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Research Report

The economic costs of the Coronavirus shutdown for Germany: A scenario calculation

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Economic Costs of Coronavirus Shutdown: Assumptions for the Six Calculated Scenarios

March 2020

APPENDIX TO THE PUBLICATIONS

Florian Dorn, Clemens Fuest, Marcell Götttert, Carla Krolage, Stefan Lautenbacher, Sebastian Link, Andreas Peichl, Magnus Reif, Stefan Sauer, Marc Stöckli, Klaus Wohlrabe, Timo Wollmershäuser:
The Economic Costs of the Coronavirus Shutdown for Germany: A Scenario Calculation,
EconPol Policy Brief 21, March 2020.

Florian Dorn, Clemens Fuest, Marcell Götttert, Carla Krolage, Stefan Lautenbacher, Robert Lehmann, Sebastian Link, Sascha Möhrle, Andreas Peichl, Magnus Reif, Stefan Sauer, Marc Stöckli, Klaus Wohlrabe, Timo Wollmershäuser, »The Economic Costs of the Coronavirus Shutdown for Selected European Countries: A Scenario Calculation«, EconPol Policy Brief 25, April 2020.

Table: The six scenarios

Scenario	Loss of value added during shutdown	Duration of the post-shutdown phase
1.	Low	1 month
2	High	1 month
3	Based on ifo business climate index	1 month
4	Low	At least 2 months, extended with longer shutdown
5	High	At least 2 months, extended with longer shutdown
6	Based on ifo business climate index	At least 2 months, extended with longer shutdown

Scenario 1

WZ-2008	Industries	GDP during shutdown
A	Agriculture, forestry and fisheries	
1	Agriculture	100%
2	Forestry	100%
3	Fisheries	
B to F	Production Industry	
B to E	Production Industry excluding construction	
B	Mining and quarrying	50%
C	Manufacturing	
CA	Manufacture of food products, beverages and tobacco	100%
CB	Manufacture of textiles, wearing apparel and leather	20%
CC	Manufacture of wood, paper, printing and reproduction	
16	Manufacture of wood and of products of wood and cork	20%
17	Manufacture of paper and paper products	20%
18	Manufacture of reproduction of recorded media	20%
CD	Manufacture of coke and refined petroleum products	20%
CE	Manufacture of chemical and chemical products	20%
CF	Manufacture of pharmaceutical products	100%
CG	Manufacture of rubber and plastic products and others	
22	Manufacture of rubber and plastic products	20%
23	Manufacture of other non-metallic mineral products	20%
CH	Manufacture of basic metals and fabricated metal products	
24	Manufacture of basic metals	20%
25	Manufacture of fabricated metal products	20%
CI	Manufacture of computer, electronic and optical products	20%
CJ	Manufacture of electrical equipment	20%
CK	Manufacture of machinery and equipment	
CL	Vehicle construction	
29	Manufacture of motor vehicles, trailers and semitrailers	20%
30	Manufacture of other transport equipment	20%
CM	Manufacture of furniture and other goods, repair and installation	
31-32	Manufacture of furniture, other manufacturing	20%
33	Repair and installation of machinery	20%
D	Energy supply	100%
E	Water supply, sewerage and waste management	
36	Water supply	100%
37-39	Sewerage, waste management and remediation activities	100%
F	Construction	50%
G to T	Service sector	
G to I	Trade, transport and accomodation	
G	Wholesale and retail trade, repair of motor vehicles	
45	Trade and repair of motor verhicles and motorcycles	20%
46	Wholesale trade	50%
47	Retail trade	50%
H	Transportation and storage	
49	Land transport and transport via pipelines	50%
50	Water transport	20%
51	Air transport	
52	Warehousing	
53	Postal and courier activities	50%
I	Accommodation and food service activities	0%
J	Information and communication	

JA		Publishing, motion picture and television programme production	
	58	Publishing activities	80%
	59–60	Motion picture, television programme production, programming	80%
JB		Telecommunications	80%
JC		Computer programming, consultancy, and information services	80%
K		Financial and insurance activities	
	64	Financial service activities	50%
	65	Insurance and pension funding	50%
	66	Activities auxiliary to financial services	50%
L		Real estate activities	50%
M to N		Corporate service providers	
M		Professional, scientific and technical activities	
MA		Professional and technical activities	
	69–70	Legal and accounting, consultancy,	80%
	71	Architectural and engineering activities	50%
MB		Scientific research and development	50%
MC		Other professional and technical activities	50%
	73	Advertising and market research	50%
	74–75	Other activities, veterinary activities	80%
N		Administrative and support service activities	
	77	Rental and leasing activities	20%
	78	Employment activities	20%
	79	Travel agency, tour operator and other reservation service	20%
	80–82	Other corporate service providers	20%
O to Q		Public administration, defence, education and health	
O		Public administration, defence, compulsory social security	100%
P		Education	100%
Q		Human health and social work activities	
QA		Human health activities	100%
QB		Residential care activities and social work activities	100%
R to T		Other service providers	
R		Arts, entertainment and recreation	
	90–92	Arts, culture and gambling and betting activities	0%
	93	Sport activities, amusement and recreation activities	0%
S		Other service activities	
	94	Activities of membership organisations	80%
	95	Repair of computers and household goods	50%
	96	Other personal service activities	50%
T		Activities of households as employers	50%

Scenario 2

WZ-2008	Industries	GDP during shutdown
A	Agriculture, forestry and fisheries	
1	Agriculture	100%
2	Forestry	100%
3	Fisheries	100%
B to F	Production Industry	
B to E	Production Industry excluding construction	
B	Mining and quarrying	50%
C	Manufacturing	
CA	Manufacture of food products, beverages and tobacco	100%
CB	Manufacture of textiles, wearing apparel and leather	10%
CC	Manufacture of wood, paper, printing and reproduction	
16	Manufacture of wood and of products of wood and cork	0%
17	Manufacture of paper and paper products	0%
18	Manufacture of reproduction of recorded media	0%
CD	Manufacture of coke and refined petroleum products	0%
CE	Manufacture of chemical and chemical products	20%
CF	Manufacture of pharmaceutical products	100%
CG	Manufacture of rubber and plastic products and others	
22	Manufacture of rubber and plastic products	0%
23	Manufacture of other non-metallic mineral products	0%
CH	Manufacture of basic metals and fabricated metal products	
24	Manufacture of basic metals	0%
25	Manufacture of fabricated metal products	0%
CI	Manufacture of computer, electronic and optical products	0%
CJ	Manufacture of electrical equipment	0%
CK	Manufacture of machinery and equipment	0%
CL	Vehicle construction	
29	Manufacture of motor vehicles, trailers and semitrailers	0%
30	Manufacture of other transport equipment	0%
CM	Manufacture of furniture and other goods, repair and installation	
31-32	Manufacture of furniture, other manufacturing	0%
33	Repair and installation of machinery	0%
D	Energy supply	100%
E	Water supply, sewerage and waste management	
36	Water supply	100%
37-39	Sewerage, waste management and remediation activities	100%
F	Construction	0%
G to T	Service sector	
G to I	Trade, transport and accommodation	
G	Wholesale and retail trade, repair of motor vehicles	
45	Trade and repair of motor vehicles and motorcycles	
46	Wholesale trade	50%
47	Retail trade	50%
H	Transportation and storage	
49	Land transport and transport via pipelines	50%
50	Water transport	0%
51	Air transport	0%
52	Warehousing	50%
53	Postal and courier activities	50%
I	Accommodation and food service activities	0%
J	Information and communication	

JA		Publishing, motion picture and television programme production	
	58	Publishing activities	50%
	59–60	Motion picture, television programme production, programming	50%
JB		Telecommunications	50%
JC		Computer programming, consultancy, and information services	80%
K		Financial and insurance activities	
	64	Financial service activities	50%
	65	Insurance and pension funding	50%
	66	Activities auxiliary to financial services	50%
L		Real estate activities	50%
M to N		Corporate service providers	
M		Professional, scientific and technical activities	
MA		Professional and technical activities	
	69–70	Legal and accounting, consultancy,	50%
	71	Architectural and engineering activities	50%
MB		Scientific research and development	50%
MC		Other professional and technical activities	50%
	73	Advertising and market research	50%
	74–75	Other activities, veterinary activities	50%
N		Administrative and support service activities	
	77	Rental and leasing activities	0%
	78	Employment activities	0%
	79	Travel agency, tour operator and other services	0%
	80–82	Other corporate service providers	0%
O to Q		Public administration, defence, education and health	
O		Public administration, defence, compulsory social security	100%
P		Education	100%
Q		Human health and social work activities	
QA		Human health activities	100%
QB		Residential care activities and social work activities	100%
R to T		Other service providers	
R		Arts, entertainment and recreation	
	90–92	Arts, culture and gambling and betting activities	0%
	93	Sport activities, amusement and recreation activities	0%
S		Other service activities	
	94	Activities of membership organisations	80%
	95	Repair of computers and household goods	50%
	96	Other personal service activities	50%
T		Activities of households as employers	50%

Scenario 3

WZ-2008	Industries	GDP during shutdown
A	Agriculture, forestry and fisheries	
1	Agriculture	100%
2	Forestry	100%
3	Fisheries	
B to F	Production Industry	
B to E	Production Industry excluding construction	
B	Mining and quarrying	100%
C	Manufacturing	
CA	Manufacture of food products, beverages and tobacco	100%
CB	Manufacture of textiles, wearing apparel and leather	20%
CC	Manufacture of wood, paper, printing and reproduction	
16	Manufacture of wood and of products of wood and cork	80%
17	Manufacture of paper and paper products	20%
18	Manufacture of reproduction of recorded media	80%
CD	Manufacture of coke and refined petroleum products	60%
CE	Manufacture of chemical and chemical products	20%
CF	Manufacture of pharmaceutical products	80%
CG	Manufacture of rubber and plastic products and others	
22	Manufacture of rubber and plastic products	0%
23	Manufacture of other non-metallic mineral products	60%
CH	Manufacture of basic metals and fabricated metal products	
24	Manufacture of basic metals	20%
25	Manufacture of fabricated metal products	20%
CI	Manufacture of computer, electronic and optical products	80%
CJ	Manufacture of electrical equipment	40%
CK	Manufacture of machinery and equipment	20%
CL	Vehicle construction	
29	Manufacture of motor vehicles, trailers and semitrailers	0%
30	Manufacture of other transport equipment	80%
CM	Manufacture of furniture and other goods, repair and installation	
31-32	Manufacture of furniture, other manufacturing	80%
33	Repair and installation of machinery	0%
D	Energy supply	100%
E	Water supply, sewerage and waste management	
36	Water supply	100%
37-39	Sewerage, waste management and remediation activities	60%
F	Construction	80%
G to T	Service sector	
G to I	Trade, transport and accommodation	
G	Wholesale and retail trade, repair of motor vehicles	
45	Trade and repair of motor vehicles and motorcycles	0%
46	Wholesale trade	20%
47	Retail trade	80%
H	Transportation and storage	
49	Land transport and transport via pipelines	80%
50	Water transport	0%
51	Air transport	
52	Warehousing	20%
53	Postal and courier activities	0%
I	Accommodation and food service activities	80%
J	Information and communication	

JA		Publishing, motion picture and television programme production	
	58	Publishing activities	80%
	59–60	Motion picture, television programme production, programming	80%
JB		Telecommunications	80%
JC		Computer programming, consultancy, and information services	80%
K		Financial and insurance activities	
	64	Financial service activities	50%
	65	Insurance and pension funding	50%
	66	Activities auxiliary to financial services	50%
L		Real estate activities	80%
M to N		Corporate service providers	
M		Professional, scientific and technical activities	
MA		Professional and technical activities	
	69–70	Legal and accounting, consultancy,	60%
	71	Architectural and engineering activities	60%
MB		Scientific research and development	80%
MC		Other professional and technical activities	50%
	73	Advertising and market research	40%
	74–75	Other activities, veterinary activities	80%
N		Administrative and support service activities	
	77	Rental and leasing activities	0%
	78	Employment activities	0%
	79	Travel agency, tour operator and other	60%
	80–82	Other corporate service providers	80%
O to Q		Public administration, defence, education and health	
O		Public administration, defence, compulsory social security	100%
P		Education	100%
Q		Human health and social work activities	
QA		Human health activities	100%
QB		Residential care activities and social work activities	100%
R to T		Other service providers	
R		Arts, entertainment and recreation	
	90–92	Arts, culture and gambling and betting activities	0%
	93	Sport activities, amusement and recreation activities	0%
S		Other service activities	
	94	Activities of membership organisations	80%
	95	Repair of computers and household goods	50%
	96	Other personal service activities	50%
T		Activities of households as employers	50%

WZ-2008	Industries	GDP during shut-down and post-shutdown phase					
		Scenario 4		Scenario 5		Scenario 6	
		Shutdown	Post-Shutdown	Shutdown	Post-Shutdown	Shutdown	Post-Shutdown
A	Agriculture, forestry and fisheries						
1	Agriculture	100%	100%	100%	100%	100%	100%
2	Forestry	100%	100%	100%	100%	100%	100%
3	Fisheries	100%	100%	100%	100%	100%	100%
B to F	Production industry						
B to E	Production Industry excluding construction						
B	Mining and quarrying	50%	90%	50%	90%	100%	90%
C	Manufacturing						
CA	Manufacture of food products, beverages and tobacco	100%	100%	100%	100%	100%	100%
CB	Manufacture of textiles, wearing apparel and leather	20%	90%	10%	90%	20%	90%
CC	Manufacture of wood, paper, printing and reproduction						
16	Manufacture of wood and of products of wood and cork	20%	90%	0%	90%	80%	90%
17	Manufacture of paper and paper products	20%	90%	0%	90%	20%	90%
18	Manufacture of paper and paper products	20%	90%	0%	90%	80%	90%
CD	Manufacture of coke and refined petroleum products	20%	90%	0%	90%	60%	90%
CE	Manufacture of chemical and chemical products	20%	90%	20%	90%	20%	90%
CF	Manufacture of pharmaceutical products	100%	100%	100%	100%	80%	100%
CG	Manufacture of rubber and plastic products and others						
22	Manufacture of rubber and plastic products	20%	90%	0%	90%	0%	90%
23	Manufacture of other non-metallic mineral products	20%	90%	0%	90%	60%	90%
CH	Manufacture of basic metals and fabricated metal products						
24	Manufacture of basic metals	20%	90%	0%	90%	20%	90%
25	Manufacture of basic metals	20%	90%	0%	90%	20%	90%
CI	Manufacture of computer, electronic and optical products	20%	90%	0%	90%	80%	90%
CJ	Manufacture of electrical equipment	20%	90%	0%	90%	40%	90%
CK	Manufacture of machinery	20%	90%	0%	90%	20%	90%
CL	Vehicle construction						
29	Manufacture of motor vehicles, trailers and semitrailers	20%	90%	0%	90%	0%	90%
30	Manufacture of other transport equipment	20%	90%	0%	90%	80%	90%
CM	Manufacture of furniture, repairs and installation						
31-32	Manufacture of furniture, other manufacturing	20%	90%	0%	90%	80%	90%
33	Repair and installation of machinery	20%	90%	0%	90%	0%	90%
D	Energy supply	100%	100%	100%	100%	100%	100%
E	Water supply, sewerage and waste management						
36	Water supply	100%	100%	100%	100%	100%	100%
37-39	Sewerage, waste management and remediation activities	100%	100%	100%	100%	60%	100%
F	Construction	50%	90%	0%	90%	80%	90%
G to T	Service Sector						
G to I	Trade, transport and accommodation						
G	Wholesale and retail trade, repair of motor vehicles						
45	Trade and repair of motor vehicles and motorcycles	20%	90%	0%	90%	0%	90%
46	Wholesale trade	50%	90%	50%	90%	20%	90%
47	Retail trade	50%	90%	50%	90%	80%	90%
H	Transportation and storage						
49	Land transport and transport via pipelines	50%	90%	50%	90%	80%	90%
50	Water transport	20%	90%	0%	90%	0%	90%
51	Air transport	20%	50%	0%	50%	0%	50%
52	Warehousing	50%	90%	50%	90%	20%	90%
53	Postal and courier activities	50%	90%	50%	90%	0%	90%
I	Accommodation and food	0%	20%	0%	20%	80%	20%

J	Information and communication						
JA	Publishing, motion picture and television programme						
58	Publishing activities	80%	90%	50%	90%	80%	90%
59–60	Motion picture, television programme production	80%	90%	50%	90%	80%	90%
JB	Telecommunications	80%	90%	50%	90%	80%	90%
JC	Computer programming, consultancy, and information	80%	90%	80%	90%	80%	90%
K	Financial and insurance activities						
64	Financial service activities	50%	90%	50%	90%	50%	90%
65	Insurance and pension funding	50%	90%	50%	90%	50%	90%
66	Activities auxiliary to financial services	50%	90%	50%	90%	50%	90%
L	Real estate activities	50%	90%	50%	90%	80%	90%
M to N	Corporate service providers						
M	Professional, scientific and technical activities						
MA	Professional and technical activities						
69–70	Legal and accounting, consultancy	80%	90%	50%	90%	60%	90%
71	Architectural and engineering activities	50%	90%	50%	90%	60%	90%
MB	Scientific research and development	50%	90%	50%	90%	80%	90%
MC	Other professional and technical activities	50%	90%	50%	90%	50%	90%
73	Advertising and market research	50%	90%	50%	90%	40%	90%
74–75	Other activities, veterinary activities	80%	90%	50%	90%	80%	90%
N	Administrative and support service activities						
77	Rental and leasing activities	20%	50%	0%	50%	0%	50%
78	Employment activities	20%	90%	0%	90%	0%	90%
79	Travel agency, tour operator and other services	20%	20%	0%	20%	60%	20%
80–82	Other corporate service providers	20%	50%	0%	50%	80%	50%
O to Q	Public administration, defence, education and health						
O	Public administration, defence, compulsory social security	100%	100%	100%	100%	100%	100%
P	Education	100%	100%	100%	100%	100%	100%
Q	Human health and social work activities						
QA	Human health activities	100%	100%	100%	100%	100%	100%
QB	Residential care and social work activities	100%	100%	100%	100%	100%	100%
R to T	Other service providers						
R	Arts, entertainment and recreation						
90–92	Arts, culture and gambling and betting activities	0%	0%	0%	0%	0%	0%
93	Sport activities, amusement and recreation activities	0%	0%	0%	0%	0%	0%
S	Other service activities						
94	Activities of membership organisations	80%	50%	80%	50%	80%	50%
95	Repair of computers and household goods	50%	50%	50%	50%	50%	50%
96	Other personal service activities	50%	90%	50%	90%	50%	90%
T	Activities of households as employers	50%	50%	50%	50%	50%	50%