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STATISTICS AND DATA DIRECTORATE
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Working Party on National Accounts

Summary record: 4th meeting of the Informal Advisory Group on measuring GDP in a Digitalised Economy

29-30 June 2020, meeting held virtually.

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Mintes of the 4th Meeting of the Informal Advisory Group on measuring GDP in a Digitalised Economy¹

29-30 June 2020, held virtually

Item 1. Welcome, procedures and housekeeping for virtual meeting

1. Peter van de Ven (OECD) welcomed participants to the virtual meeting, regretfully noting that it was a shame that he was not able to welcome them to Paris in person. After outlining some housekeeping in regards to the virtual meeting, he invited the chair to start the meeting.

Item 2. Introduction and goals for the meeting

2. The chair, Erich Strassner (BEA – United States) officially opened the meeting and welcomed participants to the 4th meeting of the Informal Advisory Group on measuring GDP in a Digitalised Economy (the advisory group). He also expressed regret that he was not able to welcome them in person but noted the silver lining that a virtual meeting presented in that there were around 80 participants at the meeting which was more than the previous meeting last June. Erich outlined that the agenda for the two days would be split, with the first day focused on progressing the work of the Digital Supply-Use Tables (digital SUTs) and the second day concerning digitalisations impact on the SNA research agenda.

Item 3. Making digitalisation visible within existing economic statistics including the use of the Digital Supply-Use Tables (digital SUTs)

Item 3.a. Update on progress of the digital SUTs framework since last meeting of the advisory group including work with G20 DETF

3. John Mitchell (OECD) provided some background on the digital SUTs. He mentioned that the three high priority indicators (HPI) had been agreed to via correspondence following the last meeting and a complete final version of the digital SUTs framework had been presented to the joint meeting of the WPNA and WPFs who had supported the progress of the work.² John then outlined the digital SUTs papers that the Statistics and Data Directorate (SDD/OECD) hoped to produce over the next 12 months, including a policy based paper as part of the OECD wide “Going Digital” project, as well as a more technical paper aimed at facilitating more progress in compilation of the digital SUTs at the NSO level.

4. John then briefly spoke about the recent work with the G20 Digital Economy Task Force (DETF) including the “tiered” definitional structure and measurement roadmap that was explicitly mentioned in the [G20 digital economy ministerial statement](#) and is included in the recently published [OECD report for the G20](#). This report encourages countries to continue to progress the work of producing economic indicators that highlight digitalisation, extensively referencing the digital SUTs as an example. In addition, the definitional structure contained within the report includes both explicit and implicit links to the digital SUTs.

Item 3.b. Preliminary report on the estimation results of digital Supply and Use Tables in Japan

5. Takeshi Sakuramoto (Rikkyo University - Japan) began a presentation on the recent work in Japan to populate elements of the digital SUTs, Takeshi explained that, a split of digitally and non-digitally ordered transactions had been estimated by using input coefficients taken from an input-output table. When this is applied to outputs from within the traditional SUTs, digital industries contributed just over 7% of total output, although as pointed out by co-presenter Yuko Ueno (Department of National Accounts Economic and Social Research Institute - Japan) this estimate ignores two industries within the digital

¹ A participant list for the meeting is available on the OECD National Account community site.

² The high priority indicators previously agreed to are, 1) Output, Gross Value Added and its components, of digital Industries; 2) Intermediate consumption of Digital Intermediary Services (DIS), Cloud Computing services and total ICT goods and digital services; 3) Expenditures split by nature of the transaction, includes estimates of digital trade.

SUTs; advertising and data driven platforms and other producers only operating digitally. Yuko then detailed the methodology behind the estimation of each of the industry including highlighting some smaller differences between the work in Japan and the OECD framework. The presentations listed some challenges for the future such as utilising the business register more, removing inconsistencies between some of the current estimates, as well as attempting to bring a trade perspective into the estimates. Yuko finished by offering one very specific example, explaining that from a product perspective the current classification does not detail digital activity very well and despite having over 3 300 different product classifications, many internet related products get aggregated into one product, “Internet based services”.

Item 3.c. Update on measuring the digital economy – USA

6. Jessica Nicholson (BEA – United States) presented on recent work by the BEA to not only update their previously published estimates of the digital economy but also on their attempts to produce estimates for items outside the SNA production boundary. Jessica presented the updated aggregate totals before speaking on how the BEA was working to meet the high priority indicators. This includes cloud services, which was an area that the BEA didn’t previously have estimates for but had now produced an aggregated estimate using data from the economic census. Some of the challenges faced by the BEA included a lack of information on digital delivery and specific information on certain digital industries. Jessica concluded by informing the group on some of the additional measures the BEA is taking to improve the data collection for digital activity. This includes questions asking for revenue associated with sales of cloud computing services and digital intermediary services as well as the costs associated with providing these services. Additionally, the BEA is trialling the use of requesting approximations of the amount of sales that were subsequently delivered digitally. The BEA is planning on publishing a revised digital economy publication in summer 2020.

7. Following the presentation from Jessica, Richard Heys (ONS – United Kingdom) asked the Japanese colleagues how they selected the specific digital categories within the digital intermediation industry. John Mitchell (OECD) asked both presenters whether they had any information relating to the consumption of cloud services to complement their aggregated estimates. Peter van de Ven (OECD) enquired whether the BEA had come across any unusual outcomes when creating the price/volume split. In addition he noted that the method undertaken by Japan was very production orientated and asked whether this reflected the situation in Japan where digital services was predominately generated domestically or if they expected a large amount of imports and exports of digital services. Nagwa Elshenawy (Ministry of Communications and Information Technology - Egypt) queried what was meant by the term “digital structures” in the BEA presentation and whether any agreement had been reached with multinational enterprises regarding the provision of information related to cloud services.

8. Yuko Ueno responded that information on import and exports is a weakness in the current data available to Japan but her feeling is that domestic producers are actually using a large amount of digital imports. She was hopeful that data might be available from multinational enterprises as it would greatly assist with the data gaps currently existing for digital imports and exports. She further explained that the categories within the digital intermediation grouping were decided based on the data that was available from a ministry survey.

9. Jessica Nicholson (BEA – United States) confirmed that at this time, they did not have any consumption data related to cloud service. In response to Peter’s question, both her and Erich Strassner (BEA – United States) confirmed that while they are well aware that the price of most digital goods and services is declining, which is reflected in the volume estimates, at this stage they have not encountered any implausible outputs. Erich added that research by the Federal Reserve Board as well as academics has shown that cloud prices in the U.S. have fallen more rapidly than official statistics, but that this remains an ongoing item for investigation. Jessica finished by outlining the BEAs definition of the digital structures as buildings where digital economy producers create digital economy goods or supply digital economy services including support services to digital products; this includes the construction of data centres, semiconductor fabrication plants, the installations of fibre optic cables, switches, repeaters, etc. Although Jessica reiterated that estimates for this are not currently published.

Item 3.d. Efforts made by INEGI to measure the digital economy: A first approach for calculating the Gross Value Added of e-commerce in Mexico

10. Francisco Guillen Martin (INEGI - Mexico) updated the advisory group on INEGI's progress in generating estimates of GVA for E-Commerce in Mexico. Francisco started by outlining the various data sources that have been used in this compilation, noting that not all sources are available every year and so some extrapolation is required. INEGI have used a methodology focused on the supply side to generate initial estimates, these estimates show that e-commerce is growing significantly quicker than the overall economy in Mexico. They have liaised with the "Internet MX association" to not only share their results but to try to leverage the associations' data in order to validate the results from the demand side. Finally, Francisco spoke on the upcoming collaboration with Statistics Netherlands to recreate work previously done in the Netherlands to study enterprises with a Mexican internet domain (.MX) to provide more information on the level of digital engagement by units.

11. Following Francisco presentation, Nagwa Elshenawy (Ministry of Communications and Information Technology - Egypt) outlined that currently in Egypt, e-commerce has its own stand-alone survey. She wondered what deflator INEGI was using to generate the estimates of e-commerce GVA. Nicola Massarelli (Eurostat) enquired what lessons from the work being undertaken by INEGI could be used in the upcoming review of the NACE and ISIC classifications. Aisah Aisah (BPS - Indonesia) queried why e-commerce was recorded in every industry, and wondered what e-commerce in mining and other industries might entail.

12. In response to the question regarding the deflator, Francisco conceded that while they are able to get some basic prices from e-commerce only firms, overall they have to apply the implicit price generate from traditional sale of goods and services and apply this to the e-commerce estimate, which is a big assumption. It is an area of focus to try to generate specific e-commerce prices. Regarding classifications, Francisco mentioned that an issue for Mexico is the large amount of production coming from the household sector and the difficulties caused when trying to apportion some of the final consumption as intermediate consumption.

Item 3.e. Accounting for the cloud

13. James Tebrake (IMF) presented on the measurement of cloud services; he described how more and more businesses, governments and households are purchasing hardware and software services from a small number of large cloud computing providers. He began by explaining the different types of cloud computing (e.g. infrastructure as a service, platform as a service, and software as a service). He followed this by a basic numerical example showing how the different behaviours of the producers and users as they increase their cloud usage could influence various national account indicators. James highlighted the areas where more guidance is needed; this includes updating classification systems to reflect cloud computing activities, as well as making improvements to data sources to capture information on cloud services expenditures and output. James elaborated in more detail about the difficulty in "identifying the counterparty" that would likely create difficulties in accurately measuring trade in cloud services. James finished by outlining what the users would expect to see in the economic accounts, such as a concentration of investment in ICT equipment by certain firms and industries.

14. The chair thanked Jim for his presentation and mentioned that this is the best example of globalisation meeting digitalisation. Aisah Aisah (BPS - Indonesia) pointed out that in the example presented, gross value added had declined, and whether this was his expectation of cloud services impact on aggregate output. She also asked in his opinion where cloud computing should be placed within the SUT tables. This question regarding classification was also asked by Nagwa Elshenawy (Ministry of Communications and Information Technology - Egypt) as she stated that within the Egyptian statistics it is currently classified to *information technology, other services*. Ilaria Di Matteo (UNSD) followed this question by mentioning that she is currently on the ISIC review task force as part of the UN expert group on classifications and the issue of cloud services is certainly an area of focus with a recommendation to be included in the upcoming report. Andreas Dollt (Eurostat) expressed concern that cloud services output is

often secondary production from large MNEs and for this reason the output may end up in the wrong classification. Peter van de Ven (OECD) thought that the option of “following the money” would likely not be effective in this case and that the best option was to appeal direct to the producers, taking advantage of the fact that there were so few of them.

15. James responded by acknowledging that all the issues raised are exactly why measurement of cloud is so challenging and therefore his best advice would be that consistency should be the paramount aim across countries. In regards to whether GVA would decline, he explained that this was just an example and that due to the many different considerations, he was not able to definitively say what the overall affect would be. He finished by agreeing with Peter that approaching the large players could be the best response.

Item 3.f. Digital SUTs – Brief verbal update on additional countries efforts to progress the measurement of digital activity within the SNA production boundary including the digital SUTs

16. The chair then invited several countries to provide more informal updates of the digitalisation work being undertaken in their countries.

17. Ziad Ghanem (Statistics Canada) informed the group that Statistics Canada’s main goal concerning digitalisation was to provide more visibility of the digital activity within the economy as the current national accounts do not provide the transparency and detail to show these estimates. Regarding cloud computing, Ziad mentioned that the work currently being undertaken uses SUT outputs as a base, however these are already 2-3 years old and this is a concern due to the rapidly changing prices being observed. He referenced the idea of trying to use “mirror statistics” of exports into Canada due to the concentration of producers in the United States and that this might be easier than trying to estimate the import of these services.

18. On the subject of platforms, Ziad admitted that due to many of the platforms not being Canadian they are unable to use more traditional data collection methods, so while they are able to get some information from households regarding the amount of services being consumed, there is a lack of information regarding production. One area of study they have looked at as part of a broader review into their business register involves using the creation of units as a proxy indicator for activity, as for certain industries there has been a large increase in unit births reflecting new producers who generate output via the platform. Ziad finished this topic by expanding on the possibilities provided by having a more in depth, expanded business register, which would allow for more efficient and productive questioning on specific topics.

19. Maarten van Rossum (Statistics Netherlands) updated the advisory group on the two streams of work by Statistics Netherlands covering both outputs inside and outside the current SNA production boundary. This included a recently published study on free services (published in October 2019) that incorporated some basic experimental estimates for free services. Maarten also mentioned an upcoming study on the value of data and use of data in production.

20. Regarding the generation of estimates within the SNA production boundary, including the high priority indicators of the digital SUTs, Maarten reinforced the view that these were still of high priority and that Statistics Netherlands had applied for a grant from Eurostat to assist with the compilation of these outputs. This would be assisted by on-going recent work on e-commerce, estimating the level of online sales by Dutch firms, generating experimental estimates for for the production of Dutch households via online platforms and generating experimental statistics on imports of digital services.

21. Richard Heys (ONS – United Kingdom) then spoke on the recent work within the UK. An area that they have focused on is regarding classifications and they have contributed to the recent ISIC review being undertaken that was previously mentioned in the meeting by Ilaria Di Matteo (UNSD). Updates to various service producer price indexes regarding telecommunication services will be introduced shortly into the annual accounts in 2020. Richard then touched on the project that ONS has conducted with ESCoE on cloud services; this was done in response to user interest on the possible switch from capital assets to

capital service. The project encountered similar challenges to some of described in the earlier presentation by the IMF.

22. Richard then mentioned several developments on the ONS efforts to progress the SNA research agenda; this included the creation of an app that can be used by members of the public to assist with the creation of time use data. This could not only be used to help calculate estimates of household production but also provide information on the use of free digital services. In addition to this, the ONS have been able to replicate the survey used in analysis by Brynjolfson, in trying to put a value on the free services that people use. Interestingly this was undertaken in two tranches, both before and after the confinement due to Covid-19.

23. Sri Soelistyowati (BPS – Indonesia) then followed by explaining that the digital SUTs are still a work in progress, with the digitally enabling industry the only industry that they would be able to produce basic estimates for. Bu Lis also spoke about the need to possibly expand the definition of e-commerce, as it is the experience in Indonesia that following the disruptions caused by Covid-19, many households are selling goods and services via social media and she was not sure whether this was explicitly covered in the current definition of e-commerce. In addition, Bu Lis covered some of the challenges BPS faced, which included where to classify certain elements of the informal digital economy and the ability to scrape data direct from the internet. Bu Lis explained that there might be legal concerns constraining the ability for BPS to do this; therefore, this might be an area where the advisory group might provide some advice on.

Item 3.g. Next steps; assisting countries compile and mainstream work on digital SUTs; discussion on high priority indicators, update on SNA guidance note draft

24. The chair thanked all four members for their contribution and stated that he was keen to hear developments from other countries, John Mitchell (OECD) also acknowledged the good work undertaken by the four countries, in particular the examples of new data sources that might be used to populate the HPIs, instead of traditional data collection techniques. John then prompted countries to answer the following questions; Are the high priority indicators still the most realistic and relevant outputs the advisory group should aim for? When may members be able/willing to share experimental results? What are the main challenges that countries face during the compilation of the high priority indicators?

25. Ligia Luetticken (Destatis - Germany) questioned whether part of this initial discussion needed to be around the quality of the outputs produced, as some indication of quality is very important for users. Francisco Guillen Martin (INEGI – Mexico) suggested that while Mexico was focusing on e-commerce for now, other components of the digital SUTs might be by assisted by additional questions that they hoped to include on an upcoming economic census. He added that additional information on the labour market contributing to the digital industries would be very useful to users. Maarten van Rossum (CBS – Netherlands) supported this idea of additional data on the labour market, specifically mentioning information on the amount of jobs, or the amount of people working on platforms and other digital industries as being of value. He added that the Netherlands remained committed to producing estimates of GVA by the digital industries over the course of 2021.

26. Maria Antonia Martinez Luengo (INE - Spain) informed the group that having available resources to complete this work remained a challenge for Spain, as they were still focussing on more urgent requirements such as complying with the ESA 2010 transmission program. Maria Antonia added that she still believed this work was important and would be willing to share compilation practices once these are underway, hopefully by 2022. Yuko Ueno ((Department of National Accounts Economic and Social Research Institute - Japan) mentioned that some basic estimates of the digital SUTs for Japan are available now, however, the estimates are still being refined so next summer would be preferable to improve the quality. Furthermore, Yuko asked how this work relates to the broader work on measurement of the digital economy as part of the G20.

27. John Mitchell (OECD) thanked the members for their contribution to the discussion and re-iterated that these questions could also be responded to in writing. In regards to the question on the connection with the G20, John explained that the OECD had recently been working in collaboration with the G20 Digital

Economy Task Force to generate a tiered definitional structure that could be applied to both statistical officers and policymakers. The different tiers in the definition, explicitly included in the digital economy ministerial statement had been developed with the digital SUTs in mind and included both explicit and implied relationships that made using the digital SUTs a key component of aligning to the parts of the definition. In addition, John agreed with members on the importance of gathering information on the labour component of the digital economy. He mentioned that this could be generated via calculating the labour component of the institutions that make up the digital industries, or a broader perspective might be taken where the labour component is delineated based on certain occupations. In response to additional information on the labour market, Nadim Ahmad (OECD) added that SDD was already involved in the OECD-ILO-European commission technical expert group that were developing a Handbook on measuring platform work.

28. The chair thanked all those involved in the discussion before emphasising that while the framework and high priority indicators had been finalised, this was only just the beginning for this work. He emphasised the focus on this work from the G20 as evidence that there is still strong demand for outputs of economic statistics concerned with digitalisation.

Item 4. Digitalisation and the proposed update to 2008 SNA

29. To begin Item 4, the chair introduced the key elements of the SNA research agenda connected to digitalisation. He informed the group that as part of the ISWGNA sub-group on digitalisation, they are looking at developing guidance note on several topics, crypto assets, free services, and the measurement of data, which will all be discussed in this session of the meeting. These three notes will be in addition to a guidance note summarising the digital SUTs framework. This work of the digitalisation sub-group is one of three ISWGNA sub groups, along with a sub-group focussing on sustainability and well-being, and one on globalisation.

Item 4.a. Cryptocurrencies and trade

30. Allison Derrick (BEA – United States) presented her work summarising recent developments on the measurement of crypto assets. As a way of background, Allison detailed the advantages of crypto assets, such as, the speed and transparency of the transactions (although not of the transparency of the transactors) as well as their ability to be immune from any inflation of the domestic currency. These advantages predominately revolve around their use as an alternative currency, although Alison then pointed out while crypto assets are fungible, divisible, and countable, its volatility does not make it a good store of value and even after 10 years (in the case of Bitcoin), they are not widely accepted as a medium of exchange. Therefore, at this point in time, crypto assets only meet one of the three characteristics of currency as outlined in the SNA. To assist with classifying the crypto assets, Allison then split them into one of four categories; first by those that are either minable or not minable and splitting these two groups again by those that are backed by an underlying asset and those that are not.

31. After briefly running through the various statistical classifications that have been discussed for crypto assets, (financial Vs non-financial; produced Vs non-produced) Alison then applied these proposed classification to the four categories that she had outlined previously. Importantly she noted that most discussions have agreed on the classification of non-minable assets backed by an underlying asset as a financial asset. However, there was a divergence between where to classify those assets not backed by an underlying asset with the IMF classifying these as produced non-financial assets (valuables), while the OECD proposes further discussion on this classification. To finish, Allison expanded on various opportunities that the BEA were exploring to gather data on crypto assets such as tax authorities and crypto wallet providers.

Item 4.b. Recording of crypto assets – Interim guidance

32. Jorrit Zwijnenburg (OECD) presented on the guidance put forward by the OECD. He also provided some background on crypto assets but focused on the different variety of crypto assets that are available such as stable coins, payment tokens as well as the previously addressed crypto currencies. He pointed out

however, that this work is not intended to provide a typology of crypto assets; rather, it is intended to assist compilers in accurately and appropriately recording the entire range of crypto assets in the National Accounts. Jorrit then proceeded to outline the proposed classification of each of the various types of assets. Similar to Allison; Jorrit suggested that for classification purposes, a large point of difference in the assets is whether they have a corresponding liability, with those that do, deemed to be a financial asset. Those that do not have a corresponding asset were classified differently, including; as a financial asset (for crypto assets used as currency), excluded from the production boundary (for exclusive payment tokens) as well as the still undecided category for those crypto assets being used as a store of value. This final category is the area where conceptual challenges remain. Jorrit explained that although the IMF has already provided interim guidance to classify this category as a produced non-financial asset (valuables) there were still significant conceptual questions that needed answers. These included, whether these type of crypto assets appear or if they are created? If it makes sense that units are “producing” something intended to ultimately be used as a form of currency? What is the output of the “miners”, do they produce the coin or are they providing a service? Moreover, how should this output be valued?

33. Amir Davidson (CBS - Israel) asked how to record transactions in an asset with such a volatile price? Marshall Reinsdorf (IMF) wondered whether a distinction should be made between those assets backed by a single currency and those that are backed by something else, such as a basket of currency or some other commodity. Ligia Luetticken (Destatis - Germany) agreed that the high volatility causes difficulties with treating the assets as valuables. The subject of volatility was touched upon by Richard Heys (ONS – United Kingdom) who raised certain negative externalities that may exist if crypto assets are considered as valuables. Richard thought this treatment might be similar to the current situation in the UK where non-monetary gold is currently classified as a valuable and causes significant distortions in various economic indicators for the UK. These distortions are due to changes in the gold price combined with the amount of gold being purchased and sold for what is thought to be speculative purposes rather than as a true store of value as intended by the SNA. Peter van de Ven (OECD) thought the inconsistency raised by Alison that certain crypto assets, such as ripple, may currently be considered produced in the interim guidance but not actually mined was important. On the subject of practically collecting data on the crypto assets, Nadim Ahmad (OECD) raised the concern regarding the use of wallets, and whether this would show where the crypto assets are held or where they were transacted. He added that fundamentally, volatility should not be an issue as there is volatility with existing fiat currency.

34. Allison Derrick (BEA – United States) responded by agreeing that many other assets face volatile prices noting the effect that this can have on international accounts as mentioned by Richard. Jorrit Zwijnenberg (OECD) responded by agreeing with Richard that additional categories may be needed for assets that are similar to crypto assets particularly as more produced assets move from being a store of value to something akin to a financial asset. In the future, this new category may require additional classifications.

Item 4.c. Measuring free platforms in the system of national accounts

35. Marshall Reinsdorf (IMF) presented his paper outlining guidance on how free services provided by digital platforms are accounted for in the national accounts. Marshall started by detailing that free services had not arrived solely with the arrival of digital platforms and that consumers have been receiving “free services” for a long time, these can be as simple as customer service that accompanies a purchase. The presentation then showed how cross subsidisation, often connected with transactions associated with just one consumer through bundling or the sale of loss leaders can also occur between multiple consumers where a user/consumer on one side of the platform subsidises the user/consumer on the other side of the platform. Marshall added that, as well as paying via cross subsidisation, consumers of the free products also pay the subsidised costs via mark ups in the price of the advertised products.

36. Marshall then outlined how some platforms may not be cross-subsidised by revenue in the present period, rather these platforms provide free services as a form of investment for the future. Often, this is undertaken to create a network effect with long terms pay offs or in order to generate data on the users so that information assets may be created. Marshall explicitly presented his view that in the case of the later;

when digital information is exchanged in return for services, this should not count as a barter transaction as typically the user has minimal awareness that they are participating in a transaction. While Marshall advocated efforts to value and measure this flow of free services, he did not think they should be included in the core accounts as it may hamper the usefulness of GDP for key policy questions.

37. Ligia Luetticken (Destatis - Germany) agreed that these free services should not be dealt with in the core accounts, and pointed out, that probably most of them are yet included in the core accounts by referring to newspapers, which are cross subsidised by payments for advertising, which even dictate their extent (number of pages) and content. Dylan Rassier (BEA – United States) wondered whether a separate measurement approach was required for one-sided business that cross-subsidised (i.e. with bundles) compared with two sided businesses, such as platforms that cross subsidise. Secondly, he queried the need for consumer knowledge before entering into a transaction, and that the SNA merely requires mutual consent. He suspected that there were many transactions within the SNA where one side had significantly more knowledge of the transaction than the other side. Richard Heys (ONS – United Kingdom) also supported this point suggesting that not everyone reads the small print in contracts, and that it may be troubling if this interpretation was changed. Richard also suggested that the need to incorporate the flows of free services, was not to increase GDP but to link the output created using the data assets that were in turn created due to the provision of these free services.

38. Andreas Dollt (Eurostat) suggested that the best solution for tracking prices may be to “unbundle” and measure the components. Ana Aizcorbe (BEA – United States) thought that in response to Marshall's concern regarding the treatment of bundle pricing used by firms, by looking at the accounting standard this might provide guidance on how to separate the issue of how much of the bundle is consumption and how much is investment. Peter van de Ven (OECD) agreed that while there is asymmetry in many transactions within the SNA, people are at least aware that they are exchanging something, in these transactions, people are not even aware that they are often providing data. Nadim Ahmad (OECD) thought that Marshall detailed the cross subsidisation impact well, but wondered about the government sector and the information that people provide the government. He agreed with the idea of organisations providing free services in order to build up a network affect and thought that valuing this network affect would be a good exercise.

39. Marshall Reinsdorf (IMF) responded that he would have to give more thought to the issue of asymmetric transactions as he agreed that these are not rare. He thought however, that in these cases, the exchange of data is so far removed from the actual transaction, and in many cases people are completely unaware and as such, he feels that this no longer meets the definition of a transaction. He finished by mentioning that there was already several papers that covered the topic of how best to measure bundles.

Item 4.d. Valuing the data economy: A labour costs approach using unsupervised machine learning

40. Christopher Blackburn presented recent work by the BEA on measuring the value of data using labour costs. While variations of this method has previously been used by the BEA and Statistics Canada, rather than just relying on labour costs collected as part of existing economic surveys, this approach added the use of machine learning to try and increase the amount of data being collected. Christopher explained that by feeding the algorithm job postings, it is able to determine specific occupations that should be included in the measurement of data based on the descriptions of the job posting. These occupations are subsequently combined with existing information on wage rate to determine an estimate for the value of data on a sum of costs approach. Christopher caveated the initial findings by highlighting the various areas where additional refinement is needed to improve the process as well as mentioning the challenges created by the highly dynamic observations that the algorithm is attempting to measure.

Item 4.e. Data – Recording and valuation of ‘data’ in national accounts

41. Nicola Massarelli (Eurostat) on behalf of the ISWGNA digitalisation sub-group presented the sub-groups progress on the conceptual measurement and classification of data in the national accounts. He provided some basic definitions that categorised data as a produced asset but separate to observable phenomena, which are used to create data but are themselves not within the production or asset boundary.

Nicola outlined some characteristics of data that when met, would allow it to be recorded in the accounts, such as its digital nature (a pragmatic decision to ignore non-digital data), its ability to have a single economic owner and its susceptibility to depreciation. In these ways, it is similar to other fixed assets in the accounts; however, there remained many features of data that made it considerably more difficult to value compared to other products in the accounts.

42. Ligia Luetticken (Destatis - Germany) enquired how the methodology proposed by Christopher as well as the classification proposed by Nicola might allow for international comparability, in particular because of poor data quality and suggested increasing transparency on data quality in released estimations. Conceptually, she asked how someone could delineate between data and a database, as the usual definition of database includes data, and that if databases were already covered in the current SNA, then what would happen to this asset once data was separately valued. She also wondered whether it was an issue of semantics and cautioned that the average user would not inherently understand the Data concept in SNA because of the daily use of that term referring to personal data and data protection. Nadim Ahmad (OECD) also picked up the point of separating data and databases asking the generic question “what was the value of the database, if data was separately valued”. In addition, he thought that the discussion had progressed significantly from the one prior to the creation of the 2008 SNA, which considered observations as data and was a reason for excluding it from the production boundary. However, as this discussion has continued, observations are still excluded but the meaning of data had evolved allowing it to be included in the production boundary. Nadim also wondered about the impact of AI on Christopher’s work. Marshall Reinsdorf (IMF) thought that any measurement of data would need to contain the use of licenses as there are multiple organisations using the same data at the same time, and they cannot all own the same asset.

43. Christopher Blackburn (BEA – United States) responded that at this time, he has not addressed attempting this method internationally, but pointed out the major concern would be trying to qualify data related tasks in different countries. Regarding AI, he agreed that as this becomes more central, the tasks associated with data would need to change and adapt to the new way data is generated. Nicola Massarelli (Eurostat) agreed that international comparability is paramount to measuring data. To assist with this, he envisioned that there would be some form of testing period where statistical offices could attempt to implement some of the guidance and then provide feedback on what is practically possible and what is not.

Item 5. Future work for the informal advisory group, conclusions and wrap up

44. The chair Erich Strassner (BEA – United States) provided a summary of the main takeaways from the day’s presentations. He felt that there had been good progression on both a conceptual and practical basis in the area of digitalisation. He stressed to countries that the continual development of this work is dependent on countries participation, attempting to implement some of the guidance suggested, and then determining what is practical. Erich continued by mentioning that countries participation is crucial for the continual development of best practice, which the OECD hoped to include in upcoming papers, and therefore he looked forward to the next meeting of the advisory group where some of this work could be shared by countries.

45. Peter van de Ven (OECD) supported this point, and encouraged countries to provide papers and work to the OECD, so that it could be included on the digital SUTs, and the advisory group community pages. Peter also mentioned that by informing the OECD of their work, including the difficulties that they are facing, the OECD has a better idea of the challenges faced by countries and this would help dictate what the advisory group focuses on, including in the planning for the next meeting.

46. Erich thanked participants for the flexibility shown by joining the meeting virtually, especially those that joined at unusual hours. He expressed thanks to the OECD colleagues for their preparation and organisation, which in his view, resulted in a very successful meeting. He then closed the meeting.