

Acting now while preparing for tomorrow: Competitiveness upgrading under the shadow of COVID-19

Christian Ketels

Visiting Executive Institute for Strategy and Competitiveness Harvard Business School cketels@hbs.edu

J. Peter Clinch

Jean Monnet Professor and Chair of Public Policy UCD Geary Institute for Public Policy University College Dublin peter.clinch@ucd.ie

ISC Working Paper, April 29, 2020

Institute for Strategy and Competitiveness, Harvard Business School Ludcke House, Boston, MA 02163

www.isc.hbs.edu; isc@hbs.edu

Abstract

This paper aims to provide policy makers, especially those focused on the longer-term growth potential of their countries, with an initial framework to think about their action priorities in the context of the overall COVID-19 response. Our focus is on the supply-side, microeconomic, and firm-centric response to the virus and its economic repercussions, a dimension that, in our view, needs to be added to the public health and macroeconomic issues currently dominating the debate.

We argue that for the approach towards partial re-opening of economies to be effective in reviving economic activity, public health measures need to be accompanied by a microeconomic toolkit. China's economic data suggests that a full recovery is not automatic even when restrictions are removed, and the US evidence suggests that the degree of economic slowdown by state is not simply a function of the public health restrictions put in place. A large set of microeconomic barriers, from disrupted supply chains to weakened balance sheets to the need to establish new safe operating procedures, will need to be addressed as well to get closer towards economic normality.

We argue that, in the approach to post-pandemic recovery, macroeconomic policies need to be accompanied by upgrading microeconomic competitiveness to ensure sustained, robust growth. The microeconomic factors to address include the quality of institutions, the quality of factor-input conditions, the openness of markets, the rules and regulations affecting businesses, and the presence of dynamic clusters and the sophistication of companies. The global financial crisis (GFC) showed how even successful macroeconomic stabilization can result in lower long-term productivity and prosperity growth. We outline a set of key factors to consider as countries develop a post-COVID plan for competitiveness upgrading to achieve a sustained and healthy recovery.

The paper focuses on identifying key policy issues governments will have to address, without being overly prescriptive on the specific actions to take. While providing specific answers will obviously be important, past crises have shown that countries tripped up not only because they provided the wrong answers but also because they failed to focus on the right questions.

Acting now while preparing for tomorrow: Competitiveness upgrading under the shadow of COVID-19

Contents

1.	Three key phases of the COVID-19 policy response	
	Phase 1: Mobilizing crisis response	
3.	Phase 2: Living with the Pandemic over the next 12-24 months	8
4.	Phase 3: Driving competitiveness for post-Pandemic growth	12
5.	Conclusion	20
Ref	erences	21

Acting now while preparing for tomorrow: Competitiveness upgrading under the shadow of COVID-19

The COVID-19 outbreak has inflicted massive human¹ and economic costs²² across the globe. Policy makers have been forced to focus on the immediate short-term needs, from 'flattening the curve' to quickly ramping up the capacity of the healthcare system to providing emergency response to the economy. As the dynamics of the pandemic appear to be stabilizing in some countries, they now need to plan for what comes next, from gradually removing the emergency measures to enabling a sustained recovery.

This paper aims to provide policy makers, especially those focused on the longer-term growth potential of their countries, with an initial framework to think about the tasks ahead, linking the pressing demands of today to the choices that will emerge over the coming months. Our focus is on the supply-side, microeconomic, and firm-centric response, a dimension that in our view needs to be added to the public health and macroeconomic issues currently dominating the debate. In particular,

- We argue that, in the approach towards partial re-opening of economies, public health
 measures need to be accompanied by a microeconomic toolkit to be effective in reviving
 economic activity. China suggests that a full recovery is not automatic even when restrictions
 are removed, and the US shows that the degree of economic slowdown is not simply a function
 of the public health restrictions put in place.
- We also argue that, in the approach towards recovery, macroeconomic policies need to be
 accompanied by upgrading microeconomic competitiveness to ameliorate what would
 otherwise be a permanent loss of output and ensure sustained, robust growth. The global
 financial crisis (GFC) showed how even successful macroeconomic stabilization can result in
 lower long-term productivity and prosperity growth.

The paper focuses on identifying key policy issues governments will have to address, without being overly prescriptive on the specific actions to take. While providing specific answers will obviously be important, past crises have shown that countries tripped up not only because they provided the wrong answers but also because they failed to focus on the right questions.

The paper focuses on the relatively advanced economies hardest hit by the pandemic so far. A whole new set of challenges is threatening to emerge if, and when, the pandemic fully hits less developed countries.³ While the broad set of issues to be faced is similar across countries, the appropriate set of policy responses will differ depending on countries' specific circumstances, from the demographic profile of the population, to the level of public and private resources available, and to the institutional capacity to respond. Failure to stem the pandemic in one part of the world can easily affect others through new waves of infections and economic spillovers.

¹ Johns Hopkins University, Coronavirus Resource Center, https://coronavirus.jhu.edu/ accessed 20 April 2020

² OECD (2020), OECD updates G20 summit on outlook for global economy, press release, 27/03/2020 - Updated 15 April 2020, and IMF (2020a), World Economic Outlook, April 2020.

³ Berglöf, Farrer (2020)

1. Three key phases of the COVID-19 policy response

The current situation is characterized by a strong focus on the short-term, and by huge uncertainty about what might be ahead. While this is, to a large degree, a reflection of the unchartered territory we are in, it is imperative that policy makers start to think about the medium- and longer-term already today. Choices made now will have significant implications for productivity, economic growth and prosperity in the medium- and longer-term.

We suggest that governments should think about three key phases in structuring their response to the COVID-19 outbreak. These three periods will be characterized by a different context in terms of the public health situation as well as the need for specific economic policy interventions. How long the individual periods will take is highly uncertain at this stage, with key features of the infection, and the impact of public health measures, still in question; the time frames indicated in the paper are merely working assumptions.



2. Phase 1: Mobilizing crisis response

On January 25th, the number of global COVID-19 cases surpassed 1,000; on February 1st, 10,000; on March 6th, 100,000; and on April 2nd, 1,000,000.⁴ By mid-March, much of world went into shutdown, with severe restrictions on the movement of people.

The situation economies around the world are now facing resembles a natural disaster or a post-war scenario, not a typical economic crisis. There are deep shocks to both the supply (companies cannot offer their services or produce, and cannot obtain supplies) and the demand side (consumers cannot access stores; uncertainty leads to a drop in demand; lost income leads to follow-on demand drops elsewhere).

Employment-intensive sectors, such as hospitality and ("non-essential") retail, where working from home is not an option, are taking an immediate hit. Quickly, most of manufacturing followed, driven by the complexities of operating conditions under lock-down, falling demand, and disrupted supply chains. And the results have rapidly become visible: Unemployment is rising dramatically in many countries,

5

⁴ Johns Hopkins University (2020), ibid.

from the <u>US</u>⁵ to <u>Norway</u>⁶. <u>Global trade</u>⁷ and <u>foreign direct investment</u>⁸ are plummeting. Financial markets have been recording large losses, and risky assets suffer, including many <u>emerging markets</u>⁹.

In the short-term, the priorities are on

- Flattening the curve of the outbreak
- Ramping up capacity in the healthcare system, and in treatment research
- Securing the functioning of core financial markets and critical supply chains
- Alleviating the direct economic impact on individuals and firms

Flattening the curve is what creates the vast majority of economic costs. It is necessary because the unmitigated outbreak would overwhelm healthcare systems. Even with an aggressive mitigation strategy, and an all-out campaign to scale up the healthcare system, there could be significant and, in many countries, traumatic capacity constraints in the provision of healthcare services to the affected population.

There are disagreements about the type of efforts most effective in flattening the curve. Most countries have opted for more-or-less mandatory restrictions on public life. A few others have chosen to be more selective. So far there is limited causal evidence on the impact of these different choices on either the trajectory of the outbreak nor the economic impact of the measures.

A key question ahead is how developing and emerging economies with their more limited institutional capacity can best manage the outbreak. Given their socio-economic conditions, a full lockdown might be neither feasible nor effective. ¹⁰ But, with their weaker health care systems, an uncontrolled outbreak will have even more dramatic consequences.

To support the **ramping up of the capacity of healthcare systems**, governments in some countries have put private hospitals under public control, provided healthcare coverage for COVID-19related treatments beyond the pre-existing insurance system, and mobilized resources to hire additional staff. At the same time, public R&D expenditures are being diverted to high risk-high reward Covid-19 funding calls with a significant ramp-up of clinical trials for vaccines and new drugs treatments. Governments have also taken measures to secure the supply of materials to the healthcare system, by organizing centralized procurement of key equipment like ventilators, relaxing regulatory barriers for medtech equipment and healthcare employment, making IP available for free, and mobilizing networks of firms in related sectors to produce critical supplies.

⁵ U.S. Bureau of Labor Statistics (2020), The Employment Situation – March 2020, BLS: Washington, D.C.

⁶ NAV (2020), 3 000 færre arbeidssøkere de siste to ukene, weekly report on unemployment, NOV: Oslo

⁷ WTO (2020), Trade set to plunge as COVID-19 pandemic upends global economy, press release, WTO: Geneva

⁸ UNCTAD (2020), *Impact of the Coronavirus Outbreak on Global FDI*, Investment Trends Monitor – Special Edition, UNCTAD: Geneva.

⁹ Institute of International Finance (2020), IIF Capital Flows Tracker – April 2020: The COVID-19 Cliff, IIF: Washington, D.C.

¹⁰ Jones, Sam et al. (2020), Is Mozambique prepared for a lockdown during the COVID-19 pandemic?, UNU-Wider, https://www.wider.unu.edu/publication/mozambique-prepared-lockdown-during-covid-19-pandemic accessed April 22, 2020.

What has been a growing concern is the <u>use of trade restrictions¹¹</u>, even <u>within the EU single market¹²</u>, on critical equipment and supplies. Within the EU, at least, coordination mechanisms have been triggered after the initial shock, and the EU has removed its tariffs for medical imports. Still, the number of countries putting restrictions on the exports of medical supplies are growing. Lowering trade barriers would be a <u>critical tool to enable a faster scale-up of producing medical equipment and supplies¹³</u>.

In terms of **sustaining the global economic system**, securing the openness of the global trading system is one of the key priorities. So far there has not been a major increase of protectionism beyond the actions taken on medical supplies. But those pushing for more self-reliance in areas like food supplies are becoming more vocal. And the combination of rising government influence in companies and low equity valuations enabling take-overs make it more challenging to keeping the global market for FDI open for transactions.

Another key priority is the functioning of global financial markets. There have been widespread signs of stress in the system, including a lack of liquidity in some financial markets, pressure on exchange rates, and large capital outflows from emerging markets. Central Banks have reacted quickly and decisively. The headline amounts mobilized have been unprecedented, and supported by large parts of the academic community, where the majority view appears to argue to 'act fast and do whatever it takes' 14.

However, international collaboration has often played catch-up to the responses driven by national governments. In Europe, there have been <u>bruising</u>, and <u>potentially credibility-damaging</u>, <u>debates¹⁵</u> about mobilizing a common financing structure, for example, a type of <u>Coronavirus Euro-Bond¹⁶</u> or a <u>COVID</u> <u>credit line in the ESM¹⁷</u>, to support EU member countries under particular strain. Internationally, the <u>World Bank¹⁸</u> and the <u>IMF¹⁹</u> have launched programs to support emerging and developing countries. Here the most is still to come once the pandemic fully hits developing countries with their lack of fiscal space and poorly equipped healthcare systems.

There has also been a <u>fast policy reaction²⁰</u> by governments around the world to **alleviate the economic costs to firms and individuals**. The specific responses have been a mix of direct support to individuals, support to the employment relationship, and support to firms. Governments have to decide whether to opt for subsidies and transfers, or to provide new credits and delayed payment of taxes and other costs.

¹¹ Global Trade Alert (2020), Tackling COVID-19 together, GTA: St. Gallen.

¹² Andre Sapir (2020), What the EU should do and not do on trade in medical equipment, Bruegel, blog post, April 10, 2020

¹³ Anabel Gonzalez (2020), A memo to trade ministers on how trade policy can help fight COVID-19, PIIE, blog post, accessed March 28, 2020.

¹⁴ Baldwin, Richard, Beatrice Weder di Mauro (eds.) (2020), Mitigating the COVID Economic Crisis: Act Fast and Do Whatever It Takes, VOX EU Book.

¹⁵ https://www.economist.com/europe/2020/04/09/european-finance-ministers-ponder-coronabonds

¹⁶ Tooze, Adam, Moritz Schularick (2020), The shock of coronavirus could split Europe – unless nations share the burden, The Guardian, 25 March 2020

¹⁷ Bénassy-Quéré, Agnès et alo. (2020), A proposal for a Covid Credit Line, https://voxeu.org/article/proposal-covid-credit-line, March 22, 2020.

¹⁸ World Bank (2020), World Bank Group Increases COVID-19 Response to \$14 Billion To Help Sustain Economies, Protect Jobs, Press release, March 17, 2020.

¹⁹ Georgieva, Kristalina (2020), Confronting the Crisis: Priorities for the Global Economy, IMF: Washington, D.C.

²⁰ IMF (2020b), COVID-19 Policy Tracker https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19, IMF: Washington, D.C.

The prior avoids burdening companies with future liabilities but leaves the public sector with a higher debt burden. Governments also have to ensure that their measures capture all parts of the economy, including many small companies that often have much less capital to sustain themselves, ²¹ start-ups that require inflows of risk capital to survive, self-proprietorships and gig economy-workers that are insufficiently covered by the existing support systems for either employees or more established firms, and the social economy sector that was legally prohibited to build up reserves and faces rapid collapse without public support.

Governments have been willing to move beyond past fiscal policy frameworks, and are ready to take on significant amounts of debt if needed. This is relatively easy for large advanced economies and those that had significant fiscal space prior to the crisis. It is much more of a challenge for economies with already stretched public finances, and those reliant on external capital. There are concerns about moral hazard and fairness, both across countries who are being asked to support one another, and within countries when governments are asked to bail out large sectors that have put their own resources into share buybacks or continue to pay dividends to their shareholders. Denmark²² and Poland²³ have, for example, decided to exclude companies registered in tax havens from their financial support programs.

In the short-term, policy effectiveness is critical, not efficiency or moral hazard avoidance. The costs of inaction are for now, likely to be higher than the costs of wasting some resources. The COVID-19 outbreak is an external shock of a massive size for which our economies were not prepared. Governments should deploy simple, general solutions, where covering lost revenue due to the shutdown should take precedence. Payments should be made as subsidies or non-voting equity. Clawback of profits could be made post-crisis through a one-off Corona tax; that is a political decision for the future. The emphasis must then be on supporting financially those who have lost their jobs and, overall, to provide incentives for those who cannot work from home to still stay at home.

3. Phase 2: Living with the Pandemic over the next 12-24 months

After the immediate peak in the outbreak, attention is starting to shift to the conditions that need to be in place for gradually allowing a restart of societal and economic activity. This limited opening could be in place for the next 12-24 months, while there is no vaccine or effective treatment, and no 'herd immunity' achieved.

When this transition will happen will depend on the healthcare situation rather than economics. Despite the clear costs of the shutdown, <u>leading economists are skeptical about a quick removal of restrictions</u> being the best approach for the economy. ²⁴ There is <u>evidence from the 1918 Spanish Flu pandemic²⁵</u> that aggressive efforts to flatten the curve do not come with higher economic costs over time. In fact,

²¹ Kost, Danielle (2020), How Small Business Can Survive the Coronavirus Outbreak, HBS Working Knowledge, 20 March 2020

²² Danish Ministry of Finance (2020), Regeringen og alle Folketingets partier er enige om at justere og udvide hjælpepakker til dansk økonomi, press release 18 April 2020

²³ https://www.pb.pl/rzad-i-nbp-oglosza-plan-pomocy-firmom-relacja-987800

²⁴ IGM Forum (2020), Policy for the COVID-19 Crisis, Chicago Booth: Chicago.

²⁵ Correia, Sergio and Luck, Stephan and Verner, Emil (2020). Pandemics Depress the Economy, Public Health Interventions Do Not: Evidence from the 1918 Flu (March 30, 2020).

locations that acted quickly and decisively tended to recover earlier than those that did not. A premature removal of restrictions exposes the economy to recurring waves of infections. Compared to 1918 there is, for example, considerably more travel, the resumption of which could potentially restart the pandemic.

But creating conditions so that societal and economic activity can restart is critical, too; it is not only business leaders who have argued that the <u>human costs of a prolonged 'freeze'26</u> would be traumatic, and retaining the support of the public for lock-down conditions will become increasingly difficult. And the longer the disruption, the more likely that the economic downturn will also leave longer-term scars.

In the medium-term, then, the priorities are:

- Aligning the regulatory framework to allow for life under pandemic conditions
- Stabilizing healthcare system capacity
- Aligning the microeconomic policy tool kit with the needs of a gradual restarting of activities
- Stabilizing the macroeconomic policy system to support the post-Pandemic recovery

Changes in the **regulatory framework** will aim to (a) allow more societal and economic activity to take place while (b) minimizing the exposure of risk groups and (c) keeping the outbreak under control.

The starting point for removing restrictions on every-day life will be different from country to country²⁷. Limits have been imposed on mobility and on the number of people that can participate in joint activities. And a set of activities, from schools to gyms and restaurants to building suites and factories, have been closed. As governments decide which sectors to re-open²⁸ and in what sequence²⁹, they will have to consider the risks these activities pose for contracting the virus as well as the costs to society and economy of keeping them closed.

- Public transportation has remained open, but often with more limited capacity. Gradually
 increasing capacity is important but requires aligning safe operating practices for both
 employees and users.
- Schools, especially for younger grades, and childcare facilities bring a large number of people together. But keeping them closed will make it much harder for other sectors of the society to function.
- Manufacturing activities are often highly capital intensive, with limited person-to-person contact. And keeping manufacturing activities closed has high economic costs, both in terms of lost output short-term and in the disruption of value chains reducing supply side capacity long-

²⁶ Financial Times (2020), Coronavirus 'medicine' could trigger social breakdown, March 26, 2020

²⁷ For the EU, see the country-specific overview for the status in mid-April on page 2 of European Commission (2020), European Roadmap to lifting coronavirus containment measures, EC: Brussels

²⁸ Cadena, Andres et al. (2020), How to restart national economies during the Coronavirus Crisis, McKinsey

²⁹ Mulheirn, Ian (2020), Suppression Exit Strategies: Options for Lifting Lockdown Measures in the UK, Tony Blair Institute for Global Change.

term. However, in many cases, their closure has been the result of disruptions in value chains and dramatic drops in demand, not of public health regulations.

- Construction activities have been kept operational in some places. Here the longer-term
 economy costs of temporary closures might be more manageable. But it may also be easier to
 create safe working environments, in which the individual employees can minimize potential
 exposure to the virus.
- Many local services, from restaurants and hotels to retail outlets that do not serve daily needs, would bring many people in physical proximity. Keeping them close has a high short-term impact on these companies and their employees. But restarting them is often not very costly; these are sectors with large amounts of churn even in normal times. So it might be better to help these firms and their employees to stay in 'freeze' mode.

Governments will, across sectors and activities, have to decide upon a common set of operating practices. Whether/which face masks to wear, what type and number of sanitization devices to put in place, how many individuals to allow in one room at a given time, and so on. Clear rules on these practices will be important not only to minimize actual spreading of the virus, but also to <u>create trust³⁰</u> in the public that these activities are safe. There is emerging evidence that clear and decisive government action is associated with lower levels of concern among the public.³¹

More generally, the success of a gradual removal of lockdown conditions will require governmental advice to be followed by the general public. This will, to a large extent, depend upon three factors: whether the credibility and trust of medical and scientific experts is high, whether political consensus remains, and whether social cohesion persists. There is also already evidence from the US that, while regulation, i.e. lockdown orders, do have a clear effect on economic activity, behavior also depends on data about infection rates and, thus, the perceived risk of being exposed to the virus.³²

For risk groups, the restrictive measures already in place will have to be kept that way until a treatment or vaccine is available. The groups most affected have been the elderly, and those with a specific set of prior health conditions. There will also have to be more targeted isolation of individuals that have been tested as infected, or have been exposed and are awaiting their test results.

<u>Widespread testing³³</u> is a necessary condition for managing the outbreak during this time. There are specific <u>suggestions from the US³⁴</u> and <u>Europe³⁵</u> that provide details on the extent of testing that would be necessary. It will also require more transparency and common standards on testing procedures.

³⁰ Candelon, Francois et al. (2020), The Role of Trust in the COVID-19 Economic Recovery: Lessons from Asia, BCG Henderson Institute.

³¹ Fetzer, Timo et al. (2020), Global Behaviors and Perceptions in the COVID-19 Pandemic, PsyArXiv. April 2020

³² Hatzius, Jan, David Mericle (2020), US Economics Analyst: Measuring Lockdown: State Orders, Economic Activity, and Social Distancing Across the US, Goldman Sachs, 12 April 2020

³³ Dewatripont, Mathias, Michel Goldman, Eric Muraille, Jean-Philippe Platteau (2020), Rapidly identifying workers who are immune to COVID-19 and virus-free is a priority for restarting the economy, VOXEU, 23 March 2020.

³⁴ Romer, Paul (2020), Roadmap to responsibly reopen America, mimeo.

³⁵ Gros, Daniel (2020), Creating an EU 'Corona Panel': Standardised European sample tests to uncover the true spread of the coronavirus. VOXEU, 28 March 2020.

Initial studies, like the one in Austria, aim to provide a representative view of the presence of the virus across the entire population. Countries will also have to decide how much tracking of individuals they find acceptable to quickly isolate those that are infected or have been exposed. Testing and tracking information will be critical to allow reacting towards an acceleration in infection rates that threatens to again overburden the capacity of the healthcare system.

Healthcare systems will need to be enabled to operate at a much higher level of capacity than pre-crisis. Keeping this up over longer periods of time will require further changes versus the short-term response to spiking numbers of infected patients. Especially for the employees in the healthcare sector, personal protection against the virus needs to be further increased and workloads brought back to sustainable levels. Governments have to decide how to deal with long wait times for elective surgeries and other routine medical services which have been put on hold during the crisis. The health impact of these delays will increasingly grow, creating difficult trade-offs for the healthcare system to manage.

Governments have to review their **microeconomic policy response**, adding to the toolkit mobilized during the immediate crisis response. Removing regulatory barriers alone will not be enough to restart economic activity, especially in core manufacturing sectors. In China, for example, economic activity has improved but remains subdued even after restrictions have been lifted³⁶. There is likely a range of other challenges: New demands on operating practices, weak demand, lack of working capital, and disrupted supply chains are some of the possible problems:

- Changes will have to be made in operational practices within companies, in their interaction
 with customers, and in their collaboration with suppliers and service providers. Governments
 can and will need to support these efforts by providing guidelines, sharing best practices, and
 supporting the transition to these new operation models.
- Customers will be unwilling or unable to buy, given the broader dislocations in the economy. Targeted stimulus programs to trigger demand will be needed to break this negative cycle.
- Financing instruments will be needed to meet working capital needs along the supply chain. The financial support needed will be different from the 'deep freeze'-instruments of wage subsidies and grants to cover operating costs. Guarantees and other tools should be used to provide capital while traditional bank financing might still be hard to obtain.
- Along their supply chains companies might be facing barriers as individual countries have adopted protectionist measures, or as logistical services are not available. Government action will be needed to unblock such policies, and to enable services to resume in parallel.
- High-levels of international cooperation and coordination will be needed to agree on
 international travel and logistical flows; how restrictions might be applied, how long they should
 remain in place and when they may be phased out.

11

³⁶ The Goldman Sachs Coronavirus China Industrial Activity Tracker, for example, dropped again during April after recovering gradually since early February, while the Coronavirus China Consumer Activity Tracker remains far in negative territory. See Goldman Sachs (2020), Coronavirus Global Activity Tracker: April 27 Update.

Finding the right solutions in all of these areas will require a set of detailed sector-specific, de-averaged solutions. A close dialogue between companies and public agencies will be necessary to quickly detect where problems exist, and come up with practical solutions. The European Commission hints at a <u>rapid alert function³⁷</u> to establish such a dialogue in its road map to lifting the containment measures; this is an idea that should be quickly developed and scaled up. <u>Cluster organizations³⁸</u> and economic development organizations at the national and regional levels can be a key asset in this process, even more so if they get connected with leading multinational companies in the sectors in which they are operating³⁹.

Macroeconomic and structural policies during this period will have to start considering the longer-term impact of policy decisions made as an emergency response on public financing structures and the broader operating rules of the national and global economy. The crisis will have changed the default starting point for many of these discussions.

On public finances, there is a strong sense that doing whatever it takes now will be the most cost-effective solution in the long term. Even under this assumption, it will be important not to overstretch the willingness of financial markets to support the current debt policies. During this period this is likely more a matter of the credibility and coordination of policy decisions made, and less about absolute debt levels. An overall plan to bring the economy back towards its growth path, strong alignment of monetary and fiscal policies in support of that goal, and a significant degree of cross-country coordination in policies will all be important. Solutions are needed that are both effective in the short-term and politically sustainable in the long-term; the infected discussion about Eurobonds⁴⁰ in Europe is an example for how hard that circle is to square, even under these exceptional conditions.

The Pandemic has resulted in national priorities taking precedence over coordination. This is to be expected given the need for rapid decision-making. But cross-border and global collaboration is and will be increasingly critical: Macroeconomic coordination will need to be stepped up to avoid deeper secondary costs to the global economy. Global collaboration is needed to keep the global trading system up, and that is, in turn, essential for global value chains to function, including in areas like medical equipment and food supply⁴¹. Additionally, advanced economies and international institutions will have to mobilize to help to address the spread of Covid-19 in emerging and developing countries, where the human and economic costs could be huge, and the effects likely find their way back to advanced countries. The recent G-20 announcement made some initial commitments in these directions.

4. Phase 3: Driving competitiveness for post-Pandemic growth

We will enter a new stage once effective vaccines and treatment solutions are available and a large part of the population has gained immunity. Then economic activities will, in principle, be able to take place as they did prior to the outbreak. But the world will have changed.

³⁷ European Commission (2020), ibid.

³⁸ https://www.clustercollaboration.eu/coronavirus

³⁹ ERT (2020), European industry playing a vital role in the fight against COVID-19, ERT: Brussels

⁴⁰ Smaghi, Lorenzo Bini (2020), Corona bonds – great idea but complicated in reality, VOXEU

⁴¹ Brown, Chad (2020), COVID-19 Could Bring Down the Trading System, Foreign Affairs, May/June 2020

After a vaccine and treatment has been found, the priorities will shift to longer-term economic tasks:

- Avoid a descent into a prolonged depression
- Creating the conditions for long-term improvements in competitiveness and prosperity
- Revisiting the broader ambitions of our societies

For policymakers, it is critical to address the very real danger that the crisis becomes **a prolonged depression**. This would happen if wide-spread bankruptcies, unemployment, and an erosion of the financial system create an environment where the 'self-healing' properties of a market economy are structurally inhibited. Fiscal and monetary policies will clearly play a critical role, building on the measures already taken and it will take politically more difficult, steps to allocate the costs of the pandemic across society.

While the economic forecasts project an 'automatic' rebound in growth rates after the pandemic, there is no certainty that this growth will be either quick, large, or sustained. It is critical that macroeconomic stabilization is seen as a necessary but not sufficient scenario for recovery. In particular, the long-term dynamics will depend on countries' **competitiveness**, understood as the wide range of factors that shape the level of productivity their economies can achieve⁴². This includes macroeconomic sustainability, the quality of institutions, and the level of human and social development.⁴³ But, importantly, it also includes many more microeconomic conditions, from the quality of factor input conditions, the openness of markets, and the rules and regulations affecting businesses, to the presence of dynamic clusters and the sophistication of companies⁴⁴.

The importance of competitiveness and productivity-enhancing measures are often acknowledged in principle but tend to trail macro-stabilization policies in practice⁴⁵. A focus on monetary and fiscal policy, important as these policy areas are for enabling a recovery and avoiding future crises, is not shaping the direction of these many other policy areas that shape the microeconomic context in which firms operate. Unlike those macroeconomic policies, they often involve a large number of individual choices and tradeoffs, and a broad range of public and private sector entities to implement them.

Past evidence suggests that large crises do, on average, come at a cost to competitiveness and long-term growth. But there is a significant 'tail' of outcomes that point in the opposite direction, where countries have achieved significant improvements in the post-crisis period⁴⁶. The spike of reforms

⁴² Porter (1990), Delgado et al. (2012), and Ketels (2016)

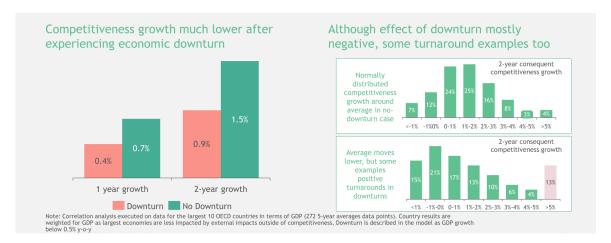
⁴³ e.g., Acemoglu/Robinson (2012)

⁴⁴ WEF (2019), World Bank (2019), Bloom et al. (2017), Easterly (2002)

⁴⁵ In the aftermath of the GFC, the importance of microeconomic measures was reflected in the Five Presidents' Report, which recommended each Euro Area Member State establish a Productivity Board to track competitiveness and make policy recommendations in this regard. But the decision to establish these Boards was only made in 2016, more than five years after the depths of the European debt crisis, and, by 2019, not all Euro Area States had established such a Board. European Commission (2019).

⁴⁶Duval, R., D. Furceri und J. Miethe (2018), The needle in the haystack: What drives labor and product market reforms in advanced countries?, IMF Working Paper, Nr. 18/101.

following the global financial crisis, and the subsequent European sovereign debt crisis, is an example of these dynamics.⁴⁷



Source: Ketels/de Bondt (2019), The future of productivity and growth: Low for long(er) - not inevitable, but likely, mimeo.

This evidence suggests that crises are not deterministic in their impact of subsequent competitiveness and productivity growth. They are better understood as periods where the divergence of possible future outcomes widens, and the shape of the distribution of these outcomes is less normally distributed around its mean. These are the times when policy decisions have a critical impact on future outcomes, and where the room for making such choices is particularly large.

How, then, can countries increase the odds of beating the average and turning crises into opportunities for prosperity-enhancing reforms? There is no consensus on this question in the academic debate. And it is empirically harder to identify which policies 'worked' than to isolate how countries were able to get better in making effective policy choices. But there are case examples that suggest a way forward. Two of the world's most highly-globalized economies make for interesting ones:

• **Singapore** is a country that is widely seen as having achieved a tremendous transformation of its competitiveness and prosperity over the last few decades. Over this period the country has repeatedly mobilized key experts and decision makers to take an in-depth look at the country's competitiveness, the global context in which it operates, and in the appropriateness of the existing policy stance. These Commissions, the latest one being the 'Committee on the Future Economy'⁴⁸, were usually assembled when the country was experiencing a crisis or deep-seated challenge⁴⁹. And they have tended to set out a comprehensive perspective on the way forward, including a set of policy reforms that went beyond isolated changes in individual policy areas.

⁴⁷ OECD (2015), Going for Growth ten years after: Taking a longer perspective on reform action, in: Economic Policy Reforms 2015: Going for Growth, OECD Publishing: Paris

⁴⁸ Singapore Ministry of Trade and Industry (2017), Report of the Committee on the Future Economy (CFE), Ministry of Trade and Industry: Singapore

⁴⁹ See also Taylor (2016) who argues that across countries external pressure he calls 'creative insecurity' drives the adoption of effective innovation policies.

• Ireland⁵⁰ was one of the worst hit Euro Area countries in the GFC, but staged a rapid competitiveness adjustment, and an equally rapid recovery in economic growth post-crisis⁵¹. This was supported by a cyclical cost-competitiveness adjustment resulting from falling demand and a dramatic fiscal adjustment, as well as favorable exchange rates. Importantly, however, it also resulted from a large capital investment in the productive capacity of the economy in the run up to the crisis, a highly skilled young workforce, and strong inward investment supported by a high-quality business environment. All of this led to rapid growth from an export-led boom. However, investment did not keep pace with economic growth in key areas such as housing, higher education, skills development, and research and innovation, which now threaten Ireland's competitiveness. The Irish economic model is also vulnerable due to its reliance on a small number of highly productive large companies, exporting a narrow range of products and services, and relying on a small number of export markets.

Both countries made policy choices based on a thorough analysis of how the world around them had changed, and what implication this had for the competitive position of their economies. This is a lesson for others to learn, and ground their longer-term policy response in a clear understanding of the new economic context that is now emerging. Thinking through the landscape countries will have to navigate in the post-COVID 19 world, it is useful to distinguish four different sets of conditions, and some of the key issues that might characterize them:



What has been eroded/lost?

The crisis will lead to a significant loss of wealth, from lost income to the reduced value of assets. Consumers' available purchasing power will be smaller, both at home and in traditional export markets abroad. Many companies will have been financially weakened, a larger number will have gone bankrupt. These effects will be heterogeneous across sectors and types of companies: Services in the hospitality sector will be most affected. It is also likely to have a highly-negative effect on other sectors that tend to be vulnerable to normal cyclical swings. SMEs and start-ups, often with more limited reserves, and critical for employment as well as long-term growth, are likely to be hit hard. Capital markets will have

⁵⁰ One of us, Peter Clinch, chaired the Irish National Competitiveness Council in the aftermath of the GFC and the European Sovereign debt crisis.

⁵¹ National Competitiveness Council (2017), Irelands National Competitiveness Challenge 2017, NCC: Dublin.

been shaken, potentially reducing access to credit and risk capital. Banks will have been hit by waves of bankruptcies among their customers.

In all of these areas, the situation will be shaped by the policy decisions governments have taken throughout the crisis. Governments themselves will face more limited fiscal space. The crisis response will have led to a dramatic increase in their debt levels, and high levels of unemployment will create ongoing demands. However, if the low level of interest rates persists, fiscal space might be less of a binding constraint as feared in the past. Finally, political tensions might rise between those most affected by the outbreak and those less so. While support for governments is rising in many places at the moment, this consensus could quickly erode as the winners and losers of the outbreak become visible, and the quality of the crisis response is evaluated ex-post.

• What remains in place?

While the focus naturally will be on the devastation and human suffering brought about by the virus, it is important not to forget what will still be in place. It is here where the otherwise appropriate analogue of the current crisis hitting economies like a war or natural disaster falls short: there is no widespread destruction of physical facilities and, while the human cost is dramatic, there is no real change in the size, or quality, of the available labor force. More generally, many competitiveness fundamentals will remain in place, even if the economic activity and prosperity they underpin has been affected.

The skills base of economies will be largely intact; the challenge will be to avoid an erosion of human capital if employees remain unemployed for extended periods of time⁵². In some areas, we will have seen employees with an entirely new set of skills in using digital technologies, and collaborating virtually. The knowledge stock, too, will remain fully in place. In fact, the need for innovation in many aspects will have added new linkages and capabilities in some areas.

Connections between individuals and companies will continue to exist. If past crises are a useful guide, we will see those groups of firms and individuals that are embedded in strong networks and clusters do better. Such linkages have, in the past, enabled the realignment of capabilities and skills towards new markets.⁵³

And the physical infrastructure, and companies' capital stock, will remain fully available. For public infrastructure, in particular, the post-crisis policy response will create opportunities for investment and modernization.

Overall, the question on factor input conditions might be more about whether changes in demand structures make a difference to their value than about actual losses.

⁵² See, for example, Abraham et al. (2019)

⁵³ Delgado, Mercedes, Michael Porter, Scott Stern (2015), Clusters and the Great Recession, mimeo.

Which ongoing changes have been accelerated? What new trends have emerged?

Crises often set the course for the periods that follow. Their main consequence tends to be to fuel change processes that were already under way, but are accelerated by the demands of the crisis.

It is likely that digitization will be such a trend. Everything from working, shopping, learning, and socially interacting, has been shifted online. While it is too early to know how much will stay that way, it clearly could be a very significant change. Individuals and organizations have been forced to acquire new digital skills, and they have had a chance to get comfortable with different ways of interacting and operating. In the past, the SARS epidemic was credited with accelerating the rise of online giants in China. The changes this time around could be much more widespread and thorough, from transforming the Future of Work to the use of AI to the emergence of entirely new sectors and business models. These trends also run the risk of increasing inequity; the crisis has already shown that while some parts of the society and economy can easily go digital, many others — often the already less prosperous — face significant barriers doing so. Governments have an important role in supporting skills development in both formal education and life-long learning.

Another such trend might be the growing weight of Asia in the global economy. This clearly depends on the future evolution of the outbreak in the US, and the policy decisions made there as well as in Asia. But, with China moving beyond crisis mode earlier, it is a real possibility that Asia's role will rise, and that it will become less dependent on the US and Europe. It also depends on how the geopolitical dynamics are going to play out; some see Asia being the clear winner due its more effective handling of the pandemic⁵⁴, others see China losing its influence⁵⁵.

Within countries, there was a trend towards urbanization and higher heterogeneity across regions in terms of their economic outcomes. Ironically, the places that have benefited most from these dynamics are now among those that have been hurt the most from COVID-19 outbreak, at least so far. So the pandemic could become a new 'leveler', where digitization helps spread economic activity and population across space, reducing the potential for 'contagion'. But with innovation still benefiting so much from local dynamics, clusters, and innovation eco-system, it is not at all clear that such a trend break will indeed occur. 57

The longer-term structural impact of economic policy choices to deal with the crisis will also need to be considered. <u>Governments' role⁵⁸</u> has already dramatically risen in the face of crisis; societies will need to decide whether they want to keep it that way or return to pre-crisis conditions. In healthcare systems, this question is maybe most prevalent where, in some countries, there has been a dramatic increase in <u>health spending</u> and a significant expansion of <u>state intervention⁵⁹</u> into private healthcare systems. But it is relevant in many parts of the economy, where governments will end up with dramatically larger

⁵⁴ Mahbubani, Kishore (2020), The West's incompetent response to the pandemic will hasten the power-shift to the east, Economist, 20 April 2020

⁵⁵ https://www.politico.com/news/2020/04/16/coronavirus-china-africa-191444

⁵⁶ OECD (2019), OECD Regional Outlook 2019, OECD: Paris

⁵⁷ Hendrickson, Clara, Mark Muro (2020), Will COVID-19 rebalance America's uneven economic geography? Don't bet on it, Brookings: Washington, D.C.

⁵⁸ https://www.economist.com/leaders/2020/03/26/the-state-in-the-time-of-covid-19

⁵⁹ Merrion Street – Irish Government News Service (2020), Taoiseach and Minister for Health welcome public private partnership to help increase hospital capacity in Covid-19 emergency, 30 March 2020.

commitments to support and, in some cases, own businesses, and a level of direct support to individuals, through subvention of companies' payroll, and directly through the welfare system. The extent of these supports is far greater than in the Global Financial Crisis of 2008-10.

We might see a growing focus on resilience, self-reliance, and thus a shift away from global value chains. Again, especially the latter was a trend already much discussed prior to the COVID-19 outbreak. But with the benefits of economic connections still significant, it remains an open question as to whether we will see a reduction, stabilization, or simply changing nature of global linkages. Even within the EU, for example, the Presidents of the European Council and Commission have written of the need to produce 'critical goods' in Europe⁶⁰ whereas the EU Commissioner for Trade⁶¹ has argued against increased self-sufficiency and, instead, has emphasized the need to be 'outward-looking' with free trade agreements a necessary basis for a swift recovery.

The European Union could emerge more fractured after the experience of large heterogeneity across Member States on efforts to 'flatten the curve', another very public disagreement on the coordinated financial response to the Covid-19 crisis, and even the (temporary) closing of borders within the Union to some medical supplies and people. But, with the benefits of collaboration as high as ever, we could also see the EU pull towards more integration in response to the pandemic. Brexit, too, had been seen as a threat to the EU but, despite the obvious negative economic consequences, it seems to have ended up increasing support for the EU among the EU-27.

Equally, there could be significant changes in both global and domestic political systems. De-coupling, and an end of global institutions, was a concern before the crisis, and the nation-state driven response to the outbreak could accelerate this trend. At the same time, there were strong forces to sustain the global system before, and the benefits and, moreover, the necessity of coordinating the response to COVID-19 remain large. There is no simple automatism in where this will go.

Similarly, western liberal democracy was generally seen to be in retreat with the rise of populism, the falling willingness to find compromise, the sidelining of 'expertise', and the increasingly fragmented perception of reality across societies. But whether the current crisis will lead the democratic model to falter, or become resurgent, is an open question. Autocratic systems like China have been able to act more decisively, but have also made significant mistakes eroding their legitimacy. The crisis could trigger positive changes in our political systems. Whether it will is, however, a question of political leadership.

• What issues that appeared locked are now open to discussion/reform?

Framing a crisis like COVID-19 as an 'opportunity to change' doesn't do justice to the deep suffering it creates. And using this crisis as just another argument for a long-held political belief, or specific policy position is, or at least appears, disingenuous. And letting the necessary crisis response become a

⁶⁰ European Commission and European Council (2020). A Roadmap for Recovery: Towards a more resilient, sustainable and fair Europe, https://www.consilium.europa.eu/media/43384/roadmap-for-recovery-final-21-04-2020.pdf

⁶¹ Beattie, A. and Brunsden J (2020). EU should not aim for self-sufficiency after corona virus, trade chief says, Financial Times April 23, https://www.ft.com/content/95dcaac2-162e-4ff4-aca5-bb852f03b1e9

decision about structural change in policy can make it hard to do what is necessary now; again, the discussion about Corona-bonds in Europe comes to mind.

However, the crisis does change the context in which to approach issues that have been on the agenda for a long-time, and that were blocked by structural factors less relevant post-crisis. Policy makers will have an opportunity to rethink the institutional structures, social supports and the role of the welfare state, health systems, structures and incentives, methods of public service provision, and support for R&D. Such approaches are only questioned and changed very infrequently; the COVID-19 outbreak might provide the context for a structural shift in these key areas of public policy.

There will also be an opening to rethink the way government is organized to deal with the policy tasks of today and tomorrow. A key challenge for mounting effective action on competitiveness upgrading, but also on issues like climate change or resilience, is that it cuts across the traditional boundaries of functionally-organized government agencies. Even the horizontal allocation of powers across different geographic levels of government is often ill-equipped to meet these challenges. COVID-19 is forcing governments to adopt new ways of operating. It could enable more structural changes in the way government operates, even once the pandemic has been overcome.

Post-COVID there might also be an opportunity to re-anchor our policymaking and economic systems in the **broader ambitions for our societies**. If we want sustainable, inclusive, and free, market-based societies, what type of institutions and structures do we need? There might be a window of opportunity to raise these questions in ways that moves beyond the established positions of the past.

The transition towards carbon-neutral, sustainable economies is one of the key themes that dominated the discussions prior to the COVID-19 outbreak. The European Commission and many EU member states have already confirmed its <u>commitment to making the green transition a key principle of its post-COVID recovery strategy</u>. ⁶² Social tensions among rich and poor, and between groups with different cultural views have been another. None of these have gone away.

But it is quite obvious that the situation after the pandemic will not only create a more conducive environment for change, including the green transition. It will also create many competing demands. And change is unlikely to materialize if the crisis only leads to different groups doubling down on their positions, arguing that the crisis has made just their demands more important. All of us are susceptible to simply reverting to the views we had prior to the crises, rather than looking for new answers. The phase after the pandemic will be a test of our collective and individual ability to move beyond such patterns.

19

⁶² Gewessler, Leonore et al. (2020), European Green Deal must be central to a resilient recovery after Covid-19, https://www.climatechangenews.com/2020/04/09/european-green-deal-must-central-resilient-recovery-covid-19/

5. Conclusion

The COVID-19 outbreak is creating unprecedented challenges for healthcare systems, economies, and societies. Quick and determined short-term action is critical, and is happening. But it also requires a pathway towards a medium- and long-term recovery. This is important to ensure continued support for necessary short-term actions; compliance with the lock-down will be easier to achieve if there is a credible path back to normality. And it is critical to avoid the inevitable short-term costs of the pandemic to trigger deep longer-term scares amidst a prolonged depression.

The medium- to longer-term strategy requires in our view matching the current focus on public health and largely macroeconomic policies with a clear microeconomic agenda. All three areas will be critical to manage the deep global shock of the pandemic.

In the medium-term, the removal of restrictions on individual behavior and mobility is on its own unlikely to be enough to drive a strong economic recovery. A large set of microeconomic barriers, from disrupted supply chains to the need to establish new safe operating procedures within and across firms to financial constraints, will need to be addressed as well. Only then will macroeconomic tools to stimulate demand be able to drive growth. We argue for an approach takes all three of these dimensions into account.

In the longer-term, there will be a need to deploy macroeconomic policies to avoid a depression, and a desire to put in public health and other measures to enhance resilience in the face of new shocks similar to COVID-19. But there will also be a need to revisit the microeconomic, supply-side conditions in economies, which will determine the possible trajectory of sustainable prosperity growth over time. Past evidence suggests that large economic crises do, on average, come at a cost to competitiveness and long-term growth. But they also point out to the clear opportunities countries have in beating these odds; policy decisions matter.

The COVID-19 pandemic is not just another economic crisis. In its early phase it has been more like a war or national disaster. Such episodes have historically come at high costs. But they have also given way to a strong rebound, if two conditions were met:

- The underlying institutions and available human capital were strong
- The policy environment enabled market growth dynamics to play out

Germany and Japan recovered after the economic, physical, and moral devastation of WWII. Their economic recovery did not happen immediately. But it did happen once the basic policy environment had been put into place. Other countries, too, were able to overcome deep and painful crises. Germans talked about the Zero Hour (Stunde Null) after the War, where there was an opportunity, as well as a necessity, to reset direction; to make systemic changes, rather than adjusting individual policies; and to restructure the 'how', not just the 'what' of economic policy making for sustainable, long-term growth.

COVID-19 might provide an opportunity for a similar 'Zero Hour' with foundational choices made to put us on a better course after experiencing huge human and economic losses. But it will not come after the moral failures that led to the devastation of WWII. Instead, it will hopefully become a symbol of how we pulled together as individuals and societies to meet adversity together.

References

Abraham, Katharine G., John Haltiwanger, Kristin Sandusky, and James R. Spletzer (2019), *The Consequences of Long-Term Unemployment: Evidence from Linked Survey and Administrative Data_ILR Review*, vol 72(2), pages 266-299.

Acemoglu, Daron, James A. Robinson (2012), Why Nations Fail: The Origins of Power, Prosperity, and Poverty, Random House: New York.

Baldwin, Richard, Beatrice Weder di Mauro (eds.) (2020), *Mitigating the COVID Economic Crisis: Act Fast and Do Whatever It Takes*, VOXEU Book, https://voxeu.org/content/mitigating-covid-economic-crisis-act-fast-and-do-whatever-it-takes, accessed March 2020.

Beattie, A. and Brunsden J (2020), EU should not aim for self-sufficiency after corona virus, trade chief says, *Financial Times*, April 23, 2020

Bénassy-Quéré, Agnès et al. (2020), *A proposal for a Covid Credit Line*, https://voxeu.org/article/proposal-covid-credit-line, accessed March 22, 2020.

Berglof, Erik, Jeremy Farrar (2020), *The COVID-19 pandemic: A letter to G20 leaders*, VOXEU, https://voxeu.org/article/covid-19-pandemic-letter-g20-leaders, accessed 26 March 2020.

Bloom, Nicholas, Raffaella Sadun, and John Van Reenen (2017), *Management as a Technology?*, NBER Working Paper 22327, NBER: Cambridge, MA

Brown, Chad (2020), COVID-19 Could Bring Down the Trading System, *Foreign Affairs*, May/June 2020Cadena,

Andres et al. (2020), How to restart national economies during the Coronavirus Crisis, McKinsey

Candelon, Francois et al. (2020), The Role of Trust in the COVID-19 Economic Recovery: Lessons from Asia, BCG Henderson Institute.

Correia, Sergio and Luck, Stephan and Verner, Emil, Pandemics Depress the Economy, *Public Health Interventions Do Not: Evidence from the 1918 Flu* (March 30, 2020). Available at SSRN: https://ssrn.com/abstract=3561560

Danish Ministry of Finance (2020), Regeringen og alle Folketingets partier er enige om at justere og udvide hjælpepakker til dansk økonomi, press release 18 April 2020

Delgado, Mercedes, Michael Porter, and Scott Stern (2015), Clusters and the Great Recession, mimeo.

Delgado, Mercedes, Christian Ketels, Michael Porter, and Scott Stern (2012), *Measuring National Competitiveness*, NBER Working Paper 18249, NBER: Cambridge, MA

Dewatripont, Mathias, Michel Goldman, Eric Muraille, Jean-Philippe Platteau (2020), *Rapidly identifying* workers who are immune to COVID-19 and virus-free is a priority for restarting the economy, VOXEU, 23 March 2020.

Duval, R., D. Furceri und J. Miethe (2018), *The needle in the haystack: What drives labor and product market reforms in advanced countries?*, IMF Working Paper, Nr. 18/ 101.

Easterly, William (2002), *The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics*, MIT Press: Cambridge.

ERT (2020), European industry playing a vital role in the fight against COVID-19, ERT: Brussels

European Commission (2019), Report from the Commission to the Council: Progress report on the implementation of the Council Recommendation of 20 September 2016 on the establishment of National Productivity Boards, COM(2019) 152 final, European Commission: Brussels.

European Commission (2020), *Joint European Roadmap towards lifting COVID-19 containment measures*, April 2020, European Commission: Brussels.

European Commission and European Council (2020). *A Roadmap for Recovery: Towards a more resilient, sustainable and fair Europe,* April 2020, European Commission: Brussels.

Ferguson, Neil M, Daniel Laydon, Gemma Nedjati-Gilani et al. (2020), *Impact of non-pharmaceutical interventions (NPIs) to reduce COVID-19 mortality and healthcare demand*, Imperial College London (16-03-2020), doi: https://doi.org/10.25561/77482.

Fetzer, Thiemo, Marc Witte, Lukas Hensel, Jon Jachimowicz, Johannes Haushofer, Andriy Ivchenko, Stefano Caria, et al. (2020), "Global Behaviors and Perceptions in the COVID-19 Pandemic." PsyArXiv. April 16. doi:10.31234/osf.io/3kfmh.

Financial Times (2020), Coronavirus 'medicine' could trigger social breakdown, March 26, 2020

Georgieva, Kristalina (2020), Confronting the Crisis: Priorities for the Global Economy, IMF: Washington, D.C.

Gewessler, Leonore et al. (2020), European Green Deal must be central to a resilient recovery after Covid-19, open letter, published on https://www.climatechangenews.com/2020/04/09/european-green-deal-must-central-resilient-recovery-covid-19/.

Gonzalez, Anabel (2020), A memo to trade ministers on how trade policy can help fight COVID-19, PIIE, https://www.piie.com/blogs/trade-and-investment-policy-watch/memo-trade-ministers-how-trade-policy-can-help-fight-covid, accessed March 28, 2020.

Gros, Daniel (2020), Creating an EU 'Corona Panel': Standardised European sample tests to uncover the true spread of the coronavirus. VOXEU, 28 March 2020.

Hatzius, Jan, David Mericle (2020), *US Economics Analyst: Measuring Lockdown: State Orders, Economic Activity, and Social Distancing Across the US*, Goldman Sachs, 12 April 2020

Hendrickson, Clara, Mark Muro (2020), *Will COVID-19 rebalance America's uneven economic geography? Don't bet on it*, Brookings: Washington, D.C.

IGM Forum (2020), Policy for the COVID-19 Crisis, Chicago Booth: Chicago.

IMF (2020a), World Economic Outlook April 2020, IMF: Washington, D.C.

IMF (2020b), COVID-19 Policy Tracker https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19, IMF: Washington, D.C.

Institute of International Finance (2020), IIF Capital Flows Tracker – April 2020: The COVID-19 Cliff, IIF: Washington, D.C.

Johns Hopkins University, *Coronavirus Resource Center*, https://coronavirus.jhu.edu/ accessed 20 April 2020

Jones, Sam, Eva-Maria Egger, and Ricardo Santos (2020), Is Mozambique prepared for a lockdown during the COVID-19 pandemic?, UNU-Wider, https://www.wider.unu.edu/publication/mozambique-prepared-lockdown-during-covid-19-pandemic accessed April 22, 2020.

Ketels, Christian, Midas de Bondt (2019), *The future of productivity and growth: Low for long(er) - not inevitable, but likely,* mimeo.

Ketels, Christian (2016), *Review of Competitiveness Frameworks*, National Competitiveness Council, Irish Department of Business, Enterprise and Innovation: Dublin.

Kost, Danielle (2020), *How Small Business Can Survive the Coronavirus Outbreak*, HBS Working Knowledge, 20 March 2020

Mahbubani, Kishore (2020), The West's incompetent response to the pandemic will hasten the power-shift to the east, *Economist*, 20 April 2020

Merrion Street – Irish Government News Service (2020), Taoiseach and Minister for Health welcome public private partnership to help increase hospital capacity in Covid-19 emergency, 30 March 2020.

Mulheirn, Ian (2020), *Suppression Exit Strategies: Options for Lifting Lockdown Measures in the UK*, Tony Blair Institute for Global Change.

NCC (2017), Ireland's Competitiveness Challenge 2017, Dublin: National Competitiveness Council.

NAV (2020), 3 000 færre arbeidssøkere de siste to ukene, weekly report on unemployment, NAV: Oslo

OECD (2020), OECD updates G20 summit on outlook for global economy, press release, 27/03/2020 - Updated 15 April 2020, OECD: Paris.

OECD (2019), OECD Regional Outlook 2019, OECD: Paris

OECD (2015), "Going for Growth ten years after: Taking a longer perspective on reform action", in: *Economic Policy Reforms 2015: Going for Growth*, OECD Publishing: Paris

Porter, Michael E. (1990), The Competitive Advantage of Nations, The Free Press: NY

Romer, Paul (2020), Roadmap to Responsibly Reopen America, mimeo.

Sapir, Andre (2020), What the EU should do and not do on trade in medical equipment, Bruegel, https://www.bruegel.org/2020/03/what-the-eu-should-do-and-not-do-on-trade-in-medical-equipment/ accessed April 10, 2020

Singapore Ministry of Trade and Industry (2017), Report of the Committee on the Future Economy (CFE), Ministry of Trade and Industry: Singapore

Smaghi, Lorenzo Bini (2020), *Corona bonds – great idea but complicated in reality*, VOXEU, 28 March 2020

Taylor, Mark Zachary (2016), The Politics of Innovation, Oxford University Press: Oxford.

Tooze, Adam, Moritz Schularick (2020), The shock of coronavirus could split Europe – unless nations share the burden, *The Guardian*, 25 March 2020

UNCTAD (2020), *Impact of the Coronavirus Outbreak on Global FDI*, Investment Trends Monitor – Special Edition, UNCTAD: Geneva.

U.S. Bureau of Labor Statistics (2020), The Employment Situation – March 2020, BLS: Washington, D.C.

World Bank (2020), World Bank Group Increases COVID-19 Response to \$14 Billion To Help Sustain Economies, Protect Jobs, Press release, March 17, 2020.

World Bank (2019), Doing Business 2019, World Bank: Washington, D.C.

World Economic Forum (2019), The Global Competitiveness Report 2019-20, WEF: Geneva.

WTO (2020), Trade set to plunge as COVID-19 pandemic upends global economy, press release, WTO: Geneva