CORONAVIRUS

Beyond COVID-19 lockdown: A Coasean approach with optionality

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1 | INTRODUCTION

Maintaining across-the-board restrictions is socially and economically costly, has adverse distributional impacts, and is poorly targeted in terms of protecting health and health care provision. Instead a win–win ‘Coasean’ social contract could be forged to protect older people and other at-risk groups coupled with freedom from lockdown for everyone else. The social contract could involve a period of support and extra payments to older age groups to commit to home quarantine, but with the possibility of opting out. Younger cohorts would be given the option of taking greater risks in return for liberty, fraternity, and greater economic participation. By doing so they would benefit themselves, but also support society economically and through acquired immunity.

2 | FEASIBLE POLICY OPTIONS AND CONSTRAINTS

A few countries, such as New Zealand and Australia, which acted early and had a limited number of COVID-19 cases, may be able to eliminate COVID-19 and reopen their societies with ongoing strict border controls. However, given that COVID-19 transmission is well established in most countries, near-term options in other countries are limited to mitigation.

In the longer term, immunity acquired via infection, or ideally a vaccine, offers the prospect of a solution. However, the timing and effectiveness of vaccines are uncertain, and this is not a near-term option. In the near term, mitigation options include hygiene measures, physical distancing, testing and contact tracing to limit transmission, in addition to improved clinical care. However, physical distancing (especially via lockdown) is very costly in terms of liberty as well as economics.

3 | A CAUTION REGARDING INFERENCES FROM INFLUENZA PANDEMICS

COVID-19 differs from an influenza pandemic in ways that limit the value of inferences drawn from such pandemics in relation to the effectiveness and costs and benefits of mitigation or
elimination strategies. A number of studies do not consider such differences, for example Barro (2020).

First, unlike an influenza pandemic, which may involve waves over a period of months but typically evolves into less serious seasonal strains, COVID-19 is expected to persist. Influenza also has a lower reproduction number ($R_0$) than COVID-19 (Biggerstaff, Cauchemez, Reed, Gambhir, & Finelli, 2014), so population immunity could be acquired at a lower level of infection. A short-term quarantine can therefore be effective in avoiding or limiting the impact of an influenza pandemic but not COVID-19, though it buys valuable time.

Second, unlike influenza, COVID-19 is very unusual in its markedly disproportionate risk of killing older people, in addition to those at risk due to chronic health conditions. In contrast, mortality during the 1918–19 influenza pandemic was U-shaped or W-shaped with age; that is, many younger people died in addition to older people (Taubenberger, 2006). This difference is relevant to the economic impact in terms of reduction in workforce participation due to deaths or fear of deaths.

A further consideration is immunity. COVID-19 infection produces immunity, but the longevity of such immunity and the extent of cross-immunity with other coronaviruses is unknown. The nature of immunity, which may differ from that for influenza, will impact the dynamics of the COVID-19 infection (Kissler, Tedijanto, Goldstein, Grad, & Lipsitch, 2020).

### 4 | THE LARGE INTERGENERATIONAL TRADE-OFFS WITH COVID-19 AND OUR POLICY RESPONSE

Figure 1 shows the marked variation in the infection–fatality ratio by age group.

The risk of death if infected in the 80-plus age group is around 250 times that for 20–29 year-olds; more broadly, the risk of death if infected in the under-60 age group is 0.145 per cent, versus 3.28 per cent in the 60-plus age group, a 23-fold difference.

While younger people are at greatly reduced risk from COVID-19, they are on the other hand likely to suffer some of the more severe impacts in terms of forgone education, employment, and social and longer-term opportunities from measures to increase physical distancing. Economic harm, particularly unemployment, can in turn be expected to have an adverse impact on mental health in particular.

The combination of low health risk for younger people from COVID-19 with disproportionately high economic and social costs from the current policy response suggests that a more targeted policy response is desirable.

### 5 | EXISTING PROPOSALS FOR AN AGE-TARGETED APPROACH

Given that the risk of dying from COVID-19 is a sharply increasing function of age, two broad suggestions have been put forward in the UK:

- Extend the stay-at-home recommendation for those aged over 70 to those aged over 60 (Osama, Pankhana, & Majeed, 2020).
- Release the under-30s from lockdown (Oswald & Powdthavee, 2020).
However, while these proposals better reflect population risk, neither is sustainable or sufficient to restart the economy and protect the most vulnerable. A larger group than those under 30 need to be released, and some, but not all, of those aged 50–60 are at significant risk and account for a significant fraction of years of life lost.

Sustainable responses that can bridge the gap to longer-term solutions are required which do not involve the high costs of lockdown in terms of liberty, employment, education, income, and broader physical and mental health outcomes. This is a pressing challenge, in particular for those at the start of their adult lives.

6 | A COASEAN CONTRACT

In this article, building on a blog post where the idea was first suggested (Williamson & Wilson, 2020), what is proposed is a Coasean social contract that recognises the reciprocal nature of the problem of mitigating the risk of harm to health, welfare, and the economy from the COVID-19 pandemic.

The bargain is ‘Coasean’ in recognising that social costs (externality) can be reciprocal – an idea developed by Ronald Coase, the Nobel Prize-winning economist. Coase analysed the case of sparks from trains setting fire to crops where the train company could mitigate sparks while the farmer could avoid cultivation of crops close to railways; and an efficient bargain between the two could in principle be struck (Coase, 1960).
Externalities arise because individual actions have consequences for others in terms of infection (from contact), in terms of reduced population immunity (from avoiding contact), and in terms of the risk that health care resources are redirected to treat those with COVID-19. A functioning economy is also required to support society, and economic harm can be expected to have health implications (Case & Deaton, 2015).

Reciprocity arises because either those at higher risk can isolate themselves or those who might infect them but are at lower risk can be locked down to reduce the spread of COVID-19. However, while some risk factors can be identified, individuals will have information about their own risk, risk preferences, and opportunity cost of lockdown that is not available to central authority but which should inform decisions about who is isolated.

What is proposed is a combination of central design and individual decisions – a Coasean social contract – that recognises the reciprocal nature of the problem and allows individuals to opt in or out of defined categories in return for receiving or forgoing social and financial support.

Reflecting different individual preferences, there would be optionality for those at low risk to isolate without payment (they are not contributing to the societal good of a build-up of population immunity), while those at higher risk could opt out of isolation but would forgo support and payment. Research on individual preferences could be conducted to inform the choice of default thresholds and incentives for a Coasean social contract.

A further option would be to require those at risk who opt out of self-isolation to pay a risk-adjusted health insurance surcharge reflecting the broader risk they pose in terms of health care costs and the risk of overloading the health care system (in contrast to the moral hazard involved with health insurance opt-in those choosing to pay an insurance surcharge to opt out of isolation might be at lower risk than average for their cohort). However, a surcharge for opting out may be considered inequitable.

This approach may also have the benefit of permitting an additional feedback loop as the load on the health system evolves, namely by changing the eligibility cohort and/or by changing the payment in return for isolation or potentially holding an online auction to achieve a given level of additional opt-in.

The ability to influence $R_0$ via modest distancing measures and to keep the growth in COVID-19 cases manageable would also be enhanced by growth in the proportion of people with a degree of immunity (well short of herd immunity) as younger cohorts re-enter education and work and socialise. Again, the COVID-19 health risk for this group, while non-zero, is low.

This approach may also have lower costs to the economy than turning off or on distancing measures for everyone as epidemic spread subsides or picks up again, since the ongoing uncertainty associated with such epidemic dynamics limits individuals' ability to plan and invest, and may make some businesses non-viable, for example in hospitality and tourism.

While financial incentives could undermine incentives for voluntary sacrifice and compliance for behavioural reasons, they are also more tuneable. It can be difficult, for example, to communicate clearly to the public the changes in the detailed rules in relation to home quarantine and physical distancing, or potentially to maintain a high level of compliance while extending the period of compliance (Briscese, Lacetera, Macis, & Tonin, 2020).

Centralised and decentralised responses to COVID-19 can, and would, both play a part in mitigating overall harm under a Coasean social contract. The proposed approach could substantially reduce the economic and social cost of the COVID-19 policy response while limiting mortality and the risk of overloading the health-care system.
HETEROGENEITY AND THE VALUE OF OPTIONALITY

The degree of heterogeneity in terms of risk and preferences across individuals in the age group most at risk may be very large. Some of those at increased risk may be highly productive or simply value outside economic and social opportunities highly, others less so.

Some may have a diminished quality of life, and/or may have died in the near term irrespective of COVID-19. Others who are healthy may consider the increased risk of premature death to be a small price to pay in return for freedom. This is relevant to the trade-offs individuals might make and to a societal assessment of alternative policy options.

For deaths involving COVID-19 that occurred in March 2020 in the UK, there was at least one pre-existing condition in 91 per cent of cases (ONS, 2020). Neil Ferguson (2020), Director of the MRC Centre for Global Infectious Disease Analysis at Imperial College London, considered that it might be that as many as half to two-thirds of those who had died from COVID-19 in the UK early in 2020 would have died by the end of the year from other causes. However, a study of hospital cases (excluding care homes) found that stratifying by age and multimorbidity counts showed that average years of life remaining were rarely below three (Hanlon et al., 2020).

Infection–fatality ratios can be combined with expected years of life remaining from life tables (ONS, 2019) to obtain expected years of life lost, conditional on catching COVID-19. These estimates can also be adjusted based on estimated Health-Adjusted Life Years remaining. Figure 2 shows the unadjusted and adjusted expected individual years of life lost conditional on COVID-19.

**Figure 2** Expected individual years of life lost (conditional on COVID-19 infection)
Sources: ONS (2019): United Kingdom; Verity et al. (2020): data for patients who died from COVID-19 in Hubei, mainland China to 8 February 2020, and for cases outside of mainland China for 37 countries, as well as Hong Kong and Macau, until 25 February 2020.
COVID-19 infection, on the assumption that years of life lost are 50 per cent lower for those aged 50–69 and two-thirds lower for those aged 70-plus.

Those most at risk face an expected loss of around six months of life on the assumption of typical health, and around two months of life if the assumed impact of comorbidity is allowed for. Compared with the reduced quality of life associated with lockdown, some might regard this risk as modest, though individuals tend to be risk-averse. Individuals are likely to have very different attitudes to this uncertain prospect.

There are, therefore, grounds for not only moving to an age-specific policy response to COVID-19, but also moving from mandates to incentives given large variations in individual trade-offs and private information about such trade-offs. What is proposed is a shift to an age-specific set of policy defaults, but with optionality and incentives to allow individuals to make individual choices.

Developing an approach which recognises individual heterogeneity and the importance of private information and preferences to individual and socially efficient trade-offs is more likely to prove sustainable, since it more closely aligns with individual preferences and incorporates support and compensation for those bearing the greatest burden in terms of isolation. The approach is intended as a bridge to a time when population immunity develops, ideally via an effective vaccine.

8 | CONCLUSION

The novel social contract set out here could be explored further by governments who have pursued mitigation via physical distancing but find that population fatigue is limiting its effectiveness or that the economic and social cost for younger cohorts in particular is simply too high. The approach seeks to recognise both individual preferences and two particular social benefits.

First, society as a whole would benefit from getting younger cohorts back into education, training and work; and from the immunity this group would build up. They should therefore be not only allowed to return to ‘normal’ life but encouraged to do so, via a reduction in financial support to pre-existing safety net levels.

Second, society as a whole would also benefit by encouraging those groups considered to be at high risk to stay at home for the medium term. Compulsion may not be sustainable, may be regarded as discriminatory, and is not ideal as some individuals may have low risk or high productivity or simply prefer liberty alongside the risk from COVID-19. A combination of support and financial incentives coupled with the option to opt out is preferable to compulsion.

The goal of this possible ‘third way’ is not to minimise deaths per se, but to go beyond a health optimisation approach to a broader well-being-maximising one, taking account of individual preferences and trade-offs.

The proposed approach places greater weight on individual choice coupled with incentives rather than mandates, in part because such an approach may be more likely to have legitimacy over an extended time frame than the prevailing lockdown approach. It also recognises that individuals have more information about their risks and preferences, and these will differ across individuals. It also has the benefit of representing a social contract which, in contrast to across-the-board restrictions, recognises the contribution everyone is making while improving intergenerational equity.

NOTE
The views expressed in this article are the author’s own and not those of Communications Chambers, which has no collective view.
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