

# The ZPID lockdown measures dataset for Germany

Holger Steinmetz, Veronika Batzdorfer, & Michael Bosnjak

Release note: 1.0

ZPID Science Information Online, 20(1)

For updates please refer to:

**doi: <http://dx.doi.org/10.23668/psycharchives.3019>**

ZPID - Leibniz Institute for Psychology Information  
Universitätsring 15  
D-54296 Trier – Germany

[www.leibniz-psychology.org](http://www.leibniz-psychology.org)

Please cite as:

Steinmetz, H., Batzdorfer, V., & Bosnjak, M. (June, 2020). The ZPID lockdown measures dataset. *ZPID Science Information Online*, 20(1). <http://dx.doi.org/10.23668/psycharchives.3019>

## Abstract

The outbreak of the COVID-19 pandemic has prompted the German government and the 16 German federal states to announce a variety of public health measures in order to suppress the spread of the coronavirus. These non-pharmaceutical measures intended to curb transmission rates by increasing social distancing (i.e., diminishing interpersonal contacts) which restricts a range of individual behaviors. These measures span moderate recommendations such as physical distancing, up to the closures of shops and bans of gatherings and demonstrations. The implementation of these measures are not only a research goal for themselves but have implications for behavioral research conducted in this time (e.g., in form of potential confounder biases). Hence, longitudinal data that represent the measures can be a fruitful data source. The presented data set contains data on 14 governmental measures across the 16 German federal states. In comparison to existing datasets, the dataset at hand is a fine-grained daily time series tracking the effective calendar date, introduction, extension, or phase-out of each respective measure. Based on self-regulation theory, measures were coded whether they did not restrict, partially restricted or fully restricted the respective behavioral pattern. The time frame comprises March 08, 2020 until May 15, 2020. The project is an open-source, ongoing project with planned continued updates<sup>1</sup> in regular (approximately monthly) intervals. This release note presents the background, dataset structure and coding rules of the dataset.

## Background

Since its declaration as a pandemic by the World Health Organization on March 11<sup>th</sup> 2020, the current COVID-19 crisis has become a burden for societies, ranging from individuals to institutions. In order to mitigate the spread of the virus, governments across the globe have announced a wide array of unprecedented non-pharmaceutical measures, most noteworthy, aiming at motivating citizens to keep distance to others (Martín-Calvo et al., 2020; Porcher, 2020). While preliminary results support the effectiveness of these measures (e.g., Anderson, Heesterbeek, Klinkenberg, & Hollingsworth, 2020; Banholzer et al., 2020; Gelfand et al. 2020), there is an ongoing discussion on the possible negative impact of measures. While recommendations, for instance, to keep a distance of 1.5 meters to other people have been regarded as implying mild behavioral restrictions, more severe measures can be expected to cause more severe consequences for individuals, families, institutions, and corporations. For instance, the nationwide closures of schools and kindergartens have increased the difficulties for families to combine childcare and education with their own work life--now in the majority of cases taking place in "home offices". Further, the closures of all "non-essential" shops, ranging from hairdressers, over restaurants up to entire shopping centers have created the fear for unemployment, a sharp increase of bankruptcies, and local or global recessions, leading to the debate of timely lifting certain restrictions (see Donsimoni et al., 2020; Hale et al., 2020).

Beyond these severe rather lagged implications for individuals and businesses, these restrictions have tremendous direct impact on the social life, wellbeing, and behavior of individuals. For instance, governments have prohibited public events, such as cultural events, church services, political demonstrations up to social gatherings and meeting more than one friend which interrupts social life. While, at present, the public still supports these measures (Blom et al., 2020; Rieger, 2020) it is plausible

---

<sup>1</sup> doi: <http://dx.doi.org/10.23668/psycharchives.3019>

that this will change in the near future, as these measures not only constitute major restrictions with negative consequences for social interactions, freedom, and wellbeing but also due to the economic impact (Jones, Brown & Palumbo, 2020) and its consequences of increasing unemployment rates (Weber et al., 2020) and the impact on the individuals' working life.

For scientific approaches, taking these restrictions into account is important and fruitful for two reasons. Firstly, investigations on the impact of these restrictions is a research topic in itself. Potential research topics could center among others on the effect of the restrictions on infection rates (Donsimoni et al., 2020), wellbeing (e.g., anxiety, loneliness, depression), political attitudes and institutional trust, or behavior (e.g., job performance, communication, paternal behavior, see Betsch, et al., 2020). Hence, in these application cases, researchers would assess the role of the restrictions as a causal determinant of focal variables. Alternatively, research could investigate the characteristics of the lockdown measures (e.g., their number, speed of implementation, degree of restrictiveness) as an outcome of potential state-wide antecedents--such as demographic features (e.g., population density, age structure), political features (e.g., political institutions), or geographic features (e.g., distance to countries with a high number of infections) and several more. That is, these application cases would regard restrictions as a outcome to be explained. For both scenarios, investigating the lockdown measures by a long term longitudinal lense has tremendous scientific potential, especially due to the various differences across states in the number and severity of the implemented measures and the points of time by which the measures were implemented.

Secondly, research projects are conducted in this time focusing on substantial issues not related to COVID-19 and the lockdown have to take the methodological implications of the restrictions into account: For instance, depending on the applied design and statistical model, the lockdown measures may act as confounders--thus, biasing estimates of effects of independent variables on dependent variables. Further, restrictions may induce causal heterogeneity if there are differences in responsiveness to restrictions across individuals which affects the effect of interest. Hence, whether the researcher is focused on investigating relationships involving the lockdown or simply wants to take potential methodological implications into account, gathering data that represents the dynamic course of the lockdown measures is necessary.

Together with this release note, we present a longitudinal open source dataset to facilitate these endeavors. The dataset represents the process of governmental restrictions beginning with the outbreak of COVID-19 in Germany in the beginning of March, 2020 until the middle of May, 2020. We identified 14 measures with supposed substantial impact on the essential behavioral patterns of individuals. These can be summarized within the following five categories:

- Recommendations to keep a physical distance of around 1.5 meters.
- Prohibitions of services with close contact (e.g., hairdressers, beauticians, tattoo studios).
- Prohibition to leave the apartment without reason (e.g., shopping for food or visits to the physician), to stay in public with only household member or one additional person or more than one person, or the prohibition of political demonstrations.
- The obligation to wear face masks in shops or public transport.
- The closure of schools, kindergartens, playgrounds, zoos, churches, and "non-essential" shops (that is, shops not necessary for getting nutrition, medical care, traffic safety or infrastructure, such as barbershops, warehouses, tattoo-studios).

There are some concomitant datasets, for instance, by Bauer and Weber (2020) or Noy, Doan, Ferrarini, & Park (2020) which take an economic perspective on the lockdown. Further, there is the dataset used by Donsimoni et al. (2020) who investigated the onset of measures on structural breaks of the infection growth curve, and cross-country data sets by Porcher (2020) or Hale et al. (2020) who focus on public health and economic interventions. For these purposes, the selected measures were mainly those with intended economic consequences (e.g., closing external borders, closures of schools or companies) as these were considered as the relevant causal antecedents for the chosen phenomenon (i.e., effects labour market or number of infections) (cf. Hale et al., 2020). Our approach, in contrast, takes an individual-centered, action-oriented perspective. In particular, we draw on self-regulation theory (Bandura, 1991) and reciprocal determinism (Bandura, 1978) as a fruitful framework to select measures. From this perspective, we focus on those measures that may likely disrupt self-regulated and psychologically relevant actions. Based on the reciprocal determinism perspective, the lockdown measures represent an external stimulus leading to restrictions of the goal-directed behavior of the individual. Furthermore, self-regulation allows to conceptualize targets of a restriction (e.g., the customer of a shop vs. the shop owner) and to create a foundation for a more fine-grained coding of the measures beyond simply noting whether a measure was implemented or not. That is, these restrictions can be severe or to a certain degree. An example for severe restriction is that a goal directed behavior has to be completely abandoned (e.g., when a person is prohibited from leaving his/her apartment). In other cases, s/he may be able to perform the behavior but only while adhering to certain obligations (e.g., wearing a face mask, having difficulties to get an appointment at the hairdresser). We tried to reflect the psychological implications of such differences by coding the occurrence of a “full restriction” vs. a “partial restriction”.

While this perspective predominantly concerns individuals as targets of the restrictions, we did not want to limit the data to these targets. Hence, on more aggregated level, we perceived societal entities on a higher level (e.g., shops, schools, churches, zoos) as behavioral agents whose goal-directed actions are negatively affected by the lockdown measures. For instance, churches as goal-directed higher-order entities may be prohibited from conducting masses (i.e., fully restricted) or allowed to conduct the mass but only while adhering to limitations regarding the number of visitors (i.e, partially restricted).

With regard to applying reciprocal determinism as a theoretical lense, we would like to note that the focus of the presented work and the data base only focuses on the effect of external governmental measures on the behavioral restrictions of agents but that the concept of reciprocal determinism is a fruitful basis to perceive the influence of agents on external circumstances. Rising indications of this form of reciprocity are the ongoing discussions up to public demonstrations on the appropriateness and longevity of the measures which can be regarded as attempted or successful endeavours of agents to determine and, thus, change the external circumstances. This has been a neglected aspect of multilevel analyses which have mainly studied the effects of contextual conditions on individual behavior (Hox et al., 2018).

## The restrictions

Based on the aforementioned theoretical perspectives, and the categories of restrictions, we identified 14 specific forms of restrictions caused by the lockdown measures:

1. Prohibition to leave the apartment without reason (i.e., for nutritional reasons or doctoral visits).

2. Recommendations to keep distance of 1.5 m to other persons.
3. Duty to wear a face mask in public transport or within stores.
4. Closure of “non-essential” shops that do not relate to alimentation or medical care, such as bookstores, warehouses.
5. Closure of barbershops and related services in the field of body care (e.g., cosmetics studios, tattoo studios).
6. Closure of “essential shops” not related to alimentation such as car and bicycle dealers, building and gardening supplies markets, pharmacies, drugstores, medical supply stores, petrol stations and banks
7. Closures of zoos.
8. Prohibition to politically demonstrate in public.
9. Closure of schools.
10. Closure of churches, mosques, or synagogues.
11. Prohibition to stay in public space in the company of another person who does not belong to the same household.
12. Prohibition to meeting with several friends in public places.
13. Closures of playgrounds.
14. Closures of kindergartens or daycare.

The aim of the dataset is not to reflect the full range of all specific measures but rather the central, exemplary restrictions. These exemplary restrictions reflect more fundamental prohibitions and classes of restrictions (set out in the official regulations of the state governments). For example, more specific restrictions such as prohibition to meet more than one friend and prohibition to visit a public demonstration are both reflections of the same ban on public gatherings. Hence from a measurement theoretical perspective (Edwards & Bagozzi, 2000), the chosen specific restrictions can be perceived as reflective indicators of an underlying common state regulation. Such a perspective provides a solid basis for arguing for the comprehensiveness of the approach even if not every possible indicators has been considered. A fruitful practical implication is the possibility to empirically test such a model and to reduce the number of restriction to a lower number of underlying dimensions.

## The structure of the dataset

The goal of the project is to create a day-level time series that reflects--beginning with March, 08, 2020 on a daily basis, whether the aforementioned restrictions came into effect or prolonged and to what extent (e.g., no restriction, partial restriction, or full restriction). As the 16 German states differed with regard to the time of implementation of the measures, the piecewise vs. integrated implementation, and the severity of the measures, we coded the degree of restrictions for each state separately. The result is hierarchical data structure in which datetimes are nested in measures and these are nested in states.

The specificity of the time series format enables it--depending on the goals of the researcher--to use data in various degrees of temporal specificity which can be easily achieved by different temporal aggregation procedures, from an overall time series consisting of daily values, to weekly or monthly aggregated values up to a sum index that indicates the total level of restrictions per federal state. Likewise, different levels of aggregation of measures are possible. For example, the overall level of

restrictions can be achieved per federal state and per point in time (see above) by summing up the individual measures, and analyses of the individual measures can also be carried out.

## The procedure

In order to generate the dataset, we worked in a team of 4 coders. The sources for the codings were primarily public governmental announcements and press releases on the federal or state level, alongside news articles. We record the original sources so that codings can be checked. In all cases, we systematically compared the accuracy of references and coding decisions across coders. We note however, that the current form of the dataset represents a beta version; that is the dataset may contain errors regarding the exact dates of implementation. This might result in a deviation of one or two days, in some specific cases. We, thus, recommend to check for updates in monthly intervals and especially before submitting publications.

## The coding scheme

As aforementioned, we coded the degree of restrictions. That is, a measure was coded as “free” (=0) when there was no obligation or prohibition. This was the case prior to the onset of the lockdown measure and when lockdown measures were withdrawn. That is, this code reflects behavior that is not restricted and represents naturally occurring behavior. A measure was coded as “*partially restricted*” (=1) when there was some sort of obligation or prohibition that enforced difficulties to perform the behavior or a whenever the target behavior consisted of a more complex set of specific actions and some actions were prohibited. An example is the partial restrictions that resulted in the re-opening of barbershops in the beginning of May, 2020, that allowed service providers certain activities (e.g., haircuts) but prohibited others (services leading to a short face-to-face distance). Other examples of partial restrictions concerned higher-order agents such as schools which could only open for certain classes or children of parents employed in “essential jobs” or churches, which were allowed to open only for a fraction of visitors. Finally, a restriction was coded as “fully restricted” (=2) when a certain target behavior could not be performed, for instance, not being allowed to conduct a picnic with friends.

It should be noted that we applied the three-categorical coding scheme (i.e., none, partial, full) that reflected both extremes of restrictions even in cases when no intermediate (i.e., partial) level existed. The most apparent example is the recommendation to keep distance to other people which either existed (i.e., coded as fully restricted) or not (i.e., coded as free). Hence, the codings “free” vs. “restricted” represent the existing ends of the spectrum regardless of whether there is or can be an intermediate degree (i.e., partial restriction). This was necessary to enable comparing codes across restrictions. Likewise, we coded the obligation to wear a face mask only as a partial restriction as it was limited to shopping centers and public traffic. Table 1 represents the name of the variables in the dataset, their explanation, and the detailed coding regime. Table 1 contains the codebook of the dataset.

**Table 1: Description of the variable names, explanation of the variables, and coding regime**

Variable name	Detailed variable name	Explanation	Categories
leavehome	Leave home	Prohibition to leave the apartment without sound reason.	<ul style="list-style-type: none"> <li>• <b>Fully restricted (=2):</b> There is a restriction in mobility; leaving the apartment is only allowed for sound reasons (e.g., use of medical services, shopping, accompanying persons in need of support)</li> <li>• <b>Partially restricted (=1):</b> It is allowed to leave the apartment without reason but there are restrictions about the location that is chosen</li> <li>• <b>Free (=0):</b> It is allowed to leave the apartment as long as other restrictions (see variables <i>dist</i>, <i>onefriend</i> and <i>morefriend</i>) are followed</li> </ul>
dist	Distance	Minimum distance of 1.5 m to other persons	<ul style="list-style-type: none"> <li>• <b>Fully restricted (=2):</b> There is an explicit governmental recommendation to keep distance to other people</li> <li>• <b>Free (=0):</b> There is no identifiable recommendation</li> </ul> <p>(Note: Codes (0/2) were chosen to reflect the extremes, no intermediate level applicable)</p>
msk	Mask-wearing	Use of face masks on public transport or within shops is mandatory	<ul style="list-style-type: none"> <li>• <b>Fully restricted (=2):</b> Wearing a face mask is compulsory throughout public space</li> <li>• <b>Partially restricted (=1):</b> Wearing face masks on public transport and in shops is compulsory</li> <li>• <b>Free (=0):</b> No obligation for face mask usage</li> </ul>
shppng	Shopping	Closure of non-essential shops, such as bookstores, warehouses	<ul style="list-style-type: none"> <li>• <b>Fully restricted (=2):</b> Non-essential shops are closed</li> <li>• <b>Partially restricted (=1):</b> Closures are conditional on the size of the store or business type</li> <li>• <b>Free (=0):</b> No restrictions</li> </ul>
hcut	Haircut	Closure of barbershops, hairdressers and related services in the field of body care (e.g., cosmetics studio, tattoo studio)	<ul style="list-style-type: none"> <li>• <b>Fully restricted (=2):</b> Shops are closed</li> <li>• <b>Partially restricted (=1):</b> Only some services are allowed or there are strict conditions so that not all services can be applied (i.e. face-related services such as skin care, make-up)</li> <li>• <b>Free (=0):</b> No restrictions</li> </ul>



ess_shps	Essential shops	Closure of “essential shops” such as car and bicycle dealers, building and gardening supplies markets, pharmacies, drugstores, medical supply stores, petrol stations and banks (shops not relevant for nutrition and food)	<ul style="list-style-type: none"> <li>• <b>Fully restricted (=2):</b> Closed</li> <li>• <b>Partially restricted (=1):</b> Open only to professionals or only partial sectors open</li> <li>• <b>Free (=0):</b> Open without restrictions</li> </ul>
zoo	Zoo	Closure of zoos and botanic gardens	<ul style="list-style-type: none"> <li>• <b>Fully restricted (=2):</b> Closed</li> <li>• <b>Partially restricted (=1):</b> Zoos are obligated to strongly limit the number of visitors per area</li> <li>• <b>Free (=0):</b> Fully open</li> </ul>
demo	Political demonstrations	Prohibition to politically demonstrate in public and public gatherings	<ul style="list-style-type: none"> <li>• <b>Fully restricted (=2):</b> There is a ban on public assembly</li> <li>• <b>Partially restricted (=1):</b> Public assembly is allowed if conditions referring to the number of persons per area are fulfilled or if the duration is limited</li> <li>• <b>Free (=0):</b> No restriction or ban</li> </ul>
school	Schools	Closure of schools (including primary and secondary schools)	<ul style="list-style-type: none"> <li>• <b>Fully restricted (=2):</b> Schools are closed</li> <li>• <b>Partially restricted (=1):</b> Schools are closed but there are exceptions for certain classes (i.e., in their final year of graduation) or for members of essential professional groups (e.g. police, fire brigade, hospital, nursing, integration assistance, utilities)</li> <li>• <b>Free (=0):</b> Schools are open</li> </ul>
church	Churches	Closure of churches, mosques, or synagogues	<ul style="list-style-type: none"> <li>• <b>Fully restricted (=2):</b> Churches a.o. are closed</li> <li>• <b>Partially restricted (=1):</b> There is a limitation of permitted visitors or duration</li> <li>• <b>Free (=0):</b> Open without restriction</li> </ul>
onefriend	Meeting up one friend	Prohibition to stay in public space in the company of another person who does not belong to the same household	<ul style="list-style-type: none"> <li>• <b>Fully restricted (=2):</b> Staying in public with another person is prohibited</li> <li>• <b>Free (=0):</b> It is allowed to stay in public with another person</li> </ul> <p>(Note: Codes (0/2) were chosen to reflect the extremes, no intermediate level applicable)</p>
morefriends	Meeting up more than one friend	Prohibition to stay in public space in the company of several other persons who do not belong to the same household	<ul style="list-style-type: none"> <li>• <b>Fully restricted (=2):</b> It is prohibited to meet more than one person in public</li> <li>• <b>Partially restricted (=1):</b> It is allowed to meet more than one friend but there is still a restriction of</li> </ul>



			<p>the number of persons (e.g., below 5)</p> <ul style="list-style-type: none"> <li>• <b>Free (=0):</b> No restrictions</li> </ul>
plygrnd	Playground	Prohibition to visit playgrounds	<ul style="list-style-type: none"> <li>• <b>Fully restricted (=2):</b> It is prohibited to visit playgrounds</li> <li>• <b>Partially restricted (=1):</b> Playgrounds can be visited as long conditions hold (e.g., with regard the number of children per area)</li> <li>• <b>Free (=0):</b> It is allowed with no restrictions to visit playgrounds</li> </ul>
daycare	daycare	Closure of kindergarten or daycare	<ul style="list-style-type: none"> <li>• <b>Fully restricted (=2):</b> Kindergartens are closed</li> <li>• <b>Partially restricted (=1):</b> Kindergartens are closed but there are exceptions for members of essential professional groups (e.g. police, fire brigade, hospital, nursing, integration assistance, utilities)</li> <li>• <b>Free (=0):</b> Kindergartens are open</li> </ul>

## Disclaimer

The dataset can be used for free under the Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0) License. The dataset is based on manual coding of policy measures. Even though we made the best attempt to report data as accurately as possible, there might be some remaining errors and we apologize in advance for that. Please email the corresponding author ([vb@leibniz-psychology.org](mailto:vb@leibniz-psychology.org)) if you would like to point out errors.

## References

- Anderson, R. M., Heesterbeek, H., Klinkenberg, D., & Hollingsworth, T. D. (2020). How will country-based mitigation measures influence the course of the COVID-19 epidemic? *The Lancet*, 395(10228), 931–934. [https://doi.org/10.1016/S0140-6736\(20\)30567-5](https://doi.org/10.1016/S0140-6736(20)30567-5)
- Bandura, A. (1978). The self system in reciprocal determinism. *American Psychologist*, 33(4), 344.
- Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50(2), 248–287. doi:10.1016/0749-5978(91)90022-L
- Banholzer, N., van Weenen, E., Kratzwald, B., Seeliger, A., Tschernutter, D., Bottrighi, P., Cenedese, A., Pruig Salles, J., Vach, W., & Feuerriegel, S. (2020). Estimating the impact of non-pharmaceutical interventions on documented infections with COVID-19: A cross-country analysis. *medRxiv*.
- Bauer, A. & Weber, E. (2020): Die Arbeitsmarktwirkungen der Corona-Eindämmungsmaßnahmen. Makronom, 04.05.2020.
- Betsch, C., Korn, L., Felgendreiff, L., Eitze, S., Schmid, P., Sprengholz, P., Wieler, L., Schmich, P., Stollorz, V., Ramharter, M., Bosnjak, M., & Omer, S. B. (2020). German COVID-19 Snapshot Monitoring (COSMO) - Welle 1 (03.03.2020). PsychArchives. <https://doi.org/10.23668/PSYCHARCHIVES.2859>
- Blom, A., Möhring, K., Naumann, E., Reifenscheid, M., Lehrer, R., Juhl, S., ... Heinemann, F. (2020). Mannheimer Corona-Studie. Retrieved from <https://www.uni-mannheim.de/gip/corona-studie/>
- Donsimoni, J. R., Glawion, R., Hartl, T., Plachter, B., Timmer, J., Wälde, K., Weber, E., & Weiser, C. (2020). Covid-19 in Deutschland—Erklärung, Prognose und Einfluss gesundheitspolitischer Maßnahmen. *Perspektiven der Wirtschaftspolitik*, 1(ahead-of-print).
- Donsimoni, J. R., Glawion, R., Plachter, B., Weiser, C., & Wälde, K. (2020). Should contact bans be lifted in Germany?. *MedRxiv article*. <https://www.medrxiv.org/content/10.1101/2020.04.10.20060301v1.full.pdf>
- Edwards, J. R., & Bagozzi, R. P. (2000). On the nature and direction of relationships between constructs and measures. *Psychological Methods*, 5(2), 155–174.
- Gelfand, M., Jackson, J., Pan, X., Nau, D., dagger, M., van Lange P. & Chiu, C.Y. (2020) The Importance of Cultural Tightness and Government Efficiency for Understanding Covid Growth and Death Rates, *PsyArXiv*, 1 Apr.2020. doi : 10.31234/osf.io/m7f8a
- Hale, Thomas, Noam Angrist, Beatriz Kira, Anna Petherick, Toby Phillips, Samuel Webster. “Variation in Government Responses to COVID-19” Version 6.0. *Blavatnik School of Government Working Paper*. May 25, 2020. Retrieved from: [www.bsg.ox.ac.uk/covidtracker](http://www.bsg.ox.ac.uk/covidtracker)
- Hox, J.J., Moerbeek, M., & van der Schoot, R. (2018) *Multilevel Analysis*, Third Edition. London: Routledge.
- Jones, L., Brown, D., & Palumbo, D. (2020, March 28). Coronavirus: A visual guide to the economic impact. *BBC News*. <https://www.bbc.com/news/business-51706225>
- Martín-Calvo, D., Aleta, A., Pentland, A., Moreno, Y., & Moro, E. (2020). Effectiveness of social distancing strategies for protecting a community from a pandemic with a data driven contact network based on census and real-world mobility data. In *Technical Report*. [https://covid-19-sds.github.io/assets/pdfs/Preliminary\\_Report\\_Effectiveness\\_of\\_social\\_distance\\_strategies\\_COVID-19.pdf](https://covid-19-sds.github.io/assets/pdfs/Preliminary_Report_Effectiveness_of_social_distance_strategies_COVID-19.pdf)
- Noy, Ilan, Nguyen Doan, Benno Ferrarini and Donghyun Park. 2020. Economic risk by country. *COVID Economics*, 3.

- Porcher, Simon. Governments' Responses to COVID-19. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2020-05-06. <https://doi.org/10.3886/E119061V3>
- Rieger, M.O. (2020, March 25). What do young people think about social distancing during the Corona crisis in Germany? Retrieved from <https://www.uni-trier.de/fileadmin/fb4/prof/BWL/FIN/Files/Corona-Rieger.pdf>
- Weber, E., Bauer, A., Fuchs, J., Hummel, M., Hutter, C., Wanger, S., ... & Walwei, U. (2020). *Deutschland vor einer schweren Rezession: Der Arbeitsmarkt gerät durch Corona massiv unter Druck* 7(2020). IAB-Kurzbericht. <https://www.econstor.eu/bitstream/10419/216723/1/kb202007.pdf>