EU budget includes a VAT-based charge and the larger the total VAT gap in the member countries, the higher the charge has to be. If the gap is different in different countries, it also means that certain countries pay a relatively higher charge than others. A serious view is also taken of the negative effects of tax fraud on economic development and competition in the internal market. The EU Commission has therefore instructed the UK consultants “Reckon LLP” to calculate the VAT gap in the 25 member countries. The same company has also been instructed to calculate the tax gap in the excise duty and company tax field. The VAT gap will be measured using a macro method that involves calculating a theoretical tax with the aid of the National Accounts. The theoretically calculated tax will then be compared with the tax actually paid, and the difference is the tax gap. The estimates of the VAT error should be completed by the end of 2007 and include each of the years 2000-2006.⁵

Reckon LLP reports in detail in a method memo the factors that have been considered with relation to how the hypothetical VAT is to be calculated. These considerations have a theoretical interest and are described briefly below.

4.4.2 How can the VAT gap be defined?

The method memo produced by Reckon LLP points out two questions of great significance in the definition of the tax gap in the VAT and excise duty areas:

- a) In cases where tax fraud leads to increased consumption or economic activity (despite the illegal activity), the question is whether the tax gap should include the tax that ought to be paid on these activities (although the activity takes place only because no tax is paid)?

⁴ This presentation will in future deal with the area of VAT, although the principles generally also apply in the field of excise duty.

⁵ At the time of printing this report Reckon LLP’s work is still in progress and it is at present not clear when the result will be published.

- b) When VAT has not been paid on a transaction the question is whether the actual expenditure of the consumer should be regarded as including VAT (i.e. VAT is added but never paid in by the seller) or be exclusive of VAT (i.e. the seller does not add any VAT)?

These two questions permit four possible definitions of the tax gap:

- a) In the first definition “*tax not remitted*” it is assumed that the VAT fraud is entirely due to the fact that the companies have not paid in the tax. The VAT is not therefore regarded as included in the price paid by the customer. If the VAT is 20 per cent and the customer pays SEK 120 undeclared for an item, the VAT error is 20 kronor.
- b) The second definition “*tax not collected*” assumes instead that no VAT has been paid on the black-market transactions. If the VAT is 20 per cent and the customer has paid SEK 120 undeclared, the VAT error in this case is 24 kronor. The customer ought to have paid SEK 144, of which 24 kronor is VAT.
- c) A third definition, “*full recovery*”, involves an assessment of the VAT that the tax authority would have been able to collect if it had complete information on all the tax fraud detected and there were no payment problems with the companies.
- d) With the final definition, “*perfect compliance*”, the additional income from the VAT that would have come in if there had not been any fraud is measured.

The four definitions are then tested on four different types of VAT fraud. It is decided that the estimates should be based on an application of the first definition, “*tax not remitted*”, and on macroeconomic data. The estimates should also be supplemented with estimates applying the third definition “*full recovery*”, where such information is available.

Reckon LLP considers that the “*tax not remitted*” definition will be a clear and simple measurement with the following characteristics:

- a) It is the natural measurement of the extent of the fraud in connection with carousel trading and wholesale trading, and gives a reasonable indication of the fraud in retail trading.
- b) It gives a correct measurement of the value of the fraud in cases where customers collude with the fraud, provided that the statistics for final consumption include adjustments for tax fraud where customers collude.
- c) It will not give a reliable measurement of the value of the fraud in cases where customers import goods for their own consumption.

Calculating the VAT gap with a macro method

The following is an account of how Reckon LLP plans to carry out its macro calculations of the VAT with the aid of the “*tax not remitted*” definition.

The starting point for the macrocalculation is a comparison of real VAT revenue and a theoretically calculated VAT based on National Accounts data.

Reckon LLP sees two different ways of calculating a theoretical VAT based on the information on consumption levels in the National Accounts.

The first method involves identifying and estimating the value of various consumer products in absolute figures individually. A VAT rate is then calculated for each group before the groups are finally added to give the total theoretical VAT. However the relatively complex structure of the VAT rates means that this method requires the expenditure to be divided up into quite small components to enable account to be taken of supply of products that is VAT-exempt, qualified VAT-exempt or liable to VAT.

Another way of estimating a theoretical VAT would be to use information from the National Accounts and consumer surveys to estimate the size of different types of expenditure with different rates of VAT. The information can then form the basis for the calculation of an average VAT rate that can be used on the information on total final consumption in the National Accounts.

Reckon LLP prefers to calculate the theoretical VAT with the aid of an average rate. With an average rate of VAT fresher calculations can be made as information in the National Accounts on the total final consumption is available earlier than the detailed figures concerning different product groups. The second method also allows the computations to be compared with the calculations of the weighted tax rate that is used in the computation of the VAT-based EU charge.

To sum up, Reckon LLP will use the following formula to calculate the VAT error:

$$\text{VAT error} = (\text{final consumption} \times \text{weighted average rate of VAT}) - \text{actual VAT revenue}$$

4.4.3 Calculations in Sweden⁶

How have we in Sweden used the possibility of trying to estimate the tax gap with the aid of the National Accounts?

Tengblad's calculation from 1994

In connection with the evaluation of the major tax reform in the early 1990s Åke Tengblad (former head of the National Accounts) calculated in 1994 the VAT gap for the period 1980-1991. The method involved calculating a theoretical VAT in the National Accounts with the aid of the input-output matrices of product group flows up to end use. This theoretical VAT was then compared with VAT actually reported.

The calculations showed a significant discrepancy in VAT throughout the 1980s. On average the difference was 11.6 per cent of theoretically calculated VAT, with major variations between the years. The reason for the difference between the years was explained by allocation to periods. Apart from the variations there was also uncertainty around the level as such. There were uncertainties surrounding the effect of reduced rates of tax and exceptions and around trade margins and operational surpluses.

⁶ The text of this section is based on Annika Persson's memorandum "*En modellansats för beräkning av skattefelet kopplat till momsredovisning*" [A model approach to calculation of the tax gap connected with VAT accounting].

Table 5: Calculation of VAT gap and corresponding value liable to tax, 1980-1991.

Year	Theoretically calculated VAT as per National Accounts SEK bn	Actual collection SEK bn	Discrepancy		
			Amount in VAT SEK bn	as % of theoretical VAT	Expressed as value liable to VAT SEK bn
1980	39.5	34.6	4.8	12.2%	22
1981	45.3	39.6	5.8	12.7%	25
1982	47.4	41.3	6.1	12.9%	26
1983	55.6	48.3	7.3	13.1%	31
1984	61.5	53.2	8.3	13.4%	35
1985	67.9	60.5	7.4	10.9%	32
1986	75.2	66.8	8.4	11.2%	36
1987	83.2	76.1	7.2	8.6%	30
1988	91.7	81.7	10.0	10.9%	43
1989	100.1	93.3	6.8	6.8%	29
1990	128.1	112.4	15.7	12.3%	65
1991	149.0	127.4	21.6	14.5%	86
Average, whole period			11.6%		

Source: Åke Tengblad. Århundradets skattereform [Tax Reform of the Century]

Since Tengblad made his calculations the National Accounts have been audited, new input-output tables have been used and the way of reporting VAT has changed. If the estimates for the same period are made using audited figures it is not certain that the result would be the same.

The National Accounts today

In the course of routine work on the Swedish National Accounts the VAT discrepancy is calculated as a kind of internal control, in order to check that the figures for production calculations (input-output model etc.) give a reasonable result. But the calculation of the VAT discrepancy as such has no intrinsic value in the context of the National Accounts.

A few years ago the National Tax Agency gained access to the internal calculations of the VAT gap made by Statistics Sweden for the period 1993-2002. The discrepancy in these calculations is considerably smaller than in Tengblad's earlier calculations and the average for the period is a modest 1.3 per cent of the theoretically calculated VAT.

Table 6: Calculation of the VAT gap 1993-2002

Year	Theoretically calculated VAT as per National Accounts SEK bn	Actual VAT Income SEK bn	Discrepancy	
			Amount in VAT SEK bn	as % of theoretical VAT
1993	157.1	155.2	1.9	1.2%
1994	162.2	160.3	1.9	1.2%
1995	167.9	164.1	3.8	2.2%
1996	161.2	157.4	3.7	2.3%
1997	168.3	166.9	1.3	0.8%
1998	177.8	177.1	0.7	0.4%
1999	188.8	187.7	1.1	0.6%
2000	198.7	194.9	3.8	1.9%
2001	208.7	204.6	4.1	1.9%
2002	217.3	215.7	1.6	0.8%
Average, whole period				1.3%

Source: Underhandskontakter med SCB/NR [Informal contact with Statistics Sweden/National Accounts]

However it must be remembered that these calculations have been made for internal consistency checks within the National Accounts. The focus is on changes in the discrepancy between years, not on the level as such. Should the discrepancy show a sudden jump in these internal calculations, for example, or disappear completely, the National Accounts see it as a warning signal and will take special measures to check the consistency of the information on which production calculations are based. As long as the level is stable and on the right side, however, no corrections result from the discrepancy calculation. However the National Accounts agree that the level of the discrepancy is low and that they had expected a higher value. There is no single explanation of why it is so low. It has become generally more difficult to carry out the calculations since differences were introduced in the rates of VAT. If calculations are to be made in order to use the VAT discrepancy as a measure of incorrectly reported VAT, complicated calculations are necessary which will correctly pick up the effect of the differentiated VAT rates, of the fact that some activities are exempt from VAT/subject to qualified exemption, trade margins etc. One problem that may have become less acute since Tengblad's calculations is that allocation of the actual VAT income to specific periods has become easier.

The National Accounts are being improved all the time. Such revisions may also have an effect on the final level of the VAT discrepancy.

What is a reasonable level?

The differences between Tengblad's calculations and the present internal calculations of the VAT discrepancy in the National Accounts are great. The last year covered by Tengblad's calculations is 1991, with a VAT gap of 17 per cent relative to actual VAT revenue and the first year in the National Accounts' internal calculations is 1993, with a VAT gap of 1.2 per cent. Only one year was missed and it seems unlikely that the differences in level express a real change. There are evidently differences in how the methods have been applied and/or the material used for the calculations.

From the point of view of the National Tax Agency the VAT gap has two components. VAT errors connected with:

- hidden income from employment
- other kinds of fraud

The VAT error due to the hidden employment from income has been calculated in the tax gap map to amount to approx. SEK 17 bn. In addition there is the leakage that arises as a result of fraud, which is estimated at approx. SEK 12 bn. The total tax gap on VAT in the tax gap map is estimated at just over SEK 35 bn. As a proportion of total VAT revenue it is approx. 13 per cent.

4.5 Individuals' savings abroad

A relatively extensive 3rd party information system gives the National Tax Agency good information on the value of assets and returns with regard to financial saving invested in Sweden. On the other hand there is not the same possibility of controlling on the return on saving outside the Nordic countries. In most cases the individual has to take the initiative of reporting the yield in his or her tax return. The sums that are actually recorded manually are negligible, however, which implies that there is a not insignificant saving abroad which is not reported for taxation in Sweden. The question is how to estimate the size of this saving in order to gain an idea of the size of the tax gap.

A memorandum from the research unit describes a model approach designed to spotlight the undeclared saving of individuals.⁷ The model approach is based on the fact that household saving is calculated in the National and Financial Accounts in two different ways:

- The National Accounts start with a “real” measurement of what is produced (goods and services) in the country. The income that arises from production is distributed between the factors of production labour and capital. A part of this income goes to the households directly or by transfers. The National Accounts calculate the financial saving as the difference between what the households have in disposable income and what they spend on consumption and real investments.
- The Financial Accounts also calculate the households' financial saving, but here it is computed from how the savings are invested, as the sum of transactions in financial assets minus the sum of transactions in liabilities. The calculation is based on material from financial institutions etc.

If the statistics were fully comprehensive and there were no other errors the two measurements of financial saving would agree. In that case it would be possible to see where all the saving was invested – including that invested by the households in foreign countries. But the two measurements differ. Household saving is usually taken to mean the measurement in the National Accounts. The idea here is that the statistics in the National Accounts capture the level of the households' financial saving correctly whereas the financial market statistics have difficulty in including everything – especially saving that has been invested abroad. The different ways of calculating financial saving give rise to discrepancies between the real and financial calculations. Part of the discrepancy probably consists in statistical shortcomings but part may well be made up of savings invested abroad.

In order to be able to estimate the size of the tax gap it is necessary to go a step further and try to assess how much of the discrepancy consists of savings that have been invested abroad and also make certain assumptions regarding how the savings have been invested and what returns there might possibly be on them. For example there is a need for an assessment of how much

⁷ The description in this section is based on Annika Persson's memorandum: “*Hur stor del av det finansiella sparandet har individerna förlagt till utlandet?*” [How great a part of the financial saving have individuals placed abroad?], draft 31 May 2007.

of the capital invested abroad has gone on consumption and how much has been invested in financial assets that yield a return (and can thus give rise to a tax gap)..

How well we succeed in specifying the size of the tax gap will of course depend on how faithfully the model reflects reality. The conclusions obtained from the model approach depend entirely on the assumptions made. For example, knowledge of the surrounding factors that influence the inclination and ability of private individuals to invest capital abroad, and developments in the securities market, are crucial to the quality of the estimation of the tax gap. Despite the uncertainty we have, in the absence of alternative material, used this model to calculate the tax gap on savings abroad.

4.6 Micro methods

Another way of trying to estimate the tax gap within an area is by means of various types of micro methods, or bottom-up methods, where the tax gap is estimated with the aid of data on individual persons or companies. These involve surveying different patterns of behaviour in the taxpayers and using them to draw conclusions regarding the tax gap for a certain group from the observations made. Examples of micro methods include random compliance controls, targeted checks and audits, surveys of particular industries and risk assessments. What is common to all these methods is, as mentioned, the fact that information on the behaviour of a sample of taxpayers is used to draw conclusions concerning a larger group.

Random samples

The compliance-controls of the National Tax Agency is designed to discover and narrow down the errors and inadequacies that occur in the taxpayers' reporting. One way of trying to identify the tax gap in a certain area is to select a group of taxpayers at random for control and then to translate the gap in the random selection to the total population⁸.

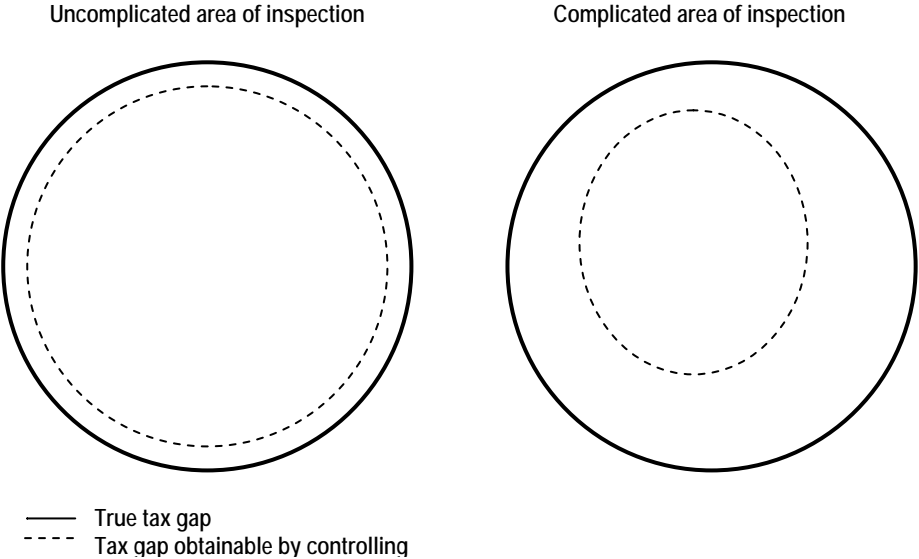
As mentioned at the start of this chapter, the tax gap is, by definition, hidden. How much of the total tax gap will be found at a control is therefore impossible to calculate. What is calculated by extrapolating from the result of a random control is not therefore the total tax gap but the tax that would be discovered if the total tax population was inspected. We can call this the "controlable" tax gap to distinguish it from the "true" tax gap, which assumes that we find all gaps, not just those gaps that are discovered in a control.

The distance between the controlable tax gap and true tax gap may vary. In limited areas where the gaps are relatively easy to discover and all the inspectors are meticulous and zealous it is probable that the result of a random control is comparatively close to the true tax gap. The distance between the tax gap obtained by controlling and the true tax gap will be greater, however, in areas that are complex and where the gaps are difficult to discover. In these cases the skills and experience of the staff who are controlling will be more important. Some will be better than others at finding errors, which naturally also affects a possible extrapolation of the result to the total population.

This argument may be summarized by saying that the more complex an area is, the more likely it is that the tax gap obtained by controlling does not agree with the true tax gap; see fig. 5 below.

⁸ When we speak of a random sample in this chapter we assume that the sample is made in such a way that it can be regarded as representing the population.

Fig. 4 Comparison of the difference between true tax gap and the tax gap that can be obtained from random controls in two different areas of taxation.

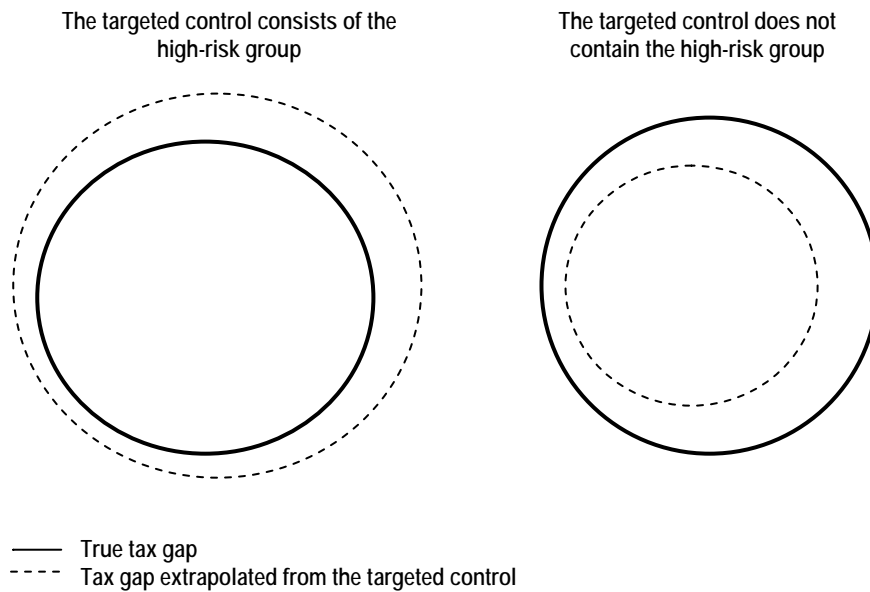


The difficulty of assessing how close we are to the reality in our estimations of the tax gap also makes it difficult to compare and assess the tax gaps in different areas in relation to each other. Let us say that in one area we have obtained by checking a tax gap of SEK 9 bn and that it represents 90 per cent of the true tax gap. In another case we have found a tax gap of SEK 5 bn, which represents 20 per cent of the true tax gap. In the first case the true tax gap is SEK 10 bn, in the second it is SEK 50 bn. As the true tax gap is unknown to us it is easy for our conclusions and our measures to deal with the tax gap to be misguided.

Targeted controls

Unlike that in a random sample, the group of taxpayers selected for inspection in a targeted control is not representative of the tax population at large. The taxpayers have often been selected because by certain criteria they are considered particularly worth inspecting. Particularly worth inspecting often means from the Tax Agency’s point of view that the taxpayer runs a greater risk of making errors than other taxpayers in the population. Once again this is not an objective truth but a judgment made by the Tax Agency on the basis of different risk evaluations and earlier experience of compliance-controls. This means that if the Tax Agency “succeeds” in its risk assessment, then the probability of mistakes and therefore the tax gap itself will be greater in the group selected for inspection than in the population as a whole. If the results of the targeted controls are extrapolated to the total population there is therefore a risk of overestimating the tax gap obtainable by controlling. Nor is it impossible that an extrapolation of the tax gap in a targeted control to the total population may exceed the true tax gap.

Fig. 5 **Difference between true tax gap and tax gap extrapolated from a targeted control**



As we can see from these considerations, it is much more difficult to use the results of targeted controls to measure the tax gap in a particular area or for a particular area of error. Unlike the random controls, the targeted controls cannot be said to represent anyone other than those taxpayers that are de facto included in the control. With a random sample there is no risk of overestimating the tax gap, provided that the population is not excessively skewed and that the sample is representative. With a targeted sample, on the other hand, it is never possible to say with certainty where the tax gap obtained by controlling lies in relation to the true tax gap. This is illustrated in the figure shown above.

The National Tax Agency makes few random checks. This means that for calculating the tax gap the results of targeted audits and controls are often the only material available. When extrapolating the targeted controls to the whole population, therefore, it is necessary to make assumptions regarding the representativity, or rather “non-representativity”, of the targeted sample. In areas where we believe that the controls pick up taxpayers with the highest risks/errors the results have to be adjusted downwards. The question is by how much. In the last resort we need to be able to assess relatively exactly our own risk assessment, i.e. how skilful we are at identifying taxpayers with the highest risk of error. In the absence of real knowledge about this, such assumptions often acquire the character of arithmetical examples. One way of investigating the accuracy of our risk assessment might be to carry out a random sample in the same area as a targeted control and then look at the difference in the results of the control between the two groups. However doing this on any great scale would require considerable resources. As already described, efforts have been made in undeclared work surveys to handle this problem by using a large number of audits from different years and by stratifying the sample in a large number of sub-areas when extrapolating. In the tax gap map we have also adjusted the results of audits in various areas by making assumptions about the level of accuracy.

A further point that may be made in this context is that the better we become in our sampling at identifying and selecting high-risk taxpayers, the greater the risk of our overestimating the tax gap in the total population.

Risk surveys and single-industry surveys

The aim of risk surveys and surveys of particular industries is to try to describe in a structured and systematic manner problems and risks in a particular industry or a particular area and the cause of the problems. An important part of such a survey consists in trying to pin down how many taxpayers are covered by the field and estimating the size of the tax gap. In many cases the surveys of particular industries and risks that the Tax Agency makes are developments of the experience recorded in the checks. The difference is that in an industry and risk evaluation it is possible to add factual data that lie outside the field of the results of the checks and thus to obtain a more sensitive evaluation of the total risk of the area or the type of error. Any calculations of the size of the tax gap will, in these contexts also, be based on the knowledge and experience that exist in the area in general, and also on the knowledge and skills of those carrying out the survey.

Arithmetical example

It is not possible, either from a resource or a time perspective, to carry out checks and/or surveys of all the areas of taxation or for all occurrences. It is inevitable that when a total summary of the tax gap is being prepared areas will be discovered where the Tax Agency has little or no knowledge. These may be areas which the Agency regards as so small and insignificant that the decision has simply been taken not to devote compliance-checking or investigative resources to the area. They may also be entirely new areas that are undoubtedly considered important but where there has not yet been time to accumulate any knowledge. Should an estimate of the tax gap nevertheless be required in these areas the size of the tax gap has simply to be estimated with the aid of various arithmetical examples. It need hardly be said that there is no way at all of verifying how well such a method has succeeded in narrowing down the tax gap.

Tax effects

As we were able to see earlier, a macro method seldom gives any guidance with regard to describing the appearance or structure of the area that has been identified as escaping taxation. Therefore it is often difficult to calculate the concrete tax effects or the tax gap using only a macromethod. For example it was possible in the undeclared work survey to identify the size of the hidden income from employment but the macro method itself gave no guidance in explaining which tax would be payable on the material. This problem does not apply to micro methods. The starting point for a compliance check or a survey is usually a specific activity or event and therefore the actual calculation of the tax effects is seldom a problem. The problem with micro methods is instead, as we have seen, estimating the size of the gap.

4.6.1 How are macro methods and micro methods related?

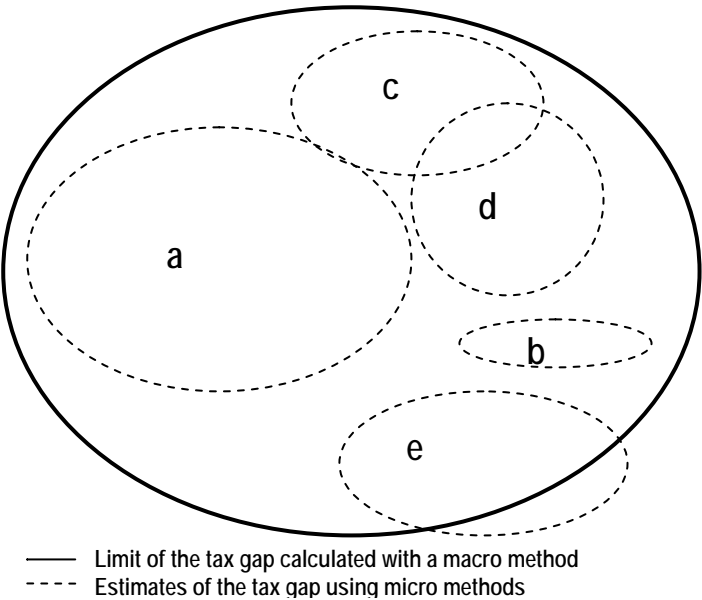
The figure below illustrates how a macro method has been used to try to identify the tax gap in a specific area, e.g. the VAT gap. The macro method cannot, however, describe the structure of the errors that lie within the area; this has instead to be described with the aid of different micro methods (dotted circles a-e). For example, circle a describes a VAT gap on unreported sales in companies and circle b the gaps that are due to the use of the wrong rate of VAT by the companies.

As we have already indicated, micro methods can seldom explain all the gaps; they can only explain the gaps that we know about from our compliance controls and other surveys. This is illustrated by the fact that the dotted circles do not fill up the outer ring. We can also “land

outside the ring” by overestimating the size of the tax gap in an area, for example by extrapolating the results of a targeted control without adjusting for the fact that the sample is not representative. When several micro methods are used to explain the tax gap in an area there is also a risk that they will overlap and that some part of the tax gap will be counted twice (see circles c and d).

When macro methods and micro methods support each other to any great extent it is likely that we have a description of the gap that agrees fairly well with reality. However it is possible to find oneself in a situation where the micro methods can only explain a small part of the gap calculated using the macro method. It is then probable that the compliance controls and surveys of the Tax Agency have not succeeded in identifying large parts of the gap. Another explanation might be that there are inadequacies in the macroeconomic data that has been used to calculate the total gap. The same reasoning can be applied in reverse, i.e. if different micro estimates give a higher tax gap than a macro calculation.

Fig. 6 Description of estimates of the size of the tax gap obtained with the aid of different methods



5 Design of a tax gap map

The National Tax Agency has earlier calculated the size of the total tax gap. What is new in the present undertaking is that not only has the total tax gap to be calculated, but it has also to be divided into different components. The nature of this division is not altogether obvious. The design should be guided by the use to which the map is to be put and the information that it is possible to obtain.

The main purpose of the tax gap map is to obtain an instructive picture of the nature of the tax gap. It should be possible to communicate the map both internally and externally, both nationally and internationally. The structure needs therefore to be clear and not excessively detailed. Too much detail runs the risk of obscuring the picture and of leading to an underestimate of the uncertainty in the figures. In addition to this it has been requested that the tax gap map should be serviceable in the work of counteracting the tax gap, as a support in risk management. An adaptation to the needs of risk management must not however lead to an impairment of the visibility.

The main sub-divisions of the tax gap that are both instructive and about which it may be realistic to expect to obtain information are:

- Type of tax
- Group of taxpayers
- Area of error

Taking a look at other countries that have developed various forms of tax gap maps reveals a division by type of tax together with some additional dimension as the commonest. This is the case in the UK and the USA, for example. However there is no common structure in the countries that have designed tax gap maps, so there is no “standard” to which to conform in order to create better comparability with other countries.

It is possible to create an instructive and lucid map whatever the principles on which the information is divided. Which design will be most useful depends on who is to use the map. A politician who is trying to draft tax rules may well find a division by type of tax very useful, whereas the man in the street is no doubt more interested in knowing who is doing wrong and what they are doing. The main argument against a division by type of tax is that many of the errors that can be made in reporting may affect several types of tax at the same time. One obvious example of this is undeclared work, where an undeclared income often affects VAT, employers’ social security contributions, income tax of the person doing the work (providing the service) and the income tax of the company (business activity). It would seem more interesting to know how much undeclared work there is and its total tax effect than to know how each type of tax is influenced by undeclared work. On the other hand the tax gaps in, for example, VAT and excise duty may be difficult to find if a division that entirely disregards type of tax is chosen. It is therefore possible to envisage a combination of different grounds for a division, where there is a basic division by, for example, groups of taxpayers and areas of tax gaps, but the VAT and excise duty gap are reported separately. This gives an added value in the form of increased information, but at the same time there is some loss of lucidity. As the instructive value of the map is the highest priority the map should only contain two dimensions.

These observations show clearly that there is no ideal design for a tax gap map and that the need for information varies. We have therefore decided to calculate the tax gap by groups of

taxpayer, by area of error and by type of tax. It is then possible to produce alternative maps according to need. We have chosen to present the main map as a matrix of groups of taxpayers and areas of error. In total the tax gap in the matrix is divided into 15 different fields.

Fig. 7 Matrix of tax gap

	International	Undeclared work	Other national
Private individuals			
Micro-companies			
Small and medium-sized companies			
Large companies			
Public sector, organizations			

5.1 Division of taxpayers into groups

When dividing the taxpayers into groups we have started on the assumption that the groups should be as different from a tax gap perspective as possible. It is also practical if the division makes it possible to use information from the Tax Agency’s undeclared work survey as previous studies have shown that undeclared work accounts for a large part of the total tax gap. The undeclared work survey used a fairly detailed division of the taxpayers into a total of 11 groups.

Three main groups emerge: private individuals (who are not entrepreneurs), the smallest companies and the largest companies. As the very smallest companies differ from a tax gap perspective from other companies we have chosen to use a basis for division that differs from that used in, for example, risk assessment. Altogether we have divided the taxpayers into the following five groups:

<p>Private individuals, approx. 9.8 million</p> <ul style="list-style-type: none"> - Physical persons, not including their business activities <p>Micro companies, approx. 640 000</p> <ul style="list-style-type: none"> - Companies with total wage bill < SEK 1 m <p>Small and medium-sized companies, approx. 65 000</p> <ul style="list-style-type: none"> - Companies with wage bill SEK 1-50 m <p>Large companies, approx. 15 000</p> <ul style="list-style-type: none"> - All the companies in the group where one company has a wage bill > SEK 50 m <p>Public sector, organizations etc., approx. 150 000</p> <ul style="list-style-type: none"> - Local authorities and their associations, other public authorities etc. - Economic associations, tenant-owners' associations etc. - Voluntary associations, foundations etc.

A number of dormant companies are registered. If these are included in the tax gap map the result will be misleading. We have therefore excluded companies that do not seem to have any business activities at all. For inclusion in the division by groups they need to satisfy one of the following conditions:

- the company has reported a turnover of more than SEK 0
- the company has reported a wage bill in income statements greater than SEK 0
- the company has reported input or output VAT of more than SEK 0

Private individuals

The private individuals group includes all individuals, excluding their business activities (which instead are categorized as micro companies). That means that individuals who are both wage earners and entrepreneurs are included in two groups. Their income from earnings, income from capital, property tax etc. is in the “private persons” group and their business activities are in the micro companies group.

In total the group consists of 9.8 million people. That there are so many is because everyone who has any income from earnings or capital that is to be taxed in Sweden and everybody who owns real property in Sweden is included in the group. In addition to wage earners all children with their own bank accounts⁹ are included, as also are persons resident abroad with properties in Sweden or bank accounts in Sweden.

Micro companies

The very smallest companies differ from other small companies with regard to the size and nature of their tax gap. This is underlined by the recent undeclared work survey. Within the Tax Agency we often wish to draw a distinction between companies with and companies without employees. If taxpayer service measures are being planned, this may be an appropriate division. From a tax gap perspective, however, the dividing line seems to be somewhere around 3-5 employees. We have therefore defined micro companies as companies with a wage bill of less than SEK 1 million.

⁹ Those who have only interest income do not need to submit a tax return, but a tax is still determined for them based on statements of interest income submitted.

Altogether there are 869 520 companies that can be assigned to the micro company group. However 26 per cent of them, or 230 101 companies, are dormant. In total the group therefore consists of 639 419 companies.

Most of the micro companies are private firms. Only 20 per cent are limited companies and 10 per cent are partnerships.

Table 7: Number of micro companies of different types

Type of company	Number	Proportion
Private firm	453 122	71%
Partnership	60 836	10%
Limited company	125 461	20%
Total	639 419	100%

The micro companies are largely sole proprietorships. Nearly three-quarters of them pay no wages at all. It has also to be remembered that private limited companies report wage payments if the owner himself/herself draws a wage. This makes the proportion of sole proprietorships even higher.

Table 8: Number of micro companies by size of wage bill

Wage bill	Number	Proportion
SEK 0	460 594	72%
SEK 1 – 10,000	7 574	1%
SEK 10,000 – 50,000	22 507	4%
SEK 50,000 – 100,000	18 681	3%
SEK 100,000 – 250,000	42 588	7%
SEK 250,000 – 500,000	46 075	7%
SEK 500,000 – 1,000,000	41 430	6%
Total	639 419	100%

In addition most micro companies have quite a low turnover. Only 18 per cent of them have a turnover of more than SEK 1 million and nearly half have a turnover of less than SEK 100 000. It is therefore probable that many micro companies represent only an ancillary income of their owner.

Table 9: Number of micro companies by turnover

Turnover	Number	Proportion
SEK 0	109 994	17%
SEK 1 – 50,000	151 120	24%
SEK 50,000 – 100,000	49 446	8%
SEK 100,000 – 250,000	74 334	12%
SEK 250,000 – 500,000	66 846	10%
SEK 500,000 – 1,000,000	70 123	11%
SEK 1,000,000 – 2,500,000	74 193	12%
SEK 2,500,000 – 5,000,000	29 481	5%
SEK 5,000,000 – 10,000,000	10 401	2%
>SEK 10,000,000	3 311	1%
Total	639 419	100%

Small and medium-sized companies

The group of small and medium-sized companies is very heterogeneous. It includes both the little company with only a few employees and large companies with a couple of hundred. It might have been desirable to divide it into two groups, but so as not to lose lucidity we have decided to present all small and medium-sized companies in a single group. Altogether the group contains 64 925 companies. As the group is defined by the size of the wage bill there are no dormant companies.

No less than 97 per cent of the small and medium-sized companies are limited companies.

Table 10: Number of small and medium-sized companies of different types

Type of company	Number	Proportion
Private firm	992	2%
Partnership	1 278	2%
Limited company	62 655	97%
Total	64 925	100%

If the small and medium-sized companies were to be divided into two groups the division would presumably fall somewhere around a wage bill of SEK 5 million. In that case 80 per cent of the companies would be in the small companies group and 20 per cent in the medium-sized companies group.

Table 11: Number of small and medium-sized companies by wage bill

Wage bill	Number	Proportion
SEK 1,000,000 - 1,500,000	18 900	29%
SEK 1,500,000 - 2,000,000	10 689	16%
SEK 2,000,000 - 5,000,000	21 950	34%
SEK 5,000,000 - 10,000,000	7 706	12%
> SEK 10,000,000	5 680	9%
Total	64 925	100%

Three-quarters of small and medium-sized companies have a turnover of less than SEK 25 m and 11 per cent have a turnover of more than SEK 50 m.

Table 12: Number of small and medium-sized companies by turnover

Turnover	Number	Proportion
SEK 0	2 639	4%
SEK 1 - 5,000,000	13 077	20%
SEK 5,000,000 - 10,000,000	16 721	26%
SEK 10,000,000 - 25,000,000	17 388	27%
SEK 25,000,000 - 50,000,000	7 571	12%
SEK 50,000,000 - 100,000,000	4 020	6%
> SEK 100,000,000	3 509	5%
Total	64 925	100%

Large companies

Organizationally the Tax Agency has separated the companies in the largest groups and assigned them to the Large Taxpayer Unit (SFSK). All the companies in a group are dealt with by SFSK if any one of the companies has a wage bill of more than SEK 50 million. Experience of SFSK suggests that the tax gap is largely concentrated in the 100 largest groups. From a tax gap perspective, therefore, it might have been possible to use a narrower limit than the organizational one. However it is simpler to calculate the tax gap if all SFSK's companies are assigned to one and the same group. We have therefore used SFSK's definition of a large company. In total the group then contains approx. 17 000 companies, of which approx. 14 500 are active.

Public sector, organizations etc.

This is a rather heterogeneous group of various types of entity. Many of them do not really have very much in common with regard to the risk of tax gap and the type of tax gap occurring. Instead it becomes a kind of residual item of groups of taxpayers who do not fit into any of the other groups. What most of the taxpayers in this group have in common is that they are only partly liable to tax. It would have been possible to create a separate group of those legal forms that are often major employers, such as municipalities and government authorities. The groups would then become more homogenous. This would however result in unjustifiably numerous and small groups of taxpayers.

Table 13: Organizations included in the group public sector, organizations etc.

Public sector	All	Active	Proportion Active
Public sector			
Government units	287	249	87%
Municipalities	292	290	99%
Statutory authorities	161	108	67%
County councils	24	20	83%
Social insurance offices	23	1	4%
Public cooperatives and institutions	87	69	79%
Regional government authorities	49	26	53%
Total	923	763	83%
Economic associations, tenant-owners' associations etc.			
Economic associations	14 369	8 318	58%
Tenant-owners' associations	25 826	18 789	73%
Total	40 195	27 107	67%
Non-profit associations, foundations etc.			
Non-profit associations*	125 389	85 000	68%
Joint ownership associations, road associations, road-owners' associations*	22 619	15 000	66%
Registered religious communities	3 081	1 338	43%
Family foundations	837	664	79%
Other foundations and funds, pension funds, staff funds	26 295	19 426	74%
Benevolent societies	108	53	49%
Unemployment benefit societies	41	37	90%
Total	178 370	121 518	68%
Total sum	219 488	149 388	68%

* Many non-profit associations etc. submit separate information every fifth year instead of submitting personal tax returns every year. There is therefore no material on which to base an estimate of the proportion of the associations that are active. Instead a reasonability assessment has been made.

5.2 Division of tax gap by area of error

The second dimension that we have used in the tax gap map is area of error. A division of the gap by areas of error can be made with varying degrees of detail. Parts of the material on which calculations of the tax gap are based are type-of-error-based with a high degree of detail. However the character and degree of detail of the material varies between different parts of the tax gap. In the tax gap map we have decided to divide the gap only into more general categories.

<p>International</p> <ul style="list-style-type: none"> - All errors that have an international connection. These may concern foreign persons with income in Sweden, people in Sweden with income from abroad or various forms of transactions between Sweden and another country. <p>Undeclared work</p> <ul style="list-style-type: none"> - Payment for work done that is to be taxed in Sweden but which is not reported. The definition is broad and includes both undeclared wage payments and undeclared sales in a company and also unreported withdrawals and private costs that have been deducted in the company. <p>Other national</p> <ul style="list-style-type: none"> - All types of error that have no international connection and that do not involve undeclared work. Examples of other errors include incorrect deductions, incorrect calculation of capital gains, incorrect depreciation, incorrect VAT rates etc.
--

Treating the errors with an international connection separately was quite natural, because these errors are often slightly different in character from other errors. In many respects the rules are complex and several countries may be concerned by the questions. It is therefore an area with both a high risk of unintentional error and also an error where there is tax avoidance – both within and outside the limits of the law – and pure fraud. It is also within the international area that we believe that the tax gap has increased in recent years.

Isolating the tax gap that may be described as undeclared work was natural for two reasons – one being that undeclared work accounts for a relatively large part of the total tax gap and the other that we have extensive material on which to calculate the tax gap in this area in the survey of undeclared work that the National Tax Agency presented a year ago. We use the same broad definition of undeclared work in the tax gap map as was used in the undeclared work survey. By undeclared work we mean that a person reports lower *income from employment* in the tax return than the law prescribes. In tax law terms this means declaring too low a sum for wages or not declaring them at all or income from business activity that is too low or not declared at all in the case of entrepreneurs. Examples of employment income that are included in the calculation of undeclared work are:

- Undeclared wage payments
- Unreported income from business activity
- Unreported withdrawals from business activity
- Private expenses that are recorded as business activity
- Incorrectly reported wages or benefits

It was more difficult to decide how remaining parts of the tax gap were to be presented. We wondered for a long time whether to try to distinguish those parts of the gap that could be described as economic crime. But such a division might cause considerable problems by overlapping the “international” and “undeclared work” groups. There is also a risk that the tax gap from economic crime would be underestimated because of inadequate information. We therefore decided that the third type of tax gap would include all errors that neither have an international connection nor represent undeclared work.

Although we have only divided the tax gap into three areas, there are places where they overlap. It would have been desirable to make the areas mutually exclusive, but it was not possible to construct them in such a manner. Instead we have dealt with overlap by deciding

on an order of priority. Errors that constitute undeclared work, but which at the same time have international connections, have been assigned to “international”. The “undeclared work” group contains all the undeclared work that is not international. The group “other national” contains what cannot be referred to any of the other groups.

5.3 Division of tax gap by type of tax

The main tax gap map shows only total tax gap, irrespective of type of tax. However in the material we have broken down the errors into different types of tax, making it possible also to construct maps divided by type of tax. In order to make it possible to relate the tax gap by type of tax to the total tax revenue the total tax has been calculated for each type of tax. These calculations are set out in Appendix 9.

<p>Income tax, earnings</p> <ul style="list-style-type: none">- Municipal and state income tax on earned income and general pension contributions from employment
<p>Tax on capital</p> <ul style="list-style-type: none">- Income tax on capital minus deficit on capital
<p>Income tax, business activity</p> <ul style="list-style-type: none">- For individuals, municipal and state income tax on income from business activity, general pension contribution for self-employed persons and tax on retained funds- For legal entities, state income tax (company tax)
<p>Social security charges</p> <ul style="list-style-type: none">- Employers' contributions for employees- Self-employed persons' social security contributions- Special salary tax- Special salary tax on pension costs for employees/self-employed persons- Tax on returns on employers' pension costs
<p>VAT</p> <ul style="list-style-type: none">- Net total of all VAT reported in personal and comprehensive tax returns- Import VAT reported to the Swedish Customs
<p>Excise duty</p> <ul style="list-style-type: none">- All excise duty grouped as alcohol tax, tobacco tax, energy tax and other excise duty
<p>Other taxes</p> <ul style="list-style-type: none">- At present consists only of property tax

5.4 Other ways of dividing the tax gap

More complex methods of division are also possible, for example:

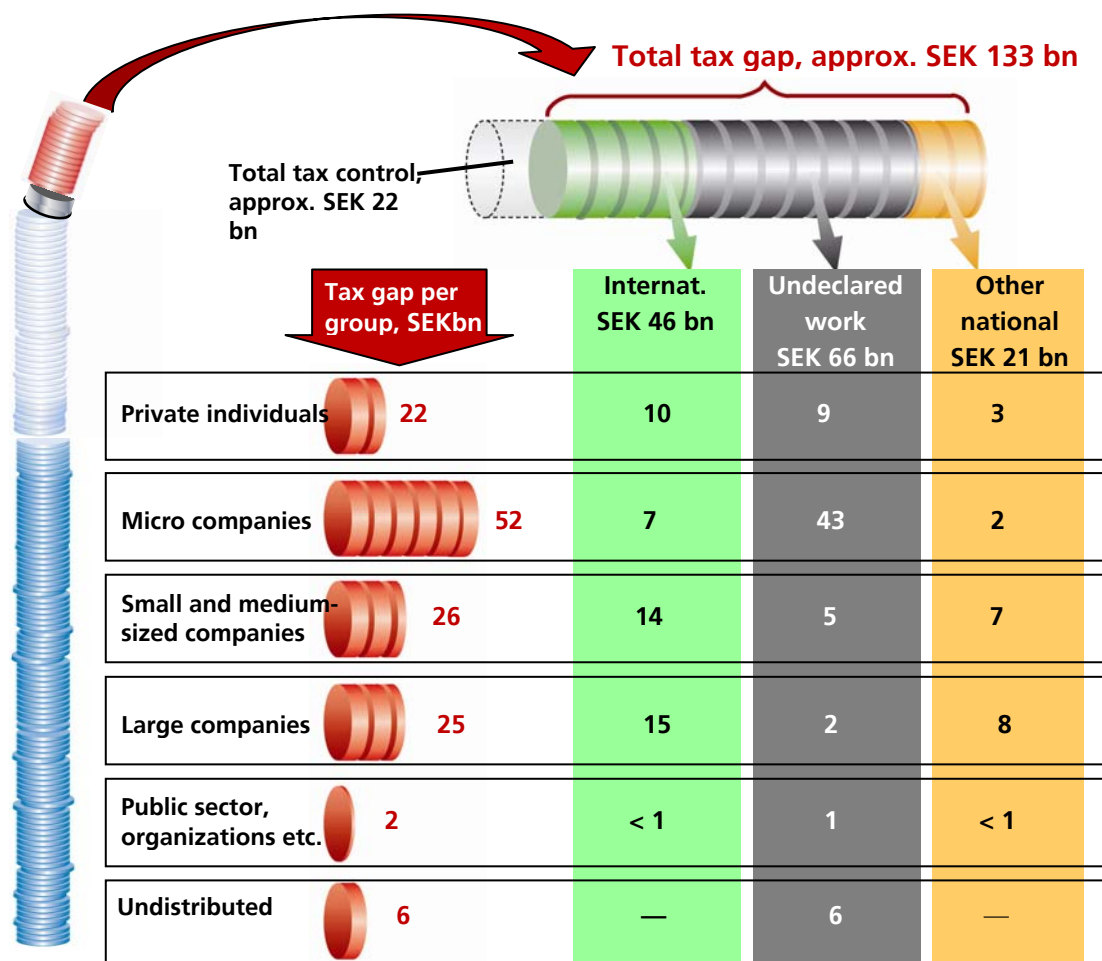
- Unintentional and intentional errors
- Registered taxpayers and “non-filers”

Dividing the tax gap between unintentional and intentional error and identifying “non-filers” would have been extremely interesting and would have given a map that would have been very useful when planning measures to deal with the tax gap. However this is not at present realistic. We just do not have sufficient knowledge of the causes of the errors.

6 Size and breakdown of the tax gap

Our calculations give a total tax gap of SEK 133 bn. The breakdown between different groups of taxpayers and different types of tax gaps are shown in the tax gap map below.

Fig. 8 Tax gap map



Source: National Tax Agency: *Skattefölskartan – Information om skattefelet* [The Tax Gap Map – Information on the Tax gap], SKV 234 edition 1. Published in October 2007

6.1 General basis of the calculations

In most cases the tax gap is calculated from information on income. It is not obvious how the tax effect of a change in income is to be calculated. The tax is influenced by who has the income and what other income the person has. For calculations to be possible in practice we have made certain general decisions concerning the tax rates used and the factors to be taken into consideration.

6.1.1 Tax rates

The rate of municipal tax is different in different municipalities. We have generally used the average rate of municipal tax, 31.60 per cent, in our calculations. According to income level it may also be necessary to pay, in addition to municipal tax, state tax of 20 or 25 per cent. The

proportion of the population with income above the threshold level 1 for state tax is 16 per cent and the proportion above level 2 is 5 per cent. This gives an average income tax of 35.05 per cent.¹⁰ We have used this average tax rate consistently, without considering the fact that various errors may be more common with low or with high income earners.

Table 14: Tax rates used in calculations of the tax gap

Type of tax	Tax rate
Income tax, individuals	35.05 %
Income tax, legal entities	28.00 %
Employers' soc. security contributions	32.46 %
Self-employed persons' contributions	30.89 %

If the tax gap is calculated from the result of compliance-controls the problem arises that there are corrections both in favour of and against the taxpayer. There are three different ways of dealing with this:

- Attribute the same significance to all the corrections and total the absolute sums of increases and reductions.
- Consider only increases.
- Calculate the net increase (i.e. increases minus reductions).

We have chosen the last of these alternatives, i.e. to calculate the tax gap from the net increases. This approach means that the tax gap corresponds to the tax loss resulting from incorrect income being shown in the tax returns.

A change in income often has an effect on several different types of tax. We have tried, as far as has been possible, to consider the effect on all kinds of tax. This is clearest in the calculation of the tax gap for undeclared work.

The hidden incomes in undeclared work often have a VAT effect as well. Where we have known the industry to which the income has belonged we have used the most usual rate of VAT for the industry (e.g. manufacturing industry 25 per cent, supermarkets 12 per cent and taxis 6 per cent). In those cases where we have been unable to assign a tax gap to a particular industry we have assumed a 25 per cent VAT.

6.1.2 Errors in allocation to particular periods

Some of the errors in tax reporting mean that a tax or an income is reported at the wrong time. The reporting is in itself incorrect, which means that at that point in time a tax gap arises. Corresponding negative errors may however be assumed to arise at the time when the income or tax should properly have been reported. The net effect of this is only a loss of interest in the public sector. With respect to errors in allocation to correct periods we have calculated the error to be 2 per cent interest on the tax. If the tax is allocated to the wrong period by several years we have calculated the effect as 2 per cent per year (in other words 10 per cent of the tax if the income is incorrect by five years). In VAT such errors often involve incorrect allocation by one month. In that case we have disregarded the error entirely.

¹⁰ 31.60% + 20% x 16% + 5% x 5% = 35.05 %

6.2 Tax gap by area of error

6.2.1 International

Of the total tax gap 35 per cent, or SEK 46 bn, has been assigned to the international area. As may be seen from the tax gap map, large companies and small and medium-sized companies together account for the greater part of the international tax gap. If instead the tax gap is broken down by different types of tax, the greater part of the gap arises from income tax in business activity (primarily company tax) and VAT.

Table 15: The breakdown of the international tax gap by type of tax

Type of tax	Tax gap	Proportion
Income tax, earnings	2.5	5%
Tax on capital	8.3	18%
Income tax, business activity	19.4	41%
Social security charges	2.0	4%
VAT	11.8	25%
Excise duty	2.8	6%
Others	0.0	0%
Total	46.8	100%

In general terms it is in the international area that there is the greatest uncertainty regarding the calculations of the tax gap. The Tax Agency has quite a high level of knowledge of the nature of the errors with international connections that may arise, but the material for a quantification of the tax gap is often lacking. Quantification is also more difficult in several parts of the international area because they often involve activities or people abroad. It is therefore often difficult to estimate how many people are affected by a particular kind of error. As the material for calculating the errors has been lacking, probability estimates have had to be made by those with the greatest experience of the area. To a large extent therefore, the estimates are based on the experience of the staff at the National Tax Agency's foreign sections.

Private individuals account for 22 per cent of the total international tax gap. The largest individual gap relates to tax on returns on capital abroad. This is a much discussed tax gap about which we have rather little knowledge (but many opinions). The amount is based on a macrocalculation, where the financial savings of households according to the National Accounts and according to the Financial Accounts are compared. The difference is assumed to be made up of capital that has been taken out of the country without being reported. On the basis of

various assumptions concerning how much of this remains as unreported saving abroad and how great the annual return on it has been, an unreported savings capital has been calculated. The tax gap consists of the tax on the annual return on this capital. There is great uncertainty in the calculation and it may almost be described as an arithmetical example.

International tax gap Private individuals

• Tax on return on capital abroad	SEK 7.5 bn
• Dividend tax	SEK 0.5 bn
• Incentive programmes	SEK 0.8 bn
• Unreported income to tax havens	SEK 0.5 bn
• VAT on purchase of cars, boats etc	SEK 0.3 bn
• VAT on distance-selling trade in EU	SEK 0.2 bn
• Other	SEK 0.2 bn
Total	SEK 10.0 bn

Other parts of the international tax gap for private individuals are calculated on the basis of analyses of the gaps in different risk areas. The calculations have been made by the international units and the basis for them varies. There are no alternative calculations with which to compare the results. The uncertainty may therefore also be considered great in these parts.

According to the calculation the *micro companies* account for 16 per cent of the total international tax gap. The calculations have been based on experience of compliance-controlling within the different risk areas. The Customs Service's calculations of the tax gap have been used with regard to VAT on imports, after which we have ourselves (rather arbitrarily) divided the gap between micro companies and small and medium-sized companies. Other gaps in VAT and income tax have been calculated by the foreign sections. In these areas, too, the calculations have been common to micro companies and small and medium-sized companies. There have been no alternative calculations with which to compare the results. The uncertainty in the results is therefore considered high. In certain areas (e.g. VAT in EC trade), the uncertainty of the base has led us deliberately to put the level very low. It is therefore probable that the total tax gap for this group has been understated. Supplementary surveys are needed before the tax gap can be calculated with greater certainty.

International tax gap Micro companies	
• VAT on imports/exports	SEK 2.1 bn
• VAT on EC trade	SEK 0.5 bn
• Carousel trading	SEK 0.5 bn
• VAT on cars, boats etc.	SEK 0.5 bn
• Alcohol tax	SEK 2.2 bn
• Tobacco tax	SEK 0.4 bn
• Transactions with tax havens	SEK 0.2 bn
• <u>Other errors</u>	<u>SEK 1.0 bn</u>
Total	SEK 7.4 bn

For *small and medium-sized companies* the international tax gap has been calculated to be SEK 14 billion, equivalent to 31 per cent of the total international tax gap. The calculations have been made with the calculations for micro companies, so the methods and the uncertainty are the same. This is one of the parts of the tax gap map where the uncertainty is greatest, and where there is a particularly high risk of underestimating the gap. There is therefore a great need for supplementary surveys.

International tax gap Small and medium-sized companies	
• Transactions with tax havens	SEK 1.9 bn
• Incentive programmes	SEK 1.8 bn
• Holding companies	SEK 1.6 bn
• Interest scheme	SEK 0.3 bn
• VAT on import/export	SEK 2.7 bn
• VAT on EC trade	SEK 2.5 bn
• Carousel trading	SEK 0.5 bn
• VAT on cars, boats etc.	SEK 0.3 bn
• <u>Other</u>	<u>SEK 2.6 bn</u>
Total	SEK 14.2 bn

The *large companies* account according to the calculation for 33 per cent of the total international tax gap. Two separate sets of figures, both based on tax compliance-controls, have been used for the calculation:

International tax gap Large companies	
• Tax avoidance schemes affecting result (transfer pricing, pandora's box etc.)	SEK ~ 11 bn
• Other international transactions	SEK 2 bn
• Incorrectly reported VAT	SEK 1 bn
• <u>Incorrectly reported wages</u>	<u>SEK 1 bn</u>
Total	SEK 15 bn

- **Risk area analyses:** The tax gap has been calculated separately for different risk areas. The calculation has been made by people with a lot of experience of the field of inspection concerned. In some cases calculations have been based on a documented result of compliance-controls and in others on what is believed from experience about size and frequency.
- **The audit method:** The result of all tax audits carried out by large companies over a number of years have been analysed and adjusted, for example taking into account that the

sample is not random, that certain audits are partial and that not all decisions will stand up in court, and have then been extrapolated to the whole population.

The two separate calculations support each other. Nevertheless the uncertainty is considered high. This applies particularly to the tax avoidance schemes that affect the results. There are a number of different methods that the big corporations can use to adjust their results, some of which break current rules and some of which do not. The schemes often enter a grey zone where only a court can decide whether they are legal or not. The methods used by a group to regulate its profits may vary markedly from year to year depending on what it is considered easiest to gain acceptance for at the time. The result of compliance-controls also varies sharply in this respect from year to year, which has a big influence on the remaining tax gap after controlling. It is therefore hard to assess the tax effect of each different measure, and we have instead decided to make an aggregated assessment of the tax gap in the large companies' tax-avoidance schemes affecting profits where there is an international connection. This part of the gap has been estimated around SEK 11 billion. However it must be borne in mind that the assessment is made in the context of our present knowledge of the legal situation. When the tax gap was calculated the Tax Agency assumed that the different forms of "interest scheme" that occur do not comply with current rules. Such a case has now been considered recently by a court and the judgment implies that the National Tax Agency cannot attack this form of income adjustment. This may give reason for adjusting the tax gap for profit-equalizing tax avoidance schemes. However the interest scheme is assumed to represent less than 20 per cent of the SEK 11 billion tax gap in the field. We do not know today how the court decision will affect the actions of companies in the future (and thus the tax gap of future years).

The group *public sector, organizations etc.* accounts only for 0.2 per cent of the international tax gap. A large part of the calculated gap is to be found in sports associations and clubs (e.g. in the form of players' wages paid into tax havens).

It is not impossible that the tax gap for other taxpayers in the group has been underestimated because of the lack of knowledge of their error. There is today very little documented knowledge in this area and the experience that exists is spread over different parts of the National Tax Agency and therefore difficult to survey.

International tax gap Public sector, organizations etc.	
• Total error	SEK 0.1 bn
Total	SEK 0.1 bn

6.2.2 Undeclared work

Undeclared work accounts for roughly half of the total tax gap – SEK 66 billion. The greater part of the tax gap for undeclared work is in the micro companies. If the tax gap is divided into different types of tax it is found that the greatest gap of all is in social security contributions (employers' contributions and self-employed persons' contributions). VAT and income tax on income from employment also accounts for large parts of the gap.

Table 16: Distribution of undeclared work between different types of tax

Type of tax	Tax gap	Proportion
Income tax on earnings	16.5	25%
Tax on capital	0.0	0%
Income tax, business activity	3.7	6%
Social security contributions	28.2	42%
VAT	17.6	26%
Excise duty	0.6	1%
Other	0.0	0%
Total	66.6	100%

This is the part of the tax gap where we have had the most extensive material on which to base our calculations. The basis consists largely of the survey of undeclared work that the National Tax Agency carried out in 2006 (see more about this in Chapter 4). This contains an estimate of the extent of the total undeclared work. This calculation relates to undeclared income. To use this in the tax gap map we have translated the income to amounts of tax and distributed between the different groups of taxpayers.

A number of different sources have been used to calculate the extent of undeclared work. The “outer limit” for undeclared work has been recalculated using a macro method and the information in the National Accounts. A number of different sources have been used to clarify the content of the undeclared work and to distribute them between groups of taxpayers. The different sources support each other and reduce the uncertainty in the calculations.

However we should be aware that a new source of error is introduced when the hidden income is to be translated into a tax amount. The result will vary by several billion, depending on what assumptions are made. We have calculated the total tax gap in undeclared work to be SEK 66 billion, but it may be anywhere within the bracket SEK 60-75 billion.

The division of the tax gap in undeclared work between different groups of taxpayers and between different kinds of unreported income from employment is accompanied with greater uncertainty than the calculation of the total tax gap from undeclared work.

How the total undeclared work has been calculated is set out in the undeclared work survey.¹¹

Private individuals account for 13 per cent of the tax gap in undeclared work. The fact that the proportion is so low for the private individuals group is largely due to the following reasons:

- Tax gap relating to undeclared services provided by private individuals but which are of a business character have been assigned to micro companies.
- Tax gap relating to undeclared sales in a company where the money is assumed to be credited to the owner has been ascribed to the company (and therefore finishes up in the group “micro companies”, or “small and medium-sized companies”).

Tax gap in undeclared work Private individuals

- Undeclared wages SEK 4.9 bn
- Undeclared services that have been sold between private individuals, not businesses SEK 4.0 bn

¹¹ ”Svartköp och svartjobb i Sverige”, Del 1: Undersökningsresultat, Rapport 2006:4, Skatteverket

The *micro company* group accounts for the largest part of the undeclared work, fully 65 per cent. This is a very large figure and it easy to regard the small companies as the great tax cheats. However the size of the gap has to be seen against the background of the fact that more than SEK 8 billion relates to undeclared sales with no connection whatever with existing micro companies. Instead it is private individuals that sell services or goods that are of such a nature that a large part of them ought to have been treated as business activity. As a result the tax gap is ascribed to the micro companies. This is not to deny that that undeclared work in the smallest companies is a big problem. More than SEK 30 billion of the tax gap relates to tax on undeclared sales in existing micro companies. However we should remain aware that the sales revenue is regarded as having gone to the owner, while the owner's income tax has also been recorded as a tax gap with the micro company (see example 3 below).

Tax gap in undeclared employment Micro companies	
• Undeclared sales in private business and partnerships	SEK 23.1 bn
• Undeclared sales in limited companies	SEK 7.7 bn
• Sales of undeclared services by private individuals to companies,	SEK 3.3 bn
• Undeclared services between private individuals,	SEK 3.3 bn
• Undeclared wages (company's part)	SEK 2.7 bn
• Undeclared sale of goods between private individuals,	SEK 2.0 bn
• Undeclared sale of alcohol and tobacco	SEK 0.7 bn
Total	SEK 42.8 bn

With an increase in company size the amount of traditional undeclared work declines. The group *small and medium-sized companies* account for 7 per cent of the tax gap on undeclared work. However parts of the tax gap relate to diverse incorrectly reported wages and benefits, which may not necessarily be thought of primarily as undeclared work.

Tax gaps in undeclared employment Small and medium-sized companies	
• Undeclared sales in the company	SEK 2.4 bn
• Undeclared wages (company's part)	SEK 1.4 bn
• Incorrectly reported wages, benefits etc.	SEK 0.7 bn
• Undeclared sale of goods liable to excise duty	SEK 0.1 bn
Total	SEK 4.6 bn

The *large companies* group accounts for 4 per cent of the tax gap in undeclared work. Here the undeclared work differs in character from that in the small companies. It no longer arises from black-market labour or unreported selling: the errors consist primarily of incorrectly reported wages and benefits. Here it should be remembered that the large companies are extremely large employers. A benefit that is calculated with an error of a few kronor may in total give rise to a large error. Among the incorrectly reported wages, however, are included lump sum payments to leading officers of the companies.

Tax gaps in undeclared employment Large companies	
• Incorrectly reported wages, benefits etc.	SEK 2.5 bn
• Undeclared sale of goods liable to excise duty	SEK 0.1 bn
Total	SEK 2.6 bn

In the group *public sector, organizations etc.*, too, there is tax gap characterized as undeclared work. Here however the situation is roughly the same as for the large companies. The public sector accounts for a large part of total wage payments and virtually all errors in salary accounting fall into this category.

Tax gaps in undeclared employment Public sector, organizations etc.	
• Incorrectly reported wages, benefits etc., public sector	SEK 1.2 bn
• Unreported wages, benefits etc., sports associations	SEK 0.1 bn
• Other undeclared employment (Economic associations etc.)	SEK 0.1 bn
Total	SEK 1.4 bn

Within the framework of undeclared work to which the difference in the National Accounts gives rise there remains 9 per cent, or a tax gap of SEK 6 billion, after what we have been able to identify has been allocated to different groups of taxpayers. Rather than allocate this on a standard pattern we have left SEK 6 billion of the tax gap in undeclared work as unallocated.

Calculation of tax gap, undeclared work, example 1

Pelle is studying and does part-time work at a little pizzeria. He gets his wages paid undeclared in cash. In a year he has received SEK 100 000 in undeclared wages.

The payments should have been reported as wages.

<u>Income tax: 35.05 % x 100 000 =</u>	<u>SEK 35 050</u>
Tax gap on private individuals	SEK 35 050

The company makes undeclared sales to earn money for the undeclared wages. If the company is a limited company this has the following tax implication:

VAT: 20 % x SEK 100 000 =	SEK 20 000
Employer's soc. sec. contribution: 32.46 % x 100 000 =	SEK 32 460
<u>Company tax 28 % x (80 000 – 100 000 – 32 460) =</u>	<u>SEK -14 689</u>
Tax gap on micro companies:	SEK 37 771

If instead the company is a private firm or a partnership, the tax implication will be:

VAT: 20 % x SEK 100 000 =	SEK 20 000
Employer's soc. sec. contribution: 32.46 % x 100 000 =	SEK 32 460
Self-employed person's contribution 30.89 % (-52 460)	SEK -16 205
<u>Income tax, owner 35.05 % x 36 255 =</u>	<u>SEK -12 707</u>
Tax gap on micro companies:	SEK 23 548

Calculation of tax gap, undeclared work, example 2

Kalle works as a joiner. In his spare time he moonlights on various woodworking jobs. He has now received a payment of SEK 50 000 for replacing the roof of the Svensson family house. No accounts are kept.

The payment should have been reported as business activity. The tax gap is therefore ascribed to micro companies, although Kalle has no registered company.¹²

VAT: 25 % x SEK 50 000 =	SEK 12 500
Self-employed person's contributions: 30.89 % x SEK 37 500 =	SEK 11 584
<u>Income tax: 35.05 % x 25 916 =</u>	<u>SEK 9 084</u>
Tax gap on micro companies:	SEK 33 168

¹² In this example we assume that Kalle and the Svensson family are fully agreed that the roof repair has been done exclusive of VAT. We have therefore added VAT of 25 per cent, not 20 per cent as in other examples.

Calculation of tax gap, undeclared work, example 3

Klara Kwick runs the Klädsam clothing boutique. She has one employee. The profit margin is low and she improves it by programming the cash register not to record every third sale. In a year the undeclared sales total SEK 500 000.

Sales should have been shown as income in the company and salary to the owner. If the company is a private firm or a partnership, the tax implication is as follows:

VAT 20 % x SEK 500 000 =	SEK 100 000
Self-employed person's contribution: 30.89 % x SEK 400 000 =	SEK 123 560
Income tax, business activity: 35.05 % x SEK 276 440 =	SEK 96 892
Tax gap on micro company:	SEK 320 452

If the company is a limited company, the salary payment should be taxed at the recipient. The entire tax gap is then allocated to micro companies, because it is there that the error has arisen and in order to attain the same effect regardless of type of company.

VAT 20 % x SEK 500 000 =	SEK 100 000
Employer's social security contribution: 32.46 % x SEK 400 000 =	SEK 129 840
Income tax, employment: 35.05 % x SEK 270 160 kr =	SEK 94 691
Company tax: 28 % x (400 000 – 270 160 – 129 840) =	SEK 0
Tax gap on micro company:	SEK 324 531

6.2.3 Other national tax gap

Hardly one sixth of the tax gap has been allocated to the category of “other national”. One-sixth may not sound much, but actually it still means SEK 21 billion in tax gap. Large companies and small and medium-sized companies account for a large part of the gap. This category includes much of what the man in the street thinks of when errors in tax returns are mentioned – incorrectly reported deductions, incorrectly calculated depreciation, incorrectly reported capital gains etc. If the tax gap is divided into different types of tax it is clear that the largest gaps are in income tax on income from business activity (including company tax) and VAT.

Table 17: Division of other national tax gap between different types of tax

Type of tax	Tax gap	Proportion
Income tax, earnings	1.5	7%
Tax on capital	2.5	12%
Income tax, business activity	8.8	43%
Social security charges	0.0	0%
VAT	6.4	31%
Excise duty	0.9	4%
Other	0.6	3%
Total	20.7	100%

In general the Tax Agency may be said to have a fairly good knowledge of the tax gaps in the area of “other national”. This may in part be because the gaps of this kind may have existed for a long time and the Tax Agency has had time to develop effective methods (income

statements, administrative procedures, mechanical controls etc.) for dealing with it. It may also be due to the fact that many gaps within this category are discovered in the compliance controls every year. This is not because of the focus of the compliance controls. It is considerably simpler to discover something that is found in a tax return (e.g. an incorrect deduction) than to discover that something is missing from a tax return (e.g. an unreported income).

Within the field of “other national” we have not been able to made use of any macrostudies to estimate the tax gap. Instead we have used different forms of microdata, often internal, to calculate the tax gap. The basis for the calculations has varied between the groups of taxpayers.

The *private individuals*’ tax gap within “other national” affects a large number of taxpayers, but nevertheless amounts only to a relatively modest sum. Only 2 per cent of the total tax gap, or 14 per cent of the “other national” tax gap, falls into this group. What causes so many people to be affected is the fact that all incorrect deductions from income from employment (which is the only error that many people have the possibility of making in their tax returns) are here. Travel to and from work is the largest gap as far as the amount is concerned. Incorrectly reported capital gains on sales of shares and properties also account for a large proportion of the gap.

Other national tax gaps	
Private individuals	
• Deductions from earnings	SEK 1.5 bn
- Travel to and from work	SEK 1000 m
- Other expenses	SEK 220 m
- Double residence	SEK 180 m
- Business travel	SEK 70 m
• Income from capital	SEK 1.4 bn
- Capital gains, shares	SEK 700 m
- Capital gains, housing	SEK 700 m
- Administrative expenses	SEK 40 m
• Alcohol tax	SEK 0.03 bn
Total	SEK 2.9 bn

The calculations of the tax gap made in this category with regard to deductions from earnings and income from capital are based on the results of random compliance controls. This means that the uncertainty in the calculations is at its lowest in this part of the map. Naturally there are nevertheless sources of error, such as incorrect assessments in the course of the controls, but the reliability of the figures is substantially higher than in other parts of the tax gap map.

The *micro companies* account only for 9 per cent of the tax gap in the “other national” category. That this gap is calculated to be so low is due to the fact that an extremely large proportion of the errors that occur in micro companies can be classified as undeclared work, applying the broad definition that we have used.

Other national tax gaps	
Micro companies	
• VAT	SEK 1.2 bn
• Unreported alcohol, tobacco and energy tax	SEK 0.2 bn
• <u>Other errors</u>	<u>SEK 0.5 bn</u>
Total	SEK 1.9 bn

The method that has been used to calculate the tax gap for micro companies may perhaps be described as the “report method”. A large number of reports of inspection projects have been collected and the tax gap for different risk areas has been calculated separately from these and then totaled. None of the inspection projects have been intended to serve as a basis for calculating the tax gap. They have in other words varied in their focus. The projects have often embraced other companies as well as the micro companies. In several of these cases the tax gap has been calculated jointly for micro companies and for small and medium-sized companies, and then been divided between the two groups on the basis of some relevant background factor. Tax gap within the area of VAT has for example been divided on the basis of the companies’ total reported VAT (the sum of output and input VAT). As we have not had any other calculation with which to compare the calculation using the report method, the

uncertainty of the result is quite large. However in view of the relatively low tax gap this is not of vital importance.

The *small and medium-sized companies* account for 36 per cent of the total gap in the “other national” category. Three different sets of figures have been used to calculate the gap. They are all based on the result of compliance controls:

- **The report method:** The tax gap has been calculated on the basis of risk area analyses, surveys and inspection projects for the types of error that are considered most significant.
- **The audit method:** The result of all tax audits of small and medium-sized companies carried out over a number of years has been analysed and adjusted taking account of the fact that the sample is not a random one and that certain audits are partial, and then extrapolated to the whole population.
- **The desk method:** A region where there has been special focus on the medium-sized companies in examining the returns has, after certain adjustments, had its results been extrapolated to relate to the whole population.

Other national tax gaps Small and medium-sized companies	
• Incorrect deficit deductions	SEK 2.0 bn
• Other errors in income tax	SEK 1.0 bn
• Errors in VAT reporting	SEK 3.4 bn
• Incorrectly reported energy tax etc.	SEK 0.2 bn
• Other	SEK 0.9 bn
Total	SEK 7.5 bn

These three methods do not produce identical results, nor should they. As there is some difference in the focus of the material, slightly different parts of the total tax gap are included in the calculation concerned. However the three separate calculations give a reasonably consistent picture of the tax gap. The uncertainty of the calculations is therefore considerably less here than in most other parts of the tax gap map.

For the *large companies* the tax gap in the “other national” category has been calculated to be SEK 8 billion, which is equivalent to 38 per cent of the total gap in the category. Two separate sets of figures, both based on compliance controls, have been used in the calculation:

- **Risk area analyses:** The tax gap has been calculated separately for different risk areas. The calculation has been made by people with a lot of experience of the area of inspection concerned. In some cases the calculations have been based on a documented result of controls and in others on empirical opinions on the size and frequency of the gap.
- **Audit method:** The result of all tax audits of small and medium-sized companies carried out over a number of years has been analysed and adjusted taking account of the fact that the sample is not a random one, that certain audits are partial, and that not all the decisions will stand up in court, and then extrapolated to the whole population.

Other national tax gaps Large companies	
• Restructuring	SEK 2.1 bn
• Errors in finance/insurance sector (company tax)	SEK 0.9 bn
• Other errors in company tax	SEK 2.5 bn
• Errors in VAT accounting	SEK 1.5 bn
• Incorrectly reported energy tax etc.	SEK 0.5 bn
• Other errors	SEK 0.5 bn
Total	SEK 8.0 bn

The two separate calculations support each other well. Although the calculated gap is based on credible material there is still quite lot of uncertainty in the amounts. This is in particular due to the fact that large gaps often occur in a few companies. The gaps may therefore vary from year to year. Moreover in calculations of the tax gap for large companies results of compliance-controls are more significant than for other groups of taxpayers. There is a big difference between a calculation of the tax gap gross (including the results of compliance-controls) and net (excluding these results). The result of controls varies considerably between

years and depending on how much is corrected in the controls, the size of the remaining gap varies.

In the *public sector* errors occur particularly often in wage reporting and in VAT reporting. The reason for the errors in wage reporting is that the public sector is such a large employer. Even if the wages are reported with great accuracy and there are good procedures, it is inevitable that errors sometimes occur. However these errors are assigned to the category of undeclared work. The errors in VAT accounting are associated with the fact that it is common to engage in business activities both liable for VAT and exempt from VAT and that this makes VAT accounting more difficult. The fact that there is so little error in income tax is also natural, as such a small part of the activities are liable for tax.

Other national tax gaps Public sector, organizations	
• Incorrectly reported VAT	SEK 0.2 bn
- Tax on acquisition, tax liability for business, VAT on private car etc.	
• Other errors	SEK 0.1 bn
- Income tax on activities in organization/foundation, excise duty etc.	
Total	SEK 0.3 bn

The group also includes *non-profit associations, foundations etc.* These, too, are engaged largely in tax-exempt activities. It is therefore natural that the total gap is not particularly large, but on the other hand there are problems surrounding the borderlines of what is exempt from tax and what is liable.

It may be stated that the National Tax Agency’s knowledge of the tax gap in this group of taxpayers is inadequate. It has been hard to find material on which to base a calculation of the tax gap. Nor has there been any concentration of expertise in the area, as experience is spread over separate parts of the organization. Sports clubs are possibly the part of this area that has been best monitored, but they make up only quite a small part of the total group. The effect of this is that the uncertainty of the calculations is greatest, but that this does not have any appreciable effect on the total tax gap.

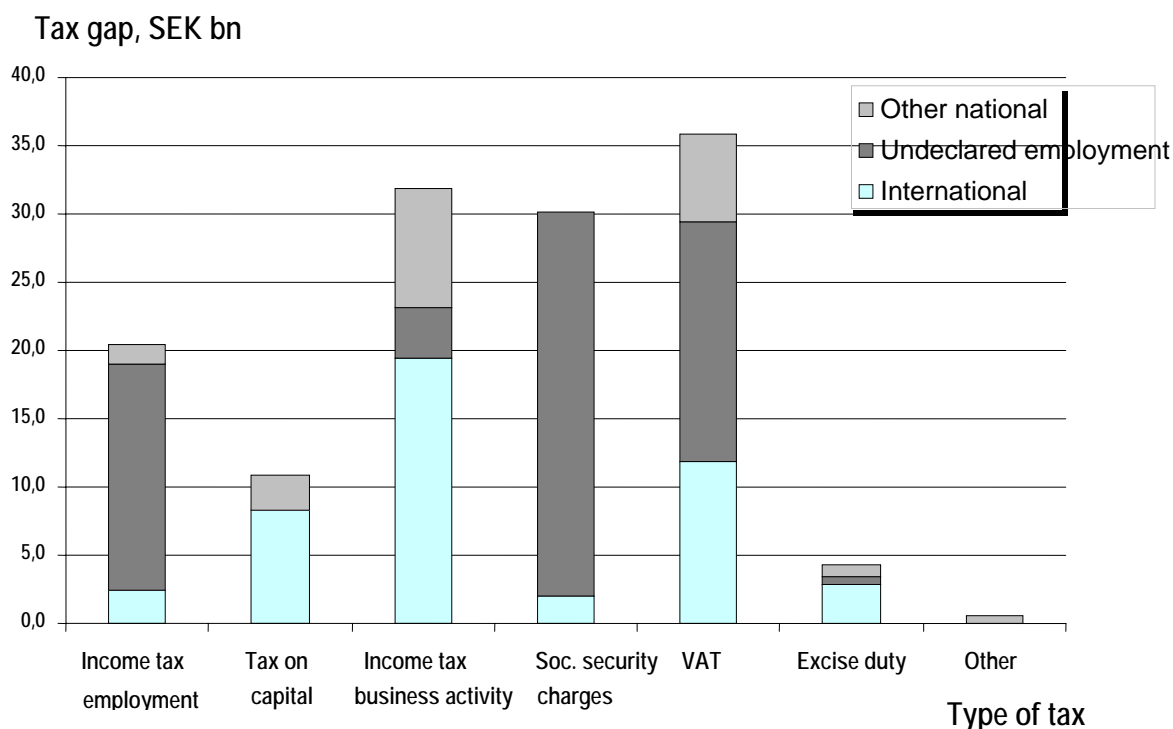
6.3 Tax gap per type of tax

For greater flexibility in the use of the tax gap map we have also broken down the tax gap by type of tax.

6.3.1 Total tax gap by type of tax and area of error

The single type of tax that accounts for the largest part of the total tax gap is VAT. SEK 35 billion of the total tax gap can be found here, making up 26 per cent of the total gap. Income tax on business income and social security charges represent almost equally large tax gaps as VAT (SEK 32 and 30 billion respectively). The tax gap on income tax on earnings and tax on capital is distinctly smaller (SEK 20 and 11 billion respectively).

Diagram 1: The tax gap, broken down by type of tax and area of error



6.3.2 Tax gap related to reported tax

Total tax income for the income year 2005 is approx. SEK 1 300 billion. Of this, income tax on employment income accounts for the largest proportion, 34 per cent. The next largest taxes are social security contributions (29 per cent) and VAT (19 per cent). The group of taxpayers reporting the largest part of the tax is private individuals (37 per cent), followed by large companies (26 per cent) and small and medium-sized companies (21 per cent).

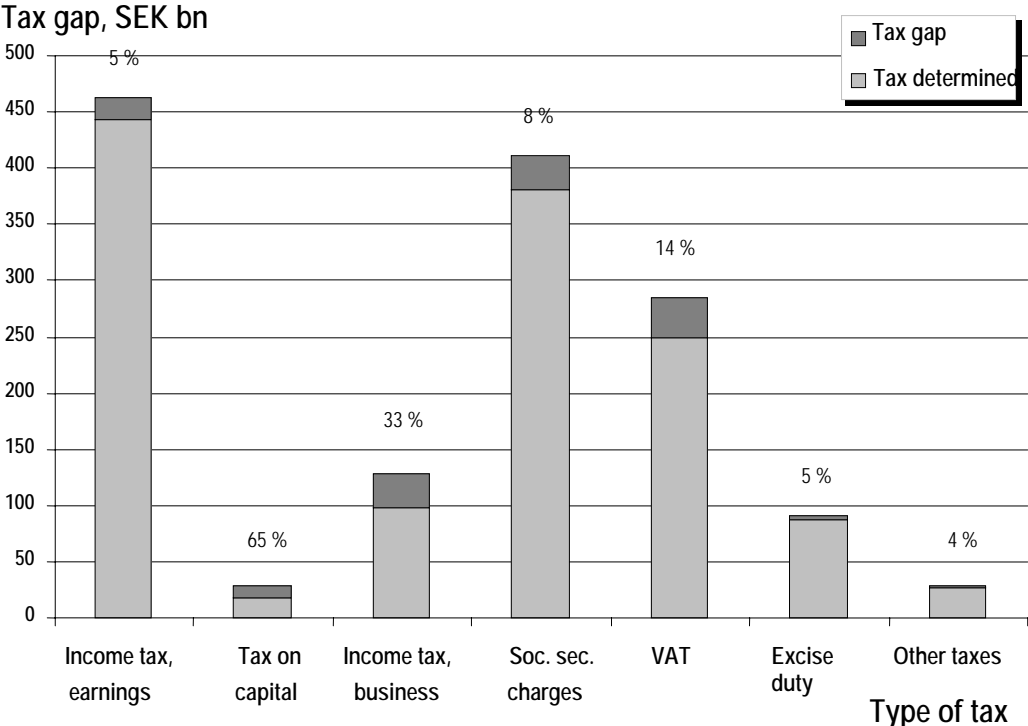
Table 18: Total reported tax of different types and in different groups of taxpayers, income year 2005

	Private individuals	Micro companies	Small and medium-sized companies	Large companies	Public sector, organizations etc.	Total
Income tax, earnings	443 282	0	0	0	0	443 282
Tax on capital	16 971	0	0	0	0	16 971
Income tax, business activities	0	16 893	23 240	53 827	3 239	97 199
Social security charges	0	25 971	97 433	136 870	121 240	381 514
VAT*	0	39 233	127 110	74 830	9 339	250 512
Excise duty	0	671	18 827	65 711	701	85 910
Other taxes	17 372	920	1 880	3 518	2 699	26 389
Total	477 625	83 688	268 490	334 756	137 218	1 301 777

* The total VAT is made up of SEK 201 792 bn administered by the National Tax Agency and SEK 48 321 bn administered by the Customs Service. We do not know the customs duty breakdown between different parties liable for tax, but assume that it follows the distribution of VAT generally. Therefore 24.1 per cent should then be added to Tax Agency figures. Then figures in the table include total VAT.

If the tax gap for each type of tax is related to the total tax reported for that type of tax, the picture changes. The greatest gap by far is in tax on capital and it amounts to no less than 65 per cent of the reported tax. In interpreting this figure we should however remember that the total tax on capital income is calculated net, after deductions for deficit on capital. The ratio is not therefore comparable with the ratio for other types of tax. If instead the tax gap is placed in relation to the tax on the total gross surplus of capital the tax gap amounts to 29 per cent of the tax.¹³ Other taxes with a high percentage tax gap are income tax on business income (33 per cent) and VAT (14 per cent). The tax gap in income tax on earned income and excise duty amounts to only 5 per cent of the reported tax.

Diagram 2: Tax gap by type of tax by comparison with the tax determined



6.3.3 Tax gap in respective type of tax

The tax gap for *income tax on employment income* amounts to SEK 20 billion, of which the majority relates to various forms of undeclared work. In particular these are undeclared wages to employees, unreported wage payments drawn by company owners, incorrectly reported wages, benefits etc. and trade in undeclared services (that are not of a business nature) between private individuals.

In addition the gap in undeclared work parts of the tax gap for earned income can be traced to incentive programmes with an international connection and unreported income paid to tax havens.

Tax gap income tax, employment	
• International tax gap	SEK 2.5 bn
- Incentive programmes	SEK 1 700 m
- Unreported income to tax havens	SEK 500 m
- Other	SEK 300 m
• Undeclared-market employment	SEK 16.5 bn
- Undeclared wages	SEK 4 900 m
- Unreported wage payments drawn by owner	SEK 3 100 m
- Incorrectly reported wages, benefits etc.	SEK 2 600 m
- Undeclared services between private individuals	SEK 2 100 m
- Other	SEK 3 800 m
• Other national	SEK 1.5 bn
- Deductions for travel to work	SEK 1 000 m
- Other expenses, business travel, double residence	SEK 500 m
Total	SEK 20.4 bn

¹³ Excess of capital for the income year 2005 is SEK 125 bn, giving a tax of 30 % x 125 = SEK 37.5 bn.

All of the errors described above relate to reporting the actual employment income. The part of the tax gap that arises from errors in declared deductions is considerably less and accounts for only 7 per cent of the tax gap in employment income.

In *tax on capital* the tax gap amounts to SEK 11 billion. Almost 70 per cent of the tax gap relates to tax on unreported savings abroad. We have previously noted that the uncertainty of the calculation is considerable, which means that the total level of the tax gap in capital income is extremely uncertain.

Of the remaining error in tax on capital the largest items are dividends and capital gains from sale of shares/participations in close companies or partnerships, capital gains on shares, capital gains on private residential properties and dividend tax.

A large part of the total tax gap is attributable to *income tax on business income*, regardless of whether the gap is compared in SEK (32 billion) or as a proportion of reported tax (33 per cent).

Of the total gap transactions affecting profits with international connections account for more than 40 per cent. The errors of this character are obviously of a tax avoidance nature. As long as the tax avoidance remains within the limits of the law, it does not constitute tax gap, but much of the tax avoidance that takes place lies in a grey zone. If the tax avoidance is not within the bounds of the current law, a tax gap arises. There are also other significant errors that often have a tax avoidance purpose. Examples of such errors include tax haven transactions, holding companies, restructurings and certain incorrect deficit deductions. Within tax haven transactions, for example, there are also errors that are in the nature of tax fraud.

There is very high uncertainty in the calculation of the tax gap in income tax on business income with an international connection. As it accounts for such a large part of the total gap, the uncertainty for the level of the total gap in business income is high.

Tax gap, tax on capital

• International tax gap	SEK 8.3 bn
- Tax on unreported savings abroad	SEK 7 500 m
- Dividend tax	SEK 500 m
- Disposal of foreign-owned real property	SEK 100 m
- Other	SEK 200 m
• Other national	SEK 2.6 bn
- Capital gain, shares	SEK 700 m
- Capital gain, housing	SEK 700 m
- Dividend, sales, close cos./partnerships etc	SEK 1 200 m
Total	SEK 10.9 bn

Tax gap, income tax on business income

• International tax gap	SEK 19.3 bn
- Transactions affecting profits	SEK 13 000 m
- Tax haven transactions	SEK 1 700 m
- Holding companies	SEK 1 600 m
- Other	SEK 3 000 m
• Undeclared employment	SEK 3.7 bn
- Unreported sales in companies	SEK 6 000 m
- Undeclared services betw. priv. individuals	SEK 900 m
- Undeclared goods to private individuals	SEK 600 m
- Other	SEK -3 800 m
• Other national	SEK 8.8 bn
- Restructuring	SEK 2 100 m
- Incorrect deficit deductions	SEK 2 000 m
- Tax gap financial/insurance sector	SEK 900 m
- Other errors	SEK 3 800 m
Total	SEK 31.9 bn

The tax gap in *social security charges* (employers' contributions and self-employed persons' contributions) totals SEK 30 billion. Almost the entire tax gap is attributable to undeclared work. This is not very remarkable. As we have a broad definition of undeclared work that includes all unreported payment for work done, the errors that relate to social security charges will also be classes as undeclared work. That part of the gap that falls within the international area also constitutes undeclared work strictly speaking, according to the definition, but as "international" has priority over "undeclared work", the gap has been allocated there.

Tax gap, social security charges

• International tax gap	SEK 2.0 bn
- Incentive programmes	SEK 1 100 m
- Unreported fees to tax havens	SEK 400 m
- Other	SEK 500 m
• Undeclared employment	SEK 28.2 bn
- Unreported wages drawn by owner	SEK 14 400 m
- Undeclared wages	SEK 3 500 m
- Black-market services between private individuals	SEK 3 100 m
- Incorrectly reported wages, benefits etc.	SEK 3 100 m
- Other	SEK 4 100 m
Total	SEK 30.2 bn

Purely theoretically tax gaps may also arise in social security charges that are not based in an unreported payment for work done (and which should not be included in undeclared work). In addition it is possible that an employer reports too low a sum as a basis for social security charges in the tax return, despite the fact that the correct salary payment has been shown in an income statement. Errors of that kind ought however to be discovered at an annual reconciliation of tax return and income statements. Then there only remain wage payments that are not reported by the employer, but which are included in the tax return by the recipient. Errors of this kind in the social security charges should be assigned to the category "other national". However it has not been possible to make such a calculation and the amounts are presumably negligible.

We have not made any separate calculations of the tax gap for social security charges, which have been calculated from the same sets of figures as the tax gap in income tax.

Value added tax (VAT) is the type of tax that accounts for the largest tax gap in monetary terms. In proportion to reported tax, however, it comes after tax on capital and income tax in business activity.

Almost half the tax gap in VAT is attributable to undeclared work. In that field no separate basis for the calculation of unreported VAT has been prepared, and assumptions have simply been made of which reported earned income is attributable to sales liable to VAT and what rate of VAT applies to the sale. The result of this is a substantial loss of VAT. It has not been possible to confirm whether or not this is reasonable from the overall experience of the National Tax Agency.

Roughly 35 per cent of the tax gap in VAT (approx. SEK 12 bn) has international connections. The errors can in some cases be due

Tax gap, VAT

• VAT on international transactions	SEK 11.8 bn
- Import/export	SEK 3 600 m
- EC trade	SEK 3 000 m
- Carousel trade	SEK 1 000 m
- Trade with cars, boats etc.	SEK 1 000 m
- Other	SEK 3 200 m
• VAT on undeclared employment	SEK 17.1 bn
- Unreported sales in companies	SEK 13 600 m
- Undeclared services between private individuals	SEK 1 250 m
- Black market goods to private individuals	SEK 750 m
- Other	SEK 1 500 m
• VAT on other national	SEK 6.4 bn
- Micro companies	SEK 1 200 m
- Small and medium-sized companies	SEK 3 400 m
- Large companies	SEK 1 600 m
- Public sector, associations etc.	SEK 200 m
Total	SEK 35.3 bn

to the fact that the VAT rules governing international trade are seen as complicated, but some parts of the gap are of a fraudulent nature. The loss of VAT on imports has been calculated by the Customs Service and the gap in exports has been assumed to be approximately the same in size. The other parts of the loss of VAT are based principally on risk analyses and estimates by the National Tax Agency's foreign sections. The VAT gap in EC trade has been conservatively estimated in the absence of reliable material at 3 billion, which the foreign sections regard as a striking underestimate. There is therefore a great need here for supplementary research.

Generally speaking, VAT has been the type of tax where it has been hardest to obtain reliable material for a calculation of the tax gap. The general opinion of those working on VAT controls is that the gap is great, but in most cases it has been hard to back up that impression with facts.

The tax gap in the field of *excise duty* has been calculated by the Special Tax Office in Ludvika. Alcohol and tobacco tax together account for almost 80 per cent of the tax gap. The largest individual gap consists of import of alcohol where the tax gap is calculated to be approx. SEK 2.3 billion. The unregistered import takes the form of internet sale from other countries, professional importation (smuggling) and taxable importation by travellers. In total the tax gap on introduction of goods liable to excise duty amounts to approx. SEK 2.8 billion and the whole amount has been allocated to the international area. The tax gap attributable to undeclared work involves both illegal distilling and also black-market selling of goods subject to excise duty such as alcohol products, cigarettes, snuff and fuel.¹⁴ The total tax gap associated with undeclared work is approx. SEK 500 billion. In the category of "other national" the tax gap on excise duty has been estimated at just under SEK 1 bn, consisting for example of unreported tax on pesticides, unreported advertising tax, incorrect applications for repayments for fuel and electricity etc.

Tax gap, excise duty	
• Alcohol tax	SEK 2.8 bn
• Tobacco tax	SEK 0.5 bn
• Energy, carbon dioxide and sulphur tax on fuel	SEK 0.4 bn
• Energy tax on electricity	SEK 0.1 bn
• Other excise duty	SEK 0.4 bn
Total	SEK 4.2 bn

The material on which the excise duty gap is calculated is of variable quality depending on the certainty of the estimates. In some cases they are based on systematic studies whereas in other cases they are rather in the nature of guesses based on certain background information.

¹⁴ The tax gap on import of goods liable to excise duty is allocated to the international area when the actual import would have been taxed. For the harmonized excise duty on fuel, alcoholic products and tobacco companies can be approved for handling goods liable to excise duty under tax suspension. These companies can quite legally import goods or acquire goods from another party liable to taxation within the country. It is only when the goods are released for consumption that the liability for tax arises and a part of the selling is not reported. It is not certain that the consumer is aware that no tax has been paid, which the consumer can be expected to be in the case of smuggled goods. It is this type of gap that is assigned to the category undeclared employment.

7 *Updating of the tax gap map*

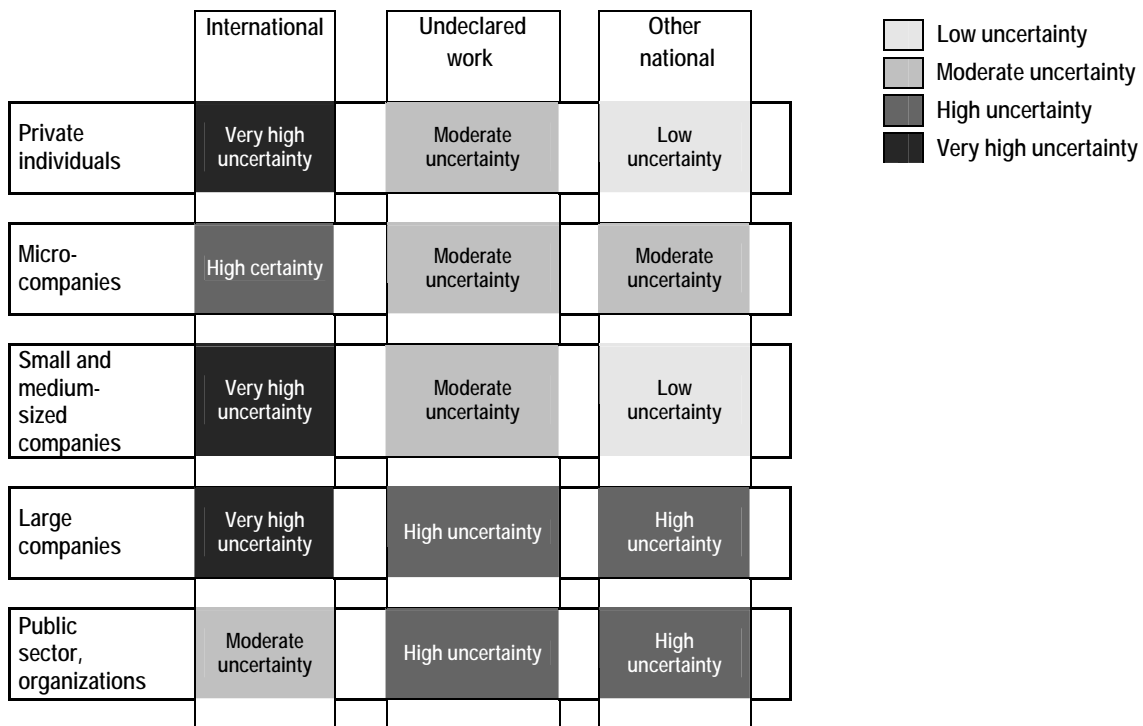
The purpose of the tax gap map is to create an instructive picture of what the tax gap consists of. The purpose is not, in other words, to obtain a basis for assessing whether the tax gap changes over time. Indeed the methods that have been used to calculate the tax gap make it impossible to pronounce on changes in the tax gap. In order to be able to say anything about how the tax gap changes it is necessary to have two snapshots of the tax gap, which must moreover be calculated in the same way. As a number of different sources with data from several different years have been used to estimate the tax gap this is no such snapshot. Instead it may be said to *show what knowledge we currently possess about the tax gap*.

Although the tax gap map now prepared is not the right instrument for measuring changes in the tax gap, it may still be desirable to update it. The main reason for updating the tax gap map is to increase accuracy in areas where there is today great uncertainty. Moreover updating may be desirable if there is any major shift in the tax gap between different areas.

7.1 *Need for fact-finding surveys in various areas*

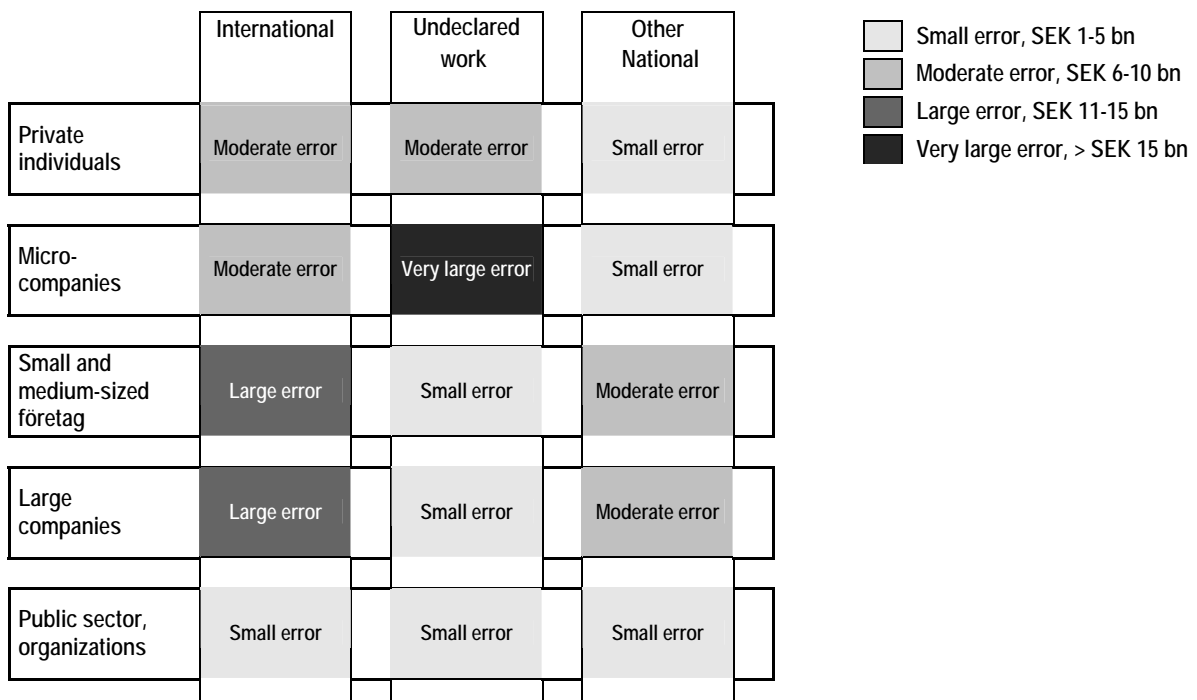
In Chapter 6 we have gone through the components of the tax gap and given an account of the methods and the material used in the calculations. We have then also given a verbal description of where the uncertainty in the calculations is particularly high or low. The table below summarizes the assessments of uncertainty in different parts of the tax gap map. If the different areas of tax gap are compared the uncertainty is greatest in the “international” area and lowest in the “other national” area. If instead different groups of taxpayers are compared, the uncertainty is greatest for large companies. The other groups may have roughly the same total level of uncertainty but the division between different types of tax gap varies. There are three squares in the tax gap map where the uncertainty in the calculations of the tax gap is very high. These are the international area for private individuals, small and medium-sized companies and large companies.

Fig. 9 Assessment of uncertainty in the calculations of the tax gap



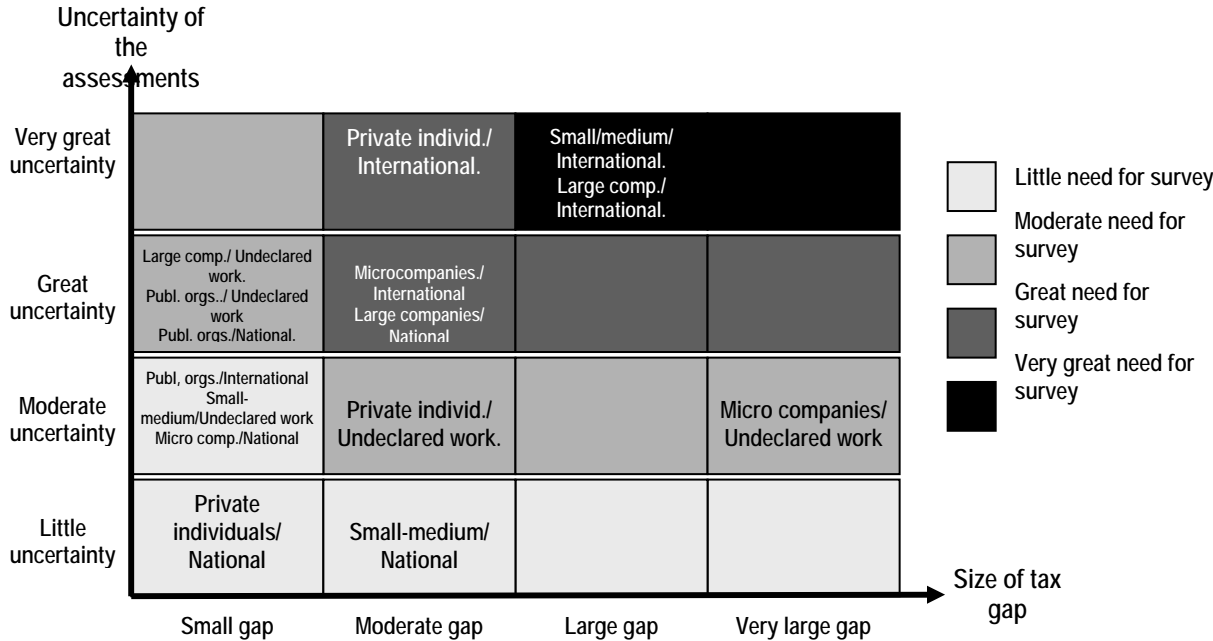
Even if the uncertainty in the tax gap calculations in a particular area is high, it is not certain that it is there that there is the greatest need for further research. To obtain a total picture of the need for research we must take into account both the level of knowledge (which is expressed here as the uncertainty in the assessment) and the size of the tax gap. If the uncertainty is high and the tax gap is large, there is often a great need for research.

Fig. 10 Assessment of the size of the tax gap



We have combined the two dimensions of size of the tax gap and uncertainty of the assessments of the tax gap in a single matrix. That gives us a matrix with sixteen different fields, with four levels of need for more information. We have placed all the fields from the tax gap map in the matrix.

Fig. 11 Assessment of the size of the research need based on size of tax gap and uncertainty of assessments



To make it easier to find one's bearings we have then returned the information on the need for research to the tax gap map. It then becomes clear that there are five areas in the tax gap map that should have priority for fact-finding surveys and research.

- International tax gap for large companies
- International tax gap for small and medium-sized companies
- International tax gap for private individuals
- International tax gap for micro companies
- Other national tax gap for large companies

Fig. 12 Assessment of need for fact-finding surveys in different parts of the tax gap map

	International	Undeclared work	Other National
Private Individuals	Great need for surveys	Moderate need for surveys	Little need for surveys
Micro-companies	Great need for surveys	Moderate need for surveys	Little need for surveys
Small and medium-sized companies	Very great need for surveys	Little need for surveys	Little need for surveys
Large companies	Very great need for surveys	Moderate need for surveys	Great need for surveys
Public sector, organizations	Little need for surveys	Moderate need for surveys	Moderate need for surveys

Little need for surveys
 Moderate need for surveys
 Great need for surveys
 Very great need for surveys

A general assessment has been made for every field in the tax gap map in the summary shown above. However our knowledge in each field is not homogeneous; in one and the same field there are both aspects that we know a lot about and aspects about which we know very little. There are also areas where the National Tax Agency has carried out extensive reserach and where knowledge of the tax gap is great but where there is still much uncertainty in the quantification of the gap. The uncertainty then often derives from interpretation of the rules, the fact that a few taxpayers account for a very large gap or the difficulty of identifying the population. In these cases it is doubtful whether more research would lead to more reliable calculations. Some parts of the tax gap are, quite simply, difficult to calculate! This summary nevertheless gives a good overview of the general need for future reserach. The planning of new reserach must however take account of what information we already have and what information we need.

This elaboration of the need for research is based on the dimensions that are included in the tax gap map. However the dimension “type of tax” may also be added. In this presentation, however, we choose simply to point out the type of tax where the need is at its very greatest, both because knowledge of the tax gap is lacking and because the total gap for the type of tax is large. This is VAT.

If we want further specification of the need for surveys, we can do this on the basis of the description of the components of the tax gap in Chapter 6. The areas where the need for research is greatest are therefore the following:

- VAT on EC trade
- VAT on exports
- Cross-border financial transactions
- Tax on return on capital abroad (tax on capital)

The list may be supplemented with tax avoidance schemes that affect profits (income tax, limited companies), but that is one of those areas where the uncertainty lies in the complexity of the area rather than in inadequate information.

7.2 Increase the value of risk management

As our instructions did not allow for any new studies, we scanned the organization for that information that was available from various surveys and control projects from the last 5-10 years. In one of the Tax Agency's internal databases there are a couple of task forces (National Plan and Risk Management) where reports on various projects have been put in. There are a total of nearly 2000 reports from the period 2003-2007. As mentioned previously, the main aim of these reports was to describe a risk area, not to estimate the tax gap. After a review of these reports we were also able to see that few of them could be used for estimating the tax gap.

The main reason for the impossibility of using these reports is that they have not included an estimate of the tax gap. The template for reporting has the tax gap as one of its headings. The heading is usually present, but the tax gap is usually reported only as extensive or large. When we tried to work backwards from the reports, information on population, sampling method, calculations and totals for the material were often found to be lacking.

The reports give a clear picture of the problems that exist in taxation in each risk area, such as specific legislation, the kind of error encountered, the way the check may be planned for greater efficiency etc. Sometimes several regions (possibly in different years) have run compliance-control projects in the same area. In those cases all the reports contain more or less complete information on the risk area (but with extremely different degrees of detail). As far as the qualitative description of different risk areas is concerned, we consider that reporting works well, but that the information ought to be used again to a greater extent in order to reduce the risk of duplication of work.

The reports also contain quantitative information. This often concentrates on the result of the controls carried out and the resources used. This is of course important information for evaluating the usefulness of compliance-controls. However this information is not enough for an estimate of the size of the tax gap in the area. To be able to extrapolate from the result of compliance controls to the whole population we also need a description of the companies making up the population. In most of the control projects the population has been determined, because that is the starting point for selecting objects for inspection in the first place. Information on the composition of the population and how the sample has been taken is hardly ever included in the reports, however. Information about the controls that have not led to any amendment is also for the most part lacking. All in all we have been unable to use existing reports of examination to estimate the tax gap.

Great resources are currently devoted to carrying out various control projects. It would therefore be good if as much use could be made of them as possible. We have already got quite a long way along this road, in that information from compliance-control projects carried out is collected for use in risk area descriptions and risk assessments. Only a little extra input would be enough to make it possible to use the projects carried out for updating the tax gap

map. The fact that we describe the extra work required as little does not mean that we trivialize estimates of the tax gap. The assumption is based on the fact that much of the information needed for an estimation of the tax gap has in any case to be obtained when planning the control project.

In preparing the tax gap map we have had the assistance of staff in several of our regions. They have begun by realizing that they have been faced with an impossible task when they have been requested to estimate the tax gap in a particular area. In order to carry out their task they have been obliged to try to create data concerning compliance controls already carried out and to make various assumptions. They have regarded the level of the tax gap at which they have arrived – despite the uncertainty in the material – as usually agreeing with the opinions prevailing in the organization on the strength of experience. They have also considered that generally they have found the tax gap calculations useful in their own work. They have been given another perspective on their work and they have been forced to evaluate and quantify the different parts of the operation. In the same way we believe that it has been useful in risk assessment to be able not only to describe different risk areas but also to quantify them on the basis of their significance in the tax gap.

For it to be possible to use the reports that have been written for updating the tax gap map, they ought to contain the following information:

- **Information on the population**
A description of the taxpayers to which the area of error inspected applies and how many taxpayers are involved. The information should be sufficiently comprehensive and concrete for it to be possible to recreate the population.
- **Information on how the sample has been taken**
For it to be possible to update the tax gap it is of course best if the sample has been taken in a random manner so as to be representative for the population concerned. Even if the sample is targeted, however, it is a good thing to obtain information on the criteria underlying the sample.
- **Information on the outcome of the compliance-controls**
Here it is not sufficient to obtain figures concerning the amount by which tax has been raised. There ought to be figures on the number of taxpayers controlled, the number where amendments were made and the amount of the amendments (broken down by type of tax). Ideally a table with the identity number of all the taxpayers controlled (including those where there has been no amendment) should also be available at a designated place in the organization. This may for example be needed in order to be able to adjust the result to the structure of the tax gap map.
- **Assessment of the accuracy of the control**
If the sample is not a random one or made in some other way that makes it possible to generalize, account must somehow be taken of the fact that the errors in the sample may differ from the population. Those who have taken the sample and carried out the controls are those best placed to assess how accurate the control has been.
- **Estimate of the size of the tax gap**
An estimate of the size of the total tax gap for the whole country for the area of error inspected.

7.3 Should the tax gap map be updated?

If we obtain new knowledge showing that the calculations of the tax gap that we have made are no longer accurate, the map ought to be updated. We know that knowledge of certain areas is inadequate. If it is decided to carry out research in any of these areas it is reasonable to use the results of the research to update the tax gap map.

It would also be desirable for information from risk management that concerns the tax gap in various limited areas to be continuously inserted in the tax gap map, so that the map always shows the Tax Agency’s present state of knowledge of the tax gap.

There is however a risk in regularly (e.g. annually) publishing an updated version of the tax gap map. Changed figures that are provided by new knowledge of the tax gap may give the impression that the gap has changed. It may also be difficult to assess from each individual compliance-control project whether the estimate of the tax gap in the specific area has any effect on the total tax gap or not. It ought therefore to be more manageable to collect all the new information about the tax gap (from control projects and special research surveys etc.) and to carry out a major updating, say, every three or four years.