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Preparing for Pandemics.

Description: Our speaker's major policy research interests are credit cycles, financial regulation, monetary policy, and preventing future pandemics. He is a co-author with Frank Milne of *Preparing for Pandemics: Lessons from the Global Financial Crisis and COVID-19*. He is a Research Fellow of the C.D. Howe Institute.

Biography: Dr. David Longworth is a retired economist with a BSc in Mathematical Statistics (1973) & an MA in Economics (1974), both from U of Alberta, & a PhD in Economics from MIT (1979). He has published in leading economic & finance journals, including the *Journal of Finance*. He had a 36-year career at the Bank of Canada. From 2003-10, he was a Deputy Governor there, responsible for issues related to financial stability & financial markets. From 2005-10, he was a member of the Committee on the Global Financial System & the Markets Committee, which met at the Bank for International Settlements. After retirement, he was an Adjunct Research Professor at Carleton University (2010-20) & a Term Adjunct Professor at the Department of Economics at Queen's University (2011-21).

The presentation will be followed by a conversation, questions, & observations from the participants.

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Preparing for Pandemics

Lessons from COVID-19 and the Global Financial Crisis

David Longworth

Introduction

- ▶ Covid-19 began in late 2019
- ▶ By March 2020, it was clear that there was a major pandemic
- ▶ By June 2020, it was clear that governments and public health authorities were ill-prepared
 - ▶ And had not followed advice that had come out of earlier pandemics
- ▶ My colleague at Queen's Economic Department, Frank Milne and I noted broad similarities with ill-preparation before Global Financial Crisis
 - ▶ We're not health professionals nor are we health economists
 - ▶ But economists interested in risk management
- ▶ We turned our working papers into a book

In far too many cases, recommendations of forensic reports on previous pandemics were ignored. Substantial weaknesses in the preparation by public health authorities and governments increased the health and economic costs of the COVID-19 pandemic relative to what they would have been if pre-existing recommendations had been followed and a wider set of plans had been put into place. We discuss parallels between the lack of preparation of financial system regulators prior to the global financial crisis and the lack of preparation by public health authorities and governments prior to COVID-19. These parallels relate to: required stocks (of capital or equipment), data collection and sharing, lending facilities, stress testing and war games, early warning indicators and systems, contagion from abroad, operational risks, a system-wide approach (including effects on the real economy), models incorporating the heterogeneity of individuals, and effects on less-regulated parts of the system. The recent COVID-19 crisis has demonstrated that, apart from the direct economic consequences from illness and death from the virus, the main costs have been due to the varying degrees of preventative measures taken by the public, firms, and governments that directly impacted health, as well as social, economic, and financial activity. We make recommendations for carrying out post mortems on the COVID-19 experience, planning for future pandemics, and establishing transparent and accountable governance systems. We then propose the use of regular, combined health, economic, and financial stress tests and exercises/war games in preparing for future pandemics and other major environmental shocks.

PREPARING FOR PANDEMICS

Lessons from the
Global Financial Crisis and COVID-19

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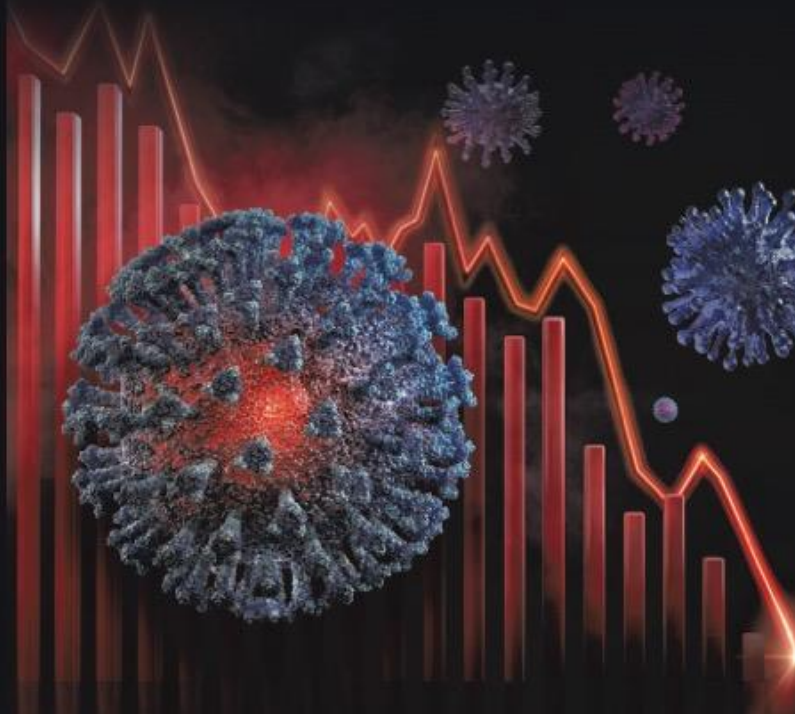
Longworth • Milne



David Longworth • Frank Milne

PREPARING FOR PANDEMICS

Lessons from the
Global Financial Crisis and COVID-19



Introduction

- ▶ There are three key parts to our analysis:
 - i. Poor Preparation and Parallels (with Global Financial Crisis, GFC)
 - ii. Postmortems and Planning (with emphasis on Governance)
 - iii. Processes to test Plans
- ▶ In essence, we want to reduce the probability that pandemics get out of hand in terms of deaths, morbidity, and other costs.
- ▶ We argue for taking into account the interactions between health, economic, social and governance aspects of pandemics
- ▶ Analysis is applicable to other areas because of importance of:
 - ▶ Sustainability, Governance, and Legitimacy
 - ▶ Testing Plans

I. Poor Preparations and Parallels

- ▶ Weaknesses in pandemic preparation likely increased its health, economic, and social costs
- ▶ We've found at least ten categories of weaknesses that have strong parallels with poor preparations of financial regulators (and financial institutions) prior to the Global Financial Crisis

I. Poor Preparations and Parallels

- ▶ Plans for equipment/buildings (capital) not made or not implemented
 - ▶ GFC: Insufficient bank equity capital
- ▶ Unclear public health expectations for non-healthcare sector (firms)
 - ▶ GFC: Lack of appreciation of effects on less regulated entities
- ▶ Unclear stockpiling roles of various governmental levels (“last resort”)
 - ▶ GFC: Insufficient advance discussion of eligibility for types of “last resort” lending
- ▶ Insufficient advance discussion of policy tools regarding borders
 - ▶ GFC: Lack of appreciation of possible contagion across borders
- ▶ Insufficient consideration of operational risks (multiple jobs; labs)
 - ▶ GFC: Lack of appreciation of certain operational risks (corporate culture & governance)

I. Poor Preparations and Parallels

Five other areas of poor preparations with clear parallels:

- ▶ Insufficient consideration of data: needs, collection, dissemination
- ▶ Insufficient consideration of other systemic effects [of lockdowns]
- ▶ Insufficient consideration of heterogeneity of effects in particular [workplaces, groups/lenders, borrowers]
- ▶ Advanced warning systems not up to the task
- ▶ Plans not tested in advance

I. Poor Preparations: Governments

Shortcomings in Government Preparation for Pandemics

- ▶ Poor oversight and implementation (with budget) of pandemic plans
- ▶ Poor preparation for lockdown design
- ▶ Lack of preparation for design of relevant fiscal policies
 - ▶ Including income support, protection of jobs and other subsidies to businesses, and loans to businesses
- ▶ Lack of preparation in considering those groups who might be hit disproportionately

II. Postmortems and Planning (P&P)

Overview

- ▶ Postmortems at many levels need to be done now (G&M, May)
- ▶ Planning for future pandemics should include using cost-benefit analysis and catastrophe risk insurance
- ▶ There needs to be emphasis on Governance, Evaluation, and Accountability, including the roles of certain government agencies, the legislature and legislative committees

II. P&P: Postmortems as Pandemic Ends

- ▶ At regional, provincial, and national level need to examine:
 - ▶ Whether pre-existing plans for preparation had been carried out
 - ▶ What other plans should have been made in advance
 - ▶ Whether existing plans were carried out in a timely manner
 - ▶ What was learned that belongs in future plans
 - ▶ Where insufficient planning and decision-making undertaken between waves
- ▶ Those doing postmortems need to have independence and experience
 - ▶ And should consult with those known to think outside the box
- ▶ Topics discussed need to include all areas from Part I

II. P&P: Planning for Future Pandemics

- ▶ Plans should cover both pre-pandemic steps and plans for actions during the pandemic
- ▶ In the pre-pandemic steps, *among other things*, plans need to:
 - ▶ Keep track of stocks (PPE and equipment), hospital space, lab capacity
 - ▶ Put into place and test data systems
- ▶ Plans for actions need to cover the various topics in Part I
- ▶ In economic policy area, policy options for income transfers, wage subsidies, subsidies to firms, and loans to firms will need to be set out
- ▶ Plans need to use cost-benefit analysis and look at options
- ▶ All plans need to be shared across levels of government, so nothing falls between the cracks

II. P&P: Catastrophe Risk Insurance

- ▶ Two major areas of national unpreparedness for economic effects:
 - ▶ Insurance industry does not have capacity to provide enough property/casualty coverage
 - ▶ Governments have not prepared a plan to contain catastrophe impacts
- ▶ F. Milne and J. Crean argue that most effective solution would:
 - ▶ Legislate gov't insurance backstops (as for terrorism, nuclear accident)
 - ▶ Thus largely replace big hits to the capital of firms (wishing to be insured)
 - ▶ Substantially reduce extent of direct government support of firms needed
 - ▶ Thus, remove banks' catastrophe risks & reduce downturn in their lending
 - ▶ Therefore replace much of the need for special government-administered loans

II. P&P: Governance, Evaluation, Account

- ▶ M. Carney *Value(s)* (2021) 3 behavioural reasons for gov't inaction
 - ▶ Recency bias, disaster myopia, hyperbolic discounting (present bias)
- ▶ We seek governance models that minimize chance of time-inconsistent behaviour (parallel with independent central banks)
 - ▶ P. Tucker *Unelected Power* (2018) examines whether independent agency could credibly commit to sticking to legislation & plan--with legitimacy
- ▶ 4 areas for “independent” agencies to provide unbiased views and/or make credible commitments
 - ▶ Carrying out postmortems and creating plans for pandemic preparation
 - ▶ Implementing the parts of the plan not involving capital expenditures
 - ▶ Designing and reporting on stress tests and exercises (more later)
 - ▶ Evaluating whether plan has been put into place, being updated regularly
 - ▶ Likely, first 3 of these by one agency and evaluation by another agency

II. P&P: Agency for Planning, Updating...

- ▶ Many public health agencies (PHA) are responsible for infectious diseases and emergency preparedness and response
 - ▶ Typically already responsible for having a pandemic plan, updating it, (in principle) testing it, and implementing many parts of it
 - ▶ For Carney's 3 reasons, useful for them to have some independence
 - ▶ Probably could not be fully so, some implementation belongs elsewhere
- ▶ Tucker talks about information agencies that produce information, give independent advice
 - ▶ One could envisage a largely independent “information and pandemic planning agency”
 - ▶ This could be formed from key sections within a public health agency
 - ▶ It could operate as a stand-alone agency (legislated) or an agency in PHA
 - ▶ Should largely cover health, but also responsible for testing plans that get into fiscal matters

II. P&P: Agency to Evaluate Implementation & Updating

- ▶ An ongoing evaluation role should include evaluating the following:
 - ▶ Implementation of the official pandemic preparation plan
 - ▶ The incorporation of recommendations from postmortems, stress tests, exercises (Part III)
 - ▶ The updating of the plan to incorporate new scientific/medical findings,
 - ▶ The training of ministers, senior staff regarding the content of the plan
- ▶ Two models: independent evaluation agency or an Auditor General
 - ▶ In many democracies, Auditors General play an evaluation role, so most likely choice
 - ▶ In either model, it would be important for legislation to clearly spell out the evaluation role in pandemic planning that is to be played

II. P&P: Role of Legislature, Committees

- ▶ Review of report by evaluation agency (AG) by legislative committee ensures accountability of “information and pandemic planning agency” and government
- ▶ The government and legislature also need to ensure that emergency powers legislation allows scope for public health decrees, lockdowns

II. P&P: Governance Challenges

- ▶ Bureaucratic and political impediments to effective governance:
 - ▶ Groupthink
 - ▶ Bureaucratic inertia: ignoring or downplaying low-frequency high-cost events
 - ▶ Deliberate bureaucratic and political obfuscation; not explaining uncertainty ex ante
- ▶ Clear plans, clear role for agencies, legislature, and government reduce the failure to meet the above challenges

II. P&P: Some final comments

- ▶ Policy decisions during pandemics are taken under much *uncertainty*
 - ▶ Better preparation (plans and their implementation) would have reduced consequences of that uncertainty
- ▶ Government-backstopped private catastrophe-risk insurance would reduce many uncertainties on the economic side and replace the need for some government programs
 - ▶ It would draw on insurance industries' personnel and databases
- ▶ Good governance with appropriately independent agencies can increase the probability that pandemic preparation can be well done
- ▶ Good postmortems and plans are prerequisites for good stress tests and exercises (which we turn to now in Part III)

III. Process to Test Plans: Stress Tests and Exercises (War Games)

- ▶ We propose far more serious preparation for future pandemics requiring:
 - ▶ Using the **postmortems** and new **plans** to create **stress tests**, and run **exercises (war games)** incorporating health, economic, financial and fiscal strategies
 - ▶ A stress test, using models and scenarios, is applied to a system to see how it responds in a severely adverse environment
 - ▶ An exercise (or war game) is a real time exercise for decision-makers to see how they respond to such an environment

III. Process: Pre-Covid Reports, Exercises

- ▶ There were a number of pre-Covid Reports and Exercises
- ▶ For example: 2006 Ontario SARS Commission report
 - ▶ Ontario health system was underfunded and unprepared for a pandemic
 - ▶ Recommendations: Preparedness in equipment, organizations, funding
 - ▶ These were ignored (Royal Society of Canada, 2020)
- ▶ Overall, little done in most pre-Covid reports to use or recommend exercises to influence policy and organizational structure or to prepare senior policymakers

III. Process: Stress Tests History, Methods

- ▶ Engineering stress tests of structures
- ▶ Stress tests of banks with a financial & economic scenario
 - ▶ Originally by banks alone, now by regulators as well

III. Preparing Pandemic Stress Tests

- ▶ Build upon tests prior to Covid-19 with updates on recent lessons
- ▶ Draw on personnel from relevant govt. depts. plus outside experts
- ▶ A test, drawn up by an expert group, should stress health, social and economic consequences of scenarios that are plausible, but extreme
 - ▶ Scenario fundamentally different from recent past
- ▶ Reveal entire test at once, with officials given sufficient time (a week or two or three) to work through all the implications in some detail
- ▶ Weaknesses of current plans should be noted, with recommendations
- ▶ Tests should be run at the national, provincial and local levels-- a cascading stress test
- ▶ There may be periodic international tests, created by international bodies, looking for weaknesses in cooperation, etc.

III. Process: Exercise History, Methods

- ▶ Originated with wargames
 - ▶ Table-top (civilian versions like Chess, Diplomacy, Risk)
 - ▶ Field exercises with real troops and equipment
 - ▶ Large-scale strategic games, often using computer simulations
- ▶ Corporate exercises/wargames
 - ▶ Games incorporate strategic scenarios
 - ▶ Games go far beyond mathematical predictive models by incorporating professional judgment, and should incorporate plausible worst-case scenarios
- ▶ Government and policy relevant exercises/wargames
 - ▶ Deal with multiple institutions in the context of emergencies
 - ▶ Low-probability/high-cost events are the focus
 - ▶ Detailed forensic reports from previous crises used as guides to construction

III. Preparing Pandemic Exercises

- ▶ The group used to construct stress tests could also be used here
- ▶ Games should include scenarios exploring the budgetary and social consequences of different policies
- ▶ Information and “shocks/surprises” are slowly fed into the exercise over its full course of 2-3 days
- ▶ The games should include communications function “players” to “communicate” the latest information on the virus and evolving policies, making clear that policies will be contingent on updated information
- ▶ The game should incorporate scenarios where errors occur (because of surprises), so that players will be exposed to the consequences of possible dissembling implying declines in public trust

III. Process: What happens to Results?

- ▶ The results of stress tests and exercises should be summarized by a group *independent* of the participants but including some of the creators.
- ▶ The results should be analyzed and acted upon to correct weaknesses in pandemic plans, change organizational structures, procedures, etc.
- ▶ Within a year, the plans should be checked to see if they incorporated what was learned in the stress tests and exercises
- ▶ Exercises should be carried out regularly to test new systems and technologies for their resilience under stress.
- ▶ New risks and uncertainties appear periodically--they should be included in subsequent exercises
- ▶ Learning how to work together is an important part of any exercise

III. Process: Training for Exercises

- ▶ Currently many policy economists are unprepared for the type of analysis coming from stress testing and exercises
 - ▶ Few understand sophisticated strategic wargaming methods used by corporate and military analysts and the stress testing used in finance
- ▶ Similarly, the health establishment have only a rudimentary training in appropriate economics, finance and systemic risk management
 - ▶ The latter is seen as being highly specialized for financial institutions and their regulators--and not relevant for many other social policy areas
- ▶ Address weaknesses by requiring appropriate courses and training
 - ▶ As a serious prerequisite for senior public servants, policy staff, and policymakers
- ▶ Need to move away from specialist silos when thinking about pandemics: bring social, economic and financial costs into the discussion

Conclusions

- ▶ The pandemic revealed serious deficiencies in public health and government preparations that let deaths and costs get out of hand
- ▶ There are disturbing similarities with bungled preparations for GFC
- ▶ We propose sophisticated **postmortems** analyzing policy successes and failures around the world and leading to new **pandemic plans**
 - ▶ These postmortems will need to address major governance issues, including clarity, transparency, and accountability
- ▶ We also propose the regular use of major pandemic **stress tests** and **exercises**
 - ▶ A major benefit of this approach is that it requires a system-wide analysis of a pandemic, with health, economic, and social content
 - ▶ This is similar to what we would propose for any other catastrophic risk (e.g., major earthquake, flood, or cyber attack).