Statistics Denmark during COVID-19

Meeting in FOC Group on Economic Statistics, 29 May 2020

The following is based on a note that has been prepared for a meeting in European Statistical System Committee (ESSC) in May 2020. For this reason, the text emphasizes the EU statistics that have high priority during the COVID period. The Annex shows an overview of experimental statistics launched during the COVID period.

Background

During the COVID crisis, Statistics Denmark (SD) has – like most other NSIs - accelerated its work with 'experimental statistics' and published it on https://www.dst.dk/da/Statistik/eksperimentel-statistik-covid-19. The table in the annex below summarizes the work. The range of experiments covers different types: Use of new data sources (incl. Big Data and commercial sources) and/or methods, use of existing statistical and administrative data sources in new ways, inclusion of COVID related questions in existing surveys, earlier dissemination of preliminary results, and dissemination on SDs website of indicators produced by other public authorities and trusted private partners. Also, in relation to the current statistics production we have emphasised exploiting relevant possibilities of relating the communication to the COVID situation and its effects on society.

Our fruitful cooperation with Danmarks Nationalbank (DN) has been extended into this area after DN started producing and updating a suite of indicators on a daily basis for DN's Board of Directors at the outset of the Danish COVID lockdown. It was soon agreed that this could preferably be carried out by SD, and that the indicators should be made publically available on SDs website, cf. above.

Resources

The work has involved considerable resources. A dedicated team was formed to produce the indicators agreed with DN, whilst other indicators were produced by the various domain divisions. No additional funding has been allocated to SD, so the work has meant that resources have been taken temporarily from current production and other development projects. The experimental statistics have been very well received by the media and leading economic commentators, and the traffic on the dedicated website grows steadily.

Business sentiment survey

In the standard business sentiment survey launched at the end of March, additional questions were added on the effect of the COVID lockdown on turnover and the likelihood to remain in business for the coming three months. Results were disseminated right after Easter. The questions were being maintained in the subsequent months.

Turnover statistics

A dedicated COVID-19 activity of key importance relates to our monthly indicator on turnover in private enterprises. It is based on VAT declarations and a key source for the quarterly national accounts, including the GDP indicator released t+45 days. Luckily, many enterprises (around 70 per cent) did actually declare VAT for March voluntarily. The development in the turnover figures was quality

assured at activity level (127 activity groups). All groups were analysed and compared with the developments for other indicators, including usage of electricity, expenditure data from the financial sector, imports and exports, other relevant releases re March, and preliminary figures for March not yet disseminated. Against that background, the estimation model for non-reported turnover was extended with a suite of adjustment factors, which were used to adjust the estimated figures at enterprise level within each of the 127 activity groups. With this approach, we could ensure the consistency between the micro data and the aggregate turnover figures and maintain the practise that the monthly indicator on turnover in private enterprises serves as one of the main inputs to the quarterly national accounts. Also, the results can be used at enterprise level in the business register. The procedure was repeated in June re the figures for April and with revisions to March.

Electricity consumption

A couple of weeks into the COVID lockdown SD entered a standing agreement (i.e. to be continued after the COVID crisis) with EnergiNet for the current delivery of both preliminary and final SmartMeter data, which we match with households and businesses (establishment level).

Telecommunication

Work is under way using tele communications (TELCO) data, although we have not yet launched new statistical products using TELCO data. The data is held at SD on behalf of the State Serum Institute (SSI). SD plans to publish statistics on the movement of individuals between local areas as soon as SSI permits. The TELCO data consists of aggregated data on small areas recorded in 6-hour windows. Data is available from all four national TELCO networks. Data are then combined with population- and workplace data from SD, i.e. data about the so-called 'day-population' and 'night-population'. (The Danish TELCO data are quite similar to those used for COVID-19 purposes in e.g. Belgium, Estonia and Norway.)

Compensation schemes for the business community

SD and the Danish Business Authority have entered a data sharing agreement and detailed data from the wage subsidies scheme implemented to avoid dismissals due to the COVID-19 crisis and the compensation scheme for self-employed are now being delivered to SD on a weekly basis. The data contains identification numbers both on the enterprise receiving the subsidy and employees concerned, data on the period for which the subsidy is granted, and the amount of the subsidy. These data are (for each employer and each employee) combined with the statistical registers in SD by using the unique identification numbers of enterprises and of persons. Against that background, SD will be able to analyse which enterprises receives this subsidy (by activity, geography and size), and it will be possible to follow the enterprises and analyse how the enterprises perform in e.g. 3, 6, 9 or 12 months' time. In the same way it is possible to analyse the employees concerned. We can describe them according to demographic variables like gender, age and address, and according to the NACE-code of the establishment they worked at. And we can follow them over time and analyse how they perform in the time to come to see if they return into employment, become unemployed or leave the labour force. Similar types of analysis may (or may not) be possible on data about the last two COVID-19 compensation measures, but SD has not yet entered a data sharing agreement and the tentative information indicates that data are of lesser value for SD.

Payment transactions

SD has finalised an agreement with Nets (the private company supplying payment solutions for banks and businesses) on getting access to aggregate credit card data for the purpose of using this data as a complementary data source for the compilation of short term statistics and national accounts. This data will be

especially useful in connection with the compilation of the monthly indicator on turnover in private enterprises, see also no. 5. above.

Research services and market based data collection

Finally, there is a rapidly growing interest from especially academia to use 1) register data from SDs Research Services and 2) our market based data collection services. Among topics for these analyses are communication and compliance with COVID restrictions; voluntary work and solidarity during the COVID crisis; time use during COVID lockdown compared to previous everyday life; and willingness to pay for cultural activities (e.g. theatres) during and after the COVID crisis.

New data sources

The table in the annex below indicates the nature of the data source for each indicator. Data from public sector authorities are always free of charge, cf. the Law on Statistics Denmark. Most, if not all, of the new external data sources could remain accessible for SD on a long term or permanent basis. However, SD has not yet decided which indicators it will be necessary or possible to sustain for a longer period or even put into current production.

Having said that, one of the key aspect of the COVID-19 statistical actions relates to the new partnerships on data cooperation. Among examples are TELCO data, health data, credit card data, the wider use of barcode data from supermarket chains, data on compensation measures, bankruptcy data, transport data. During the COVID-19 crisis we have clearly experienced a more conducive climate re data sharing and access to private data holders which in some cases were previously somewhat reluctant to share data with SD.

Stock taking in June

The work on experimental statistics developed rapidly and somewhat organically. In early June, when it was clear that the users' focus was shifting towards the post-COVID economic recovery, we took stock of the situation and decided some changes to the delivery of the experimental indicators. The changes involved that daily updates were changed to weekly, that some indicators (e.g. those produced outside Statistics Denmark and 'just' displayed on our website) will be discontinued by end of August (unless we will face a second wave of COVID), and that the remaining will be assessed by the end of 2020 as to whether they could form part of the programme of official statistics.

Annex: Overview of experimental statistics launched during the COVID period

Domain	Indicator(s)	Type / Source	State of play
Deaths (total)	(various breakdowns)	New use of in-house population register	Weekly update as long as Eurostat demands these figures
Spreading of COVID-19 (see note 1)	Number of people tested for COVID-19	Dissemination of aggregate admin. data from other authorities	Daily update until 8 June – now weekly
	Confirmed COVID-19 cases - by age group and municipality		
	Number of hospitalized with COVID-19 - of which in intensive care - of which in respirator		
	Number of deaths due to COVID-19		
	Ended COVID-19 infection		
Business statistics	COVID-19 impact on turnover (see note 2) and business climate	Extension of existing sentiment survey with early dissemination of totals	Monthly, disseminated for March and April
	Production and turnover (see note 2) in manufacturing sector	Early dissemination of totals from existing survey	Monthly, disseminated for March and April
	Registration of enterprises (new active legal units), monthly	New use of data from admin. business register and tax registrations	Monthly, disseminated for March and April
	Wage compensation schemes (various breakdowns)	New administrative data source	Weekly update
	Filing for bankruptcy, weekly (see note 3)	New use of admin. micro data from the courts	Weekly update
Foreign trade	Trade in goods with countries outside EU (Extrastat)	New use of existing admin. micro data (customs data)	Updated every two weeks
	Trade in goods with EU Member States (Intrastat) + countries outside EU (Extrastat) + trade in services	Early dissemination of totals from existing surveys	Monthly, disseminated for March - has been discontinued
Labour market	Newly registered unemployed (several breakdowns)	Dissemination of aggregate admin. data from other authorities	Weekly update
	Warned dismissals		
	Newly posted vacancies on Jobnet		
	Gross unemployment and Google search	Dissemination of results from other authorities – based on Big Data	
Expenditure	Households' use of electricity	New use of Big Data source made available for SD for free	Weekly update
	Businesses' use of electricity - by type of industry		
	Expenditure indicators (several)	Commercial source – limitations on usage	
	Turnover in supermarkets by main types of commodity	Barcode data. A new agreement with supermarket chains was necessary	Development was discontinued – too expensive

Real estate Market	New housing ads	Commercial source - limitations on usage	Weekly update
	Housing sales		
Transport	Road traffic (whole country)	Dissemination of aggregate admin. data from other authorities	Daily update until 8 June – now weekly
	Crossings at Great Belt bridge - by type of vehicle	Commercial source – limitations on usage	Weekly update
	Number of passengers in the Copenhagen subway	Dissemination of aggregate admin. data from other authorities	
	Flights from Copenhagen Intl. Airport	Dissemination of open data	
	Ships arrivals at harbours	New use of Big Data source (Satellite navigation data) made available for SD for free	
	Traffic congestion in the Copenhagen region	Dissemination of aggregate admin. data from other authorities	Under development