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Forensic economics: checking official data on government expenditure on wages from 1991 to 2014

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Abstract

This paper investigates the reliability (or otherwise) of official government data among some European countries. It focuses especially on UK, where the UK government makes relevant data available to academic researchers and to the general public. It extends the analysis to other European countries, using ISSP survey data.

Keywords

Government data, UK, Europe, forensic economics.

Acknowledgments

Introduction

Many observers (e.g. Karagounis et al., 2015) have expressed concern that government data may be unreliable – either due to mistakes, or deliberate deceit. This paper uses 'forensic economics' to investigate this issue, by comparing evidence from a variety of sources. The term 'forensic' is often used to imply illegal or immoral behaviour; in the case of a government, it can be argued that any government can change the law to make what they do legal. Hence, it may be appropriate to consider the term 'forensic' in this paper as primarily concerned with behaviour which some observers may consider immoral – for example, changing definitions in order to make a government's national accounts look more successful (just before a general election).

One way for economists and accountants to check government spending is to focus on wages, because this form of government spending directly becomes the income of people – and there are various surveys of households which give information on the incomes of household members.

Literature review

'Forensic economics' refers to analysis of economic data, in order to reveal inappropriate behaviour: "in many cases, economists get involved because economics gives them a comparative advantage. Wrongdoers may cover their tracks well enough to fool traditional forensic investigators, but they leave distortions in the data that economic analysis can detect" (Zitzewitz, 2012: 732).

Alt et al. (2012: 4) use the term 'gimmick' "to describe a variety of more or less deliberate attempts by governments to beautify their public finance statistics – in particular in relation to the budget balance and debt". They imply such attempts are widely used, by governments. "much of the practice of fiscal gimmickry exists in a shadowy world of government accounting that is properly understood by few and where surveillance has been far from perfect" (Alt et al., 2012: 9).

It seems that many governments use such gimmicks: "IMF calculates that the increase in public debt stocks between 1980 and 2010 has exceeded accumulated deficits over the same period in most countries, including 29 out of 34 advanced economies" (Alt et al., 2012: 10). Political manipulation of economic data is important: for example, it may interfere with the application of the 'Stability and Growth Pact' (Karagounis et al., 2015). Alt et al. (2012: 14) claim the tendency for gimmicks to be associated with the election times is "evidence of politically-motivated manipulation". It has been suggested that the Greek government deliberately distorted data, to make them appear eligible to join the Euro (ref??). Simister (2015: 30) reports that 2012 was a particularly challenging time for the UK government, with concern being expressed by the European Commission on the availability and reliability of data to assess the UK economy.

Alt et al. (2010: 9-11) claim "stock-flow adjustment" (SFA) appears to be the most widely-used gimmick; but warn that this is based on gimmicks that have been detected, which may be the tip of the iceberg. "The SFA in year t is defined as the difference between the annual change in gross debt B and the budget deficit D (expressed as a positive number): $SFA_t = B_t − B_{t-1} − D_t$ A positive SFA indicates that the change in gross debt exceeds the relevant budget deficit, and vice versa" (Alt et al., 2010: 9-10). Alt et al. (2010: 15) claim "positive SFAs can be a sign of fiddling to stay below the deficit limit and instead accumulate debt, which is statistically more difficult to manipulate".

This paper does not attempt to distinguish between gimmicks, mistakes, and other adjustments. For example, footnotes in ONS (2015a: Table 15) includes these complications: "4. From July 2009 Royal Bank of Scotland Group plc is classified to the public sector; for earlier time periods it is classified to the private sector. Between July 2009 and March 2014 Lloyds Banking Group plc is classified to the public sector; it is classified to the private sector for earlier and later time periods. 5. Between June 2010 and May 2012 English Further Education Corporations and Sixth Form College Corporations are classified to the public sector. Before June 2010 and after May 2012 they are classified to the private sector. 6. From October 2013 Royal Mail plc is classified to the private sector; previously it is in the public sector". It may be desirable to assess if such changes in definition are motivated to mislead (e.g. voters, or regulatory authorities); but it is very difficult for academics to assess the motives of government ministers.

This paper uses 'triangulation' to assess the state of the UK economy. This approach makes the task of researchers more difficult, because definitions can vary between organisations. The analysis in this paper might not have been possible without the standardisation imposed by various institutions of the European Union (such as Eurostat).

Data and methods

This paper uses data from several sources, in order to assess the reliability of data. One source is 'Labour Force Survey' data; this has been carried out in many European countries, using standardised methods. Eurostat (2015a) wrote "The EU LFS is a large household sample survey providing quarterly results on labour participation of people aged 15 and over as well as on persons outside the labour force. All definitions apply to persons aged 15 years and over living in private households. [...] The national statistical institutes are responsible for selecting the sample, preparing the questionnaires, conducting the direct interviews among households, and forwarding the results to Eurostat in accordance with the common coding scheme". LFS is a survey of households living at private addresses; LFS use large samples (e.g. 98,637 people interviewed in 2014) (Simister, 2015). In UK, LFS is administered by the UK government, but it follows conventions and definitions led by European Union organisations such as Eurostat (2015a). UK LFS surveys use unclustered sampling – covering the whole of the UK (but excluding Scotland north of the Caledonian Canal) (ONS, 2011). This paper uses 'raw data' from quarterly UK LFS surveys from 1997 to December 2014. In addition, summary findings of EU-LFS data from other countries are used, using data downloaded via Eurostat (2015a). LFS variables PUBLICR and SECTO03 are used for this paper, to identify government employees in UK: "The public sector comprises central government, local government and public corporations" (ONS, 2015d). To obtain the percentages in Table 1 of this paper, the authors use the number of people employed in 'Public administration and defence; compulsory social security' divided by the number employed in 'Total - all NACE activities', expressed as a percentage for each country.

LFS data has many advantages, such as large sample-sizes; but there are limitations – for example, UK LFS surveys before 1998 did not ask respondents if they work for the government or other employers. An alternative is the 'International Social Survey Program' (ISSP), for Britain and other countries, from GESIS (2015). In UK, ISSP surveys are known as 'British Social Attitude' surveys, and are administered by NATCEN (ISSP, 2015). ISSP has several advantages: it is available for 48 countries (ISSP, 2015), which is far more than LFS. ISSP data for some years is available back to 1991 in some countries. ISSP is considered a good source among many social scientists. However, note that ISSP is a much smaller sample than UK (ISSP typically include about a thousand households per year, in each country studied). For ISSP, the method is to estimate the fraction of ISSP-respondents in government-paid jobs, and find their average annual salary; then multiply this by the UK population age 15 years or more (from Eurostat). I compare this with Eurostat reports of each government's (central + local) wages paid to government employees.

Macroeconomic data on government spending are based on ESA, a European version of the UN 'System of National Accounts' (O'Mahony & Timmer, 2009: F379). An advantage of EU involvement in decision-making is that EU-LFS both use the NACE classification system (NACE 1 before 2008, or NACE2 since then). To assess government spending on wages, we can begin with NACE2 category O: 'public administration and defence; compulsory social security'. Eurostat defines this category as follows: "This section includes activities of a governmental nature, normally carried out by the public administration. This includes the enactment and judicial interpretation of laws and their pursuant regulation, as well as the administration of programmes based on them, legislative activities, taxation, national defence, public order and safety, immigration services, foreign affairs and the administration of government programmes". The definition is clarified in the following paragraph: "The legal or institutional status is not, in itself, the determining factor for an activity to belong in this section, rather than the activity being of a nature specified in the previous paragraph. This means that activities classified elsewhere in NACE do not fall under this section, even if carried out by public entities. For example, administration of the school system (i.e. regulations, checks, curricula) falls under this section, but teaching itself does not (see section P), and a prison or military hospital is classified to health (see section Q). Similarly, some activities described in this section may be carried out by non-government units" (Eurostat, 2015d). This presents two problems for this paper: category O may include some private-sector

involvement, such as a prison being run on the government's behalf by a commercial firm; and other categories (especially P and Q) also include some government spending.

In UK, most healthcare and education are provided by the public sector (by the National Health Service, and state schools & universities); so it may seem a reasonable approximation to assume all employees in healthcare and education are government-sector employees. This assumption is not made more problematic by private firms' involvement in NHS (e.g. nursing agencies providing medical staff), if such agency nurses are paid for by taxpayers' money. But outside UK, many European countries have a much smaller role for the state in healthcare; hence, it is inaccurate to assume all European healthcare workers are state-financed. For this paper, it is assumed that the three sectors O, P, and Q are all 'public sector'; but future research might improve this simplification.

Results

The first chart compares LFS (household survey) data, with Eurostat (official government spending data, on wages paid to government employees).

Chart 1: evidence from government data and LFS survey data, reported by different sources
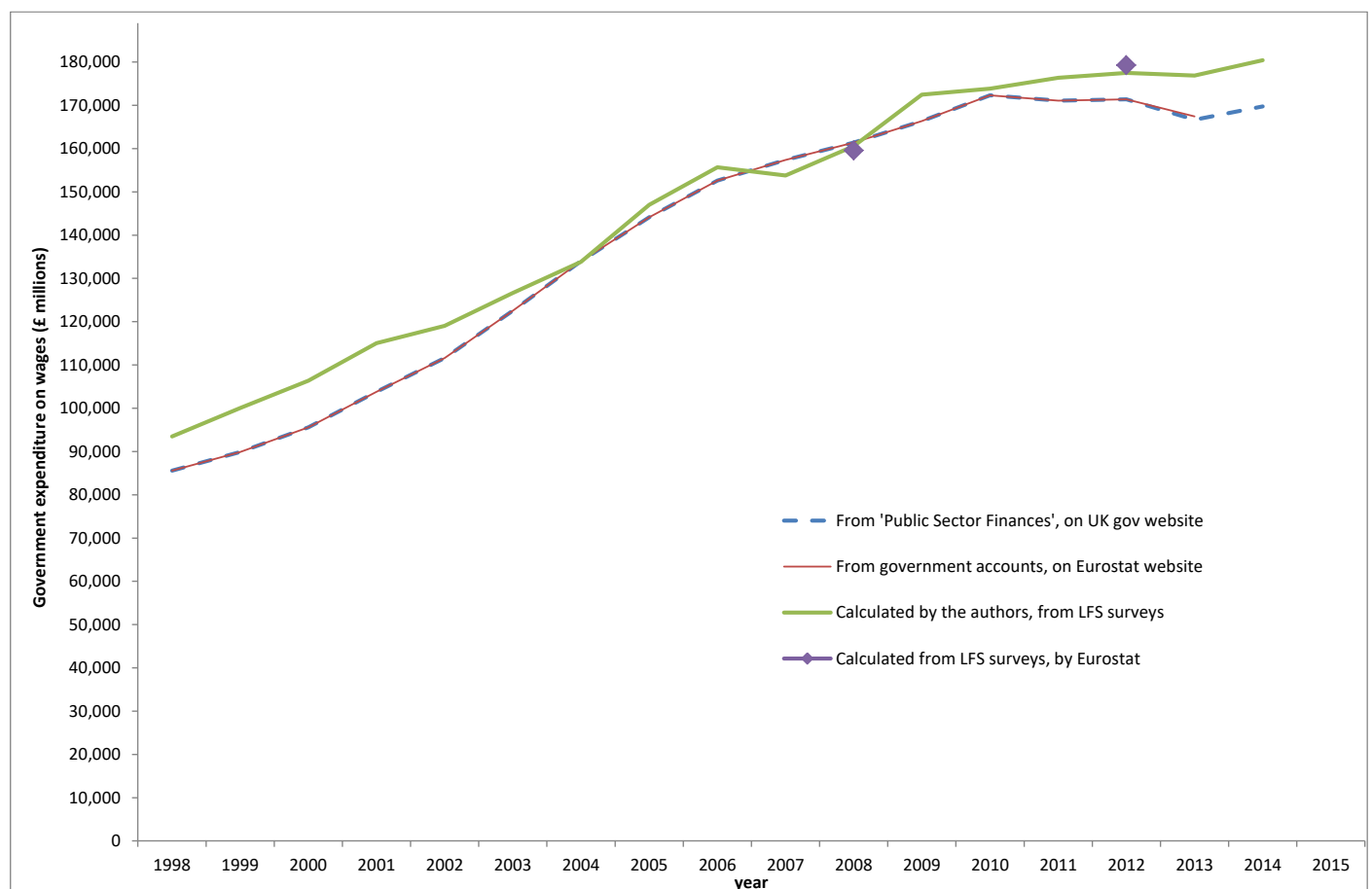

Sources: see text.

Chart 1 appears to report four forms of evidence on the UK government's wage bill (based on the legend); but it is actually only based on two original sources. The 'Public sector finances' source (ONS, 2015c) reports evidence on civil service salaries compiled from government departments; this is reported to Eurostat, who report UK government data on their website (Eurostat, 2015b).

In Chart 1, it seems as if UK government spending on wages fell 2010 to about 2013; but LFS implies a slight rise. Similarly, there appears to have been a period from 1998 to 2003 where LFS surveys make official UK government look wrong. This paper does not attempt to assess if the Labour government from 1997 to 2010, and/or the Conservative/Liberal Democrat coalition government from 2010 to 2015, reported inaccurate information. But this type of chart could be used for this type of analysis.

It could be argued that if a government intended to mislead voters or other observers, they could distort LFS data to make their official macroeconomic data seem correct. Such an approach would not be without risks: for example, Eurobarometer survey 56.1 from September-October 2001 asked respondents about which job they did, including 'Public administration' as one of the options; Table 1 reports the results. Although based on a much smaller sample than LFS surveys, EB provides an independent check on reliability of LFS data.

Chart 2: earnings of state employees in Great Britain: data from official government sources, and ISSP survey
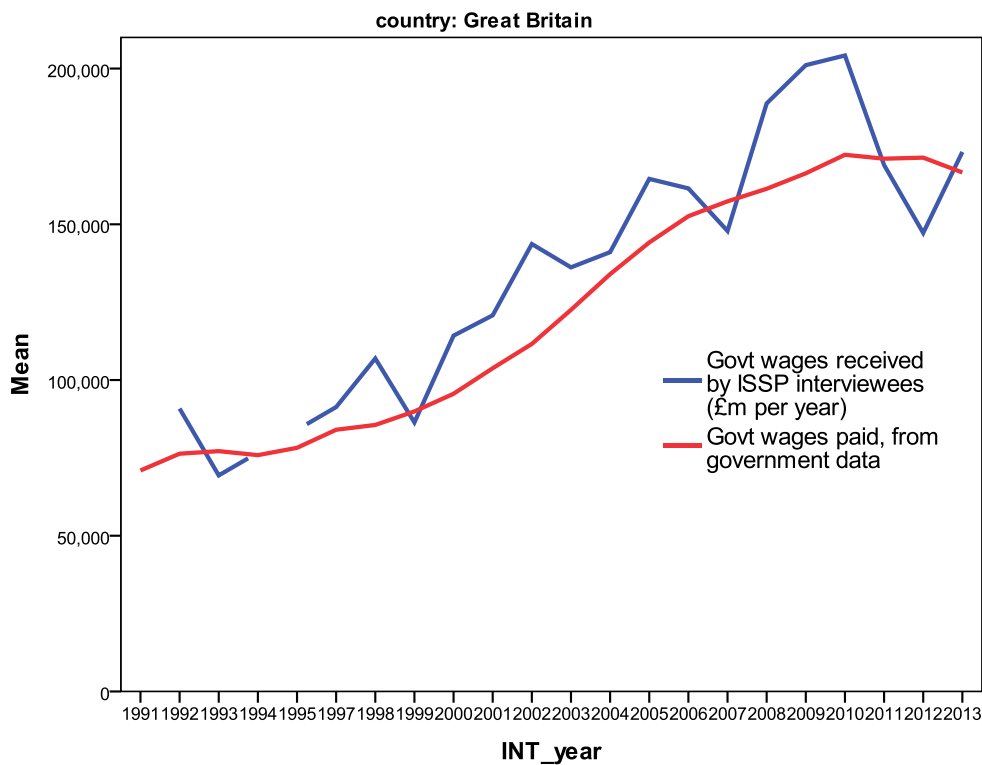
In Chart 2, data are in Billions £ per year, without controlling for inflation. UK data doesn't seem to show big problems: perhaps just random variation, due to the small ISSP sample.

Chart 3: earnings of state employees in Hungary: data from official government sources, and ISSP survey
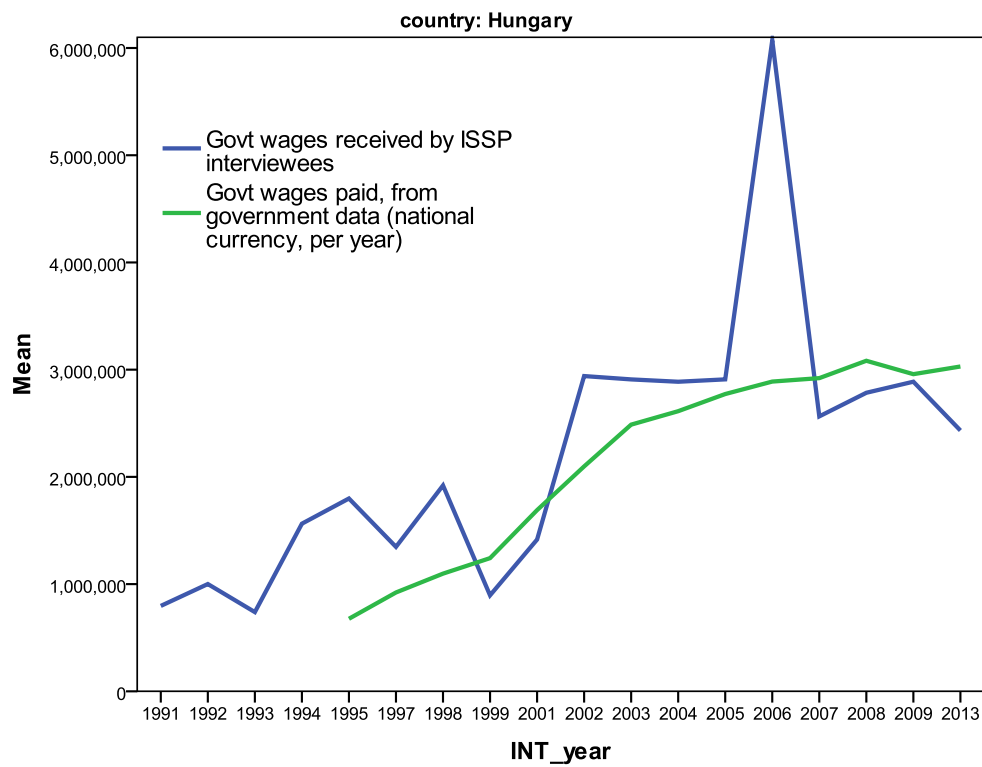

country: Hungary

Chart 3, for Hungary, uses Billions of national currencies per year; it shows a large spike in 2006 in ISSP survey data; this may be a data-processing error (by the authors, or by the collectors of ISSP survey data), so it could be checked by researchers.

For Latvia, government-paid wages reported in ISSP surveys seem fairly similar to data reported by the Latvian government, as shown in Chart 4. In so far as

Chart 4: earnings of state employees in Latvia: data from official government sources, and ISSP survey
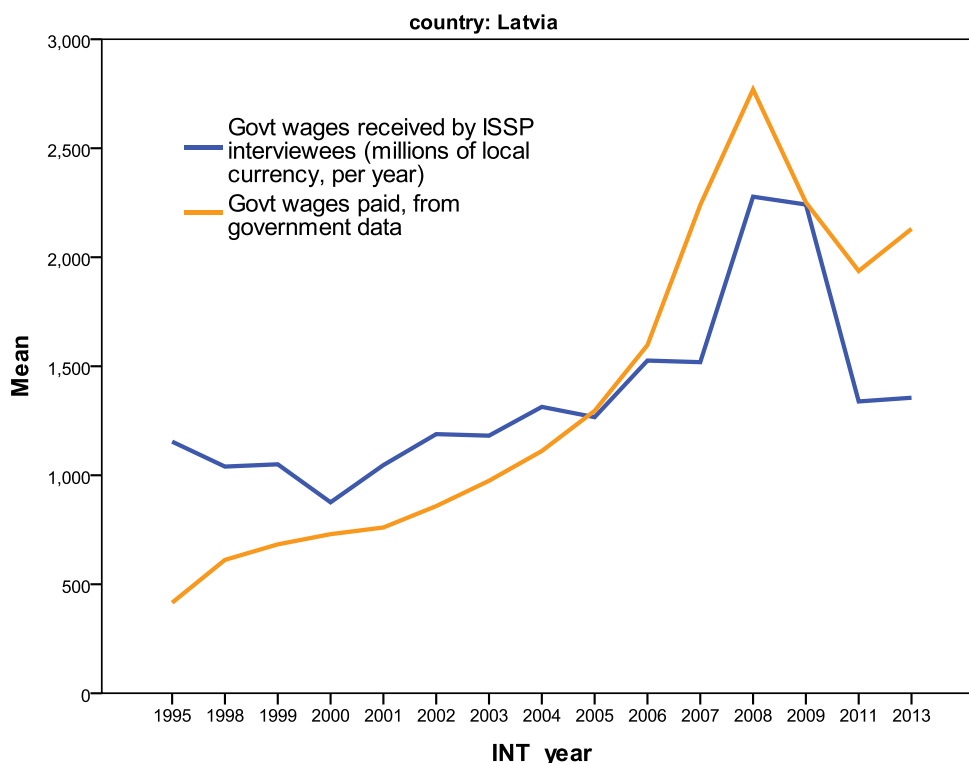

country: Latvia

Chart 4, for Latvia, uses Billions of national currencies per year.

Conclusion

It has been claimed that governments sometimes deliberately distort the data they publish, for various reasons. One example of a motive is to satisfy the EU's 'Stability and Growth Pact' (Karagounis et al., 2015): some governments may have felt their only way to join the Euro currency was to imply their government spending was relatively low. Could economists and accountants detect such forms of government behaviour?

Alt et al. (2012: 2) state "national accounts contain no entries describing the extent of gimmickry. Instead, its existence and magnitude must be inferred". This paper suggests an approach which can be used by academics and other professionals to assess the reliability of government data. In the European Union context, the EU 'labour Force Survey' seems a promising source of data to check whether official data published by governments (such as ONS, 2015c) can be relied on.

There appears to be a general under-reporting of the UK Government wage bill; however, trend analysis suggests this may be more of an accounting discrepancy rather than gimmickry.

ISSP has the advantage that, to some extent, it is independent of national governments. Hence, it may be a promising source of evidence on what a government actually spends on wages of government employees (as opposed to what it <u>claims</u> to spend on wages). However, the relatively small sample-size of ISSP makes it a data source which is prone to random errors: hence, researchers studying ISSP could be incorrectly led to conclude that a government reported false data on wages. LFS is a more reliable source than ISSP, on the grounds that a LFS survey interviews many more households than an ISSP survey; but LFS is more closely associated with the national government which funds it, so there is more risk of published LFS data being deliberately distorted on orders of a government minister.

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