

## **Eurostat podcast: Stats in a wrap**

### **How are European statistics made?**

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#### **SPEAKERS**

John Verrinder (Eurostat), Lourdes Prado (Eurostat), Jonathan Elliott

#### **Jonathan Elliott**

Stats in a wrap, the new podcast series from Eurostat.

#### **Jonathan Elliott**

Welcome to another episode of “Stats in a wrap” the podcast series from Eurostat, the statistical office of the European Union. If you've been listening to our podcasts, you'll know that we think data is delicious. And we like nothing better than to slice dice and wrap it into bite sized morsels while enjoying the intriguing stories, the fascinating conversations and startling truths about the everyday and not so everyday stats that surround us. No topic is too obscure or too obvious because we the data scientists at the frontiers of knowledge know that the numbers never lie, and they nearly always have something new to say. In the Wrap-Cafe today, we'll be encountering the unimaginably large zettabyte finding out why statisticians are like designers, or is that air traffic controllers? Wondering how to measure happiness in Bhutan, and asking why some people find numbers so scary. There's a word for that. It's arithmetic phobia. Not much of that in this cafe. I'm glad to say so come on in. I'm Jonathan Elliot, your host for this episode, and today, we're going to be talking about something we've only just touched on in our previous podcasts. That's the work of the statisticians and data scientists at Eurostat itself. In the deafening noise of information that bombards us daily, they have to deliver cleaner, meaner, quality stats that cut through consistently and reliably, and it's no easy task to safeguard quality. Their main tool is impressive technical rigor. The European statistics Code of Practice has 16 principles, ranging from impartiality to accuracy, timeliness, to confidentiality, all backed up by 84 indicators. And those are not just for one country, but for 27. And all their data have to be funnelled, harmonized and made sense of before being presented in a meaningful way as top notch stats to policymakers, academics and journalists. It's a tough job, to say the least. Fortunately, we have two guests with us today who are excellently placed to guide us through that very task. John Verrinder, head of unit at Eurostat's national accounts methodology. Hello, John.

#### **John Verrinder**

Hello, Jonathan.

#### **Jonathan Elliott**

And Lourdes Prado, at Eurostat. She's at the unit concerned with government deficit and debt.

**Lourdes Prado**

Hello, Jonathan. Happy to be here.

**Jonathan Elliott**

Thank you very much both for joining us today. I have to ask one question, which jumps out at me a little cheeky, perhaps, as I read those words, in the introduction for very interesting people, you do have job titles, that sound a little bit obscure. When you're at parties, and people ask you, what do you do, John? Do you say, Oh, I'm er, the head of unit, national accounts, methodology standards and indicators to give it its full title?

**John Verrinder**

Well, I think you're right, Jonathan, it's hard to explain that way. But actually, I say I'm an accountant.

**Jonathan Elliott**

Okay. All right. Lourdes. How do you explain your work to people who know nothing at all about statistics, or Eurostat?

**Lourdes Prado**

Well, basically, I say that I work with deficit and debt data of member states

**Jonathan Elliott**

This edition is a Eurostat focused podcast, perhaps a little more so than others. And we want to make it very much an exploration of the inner mechanics of the organization and the craft of the people who work there. John, could you give us an insight to your role in Eurostat? And also, perhaps tell us how you became a statistician? Did you want to do this as a teenager? Maybe? How did you get here?

**John Verrinder**

It didn't start that early. Jonathan. I'm from the UK and I worked in the UK for many years in the Ministry of Finance, the Treasury. And there I was working a lot with data as a kind of user, mostly. And then I had the opportunity to take a traineeship at Eurostat. And from that moment onwards, I decided that that actually very much fascinated me, this area.

**Jonathan Elliott**

Lourdes. How did you get to where you are today? And what do you do? You know a lot about national debt and deficit. But it wasn't always that way.

**Lourdes Prado**

I started studying economics to prepare my competition in Spain for the Spanish Statistical Office. And then I got in touch with accounts, which I really loved. So when I passed my competition, I decided to join the Governments accounts team in the statistical office in Spain. And there I got in touch with Eurostat. And then ever since I met Eurostat, I became sort of fascinated. And I started to think how wonderful it would be to work not only with Spanish accounts, but also with the accounts of other countries. In the unit dealing with government deficits and debt, basically, what we do is, on the one hand, we verify that member states compiled their deficit and debt figures according to EU standards.

And also, equally as important, we try to come up with guidance on the statistical treatment of new transactions or new issues that pop up. So for instance, it's very satisfactory, at least for me, to be able to work with data that capture what's going on in the street. We are able to see in government accounts, for instance, the impact of all the measures undertaken following the COVID pandemic. Also, nowadays, all these measures being introduced to cope with high energy prices and high inflation, and also the assistance provided to Ukraine. So we need to discuss among us, and to agree how to treat all these new events that are happening, how to capture these figures, and how to report these in government accounts. So our job as you can see, it's never monotonous.

### **Person on street**

My first thought about what statistic data is, is that it's a way to measure how diverse society is, how nuanced it is, how complex. Yes, society, and the population is complex in a good way, like we're not as black or white in the way we feel in the what we think. And also like the social trends about what people think, how people identify, or what people want to vote for, all of that.

### **Jonathan Elliott**

Eurostat, it seems to me is almost like an air traffic control tower, where controllers watch airplanes land and take off, you're watching the economies and all the indicators of those economies sending you in tons of data. And that gives you a bird's eye view of how all the EU member states economies are working, and what they're all doing. I think that's absolutely gripping, I can see why you enjoy your jobs. But John, tell us about Eurostat's official role. And the vital work it does.

### **John Verrinder**

Eurostat's part of the European Commission, it is a rather special department, I would say. And actually, it's key role is on, as it says, European statistics, we're not actually creating too many statistics ourselves, what we're doing is setting the standards together with the member states for the statistics, so we can have harmonized and comparable data. So we're in a sense, a kind of coordinating body. And we're also of course, collecting data from the member states, the statistics, and we are making European aggregates, we are publishing all of the data. We're acting really as a hub for European statistics.

### **Jonathan Elliott**

It's important here to say that Eurostat does not source the data for statistics, you don't collect data. Can you make that point? Because people will think that you're out there measuring things yourselves, but you don't really do that do?

### **John Verrinder**

Yes, it's quite rare at the moment for Eurostat to go out and source data itself. What we're basically doing is coordinating with the member states, the countries, so the countries prepare the statistics based on their data sources at national level. And then they transmit the statistics to us, based on the harmonized definitions, which we all agree upon.

### **Jonathan Elliott**

And quality is central in your work, isn't it?

**John Verrinder**

Absolutely. The statistics have to be of high quality. And that's a major part of our job.

**Jonathan Elliott**

The stats that Eurostat creates come in a huge variety of shapes and sizes and do very distinctive jobs. So let's talk about the people and organizations who use them. John, who are your customers?

**John Verrinder**

Well, there's a very broad range of users, Jonathan. They range from very so called advanced users. They're the ones who basically know the statistics inside out – they are professional users, one might say, so we can look indeed at policymakers, for example, in government ministries and central banks, some academics are very, into the data. So, they're very much at the advanced stage. They are really closely watching. But actually, there are a very broad range of users as well. And we can talk about journalists, we can talk about the general public and businesses. So within society, there is a big need for statistics. Of course, the users themselves have a different perception of the statistics, the advanced users very much into the fine detail. The more general users are more interested in a bigger picture.

**Jonathan Elliott**

Of course, statistics can often be abused or not reported accurately, they can often be very contentious too when you read the newspapers, and there's a headline with a dodgy stat in it as professional statisticians, do you cringe? Or are you resigned? It must be difficult?

**John Verrinder**

Of course, Jonathan, sometimes the interpretation of the data is not, you would say, not right or not fully right. And then you think to yourself, well, the message is not so clear here.

**Jonathan Elliott**

Lourdes. What do you say about dodgy stats reporting? Do you sit there grinding your teeth? Or do you say, well, at least they're using them? Even if not quite correctly?

**Lourdes Prado**

I think I will be more on the first group, cringing in my teeth. Because it's very common to see in the press references to the debt and deficit figures and not always in a very accurate way, sometimes also criticizing what statisticians do. And here, sometimes I get to be the annoyed about this, but okay, it's its life.

**Person on street**

So statistical data would be data that is, it's accumulated and gathered in a systemic way that's defined by scientific and mathematical formulas and rules.

**Jonathan Elliott**

I guess, statistics can be thought of almost as a manufactured product. The data is the source material that's used to make the stats and then Eurostat goes to work to make those useful tools for

policymakers, the statistics themselves, but they must meet quality criteria that make them official. And, John, there's a difference isn't there? Here?

**John Verrinder**

Yes, the official term is used when an institution which is compiling these statistics is recognized as a statistical institution, or the institution producing the statistics is following the appropriate quality standards. So I think the important aspect here is the quality standards, the definitions being used are those that are officially set and then monitored, and they're verified. Most statistics come from, for example, national statistical Institutes, or central banks. But other official statistics can come from government ministries, for example, provided they follow the appropriate definitions and quality and follow the rules.

**Jonathan Elliott**

Because these are official statistics, and they can have a major impact on government policies, I'm guessing that when you go live, it must be a bit of an event, right? Just like a factory pushes out a batch of new products, you have to make sure that everything goes very smoothly and consistently. And that must concentrate the mind a little bit. Talk us through just the times when you have to put out high profile official stats and how that works.

**Lourdes Prado**

When we go out, it's the final product. But there's a lot of work behind these final products before it goes out. So when it comes to government accounts, for instance, there is a period of two, three weeks after we receive the figures compiled by Member States, we check these figures, we make sure they follow the quality standards, we make sure that all the figures are correct, that there are no mistakes in our templates, that the IT system worked fine. So it's many, many, many, many pieces in the chain. It's not only that the figure is correct, but also that all the procedures that we need to get these figures work correctly. Apart from uploading all these data in our database, we normally produce some press release or some piece of writing, explaining what's the meaning of these figures. And this, of course, also needs to be checked and it's a big teamwork. When it comes to government accounts we're producing not only the database and the official press release, but we produce five other notes, supplementary notes. So we have a note on the financial crisis, we have a note explaining how to transit from the deficit to the debt. We have a note on trade credits of governments. So we have five different ad hoc notes, not only the database or the press release, but also other pieces of information explaining users, what are the meaning of these data.

**Jonathan Elliott**

We talked a little earlier about the different audiences or customers for your statistics. But there must be consumers, the professional stats people out there who really keep you on your toes. I mean, I'm just wondering if there are observers of Eurostat's work who keep you awake at night worrying about getting it wrong?

**John Verrinder**

On the macro economic statistics side, of course, there are the policymakers. So the reactions of governments, for example, to the data and the developments, but also, more importantly, I guess,

particularly for the high frequency type data, it's the markets themselves. We all know that markets have expectations about where the economy is going, when the real data arrive, they have to see whether it's in line with our expectations. And if it's not, then you see headlines, journalists can write long stories about it. So it is actually a lot of the reaction really is coming from governments and markets initially. But there are other users out there who really rely on our data for sort of more structural policymaking type role. And then the reaction is not so immediate to one news release, but it is the cumulative reaction to the statistics that are available.

**Jonathan Elliott**

And here's a question for both of you. Have you ever been possessed of information, statistical information that that, that you know is going to make waves and the next day, something's going to happen, there's going to be some market movement, the value of currencies are going to change, something dramatic might happen, but you only you and your team, or a small number, know that know the information. Has that ever happened?

**John Verrinder**

I would say it happens very regularly. If you deal with sensitive data, like GDP or like prices, Lourdes can tell us about deficit and debts of governments. These types of data are sensitive, and that's why statisticians have to treat confidentiality very, very carefully. So there are really strict measures in place to ensure that this type of information does not get out there before the official release.

**Jonathan Elliott**

And Lourdes, yes, have you ever had sort of a sleepless night or had to sit with your team and go absolutely, you know, everyone, mobiles off until this has been released or anything like that, I mean, I'm overdramatic, dramatizing.

**Lourdes Prado**

I wouldn't call it sleepless nights, because we are used to dealing with this, as John said, this happens all the time when it comes to government deficits and debt figures, especially when it concerns highly indebted countries. So it happens to us very frequently that we are discussing how to treat a specific transaction that might end up by increasing the debt of a member state by some points. And this is, of course, very sensitive.

**Person on street**

I trust the European data, like European state data more than the data that companies provide. Because I believe that they might be deceived. But I believe the European data is a bit more free.

**Jonathan Elliott**

Now we're getting to the other end of the production line here, there are data, that's the hard material that you use to fashion, your statistics. And there's quite a range, you've got surveys and registers and censuses. And then there are new trends in statistical compiling. John, kick us off with surveys, what why are their surveys, important in collecting data?

**John Verrinder**

Surveys are one of the traditional tools of the statistician since many, many years. And the main issue with surveys, of course, is that you don't have to ask everybody a question, you can ask a smaller subset of people a question. And then from that, you can try to work out what what's happening in the entire population of people. So it's extremely important because it allows statisticians to ask the questions that they want, which are useful to them. But at the same time, it restricts the burden of responding from the wider community and the burden on the statistician of actually having to ask a lot of people. So the surveys are bringing that in. Of course, if you don't talk to everybody, there's always a margin of uncertainty, but statisticians are well used to dealing with this.

**Jonathan Elliott**

That touches on quality of course, it will be coming to that a little bit later. Critically important. Now, there is another type of data to talk about, which are registers. Lourdes, talk us through administrative registers, and why they're important and how they get used by Member States.

**Lourdes Prado**

Registers are another type of data source. These allow to use the information already gathered by administrative sources. This option is cheapest, than carrying a survey or than doing a census, of course, but the statistical information that can be obtained from these registers is often more limited, because for instance, sometimes it may not follow the exact definition required. Or it doesn't cover exactly what you want to measure. But of course, administrative registers are often used as a complement to censuses and surveys.

**Jonathan Elliott**

The data we've talked about so far sound very traditional: censuses, surveys and registers and so on. But we live now, in an increasingly connected and technologically rich world. John, perhaps you could tell us about new data sources both in the private and public sectors and what kinds of data we're able to get now that we couldn't get before.

**John Verrinder**

Jonathan, it's been an enormous trend over the last few decades, let's say the increasing digitization of our societies. And as you say, the fact that we now have both in the private domain, but also in the public domain, a revolution in terms of the use of digital devices means that there's so much data around. The challenge of the statisticians is to actually harness the all these new data sources that are available, to understand them. We all know that the private sector is worked extremely hard on this in the last 20 years or more. We know of these large corporations, are basically data factories in a sense, surfing on this wave of cheaper digital technology and access.

**Person on street**

I think that data grabbing should be regulated because many people don't feel comfortable maybe sharing their information or they feel controlled. So I think everyone should be comfortable with that. So I think it's very important that it's regulated, not for me personally, because I don't really care so much, but everyone should feel comfortable sharing what they want to share.

**Jonathan Elliott**

The sheer quantity of data out there, the so-called big data is extremely big. At Stats in a wrap, we love big numbers. In the renewables podcast, we discussed a measurement of energy called the petajoule. That was one with 15 zeros after it. We thought the petajoule was pretty cool, but now meet the zettabyte. The amount of data generated worldwide in 2018 was 33 zettabytes. And a zettabyte is a trillion billion bytes, or one followed by 21 zeros. And that definitely beats the petajoule. Now, a lot of that data is held by very large corporations, data companies, and so on. And there is a question about whether the data that is privately held and has a high potential to serve the public interest by informing decision making should be more generally available. It's a debate, sometimes a controversial one. John, perhaps you could just sort of set out how you see that debate.

**John Verrinder**

Of course, these datasets held privately would be a goldmine for creating statistics. To be fair, many private corporations already publish some data from those. We can think of some corporations that already publish data, which is widely used and reported in the media. But I think that, as official statisticians, we could benefit enormously from having that access. Of course, this raises concerns about privacy of data, I think it's important to reassure that the statisticians are not interested in seeing the kind of individual, who-you-are data. But the fact that there are data together, that they are very rich data sets, is really a fantastic potential source. And this is where statisticians are asking for the possibility to access those data sources.

**Jonathan Elliott**

Yes, it's obviously data is market sensitive, and in a competitive environment data is gives you the edge and so on, you can see why private companies need to be careful with disclosing their carefully gathered data. It is a tricky area. Now, in our imaginary statistics factory where we are busily working away at a product that people need. We've got our raw material in, we've got all our data, our register information, we've got our census data, we've got all the other information that we need to start hammering together the statistics. Let's just talk about how that's done. Lourdes, it's very important to know what you want to make, isn't it? The definition question, a small word but a huge concept. Can you talk us through how statistics are compiled? And why definitions are so important?

**Lourdes Prado**

As you say starting from concepts, it's the key point. So first step is to have a clear idea of what you really want to measure. Of course, if you want to compare across countries, you need a commonly agreed definition. But this is not always as easy as it sounds. Different countries can have different ideas about concepts. And sometimes a definition cannot be easy to agree on. Sometimes also a definition has to meet a specific policymaking need, which involves a lot of discussion with policymakers about what they want exactly. I can give an example: one of the things we are working on now is how to measure green investment or more generally green expenditure. And this is a good example of how difficult it can be to agree on a definition, let me mention gas, for instance, there was a long discussion on whether gas should be considered green or not. And finally, it was agreed that it should be considered green until 2030, but not afterwards.



**Jonathan Elliott**

Now, that is a sort of tricky question, isn't it? John? It's a classic design challenge, you have to ask, what is the problem you're trying to solve with your design? What is its purpose, and that's not always that easy, is it?

**John Verrinder**

A very good example is gross domestic product - GDP. GDP has been around for many, many years. It has a certain definition. And it's very much focused on the economy. That means the material production in the economy and so on. But of course, what it doesn't do is give a broader measure of welfare. It's not defined in that way. It's defined rather narrowly to talk about material wellbeing in the sense of economic wellbeing. So if you want to take account of the environment, you want to take account of social conditions, you don't look into GDP, you have to look more broadly. Once you have that definition, you have to be very clear on communicating the definition, so that everybody understands what it means and what it doesn't mean.

**Jonathan Elliott**

Yes, my favourite example of this is the kingdom of Bhutan, which decided in 2008, to change the way it measured its economy because it believed that happiness should be included in all the measurements. So as well as gross domestic product, which we all know, it has g and h, Gross National Happiness, it will be interesting to know how its Statistics Office gathers its happiness data. If there are any listeners who can guide us, we'd love to hear from you.

**Person on street**

What's important about it is that if done correctly, like it can be shared with other people and analyzed and evaluated to determine if it followed those rules, and then also replicated, and it takes emotion out of it. So I think a lot of our analysis and decisions are based on feelings and emotion. And I think that it's a logical way to go about studying any kind of phenomenon.

**Jonathan Elliott**

Now, every designer has a favourite design. And the same is true with statistics. John, could you talk us through a case history that perhaps you'd like to bring to the table where you can talk a little bit about your own work, and a stats project that particularly inspired you.

**John Verrinder**

Measuring the distribution of income and consumption and wealth across households. And this is an extremely interesting topic, of course, because it relates to economic equality, and society, it relates to poverty and the behaviour of households. But in order to do that, you have to basically split up the data into the richest and the poorest households, and you have to do it in a correct way. And you have to deal with the fact that finding information on the richest and the poorest households is actually extremely challenging. There are often gaps in your data and so on. So that is an area which has been worked on extensively over many years, both in terms of surveys and survey information. And now increasingly in terms of the macroeconomic aggregates to get a kind of a feel of, okay, you've got this 100 of income, how much of that 100 of income is in the top 1% of households in terms of their income? So this kind of distributional data is something which is inherently interesting, everybody's

interested in equality, and are the rich getting richer and the poor getting poorer. And that's really a big challenge, but also a wonderful area to work in for statisticians.

**Jonathan Elliott**

That's fascinating. So there must be a certain amount of guesswork, where you've got these gaps, and how do you deal with gaps as a statistician? I mean, how do you guesstimate in a discipline where accuracy is everything?

**John Verrinder**

The advantage of a statistician in a way is that we can actually look across a broad range of data sources. And one of the big advantages we have is that we can take different data which relate broadly to the same thing. And we can try and connect them. By connecting them, we can actually start to see the potential gaps and issues there. So you clear your desk, and you put all your data on your desk, and you move it around, and you see where it goes and how it relates, this is actually a very strong way of bringing out the message from the data. Even if an individual bit of data has its gaps. It has its concerns and problems. It's this type of work, but it is very much a kind of professional work. There's as much of an art here as a science in many ways.

**Jonathan Elliott**

It's like looking at things from lots of different perspectives, even though you haven't got the full picture by taking lots of different perspectives. You can get almost a 3d snap and then get a feel for it. Yes, exactly. I see the art side completely here. Lourdes, can you bring to ask a case history or example of your work that that sort of shows the statistics factory in action, let's say and your own design work in it.

**Lourdes Prado**

For instance, we have a data set called contingent liabilities in government accounts. To translate this, it covers government guarantees. It covers basically, items which have not reflected in their accounts, because they are not government assets or liabilities now, but they can become potential liabilities in the future. So this data set was not collected until recently. And at some stage, the need was identified by policymakers that these data should be should start to be collected and reported, to give us an idea of potential risks. So we sort of organized some consultations and task forces to decide, first of all to define what we wanted to collect, and to see how we could put this in place together with member states. So this work took us a couple of years. We are now publishing these figures of government contingent liabilities, which is quite a new exercise.

**Jonathan Elliott**

Now central to Eurostat's work is delivering statistics that are the best in class, there's a lot of information out there that claims to be high quality, Eurostat has to be the best of the best. To help it is something called the European statistical system. Its handbook runs to 316 pages, and just glancing through it is a somewhat intimidating experience. John, can you explain this bewildering beast?

**John Verrinder**

Okay, let's not be intimidated by the European statistical system. It's a way in which Eurostat and the member states' statistical offices discuss with each other, coordinate, agree. And in the end, gives us

the system by which the statistics are produced and published. So it is a cooperative mechanism. Yes, it is named in laws, of course. But it is actually a professional cooperation between the national level, the statistical offices and bodies, and Eurostat. And over many years, I think it's been decades now since this has been working, it works extremely well.

**Jonathan Elliott**

It gives us sort of agreements and standards and definitions of how the statistics are to be compiled and produced, if I've got that right. So that means that a statistician can talk the same language to one that's in Reykjavik and another one who's in Sofia, there's just this kind of grammar, let us say, of statistical compiling, that everyone understands is that is that a fair way of putting it?

**John Verrinder**

It's a very fair way to describe it, Jonathan, it is indeed, a system, which allows everybody to talk to each other in a structured way, and gets us to good outcomes in terms of the statistics that all countries, and then eventually Eurostat, will publish.

**Person on street**

A lot of it is whether I trust it is if it's the source, and it's the periodical or the person that's sharing it. So are they trustworthy? Are they dependable? And a lot of it depends on there. It's important for them to maintain their reputation. And sometimes the data can be wrong. But again, if you share all of it, then then it should be then that will be revealed, it'll come out.

**Jonathan Elliott**

So the European statistical system brings us to stand as reliability and quality. So let's just dive into this whole quality thing. Why is it so important in statistics?

**John Verrinder**

That cannot be understated. Of course, users want reliable data, as you've said, what they don't want is data which gives them a false picture of what's going on. So reliability, quality is extremely important, particularly in this day and age, as you said, when there's a whole bunch of data out there from 1000s of different sources. And it's important to know which data you can rely on and which not.

**Jonathan Elliott**

Okay, so that's a good overview. The system identifies, I think, five definitions of quality. These are relevance, accuracy and reliability, timeliness and punctuality, accessibility and clarity, and coherence and comparability. I think there are more than five there. Some of them are pairs. Lourdes, perhaps you could give us an example about where quality is valuable in your field.

**Lourdes Prado**

When validating our figures is that the data are compiled according to the harmonized EU rules. There is no institution like Eurostat sort of validating or supervising the figures. Governments could perhaps be tempted to not be too strict when they report their I don't know, their debts or their expenditures. Being obliged to report following the standards and knowing that Eurostat will check this thoroughly and probably disagree with the treatment of this or that transaction, I think that this makes the final data that

we produce for government comparable. And users know that whatever is stamped by Eurostat is so to say the correct one.

### **Person on street**

Its data is important because it is used for making decisions. Data is power.

### **Jonathan Elliott**

Stats are kind of the engine of decision making, in many ways. And if you make bad stats, you make bad decisions. And these are not small, bad decisions. They're big ones, like economic policy. So you guys are sitting in that metaphorical air traffic control tower, and you can't afford to get things wrong. There's another word here and Stats in a wrap is full of small words, which have big definitions. Validation is another one, it's the kind of quality control stamp at the end of the production line, is that fair to say, Lourdes? Perhaps you could just tell us about what validation is, and why it's important.

### **Lourdes Prado**

Eurostat has the power not only to validate the figures, which I will explain now what it means, but also to change them, or even to express a reservation on the quality of the data submitted to us. Basically, when it comes to the government figures, member states report to us the figures twice a year, the annual figures, and we have a process in place called requests for clarification, to check and validate this data. During three weeks, Eurostat has an exchange with countries and with national statistical offices. We ask them questions; we ask for clarification, we ask for additional information when needed, to make sure that the data has been compiled according to the standards. We also have a permanent contact with member states, we carry out the bi-annual missions, the so-called dialogue visits, and here we review compliance with the European system of accounts, which is our manual in Europe for national accounts.

### **Jonathan Elliott**

It is it is a very clean organization, very clean system, it seems.

### **John Verrinder**

Well, I think that here within Europe, we can be proud of the work that we've been doing in this area, because certainly worldwide, there are some less savoury stories about statistical offices and the data that they publish. And I think that's the big issue for us. The public, in general sees a kind of government agency publishing information, and naturally, they're going to be suspicious, the government's publishing information, which actually is highly relevant for the perception by the public of the government's performance. So that's why so much work has been done, particularly in Europe, to try to ensure the independence of statistical offices, take them out of the main line of government so that politicians can't tell statistical offices what to publish. And that's extremely important, that applies to Eurostat equally as to the national statistical institutes.

### **Person on street**

To conclude, something about the role of the data, like I can have a statistics of consumer of a supermarket and then I can have some conclusions about what people used to buy or those kinds of things. And I believe that you have statistic data for everything, like how many peoples are here.

**Jonathan Elliott**

A big chunk of your public, if I can put it that way are well, the public, everyday people who are educated and numerate, but often baffled by statistics. But statistics have never been so important. I mean, climate crisis, the COVID pandemic, inflation, how we tackle these issues needs statistically literate population. John, just talk us through how you read the current state of the public understanding of statistics.

**John Verrinder**

There's, an increasing interest in the understanding of numbers. And we as statisticians can contribute that to that by communicating better, and I think that that process of communication is something that we're working very hard on, remove the jargon, start using simple expressions. Even if we as statisticians think, well, you know, that expression is not quite right. If it's understandable to the public, and it's good enough, then we should use it.

**Jonathan Elliott**

Lourdes, how do you see the public understanding of statistics, particularly now, compared to say, five years ago?

**Lourdes Prado**

If you dive into our database, or you just read the press release. It's not always straightforward to understand, or even if you go on clicking the metadata, it's written in a very technical language. Even if you go and download the methodology behind a survey or the methodology used to compile a data set, it's not easy to understand this, I fully agree. So what we are doing, I think Eurostat is working on producing statistics in a more simple way, not in the press release, not in the database, but in disseminating them through various channels. Like for instance, there is a product called Statistics Explained for each statistic. In in our website, you can click and then there is a simple explanation that helps people understand what's about.

**Jonathan Elliott**

Fantastic! Well, we are out of time, it has been a wonderful tour of the statistics factory that is Eurostat and understanding how it works. We learned a lot about the extraordinary work of its people, and how incredibly important it is it really does affect everybody's lives. It only remains for me to say a huge thanks to our amazing contributors for a very wide-ranging discussion. To John Verrinder, head of unit at Eurostat's national accounts, methodology standards and indicators, to give the full title. Thank you, John.

**John Verrinder**

Thank you, Jonathan.

**Jonathan Elliott**

And Lourdes Prado, also Eurostat, unit concerned with government debt and deficit. Thank you, Lourdes.

**Lourdes Prado**

Thank you. It was a pleasure.

**Jonathan Elliott**

If you've enjoyed the show and want to find out more, there's a wealth of information at the Eurostat website, just google "Stats in a Wrap Eurostat". And of course, don't forget to share with friends and colleagues for the show can be found on Spotify, Apple, Google, and all the usual places. And of course, join us for the next episode, when the Wrap-Cafe will be dishing up more flavoursome insights from Eurostat, this time about the wonderfully diverse mosaic of the EU's 240 regions. Join us then, but for now, goodbye!