

Pandemic, Shutdown and Consumer Spending: Lessons from Scandinavian Policy Responses to COVID-19

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Should governments shut down economic activity in response to the Covid-19 pandemic?

- Governments around the world have shut down economic activity in key sectors in response to COVID-19
- Popular view: Shutdowns stop the spread of the virus but cost money because households stop spending => Trade-off between **saving lives** or **saving the economy**
- But spending may drop even without a government-mandated shutdowns: A *direct* effect of the virus itself?
- Hard to separate because shutdowns and spread of virus coincide by design

A “natural experiment” in Scandinavia

- Denmark and Sweden similarly exposed to Covid-19 in early March 2020
- But policy responses differed:
 - Denmark: Mandated shutdown of large part of the economy
 - Sweden: lighter-touch approach based on recommendations, most private businesses allowed to continue operations
- Our research project: Use customer data from Danske Bank to compare consumer responses in Denmark vs. Sweden
- Interpret *difference* btw. Denmark and Sweden as causal effect of shutdown, capturing both
 - *Direct effects* through reduced availability of goods and services
 - *Indirect effects* through reduced spreading of the virus

Two key findings

1. Massive negative impact on spending in both countries; only marginally larger in Denmark than in Sweden (29% vs. 25%)

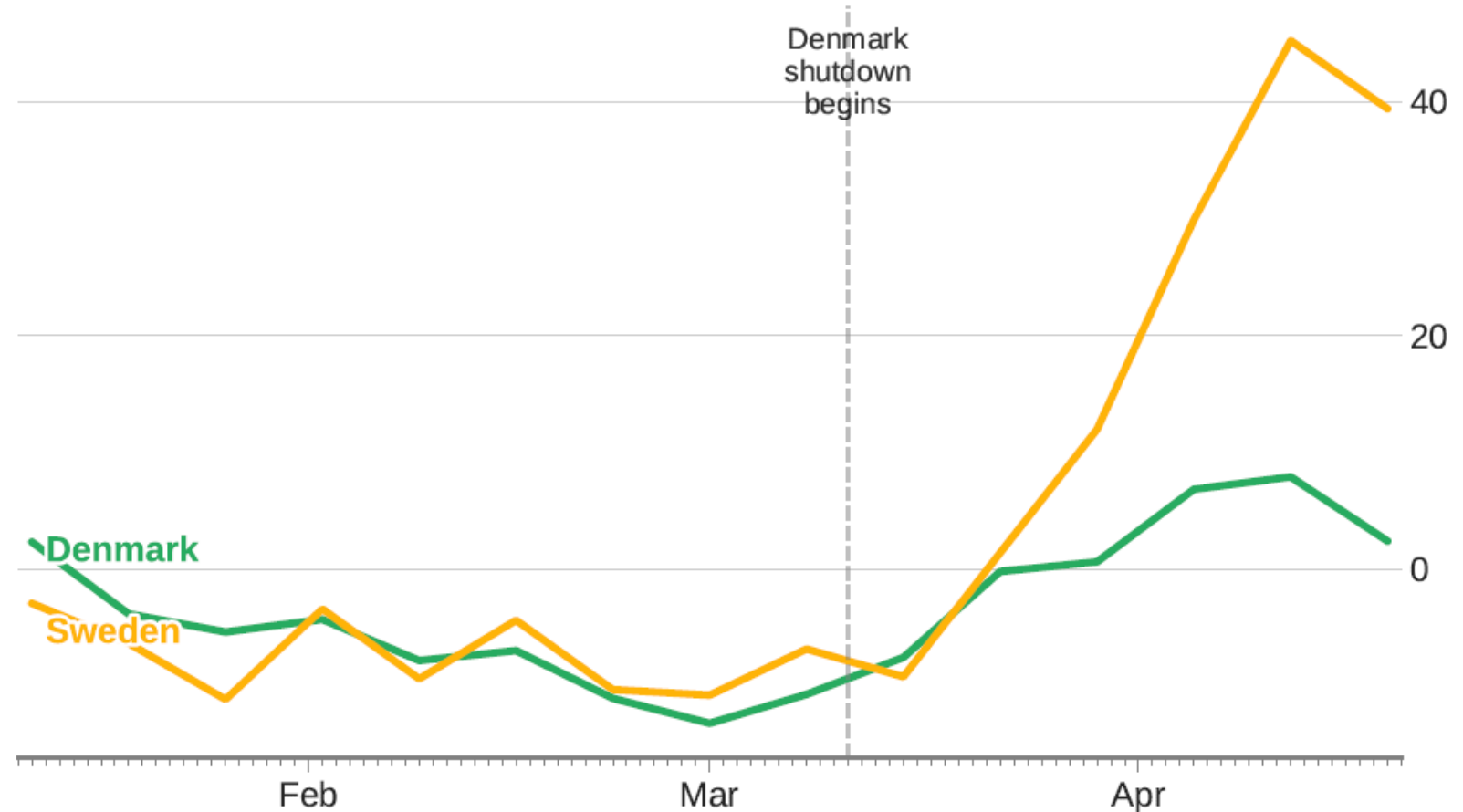
Most of the contraction in spending is due to the virus itself and occurs irrespective of government-mandated shutdown

2. Clear age profile in effect of shutdown on spending:
 - The young reduced spending more in Denmark than in Sweden
 - The elderly reduced spending *less* in Denmark than in Sweden, despite Danish shutdown

By limiting the spreading of the virus, government-mandated shutdown enables more economic activity by those most at risk

The Covid-19 crisis in Denmark and Sweden

- Excess mortality co-moved in Denmark and Sweden before Denmark shutdown
- Diverged one-two weeks after 11 March
- **Key feature: Same initial exposure to pandemic in the two countries**



Different public health measures, despite similar early experiences

In Denmark

- Schools, universities, non-essential parts of public sector shut down
- Borders closed for foreign nationals
- Ban on congregations > 10 people
- Shopping malls, nightclubs, cinemas, hairdressers, etc. shut down
- Restaurants and cafes limited to take-away service
- Private employers urged to let employees work from home
- High-risk groups recommended to socially isolate

In Sweden

- Most measures on voluntary basis and introduced relatively late
- Work-from-home and self-isolation of 70+ first recommended on 16 March
- Recommendation to limit social interactions on 24 March (but no sanctions)
- Ban on meetings of > 500 people (only later down to 50)
- Bars, restaurants, cafes restricted to table service on 24 March

Data

Transaction data for large sample of active customers at major Scandinavian retail bank (Danske Bank)

- ~ 760,000 in Denmark
- ~ 100,000 in Sweden
- We construct individual-level measure of total spending including card payments, mobile wallet and cash withdrawals
- Use merchant category codes (MCCs) to categorize spending by level of social proximity (high: restaurants, bars, hairdressers. Low: Grocery shopping)
- Also extract background information on gender, age, area of residence, income

Sample broadly representative of Danish population and similar across countries

	Denmark		Sweden
	Sample (1)	Population (2)	Sample (3)
Female	51.6%	50.6%	50.6%
Age:			
18-29 y.o.	21.5%	19.9%	17.2%
30-39 y.o.	14.0%	14.7%	17.7%
40-49 y.o.	16.7%	16.4%	21.8%
50-59 y.o.	17.1%	17.2%	18.9%
60-69 y.o.	14.5%	14.3%	12.8%
70+ y.o.	16.2%	17.6%	11.5%
Disposable income (USD)	37,541.4	37,614.1**	34,754.1*
Disposable income (USD, PPP)	37,112.9	37,184.6	37,919.1
Average spending (USD)	19,494.5		18,566.4
Average spending (USD, PPP)	19,272.0		19,690.6
Spending by category, %Total:			
High street & malls: retail goods and services	43.9%		45.5%
Social: food/drinking, recreation/entertainment	8.1%		12.4%
Personal care services, offline	2.8%		3.3%
Public transport	1.4%		1.5%
In store spending	75.6%		75.2%
Online spending	24.4%		24.7%
N	760,571	4,615,690	102,883

Estimating the impact of the Danish shutdown

Question: How much would spending in Denmark have dropped without the shutdown?

Basic idea: Use sample of customers in Sweden to get idea about this *counterfactual*.

In practice:

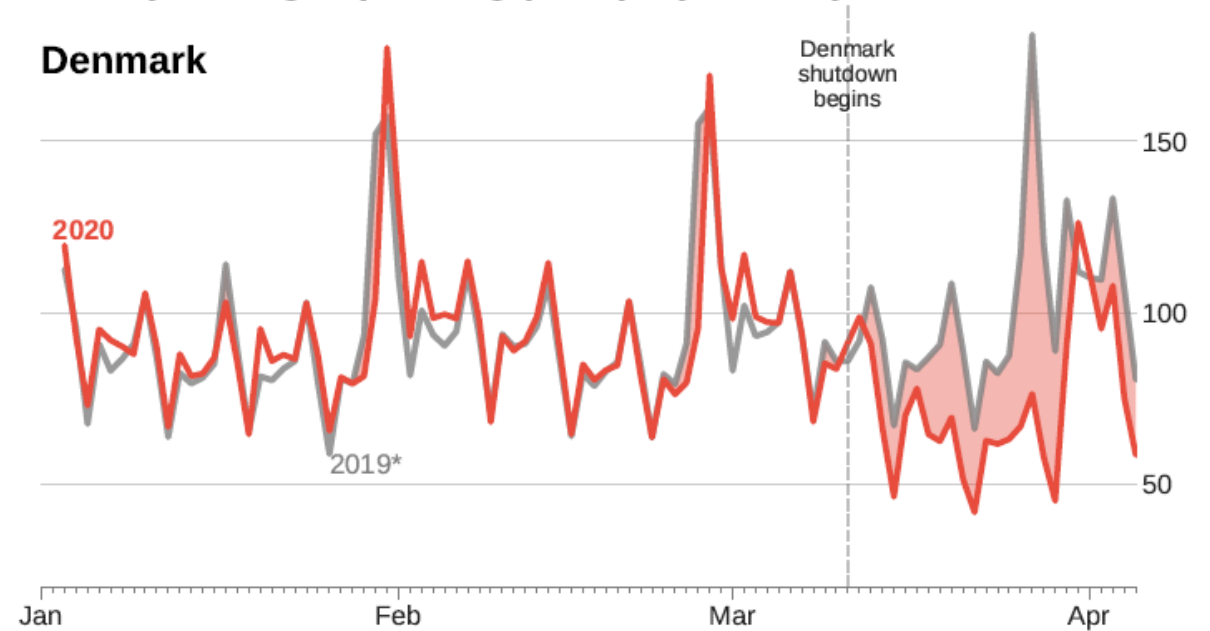
1. Estimate impact on aggregate spending in each country, relative to situation with no pandemic
2. Estimate effect of shutdown as spending impact in Denmark *over and above* spending impact in Sweden
3. Weight observations in Swedish sample to match characteristics of Danish sample (age, gender, income)

Average daily spending

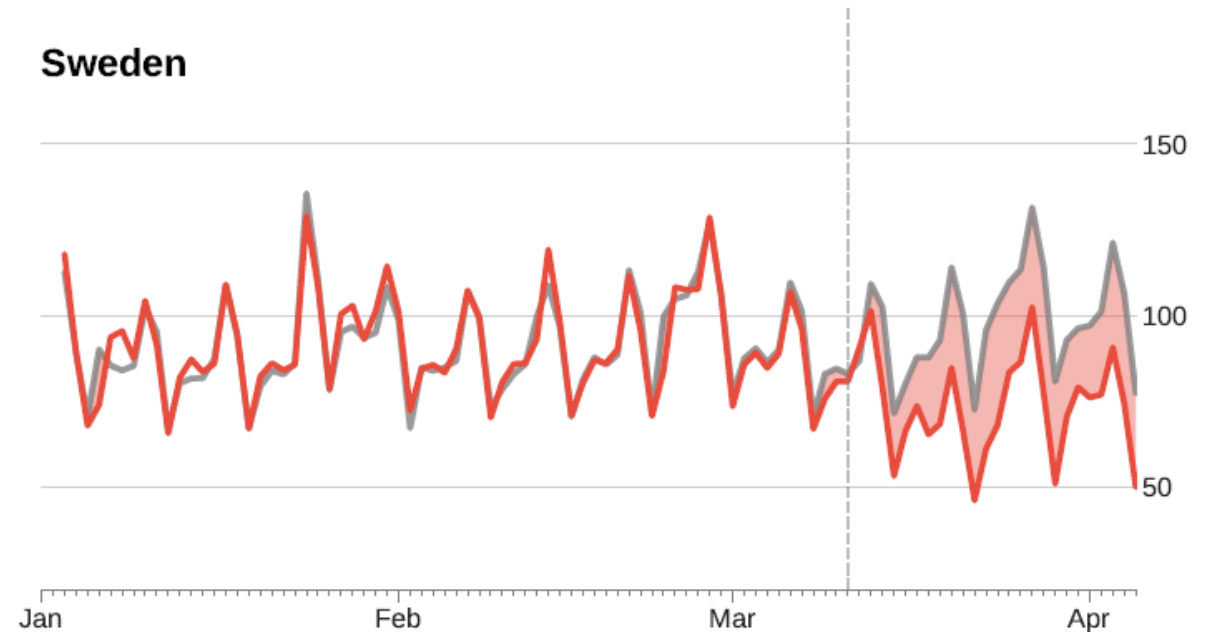
- Aggregate daily spending follows 2019 pattern closely in pre-crisis period in both countries
- In Denmark, sharp drop at 11 March shutdown
- In Sweden, also a sharp drop at almost the exact same time, despite no significant restrictions imposed here

%Daily average spending (2019), by country:

Denmark

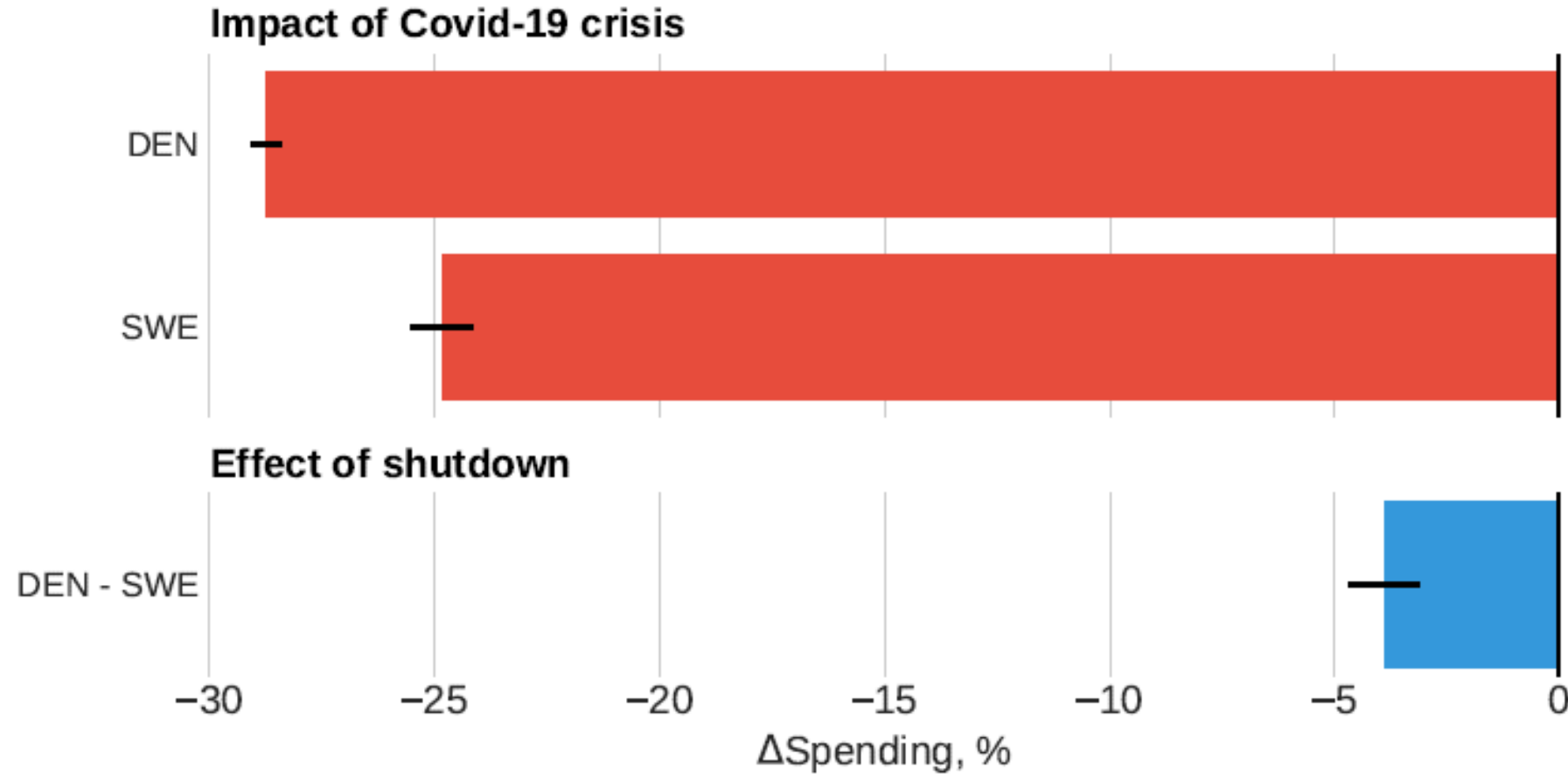


Sweden



*2019 values at same weekday

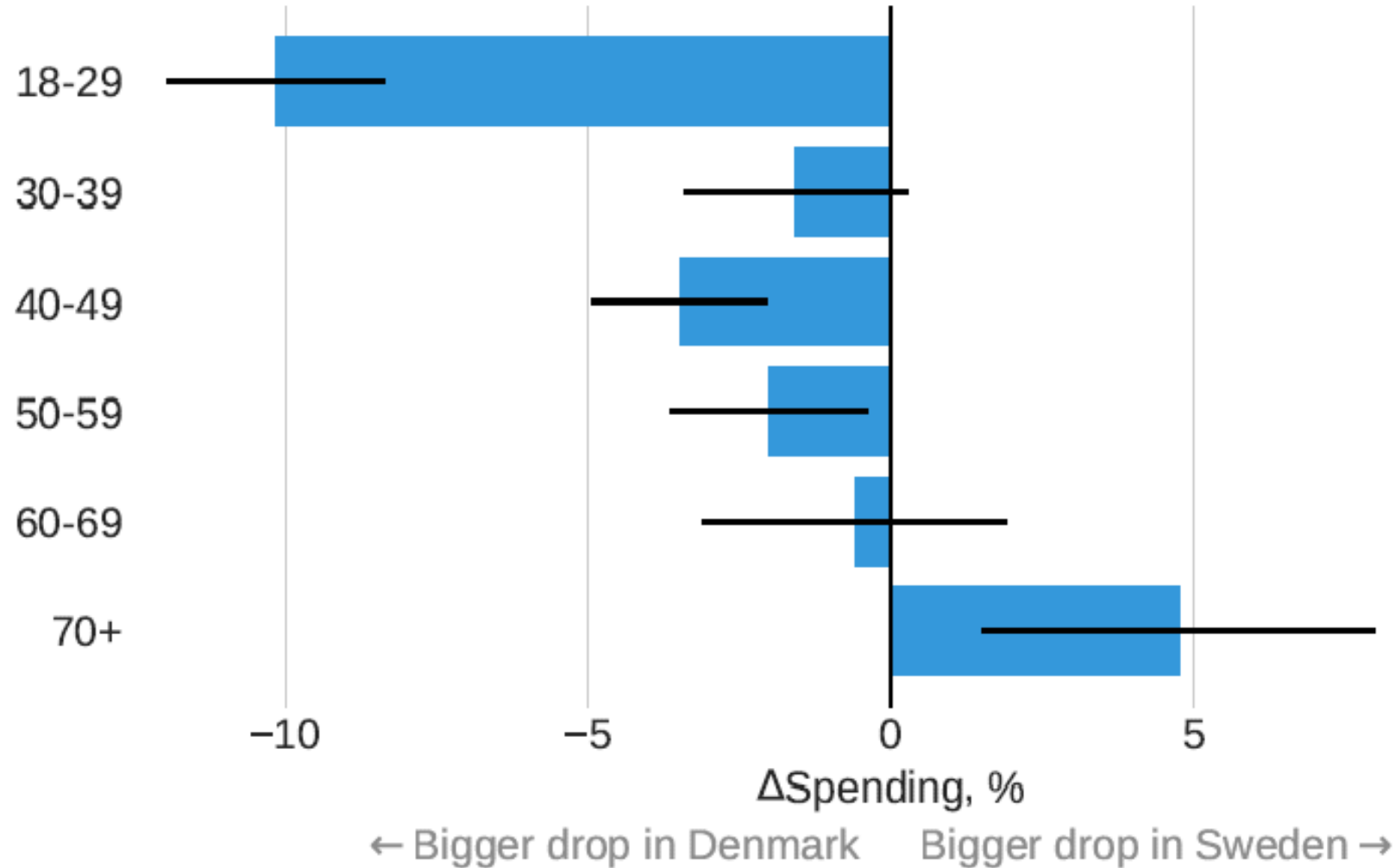
The impact of the Covid-19 crisis on spending and the effect of the Danish shutdown



Who cuts spending because of the shutdown?

- Health risk posed by COVID-19 strongly correlated with age \Rightarrow Shutdown may affect spending differently across age groups
- Shutdown may affect spending through two channels
 1. Restricts access to goods or services that households would have otherwise bought (e.g. restaurant meals) \Rightarrow lower spending
 2. Reduces health risk of other types of economic activity (e.g. high street shopping) \Rightarrow higher spending
- For high-risk individuals: First effect weaker, second effect stronger \Rightarrow less negative effect on spending than for low-risk individuals

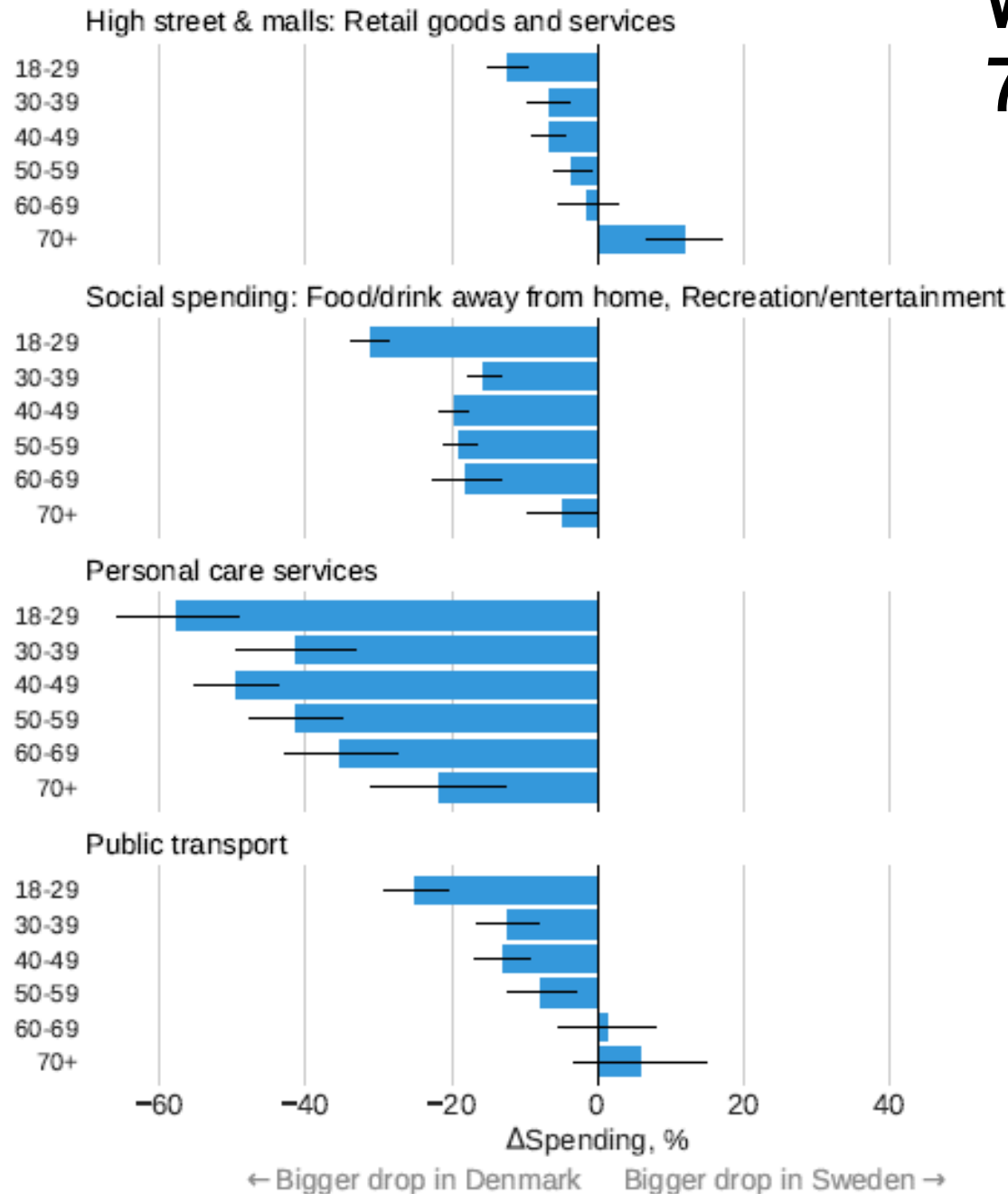
The Danish shutdown lowered spending of the young but *raised* spending among the elderly



- Stronger reduction among young people in Denmark than in Sweden, suggesting substantial effect of shutdown measures
- But opposite for 70+ individuals. Suggests *positive* impact of shutdown for this group

Where does the positive effect for 70+ group come from?

- Reflects mix of
 - Lower spending in categories with high level of social proximity (e.g. social spending, personal care)
 - Positive effects in categories with moderate social proximity (e.g. high street shopping)



Conclusion

Using Danske Bank transaction data from customers in Denmark and Sweden we conclude that

- 1. The Danish shutdown explains only a small fraction of the drop in spending during the COVID-19 crisis.**

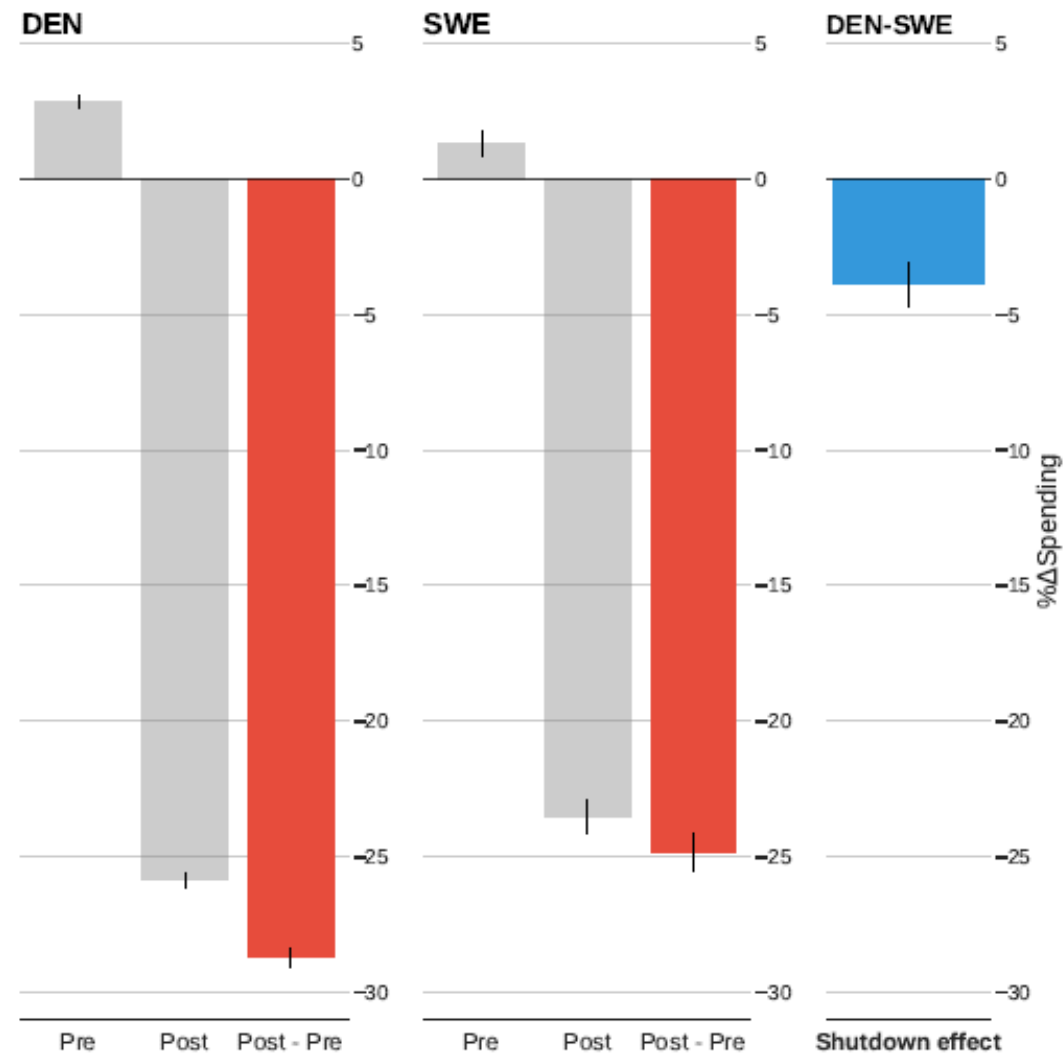
Most of the drop is due to the virus itself and would have occurred even under a lighter-touch approach as in Sweden

- 2. Shutting down economic activity lowers spending of the young but raises spending of the elderly**

By constraining the behavior of the young, shutdown slows spreading of the virus, enabling more economic activity by at risk groups such as the elderly

Appendix Slides

Effect of the shutdown in Denmark and Sweden



Are the two samples really comparable?

Spending decline almost as large in Sweden as in Denmark; suggests small effect of shutdown.

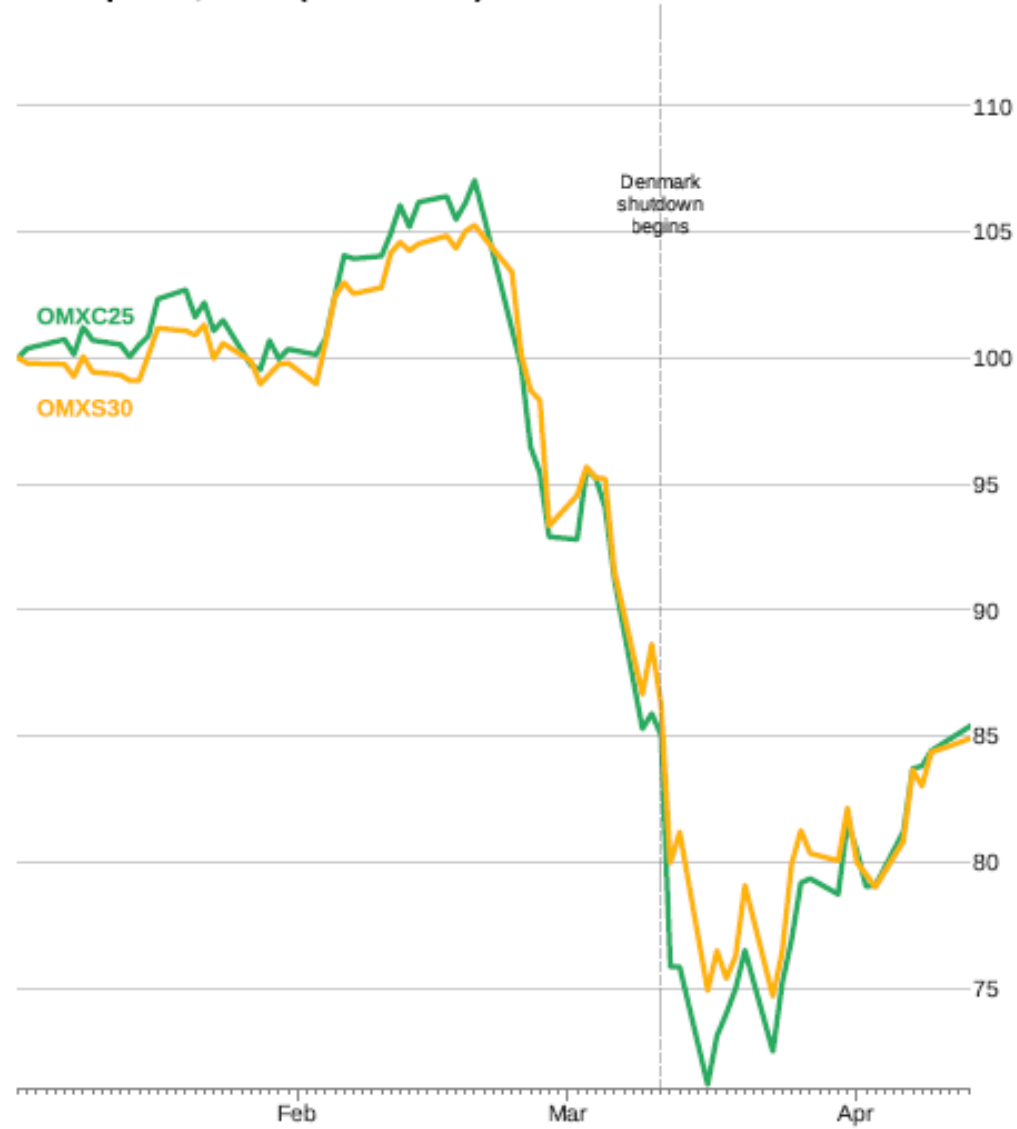
Were Swedish customers affected more adversely in other dimensions? Were there direct spillovers from Danish shutdown to Swedish customers shopping in Denmark?

We show that

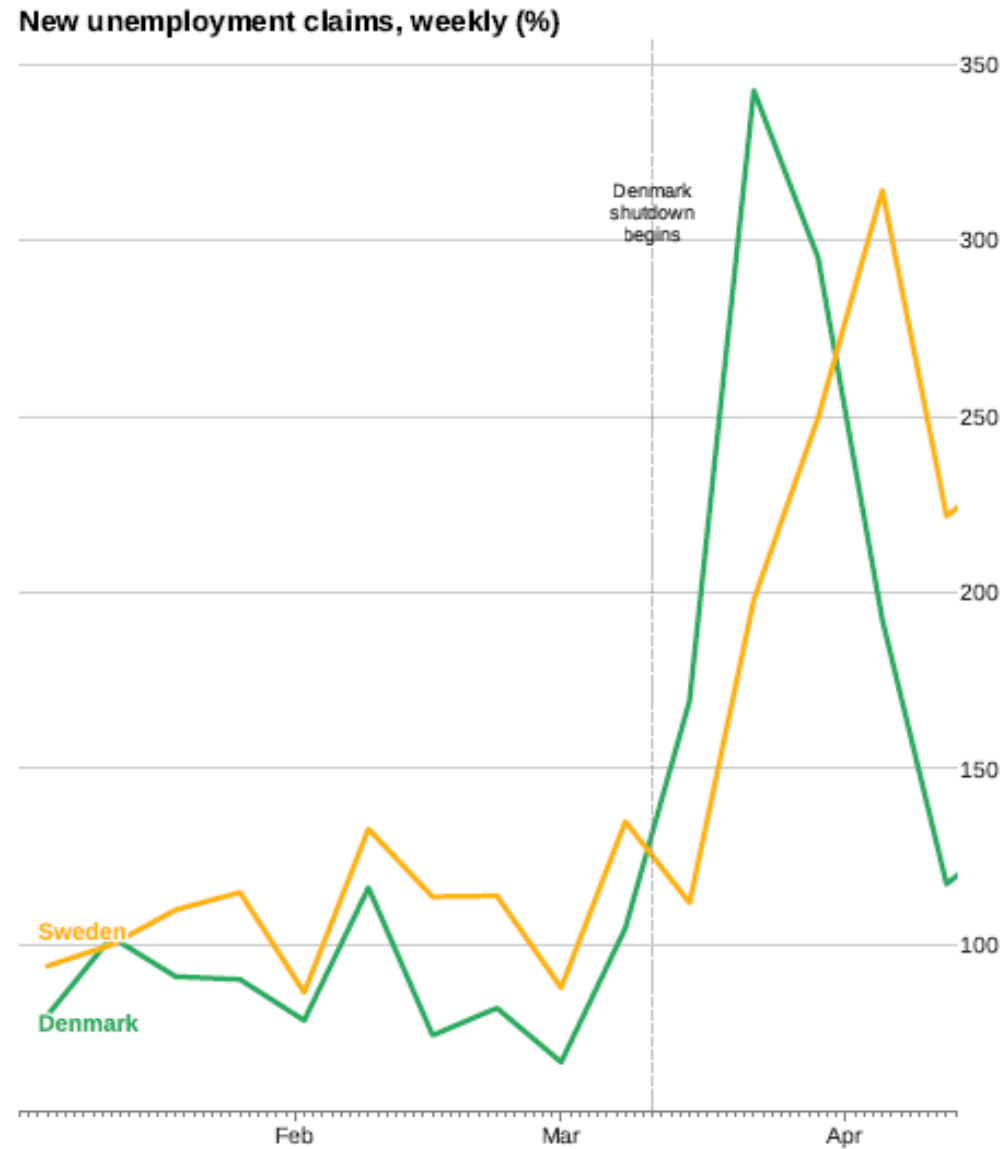
- Stock market indices in Denmark and Sweden followed almost exact same trajectory
- The rise in unemployment claims was slightly sharper in Denmark than in Sweden
- Economic policy measures aimed at households and businesses were strikingly similar in the two countries
- Less than 1% of card spending by Swedish individuals took place in Denmark before crisis

Stock prices

Stock prices, index (Jan 2. = 100)



Unemployment claims



Economic policy responses

Similarly massive government programs to mitigate economic fallout in both countries

- Significant loan subsidies introduced in both countries
- Extensive furlough support schemes to prevent mass layoffs
 - DK: 75% of salary for private sector employees who are sent home but kept on payroll
 - SE: up to 90% of salary while allowing employers to cut work hours by 80%
- Substantial cost subsidies to firms, covering up to 80% of fixed costs in DK and 75% in SE
- Many companies allowed to postpone VAT payments in both countries