OFFICIAL REPORT
AITHISG OIFIGEIL

Economy, Jobs and Fair Work Committee

Tuesday 19 September 2017

Session 5

The Scottish Parliament
Pàrlamaid na h-Alba

Tuesday 19 September 2017

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ECONOMY, JOBS AND FAIR WORK COMMITTEE

23rd Meeting 2017, Session 5

CONVENER

*Gordon Lindhurst (Lothian) (Con)

DEPUTY CONVENER

*John Mason (Glasgow Shettleston) (SNP)

COMMITTEE MEMBERS

*Jackie Baillie (Dumbarton) (Lab)
*Ash Denham (Edinburgh Eastern) (SNP)
*Jamie Halcro Johnston (Highlands and Islands) (Con)
*Richard Leonard (Central Scotland) (Lab)
*Dean Lockhart (Mid Scotland and Fife) (Con)
Gordon MacDonald (Edinburgh Pentlands) (SNP)
*Gillian Martin (Aberdeenshire East) (SNP)
*Gil Paterson (Clydebank and Milngavie) (SNP)
*Andy Wightman (Lothian) (Green)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Margaret Cuthbert
Richard Marsh (4-Consulting)
John McLaren (Scottish Trends)
Professor Catia Montagna (University of Aberdeen)
Professor Richard Murphy (Tax Research UK)

CLERK TO THE COMMITTEE

Alison Walker

LOCATION

The David Livingstone Room (CR6)

Scottish Parliament

Economy, Jobs and Fair Work Committee

Tuesday 19 September 2017

[The Convener opened the meeting at 10:02]

Decision on Taking Business in Private

The Convener (Gordon Lindhurst): Good morning and welcome to the 23rd meeting in 2017 of the Economy, Jobs and Fair Work Committee. I remind all those present to turn off any electronic devices—or at least the sound—so that they do not interfere with today's proceedings.

Item 1 is a decision on whether to take items 3 and 4 in private. Are we agreed to do so?

Members *indicated agreement.*

The Convener: I have received apologies from Gordon MacDonald, who is unavoidably detained elsewhere and may join us later in the meeting.

Economic Data

10:03

The Convener: We are commencing our economic data inquiry and we have five guests today—Richard Marsh, Margaret Cuthbert, John McLaren, Professor Richard Murphy, and Professor Catia Montagna. I will ask them to introduce themselves shortly.

The remit for the inquiry is to examine the accuracy, utility and comprehensibility of Scottish economic statistics; to consider what data is required for effective delivery and scrutiny of policy; and—perhaps most importantly—after looking at the issue, to recommend where any improvements might be made.

We will start our round-table session—the idea is that discussion will flow freely but not too freely. If anyone wishes to come in, they can indicate by raising their hand so that I can bring them into the discussion at that point. We will start with our guests introducing themselves and briefly stating their organisation and the focus of their work.

Richard Marsh (4-Consulting): I am the economics director of a small independent consultancy that is based in Kirkcaldy. I have been working on economic data in Scotland for nearly 20 years.

Margaret Cuthbert: I work for no one—not even my husband. [*Laughter*.] I started off in a big business, ICI, and then worked as a lecturer. For many years, I worked as a consultant. In recent years—by which I mean the past 15 years—I have worked on major issues in the Scottish economy as a completely independent person. They include the private finance initiative, Scottish Water, and "Government Expenditure and Revenue Scotland"—GERS.

John McLaren (Scottish Trends): I am an ex-civil servant at the Treasury and the Scottish Government. I was briefly a special adviser under Donald Dewar and Henry McLeish and then worked for the centre for public policy for regions at the University of Glasgow and for Fiscal Affairs Scotland, which is now defunct. I am currently mainly working on the Scottish Trends website.

Professor Richard Murphy (Tax Research UK): I am a professor of international political economy at City University of London. As you can tell, I am not Scottish. I wrote a blog earlier this year on GERS and as a result, I seem to have become engaged in this debate. I am a chartered accountant by original training and I am probably unusual in being both an economist and an accountant, so I can bring both perspectives to this debate.

Professor Catia Montagna (University of Aberdeen): I am a professor of economics at the University of Aberdeen. My area of research is mainly international economics. Recently, I have been working with teams across Europe on the effects of globalisation, labour markets and competitiveness in particular.

The Convener: Thank you. What is the one thing that each of you would consider the key to improving Scottish economic data?

Margaret Cuthbert: To my mind, we are very lucky with the statistics professional staff we have here. My big problem is that there is a political reason why I cannot get the data when I search for it. I would like us to examine that. We have come from a position of being a dependency or a province of the United Kingdom. Through devolution, which was accepted by everyone, we then got our own Parliament. I do not think that we have made enough of the political independence that that gave to a certain extent in looking after our economy and in collecting the type of data that is needed to run an economy. That goes all the way through from agriculture to fisheries, tourism, and transport—you name it.

We need more discussion of these matters, and it is political matters that need to be discussed, because our statisticians cannot provide the data unless they have the powers to do so. That includes in exports, for example, where a survey can go out to a very large number of thousands but they only get a fifth of the questionnaires back and they cannot force people to answer the questionnaires. On that information we base part of our export statistics.

Professor Murphy: I agree with Margaret Cuthbert, to be totally honest. The interest that I always have in data is how decision-useful it is. The data that exists does not appear to be decision-useful. It was designed a long time ago, for a different environment, and it has been modified since. Quite clearly, the data has been modified with good intent—nobody questions that in the slightest. However, it ends up not being of much use in helping anybody in Scotland, whether in the political domain or not, to work out what decisions have been made, who was responsible for them, whether they were successful, and what should now change as a consequence. That is what data should do for people, but it is not doing that and it needs to be redesigned to achieve that goal.

I entirely agree as well that the problem is that the data to make that information decision-useful does not exist. I have concentrated heavily on tax because that is the area in which I have the most expertise. However, quite simply, the UK VAT system, the UK payroll pay as you earn system, the UK personal tax system and, in particular, the UK corporation tax system and UK company data do not provide information at the present time that lets Scottish information be reliably separately identified. As a consequence, we end up with a situation in which much that is looked at is inherently unreliable and cannot be used to inform decisions.

Richard Marsh: We are in danger of the economists all agreeing for the first time. I put myself fully behind those statements. We know that the Office for National Statistics is moving away from large-scale surveys and making more use of the administrative data that Professor Richard Murphy talked about.

If VAT and payroll and corporation taxes do not properly identify the Scottish part of business and individual activities, we will be in a very awkward position. I would probably like to start with a blank sheet of paper; we have not had that in Scotland. For the past 20 years we have taken the existing figures and statistics that we have produced and asked how they can be supplemented, amended or improved. Nobody has asked the fundamental question: if we started from scratch, what would we measure to help us to make good decisions about how to grow Scotland's economy. I suggest that we would need to have a more independent team of statisticians based in Scotland who could be innovative and create the next generation of statistics that is needed.

John McLaren: I agree with what has been said so far, by and large. To bring the discussion back to a more basic level and to the economy, the first thing that we need to finish is a full set of national accounts. At the minute, national accounts are published, but a lot of what is in them is derived or residuals; there is very little on the balance of payments and very little on investment, which are key areas for the economy as a whole. National accounts are needed if you want to model the economy, which you will need to do with the new powers. To finish the accounts, more resources will be required, such as money for good surveys and also staff to interpret that data. The balance of payments, including foreign investments to and from Scotland, is very complicated.

Once we have the basic national accounts in place, we can start to add other things, such as measures to do with the environment or other wider measures. However, the accounts are the key initial area to concentrate on; much of the push has been put in, and we should extend that until the accounts are finished.

Professor Montagna: I endorse what has been said. However, I add that there is an enormous wealth of data that already exists but which we cannot access as well as we should, particularly at the microeconomic level. Data exist that underpin aggregate statistics, but researchers cannot access them. All that has been said about the greater autonomy of the Scottish Government and the collection of new data is important strategically for how to improve Scotland's data situation in the long term but, in the shorter term, it is important and relatively cost effective to improve what exists. Accessibility to the data that exist is key.

John Mason (Glasgow Shettleston) (SNP): On that point, what Margaret Cuthbert said was that they were not collecting the data. Is the problem that no one is collecting the data, or is it that someone is collecting it but we cannot see it?

Margaret Cuthbert: That is a very good point. An awful lot of data is collected in Scotland, but the way in which we have been forced down the road means that we have ended up with non-departmental public bodies in charge of large parts of such things as public procurement—you all know about its history and the PFI system. They have produced tremendous glossy publications. From many hours' experience, I can tell you that you cannot get beyond the glossy figures—I cannot find their basis. I might be told that a survey was carried out, but I cannot find the detail of the survey. I was once called "anally retentive" by a Scottish Government official, so obviously I like to find the detail.

10:15

The problem has become even worse with the Scottish Futures Trust, which established hubs. Although the Scottish Futures Trust is an NDPB and is subject to freedom of information legislation, the hubs are not. How do we find the information?

As I said, there is some information that we do not have. We have no real information on imports. How can we run the country in the future as we hope to do, no matter which political persuasion we are, if we do not have the basic types of data?

You are right on two points. Some data is not collected—we do not have the powers to do it—and we cannot get some other data because of the system that was introduced for NDPBs and their associates. Freedom of information lets us down, as you probably know. Previously some information was exempt for 25 or 20 years, now it is 15 years. If schools are being put up in Edinburgh and it is 15 years before someone like me can get the contracts to see what is happening in construction, the buildings might be falling down and a child might be killed before we get the information.

Dean Lockhart (Mid Scotland and Fife) (Con): I have a follow-up on the additional data that has been asked for across the table. It is interesting to see so much consensus among economists.

We all agree that there is a need for more and better data, but we also need to prioritise, given the limited resources in all areas. With the fiscal framework now with us, what is the bare minimum, in terms of data, statistics and resources, that we need not just to implement the fiscal framework effectively but to model around it and understand the impact that it will have on the Scottish economy and Scottish public finances? What is the bare minimum ask if we are to be ready for the fiscal framework?

Richard Marsh: It would be quite a big ask.

What struck me in the "Scottish Economic Statistics Plan 2017-18", which was produced a couple of weeks ago, is that it said that we have 11 full-time staff working on national accounts for Scotland, producing our gross domestic product figures, investment figures and so on. The Bean review highlighted that New Zealand has 60 full-time equivalent staff working on its national accounts. The UK has around 170. It is difficult to provide a sense of the resource needed, but compared to that of countries of comparable size, Scotland's national accounts team is small. In my submission, I made the point that the people in it are—perhaps it is unfair to call them this—political scavengers, because they are trying to pick the bones of what are UK data sets.

I will make a small point about what John Mason said. There is a difference between the macroeconomic indicators that Margaret Cuthbert was talking about, such as our liabilities and our capital investment, and the micro data, which is almost criminally underused. We have a vast set of data that covers most businesses in Scotland, saying what their turnover is, how many people they employ and how quickly they are growing. We can link various data sets together, to see whether those companies have been supported by the enterprise agencies and, if they were, whether they grew more quickly than those that were not. We can see whether they have been kitemarked by the tourism industry and, if they have, what happened to their productivity and whether they added more value. Those kinds of things are largely a question of finding a way to press buttons on a computer.

I was surprised by something in the written submissions. When you asked the Scottish local authorities economic development group what it wanted from economic data, it said that it wanted increased localised data, publication of sub-indicators and a few other things. It is asking for more local data, for that to be published more quickly, for smaller businesses to be included and for more detail to be provided. That reads to me as though it does not know what it wants, as it is not really telling us what data it needs. We have just had a review of business rates for which, from that data set, we could have pulled data about how much a range of different types of business pay in rates compared with how much profit they make. Further, that could have been broken down by small towns or industrial estates, or however we chose to do it. However, we did not do that.

It is not an unreasonable position for SLAED to take, but I think that it does not know what is possible. Scottish Government statisticians are sat on a vast reservoir of data that could be used for a huge range of policy applications but, quite reasonably, the people who could use it do not fully understand what it could do. We have to have a meeting of minds.

The Convener: Is it partly because there are not enough staff? You referred to pushing buttons on computers but, if there are not enough people to push the buttons, it cannot be done. Is that it, or does it go beyond that?

Richard Marsh: It is possibly an issue of needing some extra staff as, if you were going to create a lot more data, you would need more staff. However, there is also an issue of culture. If your job was to produce a set of data that described turnover for 10 standard, defined industries and that product had been produced for the past 10 years, I wonder who would thank you for producing a fantastic new way of cutting that seven different ways that show interesting things about Scotland's economy.

Professor Murphy: A bare minimum would be to agree what the accounting framework is because, as I have outlined, what Scotland has at present is not adequate. The definition in GERS of the application of the accruals concept is wrong; income is accounted for on one basis and expenditure is accounted for on another, and the consequence is that expenditure will always be higher in proportion to income in GERS than it should be in a properly balanced accruals accounting system. In an accruals accounting system, you have to undertake both on the same basis and, as that is not the case in GERS at present, the accounting framework is simply incorrect.

I have also suggested—I agree with John McLaren about this—that there is demand for a full set of national accounts. However, that should also include a proper estimation of what Scotland's liabilities are; it should not just be imports, exports and so on but should include assets and liabilities. You need to have a framework against which you measure improvement and, without that, you do not have an accounting system. That is also absent at present, so there is a need to go right back to the start point that Richard Marsh referred to.

That is the first bare minimum; here is the second. I am persuaded that, although there are major problems in getting data on expenditure, as Margaret Cuthbert explained, expenditure is probably better recorded—at least in Scotland, although not for Scotland—than any other part of the existing data, even if it is difficult to get at. However, it is very difficult to pretend that the income side of the equation is properly recorded. Earlier this year, I was at another committee meeting at this Parliament where we were discussing taxation and devolved taxation powers, and it was very clear that there are inherent conflicts of interest in many of the devolved taxation powers that are contradictory and make it exceptionally difficult for anybody in Scotland to decide how to use the powers. For example, income taxation on earned income is devolved but income taxation on unearned income is not, and it is incredibly easy for a taxpayer to redescribe their earned income as unearned to avoid that power.

If the devolved powers are to be properly used, there has to be much better information on taxation, and that requires a new agreement between the Scottish Government and HM Revenue and Customs. It would be HMRC and not Revenue Scotland, because it is a UK decision to identify, in particular, VAT destination, which is the point of delivery of services, rather than the point of supply, because that is what is important for VAT. At present, that is not recorded. Further, there has to be better information on corporation tax, for example, on who owns companies that appear to be Scottish and how to apportion income between the two. I have worked on that for 15 years and been told persistently that it is not possible but, now, we are reaching international agreements on, for example, country-by-country reporting to apportion income between states. If we can now agree how to do that in broad principle within Europe, we must be able to agree how to do it in broad principle within the UK. It just requires the political will to produce the underlying data to achieve that goal. It is not that difficult to do.

John McLaren: The answer to the question depends on what you are going to use the data for. Currently, we have quite a lot of data in comparison with other regions of the UK—if you do not mind my expressing it in those terms—but we do not use it for much. Academics rarely use the Scottish data. Some do, and the micro data is perhaps slightly different, but they rarely use the GDP data or national accounts data because it is not in their interest because it does not do their careers much good.

The data is not really used in the public debate. I put out something every time the quarterly GDP figures come out but rarely, if ever, is anyone interested or is anything picked up in the newspapers. That relates to the point that I made in my submission that the media are not particularly interested. I would say that this Parliament is not particularly interested in the economy in comparison with other Parliaments.

If you are not going to use the data for much, you are wasting your money if you put it into that, apart from the fact that, with the extra powers, you will need to forecast. That means that you will need a decent model, which goes back to having decent national accounts. However, models are expensive to run and you could spend quite a lot of time and money on that model and get results that are guaranteed to be wrong.

How wrong the results will be is an issue. The Office for Budget Responsibility has an awful lot of money and is always wrong—it has been badly wrong for a number of years now—and none of the current Scottish models is as extensive or as developed as the OBR's ones so, if they were better, it would be pure happenstance. You will not get thanked for building a complex model that is quite expensive when it continually comes out with results that prove to be wrong, which is the point that Jeremy Paxman put to the head of the OBR in a famous interview.

The question is difficult to answer because you are not guaranteed to get a model that will help you a lot. It will be of variable quality, be wrong most of the time and never get big ups and downs, but who would not try to model what their public finances will be? If you do not do it, you are flying blind. In the same way, a company does not know what it will sell, but it will make a forecast of what it hopes to sell and adjust as time goes on. That is what you do with models.

The Convener: I will take another couple of supplementaries from committee members and then bring our other two witnesses in on the question from Dean Lockhart.

Gillian Martin (Aberdeenshire East) (SNP): This week, the Parliament will embark on a big debate on the Scottish rate of income tax, which it will probably debate for many months to come. The gaps in the data are urgent. I want to know the witnesses' thoughts on how the lack of information on reserved taxes, which include corporation tax and VAT, that are raised in Scotland will impact on the debate about the Scottish rate of income tax.

Richard Leonard (Central Scotland) (Lab): I will reflect on something that Richard Murphy said, that John McLaren includes in his written submission and about which Margaret Cuthbert also talks. It concerns business registration, in respect of which I am interested in a couple of areas. To what extent do we really capture all businesses that operate in Scotland, out of the businesses that are registered in Scotland, businesses that are registered in the rest of the UK, and businesses that are registered overseas? I wonder how thoroughgoing the collection of data in all those areas is.

We know from statistics—we shall see how reliable they are—that about a third of the turnover, or the gross value added, in the Scottish economy is overseas owned. John McLaren made the point in his paper that we are moving to a calculation of gross national income rather than just gross domestic product in order to try to understand the extent to which there is leakage from the Scottish economy. Will you give us your thoughts on where we stand with that new development, and on how reliable is collection of data based on the country of ownership?

10:30

Margaret Cuthbert: A lot of statistical work on businesses is going on right now in the Scottish Government. The Scottish Government is working with the ONS on that.

I appreciate that the position is very difficult. For example, some of the tables that we get include businesses with no employees. We can sit and think about that for long enough, but what exactly does "businesses with no employees" mean? They might be included in a growth in the number of businesses.

As Richard Leonard rightly said, we also have the problem of companies from other countries owning our assets. That becomes extremely difficult with, for example, the new hubs that have been set up, with their being private companies. It turns out that, in some, the private company was established only a couple of months before the contract to be part of the team of hubs was received. Being part of that team is really important: I am dashed sure that a big construction company that is in that group will get quite a lot of the business. We can look at a Scottish company—one that is registered in Scotland—that has just been established, and find that all the directors are in Lombard Street in London. We are wide open to big problems that are not statistical, and which need other types of input that we do not have. That is a really important point.

I am getting carried away. There are other things that I wanted to discuss, but I will leave it there. I hope that we will come back to that.

Professor Montagna: Ownership is a big issue. The Scottish Government supplements the annual business survey by commissioning Dun & Bradstreet to provide information about companies that are foreign owned, but we cannot put our hands on those data. The information is produced at industry level; we do not have information at company level. Annual business survey data can be accessed through the UK data service's secure lab, but Scottish data cannot be accessed.

I disagree slightly with what John McLaren said earlier about academics not having an interest in doing work on Scotland. Regional disparities in productivity, for example, are central to economic research, but getting hold of the data to analyse such things is very difficult, as far as Scotland is concerned. The data exist, so accessibility is a key issue, as is the ability to link different data sets.

I will go back to what I said earlier: not all the interventions that are required are necessarily very costly. I am not a statistician, so I do not know exactly how many buttons need to be pressed, but I do not envisage its being very difficult to link things up at source, upstream. In other countries, the various data sets are all linked upstream, whereas in the UK, the individual researcher has to make the effort to link them up. Aside from the margin of error, which clearly increases, three people in Scotland might be doing the same thing. Therefore, there is a huge duplication of effort and, in essence, a waste of public money because we are doing things more than once.

The Convener: Do the data exist? Is it a question of definition? Richard Murphy commented on Scotland-registered companies and England-registered companies that can operate in England, Scotland and abroad. For example, an England-registered company can own property or land in Scotland and rent it out, so there is a question about whether that income can be defined as Scottish for taxation purposes. Is the information not available in a data form that economists can use? Is it about political questions—as was referred to earlier—around whether and how some companies' income should be defined as Scottish or English? At international level, the question with big companies such as Google is where they pay tax and how much they pay. What is the nub of the issue for you?

Professor Montagna: There are certainly discrepancies between datasets regarding methodological definitions as well as sample size. That is probably where some cultural change is also required, and not only in addressing issues of accessibility. There is a difference between accessibility and ease of use: we can access datasets but find when we try to put them together that they do not match in terms of definitions, sample sizes, time coverage and so on. There are definitely issues in Scotland with respect to all those dimensions. However, effort being made to overcome the accessibility and linkability issues will also bring to the fore those types of constraint.

There is infrastructure for data collection in place in the UK. To go back to something that Richard Murphy said earlier, it is possible—and it should be very desirable—to work closely with the ONS, HMRC and so on to ensure that the UK data collection better reflects the Scottish sample.

The Convener: Richard Murphy wants to come in.

Professor Murphy: I do, because I think that the two questions are directly related to each other. Somebody asked me yesterday to write about the question about income tax. I will repeat basically what I said about it in this room in April: more than anything, the question in relation to income tax in Scotland is how effective a rate rise would be. The answer is that it might well not be very effective because it is so easy for people to incorporate what otherwise looks like an employment by turning it into a company with probably one employee—rather than no employees, as was mentioned earlier—who is paid a tiny salary and a dividend to cover the rest of the remuneration. That will be subject to UK-wide income tax rates rather than to Scottish income tax rates, so tax avoidance will go on. It is as simple and straightforward as that: Scotland cannot enforce its own will with regard to an income tax rate when it is so easy for income to leave the Scottish tax system.

The question that I was asked is whether there will be massive capital flight out of Scotland to avoid a Scottish tax rate. My straightforward answer is no, because people could turn income into capital within Scotland and not pay tax on it, so it would not need to fly anywhere. The tax system lets that happen domestically, so although the debate on a Scottish tax rate at that point would not become meaningless, because there are loads of employees in Scotland, there would be a lot of tension as a result of what the tax system allows.

The matter also spills over into the question of whether we know about Scottish businesses. A very interesting statistic is produced every year by Companies House, which is based in Cardiff—that is where the Scottish company register is run—which shows that since 2008 there have been no prosecutions under Scots law for breaches of company law. I do not know why that is the case, but it appears that Companies House does not know of any. Does that mean that Scots law does not now exist in respect of application of company law? I do not know, but it probably does not. Why? It is because we do not have any company registration in the UK any more.

To be clear, I say that the company registrar in the UK receives information, but it does not check its quality. There are apparently four people reviewing the accounts of nearly 4 million companies to make sure that they have some truth and accuracy. I can tell the committee that the only piece of information that is checked on the form that is sent to Companies House is the postcode. As long as the company puts an accurate postcode on the form, it will be filed: everything else is inconsequential.

Companies House likes the balance sheet of a set of accounts to balance, but not every company manages that, and those that do not manage it get away with it. That is how weak the data is. We do not know who owns companies. The new regulation on beneficial ownership is entirely voluntary; it can be got around simply by saying that there is not somebody who controls the company, and no one checks that. There is no data on the source and destination of revenues; 90 per cent of small companies do not have to file accounts with a profit-and-loss account, anyway.

To be blunt, we are living in the wild west—or the wild north, if you like—when it comes to company registration and data from Companies House. As a starting point, we should have a Scottish company registry that actually enforces beneficial ownership rules, that requires full accounts to be put on the public record, that reduces risk and that says that people will be meaningfully prosecuted when they do not fulfil their obligations to file accounts or pay their taxes. At the moment, it is ridiculous that so many people get around their obligations by registering a company. It is just licensed fraud.

The Convener: Is that not dealt with by director disqualification actions, which have happened in Scotland since 2008? Those occur quite regularly, do they not?

Professor Murphy: Companies House says that those actions are not taking place under Scots law. I do not know why, but that is what it says.

The Convener: What are not taking place under Scots law?

Professor Murphy: Companies House says that it does not know of actions under Scots law. Perhaps it uses English law to prosecute in Scotland. I genuinely do not know why it makes that weird claim.

Let us not worry too much about that; the point is that this is a UK-wide issue. There are about 5,000 prosecutions a year for failure to comply with Companies House regulations. I do not dispute that. More than half of those prosecutions are dropped when someone turns up with the document that has been the reason for the prosecution. In other words, when someone does not file their accounts but then offers them to the court, the prosecution is dropped. That reduces prosecutions to 2,500. However, 400,000 companies a year in the UK as a whole—I suspect that the data for Scotland is proportionate—disappear without trace. They are literally struck off the register because they do not meet their legal obligations. They do not have to pay their taxes, because they simply disappear. Less than 1 per cent of those cases are pursued. It is so easy for people to get around their tax obligations.

The Convener: You are not in a position to tell us how many directors have been subjected to disqualification proceedings in Scotland in relation to—

Professor Murphy: I do not know the precise figure for Scotland, but it is perhaps a couple of hundred.

The Convener: Do you mean in relation to failing to file documentation or accounts? Are you able to tell us that?

Professor Murphy: I would be very surprised if there were more than 200 such actions a year.

The Convener: So, there might be that amount.

Professor Murphy: There might be—but that is a tiny proportion of the number of companies in Scotland. The Scottish Government says that there are 345,000 businesses in Scotland.

The Convener: Let me stop you there. You do not know the numbers, we do not know the proportion of companies and we do not know what Government enforcement is being done in Scotland. One would have to look at the statistics about actions being brought before the courts, and so forth. You are not in a position to comment on that, are you?

Professor Murphy: I am saying that the data is not available—and anyway, there is no system to make that data meaningful, because there is in the first place no proper regulatory system to ensure compliance.

The Convener: That is a different question. There may not be data that is accessible for someone such as you, but that is—

Professor Murphy: That is why I cannot answer your question.

The Convener: Fair enough—but you cannot make assertions about there being no prosecutions, or whatever type of court action is carried out in Scotland.

Professor Murphy: I was quoting Companies House: it says that there have been no prosecutions under Scots law.

The Convener: Perhaps we can move on. I think that Richard Marsh wanted to comment, and Andy Wightman then wants to come in with a question.

Richard Marsh: I have a very quick point. I do not want to do down anything that has just been said, but the point is that businesses are messy and difficult to measure. Just like my toddler when I get her ready for nursery in the morning, businesses can make it difficult. They do not stay in place; they move about, they change and they occasionally go out of their way to make life difficult. Richard Leonard said that a third of the economy is foreign owned. He means the business economy.

Richard Leonard: Yes.

Richard Marsh: There is a big issue with trying to measure the public sector in Scotland, and we should not lose sight of that. We really need to know how productive our public services in Scotland are.

I agree with most of the points that Professor Montagna made. It is great when messy datasets collide that do not make sense, because I would be suspicious of them, if they did. Ideally, we would take those data sets, which probably were not made to be linked, and put a bit of time and effort into asking whether consistent messages are coming out of them.

10:45

Gillian Martin asked about how we can measure such things properly. We appreciate that it is difficult to do, so what is the best method of doing it? I was always amused by trying to measure corporation tax in Scotland. We always asked what is the value of our economy and roughly what proportion of that is profits or the operating surplus, and then we took a pro rata of what the UK is doing. That was hugely bland. Okay, it is probably not a million miles away, but it is like holding a wet finger in the air.

Could we have got more data from the Treasury and HMRC? Absolutely not—it would be impossible.

Suddenly, in 2014, we got a beautiful piece of research linking all the administrative data and corporation tax records with businesses that were identified as Scottish to get a far better measure of the corporation tax that was being paid. That is the point that I was making about the culture. When there is pressure, there is a need to think of a better way to do things, and methods are often found.

John McLaren: The three big taxes are income tax, national insurance and VAT. Those three outweigh by far all the other taxes in terms of size.

The debate in Scotland is about perhaps moving the additional rate up or down. The additional rate does not give us very much extra money unless we also move the basic rates.

The Laffer curve was used by Alex Salmond to say that cutting corporation tax might be a good idea to get more people in, but it was originally applied to income tax. The studies that the Scottish Government should do should look at both sides: they should also be asking whether more people would be brought in by cutting income tax and being extra competitive. I am not saying that that would be the right thing to do, but studies should look at the question from all sides. Because we do not have corporation tax powers at the moment, we should probably leave it out. It is a difficult issue, because we would also then have to ask what the behavioural impacts of changes would be. They are probably unknown, but can be guessed at.

To go back to Richard Leonard's point, I say that Scotland as a region does not really need to have GNI-modified GDP or whatever, even with some taxes devolved, if it does not want to. If Scotland had full independence or full fiscal independence, it would be important, but you do not need it.

However, it is interesting and important for getting the right policies, even if Scotland remains a partially devolved region within the UK. For example, how would you improve Scottish ownership? How would you make better things that are currently issues? You will not understand that until you have a more full understanding of the economy. That is why the Irish economy looks at three or four different measures and recently introduced a new modified GNI measure. The two old measures had suggested that the Irish economy grew in real terms by 25 per cent in 2015, which is clearly absurd, so they had to introduce a new measure that goes back only a few years. Scotland is in a similar situation, partly because of oil and partly because of foreign ownership. It is difficult to really understand what is going on with the Scottish economy and, therefore, how wealthy and prosperous it is and how it is growing.

The Convener: I will bring in Andy Wightman in case he has a point that will be superseded if we carry on with this interesting discussion.

Andy Wightman (Lothian) (Green): I was interested in Richard Marsh's comment about starting with a blank sheet of paper. This is an opportune inquiry, because Parliament is at an important time for public finances and tax powers, and the interrelationship between tax powers and how they are used and the performance of the economy.

A number of the witnesses' submissions seem to support making the Scottish statistical collection a more independent project, with an independent authority that might have more powers. However, given that Scottish Enterprise is the chief economic development agency for the centre of

Scotland, I was disappointed to read that it is of the view that

"Scottish economic data are reliable as far as we are aware, and, if there are any inaccuracies, for whatever reason, they are likely to be small."

Do the witnesses agree that we need a more independent statistical authority with greater powers to compel the acquisition of data? For example, whatever one thinks about the argument between the chair of the ONS and Boris Johnson, the chair of the ONS felt able to speak out when he—rightly or wrongly—felt that statistics were being misused. That could not happen in Scotland because no one of that nature is commenting on Scottish statistics, although I am sure that the chair of the ONS would speak out if he felt that any members of the Scottish Government were misusing UK and ONS-collected statistics.

Margaret Cuthbert: Prior to devolution, the chief statistician had much more independence with regard to the ability to speak out. At that time, he or she—it was a was always a he, mind you—could go directly to the head of the ONS and stand up for the quality of statistics. That ability disappeared with devolution. I cannot think of any example since then of the chief statistician being able to stand up and say "We are not doing that." Indeed, if what we read in the papers is true, there was a recent case of the Accounts Commission giving in.

Mr Wightman asked last year whether we could have whole-of-Government accounts. A completely messed-up answer came back, which was: "We do not have whole-of-Government accounts." We could have them, but, somehow or other, people are stalling. Is that because the liabilities of Scotland would be shown if we had them? This all adds up to the question whether we have the proper system in place to ensure that we are no longer a colony but are moving forward as this Parliament expects us to. That is not just a criticism of politics; it is a criticism of the academic world.

In the 1970s, when I produced the first paper that I know of on public expenditure in Scotland, I was told by the head of a Scottish journal of economic research that that was a parochial issue that was not carried in Scottish journals. I see no difference in the approach that is taken today, other than in the approach of the Fraser of Allander institute. We have to change the effect of committees such as this one and of our academic world. What John McLaren told us today about lack of interest is appalling. Why are we paying for any contribution to the academic world if it is not producing decent stuff on the Scottish economy that would help groups such as this committee?

The Convener: Could you expand on what you said about such an intervention being impossible since devolution?

Margaret Cuthbert: We seem still to have a mindset that we are collecting data that is feeding into a larger group. I can give you some examples of that. We are not going to have any comment whatsoever on the agriculture statistics for five years. Here we are facing Brexit, and we read in the newspapers that the supermarkets probably would not survive for four days if imports stopped. However, as far as our agricultural statistics go, there is just a series of data that is meaningless to most of us. Similarly, with regard to fisheries, if you ask whether quotas can be changed from one group to another, you will encounter a series of people saying that you cannot move the quotas. However, you can sell the ships, and the ships are what have the quotas. We are bombarded with information that, at the end of the day, is hard to understand.

I will give you a lovely thing to do over the next week. Try it yourselves and see how much time you spend on it and how much brandy you need at the end of the day.

We have a big problem but many of you would be interested in what taxes Scotland could put in place that are not the ones that, in John McLaren's definition, take up most of our taxation but do not necessarily help the poorest in society. What about a land tax? That is just one of the many. I am sure that you could all think of other ones. Why are we still sticking to a taxation system that might not be appropriate to the Scottish economy or Scottish society?

The Convener: Thank you. That is starting to stray into questions of politics and what we might do, whereas we are trying to focus on what statistics and data we have at the minute.

Richard Marsh, you wanted to come in. Has the statistical team in Scotland been less independent since devolution?

Richard Marsh: I echo what Margaret Cuthbert said. That team has not been independent since devolution. The pressure that has been placed on Scotland is the effect of the independence of the Office for National Statistics. We have a Scottish Fiscal Commission and the national accounts team, both of which have around 11 people working for them. The national accounts team is by far the most important team in Scotland. Without it producing that core economic data, we could not forecast because we would have nothing to work from. One of those teams is independent and well resourced; the other is not. We have to think carefully about whether we have our priorities right.

Andy Wightman mentioned the Foreign Secretary and the UK Statistics Authority. GERS was produced last year on 24 August. It is a national statistics publication—a kitemarked publication produced by the Government—so we knew that the data was coming out months in advance. On the day before, a previously unannounced paper on the cost of Brexit to Scotland was produced. The BBC's Brian Taylor, I think, covered it, asking whether it was politics or arithmetic and saying clearly that the Government was seeking to pre-empt the results of GERS the next day.

It is worrying that a producer of official national statistics could be, as the BBC's Brian Taylor suggested, seeking to pre-empt its own products. Two hugely important things did not happen. Unlike the situation over the weekend, the Statistics Authority, which is the statistics regulator, did not say anything. The matter was not called up as a potential breach of the code of conduct. Perhaps more importantly, Scotland's chief statistician did not say anything. If an independent statistics body that covers the UK says that it is disappointed and surprised at someone confusing a gross figure and a net figure, you would expect the chief statistician to be furious—or as close to furious as a statistician can get—that someone within his own organisation sought to pre-empt a kitemarked publication but, at that moment, the guy who was filling the role of the chief statistician and the regulator at the same time was, in effect, the BBC's Brian Taylor. He has a lot on his plate, so we should not really leave it to the media to police and point out the role of the statistics.

The Convener: When you say "the chief statistician", do you mean the Scottish chief statistician?

Richard Marsh: It is a small but important distinction. For the ONS, the national statistician is independent of Government; in Scotland, the chief statistician is the Scottish Government's chief statistician.

The Convener: Do you think that the chief statistician should have a different position or terms of appointment than they have at present?

11:00

Richard Marsh: If we think of the situation that I have just described, there are several instances along those lines. It is difficult to say how we can foster a culture of saying, "I want you to be innovative, to think of new products and to be open and explain what your statistics mean" if the person saying that is not independent of the Government of the day.

The Convener: The chief statistician in Scotland should therefore be independent of the Government of the day.

Richard Marsh: They should be more independent. Committee members will know more about this than I do; I find it hard to square the speed with which the SFC was set up and constituted as a non-ministerial department, when we have had 20 years of having a national accounts team that sits within the rest of the civil service.

The Convener: John Mason wants to come in on the question of the fury of statisticians.

John Mason: I do not disagree with what Mr Marsh is saying; I just wonder about the cost. I am an accountant, so I suppose that that is logical.

The SFC was set up independently despite the Government disagreeing with it—as did I. One of the factors was cost. We have 5 million people in Scotland and England has 50 million. We cannot possibly copy everything that England does, in the way that it does it, at that expense, when we are a tenth of the size. Does there not have to be a compromise whereby we do things in a smaller way and, I hope, more efficiently, while, at the same time, having that independence?

Richard Marsh: I love your statement. We cannot possibly copy what they are doing but we are trying our damnedest. At the moment, in statistics in Scotland, we try to ape a great deal of what is done for the UK, but I think that we should try to stop doing that.

On the cost, for, say, an independent statistics body in Scotland, the main thing that we need is for the head of the statistics profession in Scotland to be independent of Government and to be able to say, "I think that the most important things that we should measure are the following five things. We have been measuring the following 40 things and they really do not matter very much."

We can have a debate around the table today and everyone will have a view of what should be measured for Scotland's economy and whether GERS is fit for purpose. It does not really matter what Richard Murphy thinks or what I think; it matters what an independent statistician thinks. That is how we build trust in the statistics.

The Convener: I will bring in Jamie Halcro Johnston and then, as Richard Murphy has just been mentioned, I will ask him to comment on that.

Jamie Halcro Johnston: My point rather ties into that. Margaret Cuthbert mentioned the public sector and the lack of transparency that perhaps exists in some contracts with NDPBs. Richard Marsh has talked about the chief statistician and their role. What action can the Scottish Parliament or the Scottish Government take now to make the data more accessible and more transparent? Also, what national or regional examples should we look to model ourselves on if trying to mimic the wider UK model is not suitable?

The Convener: Perhaps Margaret Cuthbert might like to answer, and then Richard Murphy.

Margaret Cuthbert: On exports and imports, and on quite a number of statistics, I have found that the Northern Ireland Office has a cheaper and more timely system than ours and we should possibly look at it. It is also interesting that when it looks at, for example, public procurement, it looks not at value for money but at value: there is a huge difference.

We could learn how a much smaller country that is still part of the UK has managed that. I have not had the time to investigate it; I only know the results.

Professor Murphy: I do a lot of international comparisons in my work on taxation. We often use median states for review because median is more important than mean in that area. On that basis, Scotland is a median, mid-sized state in its own right. Five million people is enough to put it well up the order: it is somewhere in the middle. Scotland as a state—or a region of the UK or however we might view it—is not that small in international terms. The British Virgin Islands is, but Scotland most certainly is not.

On some things—not many, but some—the British Virgin Islands might produce better data than Scotland. That is shocking but true. Jersey's national accounts are also substantially better than those available for Scotland. Much as it grieves me to say so, Jersey has really got it right, and if it can afford that with 100,000 people, why cannot Scotland do it with 5 million?

There is obviously an issue here and it comes back to political will. All data is subjective—all data is political—because what you measure is a choice. There is no such thing as objective data because if you measure something, it changes it. We know that. It will change performance and behaviour. Therefore I worry about the concept of independence just as much as I worry about the concept of independent central banks, which are normally not independent at all, as we know in the case of the UK as a whole.

You only have to look at the Bank of England Act 1998 to see that the "independent" Bank of England is in fact subject to complete and direct control by the chancellor, who can suspend at any time the Governor of the Bank of England if they do not do what he wants—it has always been a "he" so far. Therefore there is not an independent Bank of England.

Independent national statistical authorities will have the same problem. At the very least, there must be sensible dialogue between the Government and the statistical authority about what the Government needs to make decisions and what a statistical authority thinks is important, because they might have different priorities—I make that point very strongly. Otherwise, you will end up with information being produced that does not suit the political purpose of a Government but suits the political purpose of a director of a national statistical authority. Both will have, whether they like it or not, political purpose, because we all do. Whether it is party political does not matter; there will be political purpose to the decision. Therefore, at the end of the day, you might as well be explicit and have a clear role for Government while the director must also have the right to squeal and say, "I am being put under too much pressure for a particular result."

Jackie Baillie (Dumbarton) (Lab): I wonder whether we can move on to a substantive discussion about GERS. Let me quote back at you, Professor Murphy, some of the things that you are on record as saying, and perhaps get a view from the rest of the panel as to whether they agree with you. I hope that I am quoting you correctly. You have said that the GERS figures are "untrustworthy", "rigged by Westminster", "literally made up" and "nonsense". You have also said that

"No accountant could use the GERS methodology without risking the allegation of professional misconduct".

Does anyone else on the panel agree?

I will take silence as meaning that there is no agreement at all. [*Laughter*.]

The Convener: Silence is not golden in this case.

Margaret Cuthbert: As I wrote in my submission, I object strongly to GERS being described as "crap". I do not know whether Richard Marsh—[*Laughter*.] I meant Richard Murphy—I will need to give Richard Marsh a big pudding when he comes to visit, to say sorry.

I do not know whether Richard Murphy has done as much work on GERS as Jim Cuthbert and I have done. When we first got a GERS report, following a freedom of information request, we went through every bit of it line by line. Since those days, tremendous work has been done on GERS by the statisticians. Almost every bit of data has some bit of estimation in it. An estimate is worth while if it has a small deviation on either side and I would say that tremendous work has been done to try to reduce the uncertainty over some of these statistics.

There is a group that has been meeting on GERS. GERS keeps changing its composition to some extent as we go on. That group is successfully considering changes to it. There are some things that I would not necessarily agree with but we cannot run an economy where the main taxes and so on are controlled by another Government, in a sense, without having estimation.

I can assure you that, over the years, bodies such as the Department of Trade and Industry, HMRC and Scottish Government statisticians have all co-operated with me fantastically.

Jackie Baillie: I want to direct a specific question to Professor Murphy. If I have understood you correctly, your contention is that tax revenues that have been generated from spending outside Scotland should be attributed back to GERS. If I have got that right, would that be the only set of national accounts in which that would happen? Can you point to other national accounts in which that approach is routinely taken?

Professor Murphy: The issue there, of course, is that most national accounts are prepared for nations and we are talking about Scotland not as a nation in that sense; we are talking about it as a part of the UK. It is constitutionally part of the UK at present, but it obviously has its own Parliament, which needs data.

My point about accounting was very straightforward. We cannot have a basis for recognising income and another basis for recognising expenditure with one basis being only income in Scotland and the other basis being expenditure for Scotland—which includes expenditure that was incurred outside Scotland that generates tax revenue which is excluded from consideration on the income side—and then take one off the other, because that is simply apples-and-oranges accounting. They are not the same thing.

I completely stand by my contention. If an accountant did that, they would be guilty of professional misconduct, and I would expect them to be pulled up before their professional body and told that they were not preparing consistent accounts on a consistent accounting basis and that that was required.

Jackie Baillie: Is it true to say that there are no other areas that produce national accounts in the way that you have described? I am trying to be helpful. Is there somewhere where I can go to see what you have described? Does any country do that?

Professor Murphy: Obviously, there is expenditure that can be incurred outside a country. For example, the point has been made to me that the UK's spending on overseas aid takes place outside the UK, and tax may be paid on that in another country. I accept that point. It has been said that that is same as the Scottish situation of having spending attributed to Scotland on which tax is not paid, but it is not the same. The UK Government will have decided to spend money overseas and therefore it is under central Government direction and control. The point that I am making about GERS is that the expenditure that is allocated to Scotland is not under the Scottish Government's control, so those figures do not indicate the activity in Scotland that is under the control of Scotland. Therefore, the examples are totally inconsistent. In other words, I do not know of another example of that sort.

Jackie Baillie: Okay. That is helpful to know. It is clear that, if you are suggesting how to do things, we would want to look at other examples, but there are none.

Professor Murphy: I cannot think of one.

Jackie Baillie: Okay. Neither could I but, in fairness, you are the professional rather than me.

Professor Murphy: I am trying really hard and am struggling to answer that question, but I genuinely cannot think of one example.

Jackie Baillie: I want to explore what you went on to say, because it is hugely important that we understand it. You said:

> "the net benefit flow is very heavily from Scotland to the rest of the UK. The likely understatement of Scottish revenue resulting from this flawed approach to national income accounting is likely to be very significant".

Do you have an order of magnitude for "very significant"? How much money are we talking about?

Professor Murphy: One suggestion that came out of the discussion when the Fraser of Allander institute was involved in the matter was that that would give rise to a restatement. If my basis of accounting was used—I cannot remember precisely the number that your colleague mentioned—we would maybe be talking about a couple of percentage points or so of the stated Scottish deficit. However, we are using estimates and very rough-and-ready stuff that was done on the basis of blogging, not on the basis of doing a lot of deep searching. I am not pretending that I have done that.

I go back to Margaret Cuthbert's point. I know that she did not like my use of language, but I am afraid that I sometimes use language to put something on to a political agenda. I have been involved with trying to put deeply unsexy issues on to the political agenda for a long time. Tax was not discussed in this regard when I first started to talk about it. Tax havens were not discussed and nor was national income accounting. Those issues are not normally picked up, but if using language in a certain way can get them in newspapers and create discussion, that is worth while. The point is that, if we do not have underlying data to prepare estimates, I cannot be sure.

Jackie Baillie: You do not need to use that language to make the issue interesting to me: I am already there. [*Laughter*.]

Professor Murphy: Not everybody is.

Jackie Baillie: The Fraser of Allander institute examined the assumptions and notions that you raised. It said:

> "Changing assumptions about how much spending is allocated *'for'* Scotland or spent *'in'* Scotland in GERS will change the net fiscal position. But any revisions are relatively small."

That suggests that, rather than being "very significant", the revisions are actually quite marginal. Do you agree that that is the correct interpretation of the Fraser of Allander institute's position?

11:15

Professor Murphy: No, I would not, for a number of reasons. One is that, for example, we do not know the flows in and out of Scotland, as has consistently been said, and if we do not know those, we might well be misstating what Scottish income is anyway. We do not actually know some of the bases on which the estimates should take place.

We also do not know what the multiplier effect might be of some of the expenditure that is being incurred outside Scotland. I raise the point as well that we are not just talking about the impact of the expenditures at their first stage of measurement but that, in economic terms, we have a consequence of that spending that could be greater than the initial spend—there is a fiscal multiplier attached to them. That was not taken into account, as far as I know, in the figures referred to.

I am not disputing that, at the end of the day, the GERS methodology is going to show that there is a deficit for Scotland. Let me be clear about that: that is not what I am saying. I am saying that the methodology that exists does not work at a theoretical level and therefore we need to go back and start again. I am basically suggesting, as Richard Marsh has done, that we should go back to a plain piece of paper and start from there; if we did that, we would not end up with GERS—that is my point.

Jackie Baillie: What I am trying to do is understand your position and look for evidence for it. What I am hearing from you is that there is no evidence and that what you are doing is asserting in the absence of numbers a particular position.

Professor Murphy: I am saying—as far as I can hear, it has been agreed by the Fraser of Allander institute—that there would be a restatement of the figures if my position was correct. The institute has said that it would undoubtedly change the numbers but that that change would be small, but that is open to question. I am saying that it would be bigger than the institute says because it has not taken the fiscal multiplier into account. The institute is saying that it would not be a dramatic change and I am saying that it might be bigger than that. Would it change overall? I do not know. However, I am also saying that GERS as a whole is incorrectly prepared and therefore is not the basis for comparison for the future.

Jackie Baillie: What I am trying to understand is the evidential basis for your saying that the figure is going to be very significant, given that the Fraser of Allander institute has said that it is going to be very small.

Professor Murphy: The whole issue appears to be that Scotland is in a major fiscal deficit position but the data cannot be certain to support that, particularly when we do not know what the imports and exports for Scotland are. The figure might therefore be heavily misstated. Actually, I am looking at data at the moment on Scottish imports and exports that show that the data for Scotland look to be so dramatically out of line with the norm that there is something obviously wrong with them. I think that we are in a position where we can say that the data could be seriously misstated. However, do we know precisely? No—I accept that point.

I am telling you what I have said time and again, which is that we have not got the data to be sure about that, but nor do you have the data to be sure that you are right either—that is my retort. I might be wrong, but so might other people be.

The Convener: I want to bring other witnesses into the discussion, but before I do that I have a question for Richard Murphy. Are you seriously saying that the British Virgin Islands, which is no longer a colony but a British overseas territory that has a population of 28,000-plus, has better statistics than Scotland?

Professor Murphy: There will be some statistics that it produces, but not many, that will be better than Scotland's. In the case of Jersey, many of its statistics will be substantially better than those of Scotland. In particular, Jersey produces quite reliable accounts that show who is responsible for what and it has GNI data that is reasonably reliable, so it would be worth looking at that. If that island can produce better data that is more useful in terms of helping politicians to make decisions than that which is available to many

Scottish politicians, that is something that needs to be thought about seriously.

The Convener: Right, so we would have to look at the specifics of that. We will hear from John McLaren, then Catia Montagna.

John McLaren: If Richard Murphy is looking at Scottish exports and imports, then he knows more than I do, because there are no Scottish imports data. There is an imputed residual in the quarterly financial accounts, but that is a huge problem because, if anything is wrong throughout the national accounts, it ends up in imports, so it is a highly questionable figure. In addition, there are two main measures for exports, but year by year one will tend to go up and one will tend to go down, which does not fill us full of hope that they are particularly accurate. However, that is a slight move away from GERS.

My main point on GERS is that Richard Murphy's point is of interest, but it would not change the overall result. GERS is a bit of a dead-end these days in that we know what it is going to say. I really would not want to put an awful lot more time, effort and money into expanding GERS just a bit. The money could be far better spent elsewhere and that is where it should go. Much of this discussion is to do with finance rather than the economy but we should concentrate on the economy then go to the fiscal issues that are relevant to that. However, a lot of the time we do not seem to do that, which is perhaps because GERS dominates the debate, whereas, when the quarterly national accounts are published, that gets no coverage whatsoever.

Returning to Andy Wightman's point, if there is something in the data—GERS data or other data—that the statisticians are not happy about, it is very rare that we hear the head statistician in the UK or at the OBR speak out. Instead, it is the media and think tanks that expose such things, whether that is the Institute for Fiscal Studies or the *Financial Times*. With regard to holding the figures, the Government and ministers to account in Scotland, we lack analysis by independent bodies. You can create an independent statistician if you want but, as he or she would not really be independent because they have got there as a career move, the other elements need to be brought in.

We have exhausted the good that GERS can do Scotland in the Scottish debate about the economy.

Professor Montagna: I will not comment on GERS because I do not have enough expertise to do so. It is certainly true that one of the problems with the Scottish economic data is that it is not always possible to disentangle it from the UK data.

Perhaps there should be a more nuanced distinction between micro data and macro data because, ultimately, macro data comes from aggregating micro data upward. We do not have any data on imports and the data on exports comes from the global connections survey, which has a no-return rate of about 70 per cent. Therefore, the data is based on a fairly small sample of firms and it is also biased toward non-exporters so it does not capture, for example, whether there is a change in the status of a firm from non-exporter to exporter.

I take all the points that have been made on the national accounts, but we need to have a more holistic approach and try to see the macro and micro sides of the data as being more interconnected.

In that sense, as we discussed earlier in the debate, perhaps there should be a higher degree of independence for the Scottish statistical agency. In the long term, that would certainly be important but, on Margaret Cuthbert's earlier point, I would not be too concerned about the Scottish data collection system feeding into a higher level because, ultimately, the major progress that has been made in recent years in Europe and beyond has been made at an international level. It is very important to join forces, co-ordinate collection and follow uniform protocols to ensure compatibility of data, because a lot can be learned internationally by being able to compare the evidence that comes out of regional or national data.

Gil Paterson (Clydebank and Milngavie) (SNP): One of the biggest things about GERS that sticks out for me is that billions of pounds that are raised in tax in Scotland are spent furth of Scotland, which has impacts. The first whammy is that that money is spent outwith the Scottish economy. The second whammy is that that money is spent—primarily—in another part of the UK.

On John McLaren's point, we cannot ignore GERS, because it is used extensively, one way or another, to talk Scotland up or down. For example, when the Fraser of Allander institute published figures, everyone lined up the night before to say that Scotland was failing. That is just an indication; Fraser of Allander happened to be wrong and the figures went in the other direction. GERS is a big political football.

The third whammy is that Scotland is measured, in a political sense, against the places that benefit from Scottish expenditure. These are big issues. No one who has made a submission for the inquiry has said that the stats are good; no one has said that they are absolutely brilliant. Everyone has used qualifiers all along, and it is the same for GERS.

Where is the information about how much of the money that is spent in the UK—not overseas—is taken from Scotland? What impact does that have on Scotland's economy, and what impact does it have on the places that we are measured against? Where are the stats? Politicians should get the answer, because the issue is so important.

The Convener: Perhaps John McLaren would like to comment, since he was mentioned.

John McLaren: It is difficult to know where to start. I disagree with virtually everything that Gil Paterson said—I do not say that for political reasons. One reason why we should park GERS is that it is too political and it gets to places where it is either good or bad, when it is not. All that it does is say something about what would happen, on the basis of current spending and tax patterns, if Scotland became fiscally independent, which is not particularly interesting.

Everyone who has looked at the figures has agreed for a number of years that Scotland would be in a deficit position relative to the rest of the UK, as would Wales and Northern Ireland. No one has produced any figures that show anything else. Scotland's position has got worse relative to the UK in the past few years because of North Sea oil. That is not a great mystery, and neither is the reason why more money is spent in Scotland than in other parts of the UK. Scotland is a third of the size of the UK and has a network of islands, so we should expect more money to be spent here per head. Scotland earns a little per person in terms of tax—London has an impact because most of the high earners are there—but other than that, I do not think that there are any mysteries around the GERS data.

The Convener: I call John Mason, and then I will bring in Margaret Cuthbert.

John Mason: I am going to refer to Margaret Cuthbert, so she will perhaps come in anyway.

At the beginning of the discussion about GERS, Margaret Cuthbert said that there had been improvements and defended the position by saying that there will always be estimates, which we can make better. I am interested in that technical area.

This morning, I started by thinking that we should move everything to using administrative data instead of apportionment or estimates—you can correct me if apportionment and estimates are the same thing. Professor Montagna talked about micro data; I am not sure whether that is the same as administrative data. Should we move wholeheartedly to collecting every little company's details and adding them all up—Mr Marsh said that a lot of that is pretty messy and not very dependable—or should we just accept that apportionment is perfectly acceptable for VAT and some other things?

Margaret Cuthbert: It is not perfectly acceptable. I very much agree with John McLaren that other issues are of much greater importance for us and for the committee right now than GERS, which ideally should take a bit more of a back seat.

I have had endless conversations with various UK Government departments about whether we can do any better than we do now. I do not see that happening without tremendous expenditure on our behalf to set up units. Even if we did that, we would not have the political power to get information from companies—it does not exist. I do not see how we can do anything at the minute other than use UK Government departments to get the information.

John Mason: HMRC seems to have moved from pretty vague estimates on income tax because it has been forced to. It has given people an S code and will shortly have definite figures. Could we do the same with VAT, corporation tax and everything else, or is the situation not as simple as that?

11:30

Margaret Cuthbert: It is not in any way as simple as that because of some of the things that Richard Murphy and Richard Marsh mentioned. Business data is a dirty field. The ONS and the Scottish Government are trying hard to get more detailed local information. That is a huge job and I do not know how it is progressing—you would have to ask the statisticians. I do not know where that will go.

Professor Montagna: I will answer John Mason's question about the difference between micro data and administrative data. Micro data could be administrative data. It is data that is collected at the level of the firm, for example. In some cases, it is collected by a questionnaire survey and, in others, it is collected through VAT returns—in that case, it is administrative data, which typically tends to be more reliable than data that is collected by survey. Recent research shows that data that is collected in the financial analysis made easy—FAME—database, which is a privately produced database, provides less reliable information about whether firms are exporters than data that comes from HMRC. The more the data is collected through VAT returns, the more reliable it is.

It is important to have as large a sample of the population of firms as possible, because the reality is that the majority of firms in Europe—98 per cent—are small and medium-sized enterprises, and about 60 to 70 per cent of them are very small. Leaving them out therefore misses out a lot of economic activity in a country.

The distribution of firms within industries is also important in enabling us to understand the impact of policy, for example. You cannot focus on the average productivity of an industry; what matters is what the productivity distribution looks like, and there is a huge variation not only across industries but across regions and countries. There is a recent experimental paper, as it is called, by the ONS that considers productivity differences across regions. It shows that what matters in determining a region's productivity is not the composition of industry but the distribution of firms within industries.

A lot of information is required to understand the productivity puzzle. It comes from firm-level data, which is why it is important to get such data as much as possible.

Ash Denham (Edinburgh Eastern) (SNP): We are talking about decision-useful data. As the Economy, Jobs and Fair Work Committee, we want to consider the sort of data that might help us to make better decisions. The Scottish Government is judging its progress on what it calls the four Is—I take it that everybody is familiar with them. Are the stats that we have useful to judge whether the Scottish Government is making progress in those four areas?

Margaret Cuthbert: I have a big problem with the kind of data that the Scottish Government really needs. Somebody mentioned Scottish Enterprise. With the information that is given, it is almost impossible to find out why an NDPB has said, let us say, "We have helped 85 per cent of businesses." What does that mean? Does it refer to advice, finance or something else? How has it monitored the success of that and how has it evaluated the programme at the end of the day?

If you want to spend half a week looking in my filing cabinet, I wish you good luck. It is impossible to get information. Scottish Development International cannot even split up how much it has spent on encouraging exports and on encouraging foreign direct investment. When a committee asked it for that information, it was told, "Oh, I'm sorry—I do not have that just now, but you will get it." We are still waiting. I asked the committee whether it had got the information, but a year later it still had not.

There is a big problem in that the Scottish Government is happy to put out information on helping businesses and on skills and modern apprenticeships, but we are not getting the real data that is needed. I ask you to look at Skills Development Scotland's report on modern apprenticeships and—instead of watching the 10 o'clock news—think about what you are getting from that. Think of the questions that you would ask, then phone up or write an email to Skills Development Scotland. The answers are not there. We are living in cloud-cuckoo-land as far as that programme goes.

Richard Marsh: The question was on the four Is that the Scottish Government is working towards. It would not be entirely unfair to say that we have decided to go down the route of a slightly different economic strategy with the four Is, and perhaps the biggest change relates to tackling inequality. We have looked at what data we have and asked how we can best use it to measure progress against the four Is, rather than asking what more we need to do to fill the gaps.

I was at a business breakfast at which someone from Scottish Enterprise was asked about the dimension of inequality and inclusive growth. He said, "We know what inclusive growth means—it just means growth." Half of the people there said, "Oh," but I felt that at least he was being honest. That is probably where we are.

On what we mean by inclusive growth and what kind of data we should be picking up on, John Mason and Margaret Cuthbert talked about whether we are using the data that we have in the right way. The thing that jumps out of the quarterly national accounts is that over the past 20 years in Scotland taxation of individuals has grown substantially, whereas taxation of businesses has been virtually unchanged. That is not picked up on at all, but a huge issue will arise if we raise VAT and income tax rates while at the same time cutting corporation tax and saying that we will achieve inclusive growth. We do not have such data ready to hand and we should investigate it a bit more.

Professor Murphy: I thank Ash Denham for her question, because it moves us on. However, I will hark back to GERS—slightly—in answering it.

The four Is make sense in a real way. Who would not want investment, improved international trading positions, innovation and inclusive growth? If we inverted the question and asked whether anyone did not want any of those things, the answer would be no, so they must make sense. They are a statement of what everyone would probably want, although not everybody would put four Is on the front.

Does the data that we have help us? In a very real way, it does not. It does not answer the question of why there is not inclusive growth now, for example. We do not know how many assets there are in Scotland. We do not have a figure or a balance sheet—we do not know what is happening. We do not know whether there is net investment, because the accounts that are available are an income and expenditure account—that is what GERS is—prepared on an inconsistent basis, with no balance sheet to prove that there has been a net improvement or deterioration in the Scottish position. We do not know who has the liabilities. GERS shows the deficit, but it is not clear who deals with it, and the apportionment of liabilities may be inappropriate.

To make this work, there needs to be a much better awareness that to drive any form of growth and to drive international investment we need measures of the capital accumulation that is taking place inside Scotland. I am talking about not the financial capital but the real, tangible, physical capital that will give rise to changes in productivity.

The increase in wages is obviously the driver. That is one reason why, at present, state expenditure per head is higher in Scotland than it is in the rest of the UK, because average wages are lower in Scotland than in the rest of the UK. Average wages are also lower in Wales and Northern Ireland, which is why it appears that so much of the UK deficit is attributable to the regional Governments rather than to England.

Without the information about assets and without a proper balance sheet and knowledge about who is funding what, we cannot come up with an answer to such questions. We need to know who is funding the process, which is not clear, because there is no Scottish liabilities side of the balance sheet. Is Scotland liable for the debts that are recorded as a result of deficits being incurred? The Scottish Government cannot be liable for those debts because it does not have the capacity to pay them—it is not allowed to do so.

GERS is therefore a totally meaningless statement for a world that does not exist—it relates to an independent Scotland that does everything that the UK does now, which it clearly would not do, and which has a liability for something that it might not have incurred, because no one knows whether it would pick that up. The existing data is just make-believe. That is why you have to go back to the question of what you want. If you want meaningful information, you want to get information on asset growth and liabilities to fund that, and that goes back to the apportionment issue.

In my submission, I discuss how to apportion some aspects of tax, which I have done a lot of work on—I created the idea of country-by-country reporting that is now being used as the basis for potentially apportioning corporation tax liabilities internationally, on the basis of Organisation for Economic Co-operation and Development recommendations, and that is now law in 100 countries.

I have been around this area for some time. Work is done on the basis of estimates—let us be clear about that—because there is not enough data to ever be certain that corporation tax can be apportioned accurately over international boundaries. The estimates are based on where the sales are. The only difficulty is that Scotland does not know how many sales it has, because there is no reliable VAT data on sales in Scotland—sales to end consumers are what matters. That would also require reliable input data, as well as export data so that we can count those sales out of consideration. Data on the number of employees in Scotland is not sufficiently accurate, although I think that we are getting close and that that issue is probably being resolved. The third indicator is assets, and that data is not there.

In a real sense, we do not have the data that is required to fulfil the current Scottish economic policy, which, as I said, makes sense, because nobody would oppose those four things. We do not have the data to fulfil that promise.

Let us start the whole thing from scratch again and work out what is required to enable us to make rational economic decisions in Scotland. That is what the question should be, and that is what I set out in the six pages that I was allowed for my submission.

Andy Wightman: One of the key bits of economic data that is talked about quite a lot is productivity data. John McLaren’s paper says that that data is difficult to collect and analyse and that, in order for us to make like-for-like comparisons with other countries, a number of adjustments need to be made. Can you give us any sense, on the record, of how big a job that is likely to be and whether we are able to get better figures on productivity in order to make political debate about economic choices more meaningful?

John McLaren: That is a key measure because, over the longer term, that is what is likely to make the economy stronger. However, if you are trying to compare the USA with France, Germany and the UK, you first need to adjust for the length of time that people work. Are we talking about productivity per person, per job or per hour? All those questions will give you different results. The next question concerns what those people are working at. Are they in manufacturing, are they in services or are they in public services? All those activities have different productivities attached to them.

One reason for a difference in productivity between countries is the length of time that is worked. For example, France has quite short working hours whereas the United States has quite long working hours. France is also quite productive partly because there is quite high unemployment, which means that the people who are most productive are in work, so it looks as though the country is quite productive.

11:45

One of the reasons for the productivity figures that we saw in the UK in the previous downturn was the fact that the price of North Sea oil came down a lot. Hardly anybody works in North Sea oil but they were making huge profits and all those profits virtually disappeared. Financial services also took a huge hit. Again, not many people work in financial services but a lot of money is attached to the area. That partly explains the situation.

You need to adjust for industry composition, skills levels and things like that to get a like-for-like situation. Then again, should you adjust for those things? Skills are important, so you need to address skills in terms of policy, but you have probably worked more in that area than I have.

Professor Montagna: You are talking about labour productivity, essentially, and that is one dimension. An additional problematic dimension is prices, on which we do not have data. An increase in productivity could simply be a reflection of an increase in inflation and we might not know what is behind that.

More meaningful measures would also factor in other means of production, energy consumption and intermediates. Total factor productivity is a better measure but it is not being calculated. The ONS is starting to do that now and has written an experimental paper that came out in April 2017.

The major progress in this area has been made at the Europe level. The European Union is funding the mapping European competitiveness—mapcompete—project, which brings together academics and the statistical offices of many countries. Unfortunately, the UK is not part of that project.

There are big methodological issues and there are big data requirements. When we talk about productivity, the metaphor that I like to give my students is that it is like peeling an onion. You might measure productivity correctly but what matters is what determines it. You can identify the approximate causes but you need to be able to go to the ultimate causes to know what you can do about it through economic policy. That requires information from within the black box of the firm. For example, you need information about management practices.

The ONS has reacted to the world management survey that was initiated by Bloom and Van Reenen, who used to be at the London School of Economics but are now at Harvard. I do not necessarily agree fully with the spirit of the exercise, because I think that environmental factors are important. However, the survey's authors identify and quantify elements of management practices that can be used in total factor productivity estimates. They look at management as a technology.

It might well be that, after peeling the onion, you are left with environmental factors such as agglomeration economies. I go back to the point about behavioural responses: it is important to understand how firms and investors react. One of the messages to come out of the firm-level view of the world is that some of the macro factors that people think about, such as unit labour costs, are less relevant than we like to think. Unit labour cost is not a very good predictor of a country's ability to export. In fact, it might well be that, as some have suggested, low unit labour costs that result from high deregulation of the labour market, for example, are responsible for low productivity, as that incentivises firms to substitute labour for capital.

I return to the point that it is important to overcome the dichotomy between macro and micro data because they are very much connected. To understand the ultimate causes of productivity, we need to be able to go into the black box of the firm.

John McLaren: I will wrap up the point by saying that, once we have peeled the onion, we are left with multi-factor productivity, or total factor productivity, which is not tangible. It is about innovation and other factors that make economies very good but that we cannot see—that is the tantalising thing. We can ask what countries are doing it well. The answer is that it is about management practices, about research and development being used well and about working with universities, which takes us to an intangible element that we then have to understand. The process is not easy; if it were, every country would be doing it and growing quickly, and they are not.

Professor Montagna: Yes, but that is why international co-operation and co-operation with academics are essential.

The Convener: Let us move on to a question from Gillian Martin.

Gillian Martin: My question is related to what we have been talking about. Quite a few of the panel have identified a gap relating to what goes on in households and families. I suppose that comes down to the data that panel members have talked about.

The Government makes decisions around policies that, on the surface of it, might look expensive but could generate economic activity—for example, enhanced free childcare, a progressive policy or something that encourages the living wage. What is missing, in the data sets that are available to us, that would enable us to look at how those policies have worked and how they have stimulated the economy? We could then make the case for more progressive policies. It is difficult for the Government to be able to say that giving families enhanced childcare does not involve a massive expense and will generate a lot more economic activity.

Professor Montagna: I return to the point that I made about the ability to link data sets. Quite a lot of that information is available—for example, the British household panel survey has a lot of information about such issues and I am sure that there are other data sets, but they do not spring to mind at the moment. The important thing is to be able to link them. There may be clear causal links between some of the aspects that have been mentioned and the productivity of the firm.

For example, we have been thinking about setting up a project to look at the impact of management practices on productivity, but through the channel of worker satisfaction because management practices have a lot to do with how the workforce is managed in a firm. We could not do that, because we did not have management data. In fact, we got in touch with Bloom and Van Reenen to see whether they were prepared to replicate their study in Scotland. Their a priori impression was that we would not have a sufficiently large number of firms to make the sample significant. Luckily, the ONS has started its management practices project, and perhaps in the near future it will be possible to do something like that.

What Gillian Martin says is pertinent. There are links between different things, which is why it is important to take a holistic view of such issues. If we start peeling the onion, the nice links that come out are endless. It is important to be able to establish causality among the different aspects.

Gillian Martin: In our papers, it is stated:

> "Longitudinal data—there is very limited data on a longitudinal basis of Scottish households—particularly in terms of issues like income, wealth and spending."

I am interested in the panel's feedback on that point.

The Convener: I think that John McLaren wants to come in on that. Perhaps he can do that first and we can then hear briefly from Richard Murphy and Margaret Cuthbert.

John McLaren: I would like to come in on the previous point, if you do not mind, convener.

The Convener: That is fine.

John McLaren: There are factors such as early years intervention, which has a lot of evidence behind it to the effect that it will be good for sharing prosperity. I have been looking at that for quite a long time. The trouble is in trying to find the money to put into that policy. At the minute, all the money is being put into primary, secondary or tertiary education because politically—and, to be honest, among a lot of the public—that is where the money already goes. You have to fight damned hard to take it off them and put it somewhere else, even though there might be a huge amount of evidence to support doing so. There is an issue about implementation versus picking the right policy, as we have seen recently in Scotland in education. However, such things can be identified.

One way of potentially giving the issue a higher profile—the focus has been on bringing it up with GDP—would be to have, as well as GDP, a wider measure that looked at more social-sounding things such as health, education, the environment, wealth, wealth distribution and so on. Having that wider measure, perhaps as an annual measure, would be innovative and other countries could look at it. It is not just about GDP; it is about all those other things such as education and early years investment, which should eventually improve GDP. If you can show that those other things are improving—which, we hope, will eventually improve GDP—you can widen out the issue from being just about whether GDP has risen by 1, 2 or 3 per cent, which is not really that interesting and does not get you very far.

It is about trying to get that wider measure while still keeping a focus on economics, to some extent, highlighting the elements that lead to a rise in GDP rather than just the GDP figure itself. Not many countries do that, so there is a good opportunity for Scotland to be at the forefront in that area.

Professor Murphy: In my submission, I wrote about a "capital maintenance concept". That means a balance sheet and the idea that you are investing, and productivity is about the relative input of labour and capital. Investment in the early years may be a capital spend—it is designed to create longer-term impacts beyond the current year—but the current system of accounting looks only at income and spend, without any consideration of whether there may be a benefit over time. Because of that, you cannot make that sort of decision—inside the accounting system, you cannot say that the benefit will be achieved three years hence.

There should be a system in which it is possible to recognise that spending now will bring future benefit. That will be a subjective judgment and there will be differences of opinion about what will give rise to future benefit. However, unless you have that system, you have a problem. Such a system would also mean that you could look at the capital that is currently invested. At the moment, Scotland does not have the degree of debt that it should have because it has not had the capital expenditure that it should have had. We know that that is true.

Some of the apportionments are wrong. If we understood what is capital in Scotland, we would realise that there is far too little of it. Therefore, Scotland is being charged for capital that it does not even have. Unless you have that extra dimension to decision making, you cannot make informed decisions.

Margaret Cuthbert: On Richard Murphy's point, Jim Cuthbert and I have, for a long time, believed that GERS is too static. We need to place it in time and it has to connect with other major statistics that are produced in Scotland, but that has not happened.

On Gillian Martin's point about families and household money, I would like the factors to include geography. We can see clearly that some cities are doing quite well but that areas that are close to cities, such as North Ayrshire, are doing very badly indeed. There are statistics that we could be pulling together that would give us a much better picture of what is happening in Scotland than we would get just by looking at disability benefit, for example. We need to look at all the different support that is given, how children are doing in school and how many people are getting into higher education.

We need to do a multivariate analysis to find out how best to spend our money, how that money has been used in the past and whether it was used successfully. We have the data for that, and academics could be putting big efforts into doing that study. That would be extremely useful and would help you with the issues that you are addressing.

I agree very much with John McLaren's point that we need to look at other aspects as well as children—it is the whole caboodle. These social matters really matter for the economy.

12:00

Richard Marsh: My response to Gillian Martin's question is that it is less a question of what economic data is available to evaluate those policies than, when you start looking at the policy, having a clear idea of how you will measure it and what is information is available. You might collect some new data while the policy is being rolled out. One of the biggest flaws that we have in Scotland is in not setting out how we will measure the results once we roll out a policy.

Andy Wightman produced a good paper on the fringe festival and whether people who were renting out their flats should pay tax on that. There might have been a highly talented researcher pushing the buttons behind the scenes, but it was an elegant, clever and good piece of research. I do not necessarily agree with its conclusions, but we could ask why we are not using the same process for very large Government programmes. It is less a question of the statistics that are available than a matter of having the political will to say that we have a genuine interest in asking whether something works.

Dean Lockhart: I will wrap up on the need for more holistic measurements. John McLaren's submission talks about an index of social and economic wellbeing. There seems to be consensus that we should look not just at GDP but at a broader scope of measurements, and the data seems to be there. How can we take that one step further? How can we further embed and bring into the mainstream measures such as an index for social and economic wellbeing, so that we look in the round at the impact of policies on education as well as on the economy?

John McLaren: The Government could publish the index regularly and stand behind it to show that it takes the matter seriously. When the index was published, the Government could have a press conference to say that it was going to do this, that and the other.

One of the conclusions to come out of the paper that I published the other week was that, outside eastern Europe, Scottish life expectancy remains the worst of any developed OECD country, as it has been for a number of years. In many ways, that is the worst aspect of the Scottish socioeconomic environment, and it has probably not improved for the past 10 to 20 years. Why has it not improved? Because we are concentrating on the national health service, and that figure is not really highlighted much. Why is it important to the economy? If our life expectancy is poor and our healthy life expectancy is even poorer, and if that is related to poverty, those issues partly explain what could be done to improve Scotland's growth rate by improving health—not through the NHS, but by taking preventative measures.

Although all that does not seem to be about the economy, it is about the economy and you must give it a high profile. It is not about the outcome, which is GDP; it is about the core things that feed into the outcome. Such an index would be difficult to establish in areas such as the environment, which you might want to include, but that would not be impossible.

These things move quite slowly. The economy can move up and down quite quickly, but changes in life expectancy can move quite slowly although, in the past 10 years, the Estonians have gained more than four years of life expectancy, which is pretty good.

Margaret Cuthbert: What John McLaren says is absolutely right, but we have to look at the whole of Scotland. There are areas of Scotland that have just been left—the heart has been pulled out of them. When we devise a policy, we must look at other aspects such as transport on the way through it. Relative to what has happened in Ireland, we have missed the boat. Our policies must be inclusive of other aspects such as transport and good communications throughout Scotland as well as health. We need to be one society instead of leaving bits to die.

Professor Murphy: That goes right to the core of the need to redesign the data. Imagine that a company thinks that it is maximising profit. It might not be doing so, but that is what it thinks it is doing—or it might want growth or whatever. It chooses its key performance indicators, which will be the drivers of its business, and creates a measurement system to provide data that says whether or not it is succeeding.

Before even redesigning the information system for Scotland, you must decide on the key performance indicators, and that is a political choice. That is why I said that all data is political. What you choose to measure and how you choose to measure it is a political choice from the beginning to the end. If you do not choose the right KPIs, you will come up with data that does not suit your purpose.

The Convener: As there are no further questions from committee members, we are at the end of our time today. I thank all our guests for coming in.

12:05

Meeting continued in private until 12:41.

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