

## New Approaches to Economic Challenges (NAEC)

Update – January - July 2020

OECD Members established the New Approaches to Economic Challenges ([NAEC](#)) initiative in 2012 to better understand the interconnectedness, complexity and fragility of the global economy. Since 2012 it has promoted tools needed to analyse the many, often irrational-seeming, behaviours that are generated by the uncountable interactions of billions of people, firms and institutions locally or globally, in small groups or as nations, at timescales ranging from nanoseconds to millennia. The objective was to understand the shortcomings of the analytical frameworks the Organisation had relied on before the Financial Crisis, and to establish the basis of a better way of producing policy advice based on new frameworks.

Since then, NAEC has catalysed a debate across the OECD and beyond on how to revise, update and improve policy thinking and action. It develops a systemic perspective on interconnected challenges with strategic partners, identifies the analytical and policy tools needed to understand them, and crafts the narratives best able to convey them to policymakers and citizens.

This note provides an update on NAEC's work in the first half of 2020, a period overshadowed by the Covid-19 crisis, but which has highlighted the importance and usefulness of NAEC's work. The NAEC Group in September 2019 highlighted the possibilities and potential for [Systemic Collapse](#). Analytical work on systems thinking, anticipation and resilience emphasises an evidence-based approach to translate theories, concepts and ideas into actionable strategies using the best science, data, knowledge and techniques available. NAEC is working with OECD Committees and Directorates and outside partners to define and develop a framework to understand systemic threats and build the resilience to contain them.

## Exiting Strategies and Learning from the COVID-19 Pandemic

*"Everything we do before a pandemic will seem alarmist, everything we do after a pandemic will seem inadequate"*

US Health and Human Services Secretary Michael Leavitt in 2007



Policymakers often have a linear view of the world, where pulling the right levers will get the economy and society back on track after shocks and crises. NAEC's contribution to the OECD policy responses: **Tackling coronavirus (COVID-19) Contributing to a global effort: [A Systemic Resilience Approach to dealing with Covid-19 and future shocks](#)** argues that such an approach ignores how systems interact and how their systemic properties shape this interaction, leading to an over-emphasis on a limited set of characteristics, notably efficiency. The emphasis on efficiency in the operation, management and outcomes of various economic and social systems was not a conscious collective choice, but rather the response of

the whole system to the incentives that individual components face. This has brought much of the world to rely upon complex, nested, and interconnected systems to deliver goods and services around the globe. While this approach has many benefits, the Covid-19 crisis shows how it has also reduced the resilience of key systems to shocks, and allowed failures to cascade from one system to others. A systems approach based on resilience is proposed to prepare socioeconomic systems for future shocks.

**A virtual seminar series provided an opportunity for a range of speakers to discuss with NAEC the latest thinking on the likely trajectory of the crisis, paths to safely opening up economies, and longer-term implications.**



Carmen Reinhart, Chief Economist and Vice President of the World Bank, [talked to NAEC](#), on 15 July.

Former Treasury Secretary for President Clinton and Director of the National Economic Council for President Obama, [Larry Summers, in conversation with Angel Gurría](#) on 12 June, answered questions



on how best to design policies to contain the pandemic while sustaining our economies; the lessons for economics and policy, and the best ways of safeguarding the economy. The discussion on finance and debt asked if his thinking had evolved on tackling crises and in particular financial market regulation and bailouts. Summers discussed how well economists understand today's economy and whether too much emphasis been placed on efficiency at the expense of resilience and



how might the present crisis change economics. Nobel laureate and New York Times op-ed columnist, Paul Krugman, discussed "[Is this time different? Recovery in a time of pandemic](#)" on 22 May, and argued that the current crisis really is different from previous ones and that it requires a new analytical framework. The pandemic isn't a

demand shock or a supply shock (or both), but rather the economic equivalent of a medically-induced coma. Krugman also downplayed the dangers of the rapid build-up in national debt. As a discussant, Barry Lynn of Open Markets Institute attached Krugman's work on new economic geography and trade to the OMI-NAEC initiative on the resilience of the global production system. Dani Rodrik, of Harvard University, asked "[Will Covid-19 Remake the World?](#)" on 15 May, and argued that Covid-19 would re-enforce pre-existing trends - from markets to states, from hyper-globalisation to nation-states, from export-oriented industrialisation to alternative growth models. Rodrik presented a compelling post-Covid-19 economic strategy to tackle widening inequalities and outlined the need for a "good jobs" economy through new



industrial strategies and employment and innovation policies. Nobel laureate Michael Spence discussed "[Exiting and Learning from the Covid-19 Pandemic](#)" on 30 April, highlighting the danger the crisis presented to firm, household, and financial sector balance sheets and the potential for deep and long-term destruction of productive economic capacity. He emphasised that extraordinary policy responses were required to preserve balance sheets and may be required for longer than many expect. Eric Bienhocker, Executive Director, Institute for New Economic Thinking, responded by advocating that we should not go back to normal because normal was the problem and outlined ways we can learn from the pandemic and build back better.

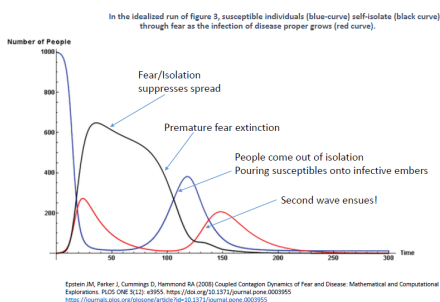


The Covid-19 crisis will have longer-term impacts on STI systems and policy approaches adopted to address the Covid-19 crisis will shape the recovery. [Science, technology and innovation in times of COVID-19](#), a workshop organised jointly with the [OECD Working Party on Innovation and Technology Policy \(TIP\)](#) as part of the 2019-20 TIP R&D project, convened academics, business representatives, policy makers and practitioners to discuss the short-term impacts and longer-term opportunities and challenges of the Covid-19 crisis on STI and the policy responses needed to support economic recovery and build more sustainable, inclusive and resilience systems. The workshop contributed to [OECD-wide efforts in tackling the Covid-19 crisis](#).

## Integrative Economics



If we want to put people at the centre of economic policy, then economics has to study people. It has to understand how their thoughts, feelings, aspirations, history, and culture interact inside them to produce the decisions and actions visible to the outside world. Understanding people to understand the economy is at the core of [NAEC](#), and is the central issue of the conference on [Integrative Economics](#), organised with a number of collaborating institutions on 5-6 March. "Integrative" means an economics that calls on the insights and methods of the range of disciplines needed to paint a realistic picture of how the economic system is shaped and helps shape the larger "system of systems" it is part of. Full summary available [here](#)



It has never been more important to understand system dynamics and the emergence of crises. The Covid-19 pandemic and its systemic consequences underline this and reinforce the need for international co-operation to cope with global threats. Covid-19 also shows signs of being the catastrophe that was needed to change attitudes towards expertise and evidence-based decision-making. Even media that traditionally argue for "common sense" approaches to complex issues are now highlighting the findings and advice of scientists and public health officials. The Coronavirus outbreak was a perfect example of a long-held message of NAEC. We are not living in a linear, Newtonian world where actions cause predictable

reactions. We are in fact part of a complex system of environmental, socio-political and economic systems that we are constantly reconfiguring and that is constantly affecting us. Systems thinking allows us to identify the key drivers, interactions, and dynamics of the economic, social, and environmental nexus that policy seeks to shape, and select points of intervention in a selective, adaptive way.

Nobel Laureate James Heckman outlined what multi-disciplinary insights are being integrated into economics including psychology and early childhood development. Andrew Sheng (INET) discussed how the economics discipline has increasingly fragmented into "disintegrative" specialist fields, becoming more complex and diverse, but may now follow other fields in a more "Integrative" direction. Joshua Epstein (NYU) made a [presentation](#) that outlined the global spread of pandemics with a focus on Coronavirus and his modelling of the coupled contagion of disease and fear. He introduced

Agent\_Zero as a cognitively plausible alternative to the rational actor, demonstrating core phenomena in a range of fields, proposing that we use it to take animal spirits seriously in economic models. Michele Cecchini from ELS presented work on modelling the spread of resistant infections in the community and across hospitals.

The [remarks](#) of Friends of NAEC Co-Chair Ambassador Irena Sodin mentioned the trade-off between efficiency and resilience. “We see that in global supply chains, surely one of the most efficient components of the international economy. But what happens when your just-in-time workflow is disrupted by shock such as coronavirus or new border controls? Maybe just-in-time needs a dose of just-in-case”.

Discussions confirmed that a new approach is emerging from the study of complex systems; an approach based on reinforcing an important system characteristic: resilience. A resilience approach accepts that all systems might fail. This approach focuses on the ability of a system to absorb, recover from, and adapt to a wide array of shocks. Increasingly, we have the tools and techniques to analyse the world in this way.

## Systems Thinking, Anticipation and Resilience



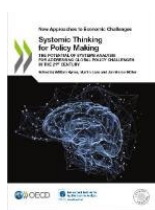
The Covid-19 pandemic has reminded us bluntly of the fragility of some of our most basic human-made systems. The challenge is now to define concretely the policies and strategies that are required to make such systems more resilient. To answer this question, NAEC is collaborating with the Open Markets Institute (OMI) to convene leading political economic thinkers, experts in the structure of supply chains, and experts in competition policy. OMI, led by Barry Lynn, are a team of journalists, researchers, lawyers, and advocates working together to examine the influence of monopolies on US society.

On 23 April, OMI and NAEC hosted the Roundtable “[Shock Proof: Building Resilient International Systems for the 21st Century](#)”. Participants discussed three main subjects:

- How did the COVID 19 shocks affect international, regional, and national production systems?
- What role if any did changes in competition policy play in making production systems fragile.
- What lessons can we learn from this event as we think about how to build the industrial, financial, and political systems of the future?

Participants in the conference included Nobel-Prize-winning economist Paul Romer, *Financial Times* editor Rana Foroohar, International Trade Union Confederation general secretary Sharan Burrow, OECD Chief Economist Laurence Boone, former director-general of the World Trade Organization Pascal Lamy, former deputy governor of the Bank of England Paul Tucker, Center for Infectious Disease Research and Policy at the University of Minnesota director Michael Osterholm, FTC Commissioner Rohit Chopra, and Michael Masters, founder of Masters Capital Management and chair of Better Markets. The event garnered US headlines when Congressman David Cicilline used his remarks to announce plans to introduce a moratorium on mergers during the pandemic, as part of the next round of stimulus funding.

The panel discussions underscored the need to understand how production networks and supply chains work. Often supply chain is a misnomer – it is really a web and they are not just supplying things, they are producing things. If we are going to get to grips with pandemics, climate change and other challenges a deep understanding and management of the global production system is needed. Fragility is introduced because of the structure of supply chains where different suppliers are opaque to other companies in the network and there is a lack of transparency and data. The Covid-19 crisis threatens the safety of citizens – like war, natural disasters, financial crises etc. We should not focus on pandemic risk to the exclusion of others. We need to be comprehensive on the disasters we need to prepare for. This event was a kick-off discussion and will be further developed.



On 27 February, the Secretary-General launched with the Director General of the International Institute for Applied Systems Analysis (IIASA) the joint OECD-IIASA publication, [Systemic Thinking for Policy Making](#), on the potential of systems analysis for addressing global policy challenges in the 21st century. In the first result of the collaboration of the [IIASA-OECD Task Force](#) over 70 international experts from both organisations pool their expertise and experience to propose new approaches to analysing the interconnected trends and issues shaping today’s and tomorrow’s world. The

authors argue that to tackle planetary emergencies linked to the environment, the economy and socio-political systems, we have to understand their systemic properties, such as tipping points, interconnectedness and resilience. They give the reader a precise introduction to the tools and techniques needed to do so, and offer hope that we can overcome the challenges the world is facing.



## NAEC and the G20



The Italian G20 Presidency will explore new policy thinking and acting through the NAEC initiative and host a number of dialogues at the OECD to consider and prepare key priorities. Notable commentators and analysts from Italy will be drawn into the discussion in which substantive experts from OECD will make comments and proposals. The [series](#) was launched on 17 July with a discussion on [Multilateralism: Another Covid Casualty?](#) by [Giampiero Massolo](#), President of the Italian Institute for International Political Studies (ISPI) and former Italian G20/G7 Sherpa and Secretary General of the Ministry of Foreign Affairs.

## NAEC Innovation LAB



The [NAEC Innovation LAB](#) is developing innovative projects drawing on talents from across Directorates and mixing different skills, including as part of the OECD Smartdata Framework. As a platform for collaboration with wider communities, the LAB is helping develop links and make use of expertise and data outside the organisation, including in national governments, academic institutions, think-tanks and the private sector. The LAB, which now has a dedicated space on the 6<sup>th</sup> floor of the Boulogne Building, hosts regular workshops with internal and external experts.



The crisis we are currently fighting has underlined how critical fast indicators are for good decision making. On 4 June, [Tobias Preis](#), Professor of Behavioural Science & Finance, University of Warwick Business School, held a LAB discussion on “Faster economic indicators with data from aircraft and online photos”. His research demonstrates how alternative data sources can be used to produce more timely economic and social indicators:

billions of real-time aircraft location broadcasts can provide a leading indicator for aviation’s direct contribution to GDP in both the UK and the US. This analysis draws on an adaptive nowcasting framework originally developed to generate quicker estimates of current flu cases using Google search volume. It describes how metadata from millions of photographs shared online can be used to produce a real-time indicator for global travel flows. These studies contribute to the broader research programme of the Data Science Lab at Warwick Business School, which investigates whether alternative data from the Internet and beyond can be used to measure and even predict human behaviour.

Following the NAEC [Integrative Economics conference](#) on 6 March, NAEC held [masterclasses](#) with some of the world’s leading practitioners on complexity, network analysis and agent-based modelling, which provided a deeper look at the models and approaches (agent-based and stock-flow consistent modelling) discussed during the Conference.



On 30 January, NAEC co-hosted a conference with Rebuilding Macroeconomics on *What can Complexity add to Macroeconomic Policymaking?*, at the National Institute of Economic and Social Research (NIESR) in London (agenda [here](#)). The Conference highlighted that the macroeconomy can be interpreted as a complex system where individuals interact to create aggregate outcomes which, in turn, change their actions or strategies in response. The aim of the conference was to find out what complexity science can add to macroeconomic policy making beyond traditional macroeconomics. This included sessions on the application of complexity concepts to Macroprudential Policy, Industrial and Regional Strategy and Monetary and Fiscal Policy. The event was webcast live in the NAEC Innovation LAB space in the Boulogne Building.


The [NAEC-Ecole polytechnique workshop on Econophysics and Policy](#) on 15 January, highlighted the contribution that theories and methods from physics can make to understand and solve problems in economics. The workshop confirmed that econophysics insights and techniques offer the potential for better understanding and management of highly interconnected economic and financial systems and, thus, may help us to anticipate and manage future crises – this is the very reason why we established NAEC at the OECD. Several areas were identified by OECD discussants for further collaboration including housing, firm dynamics and market fluctuations and flash crashes.



## NAEC in the media

During the Covid crisis, NAEC has featured prominently in the international press. Associate Editor and Chief Economics Commentator [Martin Wolf](#)’s endorsed NAEC in the *Financial Times* – “*The big question now is whether the essential systems that keep our societies running are adequately resilient. The answer is no. This is the sort of question the OECD’s New Approaches to Economic Challenges Unit has dared to address. Inevitably, it has created much controversy. Yet it is admirable*





that an international organisation is daring to do so at all. The crisis has shown us why. We cannot afford complacency. We need to reassess the resilience of our economic, social and health arrangements”.

[Coronavirus crisis lays bare the risks of financial leverage, again](#), Martin Wolf, *The Financial Times* (28 April 2020)

[Developing world's burgeoning middle class risks being wiped out in coronavirus crash](#), Susannah Savage and Yashab Osama DHAKA, *The Telegraph* (10 August 2020)

[Den Paradigmenwechsel Befeuern](#) (Firing up a Paradigm Shift), *Forbes Magazine* (German language edition) (14 July 2020)

[What could sustainable exit from covid-19 'debt trap' look like?](#), Elena Johansson, *Expert Investor* (18 June 2020)

[NAEC questions traditional economic ideas and offers new economic tools and methods. But what would a more resilient and inclusive system look like?](#), *Forbes Magazine* (17 June 2020)

[Build-back better to withstand the next global systemic economic disaster](#), Sharon Wood, *Business Maverick* (9 June 2020)

[From Just in Time to Just in Case](#), featuring the [Open Markets Institute/NAEC Roundtable](#), Rana Faroohar, *The Financial Times* (4 May 2020) In addition Congressman Cicilline remarks at the Roundtable were widely reported including in the [New York Times](#), [CNBC](#), [Reuters](#), [Bloomberg](#) and [Politico](#).

[Economists need to abandon their comfort zones to deal with Covid-19](#), Rana Faroohar, *The Financial Times* (3 May 2020)

[Laver la main invisible](#), Alan Kirman, On décide quoi pour demain?, *Le petit carnet des éditions paroles hors série* (June 2020)

[Os punks da OCDE. Em busca de uma economia alternativa](#) (The punks of the OECD. In search of an alternative economy), Nuno Aguiar, *Exame* (25 Feb 2020)

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To find out more please visit the [NAEC](http://www.oecd.org/naec/) website: [www.oecd.org/naec/](http://www.oecd.org/naec/) or please contact:  
William Hynes, NAEC Co-ordinator – [william.hynes@oecd.org](mailto:william.hynes@oecd.org)

