

## **Business statistics making an impact: a personal story**

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The author has worked with business statistics for over 30 years. This presentation explores how business statistics make an impact for governments, consumers and businesses. It follows a narrative approach based on the author's experience of statistics on manufacturers' investment, prices, retail sales, local government finance, employee remuneration, national accounts, labour market analysis, and pensions statistics amongst others. It will also explore the role of statisticians in the corporate environment drawing on the progress to date of the Royal Statistical Society's getstats campaign.

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I picked up the letter from the mat. Official. This could be it. I took it into the kitchen. Nervous. Sat down. Made a cup of coffee. Opened it. I am going to be a statistician. With a real job. Doing statistics. For the government. They have assigned me to work at the Department of Trade and Industry. The letter summons me to go and see the Director. In London.

Big building. Big office. Nice man. Makes me at ease. We would like you to work on capital investment. In the manufacturing industries. Land and buildings. Vehicles, plant and machinery. It's a big survey. Every quarter. Your job is to analyse the results, write them up for the Minister and release them to the press. Awesome.

Itching to get started. First day. Sharing an office with another chap about a year further on than me. He is analysing stocks. Raw materials, work in progress, finished goods. We have a friendly young boss. Get stuck in. This is fascinating.

The survey is a stratified sample of businesses. Quite tricky. Size of units is highly variable. Investment patterns are lumpy and different between sectors. Purchases are seasonal. It is high profile. The reports I write make the news – "British business in worst ever slump" says new official data.

Something funny is going on. My numbers don't feel right. I started in 1980. It is now 1981. The recession is bad. All the economic statistics are bleak. Mine are worse. The figures produced by a colleague working on the distribution and services sector are behaving strangely. This area is small beer compared to manufacturing. The sample size is not big enough to draw conclusions.

My boss asks me to look at it. His boss asks me to come along to a meeting at the Treasury with the team advising the Chancellor of the Exchequer on his economic forecast for the next Budget. What have you found out, John? Me? Well it's like this – manufacturing industry investment is dropping fast – too fast. Service sector investment is rising erratically and very fast. It doesn't make sense.

What about the impact of the tax reliefs in the last Budget? What has that done to incentives? Manufacturers do not have the profits to offset against investment spend. Banks do. Are the banks buying the assets and leasing them back? Can you design a survey to find out? Of course. Come back next time and tell us.

Next time the picture is clearer. The finance leasing industry is being born. We have tracked it. Our statistics have helped the government understand what is happening. I wasn't sure I was going to like working on business statistics but this is great. Important.

You've done as much as you can on investment statistics, John. We want you to work on prices. Prices of raw materials bought by industry. Prices of goods sold by industry. Everyone is worried about inflation. Factory gate prices are the big driver.

This is hard. At least with investment I knew what I was measuring. On prices, how do you work out what is a price and what is a quantity? When a new model of car has a sunroof, how much of the extra cost is a price and how much a quality improvement? How to get good weights to combine the prices of all the goods into an index that is robust? How to rebase it to account for changing patterns of purchasing and sales?

These statistics are monthly. Every month reviewing the figures. Doing the analysis. Writing reports. Taking new questions offline for consideration. Lots of people rely on the numbers. I have special responsibility for price indices for the aerospace and electronics industries. Long term contracts use our data. Large sums of money at stake. How to make sure they are fair to all parties? Learning how to work with customers. Learning how to explain statistics to different people.

1983. I've got the hang of this at last. Time to move on. Shopping is my next assignment. Retail sales statistics. The economy is turning round. Consumer led boom ahoj. These numbers have a life of their own. Small shops are closing down. Business is going out of town. Totally new sectors are springing up. Garden centres. Furniture warehouses. The government wants to promote household spending. Relaxation of Sunday trading laws.

So much for the statistician to get right. How good is our sample frame? Is our sample structure right? What is an exceptional and what is a representative movement? How do we cope with changes to seasonal shopping habits? What to do about Sundays?

The press jumps on tiny month to month changes when we are adjusting for seasonal shifts between December and January that are an order of magnitude – in some sectors two orders of magnitude – bigger. Retail federations complain that the numbers do not reflect the real world. Their members are going out of business. Business is bad. Yes it is on the High Street, but the numbers are still right. The new businesses on the trading estates and out of town are just taking over quietly.

We are under pressure. But statisticians support each other. We check and check again. We stand back and ask ourselves, what have we missed? We read up on our subjects. Go on courses. Attend lectures. We keep putting the numbers out. The trend is up even though there is a massive shakeout going on.

I have had a ball. Five years on I have been doing real statistics every day. I have been involved in publishing numbers that have affected every business in the land. I have

played a bit part in advising the government. My big boss comes in. He has heard that there is a job on promotion coming up. They want a statistician who can communicate with politicians. It's a tough one but I think you should try for it. OK.

Suddenly I am in a different world. Local government finance. 1985. Flagship policy of the Prime Minister. How to change the incentives for local authorities? In and out of the Minister's office. What if we do this? What about that? I hear what you are telling me but politically we have to go this way. Decision making up close and personal. The statistician in a special position giving advice. What is the evidence? What is really going on? Are the accounts of the local authorities giving the full picture? How can you measure creative accounting? What will the impact be if we do this? At budget setting time, a daily monitor produced for the Secretary of State updating him on decisions made in hundreds of local authorities across the country.

1987. General election. Prime Minister on TV. She says we need to get into those inner cities. Shots of derelict industrial estates. Hopeless looking people on street corners. That looks like an interesting area of work. I talk to a colleague who works on policy. Maybe we could do with someone like you. Two years later the call comes. We want you to develop performance measures for Urban Development Corporations. All those cities the Prime Minister visited during the election. Something needs to be done. Get businesses to come back. Create jobs. I am whisked around in cars, even a helicopter once, with the Minister. Meeting local bigwigs. What does success look like? How can we measure it? Statistician turned policy advisor.

The Poll Tax. Riots on the streets. Government under pressure. Who knows about local government finances? All hands to the pumps. Let's get that statistician back from inner city policy work. We need him here. Working on new legislation. Our job is to get rid of the Poll Tax. Invent a new Council Tax in no time flat. Part of a team burning the midnight oil in the Ministry. Spending time in Parliament in the officials' box. Being part of law being made. Is this really me here?

Job done. Now what? It is 1991. Reading the situations vacant column. Head of Pay Research at the Office of Manpower Economics. A step up. Interesting statistical challenge. Filled in the form. Got an interview. This is the job for me.

How do you make sure that public sector pay is fair compared with pay in the private sector? I run surveys of businesses to find out the pay and reward package they offer. Compare it to civil servants and armed forces jobs with similar levels of responsibility. Create the evidence base for employers and unions to negotiate. Aim to make sure that the private sector does not lose the best people to the state and vice versa. Neat system. The statistician holding the ring. Trusted intermediary in the decision making process.

Just getting settled when I see the best looking job in the world. Director of Policy at the Central Statistical Office. This grand old institution was set up by Winston Churchill in the darkest days of the second world war to ensure that only agreed figures are used in decision making: "the utmost confusion is caused when people argue on different figures". Now the Central Statistical Office has a new, brash, Australian chief. Shaking things up. This job is his chief of staff. Extraordinary interview in an enormous office with the biggest desk I have ever seen. At the heart of the Whitehall machine.

Amazing. They gave it to me. I have the office next door. Interconnecting. Feels like the White House. First job on arrival. Prepare the boss for his role representing the UK at the United Nations Statistical Commission. Of course you are coming too. We are discussing the revision of the System of National Accounts. It is a big revision. The way in which economic success of all nations is measured will be decided at this meeting. The Brits are big players. We do the rounds of little meetings. We come to the main hall. I get to speak. For the United Kingdom.

The Director of Policy looks after European and international relations. The Maastricht Treaty is coming up. What statistics are needed for Economic and Monetary Union? How do we measure the success of the Single Market in Europe? Harmonisation of statistics on production and trade.

This new database is incredible. How do we share it with British businesses. Roadshows. Going round the country talking to businesses about how they can use the numbers to help them compete in Europe. Brilliant day out hosting an event at Old Trafford. Home of Manchester United. Lots of people. Video link to HQ in London. Tour of the ground. Hallowed turf. I think they were interested in the statistics too.

One chap took me to one side. He represented a group of British manufacturers. This information coming out of Europe is great but we want to get into the market in India. How do we get them to have statistics like this? Leave it with me. I talk to the Foreign Office. The British Council. They send me to India to share what we have done.

Delhi airport. Great mass of humanity. A signboard with my name on it. Fight my way through. Drive into the city. Hair raising but fun. Through some gates. The tranquil surroundings of the High Commission. Here is the programme. Get to know my counterparts in the Indian Central Statistical Office. They are doing the same job as we do in London. But with so many more challenges.

Visit to the Registrar General of India. Population clock whizzing round in his office. More people to count every day. Meet Ministers and civil servants. Spend the weekend visiting the Taj Mahal and the sights of Delhi. Write a report. Opportunities for India to use business statistics to guide development of its own economy and provide better market information for British exporters. There is a win win here. Better statistical information can help drive growth for all.

1997. New government in Britain. First change for 18 years. Big questions for statistics. Lots of concern about who has been left behind. Social exclusion. Inequality. I am Director of the Social and Regional Division. Editor of the wonderful publications Social Trends and Regional Trends. Our division is charged with setting up a team to support new policy units across government addressing issues in society. How do they measure success? What is the evidence base?

We are experimenting with new publications – a focus on the unemployed, a focus on older people. What is it like to be in one of these groups? A focus on different parts of the country. A focus on London, the South West. What is the state of the local economy, business, the environment, social change? Creative. Attention from the media and politicians.

My boss moves on. Can I cover his job? Not just social and regional statistics but also the labour market and other socio-economic questions. Employment and unemployment statistics are new to me. How can we get them to fit together? How to reconcile survey data from businesses and from households? How to reconcile survey data with administrative data about benefit claimants?

Big review of the whole office. Two new Head of Profession roles. Director of Economic Statistics and Director of Social Statistics. I am Director of Social Statistics. Analysis and collection. The population census, social surveys, collections of administrative data. A thousand staff in the office. Another thousand doing the surveys spread all over the country. A fantastic group of dedicated people.

Seeing the statistical process from top to tail gives me an appreciation that the errors we most need to understand are at the two ends of the value chain. We should not just focus on the middle. The statistical process of turning the raw data into estimates is an incredible challenge on this scale but the really hard bits are to measure and understand what happens at the point of collection and at the point of use.

When you collect the data, what are people really telling you? What are they not telling you? How close is it to what your statistical process assumes they are telling you? How do we measure precision and bias in this? I would recommend that all statistical analysts spend some time with the extraordinary people who go into people's homes or talk to the businesses who provide the data. They are the statistical front line. The results can only be as good as the data that is collected.

When the results are used, what do people think they are being told? Do they understand it? Are they over-interpreting it? Are they under-interpreting it? How do we give ourselves the skills to communicate statistics effectively? How do we give users of statistics the skills to use our results well?

It is 1999. Two years to the census. We have to build up a temporary workforce of 70,000 people to run it. We are spending £500,000 an hour. This is a big business. Statistics itself is a business. This is the hardest job I have ever had. Pressure every day. Difficult decisions. Results that will affect everyone for the next ten years. It is done. The results are out. I am on TV. On the radio. We are everywhere.

The demands on the Office are changing. The questions are more cross-cutting. Economic and social questions do not fit into neat boxes. We turn the top jobs around. A head of sources and a head of analysis. I am torn but go for analysis. It is in getting statistics used where I have the most to offer.

I am back looking at business statistics in the round. Our wonderful economic analysis team is exploring the process of innovation. We are looking at competitiveness. We are looking at sectoral development – how is the tourism industry working? How environmentally sustainable is British business?

A big question is looming. Are individuals putting enough aside for their future? What is happening to the pensions industry? The government is sounding confident. The spokesman for the Opposition disagrees. They are arguing about the numbers. The Opposition spokesman writes a think piece in *The Times*. I go and see him. There is

something that does not add up. We arrange a meeting with the Chair of the Pensions Commission set up by the government and senior officials in the various Ministries.

I am asked to set up a task force to make sense of the numbers. We recruit the best statistical brains and put them to work. We invite the key players in the industry to talk us through their own figures. It is fiendishly complicated. A breakthrough. The types of pension scheme have changed in ways not picked up in the definitions used in our business statistics collections. We can fix this. We can produce regular statistical assessments that bring everything together. Satisfying.

Sitting having breakfast. Reading the newspaper. Now here's a job that looks different. Librarian at the House of Commons. Providing answers to questions from all Members of Parliament on anything. This is making a unique contribution to a well-informed democracy. This is bringing the evidence to the decision makers.

On arrival I find that there are lots of statisticians. We have some incredibly bright people working in cleverly constructed teams. Statisticians answering questions to ridiculously tight deadlines where the answers will be used in debate on the hottest of topics. Statisticians in roles supporting the wider parliamentary business – measuring the performance of the administration, designing staff surveys, exploring how to capture feedback from Members of Parliament on the support they need to do their jobs. Statisticians having a special place in running the business of democracy.

These kinds of roles are possible in all businesses. Statisticians can add a special kind of value. How can we spread the message? I have been a long time active member of the Royal Statistical Society. It is 2009. I have been invited to be part of a team doing a long term strategy review. The Society does great work for the discipline and for the profession. But what is it doing to promote statistics in the wider world? Not enough.

20<sup>th</sup> October 2010. Twenty ten twenty ten. World Statistics Day. We launch the **getstats** campaign. I am the chair of the campaign. We want to develop statistical literacy across the population. To do this we highlight the need to target the world of education, the world of politics, the world of the media and the world of business.

Statistics can make a difference to the success of businesses in all sectors. Can we help educate company directors in using and appreciating its role in customer insight, business performance, innovation and more? Hal Varian, Chief Economist at Google comes to our annual conference and talks of statistics as the new sexy profession. For businesses it really is. Whether, like me, it is the business of public administration or in any other private sector or not for profit endeavour.

We need to go out and tell our stories. We need to attract the next generation to see statistics as a great choice for a career. We need to demonstrate to government and business leaders that we can help drive performance and growth. What better time to do it than this, the International Year of Statistics.

I am still the same person that opened the envelope in the summer of 1980. I cannot think of another career path that would have given me so much variety, so much satisfaction and so much chance to be part of dedicated, high-performing teams that make a difference. I am glad I chose statistics.