

Applied Tax Gap Analysis in the United Kingdom:

Its use in tax administration, and future research

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The published Vision of Her Majesty's Revenue and Customs (HMRC), The United Kingdom tax authority, is this:

We will close the tax gap, our customers will feel that the tax system is simple for them and even-handed, and we will be seen as a highly professional and efficient organisation.

And HMRC's first Strategic Objective is this:

Maximise revenue to close the tax gap.

Our objective is to provide the money for public services by maximising revenue to close the tax gap and improving the extent to which individuals and businesses receive the credits and payments to which they are entitled.

These two statements show how the concept of the tax gap—the total amount of tax lost through non-compliance—is at the core of HMRC's strategic planning. Consequently, tax gap analysis, its application and its continuing development, is a priority for HMRC's Knowledge, Analysis and Intelligence (KAI) directorate.

HMRC and its indirect tax predecessor, Her Majesty's Customs and Excise (HMCE) have been estimating their tax gaps for about 15 years. These estimates are published annually, as a total tax gap since 2009.¹ The publications are now **Official Statistics**, published under a Code of Practice² introduced by the UK's Statistics and Registration Service Act. They help UK taxpayers and other external stakeholders to understand and challenge HMRC's operational performance at a strategic level, and are an important part of HMRC's contribution to the UK's transparency agenda.

The fact that HMRC's tax gap estimates are Official Statistics, produced by members of the UK Government Statistical Service, provides assurance of their independence from political and management interference. They are used extensively in the current public debate on fiscal deficits and austerity measures.

KAI's tax gap estimates have uses within HMRC that go beyond just that of being information. They are also used as strategic planning and risk management tools. Similarly, they are used in the UK Treasury's Fiscal Risk Register as well as in the Chancellor of the Exchequer's annual fiscal forecast.

KAI's Enforcement and Compliance team is currently planning a step increase in the range and depth of HMRC's tax gap analysis. This will improve our understanding in the following dimensions:

- Components of the tax gap, the more detailed contribution of specific risks and behaviours to the overall gap; and
- Using this, tax gap analysis in real time to support active risk management.

HMRC also intends to ask academic researchers in the field of tax administration to review its tax gap analysis, to ensure it is robust, and fit for purpose.

Background and Discussion

HM Revenue & Customs (HMRC) is responsible for the administration and collection of the vast majority of national taxes in the UK (and the great majority of taxes in the UK are levied on a national basis). As part of its administration of UK taxes, HMRC estimates, on an annual basis, the overall extent of tax lost through noncompliance. These total tax losses are referred to as the tax gap, which is quite broadly defined, as the total amount lost compared to a baseline in which all taxes are collected as the UK Parliament intended.³

Within HMRC, the tax gaps are estimated using a range of approaches and analytical disciplines by analysts working in the Department's Knowledge, Analysis & Intelligence directorate (KAI). HMRC publish a full report of the results of this analysis and the methods used to estimate them at the links given above. External analysts have also estimated all or part of the UK tax gap, using a variety of methods and producing a wide range of results.

Over time, HMRC's tax gap estimates and associated analysis have become much more than the simple presentation of information. They are applied across the full range of the Department's remit, both within HMRC and externally. This paper presents some of the ways tax gap analyses are used in the UK, grouped under the following headings:

- Publication and dissemination
- HMRC's Vision and Strategic Objective
- HMRC's Performance Management Framework
- Resource allocation and business planning
- Evaluation and research

The paper ends with a short review of development work planned by HMRC to improve its tax gap estimates and their applicability.

This paper does not attempt to explain HMRC's tax gap methodology, but it is worth reflecting on the fact that the aim of the analysis is a robust assessment of tax lost through noncompliance. The analysis aims to measure the impact of activities that are not only not directly observed by either HMRC or their analysts, but many of those activities are deliberately concealed or obfuscated from both. It is therefore inherently not a precise measure that is produced, though it has been empirically observed to provide a reasonably robust indicator of major trends.

It is also worth stressing that the analysis covers all forms of tax losses, including those that result from bad debt or errors, or through avoidance⁴ intended to get round Parliament's intended coverage of taxes. There are obvious definition issues that this coverage raises, which further challenge the precision with which the exact level of the tax gap can be estimated. However, our experience is again that, in broad terms, this does not fatally compromise the integrity of the analysis, so long as its limitations are borne in mind.

Publication and Dissemination

HMRC's tax gap estimates, and the methodology behind them, are published annually⁵; and the tax gap concept has achieved a widespread currency within the UK. This is particularly the case within HMRC itself, where it is central to the Department's compliance effort, but it is also the case in the public discourse on fiscal policy⁶ and administration, for example in the recent parliamentary inquiry into HMRC's record at ensuring tax compliance⁷ and the UK Government's austerity agenda.

The term is used commonly by HMRC's own operational staff and managers, for example in distinguishing between 'tax gap closing' and 'non-tax gap closing' work. The former contributes directly to the Department's progress toward its Strategic Objective No. 1; whereas the latter does not. Examples of tax gap closing work

including collecting tax debts, countering existing evasion and fraud and correcting tax under-declared in error. Nontax gap closing work most obviously includes work towards other strategic objectives, for example levels of customer service, and investment in IT and other infrastructure. However, it can also include critical compliance work to prevent future growth in the tax gap, for example testing the integrity of taxpayers' accounting arrangements, and education to prevent future error or action to prevent future growth in avoidance losses or fraudulent repayment claims. One of the challenges in using the tax gap currency in compliance performance is recognising the value of such work without overstating the tax gap closing compliance yield. Generally this is done using an operationalization of the concept of future revenue benefit that can be discounted to prevent double counting.

Externally to HMRC, 'closing the tax gap' is referred to in political debate to express the idea of helping to reduce the UK's budget deficit by increasing the collection of tax properly due as opposed to simply raising tax rates or extending the coverage of tax bases.⁸ This has been something of a live issue in UK politics (and elsewhere) over recent years, and external commentators and lobbyists have produced alternative formulations for the tax gap and a consequent range of estimated values. These methodological arguments are not rehearsed here, but a recent, comprehensive example of HMRC's defence of its estimates against what it regards as a most egregious external analysis can be found in its response to a parliamentary enquiry into the tax gap by the UK Treasury Select Committee (cf footnote #7).

This debate, and its challenges to HMRC's tax gap analysis, is encouraged by HMRC, partly as a way of ensuring that the estimates are as good as they can be; but also as part of the Department's contribution to the UK administration's transparency agenda. HMRC recognises that there is a legitimate public interest in the results and their ability to help in holding the Department to account for their performance.

HMRC publish their tax gap estimates as Official Statistics, which are covered by the UK's Statistics and Registration Service Act 2007. This means that the estimates are produced to standards set by a Code of Practice established by the Act and maintained by the independent UK Statistics Authority. They are subject to scrutiny by the same Authority, which is directly accountable to the UK parliament. The code of practice covers not only quality standards but also processes to ensure transparency and independence from political and administrative interference in the production and presentation of the statistics.

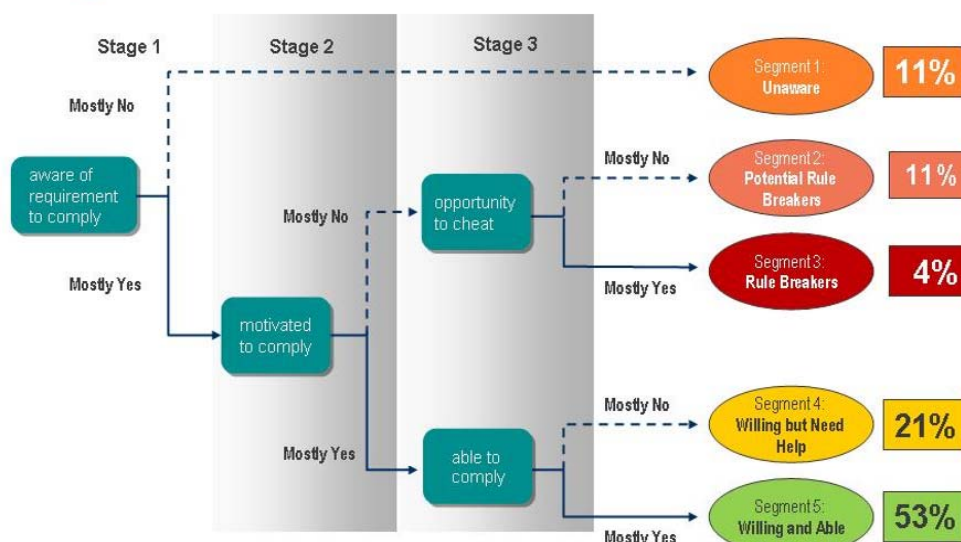
HMRC's tax gap statistics are also regularly scrutinised by the UK National Audit Office as part of their scrutiny of the Department's performance and integrity. The National Audit Office is also an independent body reporting directly to parliament.

HMRC's Vision and Strategic Objective

As mentioned in the introduction, HMRC's departmental vision is to close the tax gap, that our customers will feel that the tax system is simple for them and even-handed, and that we will be seen as a highly professional and efficient organisation. This vision is published and widely disseminated within the Department to help give all staff a clear sight of our common purpose, which is to raise the revenue required to fund the UK's public spending in such a way as minimise compliance burdens and adverse economic impacts on taxpayers.

The first line of this vision is, 'to close the tax gap'; and this is reflected in HMRC's primary strategic objective, which is to maximise revenues so as to close the tax gap. Again, this is widely disseminated within the Department and reflected in the great majority of operational units' and individuals' business plans and objectives. As discussed above, this gives a very clear focus to compliance work within the Department. In particular, it reinforces the point that the purpose of a revenue authority is not just to maximise enforcement yield through 'downstream' compliance interventions but to maximise compliance overall through an optimal mixture of 'downstream', targeted compliance activities and 'upstream' processes and education that promote voluntary compliance.

Segmentation overview for individuals



Note: additional segments for organised fraud and payment defaulters



HMRC's strategic approach to this aim is a customer-centric one, based on an analysis of taxpayers segments, illustrated for individuals in the diagram above. The challenge for analysts in this approach is to integrate a tax gap analysis based on observation and statistical inference of behaviours with a customer segmentation analysis based largely on attitudinal surveys.

HMRC's commitment to closing the tax gap has been reinforced by the current UK administration's Spending Review in 2010, which determined HMRC's expenditure over the period April 2011—March 2015. As part of this settlement, HMRC was allowed reinvestment funds of £917m based on its business case that this would enable the Department to achieve additional (compliance) revenues of £7bn pa by the end of the spending period. Although this target is not strictly one of closing the tax gap by this amount, the business case put forward by HMRC used the currency of the tax gap, as measured by KAI. To put HMRC's ambition in context, the additional revenues would be on top of £13.9bn achieved in the 2010/11 financial year, which was itself an increase of over the previous spending review period (an observed increase reflected by a decrease in the estimated tax gap in the same period).

Performance Management Framework

The senior management of HMRC use a monitoring framework developed within KAI called the Performance Management Framework (PMF) to monitor departmental performance and progress towards its strategic objectives. It should be stressed that, even though closing the tax gap is the Department's primary strategic objective, HMRC do **not** currently use its tax gap estimates to measure its performance. This is because of the significant uncertainties inherent in tax gap estimates, which preclude the level of precision necessary for performance monitoring. In addition, the tax gap will be affected by factors that are outside HMRC's control, for example economic changes and changes in social norms, so even a perfect measurement of the gap would not necessarily be a perfect measurement of HMRC's performance.

However, the 'currency' of tax gap analysis is used wherever practical in compliance measures and forecasts in the PMF. The gap estimates do not provide performance measures or operational targets in themselves, but provide a basis for the expression of such measures and targets. So, for example, the performance of

enforcement personnel in the field is calculated not just as the amount of additional revenue directly assessed or brought to bank (i.e., the amount assessed as due, discounted for collection shortfalls) but essentially as the sum of that and the identifiable indirect effects of their intervention. The indirect effects—deterrence, prevention and correction—are generally estimated on the basis of primary research conducted or collated by KAI analysts.

The intent behind this approach is to express such enforcement yield in broadly similar terms to HMRC's tax gap objective, so as to allow progress towards the objective to be monitored. The PMF metrics therefore reflect the (estimated) **outcomes** of compliance work, not just **outputs**, eg assessments raised, or **inputs**, e.g. audits conducted.

Corporate risk management within HMRC is facilitated by the Tax Compliance Risk Overview (TCRO), owned by the Risk and Intelligence Service directorate. The TCRO aims to provide a comprehensive register of the major compliance risks in the various tax regimes administered by HMRC. This allows a cross-cutting view of the risks, their relative scale and their management. The risk assessments in TCRO are baselined using KAI's tax gap analysis.

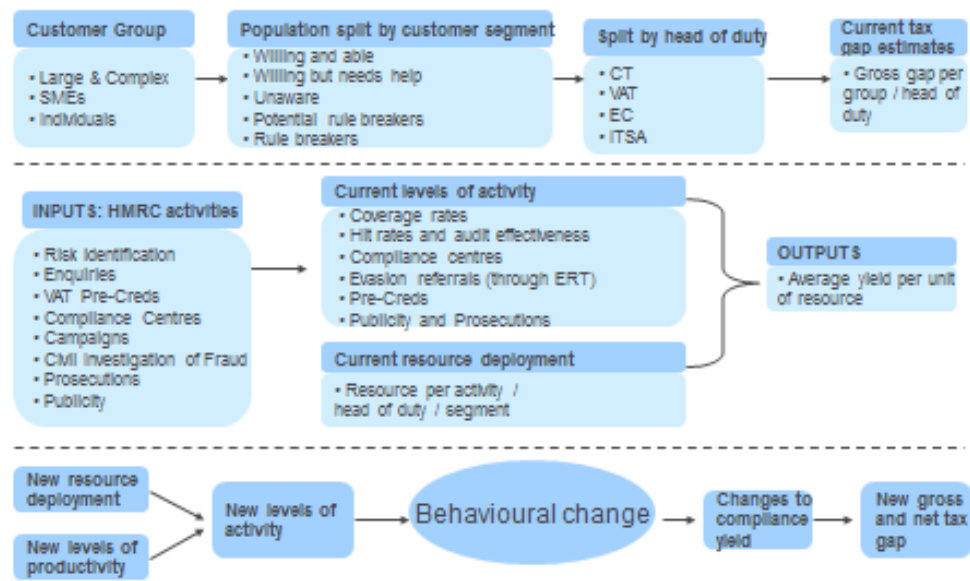
HMRC's tax gap analysis is also used in the UK Treasury's fiscal risk management process, and in the UK fiscal forecast produced by the independent Office for Budget Responsibility.

Business Planning and Resource Allocation

The revenue benefits of continuing baseline work and change propositions within HMRC are estimated in tax gap terms, rather than simple cash forecasts. Resource allocation, business simulation and scenario models developed within KAI and the business itself estimate both the direct cash impacts and the indirect impacts of behavioural change expected to arise from the Department's work and any proposed changes. This aligns HMRC's strategic revenue raising objective with its customer-centric strategy of improving voluntary compliance by systematically moving taxpayers from less compliant to more compliant customer segments.

A particular example of the strategic resource allocation models developed by KAI using tax gaps analysis is the Compliance Resources Allocation Model (CRAM) developed for HMRC's Local Compliance directorate. (Local Compliance is the part of the Department dealing with compliance issues for small and medium-sized

CRAM – how it works



enterprises, individuals and other ‘mass market’ sectors.) CRAM is essentially a scenario model, projecting the impact of compliance resource allocations on the disaggregated tax gaps of particular customer groups and segments. The model is shown schematically in the diagram on page 97.

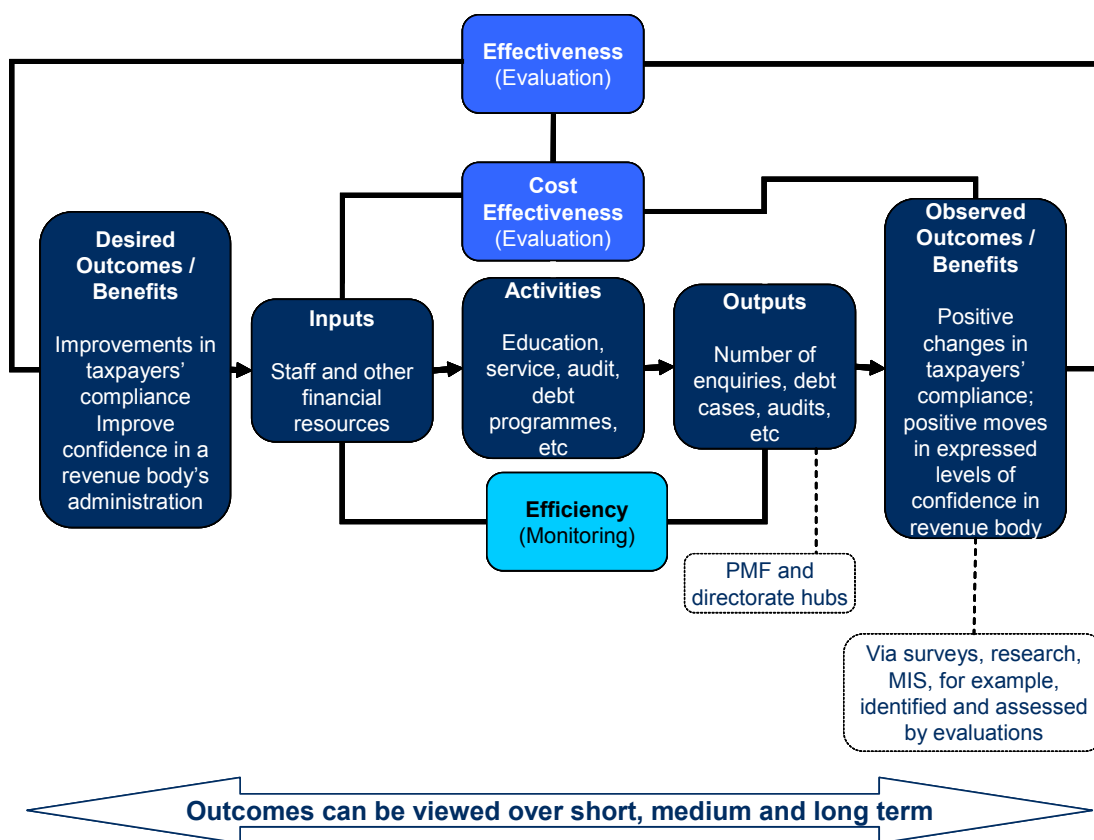
Evaluation and Research

Using the tax gap currency in place of traditional cash-based metrics places an added emphasis on the role of evaluation and research in gathering the evidence underlying tax gap analysis. In general (and almost by definition), tax losses can rarely be directly observed, and so tax gap changes generally have to be estimated on the basis of broader research and analytical techniques. Again, this complements HMRC’s customer-centric strategy and its analysis of taxpayers’ customer segments.

HMRC is increasingly using discrete compliance events such as targeted campaigns or task forces to improve compliance in specific areas such as particular industrial sectors or debt collection. These campaigns can be used by KAI analysts as natural experiments to garner evidence, not only of success or otherwise in the campaign itself, but also of the relative scale and impact of indirect effects. Such indirect effects are less easily observable in management information systems than more traditional compliance measures, so their analysis is often conducted on the basis of survey or other primary research.

The motivation behind this approach is to measure the outcome of HMRC’s compliance effort, not just the outputs. The latter—inspectors’ assessments, debt collection, filing compliance &c—are generally easier to measure, but they are not the ultimate purpose of a revenue authority. The purpose of HMRC is to collect taxes due, and it is using a customer centric strategy to minimise the total lost. It is these (tax gap) outcomes that KAI analysts research in their evaluation of campaigns and other compliance operations.

The following diagram sets out the OECD’s distinction between monitoring and evaluation, and how both are achieved in HMRC.



Adapted from OECD Forum on Tax Administration: Evaluating the effectiveness of compliance risk treatment strategies

In this area, HMRC are committed to a rigorous evaluation of the impact of the £917m reinvestment in revenue maximising activities mentioned above. This is a major research programme synthesising HMRC's tax gap analysis, research into compliance behaviour and perceptions generally, and the evaluation of individual initiatives and programmes funded by reinvestment.

The aim of this evaluation is two-fold: first, to evaluate the impact of HMRC's compliance work; and second, to establish a strategic evidence base for the future direction of HMRC's work.

In addition, the Department has commissioned a laboratory experiment to investigate taxpayer behaviour. This research seeks to identify whether there is a difference in compliance levels between individuals who are able to communicate with a network of taxpayers within the context of the experiment and those who cannot exchange information with others. Information is also being collected about the impact of higher and lower audit and fine rates on levels of compliance.

HMRC provisionally plans to conduct further such experiments designed to identify the drivers of taxpayer behaviours, subject to a review of the outcome of the current experiment.

Future Work

KAI is currently in the process of developing its tax gap analysis to increase its ability to support HMRC's strategic planning and management. If successful, this will mean a step change to the level and amount of analysis produced. There are two principal dimensions to this development work.

1. Disaggregation

Currently, HMRC's tax gap analysis is built up from separate estimates for each of the main tax regimes. Generally these estimates are for total losses, and can be broken down only into some of the larger behavioural components (e.g., evasion, fraud, avoidance and error) for some of the taxes. Similarly, although it is possible to map some of these disaggregated estimates onto particular customer groups (e.g., individuals, large businesses &c) or customer segments, this is not always possible without brave assumptions. A fuller explanation of disaggregated tax gap estimates is provided in the HMRC's published tax gap estimates.

However, there is growing demand within HMRC for more comprehensive and reliable disaggregation of the higher level estimates, so that the gaps can be estimated by regime, behaviour, customer group and customer segment.

2. Projections and forecasting

Most of HMRC's current tax gap estimates are backward looking, in that they are necessarily based on historic data, so that the total tax gap published in 2011 was estimated for the financial year 2009/10. The exception to this is the estimate of the VAT Gap, where external household expenditure data and established forecast models allow a contemporary, albeit provisional, view of the gap.

There are sound analytical reasons for the historic nature of the current gap estimates, but their backward looking nature is a severe limitation to their use in business planning and risk models. For these purposes, the estimates need to be projected to the current year, and ideally forecast for future years.

These are both very challenging analytical requirements, because of the gaps and limitations in the currently available data. Moreover, it would be either prohibitively expensive or indeed not possible at all to overcome all these gaps and limitations through narrow quantitative analysis and research techniques. The current intention therefore is to take a mixed disciplinary approach to the issue, bringing together the existing analysis, leading indicators for the current gaps using tax receipts outturns, economic and other determinants, and input from other HMRC experts providing market, performance and risk intelligence. The synthesis of these inputs is expected to produce a robust view of the tax gaps in both of the above dimensions. If successful, this will allow HMRC to build its strategic evidence base on a more fully rounded and reliable tax gap analysis, bringing together the four areas discussed in this paper into a single analytical framework.

In addition to this, HMRC intends to invite proposals from external academics later this year for funded tax gap research to challenge, validate (hopefully!), but anyway improve HMRC's own estimates. HMRC will also continue its research programme into indirect effects of compliance work.

Further Reading on Tax Gaps

- Measuring Tax Gaps 2012, HM Revenue & Customs, October, 2012 <http://www.hmrc.gov.uk/statistics/tax-gaps/mtg-2012.pdf>.
- Methodological Annex for Measuring Tax Gaps 2012, HM Revenue & Customs, October 2012 <http://www.hmrc.gov.uk/statistics/tax-gaps/mtg-annex2012.pdf>.
- The Practicality of a Top Down Approach to the Direct Tax Gap, HM Revenue & Customs Working Paper No. 12, August 2011 <http://www.hmrc.gov.uk/research/taxgap-workingpaper.pdf>.
- Developments in VAT Compliance Management in Selected Countries, OECD Centre for Tax Policy and Administration, August 2009.
- Measuring the Nonobserved Economy: A Handbook, Paris, OECD 2002.
- Tax Gap Estimates for Tax Year 2006, Internal Revenue Service, January 2012 <http://www.irs.gov/newsroom/article/0,,id=158619,00.html>.
- Reducing the Federal Tax Gap: A Report on Improving Voluntary Compliance, Internal Revenue Service, U.S. Department of the Treasury 2007.
- Tax Compliance, James Andreoni, Brian Erard and Jonathan Feinstein (1998), *Journal of Economic Literature*, Vol. 36, No. 2. (Jun., 1998), pp. 818-860.
- Study To Quantify and Analyse the VAT Gap in the EU-25 Member States, Reckon LLP, September 2009 http://ec.europa.eu/taxation_customs/resources/documents/taxation/tax_cooperation/combating_tax_fraud/reckon_report_sep2009.pdf.
- Various, The Danish Tax & Customs Administration (SKAT) <http://www.skat.dk/SKAT.aspx?oId=1895671>.
- The Shadow Economy in Germany, Great Britain and Scandinavia: A measurement based on questionnaire surveys, Soren Pedersen, Statistics Denmark 2003.
- Tax Gap Map for Sweden: How was it created and how can it be used?, Swedish National Tax Agency 2008.

Endnotes

- ¹ Most recently in October 2012: <http://www.hmrc.gov.uk/stats/mtg-2012.pdf> (main publication); <http://www.hmrc.gov.uk/stats/mtg-annex-2012.pdf> (methodological annex).
- ² <http://www.statisticsauthority.gov.uk/assessment/code-of-practice/code-of-practice-for-official-statistics.pdf>.
- ³ This is net of the tax collected through enforced and other late payments, so this concept is comparable to the "net tax gap," in U.S. parlance.
- ⁴ Not just for analysts, but also for tax professionals, 'avoidance' is a very ambiguous term. For the purpose of tax gap measurement, HMRC defines avoidance as schemes that artificially minimise tax liability in a way that was not intended by the UK Parliament (i.e., those that HMRC would wish to block, all else equal). This definition excludes cases where the interpretation of law is disputed and does not include legitimate tax minimisation strategies that reflect accurately economic realities (e.g., the payment of reasonable royalties to a parent company for the use of a brand name or realistic management charges). This is clearly a definition that is open to wide differences in interpretation. In practice, the avoidance component of the tax gap is delineated by those schemes that are required to be disclosed to HMRC by law (a subset of the total) and partly as those that HMRC officials have deemed to be challengeable avoidance (absent court decisions or settlements to the contrary). It is accepted that this definition will include some amounts that are not avoidance, and that it will incorrectly exclude some avoidance.

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- ⁵ In addition to the annual publications, HMRC also publishes methodological papers, for example: <http://www.hmrc.gov.uk/research/taxgap-workingpaper.pdf>.
- ⁶ For a recent example: There is no magic money tree of uncollected tax; we cannot close the deficit with more tax inspectors—Telegraph Blogs.
- ⁷ House of Commons—Closing the tax gap: HMRC's record at ensuring tax compliance: Government Response to the Committee's Twenty-ninth Report of Session 2010-12—Treasury.
- ⁸ For example: Closing the Tax Gap—Why Am I Paying Everyone Else's Tax? | AccountingWEB.