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Master thesis

How did Covid-19 effect Norwegian household consumption?

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Supervisor:

Gisle J. Natvik

Program:

Master of Science in Economic

SUMMARY

In this thesis, I investigate the effect the Covid-19 pandemic had on the Norwegian household consumption. The objective is to discover what changed or did not change through the pandemic in Norway and also see if some of these changes could have caused a more permanent effect on consumption. My findings shows that the Covid-19 pandemic had great effect on many categories on households' consumption. Most of the categories affected was the one that was heavily affected by restrictions. Categories like airline travel and restaurants had a huge decrees in consumption during the lockdown periods, whereas categories like furniture and pets had a huge increase on consumption when lockdown occurred in Norway. My findings also show that the overall consumption level did not fall during the pandemic but rather substituted to other products. The data also shows an increase in online shopping. When Norway opened up, most of the restricted categories went back to prior levels, but some can indicate a more permanent change. Some of the permanent changes is the increase on online shopping and varied health and hobby products.

ACKNOWLEDGEMNET

I would like to thank everyone who have supported and contributed to the writing off this thesis. I want to thank my supervisor Gisle J. Natvik for his fast and constructive guidance and support. His advice and counseling have been of great value and made this master thesis possible. I am grateful that Eika provided me with data that made it possible to go into greater detail in this thesis. A special thanks to all my friends and family who have supported me through this journey. And last but not least I would like to thank my mom and dad who has really supported me through this writing process. All their support has made this thesis a possibility.

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1.0 Introduction

The Covid-19 pandemic forced people to live a different life and change their usual consumption ways. People were forced to be more at home. Usual stores and restaurants were shut down. People had to adapt and change their consumption. The Norwegian government implemented many health and fiscal measure to try and keep the virus and the economy at a stable and good level. In this paper I want to investigate details on how Covid-19 and governmental measures affected household behavior and consumption in Norway. Do we only see people stop consuming goods and services affected by the restrictions and the pandemic? Can we see that the Norwegian's lack of consumption on restricted products only leads to an increase in savings, which then will be used to consume when the restrictions are lifted? Or do we see an apparent change in the consumption behavior in the Norwegian household?

The other research question I want to look at in this paper is if changes in consumption behavior above have turned into a more permanent effect on household consumption. This could be that new habits and trends were being formed during the Covid-19 pandemic and when restrictions are fully lifted and countries open again, they do not go back to consuming in the same way they did before the pandemic.

One hypothesis is that when people were forced to use the internet more in general to purchase their goods and services, they learned and got familiar with how to use this channel for different purposes they would not have used or used only to a minimum before. This could lead to the initial "cost" of learning a product (internet) has already been done by people. And when the restriction was lifted and they could return to their old habits, they would now continue to use these products but order online instead.

Other things that could also have an effect are that changes in the overall market and trends during the pandemic have turned permanent and continues after the pandemic is over.

There are many studies on the effects of the Covid-19 pandemic. However, as far as I can see there are few studies that has focused on the detailed effect on Norwegian household consumption during and after the Covid-19 pandemic. Therefore, I will in this master thesis try and answer two research questions.

1. **How did Covid-19 affect household consumption in Norway?**
2. **Did some of these changes have a permanent effect on consumption?**

This thesis consists of a literature review where I provide an overview on relevant literature for the topic. Then I will go into detail on the overall status of Norway during the Covid-19 pandemic. Moreover, in the methodology section I describe the research design and data process. Further I show the results from the study followed by a discussion. Lastly present the conclusions.

2.0 Literature review

I will provide an overview of supportive literature regarding the effect of the Pandemics on economic outcome. Other relevant litterateur of recent studies that provide useful evidence regarding the initial impact of the covid -19 on businesses, households, and the macroeconomy.

2.1 Consumption

Purchase behavior is a special and specific behavior that directly reflects people's needs, desires, pursuit of material and spiritual interests (Braithwaite and Scott, 1990). (Tao, Sun, Lui, Tian, & Zhang, 2022) Factors that affect changes in purchase behavior include social factors, cultural factors, demographic factors, and situational factors (Bilginger Özsaatcı & Cici, 2021)

2.2 Prior epidemics and other crisis

Prior Literature on epidemics such as the Spanish Flu (Almond, 2006); (Garret, 2008); (Karlsson, Nilson, & Picher, 2014); (Guimbeau, Menon, & Musacchio, 2020), avian influenza (Burns, Mensbrugghe, & Timmer, 2006), SARS (Chou, Kou, & Peng, 2014); (Hai, Zhao, & Hao, 2004); (Lee & Mckibbin, 2004); (Liu, Hammitt, Wang, & Tsou, 2005); (Brahmbhatt & Dutta, 2008); (Keogh-Brown &

Smith, 2008), swine flu (Rassy & Smith, 2013) These all shows and indicates that epidemics cause substantial cost to the real economy. The extent on this cost varies and is depended on the country's efforts of health and fiscal measures. ((Meltzer, Cox, & Fukuda, 1999); (Brainerd & Siegler, 2003); (Bootsma & Ferguson, 2007); (Karlsson, Nilson, & Picher, 2014)

Literature about crises like the financial crises (Voinea & Alina, 2011); (Mansoor & Jalal, 2011); (Brown, Haughwout, Lee, & van der Klaauw, 2013), food-safety crises (Pennings, Wansink, & Meulenberg, 2002), country-of-origin crises (Gineikiene & Diamantopoulos, 2017); All these studies agree that when a crisis occurs, consumers change their practices and their attitudes. Some of these behaviors and changes persist over time, and others will disappear.

A paper from (Theodoridou, Tsakiridou, Kalogeras, & Mattas, 2019) is an empirical paper about the impacts of the last years' turbulent economic periods in Greek and what effect that had on consumer behavior. The paper shows that despise the contextual and emotional impact arriving in a crisis. Consumer spending shows that individuals will behave more rationally during a crisis. In this paper, the author states that consumers tend to focus on their purchases on basic goods rather than luxury goods. Consumers tend to adjust their consideration of luxury products and switch to more economical products, favoring products more oriented towards their basic needs. (Ang, Leong, & Kotler, 2000)We can also see that consumers hesitate and do not want to spend money on high-quality or high-value products even if they could afford them (Ferrell & Hartline, 2002)

Empirical studies in psychology find that unhealthy emotions and behaviors can cause shifts in individuals' consumption. People in dire circumstances may develop a "nothing to lose" mentality and become more prone to risk-taking, resulting in more impulse purchases (Hill, Ross, & Low, 1997); (Harris, Duncan, & Boisjoly, 2002); they might also develop post-traumatic stress disorder (PTSD) and future anxiety, resulting in fewer purchases to increase savings (Nolen-Hoeksema & Morrow, 1991); (Kılıç & Ulusoy, 1999); (Kun, Tong, Pei, & lou, 2013)

2.3 Covid -19 literature

Macroeconomic Evidence

Evidence suggests that the Covid-19 pandemic will likely have resulted in a significant cost to the global economy due to the disruption to the global supply chains and the temporary and permanent closures of businesses. This results in a negative consequence for output and employment (Fornaro & Wolf, 2020); (OECD, 2020). The overall negative impact on different economies is likely dependent on the extent of the Government's efforts and their established healthcare. (McKibbin & Fernando, 2020a) (McKibbin & Fernando, 2020b)

Behavior

Scholars generally believe that a large number of consumers showed panic buying behavior or impulsive buying behavior in the early stage of the COVID-19 pandemic (Aljanabi, 2021); (Stuart, Barnes, & Micheala, 2021) and even accompanied by compulsive buying behavior ((Samet & Gözde, 2021) who looked at buying behavior and empirical studies on psychological factors in Turkey.

An empirical study done in Saudi Arabia found out that the government's strict restriction on population movement has led to great shifts in people's livelihoods and daily lives. More people are suffering from depression and loneliness, and some have resorted to alcohol, drugs, or even self-harm for relief. (Alsukah, et al., 2020)

A paper from (Gustav & Alexandra, 2020) used data from Sweden and Australia and notes that during the crisis, consumers also bought necessities rather than luxuries, as well they switched and started buying cheaper brands. Buy more local goods rather than foreign brands and buying smaller packages. They state that behavior has changed, and there is more of a focus on essential goods, and as an effect on this, the demand for none- essential goods dropped drastically. Consumers have now more focus on now directly to more essential goods, like food, toiletries, and personal health care such as medication and health supplements.

Other countries during Covid-19

China

(Chen, He, Hsieh, & Song, 2020)assess the impact of the Wuhan, Hubei lockdown on the monthly sales of various products for sale on a major online platform in China. The authors find a significant decline in the sales of digital and electronic goods and a significant increase in sales of groceries. The author used transaction data to find that consumption declined by an average of 32%.

America

Studies from the United States (Dietrich, Kuester, Muller, & Schoenle, 2020), (Binder, 2020) suggest that there was a decline on consumer GDP by 6 % over a 12 month- period. They also show that the concern and response to the Covid-19 virus for consumers are that they are somewhat or very concerned regarding the effect of coronavirus on their financial and personal well-being as well as the broader economy. Out of the consumers that were surveyed. 28% postponed travel, while 40% had purchased additional food supplies.

Denmark

(Anderson, Hansen, Johannesen, & Sheridan, 2020) use transaction-level bank account data from a large Danish bank to find a decline in spending following the onset of the Covid-19 virus, which varies across expenditure categories and correlates with government restrictions. Specifically, the authors find that aggregate card spending declined by approximately 25% following the government shutdown. Moreover, the observed decline in spending is more concentrated on product categories where trading is restricted under the terms of the government shutdown.

2.4 Durable and non-durable goods

In a paper from (Black & Cusbert, 2021)They state that spending on durable goods tends to be more cyclical than spending on non-durable goods and services. They define durable goods as goods that provide a stream of services and utility over time, this is products like motor vehicles or furnishings. Non-durable goods and services they state are products that tend to be consumed immediately like food. In the paper, they stated that there is a correlation with cyclical behavior during economic growth where consumers have more spending power on durable

goods. And that consumers will hold off on purchasing durable goods during a recession. They also state that spending on non-durable goods will usually be at the same level during growth and recession.

(Harmenberg & Öberg, 2020) Writes a paper where they conclude that the mechanisms behind aggregate durable expenditure dynamics are different from those of aggregate nondurable-expenditure dynamics. The basis for these differences stems from the interactions of uninsurable income risk and the adjustment cost income in purchases of durable goods. In the paper, they state that the household decision function for durable goods is based on two main constraints; The household credit constraint, which includes how must money you have available, and the adjustment cost, which can be interpreted as the loss when selling or replacing a durable product. This cost means that previous investments in durable goods are partly irrevocable and often generate lumpy purchases for durable goods. They also state that households that are poor in durable assets will want to increase their durable stock, and households with lacking cash will decrease it. This means that when you make a durable goods decision, you consider if you already have the product and have the cash for it. And, that if you then buy the good, you will not in the next periods change out or buy another because of the adjustment cost.

3.0 Norway during Covid-19.

Covid-19 pandemic hit Norway in a significant way, and the consequences were enormous for the country and for individuals. From the first time someone was diagnosed with Covid-19 on 26. February 2020 and to today June 2022, over 1 436 000 have been diagnosed in Norway and 3 210 have passed away (Statistikk om koronavirus og covid-19, 2020) This pandemic changed the way many Norwegians had to live their life with strict and invasive restrictions and guidelines. Through 2020 to 2022 these restrictions had a great effect on different markets and people's abilities to move and live their lives as they did before the pandemic. In the same period, we were under strict restrictions unemployment rise worldwide, also in Norway. The pandemic influenced GDP which dropped 5% in the second quarter of 2020. (Korona i Norge og EU, 2022)

3.1 Restrictions

Norway introduced strict Covid-19 restrictions to try and lessen the impact and spread of the Covid-19 virus. These restrictions were at the start implemented by the Government.

The first main restrictions were implemented 12. March 2020. All schools, kindergartens and universities were closed. All cultural events, sporting events, gyms, swimming pools, and businesses offering hairdressing, skin care, massage, body care, and tattooing are prohibited. All catering businesses were closed, including restaurants, bars, pubs, and nightlife. People were advised not to take part of unnecessary public transport and gatherings. Heavy travel restrictions, entry ban, and mandatory quarantine was also implemented.

Other demands that were implemented were general distance rules that people should not be more than 1-2 meters apart. There where encouragement that where people had the possibility to work from home, this should be implemented. The government had weakly press conferences to determine the needed restrictions to keep the infection levels stable but also keep the Norwegian country going. They also had daily and weekly information updates and changes for already implemented restrictions rules. Through 2020 and 2021 some of these restrictions went from more lenient to stricter and vice versa.

Due to the many changes to the restrictions both daily and weekly. My discussions are based on four main restrictions events. This is because it gives me good data points over a period to analyze. I have set up this main timeline for my selected main restriction periods in Norway:

1. *The first lockdown*: March 2020 to May 2020.
   This is where they implemented the first lockdown and all the restrictions I have described above.

2. *Relaxation of measures*: June 2020 to October 2020
   To try and slowly open the country again, some of the restrictions were lifted bit by bit. Events and outdoor gatherings started happening under certain restrictions and sizes. People could travel abroad to certain

countries with satisfied infection status. In October 2020, local governments could decide on local restrictions that match their infection levels. These are just some examples of restrictions that were lifted and introduced.

3. *Second lockdown*: November 20 to April 21.

   As infections increased again, the government started implementing stricter restrictions to stop the spread further. In this lockdown, the local government could still decide on some of the rules. During the second lockdown, people could eat out at restaurants under some Covid-19 guidelines. This is one of many deviations different from the first lockdown. The government encourages keeping social gatherings to a minimum.

4. *Reopening of Norway*: May 2021 to present.

   In January 2021 Norway started to vaccinate all Norwegian people over 18 years. Because of this vaccine strategy Norway begun to reopen the country in May 2021. During the period from May 2021 to December 2021, most people in Norway are fully vaccinated. The vaccination program allows the government to lift restrictions. Fully vaccinated got a Covid-19 pass, which led people to travel abroad and participate in social gatherings. From May 2021 restrictions and laws were lifted bit by bit. Note that in December 2021, some restrictions were introduced again due to the rise of the omikron variant. Some of this was for travel and alcohol serving. Also, schools were shut down and working from home mandate was introduced again. These restrictions were started to be lifted again In January 2022.

3.2 Fiscal measures.

The Covid-19 pandemic had a massive effect, not only on individuals but also on the Norwegian economy and the labor market. Many people lost their jobs or were temporarily laid off. To counteract this the Norwegian government implemented many economic and fiscal measures to help the economic stability and the labor market through the pandemic. The primary purposes of these measures were to try and support and compensate the households affected by lost income and try to

contribute to viable business recovering from the crisis and try to preserve as many jobs as possible. (As precented of Kjersti Næss Torstensen on lecture in business cycles 20.04.2022)

In total the Norwegian government used over 221 billion NOK for 2020 and 2021 in fiscal measures in response to the Covid-19 pandemic. (Så mye har pandemien kostet, 2022) Some of the fiscal measures that was implemented were compensation scheme to cover the cost for businesses. Another measure was wage schemes to cover wages for businesses that could not cover the costs and to give temporary and permanent laid-off workers compensation for lost wages. These are some of many fiscal measures which were implemented

3.4 The Norwegian labor market

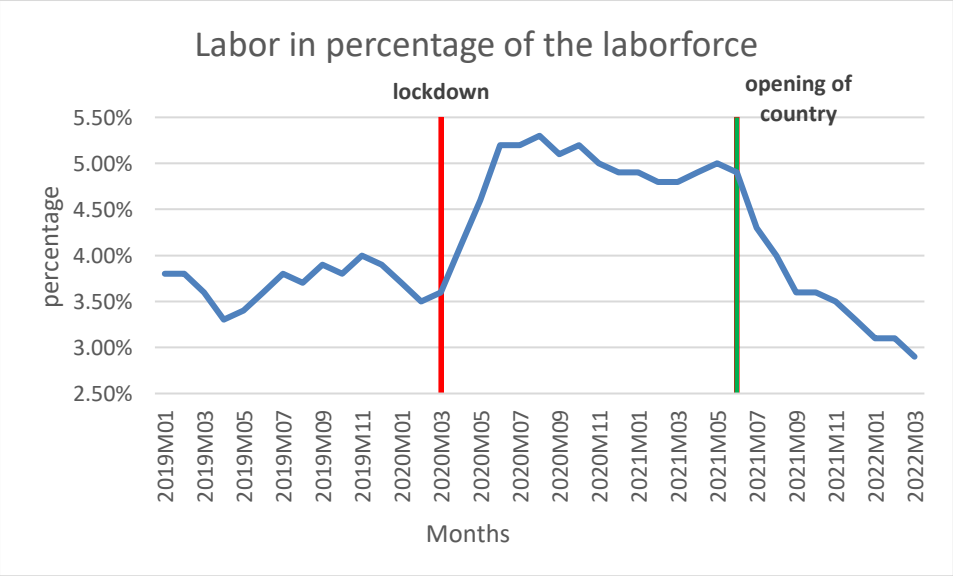

Fig1: Shows labor in percentage of the labor force. The graph is seasonally adjusted with three months moving average. The data is from SSB (Arbeidskraftundersøkelsen, 2022)

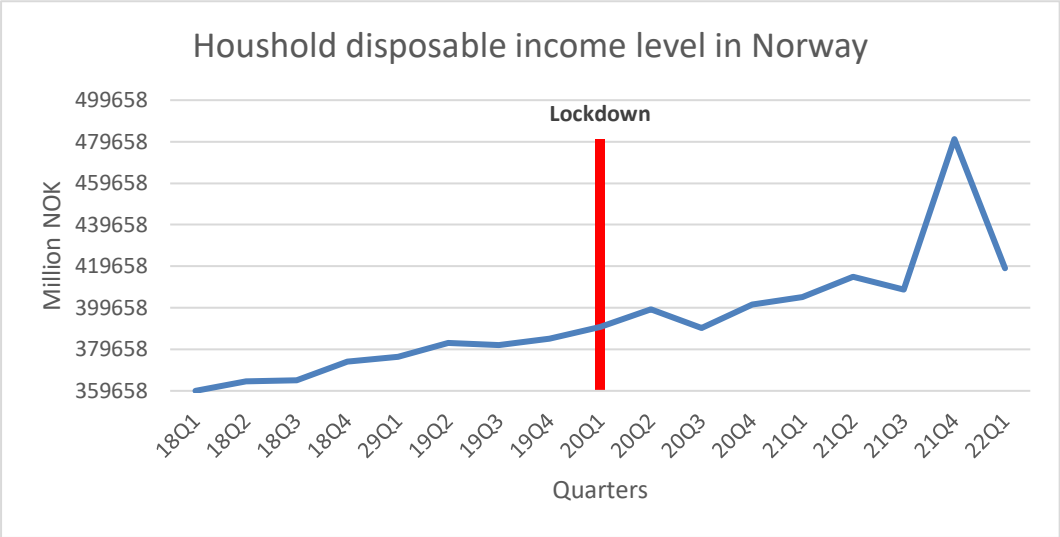

Fig2: Shows the overall household disposable income level in Norway. The data is from SSB (Nasjonalregnskap, inntekts- og kapitalregnskapet, 2022)

In fig 1 and fig 2, we see that the restriction and the governmental guidelines had a considerable effect on the unemployment rate in Norway. Where there was a massive increase in unemployment during the period when stricter national restrictions were implemented. We also see that the overall fiscal measures that were implemented also influenced the overall income level here in Norway. In Fig 2 we can see the context between unemployment and income. Where we see the main drop in income in the period the restriction was implemented and the jump in the unemployment rate was happening. The income level started to rise again from 2020Q3. And reached levels as before the pandemic and even reached higher levels. Overall, the income level in Norway during the pandemic was relatively stable. NOTE: The big increase in 21Q4 can be explained by an increase in wealth tax in that quarter. This irregularity does not affect my paper.

3.5 Effects on overall consumption and saving

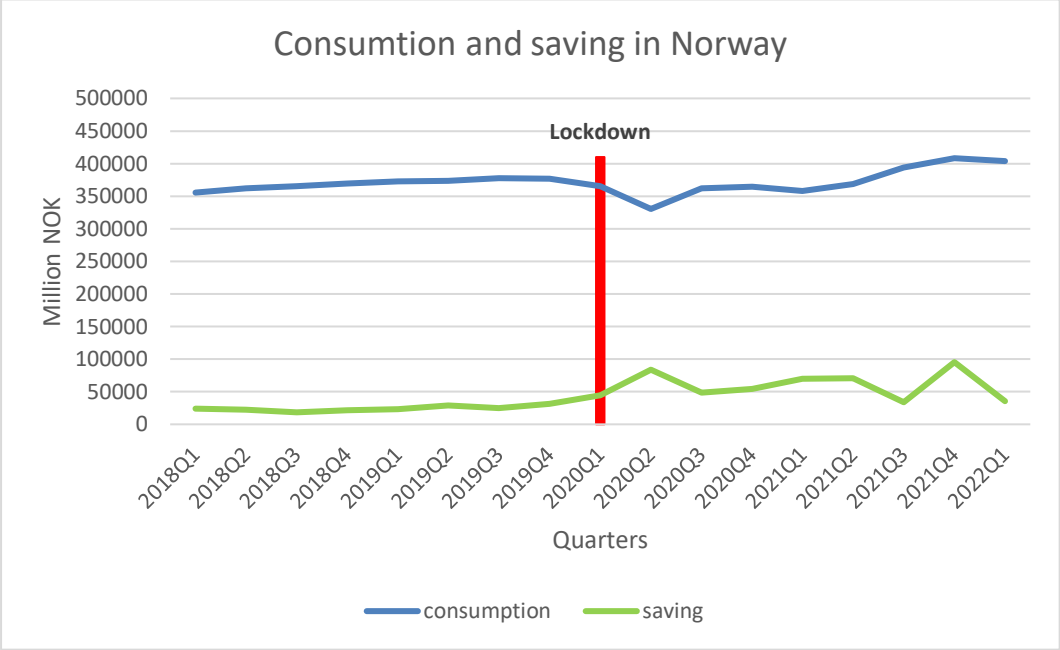

Fig3: shows overall household consumption and saving in Norway. The data is from SSB (Nasjonalregnskap, inntekts- og kapitalregnskapet, 2022)

Fig4: shows total goods and service consumption in Norway. The data is from SSB (Makroøkonomiske hovedstørrelser. Ujustert og sesongjustert 2016M01 - 2022M04, 2022) The data is seasonal adjusted and uses current prices

At the start of the pandemic the consumption went down and saving went up. It quickly stabilized and stayed at stable levels through 2020 and 2021.

The overall consumption for goods and services shows a massive drop in services consumption when the lockdown started. This matched the period when the Covid-19 restriction in Norway was implemented. This was expected due to the

shutdown and restrictions on the service market. In the same period, consumption in the goods market increased. Statistics show that for periods before Covid-19, Norwegians consumed more services than goods. When the pandemic hit and restrictions were implemented, there was a distinct shift in this consumption. During 2020M03, there was a change that goods consumption was higher than service consumption in Norway. This difference maintains through 2020 and 2021. We don't see a rise in the service marked until the middle of 2021 when the country started to open up. The increase in goods is still high after the pandemic and did not fall back to the level before Covid-19.

3.6 Prices versus quantities

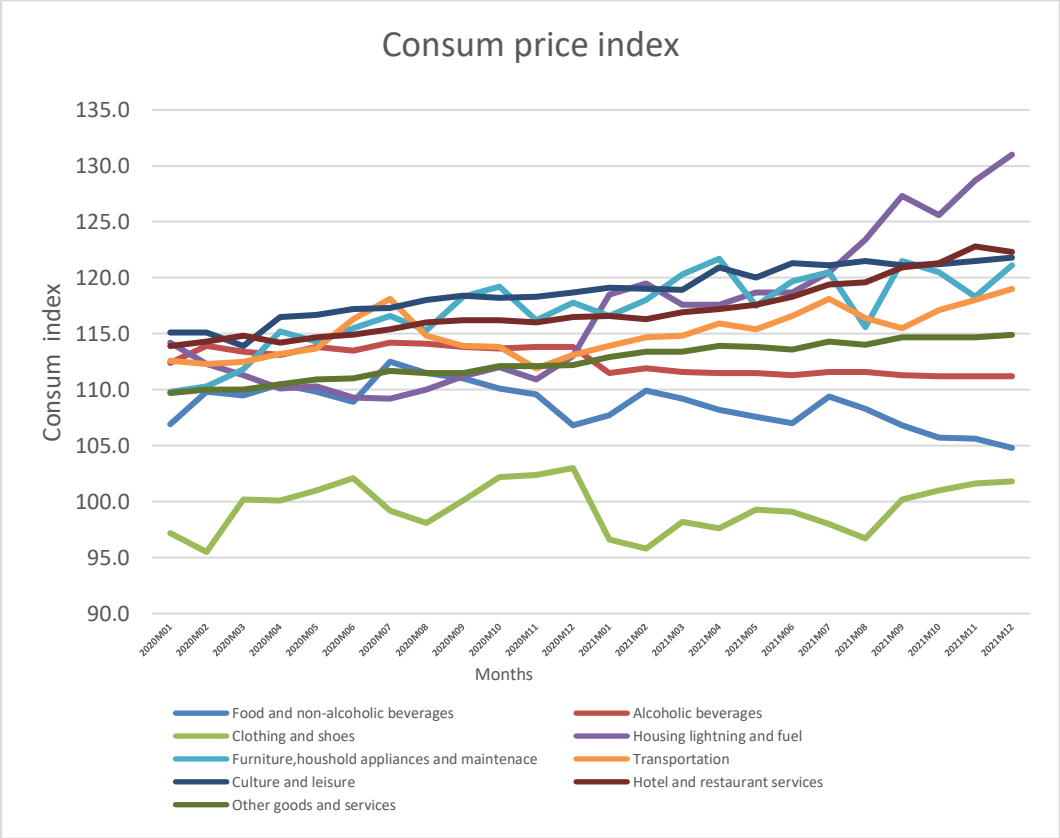

Fig5 Shows the consumption price index in Norway. It shows the index from main group level. 2015 = 100 in the index. The data is from SSB (Konsumprisindeksen, 2022)

In this paper I will mainly look at revenue numbers for different product categories. Therefore, the price change can have a significant impact. You can also expect that if the price change is drastic, it will also affect consumption. Fig 5 shows the consumer price index for different product groups in Norway. We see that the price levels for most groups are at a stable level through 2020 and 2021. Almost all categories have had a slight steady rise in the price level from 2020M1 to 2021M12. The only categories that have had a drastic shift in price level are

housing, lighting, and fuel. This category had a rise from 114.3 in 20202M1 to 131.0 in 2021M12. Overall, I will conclude that the price changes have been relatively small and will not affect my conclusions in this paper except for housing, lightning, and fuel.

4.0 Data and methods

In this chapter I will describe my research method and data collection choice.

4.1 Gathering of data

In this thesis I choose a quantitative research method to describe and test the hypothesis and answer my research questions. I have gathered a quantifiable amount of data and used statistical techniques. Quantitative method is an effective method to analyze an amount of data for this thesis.

In order to look at the effect of the Covid-19 pandemic on consumer spending I have collected data from SSB (Statistisk sentralbyrå). SSB is the main authority for the preparation and dissemination of official statistic in Norway and produces approximately 85% of all the Norwegian statistics. This is an independent institution that collect, produce, and publish office statistics related to economy, population, and society (SSBs virksomhet, 2022)

From SSB I gathered data for revenue in retail stores. This data shows the revenue for different businesses/product groups (SN2007) (Standard for næringsgruppering (SN), 2022) for wholesale and retail. I only used data for retail because this is businesses selling directly to the households. note that since this is retail revenue it also shows total revenue for all households not only the Norwegian households. Since the travel restriction implemented during Covid-19 this effect will be minimal.

This data is term based, where the year is divides in to six terms. This is January/February, March/April, May/June, July/August, September/October, and November/December. I have data for 2008 to 2022. I choose this data because it will give me valuable information and possibilities to comment on the effect on a term basis for the different product groups that households had consumed.

From Eika finance group I gathered data on daily credit card use for 2020, 2021 and January and February 2022. Eika group is the Norwegian biggest alliance for local banks. With over 50 local banks spread across of Norway. I will be using Daily credit card transaction numbers from over 320 000 Norwegian cards. Credit card usage is not a full pictures of consumer behaviors since this is credit card usage and not debit card. Norwegians may use their bank account for more daily "bread and butter" purchases. This data from Eika is anyway a good representation on the overall Norwegian consumption and purchases that is not the "necessary "category. With this data I will look at the daily transaction numbers from different categories I otherwise could not comment one with the data from SSB.

The last data I used is data on cinema. Here I use aggregate monthly cinema visits for the cinemas in Norway. This data is from Kino.no monthly statistics. (TALL & FAKTA Månedsstatistikk - oversikt, 2022) This reports contains 95% of all cinema visits in Norway. I will use the monthly numbers from 2016 to 2022. I will also use average visits per viewing. This data is from SSB (11817: Kino og kinobesøk (K) 2015 - 2021, 2022)

4.2 Methods

The questions I want to answer in this paper is:

- How Covid-19 effected household consumption in Norway?
- Is there an permanents effect in the consumer behavior after the pandemic?

I will use same analyses for both questions. To be able to answer these questions I will look at how my different data change during the Covid-19 pandemic prior to levels on earlier years, and periods. Will also look at the changes that happens after restrictions was staring to be lifted and the country began to open up again.

The data from SSB and Eika is processed by using statistic method. This is done to analyses what happened when the pandemic hit Norway.
As stated prior the different restrictions and government guidelines were constantly being changed and adjusted according to the infection's levels in and weekly and almost daily basis. The data I use is in monthly, term based or quarterly. I have therefore chosen to mainly highlight two main events in my

analysis of the data. The first is the start of the lockdown in March 2020, and the second is when the country started opening again in May 2021. This will still give me a clear indication on how the different data change according to when the Covid-19 pandemic hit the country.

The primary data is the data of retail revenue for different product categories in Norway. But I will also use the data for Eika to be able to look at product category who was not included in the datasets from SSB. This includes more service categories. Since I only have data from Eika from dec 2019- dec 2021 I am not able to deseasonalize this data as I did the data from SSB. This means that the data from Eika is not as accurate to depiction the true effect of the Covid-19 pandemic. It will still manage to give an indication on the effect the pandemic had.

With booth main data I will look at term and monthly revenue numbers. Where I will highlight event periods from when lockdown started and when the country started to open. With the data form SSB I will calculate the % change from the prior years. I have chosen to calculate the change for 2020 and 2021 with 2019. This is because this is the period close to the years I want to look at. 2019 is also not affected by covid 19 so it is a good normal base year to use. I also will calculate the percent change from 2018 to 2019 to see the usual level the data change from each year. With this I can make comments of how the different product categories changed during the Covid-19 pandemic.

4.3 Treatment of data

4.3.1 Seasonality

In time series data seasonality is a component that tells us that the changes or fluctuations for the time series is occurring in a repeated way for similar time periods. This is highly applicable for my data, and we see that there is highly cyclical behavior in the time series, and that consumer behavior is highly seasonally dependent. Example of this is that consumption increase in December Christmas holyday and fall drastically in January, or that some goods have a high increase in the summer periods and lower in the winter periods.

To manage to comment on changes of consumption behavior on a term-to-term basis, I will be looking at the seasonal adjusted time series for the data. I will manually seasonally adjust the data for retail revenue from SSB.

To stabilize the data by using moving average method. I gather data form the data sets form the past 10 years. And since I was looking at term changes, I chose to use that as my 6 periods season. I calculated the moving averages. Here I used 6 term moving average of each period. Then I computed the seasonal index which is the seasonal factor for each season. At last, I divided the original raw data with the seasonal index to get the deseasonalize data I will use in this paper.

4.3.2 Trends

In this paper I calculated the linear trends for online shopping in Norway. This was done by using a linear regression model in Microsoft Excel. From that I got the intercept and the slope of the trend line that I could calculate from the given periods to get the trend line. The data I used was term-based revenue from 2008 to 2019 to get one of the trend lines. And another trend line from 2014 to 2019. This was to get the overall trend line and also to look at the trend in the more recent years. I did not include 2020 and 2021 in the calculation because this would give me the wrong trend before the pandemic. Also, these periods had a big increase in revenue which would have shifted the trend line and given a false interpretation.

5.0 Statistics and results

5.1 Retail revenue

5.1.1 Food, drinks, and tobacco

Total Food, drinks, and tobacco

Fig 6 a shows total food retail revenue Norway. Total food is s summation of retail revenue for SN2007 industries: 47.21 Retail with Fruits and vegetables, 47.22 retail with meat and meat products, 47.23 retail with seafood, 47.291 retail with health foods. 47.24 retail with baked goods and other sweets, 47.251 retail with alcoholic beverages and 47.26 retail with tobacco. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

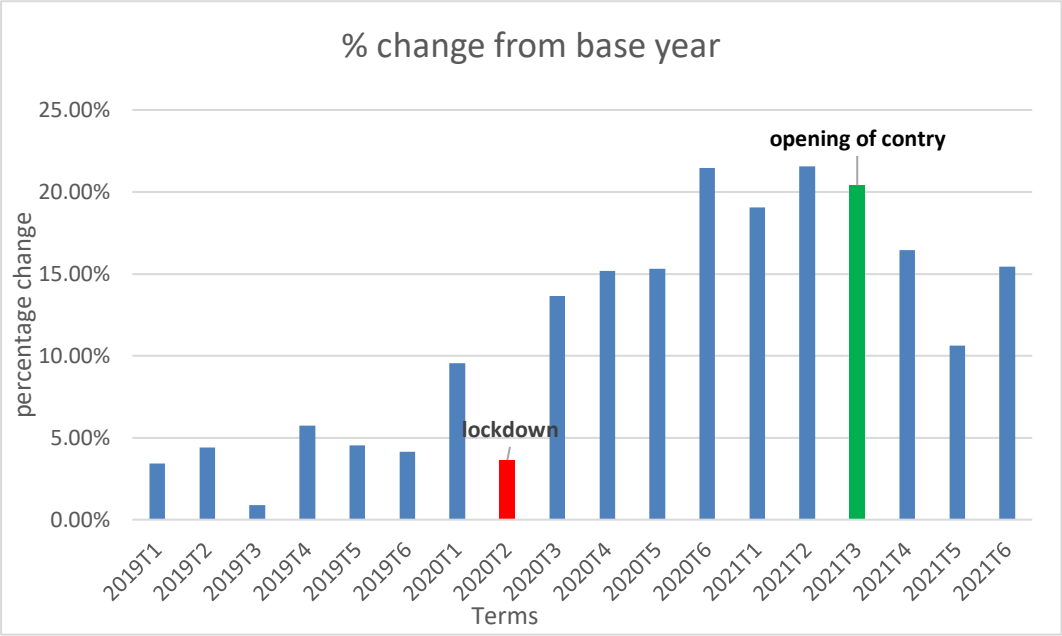

Fig 6b: Percentage change for the seasonal adjusted retail revenue numbers in fig 6a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

These two tables are an overview of total food consumption in retail stores in Norway from term 1 2019 until term 6 in 2021. When pandemic hit March 2019 fig 6 a and b shows us that there has been a huge increase in total retail food consumption during the pandemic. Fig 6 b in 2020T3 it is an increase in consumption by 13% from same term in 2019. The total retail was 3870 mill in 2019T3 and in 2020T3 it increased to 4398 mill.

This high increase in consumption was stable during the whole pandemic period with an increase of over 15% across the rest of the main pandemic time.

It decreases a little when Covid-19 restrictions were stating to be lifted but is still high and on a higher level than before the pandemic.

Food categories

Fruits and vegetables

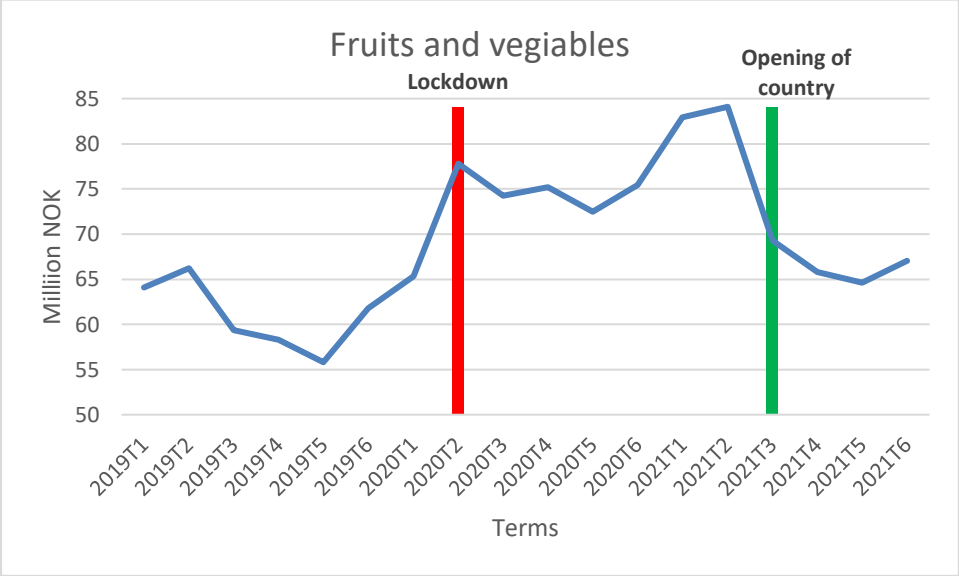

Fig 7a shows Fruits and vegetables retail revenue Norway. It is showing retail revenue for SN2007 industry: 47.21 Retail with Fruits and vegetables The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)

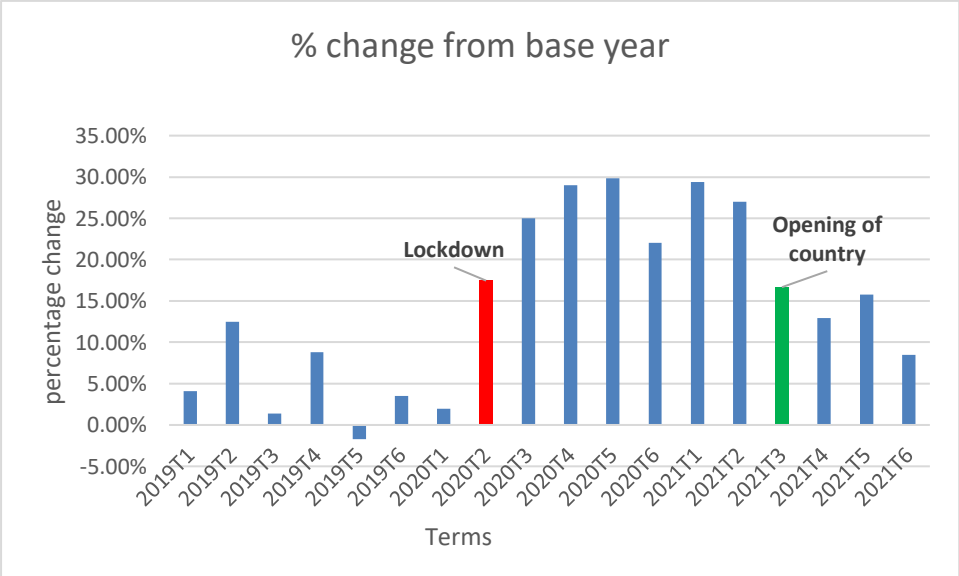

Fig 7b: Percentage change for the seasonal adjusted retail revenue number in fig 7a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

When pandemic hit March 2020 fig 7a and b shows us that there has been an increase in fruits and vegetables retail consumption during the pandemic. Fig 7b in 2020T2 it is an increase in consumption by 17% from same term in 2019. The total retail revenue was 66 million NOK in 2019T2 and in 2020T3 increased to 78 million NOK. This high increase in consumption was stable during the hole

pandemic period with an increase of over 20%. When the country started to open up there where a smaller increase in consumptions with an increase of 16% from 2019. The increase further declined in the previous terms to end at increase of 8% in 2021T6. which are still higher levels than before the pandemic.

Meat

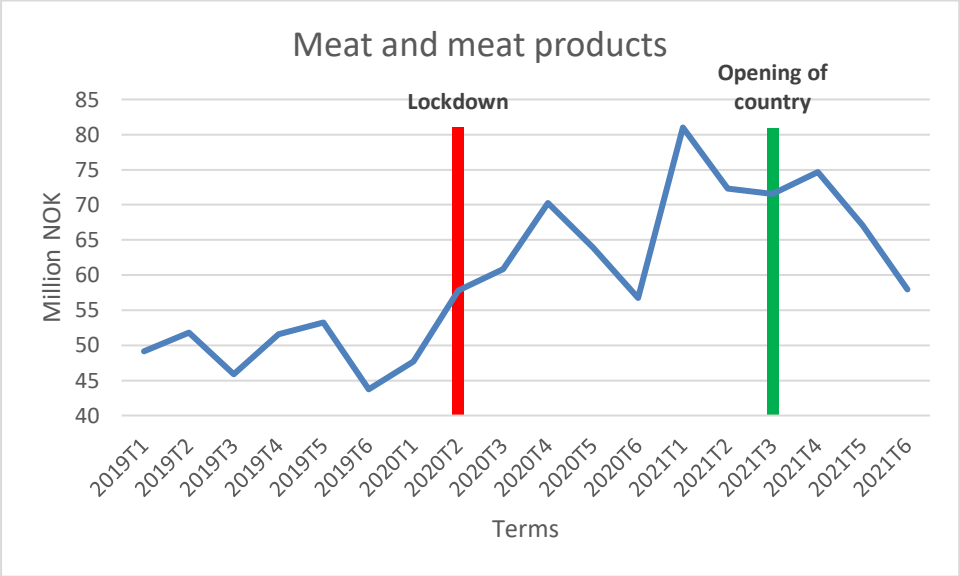

Fig 8a shows meat and meat products retail revenue Norway. It is showing retail revenue for SN2007 industry: 47.22 retail with meat and meat products The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

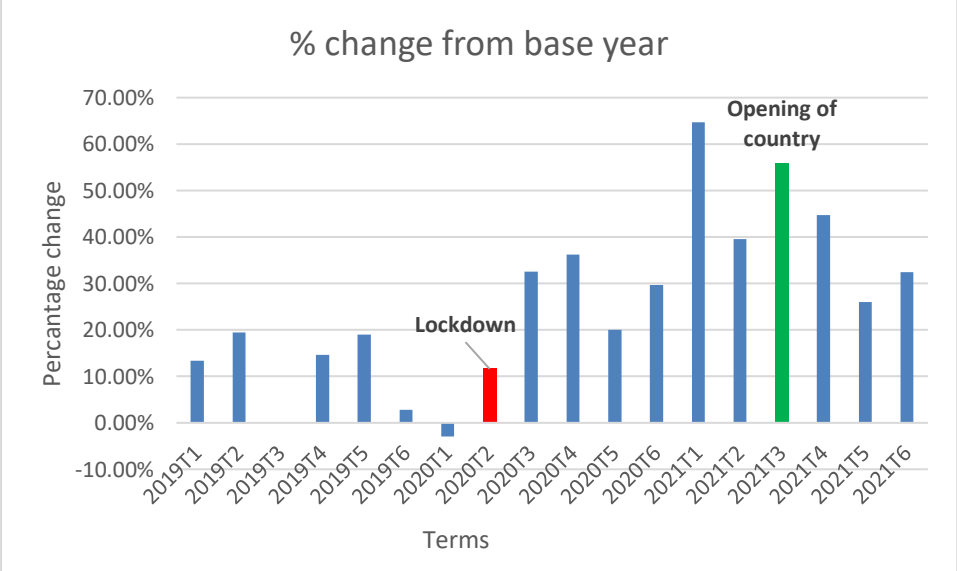

Fig 8b: Percentage change for the seasonal adjusted retail revenue number in fig 8a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

Fig 8 a and b shows us that there has been an increase in retail meat consumption during the pandemic. Fig 8b in 2020T2 it is an increase in consumption by 10%

from same term in 2019. And a further increase of 32% in 2020T3. It was an increase in revenue for meat across the pandemic with peak increase in 2021T1 with an increase of 64%. The levels where high after the restrictions started to be lifted as well but had a little drop to an increase from 50% in 2021T1 to 30% in 2021T6.

Seafood

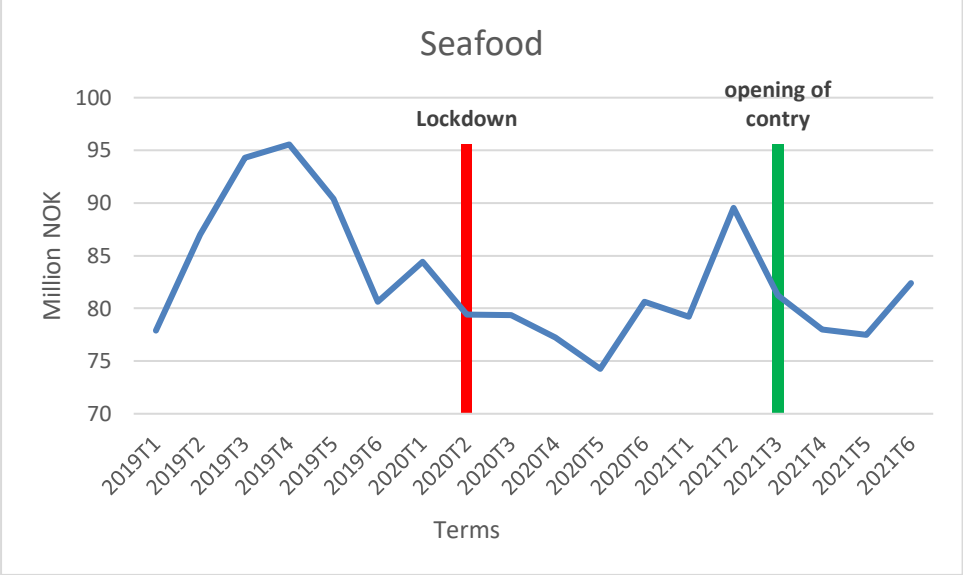

Fig 9a shows seafood retail revenue Norway. It is showing retail revenue for SN2007 industry: 47.23 retail with seafood. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

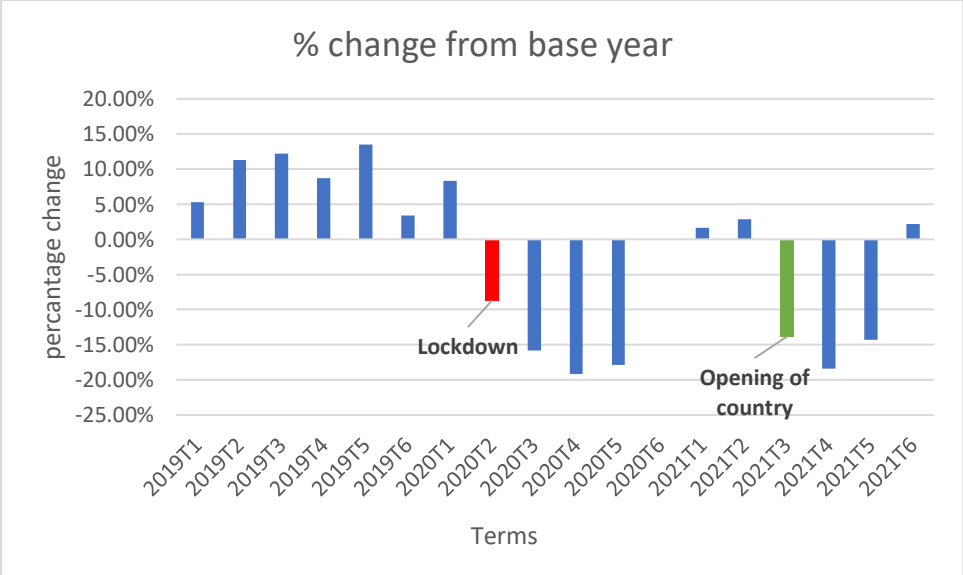

Fig 9b: Percentage change for the seasonal adjusted retail revenue number in fig 9a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

In this tables the pandemic has a different effect. When pandemic hit March 2020 fig 9a and b shows us that there has been a decline of consumption of seafood during the pandemic. Fig 9b in 2020T2 it is a decline in consumption by near 9% from same term in 2019. The decline is stable during the first period of the pandemic, then it reaches normal level in 2020T6, 2021T1 and T2 before it declines again when restrictions started to be lifted. It then reaches levels from 2019 in 2021T6.

Baked goods and other sweets

Fig 10a shows baked goods and other sweets retail revenue Norway. It is showing retail revenue for SN2007 industry: 47.24 retail with baked goods and other sweets. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

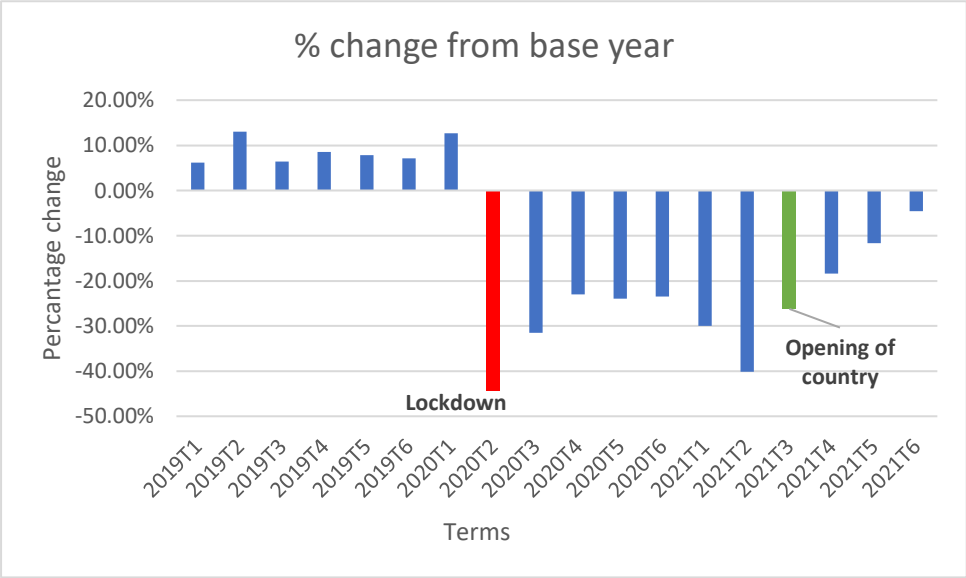

Fig 10b: Percentage change for the seasonal adjusted retail revenue number in fig 10a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

When pandemic hit March 2020 fig 10a and b shows us that there has been a decline of consumption of baked goods and sugary products during the pandemic. Fig 8b in 2020T2 it is a decline in consumption by near 45% from same term in 2019. The decline is stable through the pandemic periods. After the pandemic lockdown is over and the country opens up the decline starting to go back to "normal" levels where it goes from decline of 26% in 2021T3 to reach almost the same level as in 2019 with a decline of just 5% in 2021T6

Alcoholic beverages

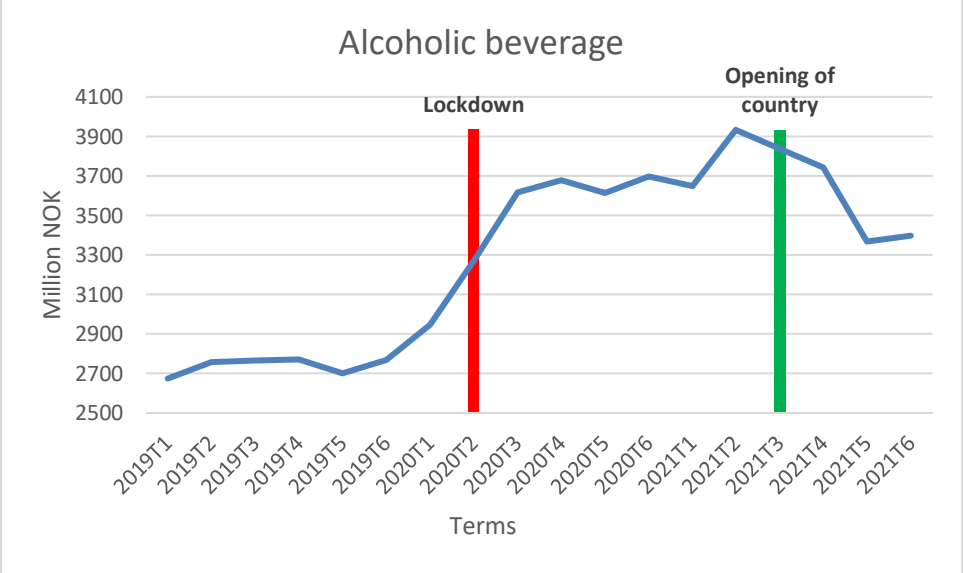

Fig 11a shows alcoholic beverages retail revenue Norway. It is showing retail revenue for SN2007 industry: 47.251 retail with alcoholic beverages. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

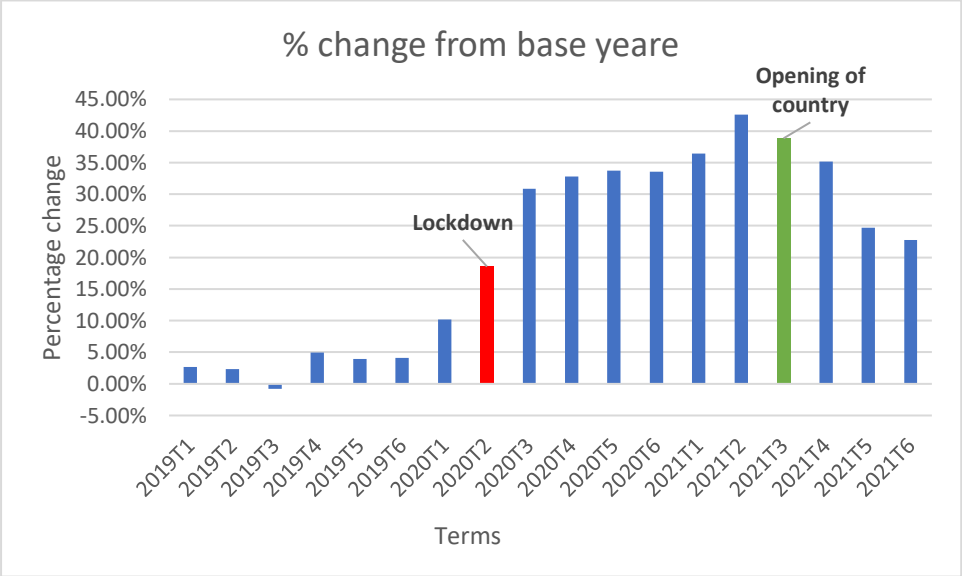

Fig 11b: Percentage change for the seasonal adjusted retail revenue number in fig 11a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

When pandemic hit March 2020 fig 11a and b shows us that there has been a huge increase in alcohol retail revenue during the pandemic. Fig 11b in 2020T2 shows an increase in consumption by 18% from same term in 2019. A future increase to 30% increase in 2020T3. This level with over 30% increase occurs during the whole pandemic period. The levels stated to go down after the restrictions started to be lifted. But it's still not back at normal levels from before the pandemic with and increase with over 22% increase in revenue in 2021T6. Overall, there where an increase in retail revenue for alcoholic beverages from 2019, 4388 million NOK in 2020 and 5492 million NOK in 2021.

Tobacco

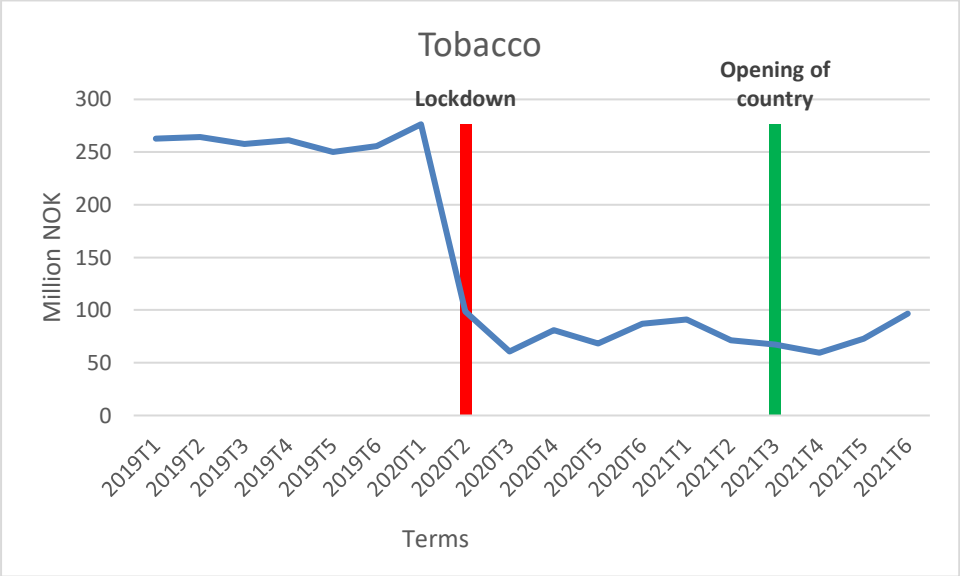

Fig 12a shows tobacco retail revenue Norway. It is showing retail revenue for SN2007 industry: 47.26 retail with tobacco. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

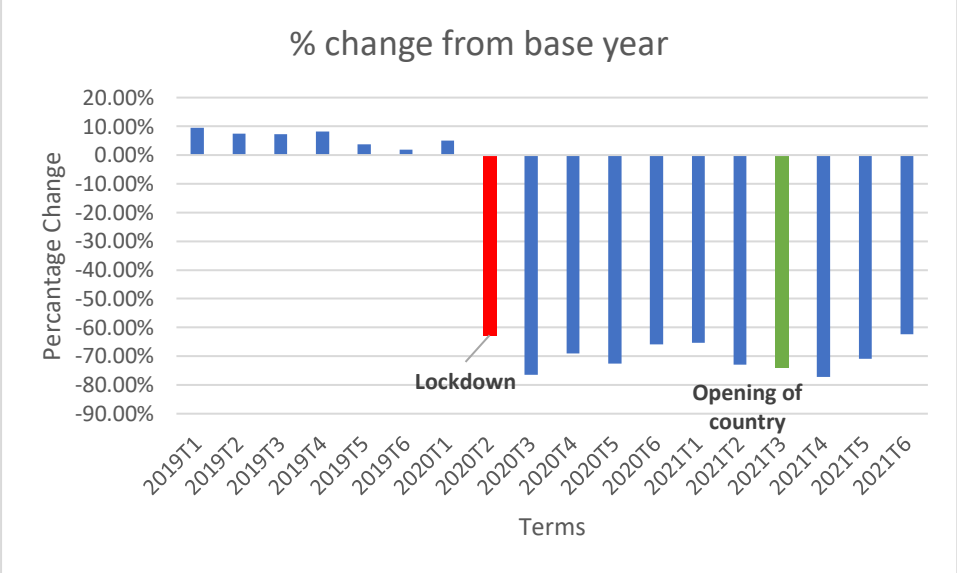

Fig 12b: Percentage change for the seasonal adjusted retail revenue number in fig 12a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

When pandemic hit March 2020 fig 12a and b shows us that there has been a decline of tobacco during the pandemic. Fig 12b in 2020T2 it is a decline in consumption by over 62 % from same term in 2019. The revenue of tobacco has a drop of 178 million NOK from 2021T1 to T2.

The decline is stable through the pandemic periods. With the decline staying at over 60%. After the lockdown and restriction started to be lifted in 2021T3 these levels did not change and go back to levels that there before the padimate with a

decline of 62% in 2021T3. Overall, there where decrease in yearly revenue from 2019, 879 million NOK in 2020 and 1093 million NOK in 2021.

Health foods

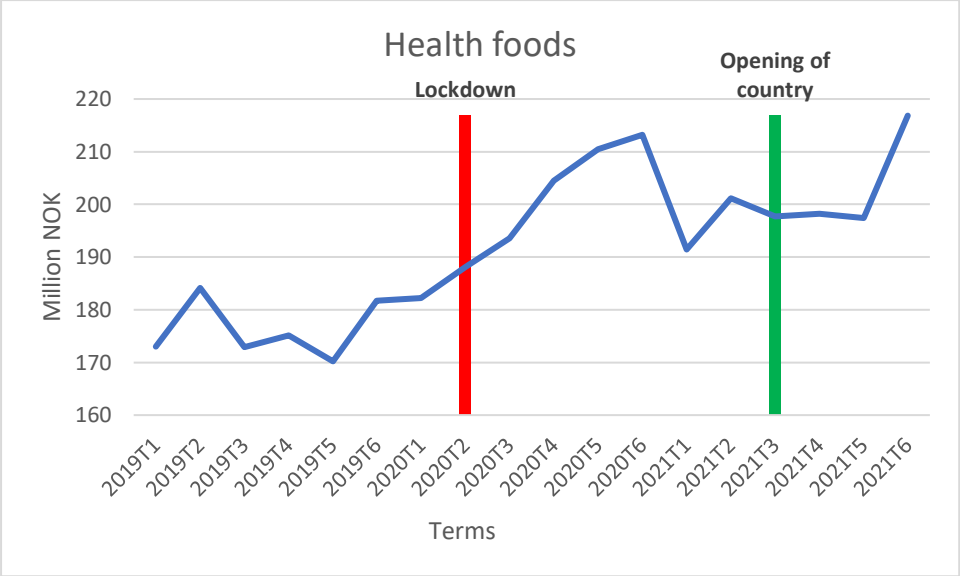

Fig 13a shows health foods retail revenue Norway. It is showing retail revenue for SN2007 industry: 47.291 retail with health foods. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022) The data is seasonal adjusted.

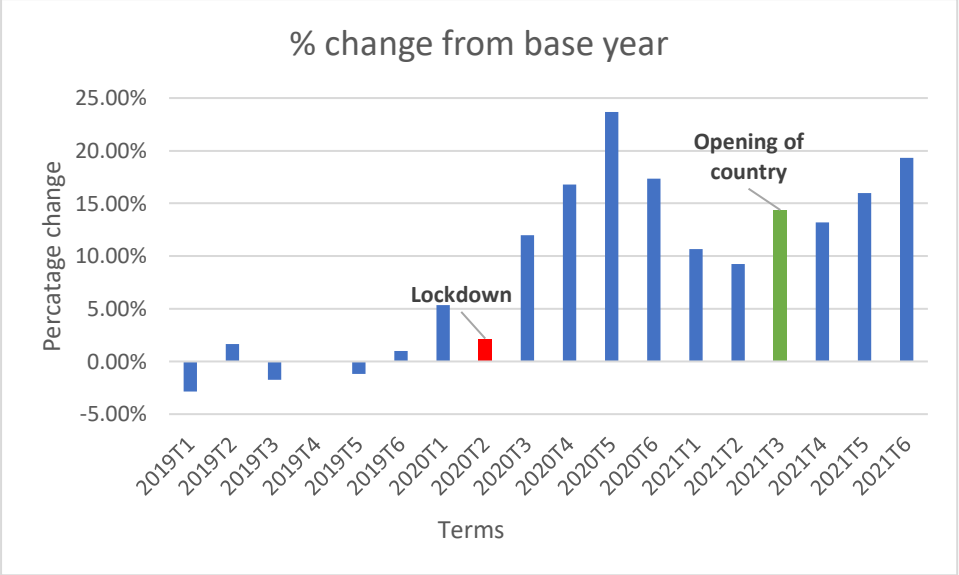

Fig 13b: Percentage change for the seasonal adjusted retail revenue number in fig 13a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

When pandemic hit March 2020 fig 11a and b shows us that there has been an increase in health foods during the pandemic. Fig 11b in 2020T3 it is an increase in revenue by 11% from same term in 2019. A future increase to 23% in 2020T5.

There is in increase in spending across all the terms in 2020 and 2021.Where there is a yearly increase from 2019 of 135 million NOK in 2020 and 146 million NOK in 2021.

Reasons and summary

Border trade

About the data used

Border trade is research done by SSB. This research spans the physical trade in other countries than Norway. The data is trade without overnight stays. The statistic used uses spending amounts and day trips.

Spending amount is in Norwegian Kroner used on goods and services. And days trips are daily trips to other countries.

The data is measured quarterly where spending amount is in million NOK and daily trips is in per 1000

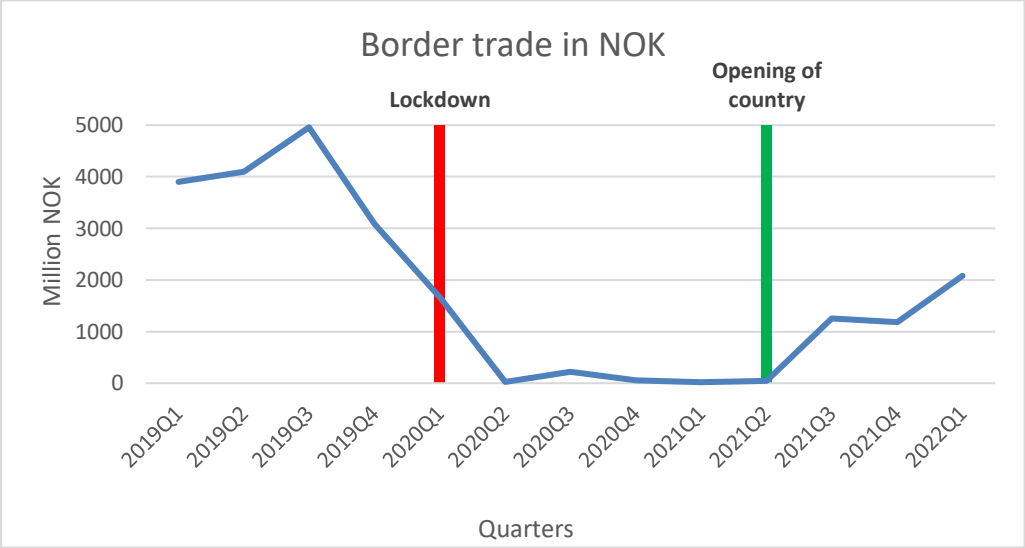

Fig 14a Shows Quarterly border trade in million NOK. The data is form SSB (08460: Grensehandel. Antall dagsturer og handlebeløp 2004K1 - 2022K1, 2022)

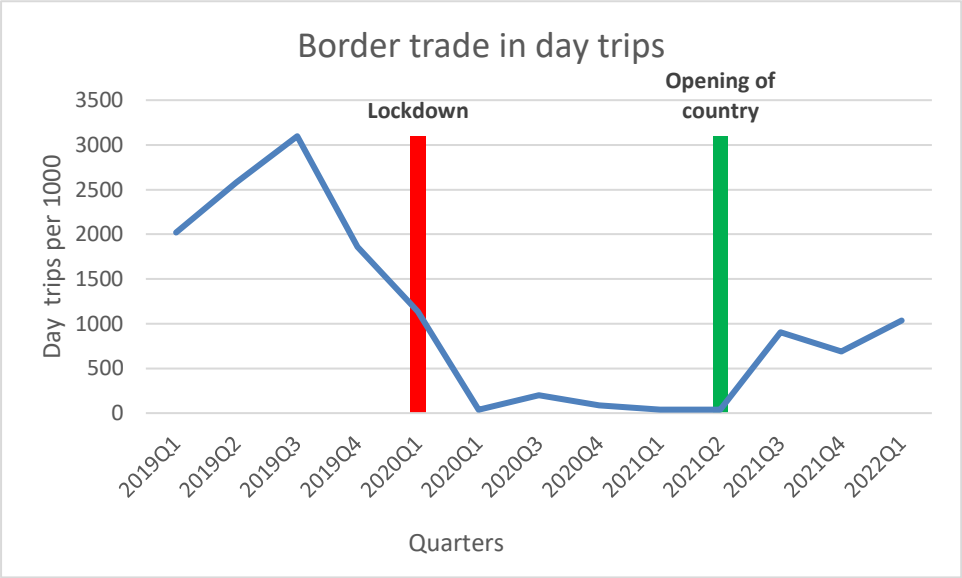

Fig 14a Shows Quarterly border trade in million NOK. The data is form SSB (08460: Grensehandel. Antall dagsturer og handlebeløp 2004K1 - 2022K1, 2022)

In table 14 a and b there is a huge decline in border trade after the lockdown started and travel restrictions were implemented. It dops from 3086 million NOK in 2019Q4 to 1667 million NOK in 2020Q1 and a further drop in 2020Q2 to 28 million NOK. This low-level stays consistent true the rest of 2020 and 2021Q1. There are increase spending in 2020Q3 and then a further increase the next two quarters. The levels are still not back at the levels it was before the Pandemic. Some reasons for this are that the travel restrictions were still not fully open as before the pandemic. Only fully vaccinated people could travel and still had to be tested on the border. The restrictions were lifted slowly every quarter as we see in the increases.

What people buy overseas

In order to obtain more information about Norwegians' shopping habits across the border, SSB carried out and a pilot survey to expand the statistics for cross-border trade. The survey was conducted through a survey where the selected were asked about which goods groups people bought and in addition the purchase amount. The survey was conducted for September 2019. (Nordmenns grensehandel, 2020)

Results from the survey

From the survey they conclude that the total purchase amount comes to a total of 2 billion NOK in September 2019. The product group that was most used abroad

was groceries and food. The Norwegians spent 684 million NOK on this product group. This corresponds to 34% of the total spending for cross-border trade for September 2019.
Alcohol: surveys indicate that 359 million NOK is spent on alcoholic beverages. This corresponds to 18 % of the total cross-border trade. Tobacco accounted for 15.9 % of total cross-border trade in September 2019.
Chocolate and sweets stood for. 127 million NOK in September.

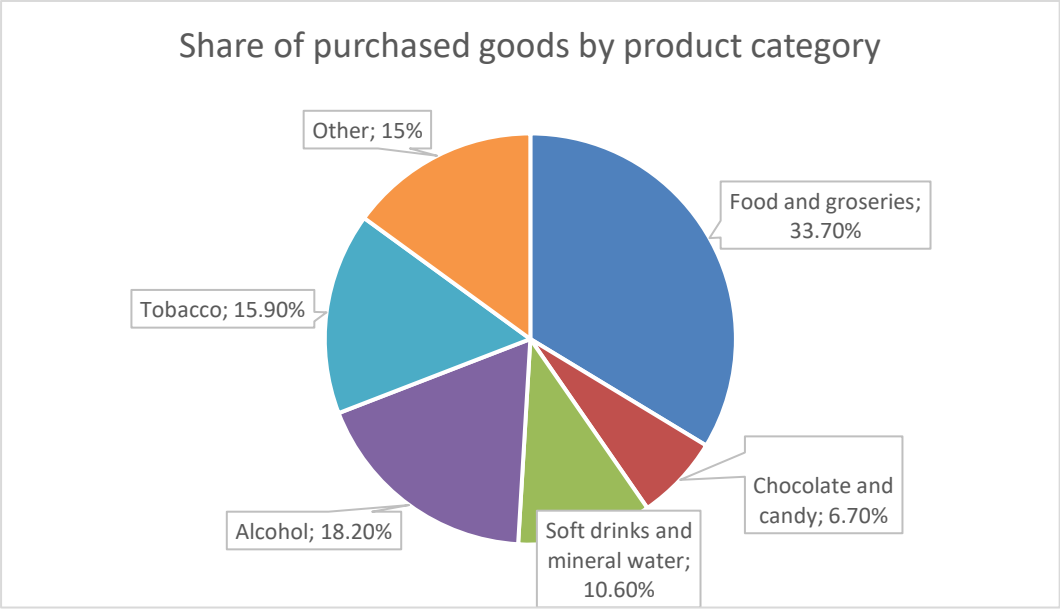

Fig 15 Show results from the pilot survey for September 2019. The fig shows percentage shares of the total purchasing amount from September 2019 which is 2 billion NOK. The data is from SSB (Nordmenns grensehandel, 2020)

In an article from the sveskeportalen, they say that over 80% of Norwegian shopping in Sweden is buying meat. (Handle i Sverige, 2022). Another article from smartepenger.no done on 11 November 2021. they state that the Norwegian price level is still significantly higher than in Sweden. And there was no significant change in the overall price level during covid.19 pandemic between the two countries. (Guide til å handle i Sverige, 2021)

Norwegians spends allot of money on border trade. Over 50 % of the categories people spend on border trade are the categories that also increased during the pandemic. These are products like meat and alcohol. When the restrictions limit the availability to shop across the border it is natural that these levels also rise in Norway.

Restrictions

Other factors that could explain the change in food is the restrictions on restaurants and social events. The catering industry, which include restaurant, bars and cafes was shut down or under strict covid guidelines through 2020 and 2021. This meant that people either couldn't go out and eat, or they chose to eat at home cause of the virus risk. This leads to the consumption which would happen at restaurants or bars cause an increase for food retail revenue.

Literature

From previous literature we see that that in previous crisis's usually there is an increase in spending in necessities and a decrease in luxuries. Food is one of these necessities and we see evidence that this have and increase in Norway where most foods have an increase in revenue. We also see that more luxuries or unnecessary food categories have a decrease in sales like baked goods and sweets and tobacco. This is especially evident in sales for tobacco which is one of the biggest categories spent on border trade. When border trade fell, we could expect an increase in Norwegian tobacco consumption, but we rather see a decrease
We also see that the increase in alcohol can also be explained by the loneliness and depression people felt during the Covid-19 pandemic.

5.1.2 Clothes

Clothes

Fig 16a shows retail clothes revenue Norway. It is showing total retail revenue for SN2007 industry's: 47.710 retail with clothes and 47.721 retail with shoes The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

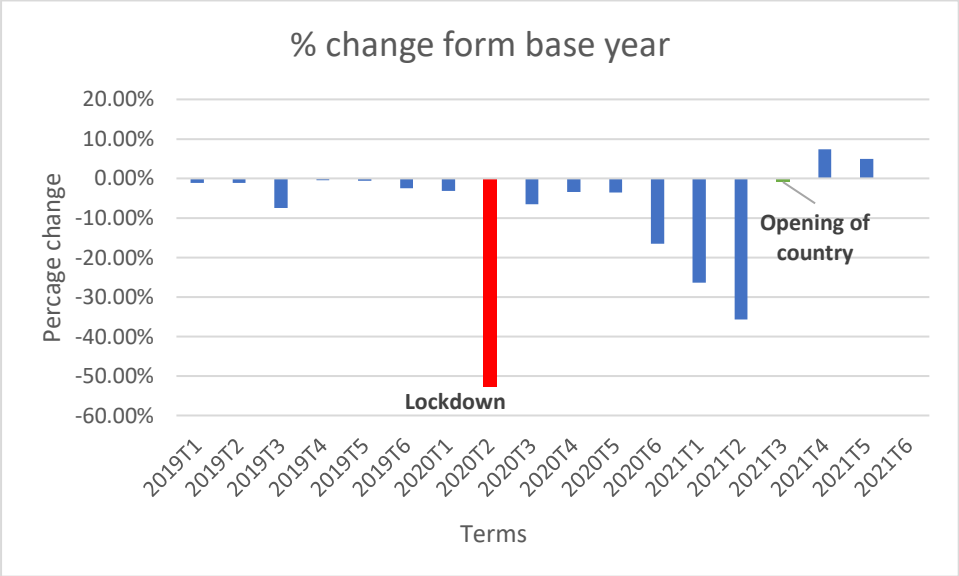

Fig 16b: Percentage change for the seasonal adjusted retail revenue number in fig 16a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

When pandemic hit March 2010 fig 16 a and b shows us that there has been a decline of retail clothes during the pandemic. Fig 16b in 2020T2 it a huge decline in revenue when the pandemic restriction hit in Norway with a decrease with 52% form 2019. And a decline from 5429 million NOK in 2020T1 to 2695 million NOK in 2020T2. The levels go back to normal levels after the huge decline in 202T2. Then in 2020T6 to 2021T2 there is a decline again. This decline matches the time when the restriction in Norway started do be stricter again. Then the revenues went back to normal levels when the restrictions where over.

Online clothes sales revenue

Fig 17a shows online clothes sales revenue Norway. It is showing total retail revenue for SN2007 industry: 47.912 online shopping for clothes The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted

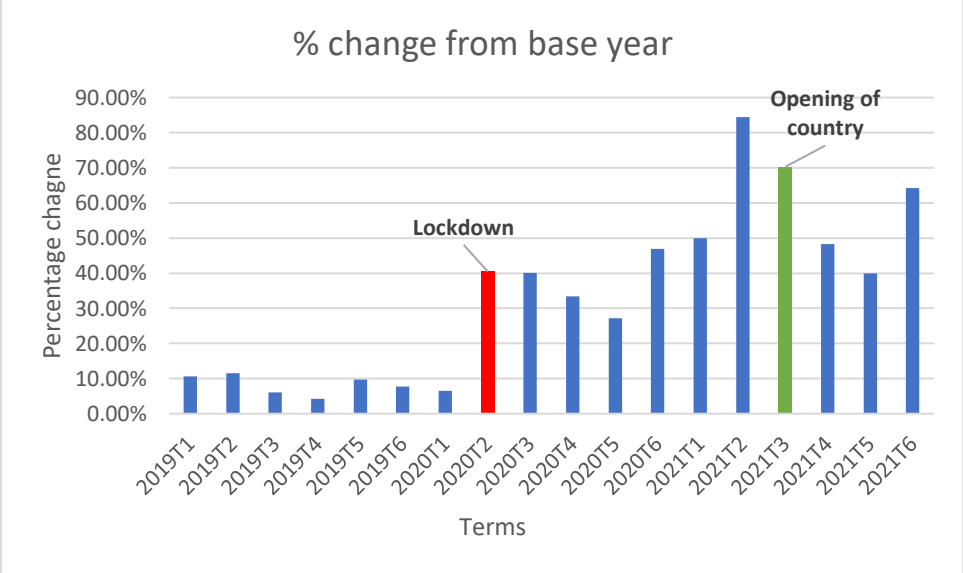

Fig 17b: Percentage change for the seasonal adjusted retail revenue number in fig 17a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

When we see a decrease in clothes retail sales during the restricted periods, we see a massive increase in clothes sales online. In 2020T2 there is and 40% increase in clothes sales online when the lockdown started. This increase in revenue level is stable trough out the pandemic. It reaches its peak at and increase of 84% in 2021T2. Even after the restriction is lifted and the country opens up the levels is still high with and increase at 64% in 2021T6

Reasons and summary

For clothes sales in retail stores, we see big decreases in revenue. This decrease matches the timing of stricter lockdown periods in Norway. Where either the retail stores were closed, or people where encourage to be at home. We also see the overall level for retail clothes shopping is similar to the levels in 2019 in the midst of the pandemic, and that the levels of retail revenue are similar to prior years when there are almost no restrictions on retail shopping.

If we look at the clothes sales for online shopping, we see a huge increase in revenue across the whole 2020 and 2021. There was an increase in online shopping at the start of lockdown, at the same time a decrease in revenue in retail stores. The increase and the decrease were not a one-to-one comparison. If we look at the decrease in retail stores from 2020T1 to T2 there is s decrease 2773 million NOK and increase for online shopping was just about 10% of that with increase of 294 million NOK for the same period.

The decrease for yearly revenue for retail from 2019 to 2020 is 4906 million NOK. From 2019 to 2021 the decrease was 2869 million NOK. For online shopping the increase from 2019 in yearly revenue was 1580 million NOK in 2020 and increase in 2851 million NOK in 2021. We see that across the year there are more a similar number in increase and decrease which can indicate that people switch from retails shopping to shopping online. Combined clothes shopping from 2019 to 2021 had not changed much. This implies that the pandemic did not affect clothes shopping other than where the shopping occurred.

5.1.3 House and renovation

Renovation

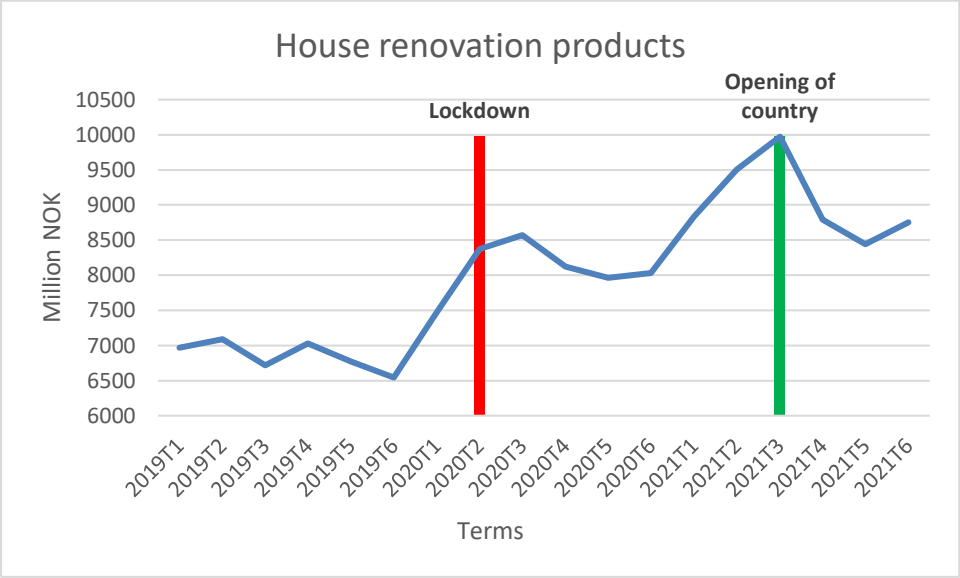

Fig 18a shows house renovation products revenue Norway. It is showing total retail revenue for SN2007 industry's: 47.51 retail sales in textiles and equipment, 47.52 Retail sale of hardware, paints and glass and 47.53 Retail sale of wallpaper, rugs and curtains, The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

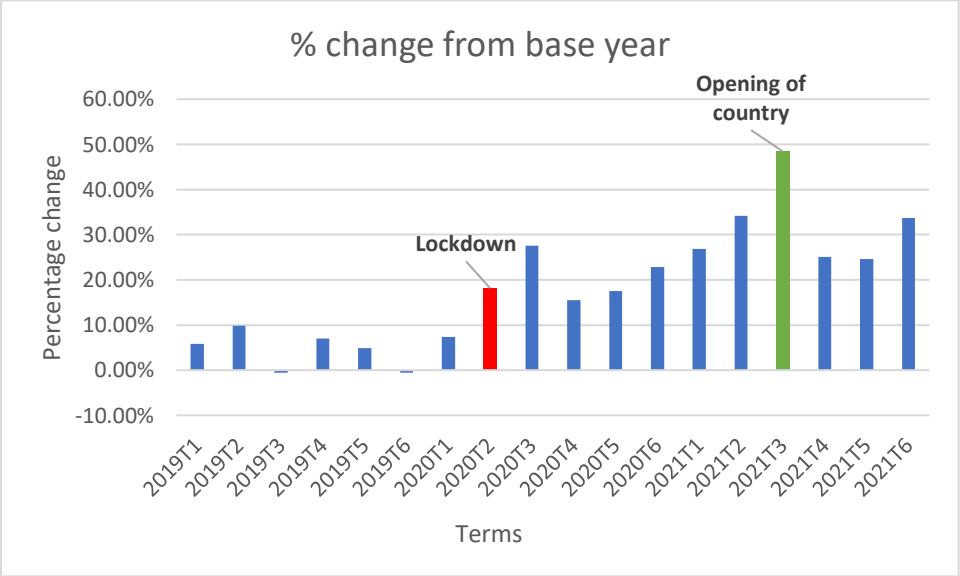

Fig 18b: Percentage change for the seasonal adjusted retail revenue numbers in fig 18a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

When pandemic hit March 2020 fig18 a and b shows us that there has been an increase in house renovating. Fig 18 b in 2020T2 it is an increase in retail revenue by 18% from same term in 2019. This increase where persistent over the whole pandemic periods with increase over 15% at the lowest. When restrictions were

lifted in 2021T3 there is a further increase to with an increase of 48% in revenue. And then being an increase of over 25% the rest of the year.

Total furniture and household products

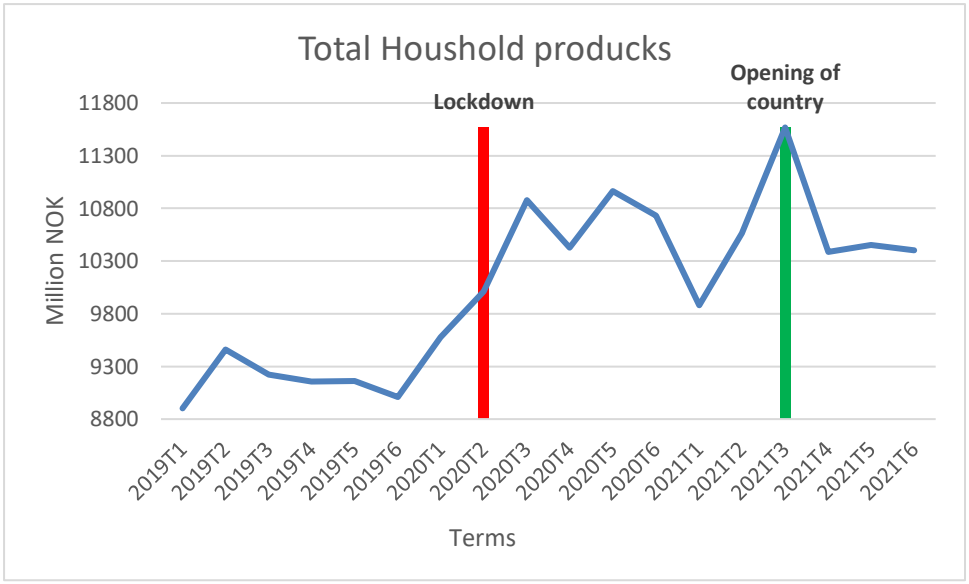

Fig 19a shows Total household products revenue in Norway. It is showing total retail revenue for SN2007 industry's: 47.43 Retail sale of audio and video equipment, 47,761 Retail sale of flowers and plants, 47.54 Retail sale of electrical household appliances and 47.59 Retail sale of furniture, lighting equipment and other articles. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

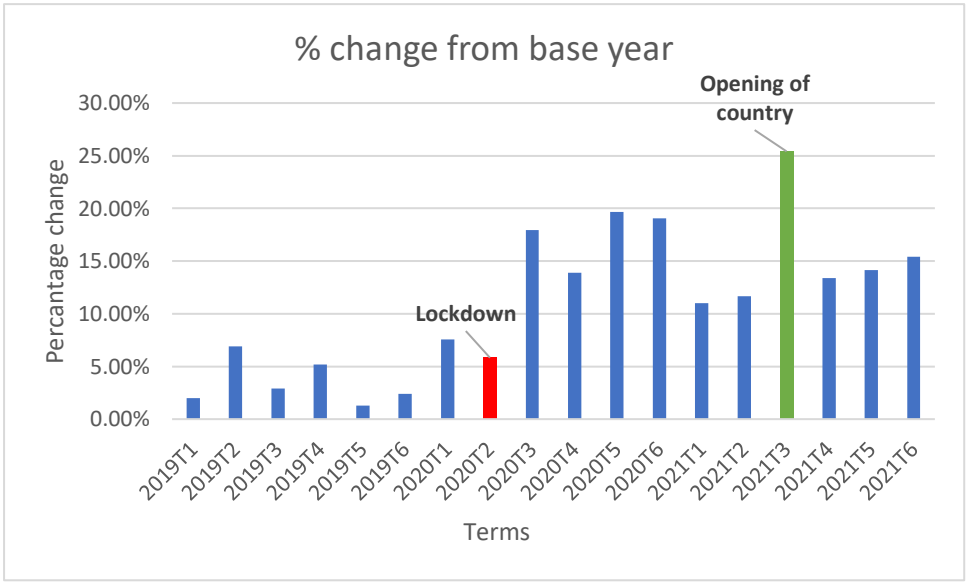

Fig 19b: Percentage change for the seasonal adjusted retail revenue numbers in fig 19a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

When pandemic hit March 2020 fig 19 a and b shows us that there has been an increase in household products. Fig 19 b in 2020T3 shows an increase in retail consumption by 17% from the same term in 2019. This increase where persistent

over the whole pandemic period with an increase of over 10% at the lowest. When restrictions were lifted in 2021T3 there is a further increase of 25%. Then being an increase of over 13% the rest of the year.

Household product different categories

Audio and video

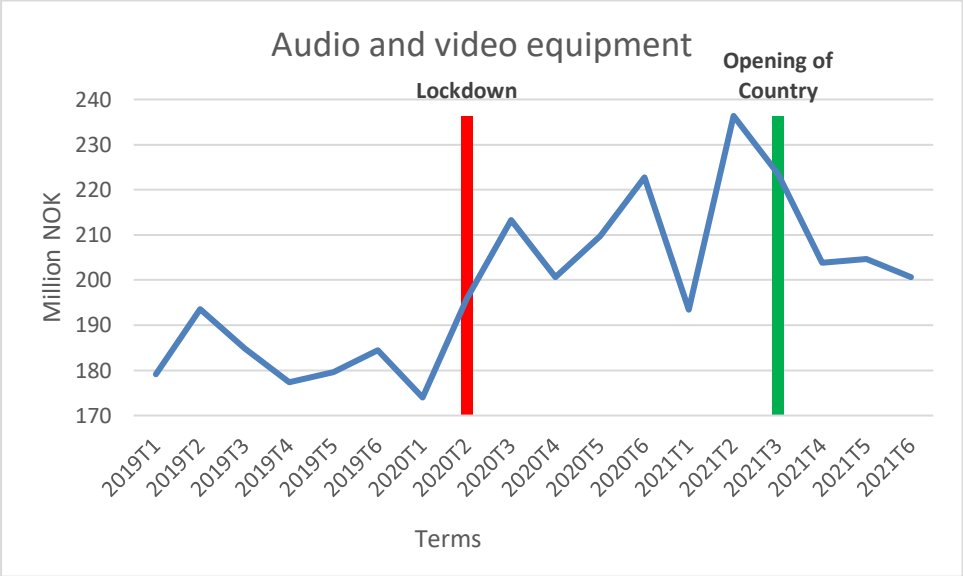

Fig 20a shows Audio and video revenue in Norway. It is showing total retail revenue for SN2007 industry: 47.43 Retail sale of audio and video equipment. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

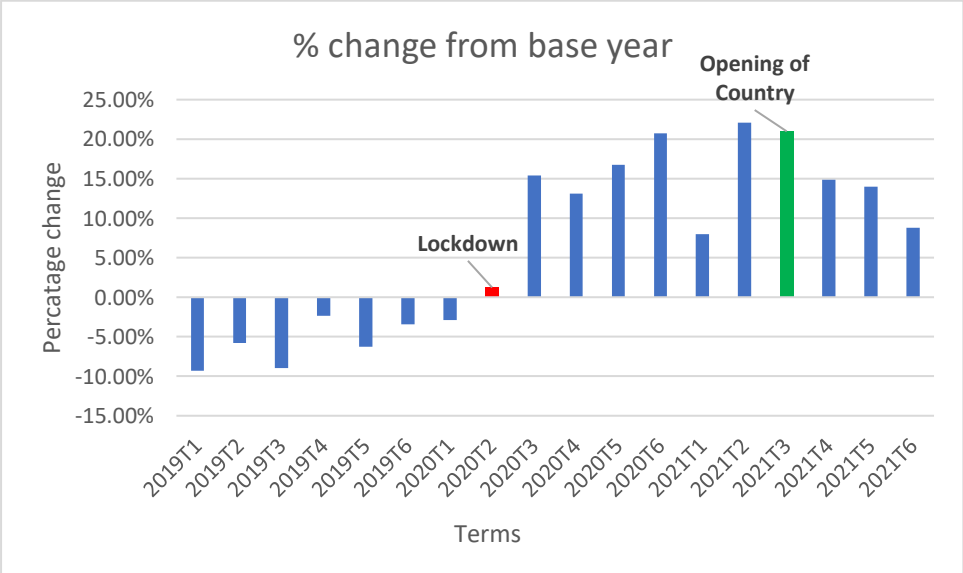

Fig 20b: Percentage change for the seasonal adjusted retail revenue numbers in fig 20a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

Electronical house products

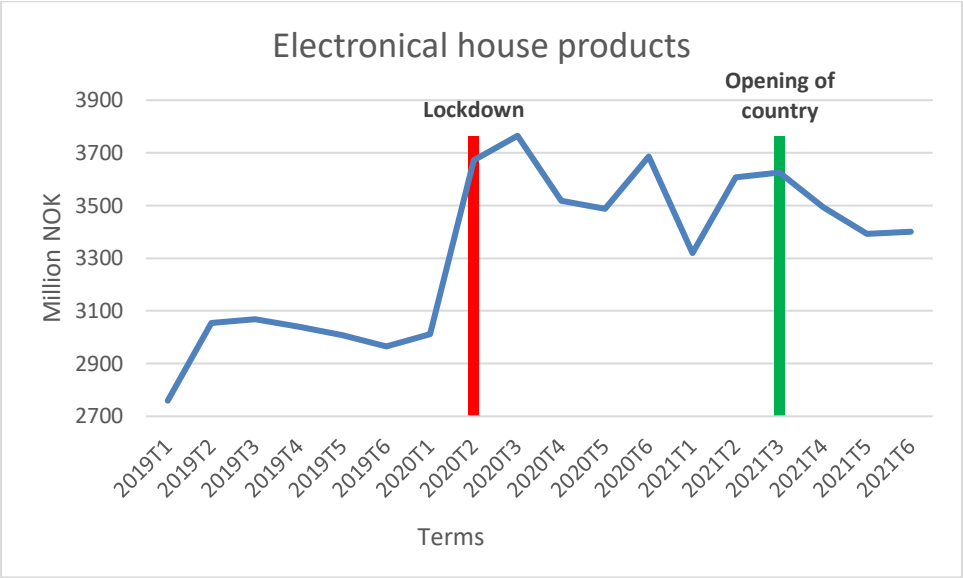

Fig 21 a shows electronical house products revenue in Norway. It is showing total retail revenue for SN2007 industry: , 47.54 Retail sale of electrical household appliances. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022) The data is seasonal adjusted.

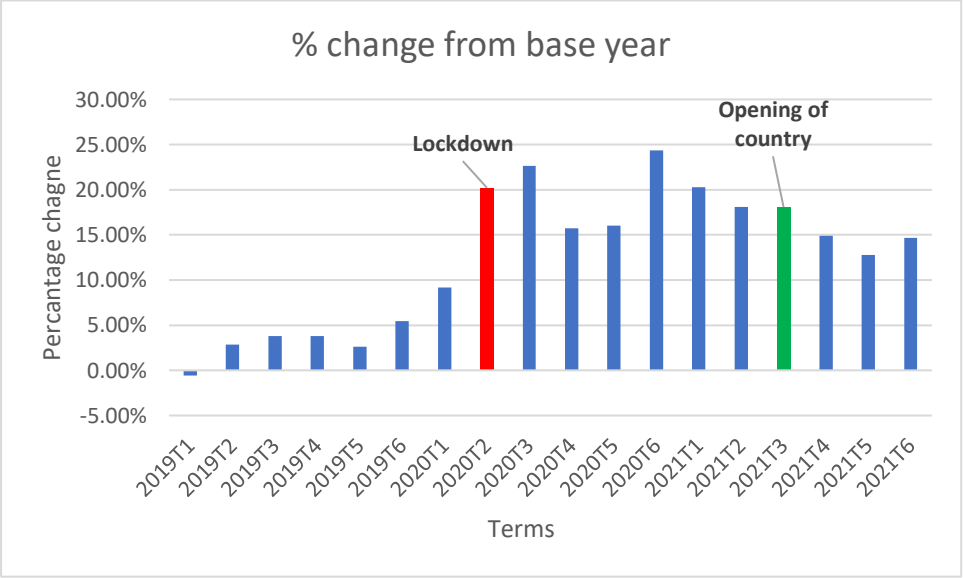

Fig 21b: Percentage change for the seasonal adjusted retail revenue numbers in fig 21a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

Plants and flowers

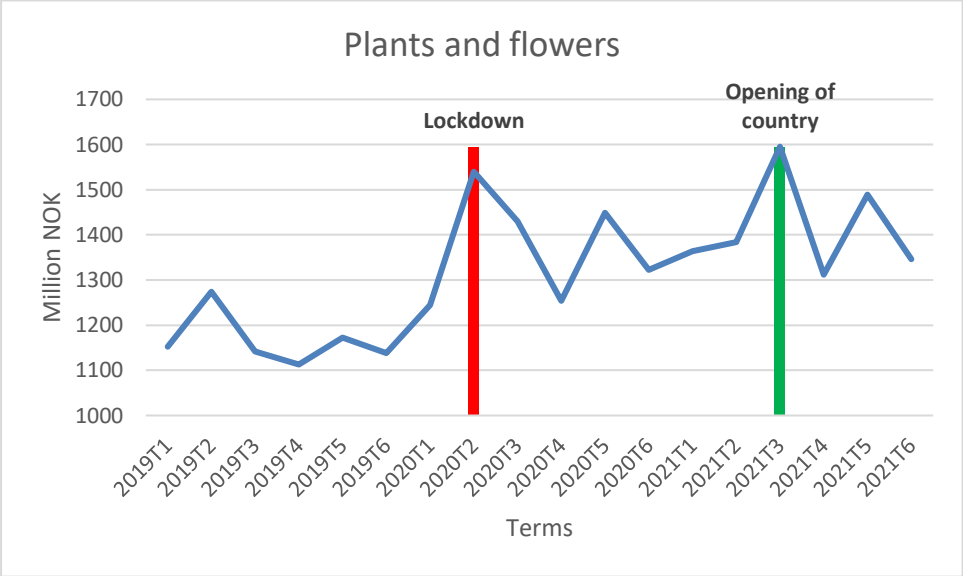

Fig 22a shows plants and flowers revenue in Norway. It is showing total retail revenue for SN2007 industry: 47,761 Retail sale of flowers and plants. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

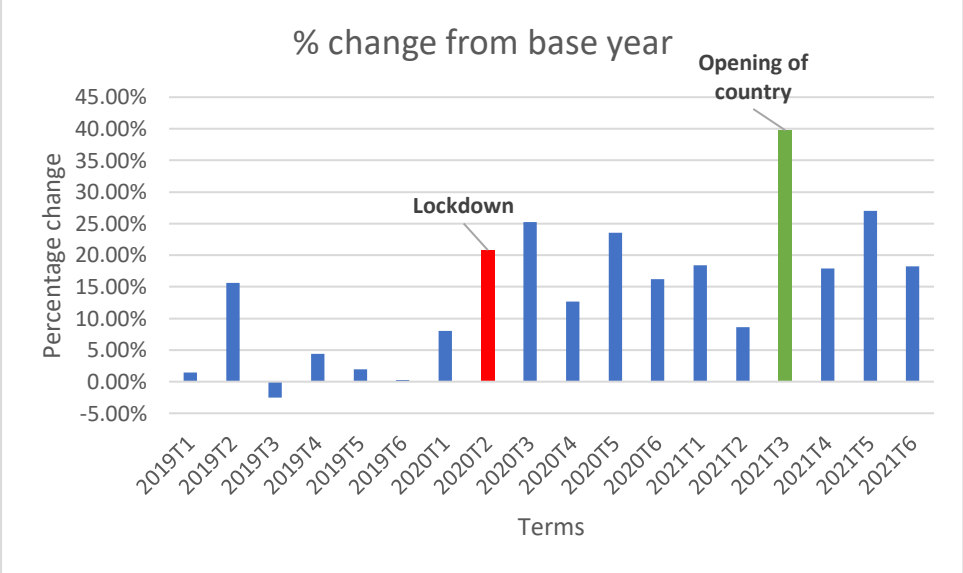

Fig 22b: Percentage change for the seasonal adjusted retail revenue numbers in fig 22a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

Furniture

Fig 23a shows Furniture revenue in Norway. It is showing total retail revenue for SN2007 industry: 47.59 Retail sale of furniture, lighting equipment and other articles. The data is from (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

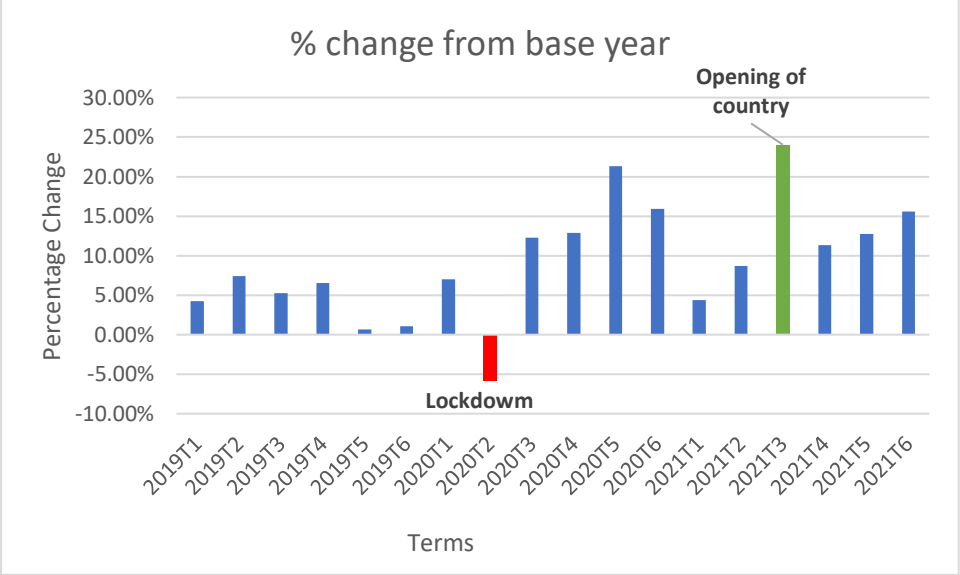

Fig 23b: Percentage change for the seasonal adjusted retail revenue numbers in fig 23a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

All the different household product categories had an increase when the lockdown started in 2020T2 or 2020T3. These levels were persistent at around the levels they increased to throughout the whole pandemic. We also see that when the restrictions were lifted in 2021T3 that the revenues increased and that the levels did not go back to the more normal levels it had in 2019.

Reasons and summary

We can see that overall, there has been a rise in house products and renovation in 2020 and 2021. Reasons for the increases can be explained that during lockdowns that people had to spend more time at home. Renovation is something that takes time, because people had more free time, they were able to renovate during the pandemic. Also, when people spend more time at home, they want to invest more in their living environment. These factors can explain some of the increase in house products and renovation.

Many of the physical entertainment product was restricted during the pandemic. Cinemas and theaters and other events were closed. This meant that people needed to find more entertainment at home via more digital media or general more home entertainment. This can explain some of the increase in electronical products or furniture where people invested in a better entertainment experience at home.

5.1.4 Entertainment and hobby Products

Services, entertainment, and travel was restricted during the pandemic. This could cause that most people needing to find other thing and hobbies to do. We see evidence in this in almost all the different categories had and increase when lockdown was implemented in Norway.

<u>Books</u>

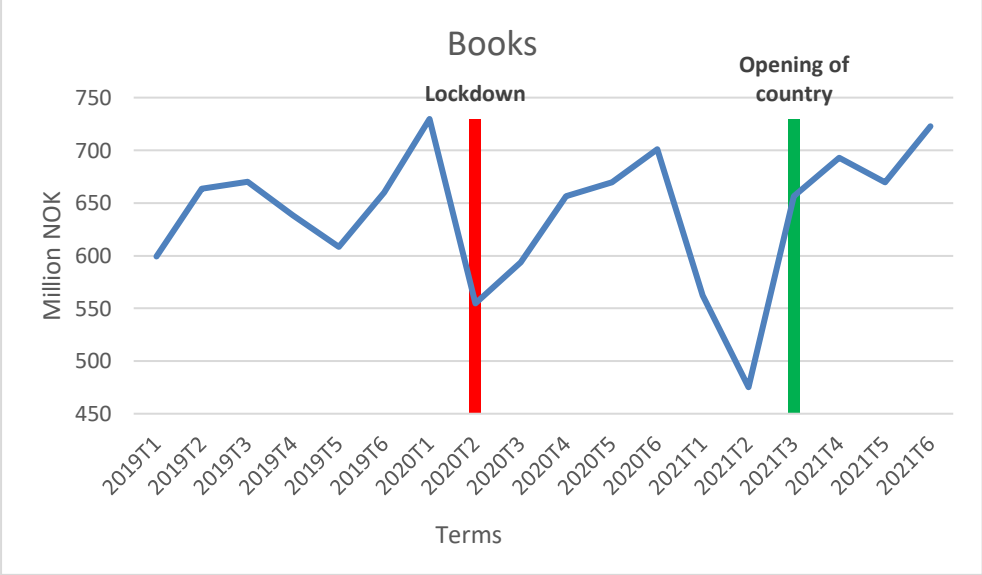

Fig 24a shows Book revenue in Norway. It is showing total retail revenue for SN2007 industry: 47.61 Retail sale of Books. The data is from (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022) The data is seasonal adjusted.

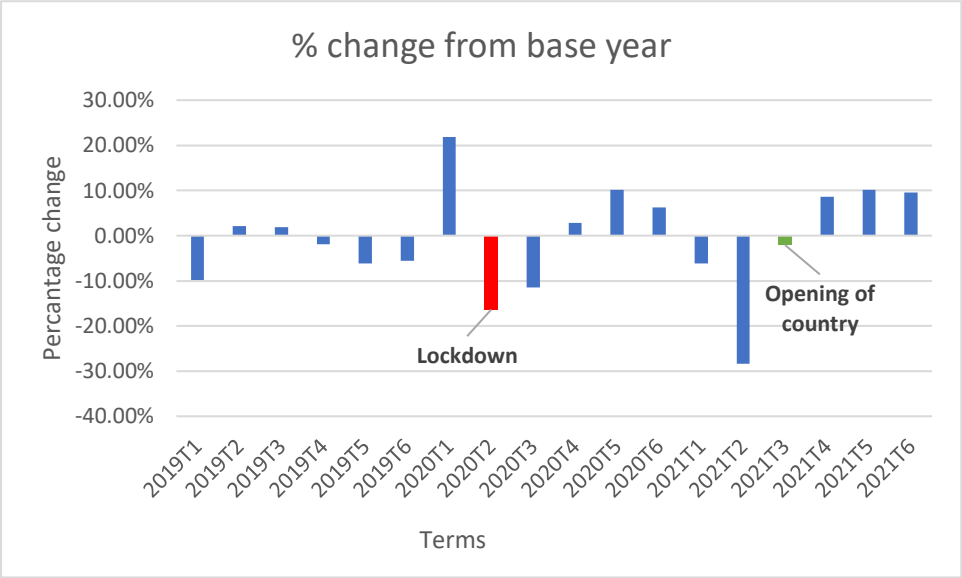

Fig 24b: Percentage change for the seasonal adjusted retail revenue numbers in fig 24a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

Retail Book sales has been relatively stable through 2020 and 2021. With a decrease when lockdown happened at 16% but then an increase in the later terms at 10% again in 2020T5. To then a decrease in the beginning periods of 2021, then have an increase in the later periods of 2021. Yearly there was and decrease in revenue from 2019 of 66 million NOK in 20202 and an increase in revenue of 60 million NOK in 2021. Overall, the level of book sale was stable true 2020 and 2021.

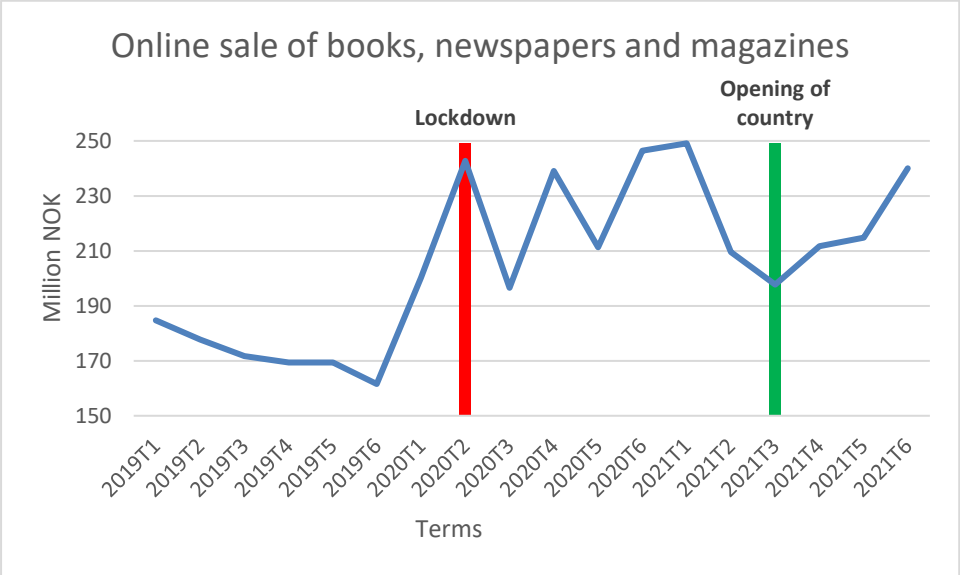

Fig 25a shows Online book sales revenue in Norway. It is showing total retail revenue for SN2007 industry: 47.915 online sale of Books newspapers and magazines. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022) The data is seasonal adjusted.

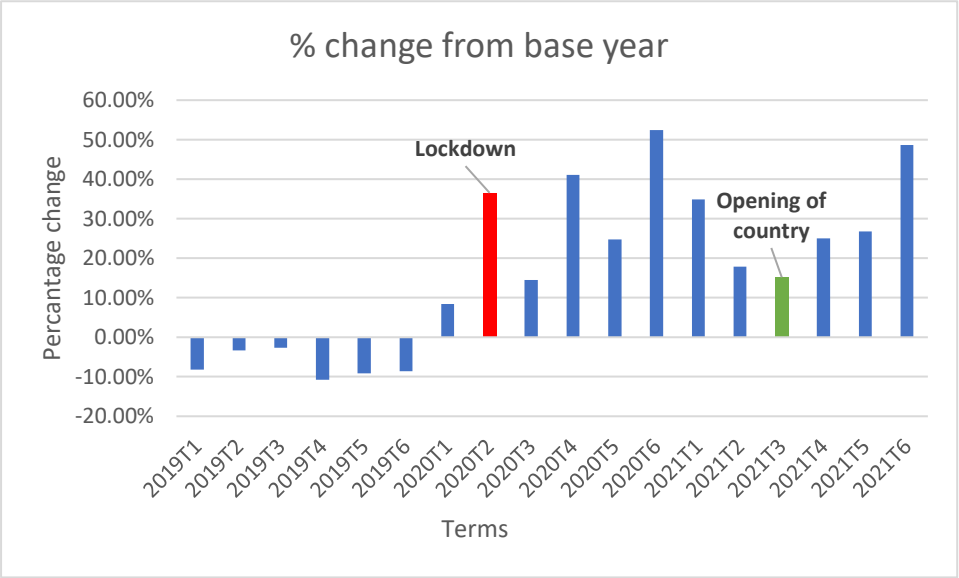

Fig 25b: Percentage change for the seasonal adjusted retail revenue numbers in fig 25a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

Reasons and summary

Retail book sales are stable across 2020 and 2021 with and overall decrease in yearly revenue of under 2% from 2019 to 2020 and increase in revenue of under 2% from 2019 to 2021. For Booksale's online there is an increase across both 2020 and 2021. For 2020 there is yearly increase from 302 million and an yearly increase of 289 million in 2021. This is an increase of revenue of around 30 % from 2019 revenue. Overall, we see an increase in book sales in Norway, and the book sales increase is only driven by online shopping.

<u>Sports Gear</u>

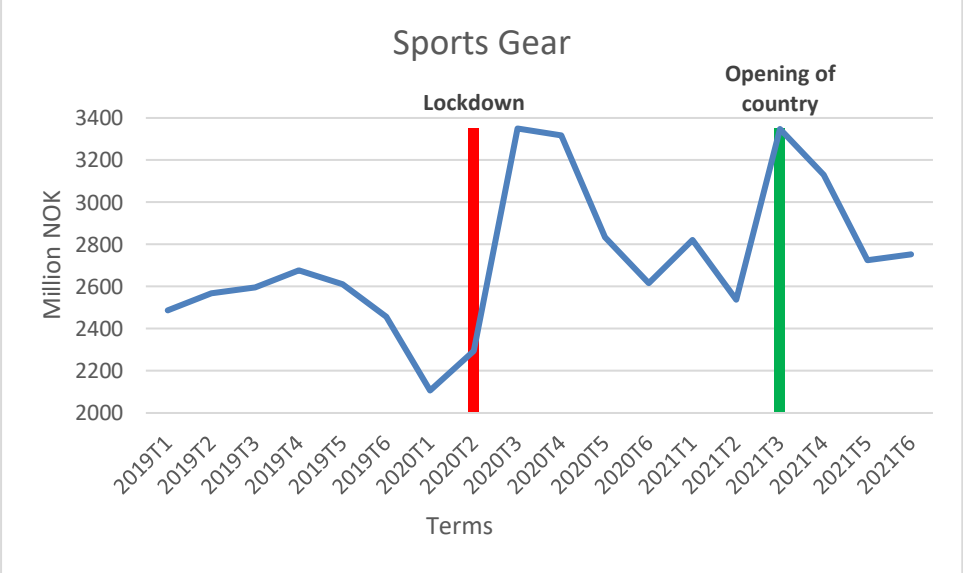

Fig 26a shows sports gear revenue in Norway. It is showing total retail revenue for SN2007 industry: 47.641 retail sales of sports gear. The data is from (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

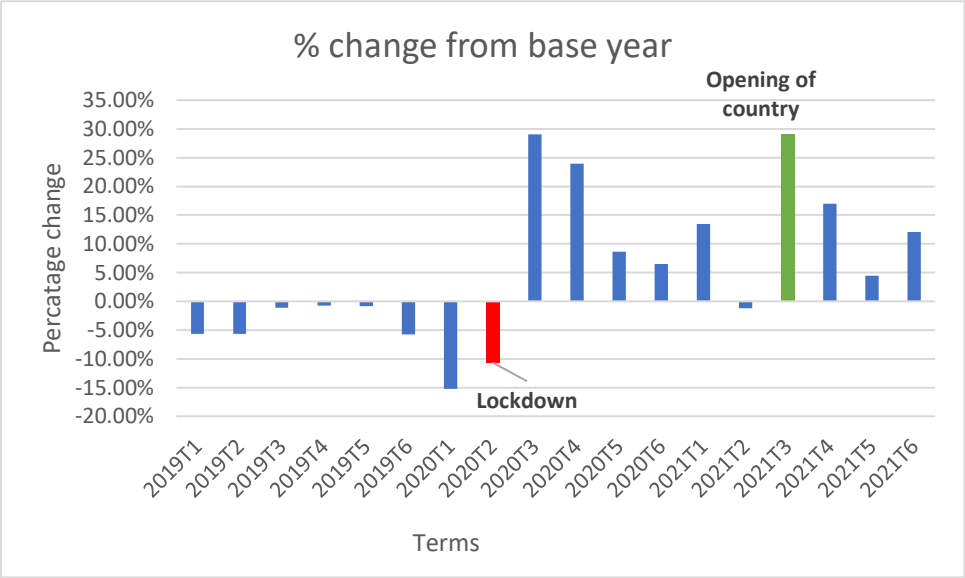

Fig 26b: Percentage change for the seasonal adjusted retail revenue numbers in fig 26a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

Sports gear had an increase when lockdown started in Norway with an increase in 2020T3 this 29% increase in retail revenue from 2019. This increase had a slow decline each period until it reached back to normal levels in 2021T2. Then in 2021T3 when lockdown a restriction was beginning to be lifted. There is a big increase in in revenue with an increase of 29%. This increase dropped to 16% in 2021T4 and ended the year at an increase of 12% in the last term of 2021.

Reasons and summary

Gyms and sports events were also heavily hit with restrictions through covid-19. People that used these facilities to train now needed to invest in their own gear to be able to maintain that. Other factors that can explain the increase is the increase in free time. People that didn't have time to train or use sport gear before may have started this during the covid-19 pandemic. Other things could be that people just started new hobbies that requires new sports gear. Nature was a virus free environment, and people need gear to take advantage of this virus free zone.

Leisure Boats

Fig 27a shows leisure boats revenue in Norway. It is showing total retail revenue for SN2007 industry:47.642 retail sales of leisure boats. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

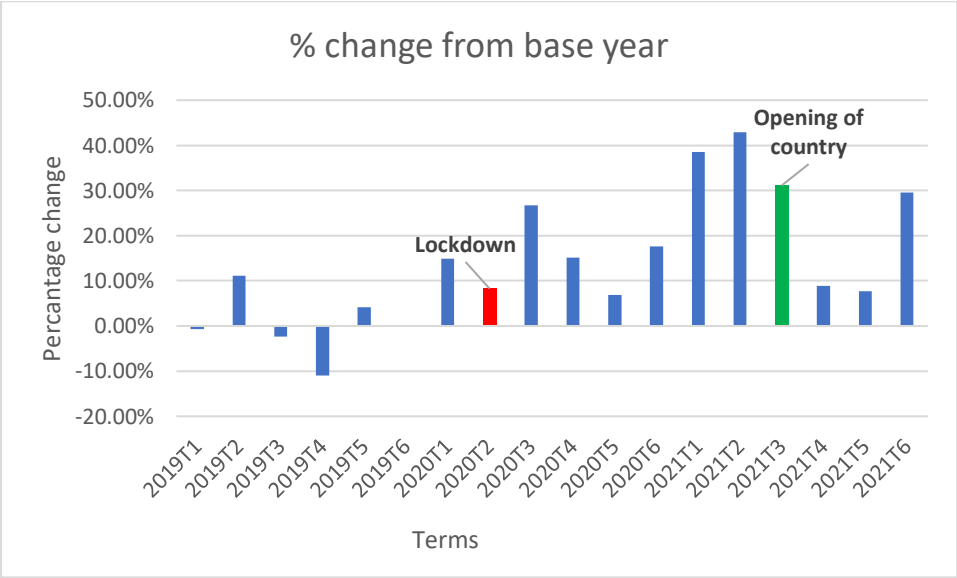

Fig 27b: Percentage change for the seasonal adjusted retail revenue numbers in fig 27a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

Leisure boats had an increase when lockdown started in Norway with an increase in 2020T3 of 26% in retail revenue from 2019. There is an increase in revenue through the main pandemic periods. With its peak in 2020T6 and 2021T1 with an increase of 38% and 42 %. In 2021T2 Norwegian retail sales of leisure boats was over 1000 million NOK. When Norway started to open up again there were still an increase in revenue, the following periods, where it dropped to an increase of

31% at 2020T3 and then almost back to normal levels the following two periods. At the end of 2021 the increase was 29%

Reasons and summary

One of the biggest reason for the increase in leisure boats could be explained by the travel restrictions and increased free time. The travel restriction led to that most of the Norwegian people needed to spend their vacation and free time in Norway. Leisure boats are a popular activity people use at vacation or for free time in Norway.

Games and Toys

Fig 28a shows games and toys revenue in Norway. It is showing total retail revenue for SN2007 industry:47.65 retail sales of games and toys. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

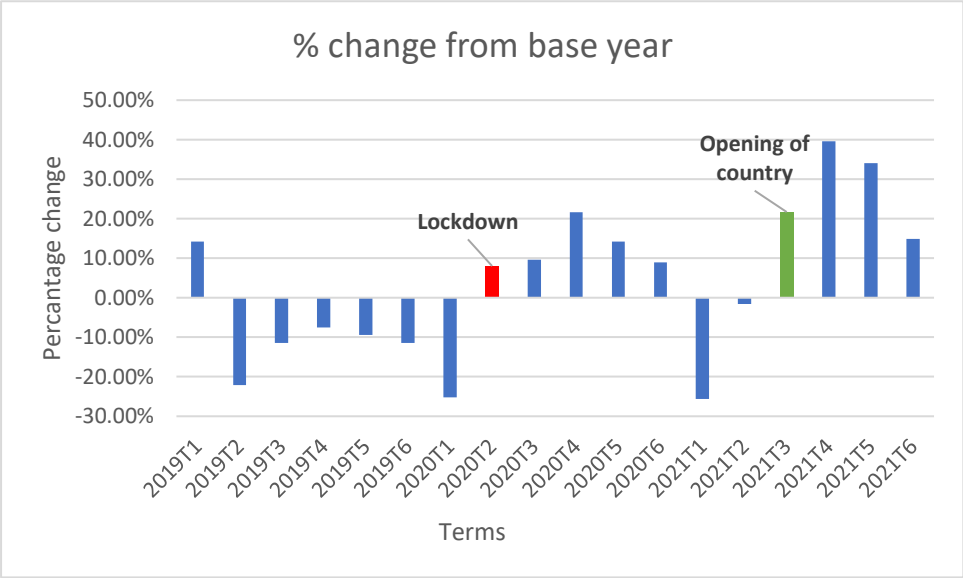

Fig 28b: Percentage change for the seasonal adjusted retail revenue numbers in fig 28a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

Games and toys had a little increase in retail revenue starting when the lockdown hit and had an increase from 2020T2 to 2020T6 with its peak at 21% increase in 2020T4. Then it had a huge decrease in 2021T1 with a decrease of 25%.
When Norway started to open up there where an increase in revenue of 20% and over 30% the following two periods. It went down but had still an increase in the last period in 2021.

Reasons and summary

As stated, before people had less freedom and possibilities to do different hobbies and activities during the pandemic. This could be one explanation for why we see an increase in spending for games and toys following the lockdown. People were bored at home and needed thing to do when other activities was limited. We also see an increase when the country started to open up again which also be explained by that people now could do more activities and therefore bough more goods to do those activities.

Pets

Fig 29a shows pets revenue in Norway. It is showing total retail revenue for SN2007 industry:47.762 retail sales of pets and pets related items. The data is from (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

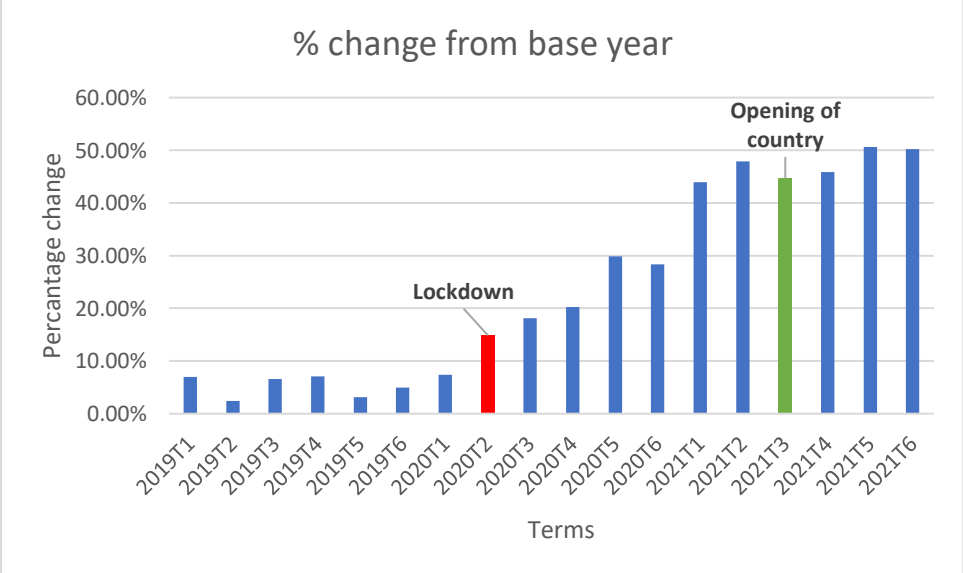

Fig 29b: Percentage change for the seasonal adjusted retail revenue numbers in fig 29a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

Pets and pet related items we see also had a huge increase after the pandemic hit Norway. In 2020T2 there where an increase at 14% and then an even bigger increase in all the following periods. It peaked at an increase around 50 % at 2021T2. This level was then persistent even after restriction were lifted and did not have a change and is still at 50% increase in 2021T6.

Reasons and summary

The increase in Pets can be explained by many factors. People where lonely during the pandemic and pets is a good companion. Also getting a new pet is something that takes time and effort like a hobby. Being stuck home made people available to do the effort needed to get a new pet.

5.1.5 Cosmetic products

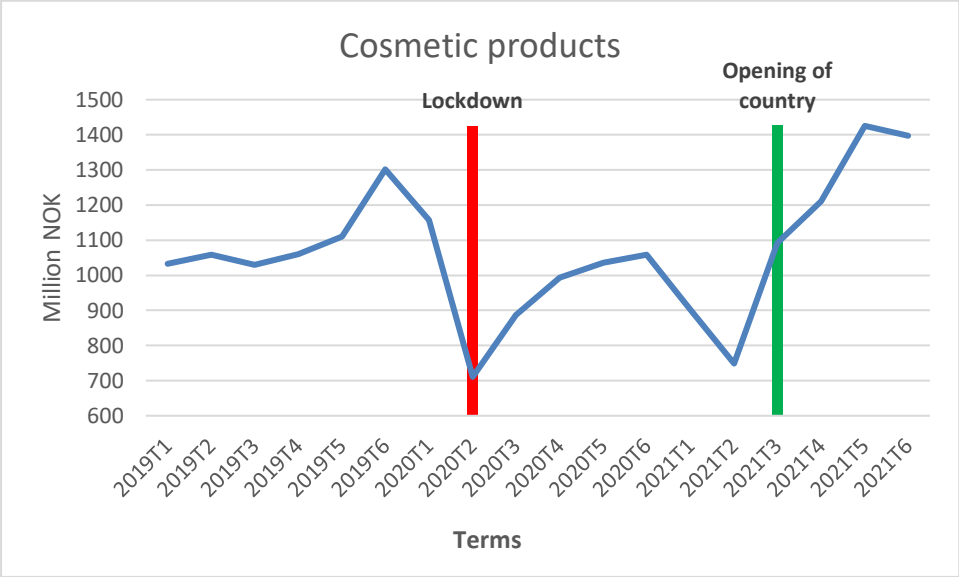

Fig 30a shows cosmetic products in Norway. It is showing total retail revenue for SN2007 industry: 47.75 cosmetic and toiletries retail sale revenue. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

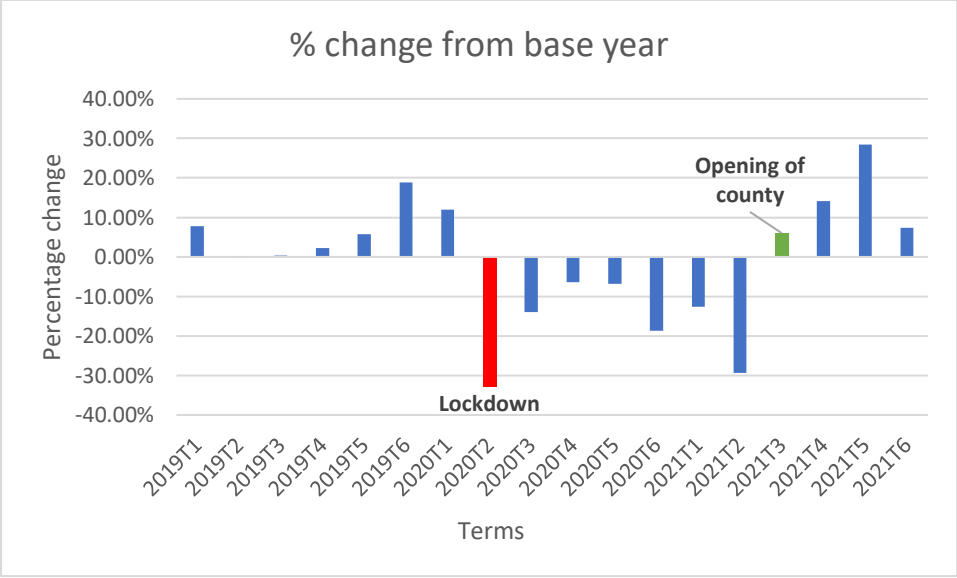

Fig 30b: Percentage change for the seasonal adjusted retail revenue numbers in fig 30a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

In Fig 30 a and b we see a drop in retail revenue for cosmetic items. In the period lockdown occurred in Norway the retail revenue for cosmetic items had a drop of over 30% for the same period in 2019. There is a negative decrease in revenue in all following periods until the period when Norway opens up again. Then there is an increase in retail revenue the followings periods with it reaching an increase of 30% in 2021T6. In period 2021T6 it almost back to the number of 2019 with an increase of 7%.

Reasons and summary

Some reasons of the decrease in cosmetic items can also be linked back to the restrictions. People had to work from home and keep social gathering at a minimum. These are usually gatherings or events where cosmetic item is used. Therefore, it is natural that also cosmetic items went down when these are restricted. This can also be an explanation for why cosmetic items increase when restrictions are lifted, and people go back to these social events again.

5.1.6 Fuel

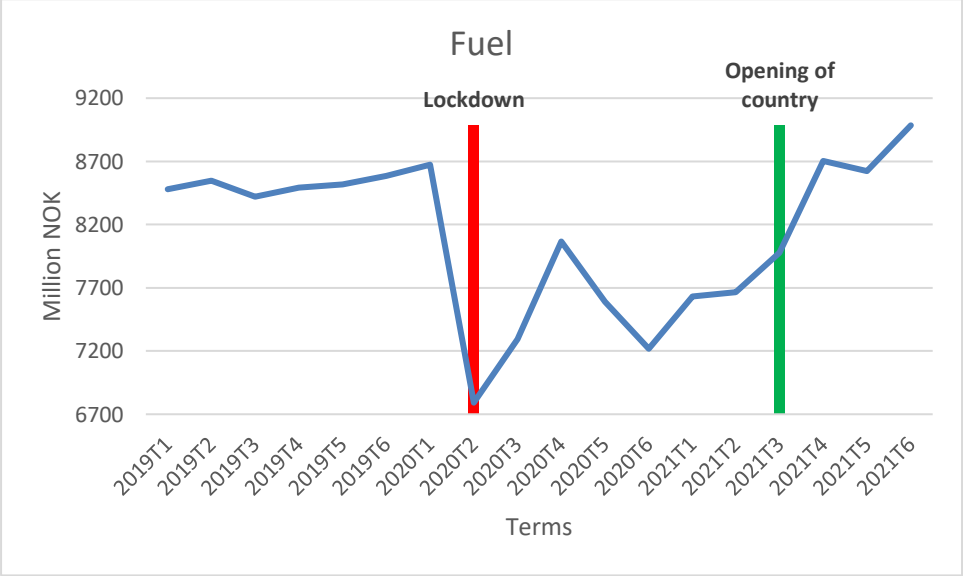

Fig 31a shows fuel revenue in Norway. It is showing total retail revenue for SN2007 industry: 47.30 retail sale revenue for Fuel to motor vehicles. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

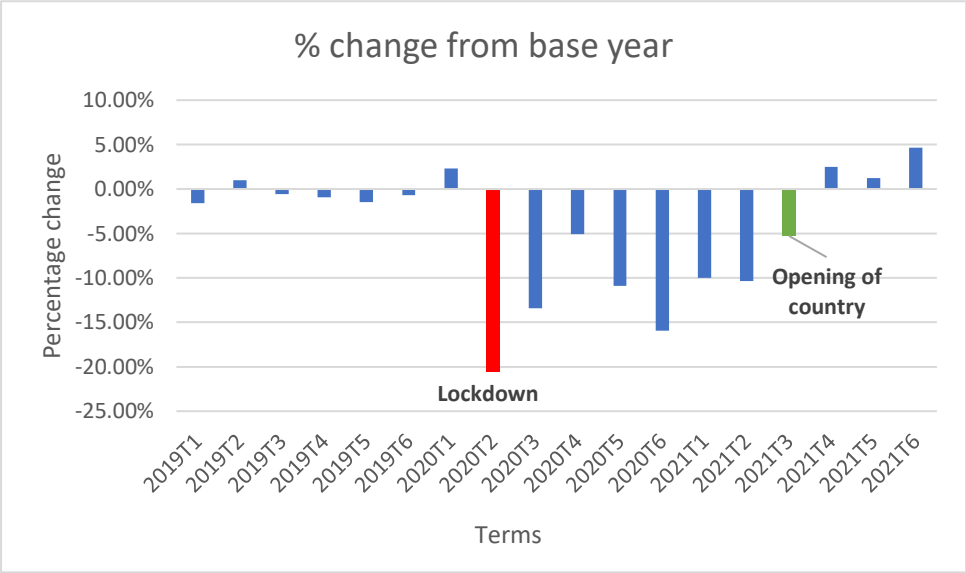

Fig 31b: Percentage change for the seasonal adjusted retail revenue numbers in fig 31a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

Fuel revenue has a massive decrease in the same period Norway went into a lockdown. From period 2020T1 to 2020T2 there was a decrease in revenue of 1882 million NOK. This decrease in revenue was occurring the whole main pandemic period with decreases from the revenue number from 2019 of around 10% all the following periods. After Norway open up the revenue number goes back to the same, they were in 2019.

Reasons and summary

People working from home and encouragement for limiting of movement can be an explanation for why there are and decrease in fuel revenue in Norway this also matches that it goes back to previous levels after the country stats to open up again and people was able to move more freely. From fig 5 we see that prices for fuel were one of the categories that had a significant increase during the pandemic. This can also be an explanation for the decrease in revenue number for fuel, that the increase in prices leads to less people to buy it. This can also be an explanation why the number slowly goes back to prior levels. That the price increase but the same amount of fuel is consumed.

5.1.7 Online shopping

Fig 32a shows online shopping revenue in Norway. It is showing total retail revenue for SN2007 industry: 47.91 online sales. The data is from (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted.

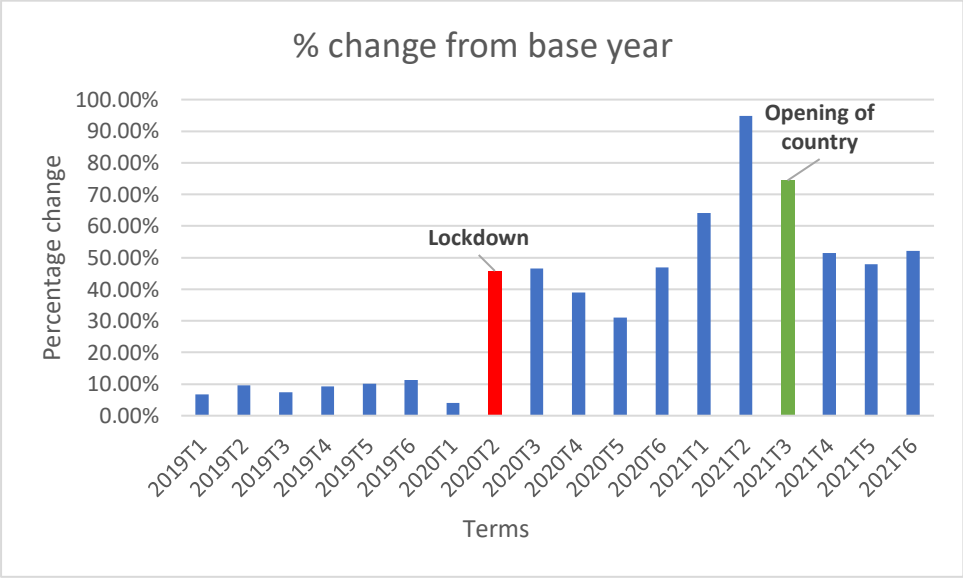

Fig 32b: Percentage change for the seasonal adjusted retail revenue numbers in fig 32a and calculated numbers. 2019 terms are percentage change from the same term in base year 2018. 2020 and 2021 terms are the percentage change from same term in base year 2019.

Online sales had a massive increase when lockdown happened in Norway. From 2020T1 to 2020T2 there is an increase in revenue of 1820 million NOK. This is an increase of 45% for the same period in 2019. This increase level is stable through the rest of 2020 with the increase being well over 30%. In 2021 there is a further increase in revenue. It reaches its peak at 2021T2 with an increase of 94%. After Norway opens up the increase is at 74%. In the last three term of 2021 the increase is around 50%

Reasons and summary

Most retail stores were hit with restrictions which either limiting the opportunity to shop in store or being completely shut down under certain periods through the pandemic. This meant that to be able to get certain products the Norwegian people had to shop online to get access to those products. People also could choose to shop online to try limit infection. This can explain the increase in internet shopping when the pandemic hit.

5.2 Services and other products

5. 2.1 Credit card sales from Eika

Restaurants

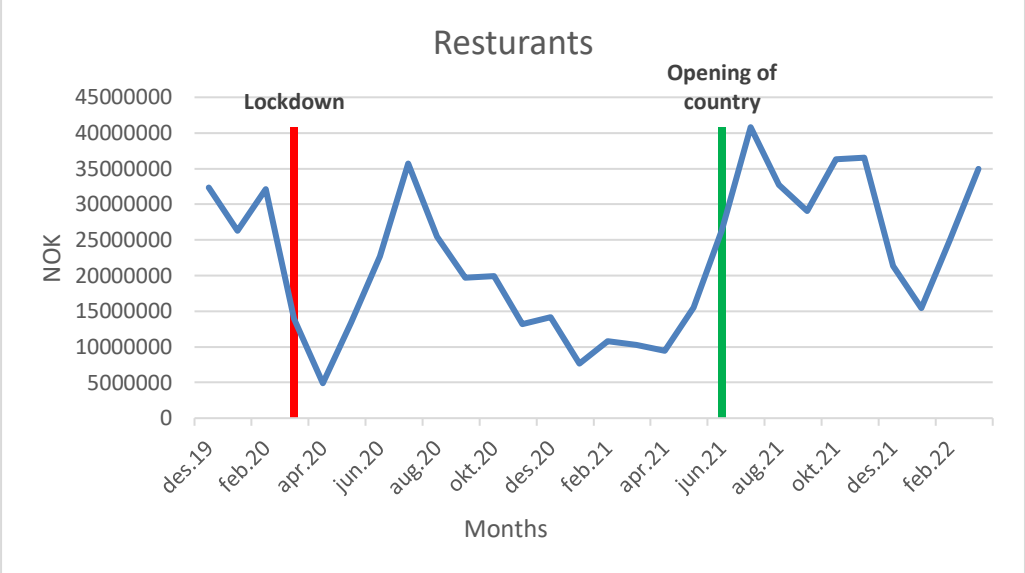

Fig 33 shows monthly credit card spending on restaurants. The data is from EIKA (vedlegg 1)

Hotels

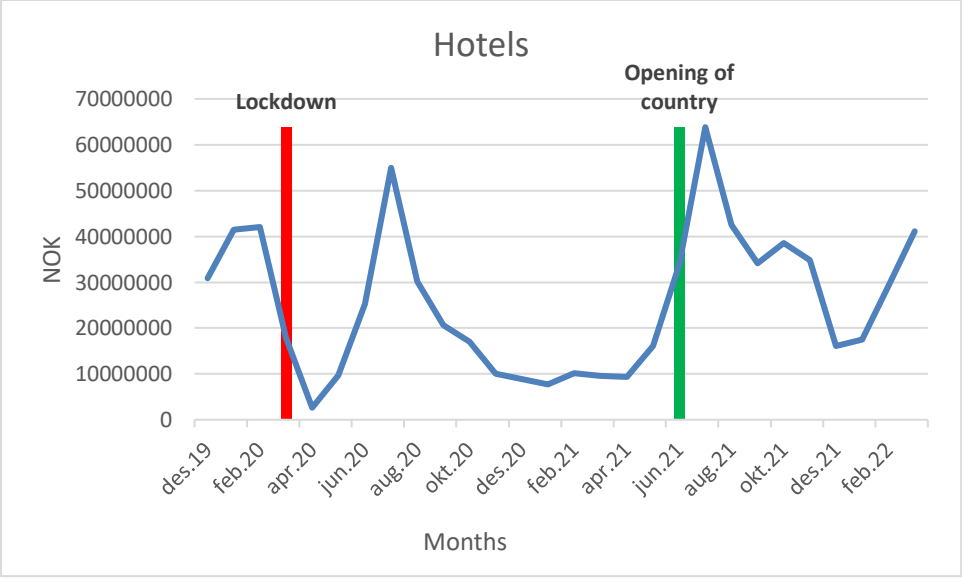

Fig 34 shows monthly credit card spending on hotels. The data is from EIKA (vedlegg 1)

Airlines

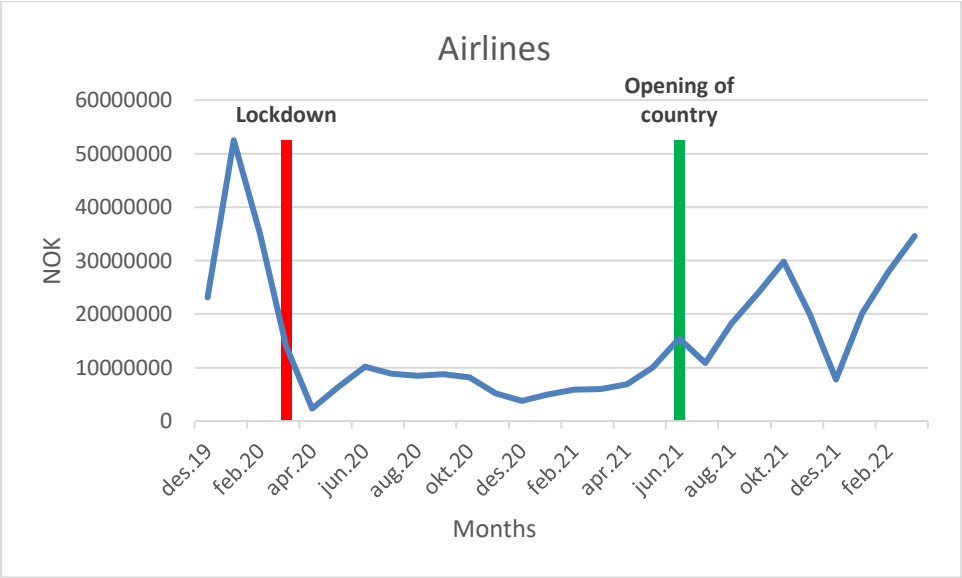

Fig 35 shows monthly credit card spending on airlines. The data is from EIKA (vedlegg 1)

Transportation

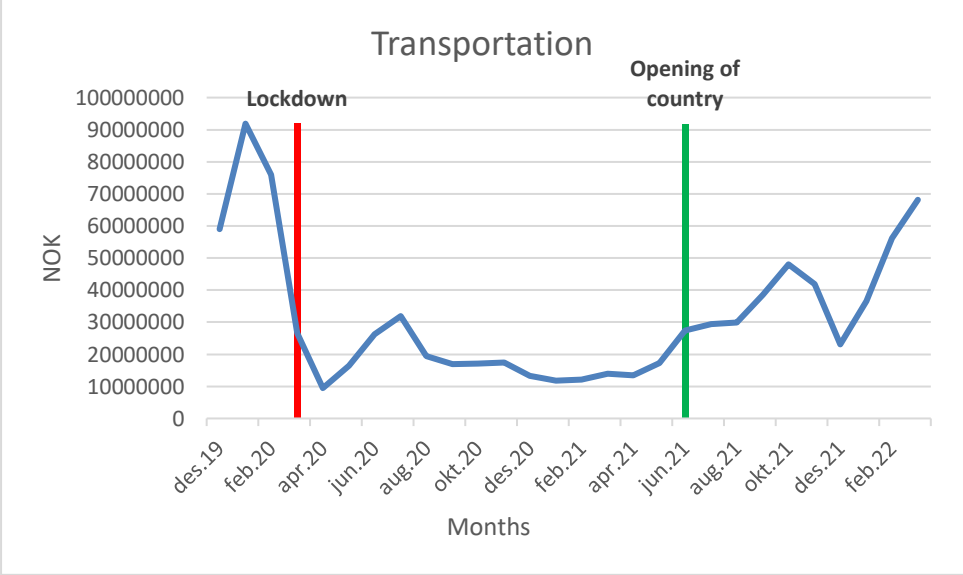

Fig 36: shows monthly credit card spending on transportation. The data is from EIKA (vedlegg 1)

In Fig 33 to 36 we see a clear drop in all the categories when lockdown occurred. All the different categories had an over 80% drop in credit card spending from February 2020 to April 2020. Hotels and restaurants spending had an increase in spending in June 2020 and a decrease again in October 2020. This matches the timeline for when restrictions were lifted during that period and then occurring again in October. For airlines and transportation this did not transpire in the same way because travel restrictions and encouragement to avoid unnecessary travel where still under effect during that time. When the country started to open up

again, we see an increase in spending for all the categories. Restaurant and hotels reach levels prior to the pandemic close to the start of the reopening. Airline and transportation where more slowly lifted which can explain the slower increase in spending for those categories. The dip and increase in December 2021 to January 2022 can be explained by restriction being re implemented in that period. Important to note that these tables are not seasonal adjusted and not compared to prior years when there was no pandemic. This can lead to some of the change from month to month can be explained by seasonal factors.

5.2.2 Cinema

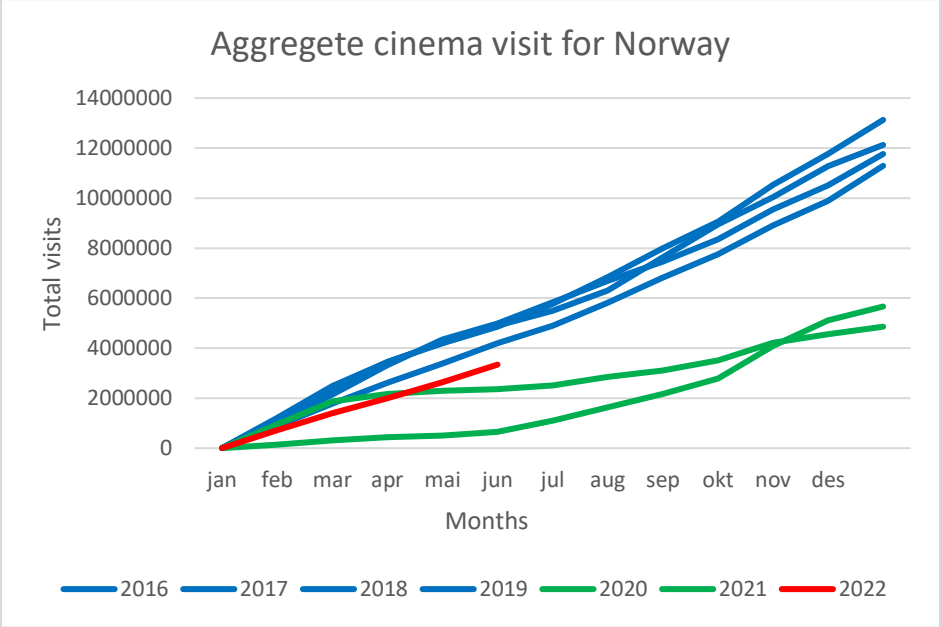

Fig 37 shows aggregate monthly cinema visits for 95 % of all cinemas in Norway. The data is form Kino.no (TALL & FAKTA Månedsstatistikk - oversikt, 2022)

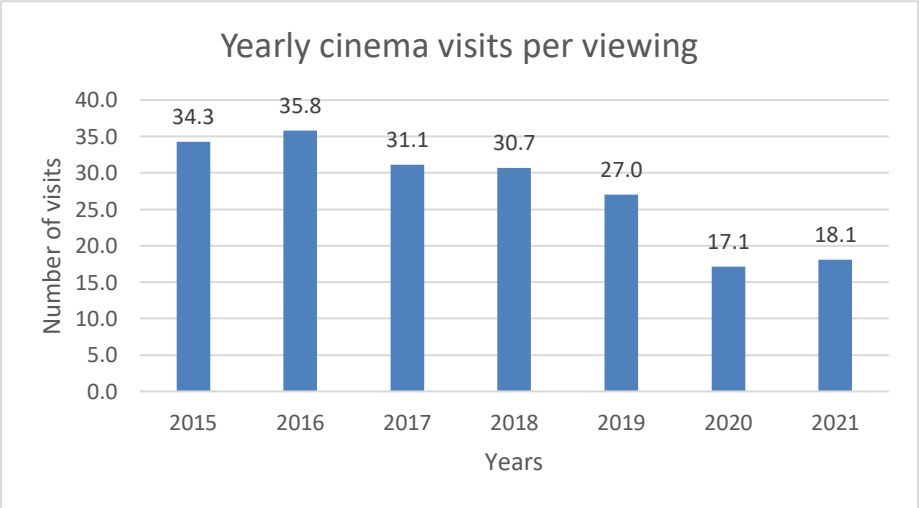

Fig 38 show yearly cinema visits per viewing. The data shows data for whole of Norway. The data is from SSB (11817: Kino og kinobesøk (K) 2015 - 2021, 2022)

One part of the service industry that also had a massive drop was the cinemas. In fig 37 we see that the aggregate number during 2020 and 20201 is much lower than the prior years. As many of the service industries cinemas were also hit with restrictions that had them shut down or run under stricter guidelines. What is interesting with the cinema number is the aggregate visits from 2022 are far below the prior years. Where the aggregate visits from May 2022 is over 1 000 000 visits less than the years prior to the Covid-19 pandemic in the same month. This can indicate that now that people have the opportunity to go to the cinema again, they don't do it. Important to note that monthly and total cinema visits are highly movie dependent. In 2022 big movies like Top Gun: Maverick who has a global box office of $1.006.423.000. This brings it as the 49 top grossed move of all time. And doctor strange in the Multiverse of Madness who had a global box office of $947.014.432 shows that big movies still come to the cinemas after the pandemic (2022 Worldwide Box Office, 2022), (Top Lifetime Grosses, 2022)We also see from Fig 38 that the visits per shoving have in a small downward trend with it going down from each year since 2016.

6.0 Discussion

The data show a clear evidence that the Covid-19 pandemic had a significant impact on consumer behavior in Norway. An impact we see in almost all categories. I will bellow share my discussions on selected categories from the statistic earlier in the study.

6.1 Increase in food retail

We see an increase in food retail revenue when the pandemic occurred and during the pandemic. We can see that most of the food categories that had an increase is starting to go back to levels prior to the pandemic. As stated, before border trade and restriction on restaurant and social gathering can be the main explanation for the levels decreasing. We can see that the most common food categories for border trade decrease in Norway the same periods where border trade in general increase. In fig 14 a and b we see that border trade is still not back to the level prior to the pandemic. The reason is because travel restriction was still not fully open for all people, only the fully vaccinated could travel freely. There is no reason to believe that border trade will not go back to the same levels as before

since the price levels has not changed between Sweden and Norway. Where most border trade take place (Nordmenns grensehandel, 2020) .This will also likely lead to most of the food categories also go back to previously levels. It is harder to say if people will go back to eat at restaurant the same way as prior to the pandemic. With being forced to home cooking for such a long period could have created new habits for people's food consumption. That means when they are available to go out and eat at restaurant, they rather make it at home instead.

6.2 More focus on health

From the data we see a clear increase in health products, fruits, vegetables, and health foods and a decrease in more unhealthy products like baked goods, sweets, and tobacco during the pandemic. Sports gear had also a rise during the pandemic. All this indicated that the Norwegian people prioritized health during the pandemic. When the country started to open, we see those fruits, vegetables, baked goods, and sweets got back to their prior levels. Health foods and tobacco did not change after the country started to open. This can indicate that some focus on healthy foods can be a more permanent.

6.3 Increase spending on durable goods

As stated, prior, people invested more into their homes during the pandemic but also other durable goods like leisure boats or sports gear. All these are products that is lasting for longer periods of time and can be seen as durable goods. Some of these products can also be seen as more luxury items like new Audio equipment or a leisure boat.

In the literature there are many that states from prior crisis or other country's during Covid-19 that these categories usually fall. In Norway all these categories have an increase. One of the biggest factors for this can be explained that all the uncertainties that usually happens during crisis's didn't occur in Norway during the pandemic. The income levels were stable across the pandemic. Unemployment had a rise during the pandemic but also the people that was affected had good help measures to combat their loss of income. We also saw that the unemployment went back to prior levels when the country started to open again. We see that all durable goods categories had and increase when the pandemic and lockdown started. And that the levels still have high numbers after the pandemic.

In the paper from (Harmenberg & Öberg, 2020) they state that durable goods often are bought in lumps and that the high adjustment cost means you don't change out your product that often. Especially the investing on renovation and household products had an increase. When you just renovated your house or bought new household product like a fridge you will most likely not renovate your house again or buy a new fridge the next year or period. We can therefore expect that the levels on house investment to go back to normal but also most likely decrease in the next periods. This can be the same for leisure boats and sport gear, but these items are more hobby related. During the pandemic people started new hobbies with sports gear. Therefore, the increase in spending during the pandemic is more an increase in the total goods marked more than and investment in a durable goods. We can probably expect not a significant decrees in these goods in the next periods.

6.4 Increase in internet spending

As we see in fig 32 a and b there where a huge increase in internet spending after the lockdown and these levels stayed high across the whole pandemic. People changed their product behavior to buy more online. Clothes revenue in Fig 16-17 a and b and book revenues in fig 24-25 a and b shows that where retail sales decrease there was an increase in online sales.

These figures shows that even after the restriction started to be lifted online consumption still is on a high level. This can be an implementation for my hypothesis that people changed their behavior, started to shop more online, learned to use it and continue to use it after the retail shops open again. This is also evidence in Nets E-shopping report a yearly internet shopping rapport for Norway (LAST NED NORSK E-HANDEL 2019, 2019), (Norsk E-handelsrapport 2021, 2021). This rapport includes a survey where people were asked the main reason for why they shop online. Prior to the pandemic in 2019 the alternative with most of the answers where online shopping for saving of time at 24% and better prices at 23%. When the same survey was asked in 2021 the alternative with most of the answers where that it is more convenient at 35% and better prices fall to 12%. This indicates a clear shift in the consumers perception of online shopping after the pandemic.

Another factor that could have changed the perception of internet shopping where the forced adaption the stores had to do during the pandemic. Retailer and services providers had to invest into online shopping to make the product as good as possible for the customer experience. Posten, one of the biggest transport companies in Norway started to build a new warehouse to overcome the increase in online shopping and to reach the desired demand for short delivery times. (Stor satsing fra Posten på netthandel, 2021) even doctors needed to adapt and started giving online consultations (Legetime på nett eller via videooverføring, 2022)

Overall, we can see that the increase in online spending during the pandemic and after can be contributed to both the supplier and the demander. Where the demander was forced to use internet shopping. Then took the cost to learn how to use It. And the supplier invested in trying to make the product as good as possible.

Fig 39 shows online shopping revenue in Norway. From 2008 to 2021.It is showing total retail revenue for SN2007 industry: 47.91 online sales. The data is from SSB (07312: Omsetning for varehandel, etter næring (SN2007) (mill. kr) 2008T1 - 2022T1, 2022)The data is seasonal adjusted. trendlines is calculated by linear regression

One thing that also is important to note for online shopping is that this increase is not a change in behavior but more a pushing of an already existing trend.
As we see in fig 32 a and b that online sales already had a rising trend with the trend for the 5 years prior to the pandemic was even steeper than the trend from 2008.

6.5 Service industry

For the service industry (airlines, hotels, restaurants) we see a clear correlation with the implemented restrictions. We see that all the categories fall when restrictions are implemented and stays low during periods with stricter restrictions. The levels rise back again when there are restrictions is being lifted. We see that other categories that is related to this as cosmetic items also follow this. We see that these services are heavy restriction dependent and when restrictions are lifted goes back to levels close to before the pandemic.

We do not see all the service industries go back to the same levels as before. One of them is the cinema market who have not reach is prior levels after the country open again. There can be many reasons for this as well. During the pandemic the video and entertainment industry had to adapt when the cinemas was closed. Movies recordings and new releases were put on hold or cancelled. Even big blockbuster movies that were slated to come out on cinema was put on streaming services for their premier instead.

This and the free time people had led to a massive increase in streaming services. (World-Wide Streaming Subscriptions Pass One Billion During Pandemic, 2021). Streaming services and watching films from home has been become more and more popular across the years. New streaming services start, and more and more money are being spend on them. (Netflix's Amortized Content Spending to Rise 26% to $13.6 Billion in 2021, Analysts Project, 2021) now full movies are being made just for streaming. Even the time movies go form cinema to be able to watch as home has been shortened. (How long should movies be in theaters before streaming? Hollywood is trying to find out, 2021) We also see that during the pandemic there where an increase in audio and video equipment so most people invested such that their viewing experience form home also would become

better. Overall, all this is a contributing factor to why cinema is not at the same level after the pandemic.

6.6 Pets and new hobbies

The increase in pet sales and hobby related items can use some of the same conclusions and theories as durable goods. When you have procured a pet, you will most likely not buy another pet, in the next period. Figure 29 is shoving the total pet and pet related items sutch as toys and pet food. With the huge increases in pets during the pandemic we can then expect increase in pet related items after the pandemic. We can also expect that the numbers of new procured pets will go down after Norway opens up. Peoples need for a pet / hobby and time to have a pet / hobby during the pandemic caused by loneliness and more spare time, will go back to more normal.

6.7 Working from home

When people worked from home during the pandemic this had effect on many different services and product categories. This new way of working was something many people liked and intend to keep going even after the pandemic (Hjemmekontoret er kommet for å bli, 2022), (209 000 ansatte med avtale om hjemmekontor, 2021)This could lead to some of the effects on many categories such as fuel and general transportation costs or again cosmetic items will still be affected and have a more permanent change.

7.0 Conclusions

How did Covid-19 effect Norwegian household consumption?
We see a clear shift in in household behavior and product choices during the pandemic. Most of the changed behavior are determent by the restriction, for example all service categories had a clear decrease during the pandemic.

The research shows that the overall consumption level in Norway did not fall during the pandemic, rather shifting to increase savings or increase spending on other products. This can be explained by the fiscal measures the Norwegian government implemented. We see that the products that had an increase is good substitutes for many of the more restricted categories. Like the increase in entertainment products or retail food. We also see that people used their free time

to start new hobbies with increase in sport gear and pets or start new renovation projects.

Will these changes have a permanent effect?
Some products can have a permeants effect, like health products or the new hobbies people has started will keep some of the increased consumption. There has not only been a change in what people buy but there has also been a change in how they buy it. It is without doubt a digital acceleration where an increase in online shopping and also more entertainment online. It is hard to say for certain if the hypothesis of internet usage is true or not. but we can conclude that some of the factor with that the people that stated using online product more will continue to use it after the pandemic. Also, that the overall adaption and investment being made during the pandemic will have a permanent effect on online shopping in the future.

8.0 Appendix

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