SKAT – The Danish Tax and Customs Administration

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Please note that additional third party reporting facilitating the taxation of shareholdings have been introduced as part of a major tax reform in effect from January 2010. These changes in the tax system are designed to address the low compliance levels documented by this project and by a compliance survey based on random audits. The risk has thus been addressed at the systemic level since the publication of the original report in December 2008, but the lessons from the project and the effect measurement remain relevant.

Measurement of effects of information leaflet and guidance letter in a 2008 shareholder taxation project

Summary

The measurements described in this report show a clear effect from providing guidance on complex tax regulations. Fully supporting our compliance strategy, the measurements show that providing information and guidance is effective in those cases where failure to conform with the regulations is due to lack of awareness or inability to comply. The results are statistically very robust. The analysis further shows that there is a widespread problem with conformity to the tax regulations in relation to ownership of shares.

In 2008, there was a nationwide initiative in Denmark aimed at the taxation of shareholdings and holdings in investment funds. This was a continuation of a project started in 2007.

A target group, consisting of just under 80,000 Danish taxpayers, was selected on the basis of an assessment of the likelihood of problems occurring and of the amount of tax which might be involved. The criteria for inclusion in the target group included having sold large numbers of shares, or being subject to the rules for taxation of unrealised profits on holdings. An information leaflet and a guidance letter were sent out to around 5,000 taxpayers selected at random from the target group.

Subsequently, tax checks were carried out for the recipients of the guidance material and for an equivalent group who had not received the material, again selected at random from the target group. In this way it was possible to study the effects of sending out information leaflets and guidance letters in relation to an extremely complex tax area.

The present report is based on the checks made on the first one-third of the taxpayers in this random sample of 10,000. This one-third was again selected at random from the sample and was thus also representative of the target group. The analysis shows that the initiative to improve guidance reduced the overall proportion of cases where adjustments to taxable income had to be made as a result of checks by nearly five percentage points, from approximately 52 to 47 percent. If the percentage of cases where adjustments were required is extended to include adjustments by small amounts which could have been made but in fact

were not, then the effect is increased to a little over six percentage points. These reductions in numbers, however measured, are statistically clearly significant.

The guidance initiative was especially effective at the more straightforward end of the spectrum of the selected group of taxpayers who had share income and in those cases where the failure to comply with regulations was due to lack of knowledge or an inability to follow the rules correctly. The guidance initiative had a positive effect on conformity with the regulations for all the types of holdings targeted. More specifically, the level of the effect – measured in terms of the proportion of cases where there were errors for any particular type of security – was statistically significant for holdings in *shares*, and approached statistical significance for *investment fund holdings in mixed securities* and certain types of *bond-based investment holdings*.

If we consider the overall average amount of adjustment to taxable income, then the amount was larger for those who had not received guidance than for those who had. However, for separate categories of investment income adjustment, the difference was only significant for those cases where assessed income from shares was reduced. The average net adjustment per case was DKK 14,000 without guidance and DKK 12,000 with guidance.

Finally, it should be noted that the extent of errors in declaration of income from shares and securities was quite considerable – in terms of both the high percentage of cases where errors had been made and the size of the adjustment amounts. If the average net adjustment upward of DKK 14,000 for the group who did not receive guidance is applicable for the whole of the target group of almost 80,000 taxpayers, then the total underdeclaration of income is in the order of DKK 1.1 billion. It thus seems that there is a need to examine more closely the possibilities for ensuring more accurate declarations.

The checks carried out have resulted to date in a total increase in taxable income of DKK 40 million; the amount of the increase was DKK 6 million less for those who received guidance than for those who did not. The effect of the guidance was thus considerable measured in monetary terms. Over the course of the whole project, the figure can perhaps be expected to increase to DKK 18 million. This figure is, however, still somewhat uncertain, and the effect measured in terms of money is so far not statistically significant.

Background

An increasing number of Danes have been investing in shares and investment funds. The new rules for tax in this area which came into force on 1 January 2006 involve new regulations for the taxation of profits on shares and other securities as well as some complex transitional regulations. In addition, from 1 January 2005 it became possible to invest in a new type of company – "investment companies" – where the taxation of the investment company is shifted down to the level of the individual investors in such a way that the profit is taxed even if not realised, with one year's deferment.

These rules are relevant for many ordinary wage-earners, pensioners, etc. who own large or small amounts of shares, investment fund securities and the like. At the same time, many people find the rules for taxation very complex to understand. There are thus reasons to believe, both on the basis of the significance of the sums involved and the probability of error, that compliance with regulations is poor in this area. SKAT, the Danish taxation agency, therefore decided to make this area the subject of a nationwide initiative in 2007 and 2008.

This initiative was in the first instance directed towards ordinary wage-earners and taxpayers. This is a group of people who are used to being able to handle their tax declarations on their own, without professional assistance, and who rarely have a need to learn new tax rules. When the rules are changed, then, there is a great need to provide this group with information and help in order to ensure that the regulations are noted, understood, and correctly applied. People such as company owners, in contrast, often have professional assistance with their tax, and this group was therefore considered to be in less need of special help in the first instance.

There are potentially a number of reasons why taxpayers might not comply completely with the regulations in this field. There are in general three types of reasons for failure to comply with regulations. These are lack of knowledge of the relevant rules, inability to follow the rules correctly, and finally lack of willingness to comply with the rules.

An important reason for the lack of compliance with the regulations concerning the taxation of income from shares is that, as is normal when tax regulations are altered, people have insufficient knowledge of the new regulations. In addition, in this case the rules are so complicated that there is also a problem with people's ability to follow them. Finally, of course, the possibility cannot be ruled out that in some cases the problem is that some people simply do not wish to comply with the regulations. In other words, all three possible reasons for failure to comply with the regulations are relevant in the area of taxation of shares and holdings in investment funds.

The efforts made by SKAT have therefore been directed at all three possible reasons for incorrect declarations in this area. Lack of knowledge of the rules among taxpayers imposes on SKAT the duty to provide adequate information. For this reason, a massive information and guidance campaign was conducted in both 2007 and 2008. An effort has been made to counter the problems many taxpayers experience in following the complex regulations through the use of a new online computer programme "Share calculations", which allows taxpayers to access electronic assistance with the complex calculations. Finally, in the second half of 2008 a large number of checks were carried out in order to make it evident that attempts at cheating in this area did not pay.

The initiative

A working group was responsible for organising the initiative. This working group produced a leaflet entitled "Har du aktier eller andre værdipapirer?" (Do

you own shares or other securities?) targeted at ordinary taxpayers. The leaflet was an expanded version of previous material. In response to heavy public demand, it included two new diagrams that provided an easy-to-follow overview of the tax rules in the area. The text is accessible from the tax authority website, www.skat.dk.

The share project working group also produced an accompanying letter to send out to selected taxpayers with the information leaflet. The letter provided guidance on what to do and where to go for help, and at the same time raised a "warning finger" by drawing attention to the fact that SKAT was aware that the recipient had sold shares or securities worth a substantial amount.

The working group selected a target group from among wage-earners and other similar taxpayers who owned shares or investment securities. This target group consisted of people who were assessed as being especially likely to fail to comply with the regulations. There were a number of criteria for inclusion in the target group, including holdings in a particular type of investment company and sale of shares or securities for at least DKK 100,000. This filtering procedure was applied to all the taxpayers in Denmark, and resulted in the identification of a target group of 79,107 people.

From this target group, a sample of 10,000 was selected to be subjected to a check on their income from shares and securities for the tax year 2007. Half of the people in this sample were sent the guidance leaflet and the accompanying letter before the deadline for submission of corrections to their tax declarations. In order to be able to assess the effect of this material, it was not sent to the other half of the people in the sample.

The members of both halves of the sample group were selected randomly from the target group, with an equal number of people being drawn from each of Denmark's thirty tax centres. This procedure ensures that representative pictures can be obtained for the whole of Denmark, for each region, and for each tax centre. The results provide reliable information about compliance with the regulations and the effect of supplying guidance material on all three of these levels, though with considerable statistical uncertainty for any given tax centre. Consequently, this report concentrates primarily on the results at the regional level and for the country as a whole.[1] In general, the level of uncertainty is lower for the percentage of cases where an adjustment was made than it is for the monetary amount of the adjustments. This is because the variance in the observed values for amounts is significantly greater.

[1] The 95% confidence intervals – i.e. the ranges within which we can be 95% sure that the proportions of cases where adjustments need to be made lie – are of between 11.7 and 13.8 percentage points for the individual **tax centres**. For the **tax regions** other than Copenhagen, the confidence intervals are of between 5.0 and 6.6 percentage points. For Copenhagen, the confidence interval covers 13.2 percentage points. For **Denmark as a whole**, however, the confidence interval was as little as 2.4 percentage points. The high level of uncertainty of the exact average adjustment percentages makes it difficult to demonstrate significant effects at the level of individual tax centres, and these results are consequently of little interest.

The tax centres were required to examine a total of 10,000 cases across the whole of Denmark during the period July 2008 to the end of April 2009. The experience gained from this will be useful in deciding on future initiatives in the area of taxation of shares and securities. It was agreed that the tax centres should report on one third of the sample by 1 October 2008 at the latest, while the remaining cases would be dealt with by the deadline stated above, namely 30 April 2009.

The first one-third of cases to be examined was selected at random, with an equal number from each of the 30 tax centres selected from each of the two groups of 5,000 taxpayers. To be exact, 111 taxpayers were selected from each tax centre for the first phase, and of these, 56 had received the guidance material and 55 had not. Thus, the first phase covered a total of 3,330 people. The cases to be covered in the first phase were specifically identified. It was not permitted to replace cases from Phase 1 with others due to be examined in Phase 2, thus ensuring that the cases examined in Phase 1 would also be representative of the whole country.

Only the cases from Phase 1 were used for the analyses presented in this report. Generally speaking, simpler cases are completed first, so the cases from Phase 2 which had been completed at the time of writing this report were not included, because this would have made the picture unrepresentative. Consequently, this report focuses entirely on checks from Phase 1. It is planned that the analyses will eventually be updated on the basis of all the checks. This larger quantity of data will make it possible to calculate figures with a higher level of statistical certainty, thus also permitting analysis in greater depth. The first one-third of cases, however, on which this report is based, still represents a fairly large sample.

The effects of the guidance initiative

By 1 October 2008 reports had been received on 3,107 of the 3,330 cases in Phase 1, or more than 93%. In the light of the fact that there were only a few months available to complete the work, and that the precise cases to be dealt with by that date had been specified, this must be viewed as a remarkable achievement. There are always some cases which take a very long time to deal with, either because they are extremely complex or because the taxpayer involved delays the proceedings. By 2 December the number of cases reported had risen to 3,272, leaving only 58 cases outstanding, or just 1.7% of the total of 3,330. This report is based on the outcomes of these 3,272 cases.[2,3]

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[2] It should be noted that there will obviously be a disproportionately high number of cases in which adjustments are made among the remaining 58 cases, and the results of the study will thus very slightly under-state the proportion of cases where adjustments are made. However, this scarcely constitutes a major problem.

[3] Completed cases totalled 1,624 of the 1,650 (30 x 55 per tax centre) without guidance material and 1,648 out of the 1,680 (30 x 56 per tax centre) with guidance material. 26 cases without and 32 with guidance had not been completed. These uncompleted cases were distributed by tax

Percentages of cases where adjustments were necessary

Table 1 shows the percentages of cases in which adjustments were made in relation to the number of cases completed, by tax region and for groups receiving and not receiving guidance.

Table 1. Percentages of cases in which adjustments were made, with and without guidance, by tax region.

Tax region	No guidance	Guidance	Effect	Number of cases
Northern Jutland	49%	39%	10.1%	303
Central Jutland	48%	42%	5.8%	630
Southern Denmark	51%	48%	3.3%	565
Central and Southern Zealand	59%	53%	6.2%	544
Northern Zealand	53%	53%	-0.4%	828
Copenhagen	51%	41%	9.8%	402
Whole of Denmark	52.1%	47.4%	**4.8%**	3,272

Note: The figures are weighted according to the actual distribution of the 79,107 taxpayers across the various tax centres. This weighting corrects for the fact that equal numbers in the sample were drawn from each tax centre. In fact, the numbers of checks carried out were: 441 in Northern Jutland, 652 in Central Jutland, 761 in Southern Denmark, 662 in Central and Southern Zealand, 645 in Northern Zealand and 111 in Copenhagen.

It is evident that the percentage of cases requiring adjustments to be made is generally rather high for the country as a whole, though somewhat lower among those who received the guidance material than among those who did not (47% and 52% respectively). Since both groups were large in size and were randomly selected from the same population, it can be assumed that they were fairly similar in their composition. Consequently, the effect of the guidance material can be calculated quite simply as the difference between the percentages of cases in which adjustments were made to taxable income. This effect is 4.8%, and the result is statistically clearly significant.[4] This means that the guidance material has clearly been successful in reducing the proportion of errors.

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region as follows: 3 in Northern Jutland, 14 in Central Jutland, 16 in Southern Denmark, 4 in Central and Southern Zealand, 21 in Northern Zealand and none in Copenhagen.

[4] In the rest of this document, the term *significant* is used to indicate whether or not the observed differences, when evaluated in accordance with the relevant statistical tests and without other explanatory variables, are found to be statistically significant at the 5% level. The significant results can be regarded as very robust, and much more reliance can be placed on these results than on those that are not found to be significant.

The significance level used in all tests is 5%. The significance level used in a study is the highest level of possibility regarded as acceptable that the results have arisen by chance. The null hypothesis is the hypothesis that one is attempting to test, for example the hypothesis that the percentage of adjustments is the same regardless of whether people received the guidance material or not. When that null hypothesis can be rejected, the difference between the two groups in the percentage of cases where adjustments must be made is said to be significant. The significance level used is thus the maximum level of probability accepted that the null hypothesis has been incorrectly rejected. The rejection of the null hypothesis thus does not mean that it is

If we consider the distribution by regions, we find that the level of conformity – among those who did not receive the guidance material – was clearly lowest for Central and Southern Zealand, followed by Northern Zealand. Our recent compliance survey of individual taxpayers tells us that conformity with the regulations is generally poor in Central and Southern Zealand.[5] The findings from these two studies are thus in agreement. Among those who did receive the guidance material the spread of levels of compliance between the regions is a little greater, but Central and Northern Jutland and Copenhagen again display the highest levels of compliance.

The effect is positive, as it was expected to be, for all the tax regions, with the exception of Northern Zealand. However, at a regional level the effects are not significant. Only in Northern Jutland did the effect of the guidance material approach significance. However, these findings may change when the results for the whole sample are available, since the larger numbers will make it easier to establish significance.

The negative effect found in Northern Zealand is due to the results for Høje-Taastrup and Nærum tax centres, where the numbers of cases requiring adjustments to be made to taxable income were greater among those who had received the guidance material. Since the differences in both these tax centres were in the order of eight percentage points, and since in addition Nærum was the tax centre with the largest proportion of people with large holdings in shares, the results from these two centres were sufficient to pull the overall effect for the region of Northern Zealand down to just below zero.

As far as Nærum is concerned, the explanation may be that such a large proportion of the taxpayers there have shareholdings that are so very complex that the guidance provides insufficient help with their declarations, or that the financial consequences of complying with the rules would be so great that taxpayers decide against doing so. This obviously does not explain why the effect in Nærum was actually negative. However, it should be noted that the size of the confidence interval at the level of individual tax centres for the percentage of cases requiring adjustment is around 13 percentage points, so the real effect might well be somewhat different from that calculated.

In designing the project, it was agreed that no adjustments to taxable income would be made if the amount of the adjustment was only small. Instead, letters were sent to the taxpayers concerned drawing attention to the error and pointing out that the correct amount should be declared in the future. If these cases where there were actually grounds for making small adjustments are taken into account,

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quite certainly wrong. It simply means that, on the basis of the observed data, it cannot reasonably be maintained. By choosing a low level of significance we thus reduce the risk of drawing false conclusions by rejecting a hypothesis which is in fact correct. The level of significance is thus a measure of the degree of agreement between the data and the postulated null hypothesis.

[5] We have recently conducted an extensive compliance survey based on random audits of 24,000 citizens and businesses for the tax year 2006. Reports on this study are available in English translation at www.itdweb.org

all the percentages of cases requiring adjustments increase a little. These *extended proportions of cases requiring adjustments to be made* are shown in table 2 by region and according to whether guidance was sent or not.

Table 2. Extended proportions of cases in which adjustments could have been made, with and without guidance, by tax region.

Tax region	No guidance	Guidance	Effect	Number of cases
Northern Jutland	55%	43%	11.4%	303
Central Jutland	52%	45%	6.9%	630
Southern Denmark	58%	53%	5.3%	565
Central and Southern Zealand	65%	58%	6.7%	544
Northern Zealand	61%	59%	2.4%	828
Copenhagen	55%	45%	9.9%	402
Whole of Denmark	58.0%	51.8%	**6.2%**	3272

Note: The figures are weighted; see table 1.

Once again, these figures demonstrate a positive effect from the information leaflet and letter, and at 6.2 percentage points the effect measured for the guidance material is 1.4 percentage points, or 30%, greater than the effect calculated solely on the basis of the percentage of "normal" cases where adjustments were actually made. Another way of looking at this is to note that the extended percentage of cases where adjustments could have been made is 5.9 percentage points higher than the standard percentage where adjustments were in fact made. For the group of taxpayers covered by the extension of the measurement, the guidance eliminated a quarter of all errors! This effect is very clearly significant. This is a very robust result and, through comparison with the results shown in table 1, it demonstrates that the guidance material is particularly effective with taxpayers at the more straightforward end of the spectrum of taxation of shareholdings.

Table 2 also shows that the effects are now positive for all tax regions. The difference brought about by the guidance material is, however, only statistically significant in Northern Jutland, though it approaches significance in Central Jutland. The absolute size of the difference is also large in Copenhagen, but since this calculation is based on only 111 cases in all – see table 1 – the level of statistical uncertainty is too great to regard the result as reliable.

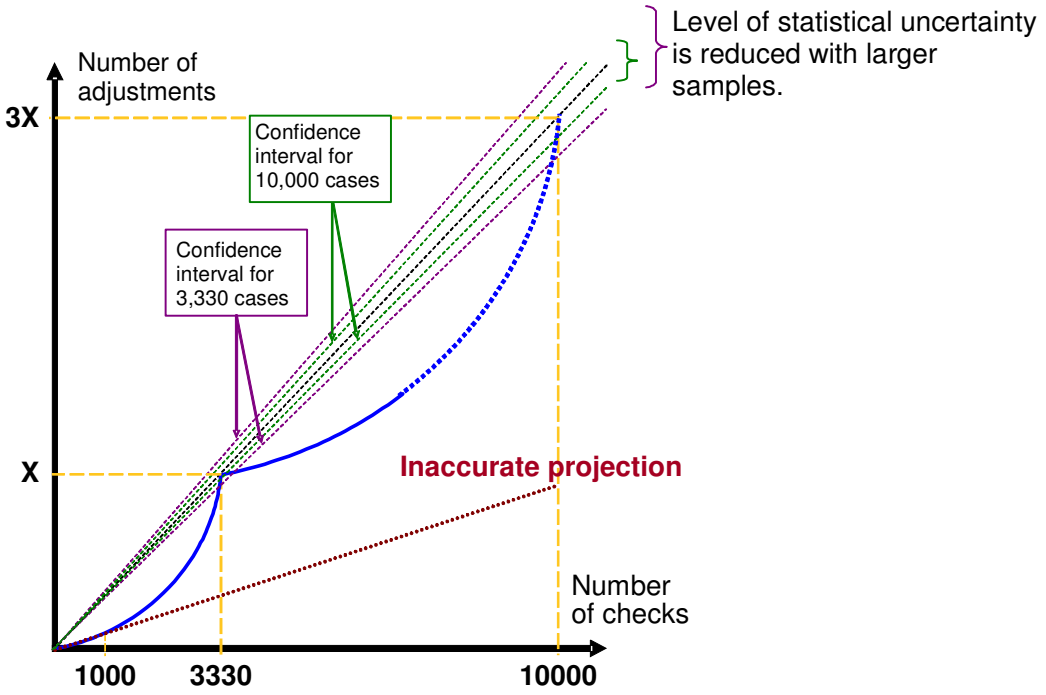
Figure 1 illustrates the trend observed in the number of adjustments as cases were settled. The completed cases (blue) curve from the point of origin to the coordinates (3,330, X) shows very clearly how the number of adjustments in relation to the number of checks carried out in Phase 1 increased over time. This is because the easier cases with a low proportion of adjustments were generally finished more quickly, and thus the cumulative percentage of cases with adjustments increased as the project progressed.

Similarly, we can already see that the same pattern is repeating itself for Phase 2, as shown by the continuation of the completed cases curve from (3,330, X) to (10,000, 3X). The last, dotted section of the curve represents the cases where the

results are not yet known, but on the basis of Phase 1 we can already estimate with a reasonably high degree of certainty the point which will be reached when all cases have been completed.

If we had based an estimate of the total proportion of cases where adjustments to taxable income should be made on a projection of the results from the first cases completed, that estimate would have been completely incorrect and might have led to incorrect decisions being made.

Figure 1. Cumulative number of cases in which adjustments were made to taxable income as cases were completed.



There is a procedural lesson to be drawn from these observations. When working with large samples it is a good idea to establish a "project milestone" lying at an early point in the process by which a certain proportion of the total number of cases should be completed. At the same time, it is essential that the cases which will be examined by this milestone are determined beforehand, and are randomly selected.

In this way, the milestone analysis will function as a kind of pilot study. The advantages of this approach are that it enables rapid results to be obtained and it makes possible the allocation of the correct resources to the analysis of the remainder of the sample. It is also an excellent tool for project management: if one does not know whether or not one is on course in a project, it is difficult to make adjustments. Project milestones also help to ensure that resources are allocated in advance, thus avoiding the possibility of ending up with 90% of the work to be done at the last minute and the attendant risk of failing to fulfil project goals for both quality and quantity.

If the results from the first phase show that the percentage of cases requiring adjustment are not what was expected, this changes the level of statistical reliability which will be obtained with the planned sample size. This could mean that it will be necessary to increase the sample size, or alternatively that a smaller sample will be adequate. A lower number of cases requiring adjustment might also result in a decision to "fine tune" the input, or to change it completely, or even to cancel the initiative altogether. This would avoid expending resources on something which is ineffective. However, such changes are only possible if the results for a randomly selected part of the sample can be obtained early on.

Another very important observation to be made from the progress of this particular project is that in Phase 2, the size of the difference in the proportion of cases requiring adjustments for taxpayers who did and did not receive the guidance material is somewhat larger than that found in the almost completed analysis for Phase 1.[6]

The early results in this particular study give a strong indication that the guidance material has been effective primarily in the more straightforward cases. This conclusion is also supported by the results reported above, which show that the effect is greater when the extended percentage of cases is used as a measure (i.e. including the cases where the adjustment involved was very small and was not implemented). When it comes to the really complex cases, the provision of guidance material explaining the rules on the basis of a series of simple examples makes little – if any – difference. It may be that the material lacks examples that are sufficiently advanced to cover all aspects of the situations of taxpayers at the complex end of the shareholding spectrum; it may also be that the financial consequences of following the new rules are so great in these cases that taxpayers do not wish to comply with them.

There are direct parallels here with SKAT's work with targeted initiatives for different groups within a given taxation area, which in general terms aim to differentiate between taxpayers who do not know the rules, those who lack the ability to follow the rules, and those who lack the will to comply.

In the field of taxation of shareholdings, the problem may be that some taxpayers simply do not know the new tax rules well enough. The guidance material resolves this problem to an extent, but for many taxpayers with more complex situations **knowledge** of the rules is not enough, because the material does not enable them to understand how to apply the rules in their particular cases (**ability**). The guidance leaflet, the letter and the recommendation to use the share tax calculation programme available on SKAT's website may also give some help to taxpayers who lack the ability to make a correct declaration, but again this provision of assistance is primarily helpful in relatively straightforward cases. Finally, it is of course also possible that for some taxpayers with complex situations the **will** to comply with the regulations is lacking, because the outcome is the payment of much higher taxes. The conclusion to be drawn is that there would appear to be little point in trying to

[6] At the time of writing, more than 3,000 Phase 2 cases have been completed, equivalent to 47% of the total.

achieve much more at the complex end of the spectrum with a relatively simple leaflet. The explicit warning contained in the letter that the tax authorities are aware that the taxpayer has sold securities for a substantial sum during the tax year may have some effect, however.

In assessing the effect of the leaflet, it is also important to note that our sample consisted solely of taxpayers who had made share trades totalling a large amount and those with complicated types of securities – in other words, that the sample consisted primarily of taxpayers whose cases were complex. It is therefore possible that the leaflet could have been relatively more effective in the cases of other holders of shares and securities.

In Phase 1, the difference with and without guidance in the percentage of cases requiring adjustments generally narrowed as the number of completed cases increased. This was because the more complex cases, where the percentages of cases requiring adjustments were almost identical for the two groups, tended to be completed later. The same picture is seen developing in Phase 2. This strongly indicates that the trend is not a coincidence, and consequently adds support to the points made above in relation to the effect of the guidance in relation to knowledge, ability and will to comply.

Table 3 shows the number of adjustments for different types of securities, for those who did not and those who did receive guidance. The proportions of cases where adjustments were made have been calculated on the basis of these figures and the total number of cases for each of the six types of security.

Table 3. Number and proportion of adjustments made for each type of security, with and without guidance.

Guidance	Shares	Share-based investment funds	Investment funds based on mixed securities	Bond-based investment holdings (Code 1D)	Bond-based investment holdings (Code 1O)	Investment companies	Adjustments made in total	Basis for adjustments in total*	No. of completed Cases
	— Number of adjustments —								
No	405	229	38	102	194	239	847	942	1,624
Yes	346	223	25	80	164	232	781	854	1,648
	——— Proportion of total number of completed cases ———								
No	25%	14%	2%	6%	12%	15%	52.1%	58.0%	100%
Yes	21%	14%	1%	5%	10%	14%	47.4%	51.8%	100%
Effect	3.9%	0.6%	0.8%	1.5%	2.0%	0.6%	**4.8%**	**6.2%**	

Note: The figures are weighted; see table 1.
* Including adjustments by small amounts which could have been made but in fact were not.

The largest proportion of cases in which adjustments were made was clearly that for shares, where without guidance adjustments were made in one case in four. The proportions of adjustments for share-based funds and for holdings in investment companies were also high, at around 15%. In contrast, the percentage of cases leading to adjustments was very low for *investments in mixed securities*. This does not necessarily mean that conformity with the regulations in this area was correspondingly high; it may be a result produced by the fact that there were not many people in the sample who owned this type of security.[7]

If we consider the effect of the guidance initiative, we see that it is positive for all types of securities, which means that the guidance is effective in all areas. In absolute terms, the effect is clearly greatest for holdings of shares. The effect in this area is also highly significant. For *investment fund certificates in mixed securities* and for *bond-based investments* the effect approaches significance, whereas the effect is nowhere near being significant for the other two types of securities.

Note that the numbers and percentages for the six different types of securities add up to more than the figures for adjustments in total. This is because an individual taxpayer may have taxable income adjustments made for more than one type of security.

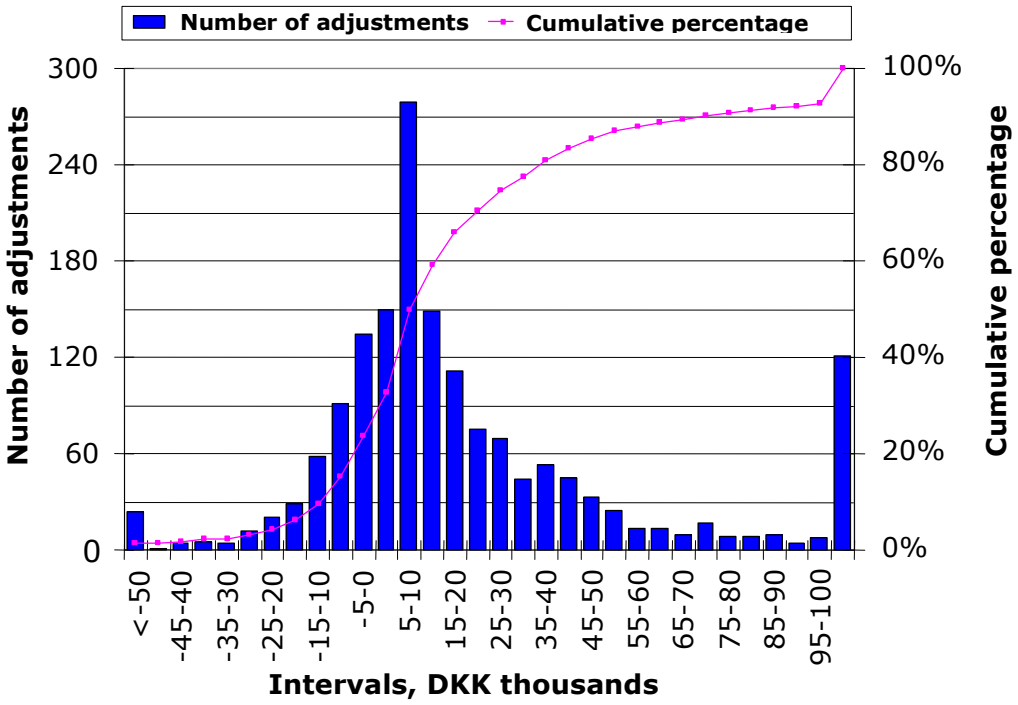
[7] Note that the percentages stated for cases resulting in adjustments relate to the percentage out of all the completed cases, not the completed cases among people owning the particular type of security.

Adjustment Amounts

In total, adjustments were made to taxable income in 1,628 out of the 3,272 cases completed.

Figure 2 shows the distribution of these adjustments by size of the amount, irrespective of whether the guidance material was sent or not. The number of adjustments is indicated by columns (scale on the left), while the s-shaped curve is the cumulative frequency in percent (scale on the right).

Figure 2. Distribution of adjustment amounts (histogram).



Note: The figures are weighted; see table 1.

The distribution is concentrated around the interval DKK 5,000-10,000 (the *mode*) and over one-sixth of all adjustments are in this range. A half of all adjustments made are under DKK 10,000 (the *median*), and the rest are over this amount. Amounts above DKK 40,000 account for nearly 20% of the total number of adjustments. The distribution is clearly *right-skewed*.

The curve for cumulative frequency shows that the amount of taxable income was reduced in nearly one quarter of cases, i.e. in these cases too much tax had been paid. In the remaining cases, the amount of taxable income from securities was increased.

Note that the very large sample size with regard to taxpayers whose shareholdings are complex or large results in a very smooth distribution, even out in the tails of the distribution curve. The most extreme intervals, <-50 and >100, account for 1.4% and 7.4% of cases respectively. Note that these are very large interval groups and significantly greater in size than the DKK 5,000 range represented by the other columns.

Before going on to interpret sizes of the average amounts, it is necessary to check whether there are any extreme outlying observations. Figure 3 shows the 30 largest adjustment amounts and figure 4 the 30 smallest.

Figure 3. The thirty largest adjustment amounts (increases).

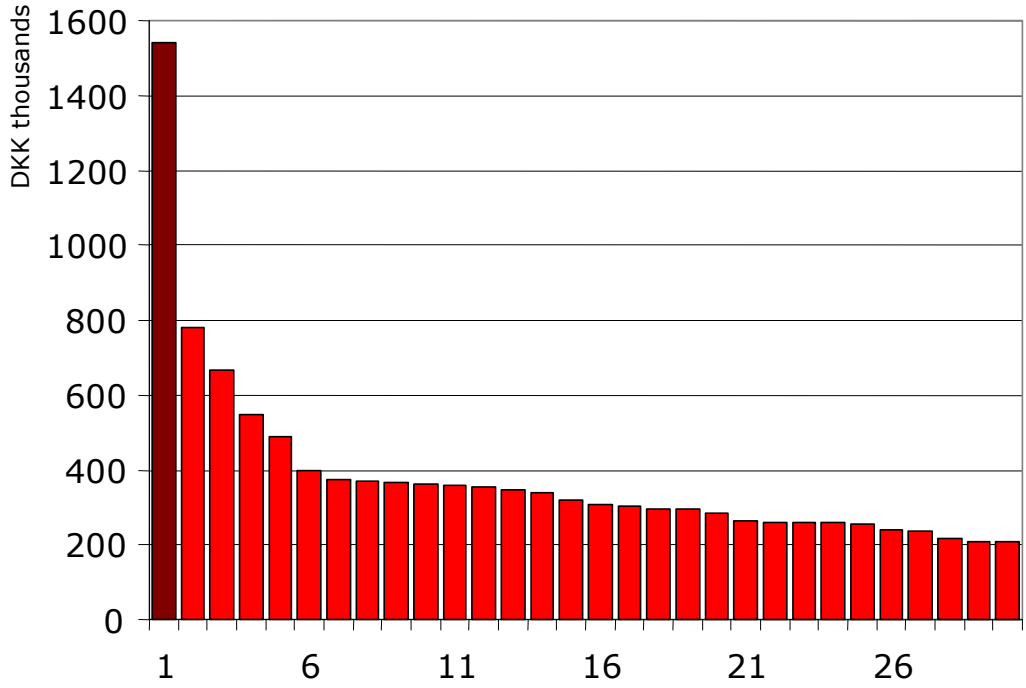
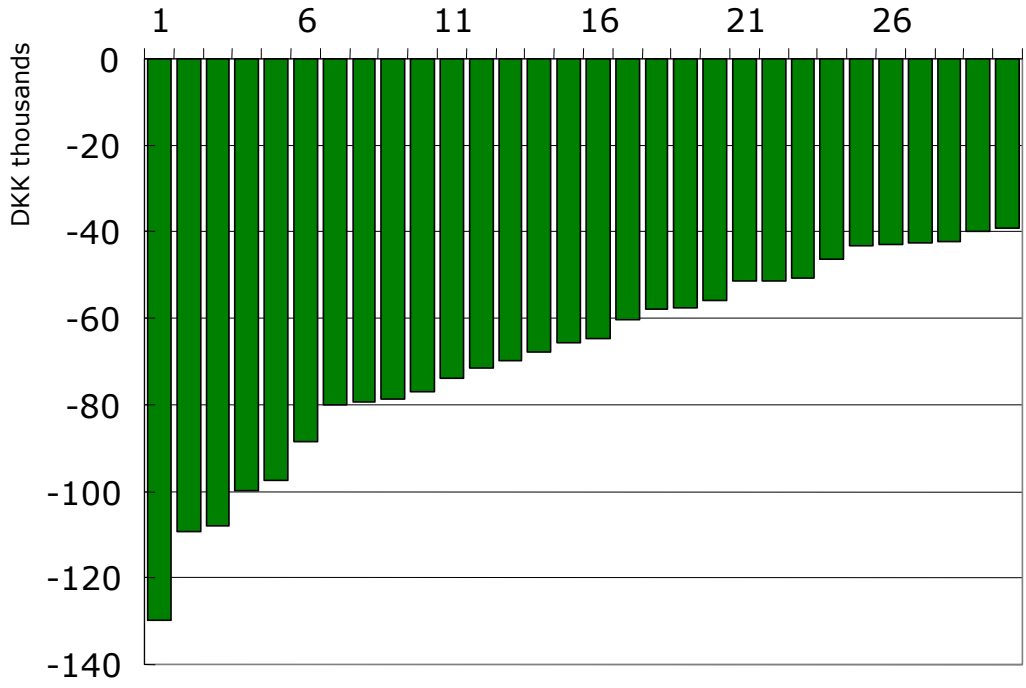


Figure 4. The thirty smallest adjustment amounts (reductions).



The only observation which might cause a "raised eyebrow" is the largest of all, which was an upward adjustment of over DKK 1.5 million. The taxpayer in

question had not been sent the guidance material.[8] It is normal to omit such outlying observations from the calculation of the average adjustment amount. Apart from this single case, the picture is very neat. The largest reduction was of DKK 130,000.

Table 4 shows the average adjustment amounts per adjustment and per case. These amounts are further divided up according to whether guidance material was sent or not. The average net adjustment amounts across all checks – the amount counted regardless of whether an adjustment was actually made or not – were DKK 14,000 where no guidance material was sent and DKK 12,000 where guidance material was received. The amount is lower where guidance was sent, as expected, but the difference is not significant.

Table 4. Adjustment amounts on average and extrapolated for the whole of the target group.

Guidance	Amount per Adjustment				Amount per case	Whole target group
	Up	Down	Net	Numerical		
	DKK thousands					*DKK millions*
No	40.6	-17.2	27.4	35.2	14.3	1127
Yes	37.8	-11.2	25.9	31.3	12.3	

Note: The figures are weighted; see table 1. One extremely high adjustment of more than DKK 1.5 million was excluded from the calculations, since it would have had a marked effect on the average adjustment amount and thus the extrapolated overall amount.

The net average adjustment amounts for those whose taxable income was actually adjusted were approximately DKK 26,000 with guidance and DKK 27,000 without. The difference is not significant, but it is in the "right" direction. When the overall amounts are subdivided according to whether the adjustment was upward or downward, the difference is again in the desired direction. The difference in the case of reductions is clearly significant. This means that many people were able to discover from the guidance material how they could use their entitlements for allowances correctly and thus pay the right amount of tax, neither more nor less. In the case of upward adjustments, the difference was not significant. This is perhaps consistent with the likelihood that taxpayers are more inclined to put their tax affairs in order when there is the prospect of getting money back than when the opposite is the likely outcome.

If the amounts of upward and downward adjustments are added together, ignoring the "minus" signs for deductions, we arrive at the numerical adjustment amount – the total of amounts by which adjustments were made, whether upward or downward – and this provides a better indication of the total level of failure to conform with the rules, irrespective of whether SKAT is owed money or taxpayers have cheated themselves. For the group who did not receive guidance the average numerical adjustment amount was around DKK 35,000 while for the

[8] In fact, the six largest adjustment amounts were all made in cases where no guidance material had been sent.

group which did receive guidance it was approximately DKK 31,000. Again, this difference is not statistically significant.

The amounts of the adjustments must be regarded as rather large. If we extrapolate the average of DKK 14,000 to the 79,107 taxpayers that fulfilled the criteria for inclusion in the target group, the projected total adjustment amount is in the region of DKK 1.1 billion.[9] It is particularly important to note that these almost 80,000 taxpayers are by no means representative of the whole population of Denmark. On the contrary, we can be reasonably certain that this selected target group is responsible for a very large proportion of the shortfall with regard to taxable income from shares and securities. In any case, the calculation certainly means that initiatives are worthwhile in the area of shares and securities, since there is a considerable amount of tax revenue to be recuperated here.

We also know from our recently published compliance project that the total numerical adjustment amount for shares is almost DKK 1.3 billion for the whole of Denmark, and that the net adjustment is almost DKK 1.1 billion, as shown in table 4. The two figures for underdeclaration in the area of shares are thus more or less identical, but the compliance project covered all taxpayers in Denmark, whereas the figure in this project is based on a specially selected target group of 79,107 taxpayers. One might therefore have expected that the figures obtained from the compliance project would have been higher, or the figures from this project lower.

It is likely that the largest part of the underdeclaration in Denmark comes from the target group of 79,107, so the difference should not be expected to be great. It is also possible that taxpayers with complex holdings of shares (the people in the target group) were underrepresented in the sample for the compliance project, and that the extrapolated estimate from that survey therefore was on the low side.

There are also other possible explanations. First and most important, the compliance survey was based on the tax year 2006, whereas the share project was based on 2007. This could make a large difference, since share income is very sensitive to the economic cycle. Next, the handling of the cases in the two surveys was different. Whereas the compliance project examined all aspects of taxable income, the share project was handled by specialised staff looking solely at taxable income in the field of shares and securities. It is possible that the special expertise of the staff resulted in the checks revealing more.

Finally, there was also a difference in the level of statistical reliability in the two studies. The compliance project was based on the tax returns of 10,729 taxpayers, which was significantly more than the 3,272 tax returns examined in the first phase of the share project. The averages found in the compliance project should thus have been more precise, though it should also be remembered that the share project was specifically focused on the high-risk group, which might make that result more accurate. However, the results from the share project are

[9] Note that the extrapolated amount is calculated on the basis of the average for taxpayers who did not receive the guidance material, since only 5,000 of the 79,000 actually received the material, and these can be ignored in the calculation of the underdeclaration of taxable income.

not completely comprehensive, since they give no indication of underdeclaration related to shares in the remainder of the population outside the target group.[10]

Table 5 shows by how much taxable income has been adjusted as a result of the 3,272 checks completed to date. In all, the amount comes to over DKK 40 million, of which DKK 23 million is related to the income of taxpayers who did not receive guidance and the other DKK 17 million to the income of those who did. As only approximately one-third of the total number of checks have been completed to date, the final adjustment amount by the end of Phase 2 can be expected to total around three times this figure, or approximately DKK 120 million. The actual revenue arising is of course less, since share income is taxed at rates from 28 and 45 percent. A total of 27 man-years have been budgeted for carrying out the project.

Table 5. Total adjustment amount for the 3,272 competed cases and the effect of sending out guidance material.

	No guidance	Guidance	Total	Effect	Predicted total effect
Completed checks, change in taxable income, DKK millions	23.2	17.2	40.4	6.0	18.3

Note: In contrast to the figures in the other tables in this paper, these figures are **unweighted**, since they relate to checks actually made. The single outlying observation of DKK 1.5 million is **included** here, and features among the group who had not received guidance. If this amount is excluded, the effect is reduced to DKK 4.5 million, and the predicted total effect to DKK 13.6 million.

The effect of the guidance initiative on the total adjustment amount is the difference between the amounts with and without guidance, and is shown in the table as DKK 6 million. If we calculate the predicted effect of all the checks in Phases 1 and 2 in total, the extrapolated amount is over DKK 18 million. If we consider this in relation to the very modest amount of resources used on the guidance initiative alone, then the input is well worth while. However, the effect is not statistically significant and the inclusion of the largest amounts makes a considerable difference to the calculated effect, as indicated in the note below the table.

[10] In principle, it would be possible to identify all individuals who were included in both surveys. These people could then be removed from the calculation of underdeclaration in the share survey. This would make it possible to perform new calculations of underdeclaration based on the two studies put together – though still with the problem that the studies were based on two different tax years.