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Covid-19 & Children

Supporting Families and Children Beyond COVID-19

Social protection in high-income countries

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20 April 2020: Toys are chained to the railings of the playground of a nursery school in Bergamo, Italy, during school closures due to the COVID-19 pandemic.

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EXECUTIVE SUMMARY

COVID-19 constitutes the greatest crisis that high-income countries have seen in many generations. While many high-income countries experienced the global financial crisis of 2007–2008, or have had national recessions, the COVID-19 pandemic is much more than that. COVID-19 is a social and economic crisis, sparked by a protracted health crisis.

High-income countries have very limited experience of dealing with health crises, having their health and human services stretched beyond capacity, restricting the travel of their populations or having to close workplaces and schools – let alone experience of all of these things combined. These unique conditions create new and serious challenges for the economies and societies of all high-income countries. As these challenges evolve, children – as dependants – are among those at greatest risk of seeing their living standards fall and their personal well-being decline.

To put COVID-19 in context, around the time of the global financial crisis, economic growth in high-income countries averaged 1.3 per cent in 2008 and -4.4 per cent in 2009 (World Bank, 2020). Today, analysis by the Organisation for Economic Co-operation and Development (OECD) predicts a contraction of 7.6 per cent of gross domestic product (GDP) on average in the OECD area under a 'single-wave' scenario. Under a 'double-wave' scenario, the same analysis predicts a contraction of 9.5 per cent of GDP on average – with France, Italy, Spain and the United Kingdom all seeing contractions of more than 14 per cent of GDP (OECD, 2020b). At the time of writing, countries in Europe are experiencing a 'second wave' of COVID-19 and lockdown strategies are being revisited.[1]

As the economic and social concerns related to COVID-19 become ever more pressing day by day, countries are struggling with the difficult decisions around reopening their schools and businesses, amid the need to maintain low rates of infection. Over the first period of social lockdown, from February to 31 July 2020, high-income countries together spent an estimated $10.8 trillion purchasing power parity (PPP) on the COVID-19 response, to address the limited supply of and demand for goods and services during lockdowns, which left businesses and families struggling, and wages unpaid.[2] This combined sum of high-income countries' massive financial packages to address COVID-19, including through social protection responses, vastly outweighs the collective response to the global financial crisis.

The severity and unique nature of the COVID-19 pandemic means that experience of dealing with such a crisis in high-income countries is very limited. As such, research on what the crisis – and the response to the crisis – could mean for children is both necessary and timely.

To contribute evidence to understand what the crisis means for children and, in turn, what governments and stakeholders in high-income countries can do to best protect children from negative effects, this study set out to answer five research questions:

1 This report was finalised in November 2020.

2 1 Trillion refers to a million million (1,000,000,000,000). Expenditures across countries are standardized for purchasing power parity (PPP) – a standardized dollar value that accounts for differences in prices (purchasing power) across countries. Unless otherwise stated, all amounts shown are in US dollars.

1. Through which social and economic mechanisms can COVID-19 affect children in high-income countries?
2. What can we learn from previous crises about the potential effects of the COVID-19 crisis on children and those who care for children?
3. How are child well-being and vulnerability to poverty likely to be affected by the crisis?
4. Are initial government social protection responses to the crisis likely to accentuate or mitigate risks to children's well-being?
5. How could future public policies be optimized, in the short and medium term, to protect outcomes for children?

No one group in society better represents the future than the child population. Therefore, child-sensitive approaches to crisis recovery – ensuring that children are protected from harm, that their services are ring-fenced, and that they are seen as a priority group in the response – are not simply driven by good intentions, but should be seen as vital to ensuring that future generations are equipped to avoid crises such as COVID-19. As a second wave of COVID-19 hits, and immunizations are beginning to be rolled-out, many high-income countries can still do more to manage the recovery of the crisis in ways that do not exacerbate inequalities for children and families, and in so doing, can protect children's futures.

The **main findings** of this report are as follows:

- **Children will be severely affected by the COVID-19 economic crisis.** This report shows that child income poverty is likely to increase and remain higher than pre-COVID levels for up to five years in those countries worst hit by the crisis. This increase in poverty will follow on from more than two decades of stagnation in child income poverty rates in the majority of high-income countries.
- **Child well-being and efforts to achieve the United Nations Sustainable Development Goals (SDGs) are also at risk.** The study results also show that contractions in economic conditions in high-income countries have been predictive of increases in child mortality the following year. Moreover, higher child income poverty rates are a predictor of a decline in both learning outcomes and health outcomes the following year. Notably, the same tests reveal how social expenditures all have critical roles in mitigating the effects of the crisis for children. That is, expenditures on social protection mitigate child mortality rates; expenditures on family policies mitigate a decline in learning outcomes; health expenditures mitigate intentional homicide rates; and education expenditures mitigate the proportion of youth aged 15–19 years not in education, employment or training (the NEET rate). Given the need for multiple interventions, without making concerted efforts to address the effects of the crisis on all children, governments are at risk of reversing recent progress towards meeting SDG targets, and children will suffer.
- **Various combinations of economic, social and policy conditions can be used to distinguish a country's pre-existing risk of, or resilience to, poorer child income poverty and child well-being outcomes.** For instance, across high-income countries there is no one standard economic or social condition that indicates whether a country is predisposed to higher-than-average child income poverty rates. Pre-COVID data for the most recent year show that countries with a higher GDP per capita and greater commitment to family benefits and/or universal approaches to benefits more

commonly report lower child income poverty rates. Higher unemployment, lower spending on families and means testing of social protection are conditions more commonly seen in countries with higher child income poverty rates pre-crisis.

- **Combinations of economic, social and policy conditions – and complementarities between well-being outcomes – highlight complexities for policy recommendations.** Analysis shows that indicators of conditions considered 'positive' or 'negative' for child well-being can – in the context of other factors – produce counterintuitive results. The same is true for child well-being indicators. For instance, conditions that coexist with higher suicide rates can include both lower poverty rates in combination with higher NEET rates among youth aged 15–19 years, and higher poverty rates along with lower NEET rates among youth aged 15–19 years. To improve child well-being, across the board, both monitoring and policy evaluation efforts must begin to account for this complexity.

- **How much public money is spent in response to the crisis matters.** High-income countries are spending historic amounts of money in response to COVID-19. About 8 per cent of global GDP, or an estimated $10.8 trillion, was allocated to the COVID-19 response from February to 31 July 2020. Of this vast sum, a mere 2 per cent was earmarked for child-specific social protection policies. In contrast, just over 90 per cent of total has been spent on fiscal stimulus interventions, including packages of interventions, directed to, or through, businesses.[3] This approach by high-income country governments relies on a 'trickle-down' approach to child welfare – most directly through families attached to the formal labour market or secure employment – an approach that is likely to further exclude the most vulnerable and marginalized children in society.

  – Governments can reflect on, and rebalance, the expenditures going to families and children. The literature shows that direct intervention for families and children is more effective than fiscal stimulus in mitigating the effects of the crisis on poverty and child well-being.

  – While acknowledging that fiscal stimulus is an essential part of the response package – that supports the economy and facilitates swifter recoveries post-COVID-19, as well as providing for many families reliant on the labour market – the sheer volume of spending is striking. Given countries' initial preference for the stimulus route, there is a need – in order to maximize these efforts for families and children – for business supports to include conditions that seek to promote family-friendly and equitable investment of these public funds – for example, regulating leave and work conditions for parents – options so far underutilized in fiscal stimulus packages.

- **How money is spent on families also matters.** Of the 159 social protection interventions allocated funds by the end of July 2020, just 47 were for children or for families raising children. About one third of all high-income countries offered no new policies specifically aimed at supporting children through this period of the crisis. Of 47 policies introduced for children and for families with children, 14 addressed childcare needs, 12 concerned extensions of family allowances, 8 provided for school feeding and 3 for family food support, and 1 concerned an extension of maternity pay. All but eight of these child and family benefits involved expansions of pre-existing eligibility, risking missing the near or new poor, or conditions of payment based on employment, and thus missing children in the poorest households. For the family policies with available data, the most common duration of implementation was just 3 months (5.6 months on average), addressing neither the length of the health crisis itself nor the expected long-term effects of COVID-19 on child income poverty.

3 Interventions covered here are based on COVID-19 responses listed in standardized international databases (World Bank and International Monetary Fund sources). Estimates are extrapolations based on total numbers of interventions by type, as reported in cross-country databases, and average values of known costs by type.

  - Governments should diversify their social protection responses to ensure that money is spent in smart ways. This includes covering both the most vulnerable children and families as well as those that are near poor, to avoid exacerbating existing inequality and poverty risks. Response packages can include income support, school feeding (and replacement services), childcare support, health support (including, where necessary, health insurance schemes) and waivers for utility bills and rent or mortgage payments, to avoid further indebtedness or evictions. To do this, eligibility criteria for social insurance and social assistance policies can be relaxed, including conditions related to employment. Time frames for the benefits should reflect both the conditions of immediate need imposed by lockdowns as well as potential longer-term consequences (e.g., immediate delivery of food packages to remote communities and intergenerational households, plus longer-term cash support).
  - Increases in payment rates, where necessary, should be delivered in line with increases in social protection coverage. When families cannot work, benefits need to be paid at adequate amounts to raise all families – irrespective of size, structure and circumstances – above minimum income levels/poverty thresholds. This requires additional elements that adjust payments based on family size, family structure, the number of children with disabilities and, importantly, the ages of children (care responsibilities can crowd out work when children are in the preschool years or at critical development stages in the life course, such as the school-to-work transition).

- **A rebalancing of the present fiscal stimulus spending versus social protection expenditure is needed.** Where countries need to find the resources to undertake the necessary policy expansions, and extensions of the duration of their implementation, a rebalancing of the present fiscal stimulus spending versus social protection expenditure would be the first thing to consider. One added benefit to strengthening social protection systems at this time is the potential this has to outlive the COVID-19 crisis and build societies' resilience to future shocks. Furthermore, the public and private costs related to falling living conditions among the child population today with be long-lasting, and expensive, as great demand for more intensive social interventions follows over time. Should the crisis experience be allowed to exacerbate inequalities, these are also likely to grow over time, creating further economic and social challenges.

- **How money will be paid back matters**. Evidence in this report highlights the damaging effects of austerity on children and their families. These range from increased risks of violence, homelessness and negative health outcomes to a greater risk of child institutionalization, among others. Many countries have relied on borrowing to finance their fiscal stimulus responses and, in the absence of growth and inflation, will have debts to repay.
  - Governments should protect existing child and family benefits and services from austerity at all costs. Children are not responsible for the economic downturn or the economic recovery. Moreover, child and family benefits and services actually mitigate the effects of the crisis on children. Given the relative underinvestment in children during the first wave of COVID-19 – and the costs of school closures to child development – if austerity is imposed on child and family policies to pay for tax-funded fiscal stimulus, children and their families will effectively end up paying twice over.

- **Learn in the short term, plan for the long term.** Prior to COVID-19, high-income countries had no recent experience of dealing with health pandemics that have led to lockdowns, economic crisis and the subsequent need for fiscal stimulus and social protection interventions. As the crisis continues,

careful learning and short feedback loops are required, in parallel with learning and planning for long-term systems strengthening to avoid future crises (including those that may follow on from decisions made in the short term, e.g., moving from fiscal stimulus to austerity).

  - National action plans need to take on a 'learn as you go' approach to COVID-19, implementing operational research to evaluate the effects of lockdowns on families and children in terms of income poverty and well-being.
  - With this in mind, and reflecting on present social protection responses, most high-income countries require a greater appreciation of the situation and needs of families, and particularly vulnerable and low-income families, if greater inequality and worsening of outcomes for children are to be avoided. The unique nature of the COVID-19 crisis would suggest that greater use of un-conditional income support for the poorest families is necessary, in combination with food parcels, care support, and waivers of utility bills and rent or mortgage payments.
  - Governments need to implement COVID-19 responses that learn from the trends of the global financial crisis – adapted to COVID-19 lockdowns – and let social protection responses reflect the reality of the recovery time frame, and the depth of the economic crisis. This requires establishing longer-term plans for social protection and setting payment schedules accordingly.

- **Finally, governments and other key stakeholders have a role to play in the efforts to build stronger social protection systems for the future** – systems more resilient to health and economic shocks. The most meaningful way to support such efforts, in the short term, is to ensure that children, child poverty, child well-being and equality are built into the heart of COVID-19 recovery responses. This means that second-wave and recovery responses to COVID-19 will require a rethink.

The remainder of this report compares the available evidence on national experiences of COVID-19 across high-income countries. As with other reports in this series, such a comparison is only the start of what is required to build evidence to support children during COVID-19. Also essential are national studies that go into greater depth and provide updates on more recent policy developments, and which review the different experiences of children within a country by urban/rural location, by gender and by age, as well as for migrant children, children with disabilities and children living in institutions. Such evidence is needed to meet the ambition of the SDGs to *leave no one behind*, as it will help countries to better understand *which* children receive adequate support *when* social protection is provided to families, and at *what levels* and *under what conditions* children receive support.[4]

Following the first wave of the crisis, it is clear that government investment, in all its forms, will need to continue as long as COVID-19 is not fully contained. Should the second wave of COVID-19 fail to be met with equal effort in financial terms, countries will need to spend smarter. If governments are to mitigate the effects of the crisis on all children and their families – and meet the ongoing ambitions laid out for children in the SDGs – greater use of child-specific social protection policies is needed now. Unless governments strengthen the initial responses with coordinated and adequate action in this area, for the benefit of *all* children, COVID-19 will leave an entire generation deeply scarred.

4 For further details, visit the Sustainable Development Goals website (https://www.un.org/sustainabledevelopment/sustainable-development-goals).

1. WHY LOOK AT HOW COVID-19 AFFECTS FAMILIES AND CHILDREN IN HIGH-INCOME COUNTRIES?

COVID-19 constitutes the greatest crisis that high-income countries have seen in living memory.[5] While many high-income countries experienced the global financial crisis of 2007–2008, or have had national economic crises or recessions, the COVID-19 pandemic is much more than that. COVID-19 is a social and economic crisis, sparked by a health crisis that promises to be protracted.

High-income countries are not used to experiencing health crises, having their health and human services put under immense strain, seeing spikes in mortality rates, restricting the travel of their populations, or keeping adults and children at home from work and school. These unique conditions create new and serious challenges for the economies and societies of all high-income countries. As these challenges evolve, children – as dependants – are among the groups at greatest risk of seeing their living standards fall and their personal well-being decline.

Government action across 41 high-income countries has recognized these broader economic and social challenges. The weight of investment behind these initial responses has served to underline the gravity of the potential health and economic consequences of COVID-19. Nevertheless, the evidence indicates that there is less direct understanding of the implications of the crisis for children, in so far as the public response – with the exception of school policies – has largely focused on general measures, with limited direct public intervention for the youngest in society.

This study reviews government action in response to COVID19 in terms of fiscal stimulus and social protection up to the end of July 2020, by which time 26 countries had restricted movement of all of their citizens. All but four countries had closed schools, at least at one-level, across the whole country (Australia, Japan, Sweden and the United States had not). International travel bans had been implemented in all but three countries (Ireland, Luxembourg and the United Kingdom). 23 of 41 countries had closed all but essential workplaces, and all but 5 had shut public events (Canada, Denmark, Japan, Sweden, and the United States). Where restrictions were in place, lockdowns lasted an average of 53 days, school closures – 102 days, workplace closures – 40 days, public events – 103 days, and travel bans lasted on average 137 days, with many still ongoing (Blavatnik School of Government, 2020 - *see appendix Table 1.2*).

The initial fiscal stimulus and social protection investment designed to mitigate the COVID-19 crisis has already outstripped the response to the global financial crisis in high-income countries.[6] Total expenditure by high-income countries on fiscal stimulus to 31 July is estimated in the region of $10.8 trillion PPP[7] – with the majority of this sum spent in March and April, and spending slowing down since. In what now appears to have been only the 'first wave' of COVID-19, this is equivalent to high-income countries spending 8 per cent of global gross domestic product (GDP) in response in just five months.

5 In this report, the term 'high-income countries' covers Organisation for Economic Co-operation and Development (OECD) and European Union (EU) countries, prior to the accession of Colombia to the OECD. The 41 countries are: Australia, Austria, Belgium, Bulgaria, Canada, Chile, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Republic of Korea, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States of America.

6 The difference between fiscal stimulus and social protection in this paper is based simply on whether the money arrives first in the hands of the business owner or in the hands of the citizen. It should be noted, on occasion, fiscal stimulus packages include payments to both firms and households (not necessarily via payments directed through firms).

7 Expenditures across countries are standardized for purchasing power parity (PPP) – a standardized dollar value that accounts for differences in prices (purchasing power) across countries. Unless otherwise stated, all amounts shown are in US dollars.

Notably, this expenditure on COVID-19 responses is weighted heavily in favour of corporate welfare, around $8 channelled through business support and furloughing for every $1 spent on social protection. A closer look at social protection policies for families and children compared with other interventions shows a lack of direct intervention for families and children, and very low levels of investment overall. In high-income countries, 47 of the 159 COVID-related social protection responses implemented to 31 July were specifically designed to serve families with children.[8] Together, these account for just $250 billion PPP, or 2.3 per cent of the total fiscal response to the crisis among high-income countries (*for cost estimations, see Table 5*).

At the time of writing (November 2020), many high-income countries are experiencing a 'second wave' of COVID-19, with daily infection rates on the rise. With no sign of either the pandemic or its consequences for societies and economies abating, this study seeks to draw lessons from the first wave of COVID-19, to learn how best to respond to the needs of *all* children and families in high-income countries as the crisis continues.

More specifically, the report assesses the adequacy of public responses for children in the wake of the first wave of COVID-19. To understand whether these responses are adequate, the ways in which children are at specific risk from the economic and social repercussions of the health crisis are first reviewed.

Families with children as part of society, economy and the world

The predicted economic fallout from COVID-19 is based on a new reality where, in the most affected countries, businesses and schools are being temporarily closed, and many people cannot work if not from home. Taken together, these conditions will lead to falls in productivity and consumption, businesses failing, increased poverty and an accumulation of debt defaults that puts the entire financial system at risk of a repeat of the 2007–2008 global financial crisis.

Fiscal stimulus and social protection expansion, at a time when many are unable to work, will need to be earned or repaid. In the absence of future spikes in productivity, growth and inflation, governments will turn to tax increases and/or austerity – with the latter leaving long-term scars on social protection systems and on children themselves.

The pandemic, and government responses to it, each have their own social costs – not only in terms of poverty and risks to living standards, but also through social isolation, during which mental ill health, for example, can occur.

As members of society, children and their families will not escape the repercussions of COVID-19, and inevitably, some children and families will experience these social costs differently. For example, large families living in cramped conditions, children living in households where interpersonal violence occurs or where parents have addictions, and children separated from their parents or other family members may all suffer more. Also requiring consideration are intergenerational families, placed under additional stress because of the increased risk of COVID-19 complications for elderly relatives, and those families who will experience bereavement, and the emotional toll that this brings. Finally, some children will be subjected to experiences that stem from a combination of these factors.

8 Four other benefits packages provide for existing recipients via some form of family, youth or child benefit (*see Table 4*).

Children's experiences of repercussions from previous health and economic crises

When health and economic crises hit, public policies have a unique role in protecting children. Section 2.2 of this report summarizes the findings of a rapid review of evidence on the effects of crises on social protection and health, and related direct and indirect outcomes for children. Evidence from multiple high-income countries clearly shows that how a government responds to a crisis (whether directly for children or not) can have serious implications for child and family poverty, parental care, child mortality, health, nutrition, learning outcomes, parental labour market attachment, gender equality, parental mental health and suicide, homelessness and more.

Emerging evidence predicting the short- and medium-term outcomes of the present crisis, particularly around poverty risks and economic fall out (for example, Sumner et al., 2020; IMF, 2020a; and, Section 4 of this report), confirms that COVID-19 will be no different in this respect. Indeed, the repercussions stand to be more severe than those of the global financial crisis. Inevitably, children, young people and their families will be affected, along with everyone else.

Children's rights and the Sustainable Development Goals: Informing the decisions of policymakers and other stakeholders

A final reason to monitor the impacts of the COVID-19 crisis on children is the need to maintain a focus on longer-term social goals and targets for children, as set out in the United Nations Sustainable Development Goals (SDGs).

Children and their families are at the core of a discourse that seeks to identify accelerated approaches to achieving the SDGs (Richardson et al., 2020). No one group in society better represents the future than the child population. Therefore, child-sensitive approaches to crisis recovery – ensuring that children are protected from harm, that their services are ring-fenced and that they are seen as a priority group in the response – are not simply driven by good intentions, but should be seen as vital to ensuring that future generations are equipped to avoid crises such as COVID-19. Should the responses to the present crisis fail to fully account for the impact that public policy decisions will have on all children, progress towards the SDGs is also at risk.

Moreover, lifelong impacts for individual children will constrain opportunity and create dependency, weakening social development and increasing the likelihood of future crises.

Many high-income countries can still do more to manage the recovery of the crisis in ways that do not exacerbate inequalities for children and families, and in so doing, can protect children's futures. Evidence shows that well-designed family-focused policies have multiple positive 'spillover' effects – effects needed to meet the various SDGs and their individual targets (Richardson et al., 2020).

1.1 COVID-19 responses for families and children in high-income countries: Research questions

To understand the ways in which COVID-19 can affect families with children in high-income countries, and so how governments and other stakeholders can manage social policy responses that protect children from the negative repercussions of the crisis, this study addresses the following research questions:

1. Through which social and economic mechanisms can COVID-19 affect children in high-income countries?
2. What can we learn from previous crises about the potential effects of the present crisis on children and those who care for children?
3. How are child well-being and vulnerability to poverty likely to be affected by the crisis?
4. Are initial government social protection responses to the crisis likely to accentuate or mitigate risks to children's well-being?
5. How could future public social policies be optimized, in the short and medium term, to protect outcomes for children?

To address each question, the remainder of this report is organized into five substantive sections.

Section 2 elaborates on how COVID-19 is affecting children – introducing a conceptual framework together with evidence from previous crises relevant to the high-income countries – and the pathways through which certain child-focused SDGs are likely to be affected. This section addresses research questions 1 and 2.

Together, sections 3, 4 and 5 address research question 3. Section 3 explores the pre-existing economic, social and demographic conditions likely to determine the degree to which the effects of the COVID-19 crisis and early responses – mapped by social protection, fiscal stimulus, and closures, lockdowns and travel bans – will be detrimental to children and families in high-income countries. It also examines child well-being outcomes and COVID-19 caseloads. Section 4 undertakes empirical analysis of the pre-existing conditions in high-income countries, and section 5 provides recommendations for monitoring key statistics based on these findings, using data and results from sections 3 and 4.

Finally, section 5 assesses whether social protection and fiscal stimulus responses to the crisis have been fit for purpose and, where this is not the case, which social protection policies could work to protect *all* children from harm post-COVID-19. Research questions 4 and 5 are answered – drawing on evidence from the literature, the data and the empirical analysis in previous sections – and the recommended role of social protection in preventing/treating social and economic risks at household and national levels following the COVID-19 pandemic is set out.

2. HOW IS COVID-19 AFFECTING CHILDREN?

Although children are not at high risk of the direct physical effects of COVID-19, their well-being will inevitably be affected indirectly in a range of ways, through three possible routes. These routes concern the effects of:

- The virus on those around them, including the loss of family members, and the potential psychological impacts of the prevalence of the virus in society
- Measures taken in response to the virus – including lockdowns and school closures
- Expected economic crisis – leading to a higher risk of child poverty and deprivation.

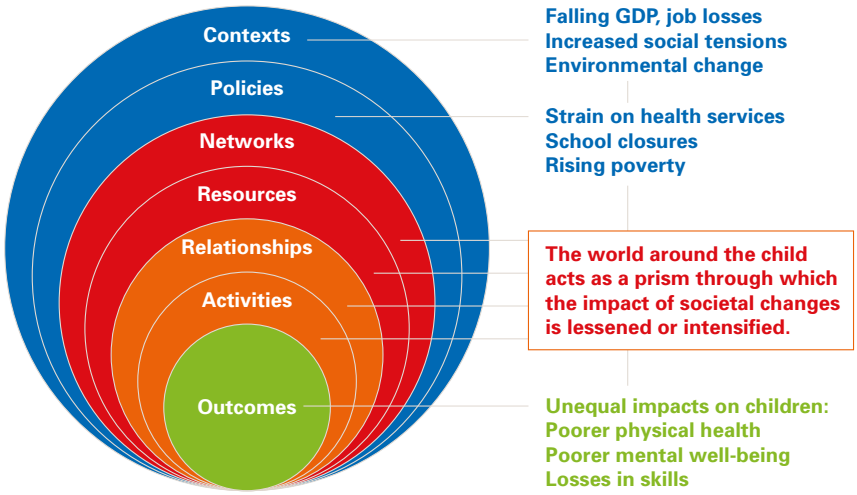
This section introduces a conceptual framework for understanding how crises like COVID-19 can affect children; examines evidence from previous crises relevant to public policy responses to COVID-19; and looks at the child-focused SDGs likely to be affected by the present crisis.

2.1 A conceptual framework for understanding how COVID-19 affects children

The UNICEF Office of Research – Innocenti (hereafter, UNICEF Innocenti), has developed a conceptual framework to link macroeconomic and social conditions to child well-being, based on Bronfenbrenner's ecological model (Bronfenbrenner, 1979). The framework can help to understand how factors related to COVID-19 at different levels – from families to broad societal contexts – affect children, often through a cascading sequence of effects. The framework has the advantage of both explaining and highlighting how COVID-19 can have unequal impacts on children exposed to the same societal conditions but living within different community and family contexts, and also supporting the identification of mechanisms to reduce such inequalities. The interplay of conditions – social and economic – can also help to explain why advantageous conditions may not always lead to positive outcomes for all children (and vice versa).

Figure 1 applies this framework to the COVID-19 crisis. The ecological model illustrates the influences around a child within the universal context – recognizing children as part of the society in which we all live, breathing the same air, clean or dirty, and living with the same policies and rules, within the same system. Within the context of the COVID-19 crisis, policies, social networks, resources, relationships and activities in their various forms can mitigate or accentuate the outcomes (i.e., benefits or risks) affecting child well-being.

Figure 1: The cascading impacts of the COVID-19 crisis on child well-being



Source: Rees et al., (forthcoming in 2021).

The example of literacy achievement amid the COVID-19 crisis illustrates how connections between layers of the ecological model can combine to influence the outcomes for a child. School closures (policies) will affect children differently according to the material and human resources at home. Children without access to the internet, books or a quiet place to study (resources), and who also lack parents with the time, skills and educational background to support learning (relationships), will fare worse than children whose home environment supports their educational progress. At the same time, the direct impact of the virus on families, and the economic repercussions (context), may mean additional work pressures for parents, leading to children taking on additional responsibilities at home (networks). This will reduce their available time to spend on schoolwork (activities). Necessary interventions in the event of school closures would therefore seek to address inequalities in resources at home, as well as consider facilitating flexible working for parents and the provision of guidelines or support for parental home-schooling strategies (see, for example, Dreesen at al., 2020).

2.2 Evidence from the literature on crises and children

Work by Tirivayi et al., (2020) reviewed the evidence on fiscal stimulus and social protection responses for children and families in the face of health and economic crises and natural disasters around the world. Table 1 reports the general findings by type of crisis, and provides examples of government actions undertaken in response. While evidence on policy responses to virus pandemics (apart from HIV/AIDS) is scant – and entirely absent for high-income countries – there is evidence of extensive policy responses to economic crises, particularly the 2007–2008 global financial crisis.

Global financial crisis

The global financial crisis of 2007–2008 originated in the banking sector in the United States of America but quickly spread across the world, leading to the first contraction of the global economy since the Second World War (Cantillon et al., 2017). Although most national economies had recovered by 2010, a public debt crisis ensued – with five euro area countries unable to refinance their government debt – leading to austerity policies that heavily affected children. From 2008 to 2012, 2.6 million more children from European Union (EU) and Organisation for Economic Co-operation and Development (OECD) countries fell below the poverty line as child poverty increased in 23 of the 41 EU/OECD countries, and decreased in 18 countries (UNICEF Innocenti, 2014). Indeed, some countries – Denmark and Finland, for instance – managed to substantially reduce child poverty during both the first phase (2008–2009) and second phase (2010–2012) of the global financial crisis.

During the period of fiscal stimulus following the global financial crisis, high-income countries undertook temporary measures to expand social protection as well as long-term reforms. Many social cash transfers, from parental leave benefits to pensions, were adapted in response to the heightened need for support in the population (Richardson, 2010). Expansions in both coverage and payments were seen; human services and cash transfers were affected.

As fiscal stimulus responses sought to mitigate the harms of the financial crisis, inequalities in their effects were evident. Indeed, neither fiscal stimulus nor social protection responses were immune to implicit discrimination – on occasion, for example, favouring male-dominated industry, offering payments to formal employees only or excluding young men from social assistance support.

Moreover, in the years that followed, austerity – justified as a means to counter the public spending necessitated by the financial crisis – left children and young people among the most vulnerable to the effects of further crises. Across Europe, in particular, cuts to services and benefits for families and children were commonplace and often permanent, with many austerity reforms lasting until the onset of COVID-19 itself.

Table 1. Public policy responses to health and economic crises

Crisis type	Responses	Examples
Pandemic or other health emergency	■ Scant evidence of macroeconomic policy responses, possibly because the economic impacts of previous pandemics and health emergencies have not been as large in scale as those of COVID-19. ■ Public policy responses to previous pandemics and health emergencies have not directly addressed the needs of children.	■ Social protection responses to the global HIV/AIDS epidemic have to date targeted infected individuals, those at risk of infection and/or those vulnerable to the impacts of the death of an infected individual (orphans and family members). Responses include cash and food transfers, often combined with treatment and care services.
Global financial crisis (as seen in 2007–2008)	■ Short initial phase of expansionary fiscal stimulus and social protection responses followed by a longer phase of austerity. Initial phase ■ Fiscal packages widespread in Europe. ■ Pre-existing statutory social protection programmes or plans used for rapid response in high-income countries. Second phase ■ Austerity measures reduced public spending, including funding of social protection, especially in the euro area.	■ Some high-income countries provided pension reforms, unemployment benefits, active labour policies, parental leave benefits, social transfers, child benefits, school feeding, education subsidies, and tax breaks for families. ■ A few high-income countries, including Germany, extended coverage of unemployment benefits and pensions to informal workers. ■ Gender-blind/discriminatory responses in some countries, such as Sweden, were more favourable towards sectors dominated by men (e.g., heavy industries); in other countries, such as the United States, they excluded young men from social assistance and unemployment benefits.

Note: Grey shading denotes evidence taken from countries in the high-income group. Source: Adapted from Tirivayi et al., (2020) and Richardson et al., (2020). Results from Tirivayi et al., (2020) on natural disasters not shown.

Youth not in education, employment or training (NEET)

A well-documented impact of the global financial crisis on young people in high-income settings has been their disengagement from both education and the labour market – leading to a more difficult start to adult life and increasing the risk of the intergenerational transmission of vulnerabilities (See, for example, Scarpetta et al., 2010). In the EU, the first five years of the crisis saw the number of youth aged 15–19 years not in education, employment or training (NEET) increase by 1 million to 7.5 million. By 2018, the NEET rate among this age group had dropped to 6 per cent on average among the high-income countries, having improved in 30 out of 37 rich countries. In Bulgaria, Chile, Italy, Mexico and Turkey, however, more than 1 in 10 young people were still receiving neither an education nor work experience. Although youth NEET rates have improved, the effects of the global financial crisis continue to be felt after more than a decade. As such, the missed education and work experience related to COVID-19 (caused by school lockdowns and economic effects combined) are expected to affect young people for years to come.

Macroeconomic and social protection responses

Table 2 shows how public policy responses to previous crises have affected outcomes for children and families. Italics denote outcomes reported in at least one study undertaken in a high-income setting.

Cash transfers and social services have direct positive effects on children, especially better health (and health care use), improved school attendance and reduced poverty. There are no reports of direct effects on children of fiscal stimulus measures. Both fiscal stimulus and social protection responses have indirect positive effects on children in high-income settings through adults who experience improved income, employment, assets and physical and mental health, and lower suicide rates as a result. Global evidence suggests there is the potential for social protection to achieve even more.

In contrast, austerity has been shown to have direct negative effects on childcare and parental caregiving in some high-income settings. Indirect negative effects include gender inequality from sector-specific fiscal packages; austerity-driven outbreaks of infectious diseases and increased homelessness, crime, mental ill health and suicides; long-term unemployment; and lower school funding and education service quality.

Table 2. The direct and indirect impacts on children of public policy responses to crises

Public policy response	Direct impacts on children	Indirect impacts on children
Fiscal stimulus (e.g., bailout, monetary policy, increased budgets)		Poverty reduction Increased family income Gender inequality from favouring predominantly male sectors (e.g., heavy industries)
Austerity	Reductions in childcare service coverage and parental caregiving	Infectious disease outbreaks Increased homelessness, crime, adult mental ill health, suicides
Health insurance	Greater health care use by families	
Unemployment benefits	Poverty reduction	Increased job search by adults Increased long-term unemployment
Weather insurance		Increased asset ownership and agricultural productivity
Cash transfers*	Poverty reduction Increased school enrolment and health care use	Improved food security, livelihoods and psychosocial health
	Mixed results for child nutrition	
Food transfers	Improved child nutrition	Improved food security
School and health subsidies (waivers, scholarships)	Improved school attendance	Reductions in school finances and quality of services More unequal access (elite capture)
School feeding	Improved child nutrition, cognitive development and school attendance	
Labour market programmes	Poverty reduction	Increased family income, adult employment, job retention
		Improved adult physical and mental health Reduction in adult suicides
Social services	Improved child mortality and child education	

Note: Grey shading denotes outcomes reported in at least one high-income country-specific study. Tirivayi et al., (2020) also distinguish between the timelines of effects, by short-, medium- and long-term outcomes. *For cash transfers, modality matters: targeting, coverage, transfer value and duration. Source: Adapted from Tirivayi et al., (2020).

2.3 COVID-19, the Sustainable Development Goals and children

With 10 years left to achieve the SDGs, the COVID-19 crisis puts at risk recent gains made to child-focused indicators. As noted above, key indicators of positive or negative conditions for child well-being in high-income countries include poverty and youth employment, as well as protection from violence and improvements in education, physical health and mental health. This report has selected indicators from the SDG framework to represent these areas, to highlight the importance of maintaining progress towards these goals for children, whatever challenges the COVID-19 crisis brings.

Table 3 reports progress – prior to COVID-19 – on the SDG indicators for which data are available for all countries from 2015 onwards (with just a few exceptions). Dark blue shading indicates results that are lower than average; mid-blue indicates results that are about average; and light blue denotes higher-than-average results.

Looking first at child income poverty – defined as having a household income of less than 60 per cent of the median equivalised household income – about one in five children in rich countries were living in income-poor households prior to COVID-19. The highest rates of poverty were seen in countries with between one in four and one in three children living in income-poor conditions, with the highest poverty rates overall found in Turkey (33 per cent) and Romania (32 per cent). Child income poverty rates were lowest in those countries where about 1 in 10 children were living in income-poor conditions: prior to the present crisis, Iceland had the lowest poverty rate (10.4 per cent) among high-income countries, followed by Czechia and Denmark (both 11 per cent).

The second indicator to be tracked in this report is the mortality rate for children aged 5–14 years. This indicator is used to reflect physical health outcomes, and it avoids double counting, as the mortality rate neither includes homicide statistics nor covers the age range of suicide figures. As with other mortality rates, this is an extreme measure: For every child death from a physical health-related condition in high-income countries, many more children will experience physical ill health. In the years before COVID-19, children in Mexico, Turkey and Bulgaria were more likely to die from illness than children in other high-income countries, with mortality rates of between 1.7 and 2.5 deaths per 1,000 children aged 5–14 years. Children fared much better in Luxembourg, Denmark and Norway, which had mortality rates of between 0.36 and 0.63 deaths per 1,000 children aged 5–14 years.

Prior to the COVID-19 crisis, the NEET rate among youth aged 15–19 years was about 6 per cent on average among high-income countries. The highest rates were seen in Bulgaria, Chile, Italy, Mexico and Turkey – each of which had a NEET rate of more than 10 per cent among the youth population aged 15–19 years. Luxembourg and Slovenia had the lowest rates of inactive youth prior to the present crisis, with fewer than 1 in 50 youth aged 15–19 years not in some form of education, employment or training.

How children perform in school is critical to their well-being both today and in the future, and is the main vehicle for addressing intergenerational immobility. The OECD Programme for International Student Assessment (PISA) provides the best comparable data for high-income countries, reporting proficiencies in reading, mathematics and science as children reach the end of compulsory schooling at the age of 15 years. Table 3 reports countries' average PISA reading literacy scores, which are scaled using 500 points as the average and 100 points as the standard deviation, based on an international sample of children's individual scores. For the countries covered, the unweighted average is 485 points. Prior to the present crisis, Mexico, Cyprus and Romania were the lowest-

scoring countries for reading literacy in the high-income group, with scores of 420, 424 and 428 points respectively. Estonia was the highest-scoring country, with 523 points, followed by Canada and Finland, each of which scored 520 points.

Prior to the COVID-19 crisis, there were approximately 6 suicide deaths per 100,000 youth aged 15–19 years, on average, in high-income countries. Given the stigma related to suicide in some cultures and in some religions, it is reasonable to expect that this number is actually an underestimate. With COVID-19 and associated lockdowns accentuating mental health challenges for many young people in high-income countries, this indicator is at risk of showing increases. Suicide rates are an extreme way of measuring mental health, however, and are used only in the absence of better indicators. For every suicide among youth aged 15–19 years in high-income countries, many more children and young people will experience mental ill health. Iceland's suicide rates before the present crisis were very high compared with those of other countries, with about 100 suicide deaths per 1 million youth aged 15–19 years (almost twice the number of suicides in this age group reported in both Norway and the United States). Cyprus and Greece reported suicides rates of below 20 suicide deaths per 1 million youth aged 15–19 years and, notably, Luxembourg reported zero suicides for the most recent year with data (2018).

The final indicator to be tracked in this report is the child homicide rate. Child deaths through intentional injury are covered in this report as an indication of the safety and security of children in high-income countries. Similar to suicide, child homicide is an extreme indicator for measuring the safety and security of children, and is used in the absence of better indicators of risk. It is expected that, for every child victim of homicide in high-income countries, many more children will experience the risk of severe harm and insecurity. In the years before COVID-19, the average rate of child homicide across all high-income countries was equivalent to about 3 child homicides per 1 million children aged 0–14 years. Only three countries reported rates of more than 10 child homicides per 1 million children in this age range: Luxembourg, Mexico, and the United States (which, in 2016, recorded more than 14 child homicides per 1 million children aged 0–14 years). Seven countries reported zero child homicides in the most recently available internationally comparable statistics: Cyprus, Estonia, Finland, Iceland, Ireland, Malta and Slovenia.

Section 4 analyses how these six SDG indicators are likely to have been affected by the COVID-19 crisis. Before doing so, section 3 first reviews the economic, social and expenditure trends that may help determine to what degree countries are at risk of or resilient to economic crises, and how these contextual factors may affect responses for children during the COVID-19 crisis.

Table 3. Country performance on six child-focused SDG indicators, prior to COVID-19

Country	At risk of child income poverty (threshold: below 60% of the median equivalised household income)	Mortality rate (all deaths) per 1000 children aged 5-14	Share of youth who are NEET (% of 15-19)	PISA: Reading Literacy Score	Suicide rate per 100,000 aged 15 to 19	Child homicide (death through intentional injury) rate per 100,000 aged 0 to 14
SDG targets	**1.2.1**	**3.2.2**	**8.6.1**	**4.1.1**	**3.4.2**	**16.1.1**
Australia	17.5	0.84	5.3	503	9.2	0.52
Austria	19.2	0.80	5.3	484	6.6	0.57
Belgium	20.1	0.80	3.9	493	6.2	0.16
Bulgaria	26.6	1.68	11.8		3.3	0.10
Canada	21.0	0.98	5.9	520	9.6	0.33
Chile	27.2	1.49	11.7	452	6.8	0.41
Croatia	19.7	1.13	8.5		6.4	0.50
Cyprus	17.3	0.90		424	1.3	0
Czechia	11.0	0.81	2.4	490	8.3	0.31
Denmark	11.0	0.50	3.5	501	1.4	0.10
Estonia	15.2	1.22	9.0	523	8.7	0
Finland	11.1	0.68	4.6	520	7.7	0
France	19.9	0.80	6.8	493	3.2	0.25
Germany	14.5	0.72	3.4	498	4.9	0.23
Greece	22.7	1.05	8.1	457	1.3	0.13
Hungary	13.8	0.97	6.8	476	4.8	0.85
Iceland	10.4	0.78	3.9	474	18.4	0
Ireland	15.8	0.64	6.0	518	7.1	0
Israel		0.94		470	2.6	0.25
Italy	26.2	0.73	11.0	476	2.6	0.06
Japan	18.8	0.73		504	7.3	0.18
Latvia	17.5	1.37	2.9	479	6.9	0.34
Lithuania	23.9	1.50	2.6	476	9.1	0.95
Luxembourg	22.7	0.36	1.5	470	0	1.06
Malta	21.4	0.84	6.3	448	8.0	0
Mexico	27.6	2.47	13.7	420	6.9	1.14
Netherlands	13.1	0.81	3.3	485	3.9	0.18
New Zealand	24.4	0.87	5.1	506		

Norway	13.2	0.63	2.5	499	10.1	0.32
Poland	13.0	1.11	3.5	512	6.5	0.05
Portugal	19.0	0.82	4.0	492	2.0	0.35
Republic of Korea	11.5	0.75		514	8.1	0.75
Romania	32.0	1.80	9.2	428	4.1	0.33
Slovak Republic	20.5	1.27	6.7	458		
Slovenia	11.7	0.74	1.9	495	5.3	0.00
Spain	26.8	0.71	8.7	496	2.6	0.13
Sweden	19.3	0.76	6.8	506	5.8	0.06
Switzerland	19.0	0.66	4.1	484	4.6	0.08
Turkey	33.0	1.95	15.3	466	2.3	0.20
United Kingdom	23.5	0.78	8.9	504	4.3	0.03
United States	30.0	1.34	7.1	505	9.9	1.43
Average (int.)	19.6	1	6.3	485.1	5.9	0.3

Note: The average for each indicator is the unweighted average for all countries with data. For child income poverty rates, income is equivalised using the modified OECD scale. Most recent data are used for all indicators, as follows: child income poverty rate (all data are for 2018, except for Iceland [2016] and Turkey [2017]); child mortality rate (all 2018); youth NEET rate (all 2018, except Chile [2017]); average PISA reading literacy score (all 2018, except Spain [2015]); youth suicide rate (all 2016, except Bulgaria, Canada, Denmark, France, Ireland, Italy, Latvia, Malta and Slovenia [2015] and Luxembourg [2018]); and child homicide rate (all 2016, except Bulgaria, Canada, Denmark, France, Italy and Latvia [2015] and Cyprus, Estonia, Finland, Iceland, Ireland, Malta and Slovenia [2018]). Blank cells show countries with no available data for that indicator from 2015 onwards. Dark blue shading indicates results that are lower than average; blue indicates results that are about average; and light blue denotes higher-than-average results. Source: See Appendix 1.

3. COVID-19 AND KEY ECONOMIC, SOCIAL AND POLICY TRENDS THAT MATTER FOR CHILDREN

To understand how child well-being and vulnerability to poverty are likely to be affected by COVID-19 – and indeed how high-income country governments can continue to respond to the pandemic – it is important to build a picture of the pre-existing macroeconomic, socio-demographic and policy conditions that in each country, as well as COVID-19 caseloads and initial government responses by country.

This section of the report introduces all of this contextual information. Sections 3.1 and 3.2 discuss trends in macroeconomic, socio-demographic and policy factors that may influence the response to the COVID-19 crisis in high-income countries. Data are presented for a selection of key trends; other trend data used in the analysis in section 4 are not shown, but are available from the authors on request (*see Appendix Table 1.1 for a full list of outcomes*). Section 3.3 presents COVID-19 cases and deaths by high-income country. Section 3.4 reports fiscal stimulus and social protection responses by the governments to 31 July 2020.

As the information presented here is for background, each section introduces only the key points.

3.1 What economic conditions matter for children?

The wealth of a nation determines the extent to which it can provide for the needs of its population, and specifically the welfare of dependent groups such as children and the elderly. This section looks at two factors relevant to determining national wealth over time (GDP growth, GDP per capita) and two factors affecting opportunities to earn and spend at the national level during the COVID-19 crisis (reliance on the service sector, and general government debt).

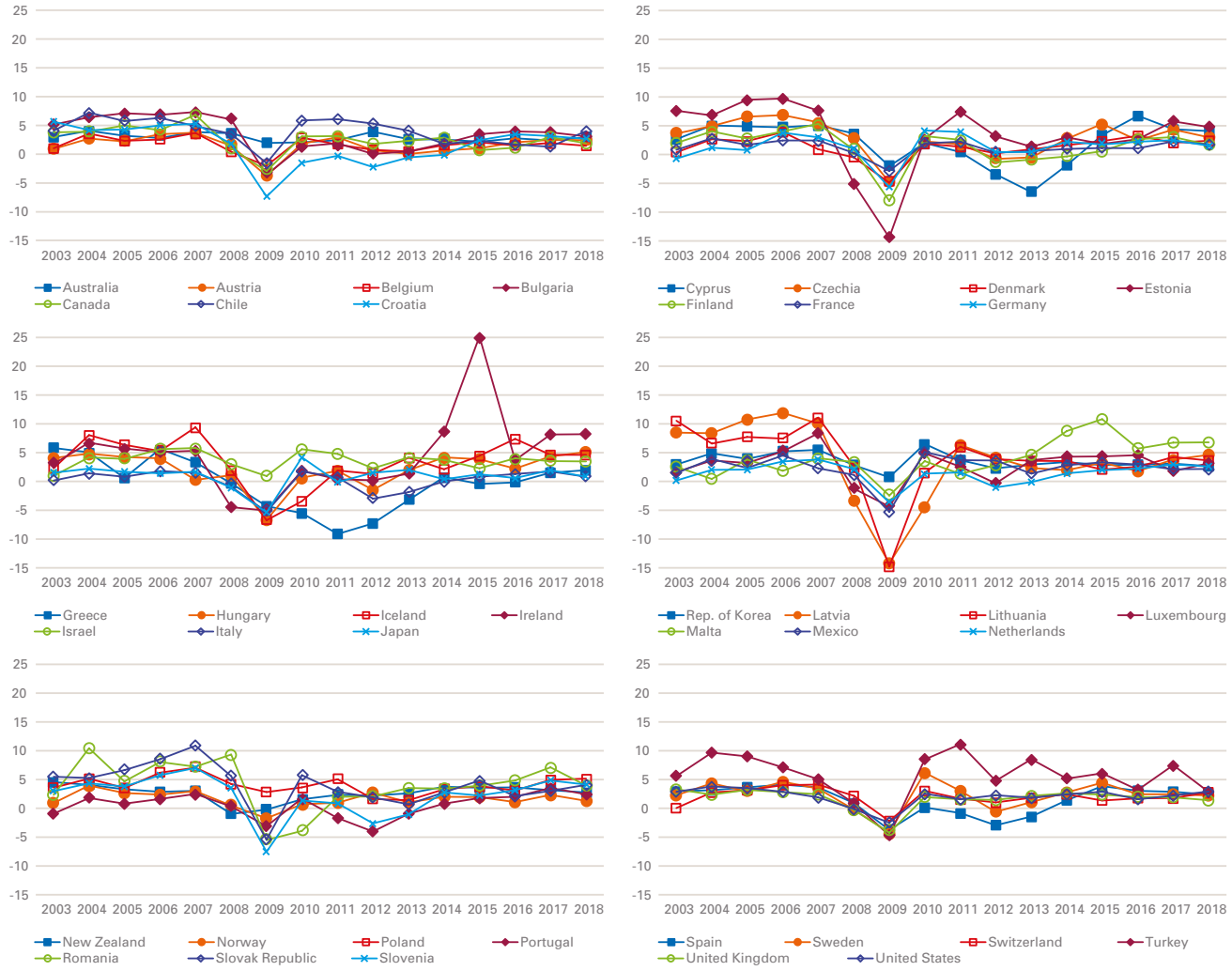
Figure 2 reports trends in GDP growth, by country, from 2003 to 2018. Year-on-year growth is reported (rather than cumulative growth) and so the fluctuation in GDP growth trends can be volatile. As with all of the following trend charts, six panels are used to report the trends for all of the high-income countries, with countries grouped according to alphabetical order. The y-axis is standard in each figure to allow for the at-a-glance interpretation of levels and trends. All trend data presented here are also available on request.

Figure 2 reveals noticeable dips in GDP growth in almost all high-income countries in 2009, following the global financial crisis of 2007–2008. Exceptions include Australia, Israel, the Republic of Korea and Poland, where only the smallest declines in growth were seen. The majority of these dips amounted to approximately 5 per cent of GDP, and recovery in many countries took a V-shaped form, meaning that growth rates had rebounded to pre-2009 levels by 2010.

In some cases, falls in GDP growth following the financial crisis lasted longer than one year, with countries taking up to three years to recover – resulting in a U-shaped recovery. These countries, with previously high rates of GDP growth, saw early falls to deeper levels, closer to 10 to 15 per cent of GDP. Notable cases include Estonia, Lithuania and Luxembourg.

Slower recoveries in GDP growth – as distinguished by trends that take on an L-shape, for example, as seen in Greece, Slovenia and Spain – have long-term impacts on overall measures of wealth. Indeed, slow recoveries in GDP growth have led to instances in which a country's GDP per capita has taken up to a decade to recover to pre-crisis levels (*see Figure 3*).

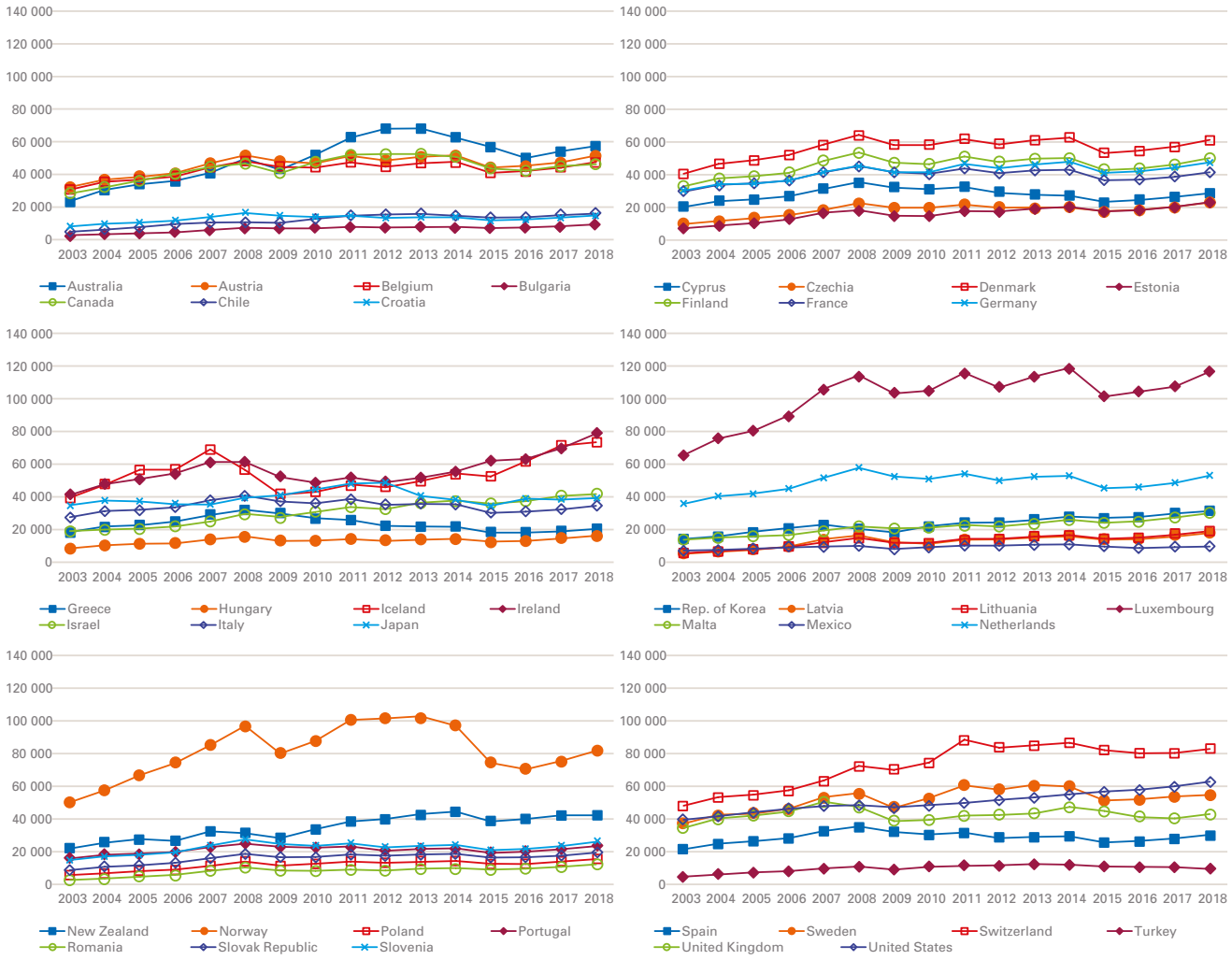
Figure 2. Most high-income countries saw GDP growth fall around 2009, with negative figures in several cases



Note: Trend lines run from the first to the last observed data points; markers represent years with observed data – for years with no markers, no data for that year were reported for that country. To read the trends at a glance: the quickest recoveries (short-term or one-year recoveries) have a 'V-shape' (e.g., Slovakia); medium-term recoveries (two to three years) have a more distinguished 'U-shape' (e.g., Latvia or Luxembourg around 2009); and the slower, longer-term recoveries are best described as having an 'L-shape' (e.g., Greece around 2011). Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2010 US dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Source: World Bank (2020).

Figure 3 reports trends in GDP per capita, by country, from 2003 to 2018. Trends are reported in US dollars PPP. The trends show relatively stable outcomes across this measure in most of the high-income countries, although dips are evident in some countries around 2009 and again around 2015. In absolute terms, the least wealthy countries according to this measure consistently reported GDP per capita figures below $10,000 PPP. The richest countries on this measure, including Iceland, Ireland, Luxembourg, Norway and Switzerland, reported GDP per capita figures of at least $80,000 PPP in 2018. Despite the slight upward trend overall, a few countries in 2018 still had GDP per capita figures below pre-global financial crisis levels. This was the case in Cyprus, Greece, Italy, the Netherlands, Norway, Spain and the United Kingdom – countries that, in 2018, all reported a GDP per capita figure of at least $4,000 PPP less than reported in 2007.

Figure 3. Falls in GDP per capita were seen around 2009, following the global financial crisis, and again around 2015–2016



Note: Trend lines run from the first to the last observed data points; markers represent years with observed data – for years with no markers, no data for that year were reported for that country. GDP per capita is gross domestic product divided by mid-year population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current US dollars PPP. Source: World Bank (2020).

When seeking to understand the effects of economic crises on children, it is important to distinguish between GDP growth and GDP per capita. Growth rates, although the focus of media reports and predictions of economic contraction (OECD, 2020b), can turn quickly from negative to positive, which can obscure how a short, sharp shock to GDP growth can have a sustained effect on wealth (which may recover more slowly, as described above). The converse is also true: Rapid GDP growth can be unequal and slow to influence broader economic trends. A case in point is Ireland, which saw a large increase in GDP growth around 2015 – explained by corporations relocating to Ireland due to lower corporation taxes at that time – that translated into a slower upward trend in GDP per capita from then on (*see Figure 3*).

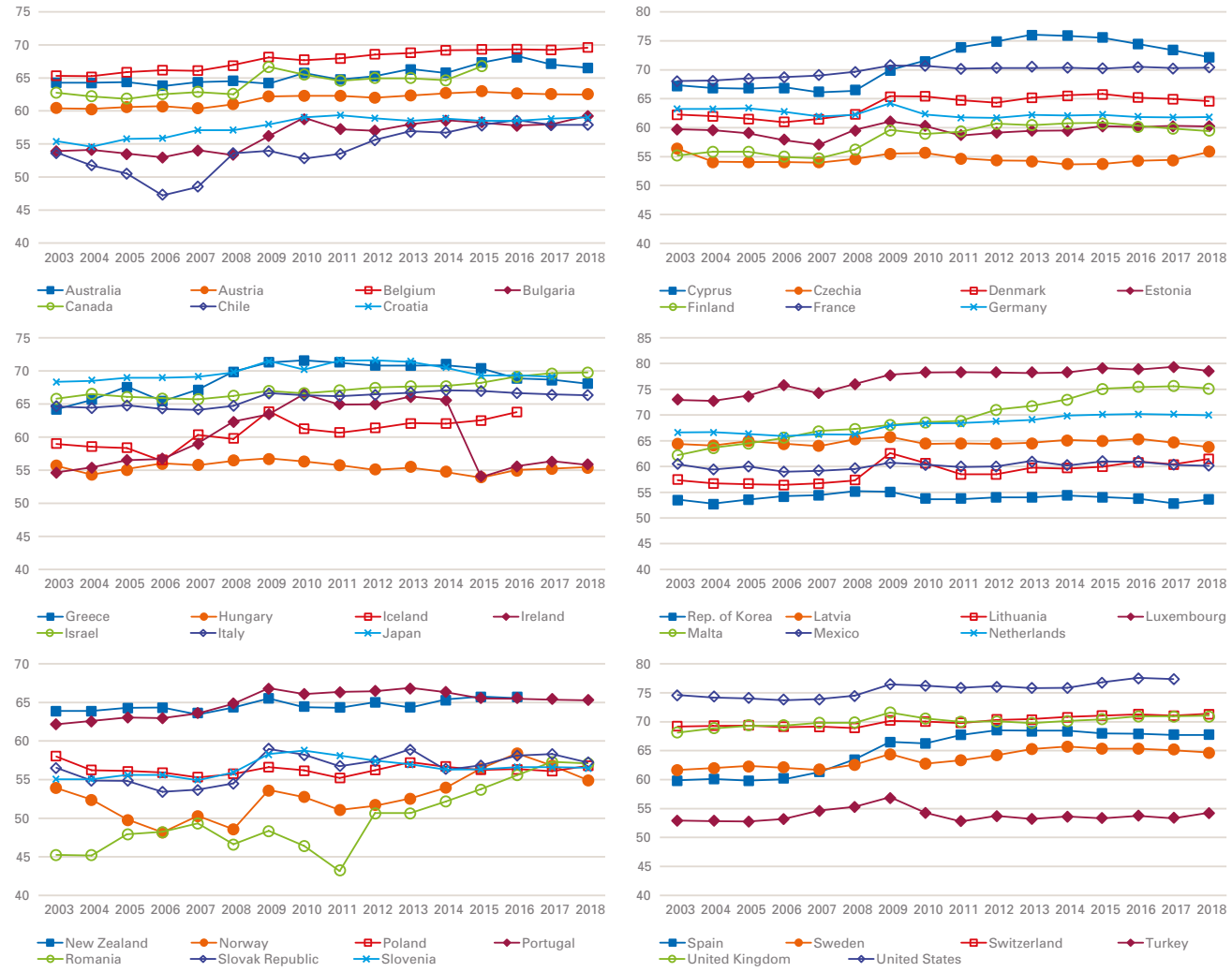
GDP growth does not necessarily translate into national wealth contemporaneously, and even sharp rebounds can have long-term effects on individual wealth. For this reason, the analysis in section 4 uses GDP per capita as a better indicator of the sustained effects of a crisis.

Figure 4 looks at trends in the percentage share of the value added to national GDP by the service sector as a whole. The extent to which various sectors contribute to GDP may indicate the extent to which a crisis such as COVID-19 will affect individual economies. The service sector has been hard hit in 2020 by the closures to workplaces and public events, and restrictions to tourism and hospitality, among other industries. Since 2003, in the vast majority of high-income countries, the service sector as a whole contributed at least 55 per cent of GDP.[9] In Belgium, Cyprus, France, Israel, Luxembourg, Malta, Switzerland, the United Kingdom and the United States, the share contributed by services rose to between 70 and 75 per cent of GDP. It is expected that, in general, these countries will be more susceptible to economic costs related to COVID-19 lockdown restrictions. Only in a few countries, including Norway, the Republic of Korea and Turkey, did the service sector contribute less than 55 per cent of GDP over the 2003-2018 period.

Manufacturing and heavy industry in countries that have required closures of all but essential work-places have also been affected by the pandemic, with impacts for thousands of factories and millions of workers. The agricultural sector has also been hit, though to a lesser extent. Most agricultural businesses have experienced a decline in revenue and sales, labour shortages and issues with regional distribution, but compared with manufacturing and services, the sector has showed greater resilience owing to the absence of backward linkages within supply chains.

9 Countries' resilience to the COVID-19 crisis is also largely determined by the different composition of their services sector, as all sub-sectors are not equally hit by the pandemic. By construction, the services sector value added (expressed as a share of GDP) results from the combination of different sub-sectors, namely wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health care, and real estate services.

Figure 4. Prior to COVID-19, services contributed at least 55 per cent of GDP in most high-income countries



Note: Data show the value added to the national economy by the service sector, as a percentage of GDP. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Services correspond to the wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional and personal services such as education, health care and real estate services. Also included are imputed bank service charges and import duties. Source: World Bank (2020).

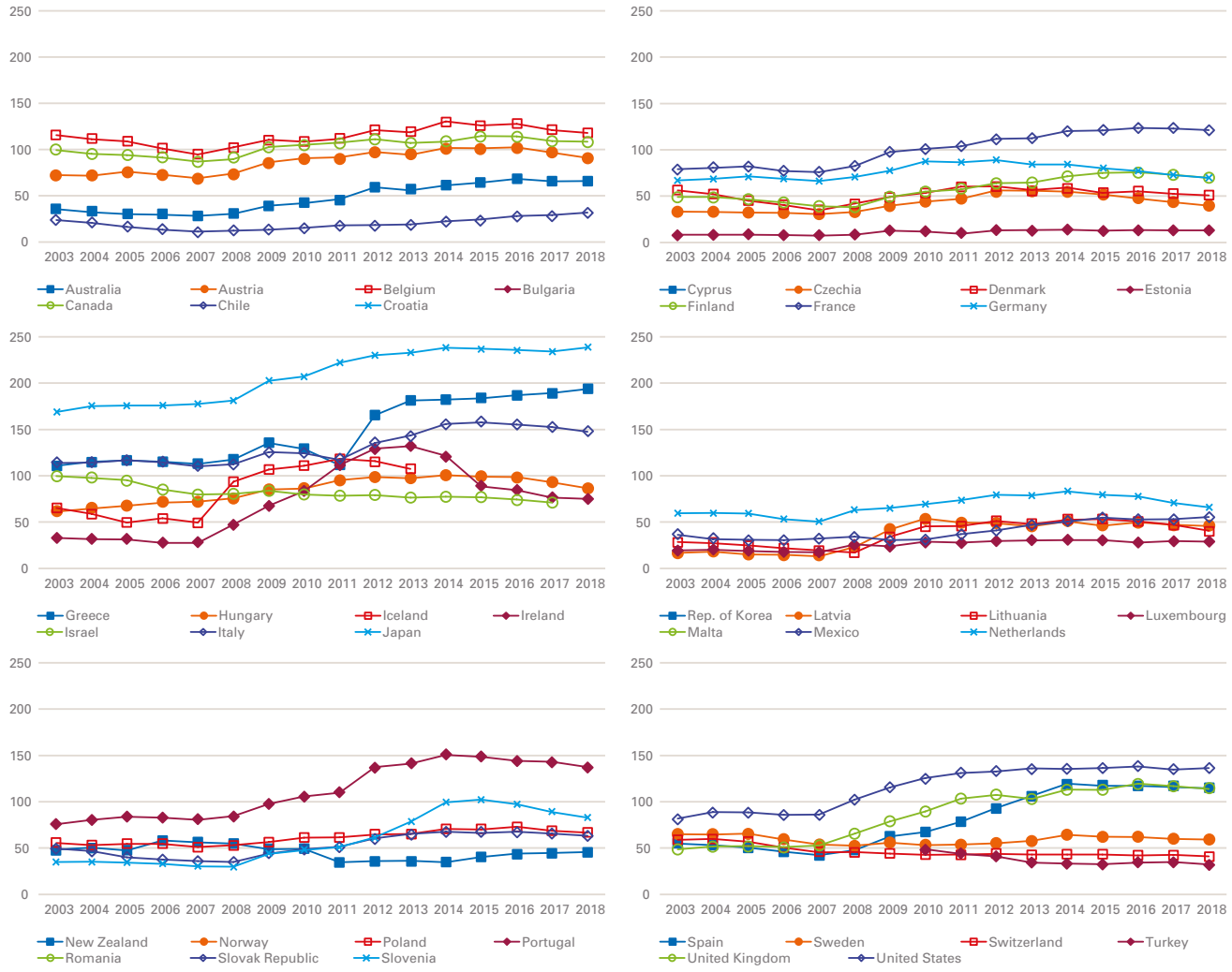
General government debt is an indicator of the sustainability of government finances, and so is key to understanding the fiscal space in which countries can move in response to health and/or economic crises, including COVID-19. Depending on how it is managed, a higher level of unaffordable government debt can also indicate a risk to economic recovery, since it restricts a government's options to counterbalance an economic slowdown and may result in social protection expansion being limited at precisely the time it is needed most. Figure 5 reports trends in general government debt as a proportion of GDP (shown as a percentage), by country, from 2003 to 2018.

General government debt as a proportion of GDP is relatively stable in the majority of high-income countries, though actual levels of debt vary widely across the group. In the years immediately

preceding COVID-19, debts at levels exceeding 100 per cent of GDP were seen in Belgium, Canada, France, Greece, Italy, Japan, Portugal, Spain, the United Kingdom and the United States. In Greece and Japan, general government debt exceeded 200 per cent of GDP. Debts at levels of about 30 per cent of GDP or less were seen in Chile, Estonia and Turkey prior to the present crisis. Estonia's government debt in 2018 was 12.9 per cent of GDP.

As noted in section 2, austerity poses a high risk to child well-being and to family income poverty, and as such, should be avoided by countries committed to achieving the SDGs. Given that the risk of austerity increases when unaffordable government debt reaches higher levels, this indicator should be closely monitored by advocates for children in high-income countries.

Figure 5. Prior to COVID-19, general government debt exceeded annual GDP in 10 high-income countries



Note: As per OECD (2020a) definition: "General government debt-to-GDP ratio measures the gross debt of the general government as a percentage of GDP. It is a key indicator for the sustainability of government finance. Debt is calculated as the sum of the following liability categories (as applicable): currency and deposits; debt securities, loans; insurance, pensions and standardised guarantee schemes, and other accounts payable. Changes in government debt over time primarily reflect the impact of past government deficits." Source: OECD (2020a).

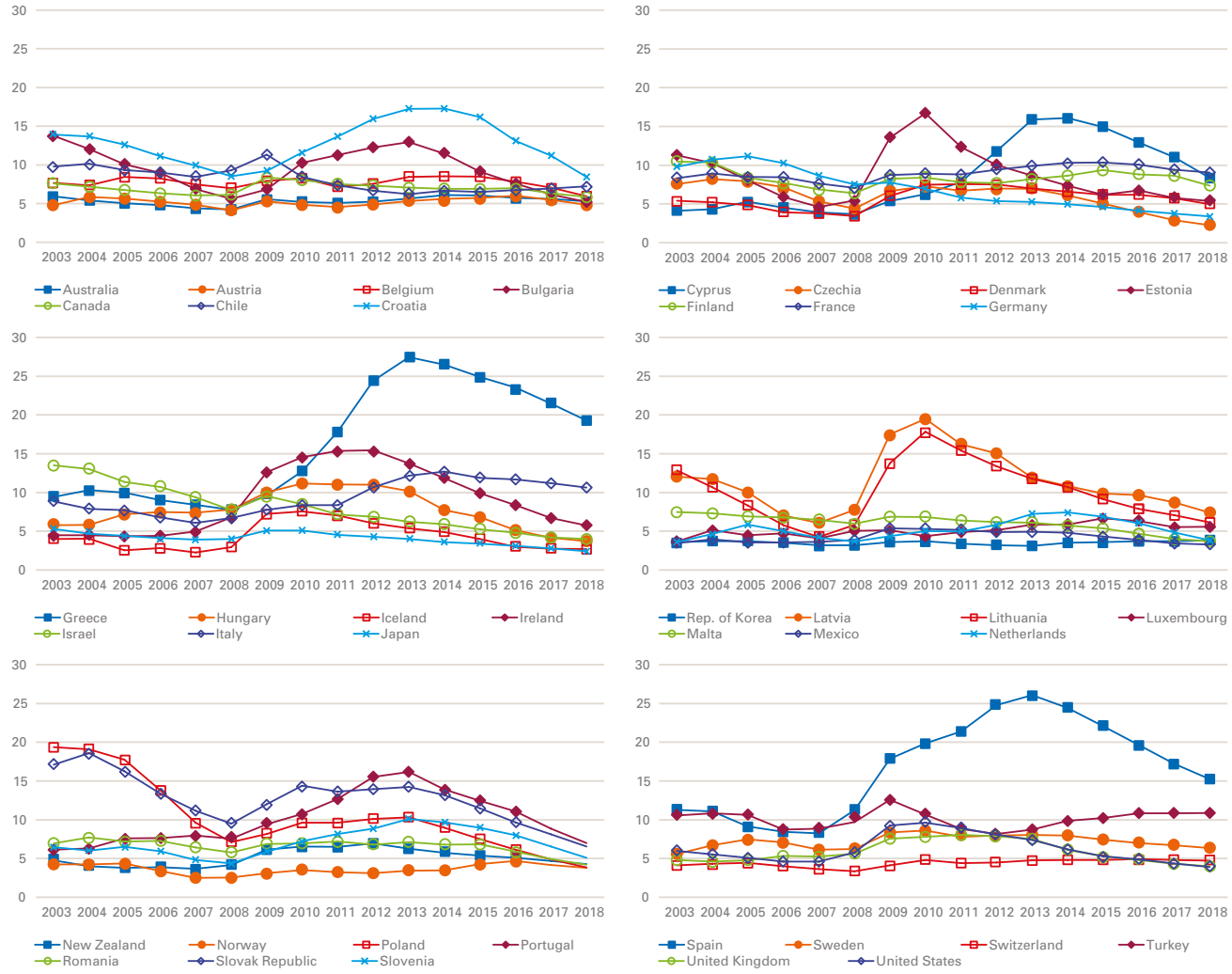
3.2 Which social and demographic conditions matter for children?

To complement the discussion of trends in macroeconomic factors that may influence the response to the COVID-19 crisis in high-income countries, this section looks at trends in pertinent socio-demographic and policy factors. In particular, it examines three social conditions that can indicate risk of or resilience to shocks: unemployment rate, age-dependency ratio and inequality. It then goes on to look at trends in social policy expenditures as an indication of governments' existing commitments to social welfare and the fiscal space for further expansion. The expenditures examined in this section are: social protection spending overall, spending on family and child policies, health expenditures, and education spending.

Figure 6 presents trends in unemployment in the total population (expressed as a percentage), by country, from 2003 to 2018. It is notable that in the period before the 2007–2008 global financial crisis, unemployment was falling or stable in a number of countries. Following the financial crisis, a number of countries saw large increases in the overall unemployment rate. Employment is a key source of family security and income security, and as such, a determinant of income poverty, influencing child well-being. Unemployment also increases demand for welfare services and lowers national productivity – both of which may have knock-on effects for children's access to social protection services and related support in the short and longer term.

The biggest fluctuations in unemployment from 2003 to 2018 were seen in Bulgaria, Croatia, Czechia, Estonia, Greece, Latvia, Lithuania, Portugal, Slovakia and Spain. A number of these countries were strongly affected by the economic downturn following the global financial crisis, particularly those in Southern Europe, where the effects on poverty and employment have been well documented. Less well understood are the sustained effects of unemployment shocks, lasting in some countries for a full decade following the global financial crisis. In the case of Greece, unemployment in the total population was twice as high in 2018 as it was in 2007. Spain has also been experiencing high unemployment in recent years – with unemployment at least 50 per cent higher in 2018 than it was prior to the global financial crisis.

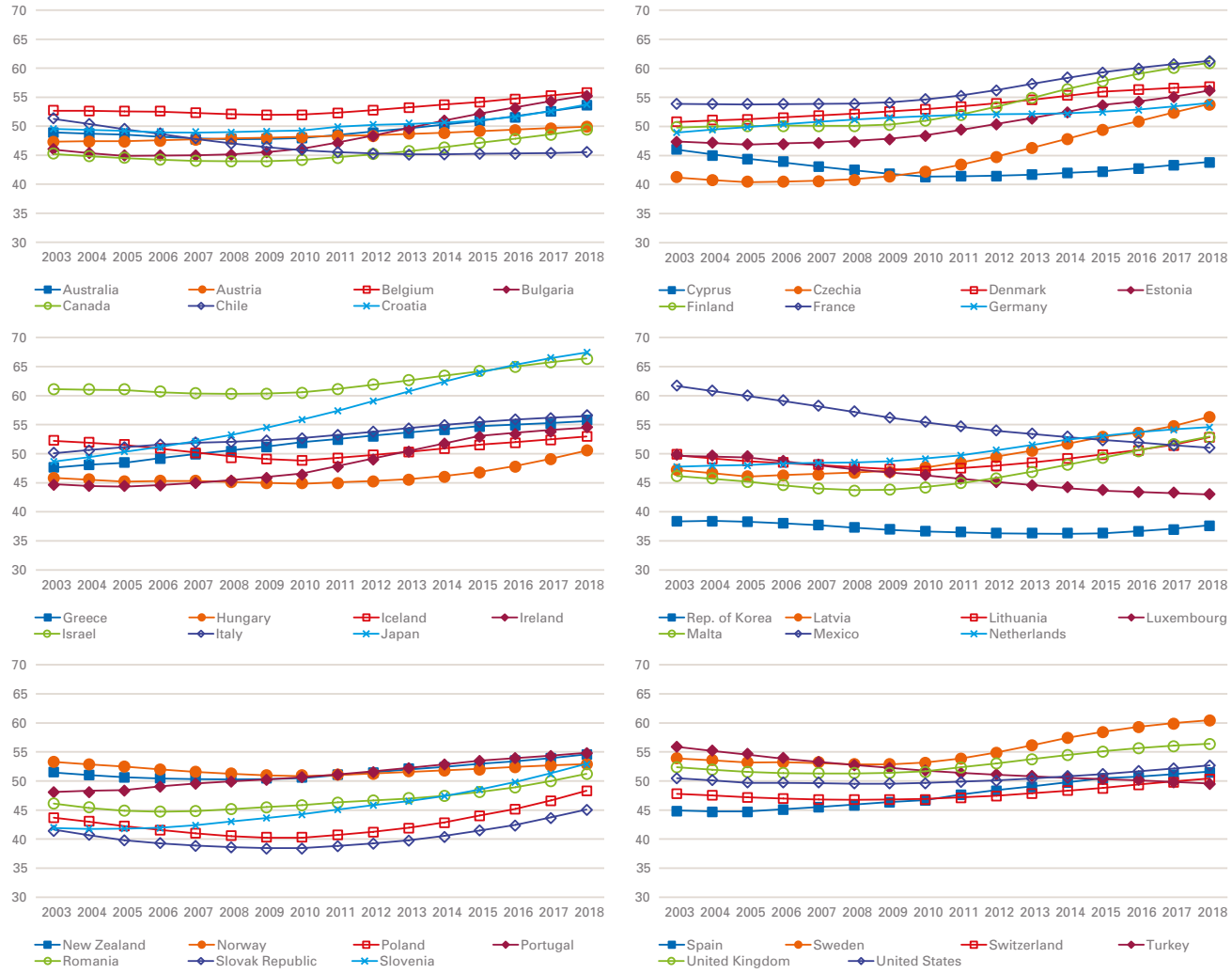
Figure 6. Unemployment did not react sharply to the global financial crisis, but recent peaks and falls are evident in Southern Europe



Note: Data show unemployment in the total population, expressed as a percentage (International Labour Organization estimates). The labour force participation rate is the proportion of the population aged 15 years and older that is economically active, i.e., all people who supply labour for the production of goods and services during a specified period. Source: World Bank (2020).

Unemployment is not the only measure of the demand placed upon a welfare state during an economic crisis. A long-standing indicator of demand on welfare states is the age-dependency ratio (*see Figure 7*). The age-dependency ratio expresses, as a percentage, the proportion of dependants (young or old) in the population in relation to the working age population. The trends in the age-dependency ratio in high-income countries from 2003 to 2018 are largely positive: relatively more people in these countries were requiring support from social services in 2018 than 15 years previously. The few exceptions to this trend are Chile, Cyprus, Luxembourg, Mexico and Turkey, which see falls, and Iceland. These countries have each experienced an overall decline in their age-dependency ratio in recent years, with the largest falls seen in Mexico. Norway and the Republic of Korea where there is little change overall.

Figure 7. Age-dependency ratios have risen in all but five high-income countries prior to COVID-19

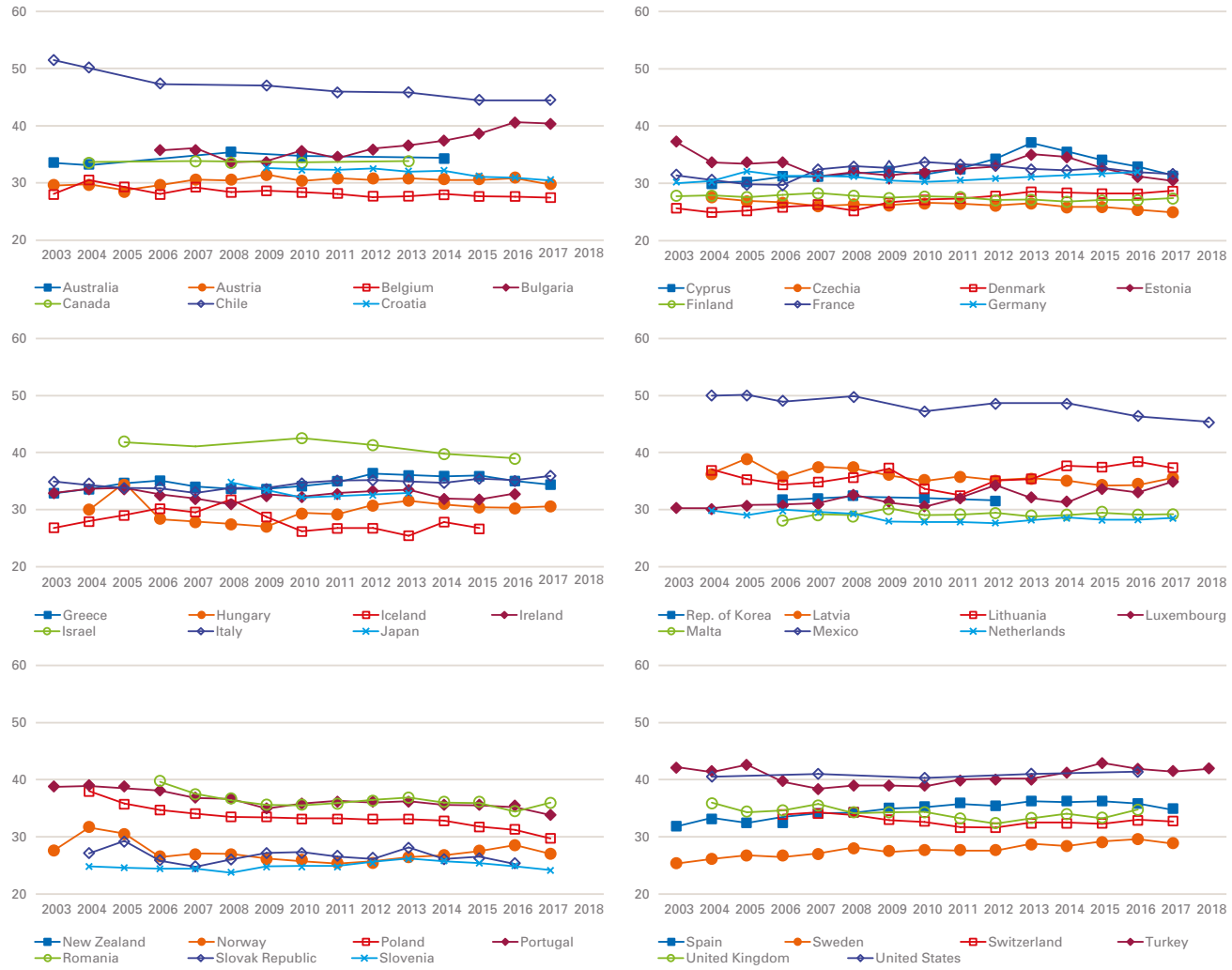


Note: Age-dependency ratio is the proportion of dependants in the population – children under 15 years and adults aged 65 years or over – in relation to the working age population (aged 15–64 years), expressed as a percentage. Source: World Bank (2020).

An important social indicator of national resilience to crises is income inequality, which is closely associated with relative poverty as well as with multiple risks experienced by children in relation to their well-being. It can also indicate the extent to which all citizens are equally prepared for, or resilient to, lockdowns in response to COVID-19. In addition, higher income inequality is likely to affect the funding of social protection services through income tax inflows, as there will be fewer middle-class earners overall.

Figure 8 reports levels of income inequality (expressed as a percentage), by country, from 2003 to 2018. Income inequality has fallen or remained stable in the majority of high-income countries, declining from over 50 per cent in Chile and Mexico, for example, closer to the high-income country average of 20 to 35 per cent. In a few instances, income inequality seems to be increasing – in Bulgaria and Italy, for example.

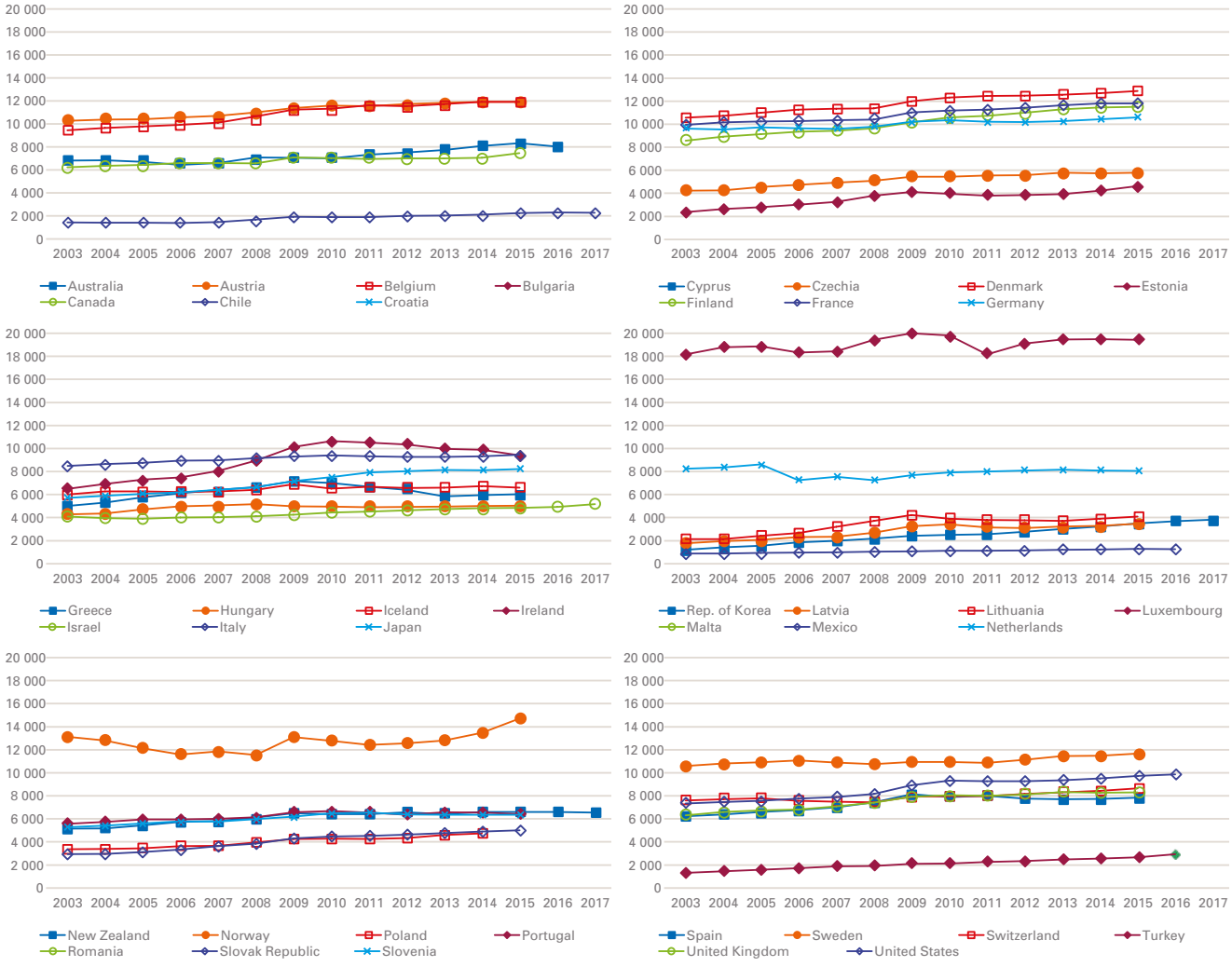
Figure 8. Income inequality has fallen or remained stable in most high-income countries in recent years



Note: Trend lines run from the first to the last observed data points; markers represent years with observed data – for years with no markers, no data for that year were reported for that country. The Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A Lorenz curve plots the cumulative percentages of total income received against the cumulative number of recipients, starting with the poorest individual or household. The Gini index measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. A Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality. Source: World Bank (2020).

The main way to deal with market income inequality is through redistribution policies. To this end, the trends in social protection spending in high-income countries from 2003 to 2018 are presented (*see Figure 9*). The figures, reported in US dollars PPP, show that social protection expenditure per capita has seen modest increases in general, with only very few countries altering their absolute investment per person. The highest spender on social protection over the period was Luxembourg, which spent $18,000 PPP per person per year on average. The lowest spender was Turkey, where spending reached approximately $3,000 PPP per person per year by 2016.

Figure 9. In most countries, social protection expenditure per capita has seen little change in almost two decades



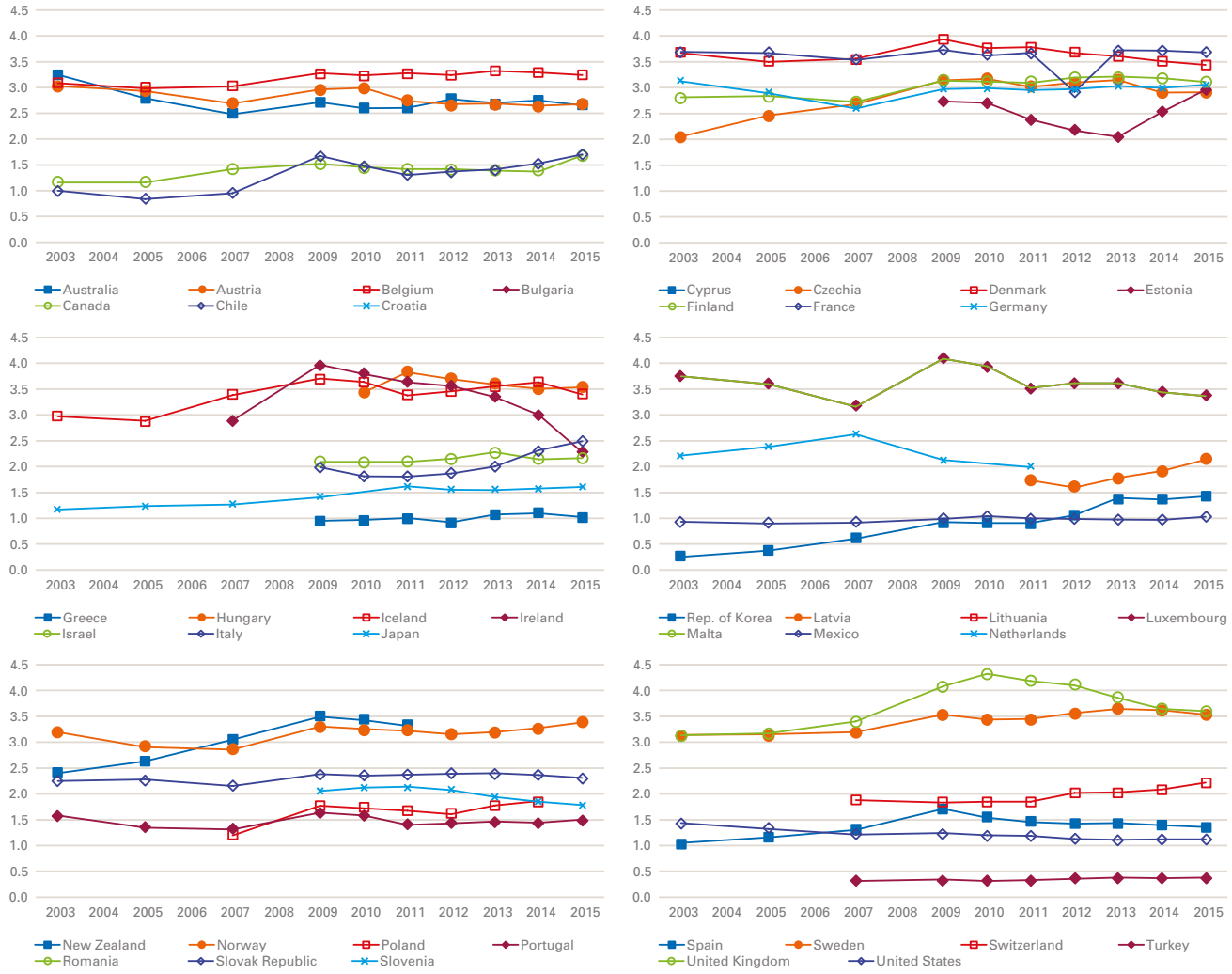
Note: Data show social protection spending in US dollars PPP. For some countries, e.g., EU member states, disaggregated data are available through ESSPROS (European System of Integrated Social Protection Statistics). Source: OECD (2020c).

Looking more closely at specific types of social expenditure, Figure 10 records the expenditure on family benefits as a percent of GDP (cash benefits, services, and tax breaks for families, as reported by the OECD). In 2015, the average spending in OECD countries on family benefits was 2.4% of GDP, ranging from 3.7% in France, to 0.4% in Turkey – with cash benefits making up over 50% of the average spend, services around 40% or average, and tax breaks less than 10% (OECD, 2020).

The trendlines show some increases around 2009 in Chile, Denmark, Ireland, Latvia, Poland, Portugal, Spain and the United Kingdom. At least in Ireland and the United Kingdom, this was not unrelated to the global financial crisis, as means-tested family cash benefits reacted to higher levels of unemployment and underemployment. With the exceptions of a few countries showing some downwards trends and volatility since 2010 (Estonia, France, Ireland, Slovenia and the United Kingdom), the general trend shows a modest increases in the proportion of GDP to be spent on family policies. The increasing trend is most likely to be explained by increases in service expenditure, related to expansions in human services such as childcare.

Expenditures on family benefits are an important indicator for monitoring the effects of the crisis on children, and, to a degree, indicate the extent to which families are greater or lower risk of poverty depending on the modalities of payment. For instance, means-tested benefits will cover a different population than universal benefits, be paid at different levels, and can be responsive to shocks such as COVID-19. The data in Figure 10 does not distinguish between these approaches to delivering family allowances and therefore it is unclear to what extent absolute investment levels can contribute directly to poverty reduction. Nevertheless, expenditure levels, in absolute terms, give an indication of both the willingness of the country to invest directly in families, and the fiscal space available to expand family cash benefits in terms of coverage or payment levels.

Figure 10. Expenditure on family benefits and services varies widely, with most countries showing stable trends or modest increases

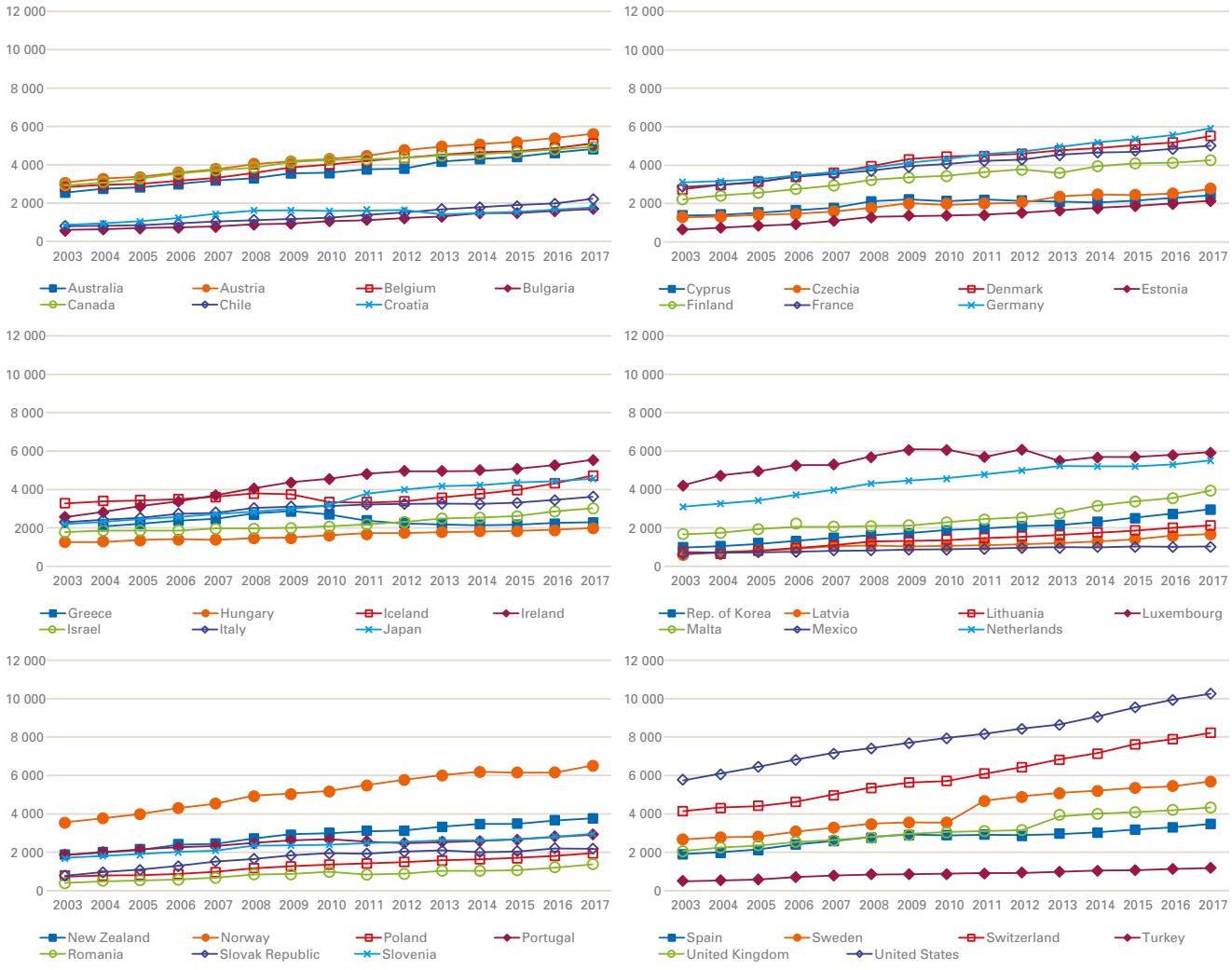


Note: Public spending accounted for here concerns public support that is exclusively for families (e.g. child payments and allowances, parental leave benefits and childcare support). Spending in other social policy areas such as health and housing support also assists families, but not exclusively, and is not included here. For additional notes on estimation, and cautions related to devolved expenditures see Source: OECD (2020d).

Given that COVID-19 began as a health crisis, and may affect health in both direct and indirect ways, it is necessary to understand more about health expenditure per capita in high-income countries. Figure 11 presents health expenditure per capita – for the public and private health systems combined – in US dollars PPP, by country, from 2003 to 2017. Across all countries, there has been a general trend towards increasing health expenditure per capita in recent years, though total health expenditure for the period 2003–2017 seems to be lower than total social protection expenditure (*see Figure 9*).

In most high-income countries, health expenditure per capita was below $6,000 PPP in 2017, and in the majority of cases, started at below $2,000 PPP in 2003. The incremental increase seen in per capita spending on health in recent years is large. It is noticeable that in some countries such as the United States – the group's highest spender on health – by 2017, health expenditure per capita was equivalent to social protection expenditure, but increasing at a faster pace.

Figure 11. Health expenditure per capita has increased in real terms across all high-income countries in recent years

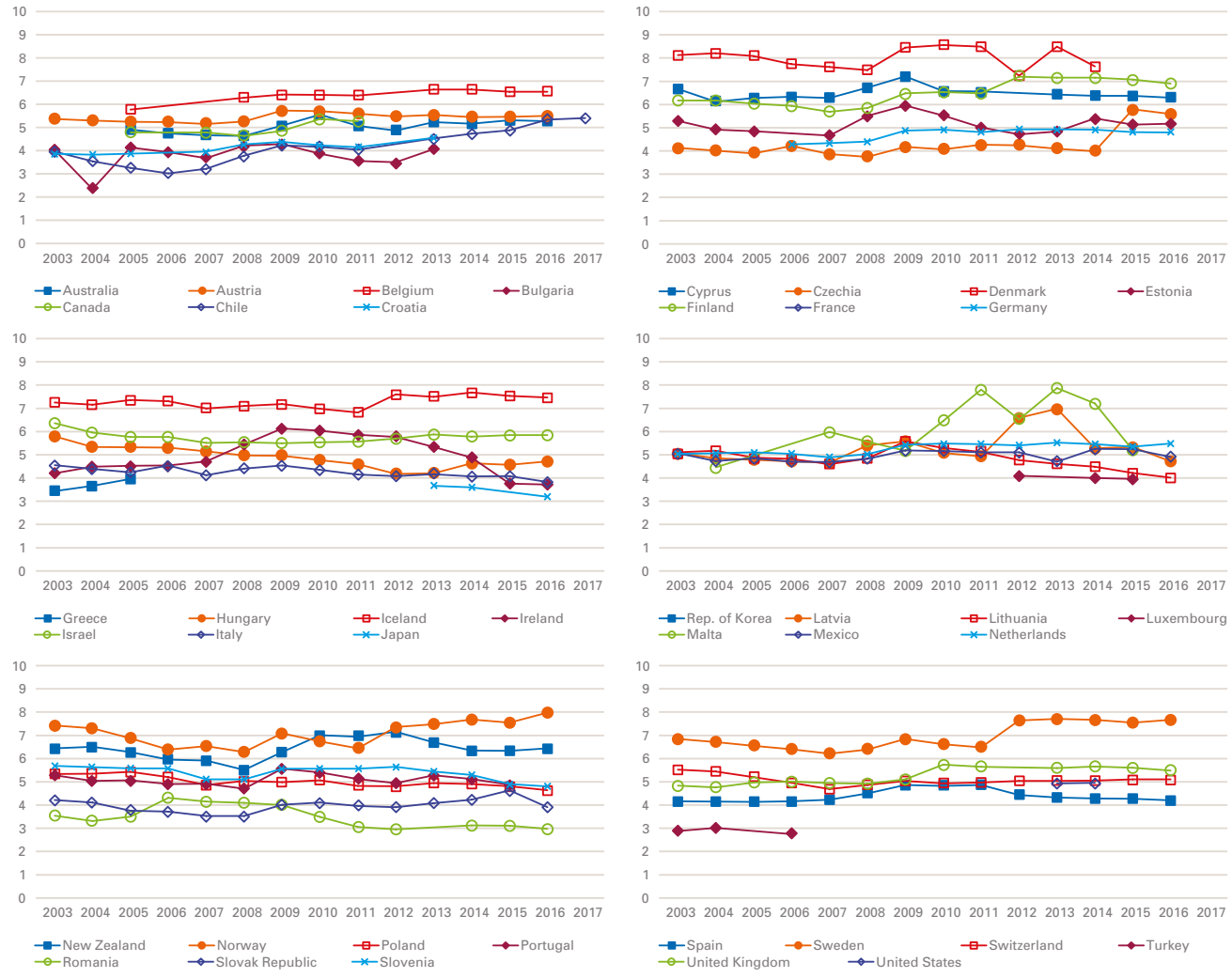


Note: Data report estimated health expenditure per capita in US dollars PPP. Trend lines run from the first to the last observed data points; markers represent years with observed data – for years with no markers, no data for that year were reported for that country. The health expenditure estimates have been prepared by the World Health Organization under the framework of the System of Health Accounts 2011. The System of Health Accounts tracks all health spending in a given country over a defined period of time regardless of the entity or institution that financed and managed the spending. Source: World Bank (2020).

Figure 12 examines the total amount spent on public education as a proportion of GDP (shown as a percentage), by country, from 2003 to 2016. More recent data were unavailable, and a number of countries have incomplete data for the specified period. Unlike health and social expenditure, public education expenditure displays a degree of volatility.

In GDP terms, on average, public education expenditure in high-income countries outstrips social expenditure on families (in total, including family allowances; see OECD, 2020b). The highest-spending countries reported public education expenditure of 6 to 8 per cent of GDP during the period 2003–2016, compared with expenditure of about 3 per cent of GDP among the lowest spenders on public education. Despite fluctuations, there has been very little absolute change in any country's expenditure over the period. This may be explained by path-dependent expenditures in education related to fixed and running costs, including teacher contracts.

Figure 12. Government expenditure on education as a proportion of GDP has been relatively stable across the group in recent years



Note: Data show total government expenditure on education as a proportion of GDP (shown as a percentage). Trend lines run from the first to the last observed data points; markers represent years with observed data – for years with no markers, no data for that year were reported for that country. Source: World Bank (2020).

3.3 How have COVID-19 caseloads affected high-income countries?

Following on from the discussion of key trends in macroeconomic, socio-demographic and policy factors that may influence the response to the COVID-19 crisis in high-income countries, this section introduces evidence on COVID-19 caseloads by country and compares the onset of cases and deaths to government approaches to lockdown restrictions. These data are important for understanding the timing of the social and economic effects on families with children relative to the onset of the virus and its death toll. Together, these give an indication of the length of time absent from the labour market and from school; the length of time families with children have been in physical isolation; and the severity of, and trends in, the virus caseload by country, and how this may lead to longer or shorter lockdowns overall.

Figure 13 presents individual country trends mapping the daily and total caseloads of COVID19 and reporting total deaths. The shaded bars in the charts represent the start and end dates related to lockdowns and restrictions put in place. In each case, these only reflect national lockdowns (not local- or state-level decisions) and cover requirements to close, cancel, stay at home, or ban travel – as opposed to recording recommended restrictions and closure practices (*See Figure 13 notes for details*).[10]

To read the charts, take, for example, Australia. The left-hand axis reports the daily caseloads from zero to 800 maximum, the right-hand axis reports the cumulative caseloads and deaths from January to the end of July (0 to 20,000) – note that across countries, axes are not standardised to improve readability. The total cases to the end of July are reported to the right of the country name in each chart. The lines for daily caseloads are more easily distinguished by their volatility, this is the same for all countries. In early February and mid-March, Australia implemented international travel bans, and public event lockdowns respectively. The former lasted past the end of July, and the latter was rescinded in mid-June.

Across the group of countries, in terms of total caseloads, the dashed lines show that in several countries the peaks of daily caseloads are seen in the middle of the national lockdowns, before a reduction in daily caseloads are seen – and initial flattening of the total caseloads trendlines. However, there are no examples of when this flattening of caseloads completely plateaus before 31 July.

Countries that saw rapid increases in daily caseloads at the beginning of the crisis, with quick onset and flattening at the lowest daily rates included: Austria, Belgium, Estonia, France, Germany, Iceland, New Zealand, Norway, and Switzerland. Countries which saw a slower onset, and a larger daily increase over time, include Canada, Chile, Denmark, Finland, Hungary, Ireland, Italy and the Netherlands, and the United Kingdom.

A number of countries looked to be having either continued growth in caseloads, or second waves, by end of 31 July. Australia saw an increase in daily caseloads in early July, as did Croatia, Greece, Israel, Japan, Luxembourg, Malta (no lockdown data), Slovenia, and Spain, amongst others. Bulgaria, Mexico, Poland, Romania, Sweden (although slowing by end of July), and the United States reported a longer-term trend of increasing daily caseloads.

Although there's no clear and common pattern to indicate of how the lockdown strategies contribute to these caseload patterns, the groups above show some simple patterning. The countries with quick onset and flattening all applied at least three sets of restrictions. This is also true for slower onset

10 Recovery rates are available from the source for these charts, but are not presented here.

countries, with the exception of Denmark. Countries with fewer national restrictions – Australia, Japan, Sweden and the United States – are found in the set of countries with continued growth in caseloads or second waves.

Figure 13. Daily cases (left axis) and total cases (right axis) by country, with restrictions

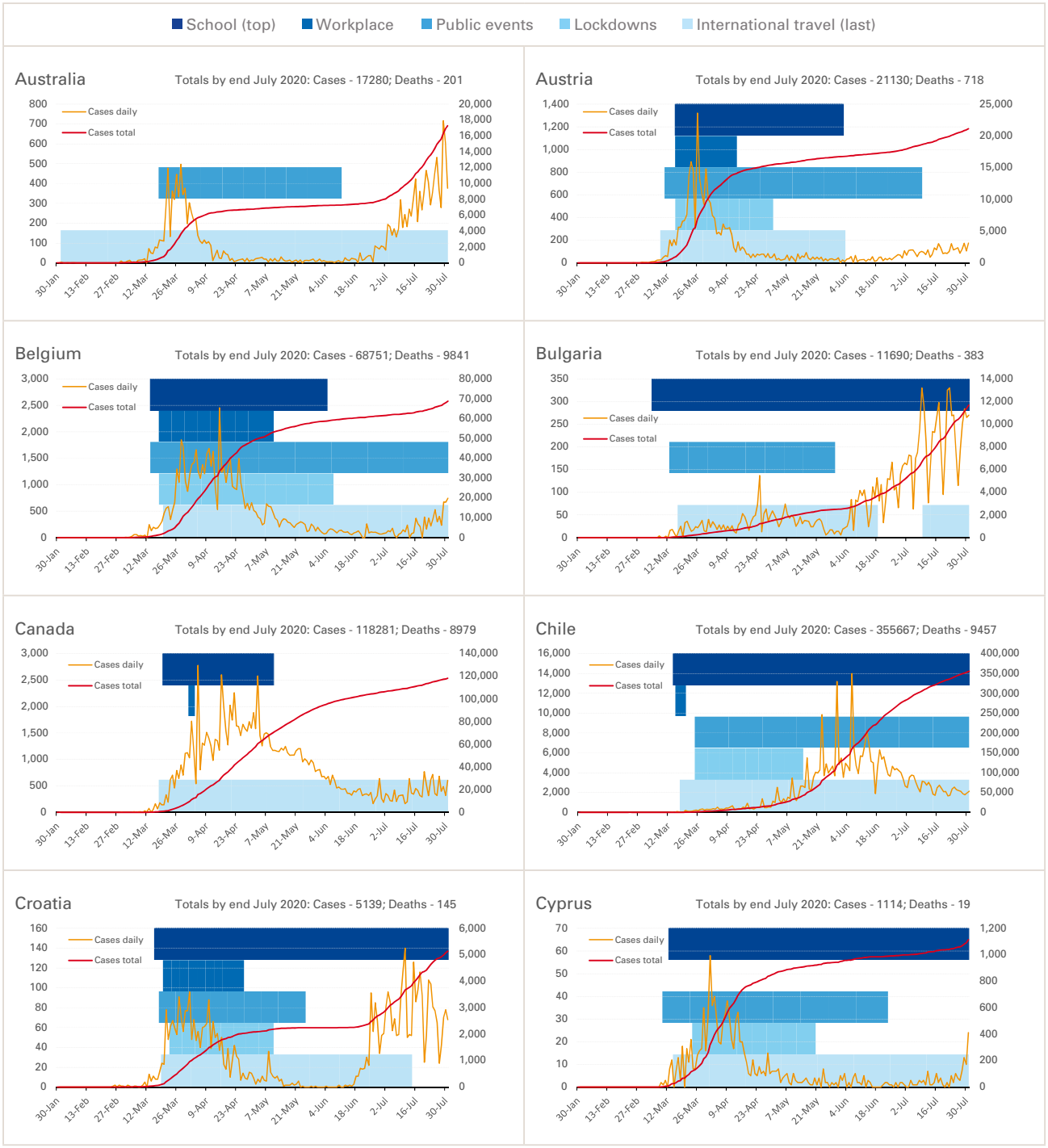


Figure 13. Daily cases (left axis) and total cases (right axis) by country, with restrictions

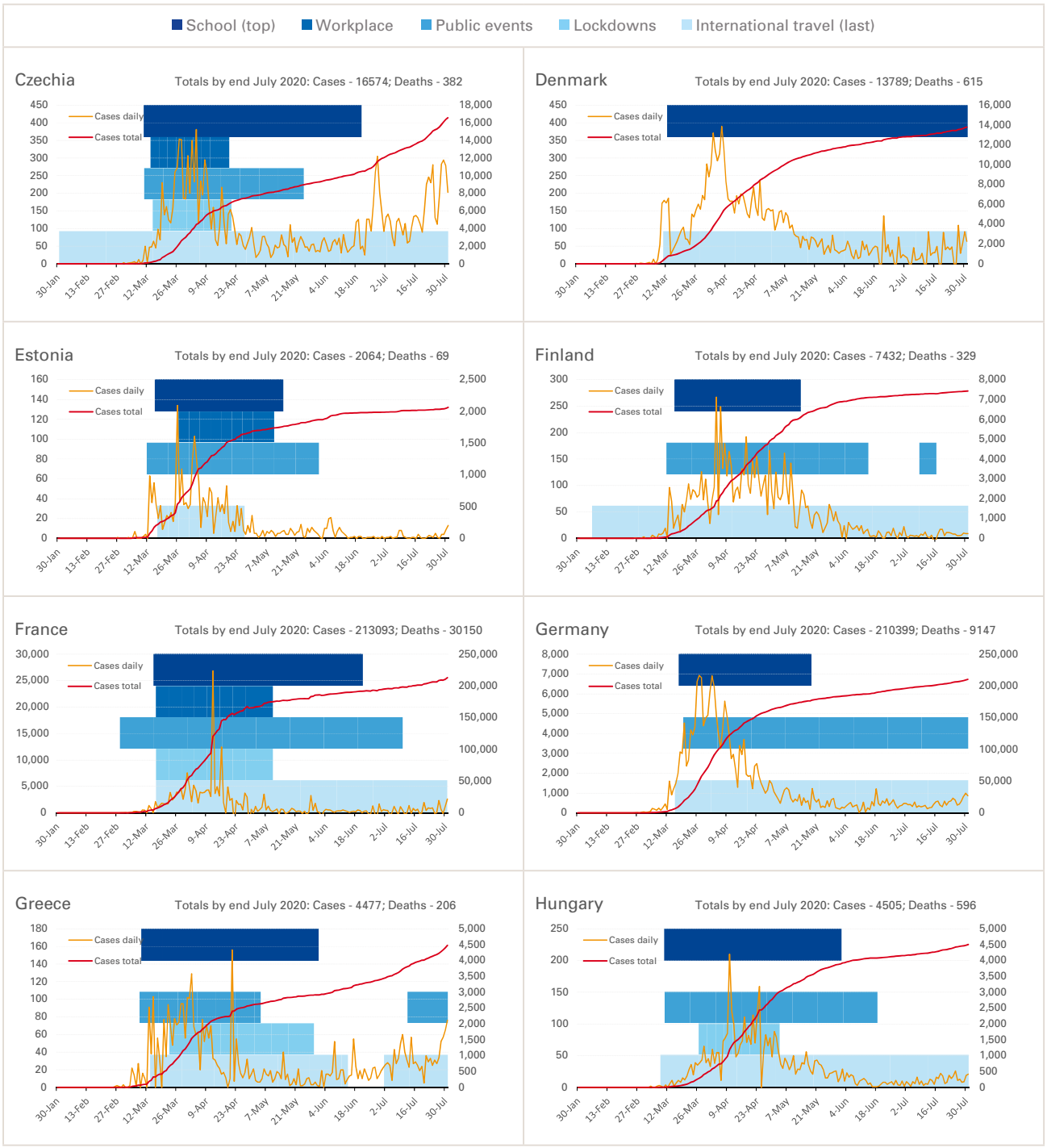


Figure 13. Daily cases (left axis) and total cases (right axis) by country, with restrictions

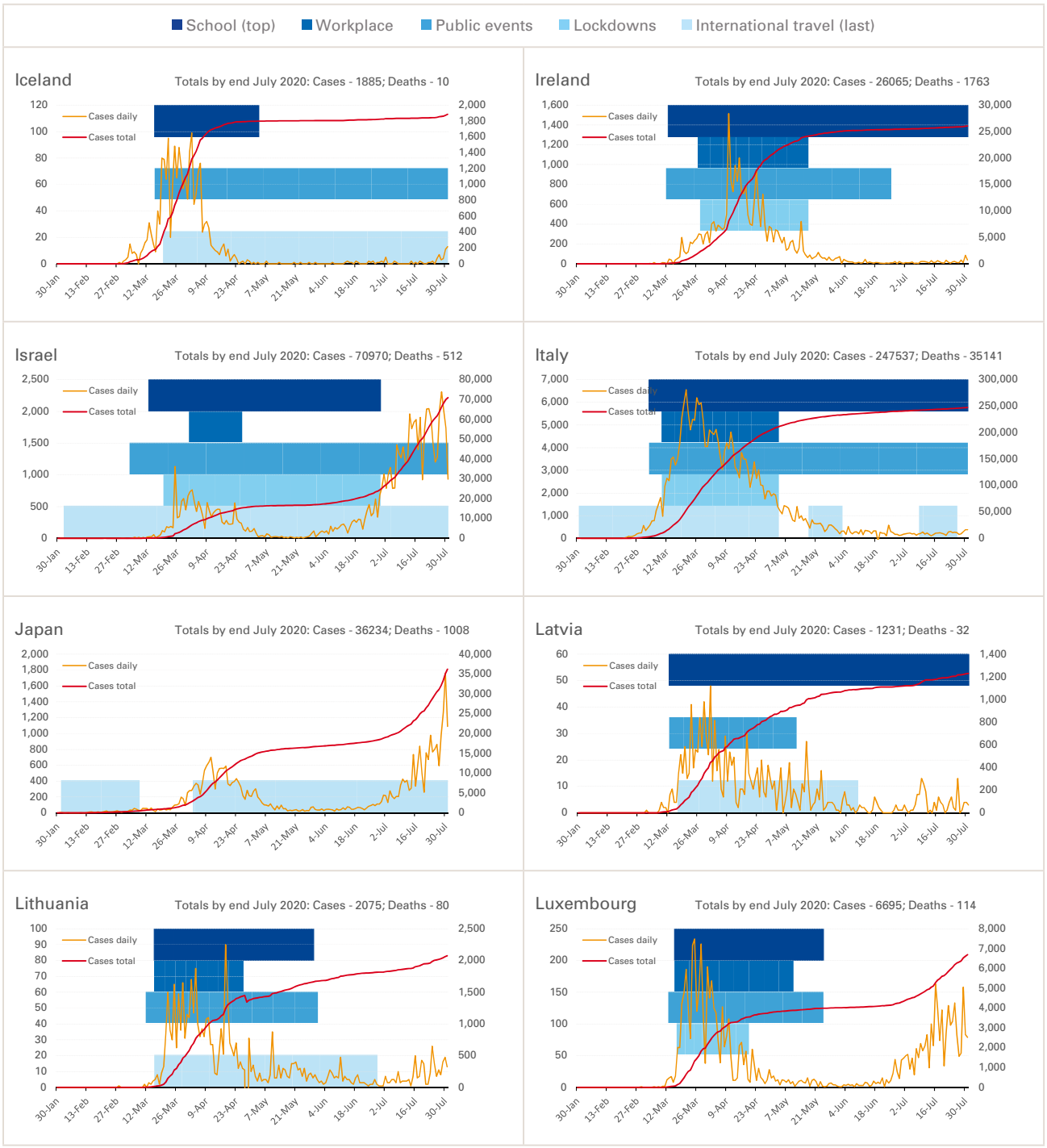


Figure 13. Daily cases (left axis) and total cases (right axis) by country, with restrictions

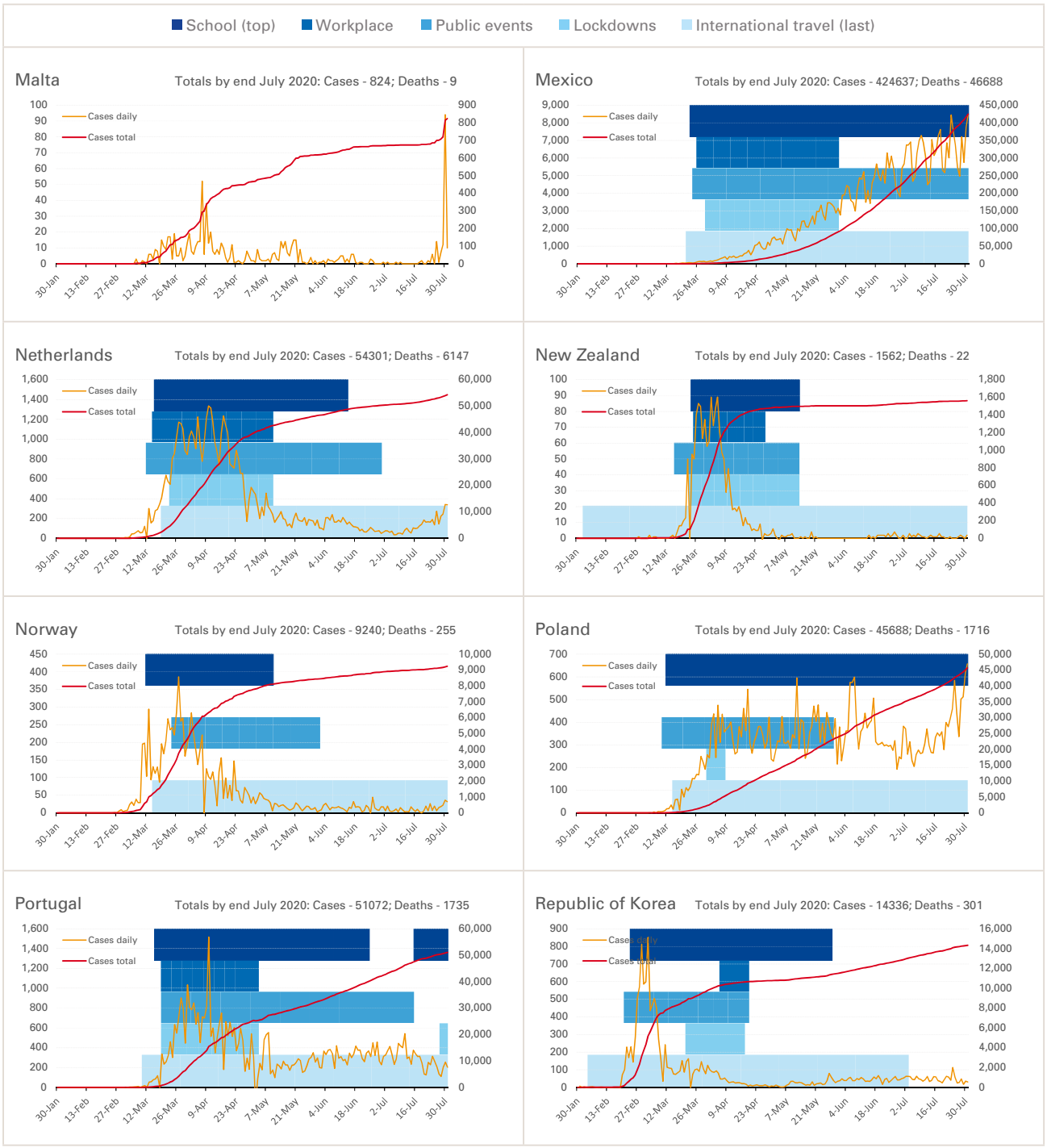


Figure 13. Daily cases (left axis) and total cases (right axis) by country, with restrictions

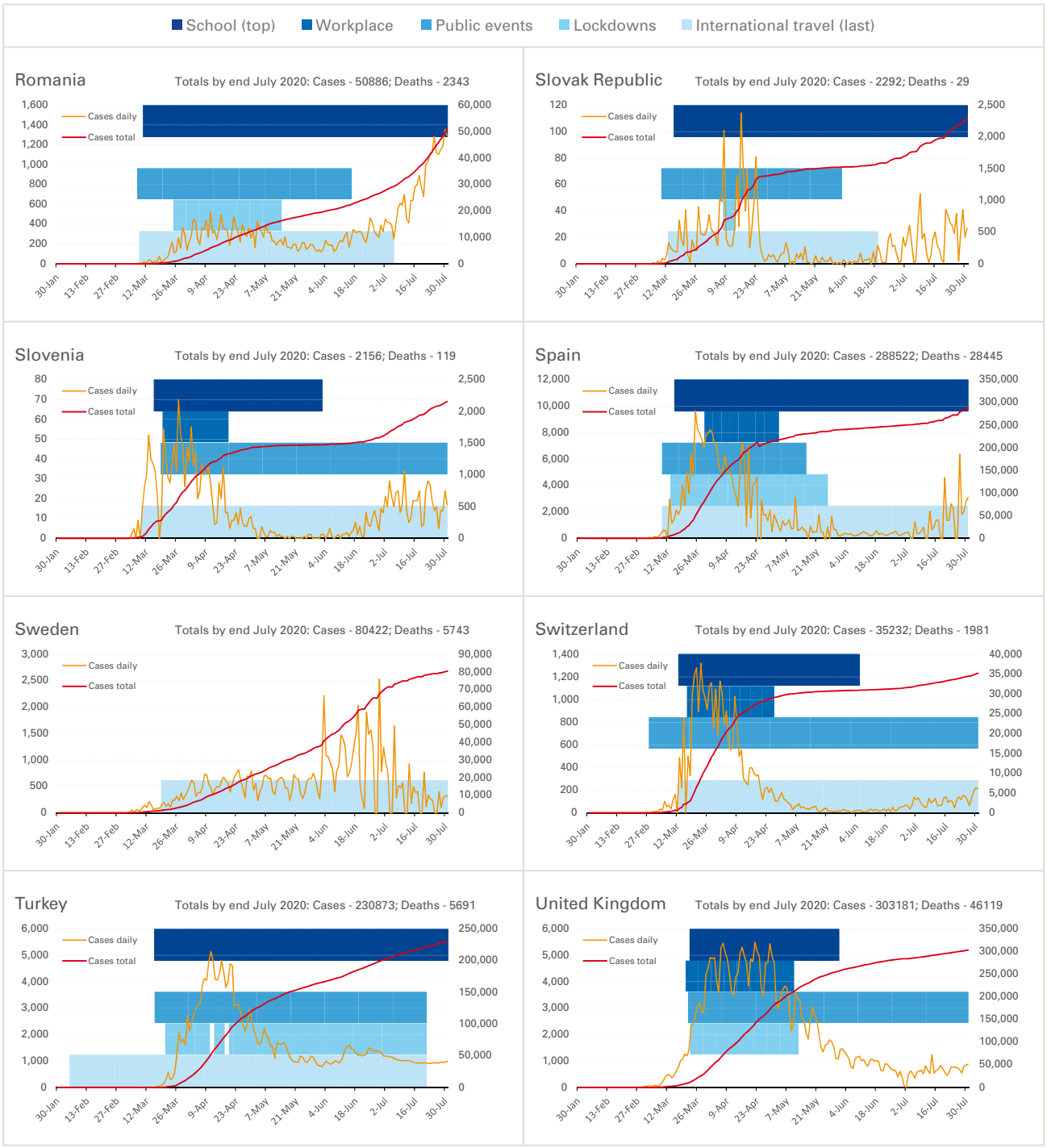
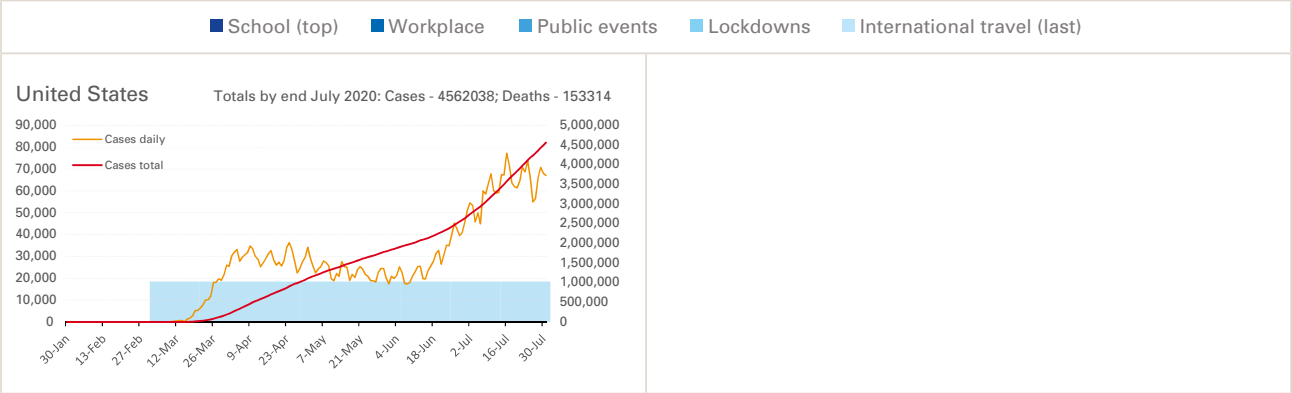


Figure 13. Daily cases (left axis) and total cases (right axis) by country, with restrictions



Note: School closing reported start and end data where national decrees required closing at some levels or categories, e.g. just high schools, or if all schools were closed. Workplace closure reported start and end data of national requirement to close workplaces or work from home in all-but-essential workplaces (e.g. stores, doctor surgeries). Public events show start and end date of a national requirement to cancelling public events. Lockdowns report a start and end date of national requirement to not leave the house with exceptions for daily exercise, grocery shopping, and 'essential' trips, or not leave the house with minimal exceptions (e.g. allowed to leave once a week, etc.) Travel bans cover bans on arrivals from some regions or all regions (total border closure). Data was missing for Malta. See Appendix Table 1.2 for days of closure by decree by country. Source: COVID-19 data: Johns Hopkins University and Medicine (2020); closure dates and codebooks: Blavatnik School of Government (2020).

3.4 Public policy responses to COVID-19 in high-income countries

What has been the initial response of governments to the COVID-19 crisis in high-income countries? The social protection and fiscal stimulus responses implemented in the 41 countries to 31 July 2020 are mapped in Tables 4 and 6 respectively. Each table describes the type of social protection or fiscal stimulus response; the recipients of the intervention; its coverage in terms of the number of recipients (social protection responses only); payment details and costs related to the intervention; whether the intervention was national or universal in scope; and the duration of its implementation.

To read Table 4, note the following:

- Cells shaded blue indicate social protection policies and programmes specific to children or to families raising children.
- The table includes only increases to benefits coverage, increases or extensions to payments, and new payments. The table omits examples of countries that have facilitated the take-up of benefits for existing beneficiaries by relaxing eligibility criteria rather than waiving these criteria (although relaxing the criteria will undoubtedly reduce stress related to take-up for families benefiting from means-tested benefits).[11]
- Leave policies are distinguished by purpose. 'Paid leave' refers to leave policies for purposes including sickness and caring responsibilities, but not specifically for the purpose of childcare.

11 One such example of a country relaxing its eligibility criteria is France, where the government has simplified the administration of certain family benefits by guaranteeing payments through the Family Allowance Funds if the quarterly declaration of resources is not possible (Gentilini et al., 2020). This measure is national and temporary. The United Kingdom relaxed eligibility criteria related to the Universal Credit programme (Gentilini et al., 2020). Italy's suspension of the eligibility rules is included in the table as this effectively extends payments without the need to reapply. Austria's entry in the table omits the temporary waiving of the condition to regularly meet with the caseworker at the Austrian Labor Market Service.

'Paid childcare leave' refers to policies designed to support parents having to take on additional childcare responsibilities during lockdowns. 'Paid sick leave' refers to policies where receipt of the benefit is based on the individual (or another member of the household) being required to self-isolate because of COVID-19, or unable to work due to illness.

- 'Childcare benefit' refers to monies paid to a parent during the child's preschool years, whether under an established child home care allowance or as an additional payment to parents with specific childcare needs due to the COVID-19 crisis. 'Paid childcare leave' refers to leave policies designed to support parents having to take on new childcare responsibilities in the present crisis (with payments made to parents, not for the costs of purchasing childcare). 'Family allowances' are payments made on the basis of caring for dependent children (paid to individuals who do not necessarily have to stop work to provide this care).

- 'Unemployment benefits' are distinguished from 'wage subsidies', the latter of which are benefits paid directly to furloughed workers, not unemployed workers (similar benefits paid through employers are reported in Table 6). 'Unemployment benefits' relates to policies implementing changes in the conditions of existing unemployment benefits for people who are unemployed (not on furlough), including job search conditions. These policies are also separate from 'paid leave' schemes, which assume that workers would otherwise continue to work in the absence of sickness or caring responsibilities.

- 'Utility and/or financial obligation' includes payments towards, or deferments of, utility bills and rent or mortgage payments.

- 'Pensions' covers all pensions, including disability pensions (Mexico), and forward payment of pension savings.

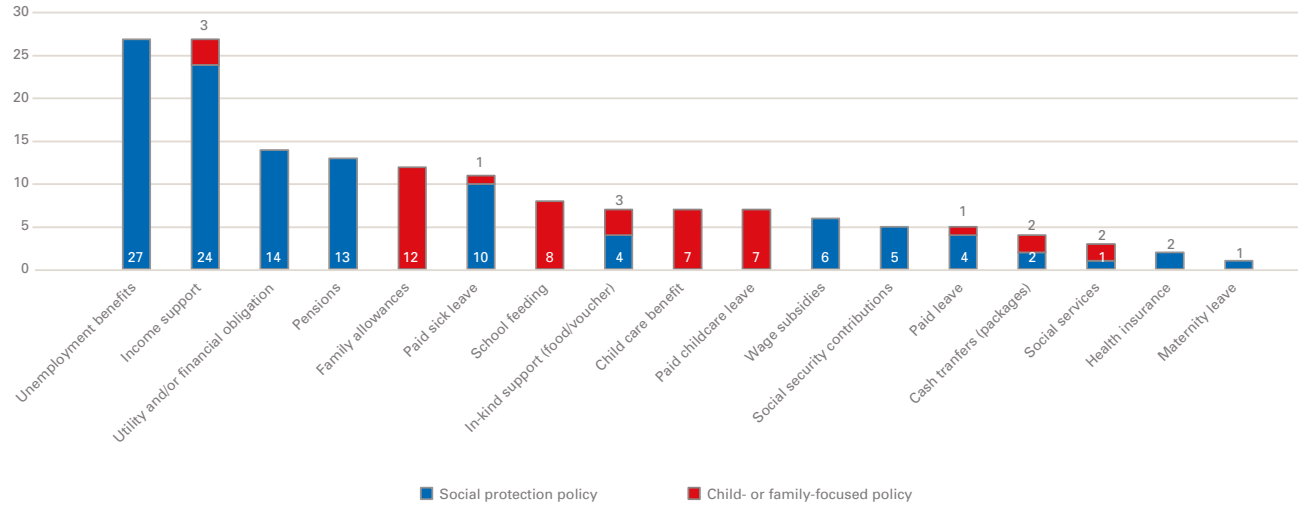
- 'Cash transfers' refers to set payments for individuals on existing benefits. Four cash transfer packages include coverage for families with children or youth (two in Australia and one each in the Republic of Korea and the United States; each of these is included in the family policy averages, numbers and cost calculations in Table 5). On occasion, a cash transfer package may include tax reductions (see Iceland).

- 'Income support' covers general cash transfers based on risks to incomes – not otherwise defined, and based on neither employment nor child-rearing conditions. This support also covers payments to specific sub-groups of the workforce (informal workers, uninsured workers, civil servants, self-employed individuals,[12] freelancers).

- Fiscal stimulus responses (recorded in Table 6) include benefits paid directly to families for children; in two cases (Canada and Iceland), these cannot be clearly distinguished in terms of costs. The one-off family allowance implemented in Iceland is included as a social protection response in Table 4, as is the Canada child benefit, but their costs are accounted for in the overall fiscal stimulus responses for these countries, in Table 6.

12 Self-employed individuals are included in social protection counts when payments to them are coupled with individual payments, and not with payments to small and medium-sized enterprises (SMEs) or larger firms.

Figure 14. Less than half of the countries committed resources explicitly to families with children in response to COVID-19 to 31 July 2020



Note: Bars in red distinguish the child- and family-focused social protection responses to COVID-19. One of the school feeding policies was implemented at the state level in Canada. Source: See Table 4.

Tables 4 and 6 are for background; for this reason, they are not discussed in the main text of this report beyond a few headline facts.

Key facts on social protection responses to COVID-19 to 31 July 2020, taken from Table 4:

- Of 159 policies implemented from February to 31 July in high-income countries, 47 were directly aimed at children or at families caring for children (*see Figure 14*). Six of the interventions were delivered or paid out to recipients of family benefits as part of a larger package (a cash transfers package, social services or a paid leave scheme that, for instance, also covers the elderly).
- By far the most common social protection options implemented overall were unemployment benefits and income support, followed by utility and/or financial obligations (all social assistance policies) and pensions (a form of social insurance) (*see Figure 14*). Other social insurance policies, including health insurance and social security contributions, were among the least popular, despite the evidence of their mitigating effect on health and employment challenges. Social services were also rarely used.
- Some 102 policies were social assistance policies, 55 were social insurance policies (requiring formal employment and other relevant conditions) and 2 were labour market interventions.
- Of the 47 family policies, only 15 did not make payment conditional upon previous employment or previous receipt of benefits.
- Of the 159 social protection interventions, 125 were not expansions of existing policies; the remaining 34 were such expansions.
- In terms of duration of implementation, of the 114 policies that provided information on time frames, 89 were temporary and 24 were one-off interventions, 1 was permanent. This translates to an average duration of 5.8 months per social protection policy. Where such data exist for family policies, the average duration was 4.9 months per family policy.
- The vast majority of policies were national in terms of coverage: 131 out of 139 policies with data. Eight countries implemented state-level interventions.

Table 4. Social protection responses to COVID-19 in high-income countries

Country	Type of response, social protection category*, expansion of existing policy (Yes/No)	Who is eligible?	Coverage (no. of people)	Payment details	Total cost	National (N) or local (L) policy	One-off (O), temporary (T) or permanent (P) intervention	Duration (no. of months)
Australia	Income support (SA) (No)	Social security recipients, veterans and recipients of other income support, and eligible concession card holders		Two payments of Aus$750 each				
	Cash transfers (SA) (No)	All those receiving the basic government pension, and those receiving youth allowances, family tax benefits, disability support or carer payments	6.6 million	Aus$455	Aus$2.9 billion	N	O	
	Unemployment benefits (SA) (No)	Recipients of the JobSeeker Payment, Parenting Payment, youth allowances and other payment types		Aus$550	Aus$8.5 billion	N	T	6
	Income support (SA) (No)	Informal/casual workers and those on low incomes		Aus$250		L (Tasmania)	O	
	Childcare benefit (SA) (No)	Families with children under 18 years of age	1 million	Free childcare				
	Paid sick leave (SI) (No)	Self-employed individuals		Special unemployment benefits paid directly by the government				
	Pensions (SI) (No)	Individuals affected by COVID-19		Access to up to $10,000 of their superannuation in 2019–2020 and a further $10,000 in 2020–2021		N	T	
Austria	Income support (SA) (No)	One-person companies and freelancers				N	T	
	Childcare benefit (SA) (No)	Women, from pregnancy until the child reaches 5 years of age		Temporary waiving of conditions to receive the childcare benefit		N	T	
	Utility and/or financial obligation (SI) (No)	Households and individuals		Deferment of rental payments to the end of 2020				
	Paid childcare leave (SI) (No)	Employees with caring responsibilities for one or more children under 14 years of age		Three weeks of care leave		N	T	
Belgium	Utility and/or financial obligation (SA) (No)	All citizens		Seasonal suspension of evictions from dwellings		N	T	
	Unemployment benefits (SI) (No)	All citizens		65–70% of wage + €5.63 per day		N	T	4
	Social security contributions (SI) (No)	Citizens affected by COVID-19 consequences		One-year deferral of payment of social security contributions		N	T	12
	Health insurance support (SI) (No)	Self-employed individuals		Incapacity for work benefit paid by the health insurance scheme		N	T	
Bulgaria	In-kind support (food/voucher) (SA) (Yes)	Elderly people, people with disabilities, poor people	50,000	Individual food packages and hot meals		N	O	
	Unemployment benefits (SI) (Yes)	Employees from sectors hit by the COVID-19 crisis		60% of previous income		N	T	1
	Pensions (SI) (Yes)	Pensioners (including disability pensioners)	258,000 (including 75,000 disability pensioners)	Pensions recalculated/renewed certificates		N	T	
	Wage subsidies (LM) (No)	Workers		60% of wage	1 billion NCU (0.012% of GDP)	N	T	

Country	Type of response, social protection category*, expansion of existing policy (Yes/No)	Who is eligible?	Coverage (no. of people)	Payment details	Total cost	National (N) or local (L) policy	One-off (O), temporary (T) or permanent (P) intervention	Duration (no. of months)
Canada	Income support (SA) (No)	Those who do not qualify for employment insurance		$2,000 per month		N	T	4
	Unemployment benefits (SA) (No)	Unemployed individuals		C$1,000		L (British Columbia)	T	
	School feeding (SA) (No)	At-risk students		School meals		L (British Columbia)	T	
	Social services (SA) (No)	Indigenous communities (First Nations, Inuit and Métis communities)		Support for elderly and vulnerable community members; measures to address food insecurity; educational and other support for children; mental health assistance; and emergency response services and preparedness measures to prevent the spread of COVID-19	C$685 million	L/N		
	Family allowances (SA) (No)	Canada child benefit		One-off payment to beneficiaries increased to C$300 per child for the year 2019–2020	C$2 billion	N	O	
	Income support (family tax credit) (SA) (Yes)	Low- and modest-income families receiving the Goods and Services Tax (GST) Credit payment		One-off payment to beneficiaries	C$5.5 billion	N	O	
	Paid sick leave (SI) (No)	Eligible workers with limited or no paid leave benefits		55% of earnings up to $573 per week	$5 million	N	T	
Chile	Family allowances (SA) (No)	Families belonging to Chile's Seguridades y Oportunidades programme or receiving the Family Subsidy			17 million NCU	N		
	Income support (SA) (No)	Informal workers	2 million	$15	134.6 million NCU	N	O	
	In-kind support (food/voucher) (SA) (No)	Vulnerable families	2.4 million	Baskets of non-perishable foodstuffs and hygiene products delivered directly to the homes of the beneficiaries	$100 million	N		
	School feeding (SA) (No)	Children and adolescents	1.6 million	Food packages covering 10 business days		N		
	Utility and/or financial obligation (SA) (No)	All taxpayers		Interest and fines for taxes and late declarations waived		N		
	Paid leave (SI) (No)	All workers			$2 billion	N	T	
Denmark	Paid leave (SA) (No)	Workers with children aged 0–13 years (previous threshold was up to 10 years of age) or people taking care of an individual with disabilities (regardless of the age of the individual)				N		
	Paid sick leave (SI) (No)	All workers		Right to receive and be reimbursed for sickness benefits from the first day of absence in the case of COVID-19 infection or due to quarantine imposed by health authorities		N	T	3
Estonia	Wage subsidies (SA) (No)	Workers without work or who have had a wage cut		70% of average wage up to €1,000	€250 million	N	T	
	Unemployment benefits (LM) (No)	Unemployed individuals		Online job search counselling and intermediation		N	T	
Finland	Cash transfers (SA) (Yes)			Expanded parental allowance, social assistance and unemployment insurance	€3 billion			
	Unemployment benefits (SI) (Yes)	Laid-off workers/self-employed individuals		Right to claim income-linked benefits, without shutting down business (for self-employed)		N	T	
	Paid sick leave (SI) (No)	Employees, childcare providers, people placed in quarantine		Sickness allowance		N	T	
	Pensions (SI) (No)			Lower contributions	€1 billion	N	T	

Country	Type of response, social protection category*, expansion of existing policy (Yes/No)	Who is eligible?	Coverage (no. of people)	Payment details	Total cost	National (N) or local (L) policy	One-off (O), temporary (T) or permanent (P) intervention	Duration (no. of months)
France	Income support (SA) (No)	Households receiving the Active Solidarity Income or Specific Solidarity Allowance		€150 per household + €100 per child		N	T	
	School feeding (SA) (No)	Most vulnerable children enrolled in middle schools		Cash transfers or food stamps to mitigate the unavailability of school meals (due to closures)		L (Brest, Marseille and Paris municipalities; county of Haute-Gavonne)	T	
	Income support (SA) (No)	All civil servants		€1,000		N	T	
	Unemployment benefits (SI) (No)	Employees who stop working		84% of net wage compensated (100% if minimum wage earner)				
	Paid sick leave (SI) (No)	People in isolation and other household members		Up to 20 days without waiting		N	T	
Germany	Family allowances (SA) (No)	Parents		One-off 'child bonus' of €300 for families receiving the child grant (Kindergeld)				
	Pensions (SI) (No)			Pensions increase				
	Family allowances (SA) (No)	Parents who have lost income		€185 per child per month + simplified process for child grant		N	T	
	Paid sick leave (SI) (No)	Employees		Same amount of salary for first six weeks		N	T	
Greece	Wage subsidies (SA) (No)	Employees	790,000	€800		N	O	
	Unemployment benefits (SA) (No)	Long-term unemployed individuals	160,000	€400			O	
	Utility and/or financial obligation (SA) (No)	Tenants		60% of their monthly rent		N	T	2
	Wage subsidies (SA) (No)	Employees		€534		N	O	
	Family allowances (SA) (No)	Households that have minor dependants and which receive Social Solidarity Income (guaranteed minimum income)		€100 for the first child + €50 for all other children up to a maximum €300 for each beneficiary (single-parent or co-parent families)		N	O	
	Income support (SA) (No)	Specific professionals		€600		N	O	
	Unemployment benefits (SI) (No)			Two-month extension		N	T	
	Paid childcare leave (SI) (No)	(i) Public sector workers with children; (ii) businesses; (iii) private sector workers with children		(i) Special leave or part-time work without deduction from pay; (ii) temporary rotational work scheme introduced; (iii) eligibility for special-purpose paid leave		N		
Hungary	Utility and/or financial obligation (SA) (No)	Private citizens and companies		Loan repayment moratorium		N	T	
	Pensions (SI) (No)			An extra week of pension paid out each February		N		36
	Maternity leave (SI) (No)			Expiring benefits extended		N	T	
	Social security contributions (SI) (No)	Employees		Reduced until 30 June 2020		N	T	
Iceland	Cash transfers (incl. tax breaks) (SA) (Yes)	All taxpayers / benefit recipients		Tax reduction/increased benefits		N	T	
	Family allowances (SI) (No)	Families with children under 18 years of age		$140 or $285 per child based on income		N	O	
	Pensions (SI) (No)	Pensioners		Individuals may withdraw a monthly sum from their voluntary pension savings to a maximum of 800,000 NCU ($5,680)		N	T	15
	Unemployment benefits (SI) (No)	Employees		Right to claim up to 75% of unemployment benefits	$1.6 billion	N	T	

Country	Type of response, social protection category*, expansion of existing policy (Yes/No)	Who is eligible?	Coverage (no. of people)	Payment details	Total cost	National (N) or local (L) policy	One-off (O), temporary (T) or permanent (P) intervention	Duration (no. of months)
Ireland	Unemployment benefits (SA) (No)	Unemployed individuals		€350 per week for six weeks		N	O	6
	School feeding (SA) (No)	Students	250,000	Home packages with fresh foodstuffs		N	T	
	Paid sick leave (SI) (No)	Employees/self-employed individuals		€305 per week and subsequently €350 per week				
Israel	Family allowances (SA) (No)	Families with children		500 NCU		N	O	
	Unemployment benefits (SA) (No)	Employees/self-employed individuals				N	O	
	Family allowances (SA) (No)	Families with children				N	O	
	Paid leave (SI) (No)	Public sector workers		Mandatory vacation		N	T	
Italy	In-kind support (food/voucher) (SA) (No)	Municipalities	7,904	Food vouchers and/or basic food necessities based on population and income criteria	€400 million	N	O	
	Family allowances (SA) (No)	Families and workers		Additional income support for families and some workers	€14.5 billion	N		
	Childcare benefit (SA) (No)	Families and workers		€1,200 (€2,000 for health workers) for care provided by a babysitter/grandparent(s)	(A share of) €13.5 billion	N	O	
	Income support (SA) (No)	Vulnerable households not protected by any other social assistance measure		From €400 to €800 per month, depending on the equivalence scale	€1 billion	N	O	2
	Income support (SA) (Yes)	Beneficiaries of the basic income (Reddito di cittadinanza; RDC)		All conditions related to the basic income programme (RDC) are suspended		N	O	
	Wage subsidies (SA) (No)	Workers (if income <€40,000 per year)		€100		N	O	1
	Income support (SA) (No)	Self-employed individuals/professionals		€600 (March/April), then €1,000 (May)	€1.8 billion	N	O	3
	Paid childcare leave (SI) (No)	Parents of children under 12 years of age		50% of wage for up to 15 days		N	T	
Japan	Income support (SA) (No)				$190 billion	N	O	
	School feeding (SA) (No)	Students	170,000	Free lunches in elementary and junior high schools	$72.4 million	L (Osaka)	T	12
	Income support (SA) (No)	All citizens	126 million	$930	$106.95 billion (2% of GDP)	N	T	3.5
Republic of Korea	Childcare benefit (SA) (No)	Employees who are parents		50,000 NCU per day	24,000 NCU	N	T	
	Income support (SA) (No)	Low-income households			200 NCU	N	T	
	Unemployment benefits (SA) (Yes)	Recipients of the Jobseekers Allowance		500,000 NCU		N	T	3
	Income support (SA) (No)	Households in bottom 70% income bracket	14 million (households)	One-person household: 400,000 NCU; two-person household: 600,000 NCU; three-person household: 800,000 NCU; four-person household: 1 million NCU	9,100 NCU	N	T	
	In-kind support (food/voucher) (SA) (No)	Households receiving child and social assistance		Four months' worth of purchase vouchers		N	T	4
	Utility and/or financial obligation (SA) (No)	Electricity bill payment for low-income households	1,570,000		1,300 billion NCU	N	T	3
	Paid childcare leave (SI) (No)	Employees who are parents		Five days of leave, along with childcare support		N		
	Health insurance support (SI) (No)	Workers		Industrial accident assurance for workers who test positive		N	T	
Latvia	Paid sick leave (SI) (Yes)							
	Unemployment benefits (SI) (Yes)	Allowance for idle time		Employees receiving the allowance will also receive a supplement of €50 ($55) for each dependent child under 24 years of age				

Country	Type of response, social protection category*, expansion of existing policy (Yes/No)	Who is eligible?	Coverage (no. of people)	Payment details	Total cost	National (N) or local (L) policy	One-off (O), temporary (T) or permanent (P) intervention	Duration (no. of months)
Lithuania	Utility and/or financial obligation (SA) (No)	Individuals who have lost their jobs		Mortgage payment (excluding interest) deferred for three to six months		N	T	6
	Utility and/or financial obligation (SA) (No)	Not specified		Deferment or payment by instalment of utility bills		N	T	
	Income support (SA) (No)	Subsidies for individuals returning from downtime or unemployment			€380 million			
	Unemployment benefits (SI) (No)	Self-employed individuals with social security contributions		€257 per month + €42 (from 7 May 2020)		N	T	3
	Pensions (SA) (No)	Pensioners			€182 million	N		
	Unemployment benefits (SA) (No)	Unemployed individuals		€200	€265 million	N		
	Family allowances (SA) (No)	Children of families which have lost income		€100 per child		N		6
Luxembourg	Paid leave (SI) (No)	Workers		Family leave for workers and self-employed individuals	€226 million (0.6% of GDP)	N	T	
	Paid leave (SI) (No)	Workers		Extension of leave for family reasons to take care of adults with disabilities and elderly people, and the cost-of-living allowance increased for low-income households	€150 million			
Malta	Childcare benefit (SA) (No)	Parents		€800 per month (€500 per month for part-time workers)		N		
	Pensions (SA) (No)	People with disabilities		€800 per month (€500 per month for part-time workers) for a specified period		N		
	Utility and/or financial obligation (SA) (No)	Individuals who have lost their jobs		Increased rent subsidy		N	T	
Mexico	Pensions (SA) (Yes)	Disability pensioners		Payment of disability pensions four months in advance		N	T	4
	Utility and/or financial obligation (SA) (Yes)	Public sector workers and other formal workers	440,000	Low-rate personal loans/housing loans	35 billion/177 billion NCU	N	T	9
	Utility and/or financial obligation (SA) (Yes)	Public sector workers	670,000	Personal loans ranging from 20,000 to 56,000 NCU (each)	35 million NCU	N	T	
	Cash transfers (incl. cash-plus programmes) (SA) (Yes)	Farmers in rural areas	200,000	Expansion of the Sembrando Vida programme, which provides permanent employment in rural areas		N		
	Pensions (SI) (Yes)	Senior citizens		Payment of pensions four months in advance		N	T	4
Netherlands	Income support (SA) (No)	Self-employed individuals with financial problems		Support can be applied for in the form of an additional allowance for living expenses and/or operating capital, and is paid directly by the municipalities		L	T	
New Zealand	Income support (SA) (No)	Low-income households		NZ$25 per week	NZ$2.8 billion (0.8% of GDP)	N	T	
	Income support (SA) (No)	Income relief payments to support individuals who have lost their jobs			NZ$600 million (0.2% of GDP)			
	Paid sick leave (SI) (No)	Employees who need to self-isolate		Paid sick leave	NZ$126 million	N	T	
Norway	Paid childcare leave (SI) (No)	Workers		20 days of childcare leave per child (doubled)		N		
	Wage subsidies (SI) (Yes)	Employees		100% retention of salary up to $56,700		N	T	
	Unemployment benefits (SI) (Yes)	Laid-off employees		80% of income replaced up to 300,000NCU and 62.4% up to 600,000 NCU		N	T	

Country	Type of response, social protection category*, expansion of existing policy (Yes/No)	Who is eligible?	Coverage (no. of people)	Payment details	Total cost	National (N) or local (L) policy	One-off (O), temporary (T) or permanent (P) intervention	Duration (no. of months)
Poland	Childcare benefit (SA) (Yes)	Parents with children under 8 years of age		Parents have an additional 14 days of childcare allowance		N	T	1
	Unemployment benefits (SA) (No)	Workers who lost their jobs after 15 March 2020		Not specified		N		
	Unemployment benefits (SI) (Yes)			Unemployment benefit increased by 39% for the first 90 days of unemployment		N		
Portugal	Utility and/or financial obligation (SA) (Yes)	All citizens		Suspension of termination of essential services due to non-payment (water, electricity, gas, telecoms)		N		
	Paid sick leave (SA) (Yes)	Workers		100% remuneration for quarantine		N		
	Unemployment benefits (SI) (No)	Workers		Extension following lockdowns		N		
	Family allowances (SA) (No)	Parents with children under 12 years of age		Financial support of €438 per month for self-employed individuals who are parents		N	T	6
Romania	Income support (SA) (Yes)	Self-employed and low-income households		5,163 NCU ($1,180) per month		N	T	
	Unemployment benefits (SI) (No)	75% of the gross average salary at the national level				N	T	
	Paid childcare leave (SI) (No)	Parents with children under 12 years of age				N	T	
Slovakia	Unemployment benefits (SA) (No)	Unemployed individuals		€210 per month				
Slovenia	Income support (SA) (No)	Self-employed individuals unable to work		70% of the net minimum wage		N	T	2
	Unemployment benefits (SA) (No)	Workers		Workers who have lost their job during the COVID-19 crisis are automatically entitled to unemployment benefits		N	T	
	Pensions (SI) (No)	Low-pension recipients		One-off pension supplement of €130 (or €300 for low and minimum pensions)		N	T	1
Spain	Social services (SA) (No)	Older persons and dependants		Extraordinary contingent fund to support social services	€333 million	N	T	
	Income support (SA) (No)	Self-employed workers who are unable to work			€3.8 billion	N		
	Income support (SA) (No)	Targeted individuals	5 million	Minimum Vital Income (means tested)	€3 billion	N		
	Childcare benefit (SA) (No)	Parents		Family benefit (no details available)		N		
	School feeding (SA) (No)	Vulnerable children		Right to basic food for vulnerable children	€27.2 million	N	T	
	Social security contributions (SA) (No)	Workers		50% reduction in contributions; sick pay for all		N	T	
	Unemployment benefits (SI) (Yes)	Expansion of the ERTE furlough scheme to cover subsidies for individuals laid off due to COVID-19	100,000	€430 per month		N	T	3
Sweden	Social security contributions (SI) (No)	Employees		Employees earning less than $2,500 per month have social security contributions waived		N	T	4
	Social services (SA) (No)	Supplementary housing allowances to families with children				N		
Switzerland	Unemployment benefits (SI) (Yes)	Partial unemployment cover		Partial unemployment cover, as part of economy-wide support (*see Table 6*)		N	T	6

Country	Type of response, social protection category*, expansion of existing policy (Yes/No)	Who is eligible?	Coverage (no. of people)	Payment details	Total cost	National (N) or local (L) policy	One-off (O), temporary (T) or permanent (P) intervention	Duration (no. of months)
Turkey	Family allowances (SA) (Yes)	Low-income families			$306 million	N	T	
	Unemployment benefits (SA) (No)	Workers affected by COVID-19		$271		N	T	3
	Utility and/or financial obligation (SA) (No)	Individuals aged 65 years and older with chronic conditions				N	T	
	In-kind support (food/voucher) (SA) (No)	Personal protective equipment, housing and transportation for seasonal agricultural workers				N	T	
	Pensions (SI) (Yes)	Minimum pension increased		$230		N		
United Kingdom	Income support (SA) (Yes)	Vulnerable households	4 million	State-paid benefit increased by £1,000 per year		N	T	12
	Utility and/or financial obligation (SA) (No)	Households		Temporary suspension of mortgage payments and fuel duty (for one year), and suspension of new evictions from social or private rented accommodation		N	T	
	School feeding (SA) (Yes)	Vulnerable children	1.3 million	£15 food voucher per week		N	P	
	Paid sick leave (SI) (Yes)	Individuals who are self-isolating and low-income households		£75.10 per week		N	T	
United States	Income support (SA) (No)	Individuals with <$75,000 and households with <$112,500		Adults: $1,200 each; children: $500 each	$290 billion	N	T	
	Paid childcare leave (SI) (No)	Parents of children whose schools are closed		$511 per day for 2 weeks, then $200 per day for 12 weeks		N	T	3
	Pensions (SI) (Yes)	Early access to pension benefits		Emergency withdrawals of up to $100,000 from pension funds		N	T	
	Social security contributions (SI) (No)	Plan sponsors		One-year waiver of social security contributions (starting in 2020)		N	T	12
	Income support (tax rebates) (SA) (Yes)	Individuals		One-off tax rebates (Coronavirus Aid, Relief, and Economic Security [CARES] Act)				
	In-kind support (food/voucher) (SA) (No)	Most vulnerable individuals		Food safety net (CARES Act)	$25 billion			
	In-kind support (food/voucher) (SA) (No)	Households enrolled in childcare and food assistance programmes	6,250 (families)	$800-worth of food vouchers		L (Seattle)	T	2
	School feeding (SA) (Yes)			Expansion of food and nutrition programmes for school meals and child nutrition programme (under the Families First Coronavirus Response [FFCR] Act)				
	Unemployment benefits (SA) (Yes)			Expansion of existing unemployment benefits (CARES Act)	$250 billion			

Note: Cells shaded grey indicate policies for children or for families raising children. *Social protection categories: SA: social assistance; SI: social insurance; LM: labour market. Unless otherwise stated, all amounts shown are in US dollars. NCU = National Currency Unit. Support for Canada's indigenous communities includes payments for community members living on and off reserves. The cost related to Luxembourg's extension of leave for family reasons is estimated and has been deducted from the additional fiscal package reported in Table 6. For additional information on paid sick leave for the self-employed in Australia https://read.oecd-ilibrary.org/view/?ref=134_134797-9iq8w1fnju&title=Paid-sick-leave-to-protect-income-health-and-jobs-through-the-COVID-19-crisis. In Canada, for information related to the Indigenous Community Support Fund https://www.coo-covid19.com/post/indigenous-community-support-fund. For other Canadian benefits, https://www.canada.ca/en/department-finance/economic-response-plan/completed-measures-respond-covid-19.html, and https://www.canada.ca/en/department-finance/economic-response-plan/fiscal-summary.html. Source: Gentilini et al., (2020); International Monetary Fund (2020).

The global costs of the interventions – both fiscal stimulus and social protection responses – are an important indicator of the relative commitment by individual countries to different approaches to addressing the COVID-19 crisis. Costs also give an indication of the fiscal space available for making recommendations for policy reform. Table 5 reports, for the group of high-income countries, the total numbers of fiscal stimulus and social protection interventions (and child- and family-focused social protection policies specifically), as well as the reported costs and estimated costs of these public responses to COVID-19 from February to 31 July 2020.

Table 5. Intervention costs (in billions of US dollars PPP) and estimated total spend on fiscal stimulus and social protection

Type of intervention	No. of responses	No. of costed responses	Total reported costs	Median cost per intervention (based on reported costs)	Estimated cost of all interventions	Proportion (%) of total sum
Fiscal stimulus	182	145	9,686.6	8.8	10,012.3	92,6%
Social protection – all	159	45	688.3	1.0	804.2	7,4%
(Child- and family-specific)	47	15	186.7	2.0	250.3	2,3%
(Social protection – other)	112	31	501.6	0.9		
Total	**341**	**190**	**10,374.9**	…	**10,816.5**	…

Note: The difference between fiscal stimulus and social protection in this paper is based simply on whether the money arrives first in the hands of the business owner or in the hands of the citizen. It should be noted, on occasion, fiscal packages include payments to both firms and households (not necessarily via payments directed through firms). These are included in Table 6 as fiscal stimulus interventions and are generally more costly than social protection interventions. Thirty fiscal packages included in Table 6 refer to households or 'families' in broad terms. Although these will affect the overall share of social protection as part of the stimulus response, no cases remain that are child-specific, and as such will not affect the summary statistics that indicate the share of overall stimulus used to support children or families with children. In the calculation of child and family specific spending, one third of the CARES Act Tax Rebate has been included to account for child specific payments, the remainder is included in general social protection. This is to account for the lower rate of payment for children, and is based on a two adult two child household. Source: Author's calculations (see Tables 4 and 6).

Of 341 COVID-19 interventions reported in international databases, more than half (182) have focused on fiscal stimulus interventions or packages to provide financial support directly to, or through, businesses. The remaining 159 interventions have delivered social protection support directly to individuals (*see Table 5 note*).

The reported costs related to the social protection interventions were hard to come by – just under 30 per cent of the interventions (45 out of 159) have been costed (*see Table 4*). In contrast, about 80 per cent of the fiscal stimulus responses have been costed (145 out of 182). Considering those packages that have been costed, the median cost of a fiscal package amounted to $8.8 billion PPP. This is more than 8 times the average of the median cost of a social protection intervention, and more than 4 times the median cost of a child- or family-focused intervention. Extrapolating the costs on the basis of median values (averages were highly skewed by costs in larger countries), to estimate the total cost of all interventions, it can be seen that high-income countries have spent in excess of $10.8 trillion PPP in response to COVID-19 in the first full five months of the crisis. This is equivalent to approximately 8 per cent of global GDP. Expenditure thus far has been broadly in favour of fiscal

stimulus – about 93 per cent of the total sum has gone towards fiscal packages paid to or through businesses or infrastructure. Just over 7 per cent of the total has been paid directly to individuals and families, with a minimal 2.3 per cent of the total explicitly directed to the support of children and families with children.

Notwithstanding the need to support businesses at times of lockdown and economic crisis, it is striking that the overwhelming majority of the spending on responses has been directed through businesses, including furlough schemes and other interventions designed to support working people. Table 6 introduces information on the costs, and coverage and focus of fiscal stimulus policies applied in high-income countries in response to COVID-19 to 31 July 2020:

- Of the 182 fiscal stimulus interventions implemented, fiscal packages have been the most common choice, with 33 applied in total, including 11 'second-round' fiscal packages. In 18 cases, tax and social security payment deferrals, waiver or refunds were put in place for businesses, with the same number of direct business support packages implemented. In total, 15 wage subsidy schemes – including furlough schemes – were applied, plus 13 schemes relating to business loans, loan guarantees or loan interest waivers.
- In 99 cases, firms were the main recipients of the intervention. Of this number, 15 interventions covered self-employed people and small and medium-sized enterprises (SMEs) specifically.
- In 157 cases with data, the fiscal stimulus interventions were not sector-specific (and just 7 others were earmarked for the service sector). Almost all of the 157 non-sector-specific interventions had a national focus (only two, both in Germany, were sub-national plans).
- Only 19 of the fiscal stimulus interventions reported a timetable for implementation. Most interventions had a duration of 3 months; the average duration was 11.9 months per intervention.

Among the 33 fiscal packages were a number of infrastructure investments, including six health system investments going directly towards hospital or testing plans. Welfare investments – including subsidies for income support, pension contributions, sick leave and unemployment support – were also part of the fiscal packages.

- Health system investments made directly in hospitals, or in supply chains for personal protective equipment (PPE) are viewed differently from other fiscal stimulus, as monies are allocated to the public sector before the private sector. Any such investments that have been reported are excluded from the lists (*see Table 6 note for exclusions by country*). Other investments with higher rates of direct private investment are retained.
- In total, household-facing interventions were embedded in the fiscal packages of seven countries: Australia, Finland, Italy, Japan, Malta, Spain and the Republic of Korea. These have been retained in Table 6 (as the data do not allow for clear disaggregation of coverage or costs), but accounted for in adjusted calculations in Table 5.
- A number of welfare benefits embedded in fiscal packages have been moved across to Table 4; each is considered in the summary calculations (*see Table 5*). These benefits include direct aid to households such as the increase in existing Goods and Services Tax Credit payments and childcare benefits, and new distinctions-based Indigenous Community Support Fund implemented in Canada

(costs estimated based on national sources). In Luxembourg, the additional May fiscal package, reinforcing April measures, included: "extending leave for family reasons to take care of adults with disabilities and elderly and increasing the cost-of-living allowance for low-income households" (IMF, 2020b) The permanent increase in social spending to protect vulnerable people in New Zealand (total NZ$2.4 billion or 0.8 per cent of GDP) has also been moved to Table 4.

Table 6. Fiscal stimulus responses to COVID-19 in high-income countries

Country	Type of fiscal stimulus (business loans, fees waivers, etc.)	Who is eligible? (Firms and/or workers)	Payment details	How much does it cost in total?	Sector/ coverage	Duration (no. of months)
Australia	Fiscal package			Aus$194 billion (9.9% of GDP)	U	
	Fiscal package	All	Payroll tax relief for businesses and relief for households (e.g., discounted utility bills), cash payments to vulnerable households, and support for health spending, construction, infrastructure, and green investment	Aus$40 billion	U	
	Loan guarantees	Small and medium-sized enterprises (SMEs)		Aus$20 billion	U	
	Residential mortgage-backed securities	Small banks and non-bank financial institutions		Aus$15 billion	U	
	Wage subsidies	Firms with apprentices and trainees	50% of wage	6.7% of GDP	U	9
	Wage subsidies	All permanent, part-time and casual workers	JobKeeper Payment of $909 per week for two weeks		U	6
	Payroll tax relief	Businesses and households	State and territory governments	Aus$11.5 billion (0.6% of GDP)	U	
Austria	Long-term care, short-term work	Family and micro businesses		€4 billion	U	
	Guarantees schemes	Firms		€9 billion	U	
	Deferral of tax/social security contributions	Firms and workers		€10 billion	U	9
	Short-term work and research	Firms	Reduced work time, with 90% of wage covered by the government	€12 billion		
	Wage subsidies	Firms				
	Delayed debt services	SMEs			U	
	Tax relief, tax incentives	Hospitality sector, and support to non-profit sector		€1.2 billion		
Bulgaria	Wage subsidies	Firms	60% of wage (including social security contributions) of laid-off workers covered by the government + three-month wage subsidies to companies to hire unemployed individuals			
	Credit lines	Workers on unpaid leave	Up to €760	200 million NCU	U	
	Support package	Firms	Reduced value-added tax (VAT) on services, books, baby food and for other sectors			
	Waivers and exemptions	Firms	Corporate tax payment deferred		U	4
Belgium	Support package	Firms and self-employed individuals	Increased support for those in temporary unemployment; liquidity support through postponements of social security and tax payments; transfers to affected households	€10.2 billion (2.3% of GDP)	U	10 (until end of 2020)
	Credit guarantees	Firms and self-employed individuals	Guarantees for new bank loans	€51.8 billion (11.8% of GDP)	U	10 (until end of 2020)
Canada	Support package	Firms, and self-employed individuals and households	Direct aid to households and firms, including wage subsidies, payments to workers without sick leave and access to employment insurance; an increase in existing GST Credit payments and childcare benefits; and a new distinctions-based Indigenous Community Support Fund	C$163.62 billion	U	
	Wage subsidies	Employers experiencing a drop of at least 30% of their revenue	75% wage subsidy of up to C$847 per week or C$58,700 per employee		U	12
	Deferral of tax/social security contributions	Firms and self-employed individuals		C$85 billion (4.1% of GDP)	U	
Chile	Support package	Small, medium and large enterprises (SMLEs), workers/individuals	(i) Higher health care spending; (ii) enhanced subsidies and unemployment benefits; (iii) a set of tax deferrals; (iv) liquidity provision to SMEs, including through the state-owned Banco del Estado de Chile; and (v) accelerated disbursements for public procurement contracts	$11.75 billion (4.7% of GDP)	U	
	Credit guarantees	Firms		$3 billion	U	
	Fiscal package			$12 billion		24 (until 30 June 2022)

Country	Type of fiscal stimulus (business loans, fees waivers, etc.)	Who is eligible? (Firms and/or workers)	Payment details	How much does it cost in total?	Sector/ coverage	Duration (no. of months)
Cyprus	Support package	SMLEs, workers/individuals	Health sector, leave allowance, business support, deferral of VAT payments, interest subsidy for new businesses, wage subsidies, suspension of a scheduled increase in the contribution to the General Healthcare System	€896 million (4.4% of GDP)	U	
Czechia	Wage subsidies	Employees required to quarantine	60% of reduced average earnings for the first 14 calendar days of quarantine, with no waiting period; after 14 days, the employee is further reimbursed	9.6 billion NCU (5% of GDP)	U	5 (until 31 August 2020)
	Wage subsidies	Businesses	60% of wage if quarantined; 80% of wage if inputs for activity are unavailable; 100% of wage in case of job closure, or childcare responsibilities			5 (until 31 August 2020)
	Tax/social security contributions	Firms, and workers via firms	Waived SSC paid by the employers (24.8% of gross salaries) with a maximum of 50 employees		U	3 (until 31 August 2020)
	Lump sum transfer	Self-employed individuals, small businesses	€900			
	Credit guarantees	Firms		18.9 billion NCU (9% of GDP)	U	
	Tax relief		Personal and corporate income tax		U	4
Denmark	Wage subsidies		75% of wage up to $3,418			3 (until 31 July 2020)
	Fiscal package	Health sector, workers, businesses		60 billion NCU (2.6% of GDP)	U	
	Fiscal package	Firms		60 billion NCU (2.6% of GDP)	U	
	Fiscal package	Firms and self-employed individuals	Tax payments postponed and other fiscal measures	30.7 billion NCU (1% of GDP)	U	3
	Credit guarantees	Firms		70 billion NCU (3% of GDP)	U	3
Estonia	Wage subsidies	Firms	Support to Unemployment Insurance Fund, to cover for wage reduction	€250 million	U	
	Credit guarantees	Rural companies	Business loans	€200 million	S	
	Credit guarantees	Individuals, firms	Guarantees/collateral for bank loans	€1 billion	U	
	Credit guarantees	Firms	Investment loans and liquidity support	€550 million	U	
Finland	Tax and spending measures	Workers	Health care and COVID-19 testing	€1 billion	U	
	Grants scheme	SMEs and self-employed individuals		€650 million	U	
	Welfare investments (pension contributions)	Firms and self-employed individuals	Deferral of tax and pension payments for three months	€4.5 billion (2% of GDP)	U	
	Income support	SMEs and self-employed individuals		€1.5 billion	U	
	Business support		Support to restaurants and catering businesses	€123 million	U	
	Supplementary guarantees		Employment Fund, SURE initiative and European Investment Bank	€1.68 billion (0.7% of GDP)	U	
	Support package	Households and businesses	Support to households and businesses, plus additional public investment	€2.2 billion		
France	Guarantees schemes			€315 billion (14% of GDP)	U	
	Welfare investments (health insurance)	Sick workers		€110 billion	U	
	Deferral of tax/social security contributions	Firms, workers	Includes refund of corporate income tax and VAT		U	
	Wage subsidies	Self-employed individuals, SMEs	One-off subsidy of €1,500		U	
	Business support	Self-employed individuals, SMEs			U	
	Delayed financial obligations/ payments (e.g., rent/utility bills)	Microenterprises and SMEs			U	
	Equity investments/ nationalization	Companies in difficulty			U	
	Welfare investments (unemployment benefits)	Companies in difficulty	The company (fully reimbursed) compensates 70% of gross wage (about 84% of net wage); minimum wage earners are compensated 100%		U	
	Fiscal package (additional)		Extension	€135 billion		

Country	Type of fiscal stimulus (business loans, fees waivers, etc.)	Who is eligible? (Firms and/or workers)	Payment details	How much does it cost in total?	Sector/ coverage	Duration (no. of months)
Germany	Wage subsidies	Firms	Workers with a reduced number of hours receive 60% of salary (67% if they have children) from the employer for up to 12 months	€156 billion (March) + €218 billion (in debt this year)	U	
	Business support	Self-employed individuals, SMEs	Short-time work benefit (Kurzarbeit)		U	24
	Deferral of tax/social security contributions	Firms, and workers via firms			U	
	Direct support	Small business owners, self-employed individuals, start-ups	Grants and venture capital for start-ups, and local government measures to directly support their economies	€50 billion + €2 billion (venture capital) + €141 billion (Länder and municipalities)	U/L	
	Loan guarantees	Firms, credit insurers		€756 billion (23% of GDP)	U	
	Social security contributions (waiver/ subsidy)	Firms	Social security contributions reimbursed by the Federal Employment Agency			
	Loan guarantees	Firms, and workers via firms	Exporters and export-financing banks	€73 billion	L	
	Fiscal package (additional)	Firms and workers	Temporary VAT reduction, income support for families, grants for hard-hit SMEs, financial support for local governments, and subsidies/investment in green energy and digitalization	€130 billion (June)	U	
Greece	Business support	Firms	Share of headline package of measures	€24 billion (14% of GDP)	U	
	Loan guarantees	Firms, and workers via firms			U	
	Interest payment subsidies	Firms, and workers via firms			U	
	Deferral of tax/social security contributions	Firms, and workers via firms			U	
Hungary	Deferral of tax/social security contributions	SMEs (media sector, service sector)			S	
	Loans (interest free)	SMEs			S	
	Wage subsidies	Workers via firms, new hires	Wage subsidies for those put on shortened work hours		S	
	Investment support	Firms	Job creation	450 billion NCU	U	
	Loan guarantees	Firms, and workers via firms			U	
	Loans (interest payment subsidies)	Firms			U	
	Investment support	Export companies		€800,000	S	
Iceland	Support package	Households and firms	Tax cuts, tax deferrals, increased unemployment benefits, one-off child allowances, support to companies whose employees have been quarantined, and state-guaranteed bridge loans to companies	230 billion NCU (7.8% of GDP)	U	
	Support package	Economy-wide	Public investment, tax incentives for real estate improvement, temporary tax relief for the tourism sector, and marketing efforts to encourage domestic tourism	33 billion NCU (1.1% of GDP)	U	
Ireland	Wage subsidies	Firms, and workers via firms	70% of wage (85% of wage if annual earnings are <€24,400)	€6.8 billion (2% of GDP)	U	
	Wage subsidies (additional)	Firms	Employers whose turnover has fallen by at least 30% will receive a flat-rate subsidy of up to €203 per employee per week		U	
	Business support (additional)	All firms	Tax deferrals and suspension of debt and interest on payments	€1.5 billion	U	
	Business support (additional)	All firms	(i) The Restart Grant for Enterprises (€550 million); (ii) waiver of commercial rates; (iii) COVID-19 Credit Guarantee Scheme: 80% government guarantee for a wide range of credit products from €10,000 to €1 million, for up to a maximum term of six years; (iv) liquidity and enterprise investment measures worth €55 million to reduce lending rate for micro and small businesses; and (v) the Future Growth Loan Scheme (€500 million), with the European Investment Bank Group, to enable businesses with up to 499 employees to invest for the longer term at competitive rates	€6.5 billion (2% of GDP)	U	
	Business support (additional)	Firms	€5,000 per week (0–5% turnover compensation payments to affected firms in several sectors: accommodation, food and the arts, recreation and entertainment)		U	
	Business support (additional)	Firms	Immediate cashflow support to previously profitable companies		U	
	Deferral of tax/social security contributions	Firms	Warehousing of tax liabilities, enabling firms to delay payment of their Pay-As-You-Earn (PAYE) and VAT debts in part or in full for a set period, with no interest or penalties		U	

Country	Type of fiscal stimulus (business loans, fees waivers, etc.)	Who is eligible? (Firms and/or workers)	Payment details	How much does it cost in total?	Sector/ coverage	Duration (no. of months)
Israel	Loan guarantees	Firms		41 billion NCU	U	
	Property tax relief	Firms			U	
	Deferral of tax/social security contributions	Workers, self-employed individuals			U	
	Tax refunds and business grants	Firms			U	
	Infrastructure projects	Government, SMEs	8 billion NCU for information technology (IT) support/digitalization		U	
	Fiscal package (additional)	Businesses	Expansion of the April fiscal package including employment incentives, grants, support for high-risk businesses, and additional funds to support SMEs	20 billion NCU	U	
	Loan guarantees (additional)	Businesses, workers	Extension of unemployment benefits for furloughed workers, expansion of grants to self-employed workers and small businesses, and expansion of the state Loan Guarantee Program to SMEs	30 billion NCU	U	
Italy	Income support	Self-employed individuals, laid-off workers	80% of salary for up to nine weeks	€10.3 billion	U	
	Deferral of tax/utility bill payments	Firms		€6.4 billion	L	
	Credit supply	Firms		€5.1 billion	U	
	State loan guarantees	To banks for households and firms		€750 billion (50% of GDP)	U	
	Fiscal package (additional)	Firms	Measures to support businesses, including grants for SMEs and tax deferrals (€16 billion)	€37.2 billion	U	
	Fiscal package (additional)	Households and firms	Additional income support for families and some workers, an extension of the short-time work programme, and a suspension of social security contributions for new hires	€12 billion	U	
Japan	Business support	Firms		117,000 billion NCU (21.1% of GDP)	U	
	Economy-wide support	Firms, and workers via firms			U	
	Sick leave support	Firms	Two thirds/half of the leave allowance reimbursed at $78 per day		U	
	Fiscal package (additional)	Firms, workers, households	(i) Health-related measures; (ii) support to businesses; (iii) support to households; (iv) transfers to local governments; and (v) ceiling of the COVID-19 reserve fund raised	117,000 billion NCU (21.1% of GDP)	U	
Republic of Korea	Fiscal package	Firms, workers, households	Health care and prevention; household and business support	16,000 billion NCU (0.8% of GDP)	U	
	Wage subsidies	Firms	Subsidies and jobseeker benefits	10,000 billion NCU	U	
	Wage subsidies	Firms	Employment retention subsidies increased from 66% of wage to 90% for three months		U	
	Sick leave support	Firms	Employers reimbursed the cost of paid leave for employees infected with COVID-19	84 billion NCU	U	
	Social security contributions	Firms	Three-month payment deferrals and 30% cut in contributions		U	
	Unemployment insurance	Firms	Three-month payment deferrals for small businesses with fewer than 30 employees		U	
	Reduced work time	Firms	Increased of existing indirect employment-cost subsidies to 400,000 NCU per worker		U	
	Fiscal package (additional)	Firms	Revenue reduction, additional spending on financial support, expansion of employment, investment in green industries	35,000 billion NCU	U	
Latvia	Wage subsidies	Workers	75% of wage up to €700	€2 billion (6% of GDP)	U	
	Waivers and exemptions	All taxpayers	Tax payment delay		U	36
	General stimulus business support	Firms (agriculture)		€45 million	S	
Lithuania	Loan guarantee scheme	Firms	Loan guarantee for SMEs	€1.3 billion (3% of GDP)	U	
	Liquidity support	Firms		€1 billion (2% of GDP)	U	
	Financial support	SMEs	Interest compensation, soft loans and other financial tools	€133 million	U	
	Wage subsidies	Firms, self-employed individuals	Wage subsidies for individuals returning from downtime or unemployment	€500 million		
	Wage subsidies (additional)	Self-employed individuals	Additional funds	€15.6 million	U	
	Economy-wide investment plan	Economy-wide	Investment in human capital, digital economy and business, innovation and research, infrastructure, and climate change and energy through to the end of 2021	€6.3 billion	U	

Country	Type of fiscal stimulus (business loans, fees waivers, etc.)	Who is eligible? (Firms and/or workers)	Payment details	How much does it cost in total?	Sector/ coverage	Duration (no. of months)
Luxembourg	Non-repayable financial aid	Firms, self-employed individuals	Financial aid to microenterprises: for those with <10 employees, a non-repayable and non-taxable support of €2,500 is granted + direct aid of €3,000, €3,500 or €4,000 depending on the income level of the individual concerned	€250 million (0.4% of GDP)	U	
	Liquidity support	Firms, self-employed individuals	Liquidity support measures including the provision of repayable advances to cover operating costs	€400 million (0.6% of GDP)	U	
	Deferral of tax/social security contributions	Firms, and workers via firms	Postponement of tax and social security contribution payments for the first half of 2020	€4.6 billion (7.2% of GDP)	U	
	Credit guarantees	Firms	Extension of credit guarantees	€3.6 billion (5.6% of GDP)	U	
	Wage subsidies	Firms	Expansion of short-time working scheme: reimbursement of 80% of salary	€1 billion (1.6% of GDP)		
	Fiscal package (additional)	Economy-wide	Unemployment benefits for affected businesses based on recovery/employment retention plans, non-repayable financial aid, flat-rate aid to shops and tourism, and other incentives	€650 million	U	
Malta	Fiscal package		Economy and household support	€520 million (4% of GDP)	U	
	Paid sick leave	Employers	€350 grant for each employee required to be on mandatory quarantine leave		U	
	Grants scheme	Research on COVID-19	Research and development	€5.3 million	U	
	Rent Subsidy 2020 scheme	SMEs		€2.5 million	U	
	Wage subsidies	Firms	€350 grant awarded to employers for each employee required to be on mandatory quarantine leave		U	
	Wage subsidies (additional)	Businesses and self-employed individuals	€800 per month for those hardest hit (€500 per month if part-time); one day's salary per week equivalent to €160 per month per full-time employee (€100 per month if part-time); two days' salary per week equivalent to €320 per month per full-time employee employed by a Malta-based individual or Gozo-based business (€200 per month if part-time); three days' salary per week equivalent to €480 per month per full-time employee employed by a Gozo-based individual (€300 per month if part-time)		U	
	Fiscal package (additional)	Economy-wide	Investments in infrastructure; tax deferrals; other support schemes	€900 million	U	
Mexico	Business support (loans)	Firms	Credit guarantee support	25 billion NCU	U	
	Business support (loans)	SMEs, self-employed individuals, businesses	Loans with optional repayments; microcredit programme for welfare	64.5 billion NCU	U	
	Credit guarantees		Housing credits for government workers	35 billion NCU	U	
	Loan guarantees	To banks for households and firms	Preferential loans of 25,000 Mexican pesos (~$1,000)	0.5% of GDP	U	
Netherlands	Fiscal package	Firms and workers	(i) Compensation of up to 90% of labour costs for companies expecting a reduction in revenue of 20% or more; (ii) compensation for affected sectors (hospitality, travel, agriculture, culture and others); (iii) support for entrepreneurs and self-employed individuals, start-ups and small innovation companies; (iv) scaling up of the short-time working scheme (unemployment benefit compensation available to companies needing to reduce their staff by at least 20%); and (v) allowances for SMEs to help them finance their fixed costs	€36.6 billion (3% of GDP)	U	
	Tax deferrals	Firms			U	
	Public guarantee schemes	SMLEs		€61 billion (7.8% of GDP)	U	
New Zealand	Wage subsidies	Firms, and workers via firms	Support to employers severely affected by the impact of COVID-19	NZ$14.8 billion (4.9% of GDP)	U	
	Business tax subsidies	Firms	Changes to business taxes to help cashflow	NZ$2.8 billion (0.9% of GDP)	U	48
	Business tax subsidies	Firms	Temporary tax loss carry-back scheme	NZ$3.1 billion (1% of GDP)	U	
Norway	Fiscal package	Firms and workers	Package including measures such as: mitigation of income loss for businesses; compensation (cash payout) to enterprises with severe income loss; loss provisioning; government guarantees for bank loans to businesses	98 billion NCU	U	
	Guarantee and loan schemes	Firms and workers	Bank loans to enterprises (90% guaranteed by the government); government bond fund to increase liquidity; increased borrowing limit	102 billion NCU	U	

Country	Type of fiscal stimulus (business loans, fees waivers, etc.)	Who is eligible? (Firms and/or workers)	Payment details	How much does it cost in total?	Sector/coverage	Duration (no. of months)
Poland	Fiscal package	Firms and workers	(i) Wage subsidies for employees of affected businesses and to self-employed individuals; (ii) postponement or cancellation of social insurance contributions (for micro firms with up to nine employees, social insurance contributions are covered by the budget for three months); (iii) employers able to lower employees' work time to 80% (with 40% of the average wage covered by the state, and the firm covering the remaining 40%)	104 billion NCU (4.2% of GDP)	U	
	Credit guarantees	Firms	Micro loans for entrepreneurs	75 billion NCU (3.3% of GDP)	U	
	Business support	Firms	Support for business liquidity challenges	100 billion NCU (4.5% of GDP)	U	
Portugal	Wage subsidies	Workers via firms	Financial support for workers temporarily furloughed	€600 million (0.3% of GDP)	U	
	Wage subsidies (additional)	Firms	Simplified layoff regime for companies (where activity has been substantially affected), whereby workers are entitled to two thirds of gross wage (30% paid by employer, 70% paid by social security system) for up to six months		U	
	Deferral of social security contributions	Firms	Available to firms that had to close or lay off workers, as determined by the health authority, as well as for the first month following the resumption of activity	€7.9 billion (3.7% of GDP)	U	
	Tax deferrals	Firms	Deferral of tax payments for companies and self-employed individuals (VAT and personal/corporate income tax) due in the second quarter of 2020		U	
	Credit guarantees	Firms	State guarantee loan for SMEs	€13 billion (6.8% of GDP)	U	
Romania	Credit guarantees	Firms	Loan guarantees and subsidized interest for working capital and investment of SMEs	5 billion NCU (1.5% of GDP)	U	
	Business support	Firms	Partial coverage of the wages of self-employed individuals and workers in danger of being laid off; partial wage subsidies for those returning to work; deferral of utility bill payments for SMEs		U	
Slovakia	Wage subsidies	Employers	Subsidies for employers who had to close or restrict business operations due to the decision of the Public Health Authority (80% of average monthly salary); subsidies for self-employed individuals whose sales declined during the state of emergency (up to $540 per month)		U	
	Fiscal package	Employees	Wage compensation, deferral and waiving of employee health insurance payments, easing of administrative burden on businesses	€2.2 billion (2.3% of GDP)	U	
	Credit guarantees	SMLEs, self-employed individuals	Credit guarantee support	€4 billion	U	
Slovenia	Fiscal package	Firms, and workers via firms	Support including tax deferrals, wage subsidies, credit guarantees, support for corporate liquidity, vouchers for tourism, liquidity loans	€7 billion (15.6% of GDP)	U	
Spain	Fiscal package	Households and firms	Package including several measures related to support for households, SMEs and firms	€38 billion (3.5% of GDP)	U	
	Business support	Firms	Exemption from payment of social security contributions for businesses under the ERTE furlough scheme	€18 billion (~0.16% of GDP)	U	6
	Business support	SMEs, self-employed individuals	Flexibility for SMEs and self-employed individuals to calculate their income tax and VAT instalment payment based on actual profits in 2020; additional benefits for self-employed individuals in relation to cessation of activity	~0.08% of GDP	U	
Sweden	Fiscal package	Firms, and workers via firms	Business-related support including: additional expenditures on wage subsidies for short-term leave; loans to SMEs; temporary reduction of employer social security contributions; temporary grants to businesses based on their loss of turnover to cover their fixed costs; more funding to train health workers; deferral of a maximum of three months' worth of payments of companies' social security contributions; state credit guarantees for loans to companies (extended to 31 December 2020)	695 billion NCU (13.8% of GDP)	U	
	Sick leave support	Firms, and workers via firms	Workers to receive sickness benefits from the moment they must be absent from work due to COVID-19 illness, and the state rather than employers to cover the cost of the first day of leave		U	
Switzerland	Fiscal package	Firms and workers	Business-related support including financial aid to the hardest-hit first, and loan guarantees to SMEs	73 billion NCU (10.4% of GDP)	U	
	Fiscal package (additional)	Firms and workers	Measures including short-time working allowances, loans to SMEs, tax deferrals, social security contribution deferrals, compensation for loss of earnings for self-employed individuals	32 billion NCU	U	
	Fiscal package (additional)	Firms and workers	Measures including short-time work programme expansion, compensation for loss of earnings extended for self-employed individuals, expansion of loan guarantee programme		U	
Turkey	Waivers and exemptions	Firms	Postponement of VAT and social security insurance payments		S	3
	General stimulus/business support	Firms and workers	General fiscal measures that include social protection	$11.6 billion (1.5% of GDP)	U	
	Credit lines	Firms	Credit guarantee fund	$3.8 billion (0.5% of GDP)	U	

Country	Type of fiscal stimulus (business loans, fees waivers, etc.)	Who is eligible? (Firms and/or workers)	Payment details	How much does it cost in total?	Sector/ coverage	Duration (no. of months)
United Kingdom	Business support	Firms	Property tax holidays; direct grants for SMEs	£29 billion	U	
	Business support	Firms	Grants and convertible loans to support firms driving innovation and development	£1 billion	U	
	Loan schemes, tax deferrals, wage subsidies	SMEs	100% loan guarantees, tax deferrals for self-employed individuals, partial payment of employees' wages by government		U	
	Wage subsidies	Employers	Government to cover 80% of salary of furloughed workers up to £2,500 per month	£7 billion	U	3
	Public investment		Infrastructure investments	£5 billion		
United States	Credit guarantees	Firms	Credit guarantees to help small businesses that retain workers (Paycheck Protection Program and Health Care Enhancement [PPPHCE] Act)	$321 billion	U	
	Business support	Firms	Assistance to small businesses (PPPHCE Act)	$62 billion	U	
	Business supports	Firms and workers	Additional provisions (CARES Act)	$1,600 billion	U	
	Loans and guarantees	Firms	Prevention of corporate bankruptcy ($510 billion) (CARES Act)		U	
	Loans and guarantees	Firms	Forgivable loans for small firms ($349 billion) (CARES Act)		U	
	Welfare investments (sick leave support)	Firms with <500 employees	Employers covered under the FFCR Act must provide paid family leave and paid sick leave to eligible employees who are unable to work (or work from home) at the rate of $511 per day for 2 weeks and $200 per day for 12 weeks (FFCR Act)	$192 billion (1% of GDP)		
	Loans and guarantees	Firms	Expansion of Small Business Administration loan subsidies (FFCR Act)		U	

Note: Unless otherwise stated, all amounts shown are in US dollars. NCU = National Currency Unit. For sector and coverage: U = universal, S = services, L = local. Tax and spending measures to the health system in Canada (C$5.7 billion) to support increased testing, vaccine development, medical supplies, mitigation efforts, and greater support for indigenous communities have been removed. Part of a 60 billion NCU fiscal package in Denmark will be spent on the health system; the figure has not been changed. The one-off child allowance mentioned in the Icelandic support package is included in Table 4. Public investment in health care and civil protection in Italy (€3.2 billion) has been removed. In the second Italian fiscal package, funds for income support for families (€14.5 billion) are moved to Table 4; funds for the health care system (€3.3 billion) have been removed. Mexican public expenditure on health (0.2% of GDP) has been removed. For the New Zealand fiscal package, spending related to 'health care and social spending', including health care-related spending to reinforce capacity (NZ$800 million or 0.3 per cent of GDP) and infrastructure investments have been removed. For the United States, Coronavirus Preparedness and Response Supplemental Appropriations Act provides mainly for virus testing ($8.3 billion); transfers to state and local governments ($150 billion) and international assistance ($49.9 billion and $1.25 billion in two payments) are not included. In Spain, the expanded budget for the Ministry of Health and regional health services (€1.4 billion) has been removed. In the United Kingdom, funding for the National Health Service (£48.5 billion), to increase capacity, is excluded. For the United States, unemployment benefits and tax rebates in the CARES Act have been moved to Table 4. Source: Gentilini et al., (2020); IMF (2020b).

Box 1: What has happened since July 2020? Spotlight on Canada

This report has focused on the first wave of COVID-19. Since July, countries have continued to adapt and expand their responses to the crisis. This Box is an example of the detail available at the national level, on the responses to COVID-19 from March until mid-November 2020. The Table shows 48 separate policies, including 24 social protection policies and 24 fiscal stimulus responses. Details are limited to the dates, names, costs and coverage of the policies (see source for more details). It is immediately evident that the balance of social protection and fiscal stimulus interventions is more in Canada then for other high-income countries in the first wave of responses; a smaller proportion of policies are specifically directed to children or families raising children. Although not all policies are clearly dated, since July, few changes are to be seen. The exception is the replacement of the Canada Emergency Response Benefit (CERB) social protection policy for employees and recently employed persons. No new stimulus responses are recorded. In terms of investment, without accounting for CERB replacements (no data), fiscal stimulus expenditures are between 5.4 and 5.7 times the social protection costs (estimates based on average cost per intervention and total reported costs, respectively). The 8.2bn CAD spent on five policies – that are specifically directed to children and families with children – make up 1.1% of the total investment of CAD 690.7 bn.

Social Protection	CAD bn	Fiscal stimulus / coverage	CAD bn
TOTAL expenditure	**103.0**	**TOTAL expenditure**	**587.7**
March: Lower RRIF Minimum Withdrawal[5]	0.5	**March:** Enhancements to the Work-Sharing Program[5] / Workers via firms	0.01
March-December: Canada Emergency Response Benefit (CERB)[1]	80.5	**March:** Credit and liquidity support for the Agricultural Sector[1] / Farmers and Agri-food Businesses	5.2
March: Other Direct Support for Individuals[1]	0.07	**March:** Sectoral Support for Transportation, Academic, Cultural, Agricultural, Extractive Sectors[1]	8.9
March: Contribution of 9 million through United Way for local organizations (in 2019-20)[5]	0.01	**March-June:** 10% Temporary Business Wage Subsidy[5] / Workers via firms	2.1
March: Indigenous Community Support Fund (Updated with May 21st announcement)[2,3,5]	0.38	**March-June:** Sales Tax Remittance and Customs Duty Payments Deferral[4] / Firms and individuals	30
April: Temporary Enhanced GST Credit[2,3]	5.5	**March-July:** Essential Workers Wage Top-up[5] / Businesses, self-employed	3
April onwards: Support for Food Banks and Local Food Organizations[6]	0.1	**March-August:** Income Tax payment deferral until after August[4] / Firms and Individuals	55
April 2020-2022: Support for Students and Recent Graduates[4]	9.1	**April:** Wage Subsidy for Staff of the Non-Public Funds, Canadian Forces[5] / Workers	0.01
April: Support for People experiencing Homelessness (through *Reaching Home*)[6]	0.16	**April:** BCAP - SME Loan and Guarantee program[2] / SMEs	40
April: Support for Children and Youth (Kids Help Phone)[3,6]	0.01	**April:** BCAP - Canada Emergency Business Account (CEBA)[2,3] / Small businesses and not-for-profits	41.3
est. April: Supporting the On Reserve Income Assistance Program[2]	0.27	**April:** Canada Emergency Business Account (CEBA) - %25 incentive[1] / Firms	13.8
May: Temporary Enhanced Canada Child Benefit[3]	2.0	**April:** Canada Emergency Wage Subsidy (CEWS)[5] / Workers via firms	83.6
May: Support for women's shelters and sexual assault centres, including in Indigenous communities[6]	0.01	**April:** Credit and liquidity support through the Bank of Canada, CMHC and commercial lenders[2,6] / Banks	300
May: Support for Charities and Non-Profits[6]	0.35	**April-July:** Support for Northern Businesses (from existing resources) (NBRF)[1] / SME territorial businesses	0.02

June: Support for the Canadian Red Cross[6]	0.1	**April-Sept:** Canada Emergency Commercial Rent Assistance (CECRA)[6] / Small Businesses and Commercial Landlords	3.0
July: Protecting and Supporting Indigenous Women and Girls Fleeing Violence[3,6]	0.3	**April-Sept:** Parks Canada Rent Relief and Revenue Replacement[4] / Commercial letters and licensees	0.07
July: New Horizons for Seniors Program expansion[5] / 0.02 / July	0.02	**May:** Support for local Indigenous economies and the Indigenous Tourism Industry[1] / First Nations, Inuit, and Métis businesses	0.13
August 2020 – Aug. 2021: Canada Student Grant Payments[4,6]	0.2	**May:** Support for Indigenous Businesses and Aboriginal Financial Institutions[2] / First Nations, Inuit, and Métis SMEs	0.31
Sept 2020-Nov. 2020: Support for Persons with Disabilities[6]	0.9	**May:** Large Employer Emergency Financing Facility[6] / Large businesses	..
Sept 2020-Sept 21: Employment Insurance Program[1]*	..	**May-June:** Alternative Credit Support for Businesses[1] / Businesses	1.2
Sept 2020-Sept 21: Canada Recovery Benefit[1]*	..	**June:** BCAP -Financing for Mid-size Companies[2] / Mid-size /Businesses	..
Sept 2020-Sept 21: Canada Recovery Sickness Benefit[1]*	..	**July:** Women Entrepreneurship Strategy – Ecosystem Top-up[6] / Women business owners	0.02
Sept 2020-Sept 21: Canada Recovery Caregiving[2] *	..	**July:** Granville Island Emergency Relief Fund[4] / Businesses	0.02
July: One-Time Payment to OAS and GIS recipients[5]	2.5	**July:** Support for the Federal Bridge Corporation Limited[1]	..

Note: For Social Protection: 1 = workers / recently employed, 2 = individuals (not work conditioned), 3 = children, families with children (shaded in blue), 4 = students, 5= pensioners / elders, 6 = vulnerable groups. *Replacement for CERB. For Fiscal Stimulus: 1 = fiscal support / grants, 2 = loans including guaranteed loans, 3= forgivable loans, 4 =waivers (rent, tax, or social contributions), 5 = wage subsidies, 6 = other business support. Source: https://www.canada.ca/en/department-finance/economic-response-plan/fiscal-summary.html; and https://www.ourcommons.ca/content/Committee/431/FINA/WebDoc/WD10854903/431_FINA_reldoc_PDF/DepartmentOfFinance-TenthReport-e.pdf

4. MAKING SENSE OF MANY FACTORS: LINKING THE EVIDENCE TO UNDERSTAND THE EFFECTS ON CHILDREN

To try and make sense of the multiple and complex factors at play in a health epidemic or pandemic – and one that involves social lockdowns and the potential for a major economic crisis – this section of the report undertakes two types of empirical analysis.

The first set of tests seeks to understand which categories of countries, categorized by key determinants of child income poverty and child well-being, are more likely to be at risk of or resilient to poorer child well-being outcomes. This will allow high-income countries to understand how the pre-COVID-19 baseline results (as reported in Table 3) are aligned with key social and economic determinants such as GDP per capita or health expenditure. This knowledge can help to predict any given country's vulnerability to poorer outcomes for children following the COVID-19 crisis.

The second set of empirical tests estimates the elasticity of the child income poverty and child well-being indicators according to changes in key social and economic determinants, using pooled series data. This set of tests will provide more details on how the indicators themselves will change – on average, across the high-income countries – in response to the COVID-19 crisis.

Together, the two sets of tests will allow high-income countries to identify, and then predict and track, changes to key social and economic determinants, based on priority areas (national vulnerabilities) and sensitivity to the COVID-19 crisis of child income poverty and child well-being outcomes in individual countries. Country-specific findings from these tests are the reference point, against which the suitability of the overall response to the COVID-19 crisis in each country is to be assessed.

4.1 Predictors of child well-being in high-income countries before the COVID-19 crisis

This section of the report is divided into six subsections, each of which looks at one of the indicators of child well-being presented in section 2. Specifically, it uses a novel methodological approach, namely qualitative comparative analysis (QCA), and its fuzzy-set technique, to identify the 'necessary' and 'sufficient' social and economic conditions, at the country level, that explain risk of or resilience to poorer child income poverty and child well-being outcomes.

Fuzzy-set QCA is based on the concept of subset relations, and presents the findings in terms of necessary and sufficient conditions linked to specific outcomes (Cebotari & Vink, 2013). A necessary condition is when the score in the outcome (Y_i) is consistently lower than the score of the condition (X_i) across all countries (so the outcome is a subset of the condition). Sufficient conditions are determined when a score of the condition (X_i) is lower than the score in the outcome (Y_i) among some cases in the group of countries (and so the condition is a subset of the outcome). A detailed description of the QCA methodology is provided in the appendices to this report (*see Appendix 3*).

The conditions analysed below are separately selected for each of the outcomes reported in Table 2, as well as according to the availability of most recent data. The analysis is used to assess the extent to which these outcomes are the results of social and economic conditions, and how the indicators of child poverty and vulnerability may be expected to react to the COVID-19 crisis (and responses), which can change these conditions. The results of these tests can be used to inform monitoring of and policy for child well-being, specifically in reference to (1) necessary conditions for good child well-being outcomes; (2) monitoring of combinations of conditions that imply risk of or resilience to poorer outcomes for children; and (3) complementarities in child income poverty and child well-being outcomes.

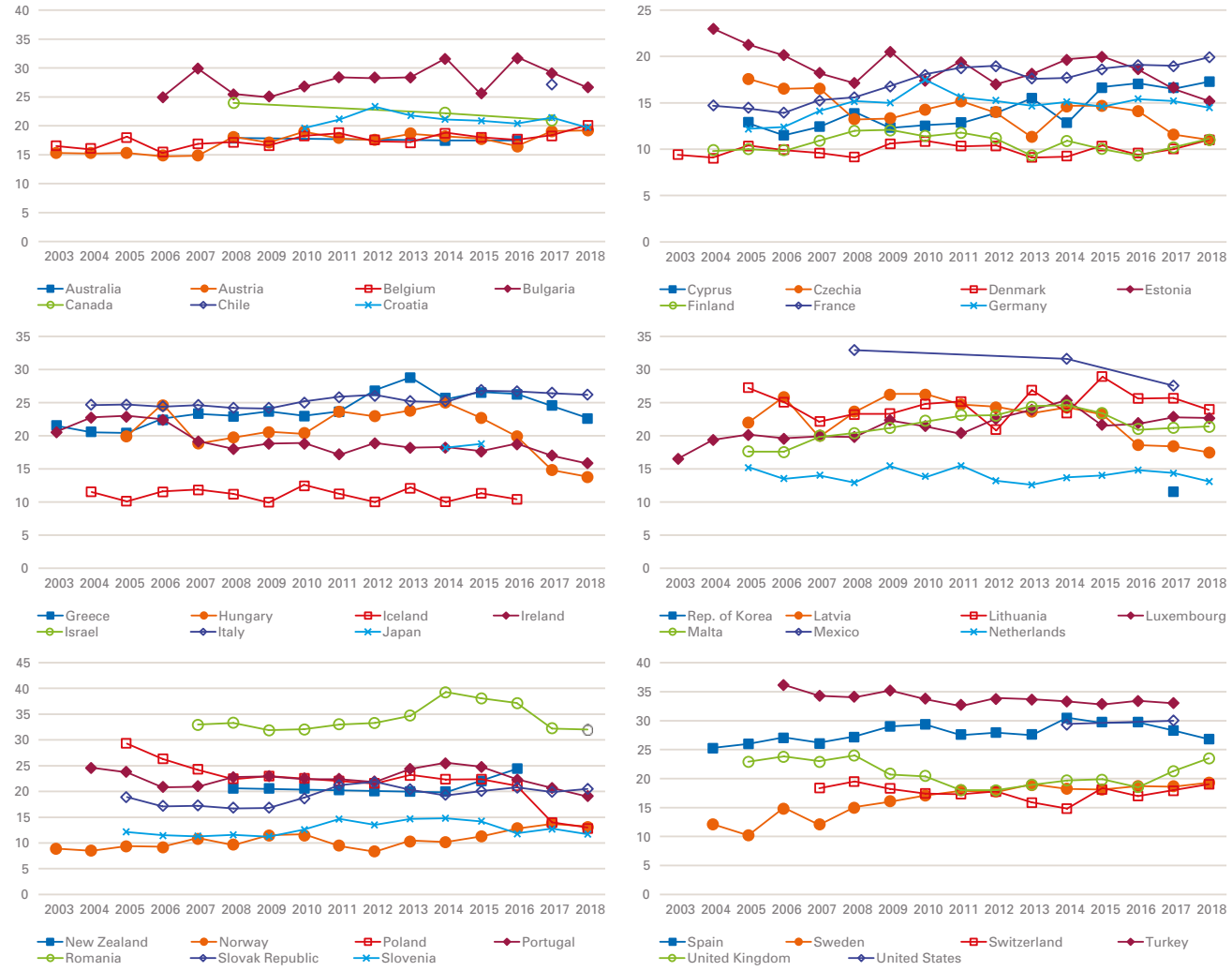
Notably, the analysis that follows shows that indicators of conditions considered 'positive' or 'negative' for child well-being can – in the context of other factors – produce counterintuitive results. Combinations of child well-being outcomes matter too. For instance, a lower poverty rate in combination with a higher youth NEET rate, and a higher poverty rate combined with a lower youth NEET rate can both coexist with a higher suicide rate. To improve child well-being, both monitoring and policy evaluation efforts must begin to account for this complexity.

4.1.1 Conditions related to higher and lower child income poverty rates

Child poverty is consistently linked to worse child well-being outcomes across the board. Child income poverty also indicates the extent to which existing child populations are more or less vulnerable to economic shocks. Within the conceptual framework proposed by this report, in section 2, child income poverty accrues at the household level and can diminish the potential for families to mitigate the effects on children's lives of shocks caused by conditions outside of the home.

Figure 15 shows the trends in child poverty rates, expressed as a percentage, for the high-income countries from 2003 to 2018. It is noticeable that over this period there has been no major, consistent improvement in reducing child income poverty in the vast majority of countries. Poland is a notable exception where the poverty rate has fallen.

Figure 15. Child poverty rates in high-income countries have remained stubbornly high for a generation



Note: Trends report the percentage of children living in households that are income poor, based on a relative measure of poverty. Income-poor households have a household income of less than 60 per cent of the median household income in the population, after equivalisation (using the modified OECD scale). Trend lines run from the first to the last observed data points; markers represent years with observed data – for years with no markers, no data for that year were reported for that country. Source: Eurostat (2020); UNICEF Innocenti (2020).

But which social, economic and policy conditions are linked most directly to higher and lower rates of child poverty in high-income countries? The QCA results for poverty outcome employ the child relative income poverty defined as the percentage of children aged 0-18 with an equivalised household disposable income below the poverty threshold defined as 60% of the median after social transfers in each target country. The analysis also includes six conditions, which measure GDP, social expenditure, public spending on family benefits, unemployment, means-testing of child benefits, and universal childcare.[13] For the analysis, both the conditions and the outcome are categorised into

13 Publicly provided childcare services can start and finish at different ages across different countries, and availability of places may restrict 'true' universality in any system. Nonetheless 'Childcare is universal' records conditions where children can access childcare for at least 15 hours per week for two consecutive preschool years regardless of parental income or employment.

3 subsets distinguishing between high and low set membership using ½ a standard deviation above and below the mean as set thresholds.[14]

The results of the QCA analysis present the necessary and sufficient conditions, and their combinations, for the presence of the outcome (a higher child poverty rate) and the absence of the outcome (a lower child poverty rate). How well these subsets match is determined by 'consistency' and 'coverage' statistics (*for a description of the parameters see Appendix 2*).

The analysis of necessary conditions includes the presence and absence of all conditions for the two outcomes (higher or lower child poverty rates). The results show that no single condition has the strict consistency threshold to be a necessary condition. However, with a consistency score of 0.83, lower unemployment is a non-trivial and relevant quasi-necessary condition for lower child poverty rates in the analysed sample of countries. With a coverage score of 0.66, having lower levels of unemployment is, overall, a relevant prerequisite for alleviating child poverty in high-income countries. Notable outliers are Finland, Latvia, and Ireland, who have comparatively low child poverty rates but comparatively high levels of unemployment in this pool of countries. This evidence attests to a strong link between unemployment and child poverty in high-income countries.

Turning to the analysis of sufficient conditions, which outlines the combinations of all conditions that lead to the presence or absence of the outcome, there are three combination of conditions that explain higher child poverty rates in the pool of countries. The three combinations are presented in Table 7 (Configurations). The consistency score of the solution encompassing the three combinations is 0.85, which suggests that these combined solutions are empirically robust. The coverage score, of 0.59, indicates that the three combinations explain roughly 59% of the outcome when experienced in one of the countries in the full set.

- ✔ Combination 1 shows that lower GDP, and higher spending on family benefits, and the main child benefit being means-tested, are together sufficient to explain higher child poverty rates in New Zealand.
- ✔ Combination 2 includes a lower level of spending on family benefits, and the presence of higher unemployment rates, which together explain higher child poverty rates in eight countries. These countries are Greece, Italy, Latvia, Lithuania, Portugal, Slovakia, Spain, and Turkey. This combination demonstrates the close relationship between scarcity of family benefits and unemployment, and child poverty in high-income countries.
- ✔ Combination 3 relates to higher levels of child poverty in Canada, Japan, Switzerland, and the United States, and reflects a higher level of GDP, and low spending on family benefits, and means-testing of child benefits.

Notably, two conditions – social expenditure, and universal childcare – are not part of the combined solutions that explains higher rates of child poverty in high-income countries. Their absence does not imply that these conditions are redundant, but rather that the outcome is better explained by other combinations of conditions within the pool of countries.

14 More methodological details are available in Appendix 2.

Table 7. Combinations of sufficient conditions that explain a higher child poverty rate in high-income countries

Status	Configuration 1	Configuration 2	Configuration 3
Higher GDP			✓
Lower GDP	✓		
Higher social expenditure			
Lower social expenditure			
Higher spending on family benefits	✓		
Lower spending on family benefits		✓	✓
Higher unemployment rates		✓	
Lower unemployment rates			
Child benefit is means-tested: Yes	✓		✓
Child benefit is means-tested: No			
Childcare is universal: Yes			
Childcare is universal: No			
Cases	New Zealand	Greece, Italy, Latvia, Lithuania, Portugal, Slovakia, Spain, Turkey	Canada, Japan, Switzerland, United States
Consistency	0.78	0.84	0.81
Raw coverage	0.08	0.40	0.20
Solution consistency	**0.81**		
Solution coverage	**0.58**		

Source: Author's calculations.

The analysis of sufficient conditions for *lower child poverty* rates resulted in four combinations of conditions that explain the outcome in the country group. These combinations are presented in Table 8.

- ✔ Combination 1 shows that lower social expenditure, and lower unemployment rates, and the main child benefit is not means-tested result in lower child poverty rates in Estonia, Hungary, Iceland, and the Netherlands.
- ✔ Combination 2 indicates that a lower spending on family benefits, and lower unemployment rates, and universal childcare is sufficient to result in lower poverty among children in Japan and Poland.
- ✔ Combination 3 shows that higher GDP, and lower spending on family benefits, and the main child benefit is not means-tested explains lower levels of child poverty in Ireland and the Netherlands.

Cases can be present in different combinations of sufficient conditions, as it is the case of the Netherlands, because the set membership in conditions often overlaps. The overall solution consistency is good (0.82) suggesting that the claim of sufficiency is well covered empirically. The coverage score of 0.37 suggests that the solution covers 37% of cases that have lower child poverty rates.

Table 8. Combinations of sufficient conditions that explain a lower child poverty rate in high-income countries

Status	Configuration 1	Configuration 2	Configuration 3
Higher GDP			✓
Lower GDP			
Higher social expenditure			
Lower social expenditure	✓		
Higher spending on family benefits			
Lower spending on family benefits		✓	✓
Higher unemployment rates			
Lower unemployment rates	✓	✓	
Child benefit is means-tested: Yes			
Child benefit is means-tested: No	✓		✓
Childcare is universal: Yes		✓	
Childcare is universal: No			
Cases	Estonia, Hungary, Iceland, the Netherlands	Japan, Poland	Ireland, The Netherlands,
Consistency	0.80	0.78	1.00
Raw coverage	0.19	0.12	0.12
Solution consistency	**0.82**		
Solution coverage	**0.37**		

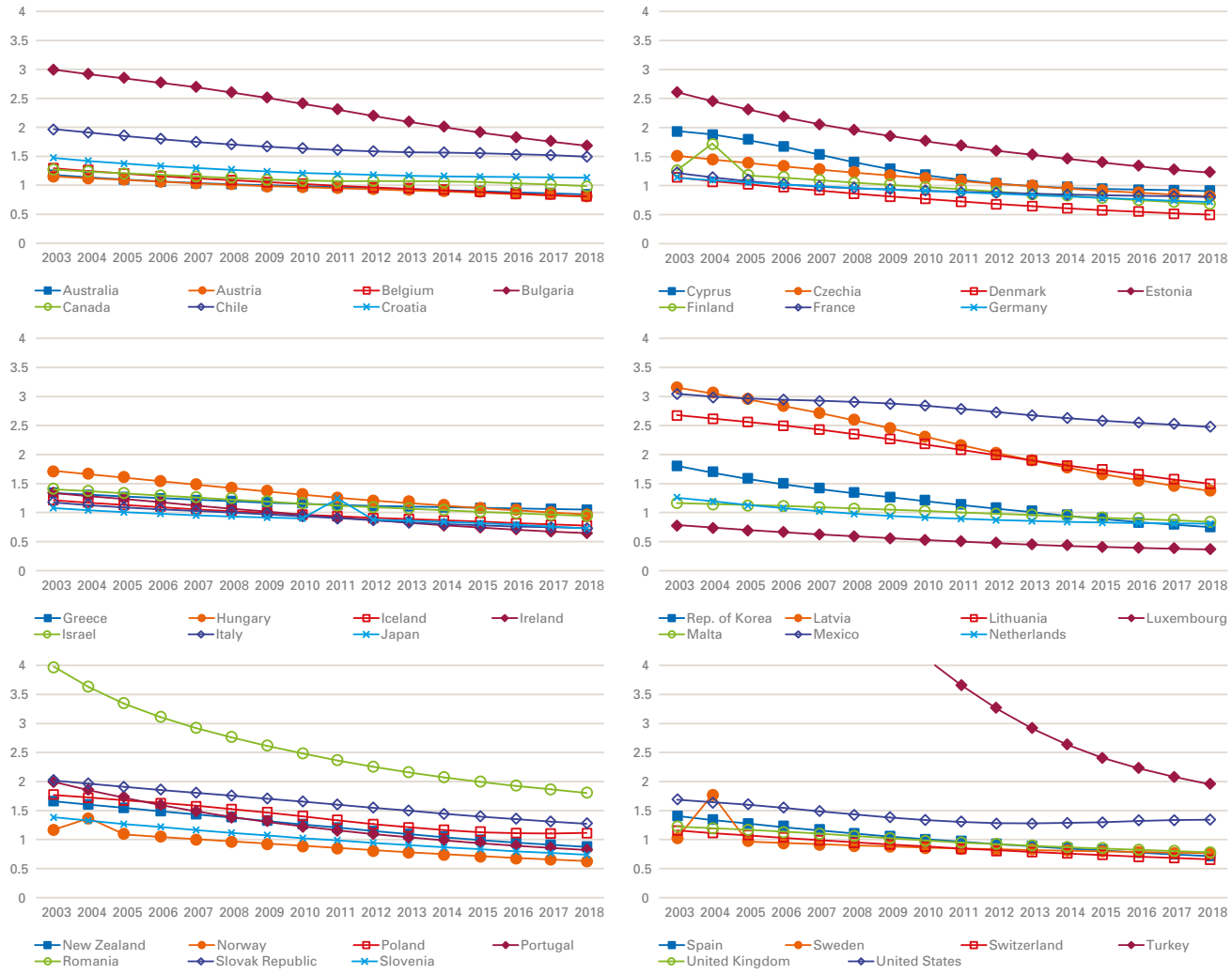
Source: Author's calculations.

The presented combinations suggest that the *how* social protection monies are spent in high-income countries can be used to explain better poverty rates among children. Importantly however, although the presented conditions are sufficient to ensure the presence of the outcome (lower child poverty rates), the outcome can also exist in the absence of these conditions. In other words, there could be other conditions, or a combination of conditions, that may also associate to lower poverty rates in high-income countries.

4.1.2 Conditions related to higher and lower mortality rates among children aged 5–14 years

All high-income countries have exhibited steady downward trends in child mortality rates in the past two decades (*see Figure 16*). Within this group, the highest child mortality rate among children aged 5–14 years was observed in Turkey in 2003, although this is now falling rapidly to within the range of the high-income country set. The lowest child mortality rates seen in high-income countries over the past two decades were recorded in continental Europe, with rates commonly starting at less than 2 deaths per 1,000 children aged 5–14 years. Even in these cases, progress continues to be made.

Figure 16. All countries have shown steady downward trends in child mortality rates in the past two decades



Note: Data show the mortality rate in the child population, expressed as the number of deaths per 1,000 children aged 5–14 years. Full data for Turkey are available (the chart has been cut for readability) and show a consistent fall from 7.1 deaths per 1,000 children aged 5–14 years in 2013 to 4.1 deaths in the same population in 2010. Trend lines run from the first to the last observed data points; markers represent years with observed data – for years with no markers, no data for that year were reported for that country. Source: World Health Organization (2020).

In this report, the child mortality rate among children aged 5–14 years is measured after excluding homicides and suicides, which are reported separately. Figure 16 shows that further progress to reduce avoidable child deaths can still be made in high-income countries, and that country-level factors, whether social or economic, will be contributing to the differences seen between countries in this comparison.

Which economic, social and policy conditions are most directly linked to higher and lower rates of child mortality in high-income countries? The QCA for child mortality rates among children aged 5–14 years includes six conditions, namely GDP per capita; relative child income poverty; health expenditure per capita; immunization rate for the diphtheria, pertussis and tetanus (DPT) vaccine; whether health services are free to access at the point of consumption; and availability of universal childcare.

The QCA looked at both necessary and sufficient conditions for experiencing higher or lower rates of an outcome (i.e., a higher and lower child mortality rate respectively). The analysis of necessary conditions finds that a lower GDP per capita (consistency, 0.85) is a necessary condition for a higher child mortality rate within the country group. This means that higher child mortality rates are generally always present in high-income countries that have a lower rate of economic performance. Two outliers fail to fulfil this necessity logic: Canada and the United States, each of which has a relatively high child mortality rate but also a higher GDP per capita.

Furthermore, with a consistency score of 0.82, the condition of having lower levels of health expenditure per capita comes marginally close to being a necessary condition for higher child mortality in high-income countries. Again, outliers to the necessity logic of this relation are Canada and the United States, which have relatively high child mortality rates but also higher health expenditure per capita. The two conditions testify to the close interlinkages between poor economic performance, and investments in health care, and child mortality rates.

Turning to the analysis of sufficient conditions, there are three combinations of conditions that explain a *higher child mortality rate* within the pool of countries (*see Table 9*). The consistency score of the solution encompassing the three combinations is 0.88, which suggests that this combined solution is empirically robust. The coverage score of 0.56 indicates that the three combinations together explain more than half of cases (roughly 56 per cent) with a higher child mortality rate among the countries in the group. The coverage score also suggests that there may be other conditions that can additionally explain the presence of this outcome in high-income countries.

- ✔ Configuration 1 shows that a lower GDP per capita, a lower child poverty rate, the absence of health services that are free at the point of consumption, and the presence of universal childcare together explain higher child mortality rates in Estonia and Poland.
- ✔ Configuration 2 indicates that a higher child poverty rate, the presence of health services that are free at the point of consumption, and the absence of universal childcare are sufficient to explain higher child mortality rates in Greece, Latvia, Lithuania and Slovakia.
- ✔ Configuration 3 reveals that a higher child poverty rate, a lower immunization rate, higher health expenditure per capita and the absence of universal childcare are sufficient conditions for higher child mortality in the United States.

The solution and combinations highlight connections between higher child poverty rates, lower economic performance, lower levels of immunization, the absence of health services that are free at the point of consumption and the absence of universal childcare in explaining higher child mortality rates in high-income countries.

Table 9. Combinations of sufficient conditions that explain a higher child mortality rate (5–14 years) in high-income countries

Condition	Configuration 1	Configuration 2	Configuration 3
Higher GDP per capita			
Lower GDP per capita	✓		
Higher poverty rate		✓	✓
Lower poverty rate	✓		
Higher health expenditure per capita			✓
Lower health expenditure per capita			
Higher immunization rate			
Lower immunization rate			✓
Health services are free to access: Yes		✓	
Health services are free to access: No	✓		
Childcare is universal: Yes	✓		
Childcare is universal: No		✓	✓
Cases	Estonia, Poland	Greece, Latvia, Lithuania, Slovakia	United States
Consistency	0.83	0.93	0.81
Raw coverage	0.19	0.30	0.11
Solution consistency	**0.88**		
Solution coverage	**0.56**		

Source: Author's calculations.

The analysis of sufficient conditions for a *lower child mortality rate* uses the same set of conditions and shows three combinations that explain the outcome (*see Table 10*). The consistency score of the solution encompassing the three combinations is 0.95, which suggests that this combined solution is empirically robust. The coverage score of 0.74 indicates that the three combinations together explain nearly three quarters of cases (roughly 74 per cent) with a lower child mortality rate among the countries studied.

- ✔ Configuration 1 shows that a lower child poverty rate and a higher GDP per capita explain the lower rates of child mortality in 14 high-income countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, the Netherlands, Norway, Sweden and Switzerland. The consistency (0.96) and coverage (0.55) scores show a widespread applicability of this combination across the country group.
- ✔ Configuration 2 indicates that a higher GDP per capita and a higher immunization rate are sufficient conditions for the outcome in Australia, Belgium, Denmark, France, Japan, Luxembourg, Norway, Sweden and Switzerland.
- ✔ Configuration 3 reveals that a higher poverty rate, a lower immunization rate and the presence of universal childcare together represent a sufficient pathway to lower child mortality rates in New Zealand, Spain and the United Kingdom.

The solution encompassing the three combinations confirms the importance of higher economic performance, lower child poverty rates, high levels of immunization, and universal childcare for reducing the child mortality rate in high-income countries. Interestingly, this solution applies to the country group regardless of country status in terms of health expenditure per capita.

Table 10. Combinations of sufficient conditions that explain a lower child mortality rate (5–14 years) in high-income countries

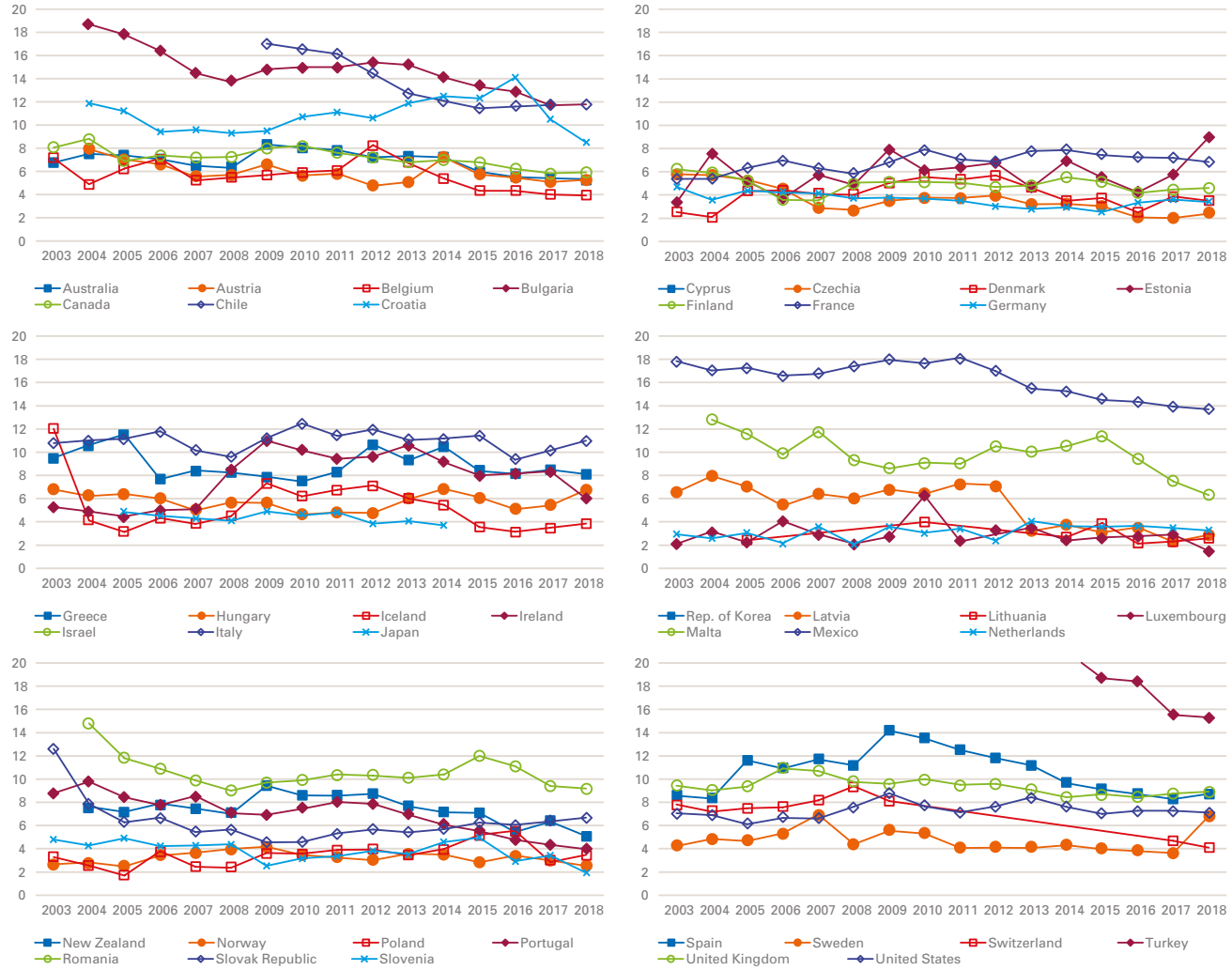
Condition	Configuration 1	Configuration 2	Configuration 3
Higher GDP per capita	✓	✓	
Lower GDP per capita			
Higher poverty rate			✓
Lower poverty rate	✓		
Higher health expenditure per capita			
Lower health expenditure per capita			
Higher immunization rate		✓	
Lower immunization rate			✓
Health services are free to access: Yes			
Health services are free to access: No			
Childcare is universal: Yes			✓
Childcare is universal: No			
Cases	Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, Netherlands, Norway, Sweden, Switzerland	Australia, Belgium, Denmark, France, Japan, Luxembourg, Norway, Sweden, Switzerland	New Zealand, Spain, United Kingdom
Consistency	0.96	0.97	0.98
Raw coverage	0.55	0.36	0.14
Solution consistency	**0.95**		
Solution coverage	**0.74**		

Source: Author's calculations.

4.1.3 Conditions related to higher and lower NEET rates among youth aged 15–19 years

Figure 17 presents trends in NEET rates among youth aged 15–19 years in high-income countries from 2003 to 2018. These trends reflect the influence of the global financial crisis and its repercussions, although the picture is not as dramatic as it is for NEET rates among older youth (aged 20–24 years) or for adult employment rates (World Bank, 2020). NEET rates peaked in many countries in the years following 2008, followed by a more recent return to pre-crisis levels or below. In 2018, NEET rates in Estonia, France and Sweden were still more than 1 percentage point above their 2005 levels. Some countries – most notably Bulgaria, Malta, Mexico, Romania and Turkey – have made progress in reducing the NEET rate among youth aged 15–19 years over the last decade or so.

Figure 17. For many countries, a spike in the youth NEET rate is visible following the 2007–2008 global financial crisis



Note: Data report the number of youth aged 15–19 years not in education, employment or training (NEET) as a proportion (%) of the total population aged 15–19 years. Trend lines run from the first to the last observed data points; markers represent years with observed data – for years with no markers, no data for that year were reported for that country. International Labour Organization modelled estimates, November 2019. Turkey reports a consistent downward trend in the youth NEET rate, starting from 32.9 per cent in 2003, with the exception of a spike in the rate in 2008, when 35 per cent of youth aged 15–19 years were inactive. Earlier data for Turkey have been removed for readability of the chart. For the specific sources by country and the estimation methodology, refer to ILOSTAT directly. Source: International Labour Organization (2020).

Which economic, social and policy conditions are most directly linked to higher and lower rates of youth inactivity in high-income countries? The QCA for NEET rates among youth aged 15–19 years of age assesses six conditions: GDP per capita, relative child income poverty, public expenditure on and caseloads in labour market programmes, unemployment rate, public education expenditure, and age-dependency ratio.

The analysis finds no conditions necessary for either a higher or a lower youth NEET rate, as per the established consistency threshold of 0.85. This shows that no single condition produces the outcome. The conditions that come closest to being necessary are a lower GDP per capita (consistency, 0.66) for a higher youth NEET rate; and a lower unemployment rate (consistency, 0.75) for a lower youth NEET rate.

For a higher youth NEET rate, the analysis of sufficient conditions presents two combinations of conditions that explain the outcome (*see Table 11*). The consistency score of the solution encompassing the two combinations is 0.81, which suggests that this combined solution is empirically robust. The coverage score is just 0.35, however, meaning that the two combinations together explain only about one third of cases (roughly 35 per cent) with a higher youth NEET rate among the countries in the group.

- ✔ Configuration 1 shows that a higher GDP per capita, a lower unemployment rate and higher expenditure on education are sufficient conditions for higher youth NEET rates in Israel, Mexico, New Zealand, the United Kingdom and the United States.
- ✔ Configuration 2 indicates that a higher GDP per capita, lower expenditure on labour market programmes, higher expenditure on education and a higher age-dependency ratio together explain higher NEET rates in Ireland and the United Kingdom.

These results may indicate poor targeting of inactive youth despite higher levels of investment in education and economic welfare within the country group. An increasing age-dependency ratio is a further obstacle to reducing the higher youth NEET rates in some high-income countries.

Table 11. Combinations of sufficient conditions that explain a higher youth NEET rate (15–19 years) in high-income countries

Condition	Configuration 1	Configuration 2
Higher GDP per capita	✓	✓
Lower GDP per capita		
Higher poverty rate		
Lower poverty rate		
Higher expenditure on labour market programmes		
Lower expenditure on labour market programmes		✓
Higher unemployment rate		
Lower unemployment rate	✓	
Higher expenditure on education	✓	✓
Lower expenditure on education		
Higher age-dependency ratio		✓
Lower age-dependency ratio		
Cases	Israel, Mexico, New Zealand, United Kingdom, United States	Ireland, United Kingdom
Consistency	0.84	0.77
Raw coverage	0.31	0.13
Solution consistency	**0.81**	
Solution coverage	**0.35**	

Source: Author's calculations.

The analysis of sufficient conditions for a lower youth NEET rate uses the same six conditions. The solution indicates that there are three combinations that explain the outcome (see Table 12). The consistency score of the solution encompassing the three combinations is 0.87, which suggests that this combined solution is empirically robust. The coverage score of 0.68 indicates that the three combinations together explain just over two thirds of cases (roughly 68 per cent) with a lower youth NEET rate in the group of countries.

- ✔ Configuration 1 shows that lower expenditure on labour market programmes, a lower unemployment rate and lower expenditure on education explains lower NEET rates in Canada, Germany, Japan, Poland and Slovenia.
- ✔ Configuration 2 indicates that a lower GDP per capita, lower expenditure on labour market programmes and a lower age-dependency ratio are sufficient conditions for lower NEET rates in Australia, Canada, Czechia, Germany, Norway, Poland and Slovenia.
- ✔ Configuration 3 reveals that a higher GDP per capita, higher expenditure on labour market programmes and a lower unemployment rate together represent a sufficient pathway to lower youth NEET rates in Austria, Belgium, Denmark, Luxembourg, the Netherlands and Switzerland.

Cases can have membership of two combinations (e.g., Germany) because set membership often overlaps. Notably, the condition of child income poverty is not part of any of the combinations of sufficient conditions that explain a higher or lower NEET rate among youth aged 15–19 years in high-income countries.

Table 12. Combinations of sufficient conditions that explain a lower youth NEET rate (15–19 years) in high-income countries

Condition	Configuration 1	Configuration 2	Configuration 3
Higher GDP per capita			✓
Lower GDP per capita		✓	
Higher poverty rate			
Lower poverty rate			
Higher expenditure on labour market programmes			✓
Lower expenditure on labour market programmes	✓	✓	
Higher unemployment rate			
Lower unemployment rate	✓		✓
Higher expenditure on education			
Lower expenditure on education	✓		
Higher age-dependency ratio			
Lower age-dependency ratio		✓	
Cases	Canada, Germany, Japan, Poland, Slovenia	Australia, Canada, Czechia, Germany, Norway, Poland, Slovenia	Austria, Belgium, Denmark, Luxembourg, Netherlands, Switzerland
Consistency	0.88	0.86	0.91
Raw coverage	0.28	0.31	0.29
Solution consistency	**0.87**		
Solution coverage	**0.68**		

Source: Author's calculations.

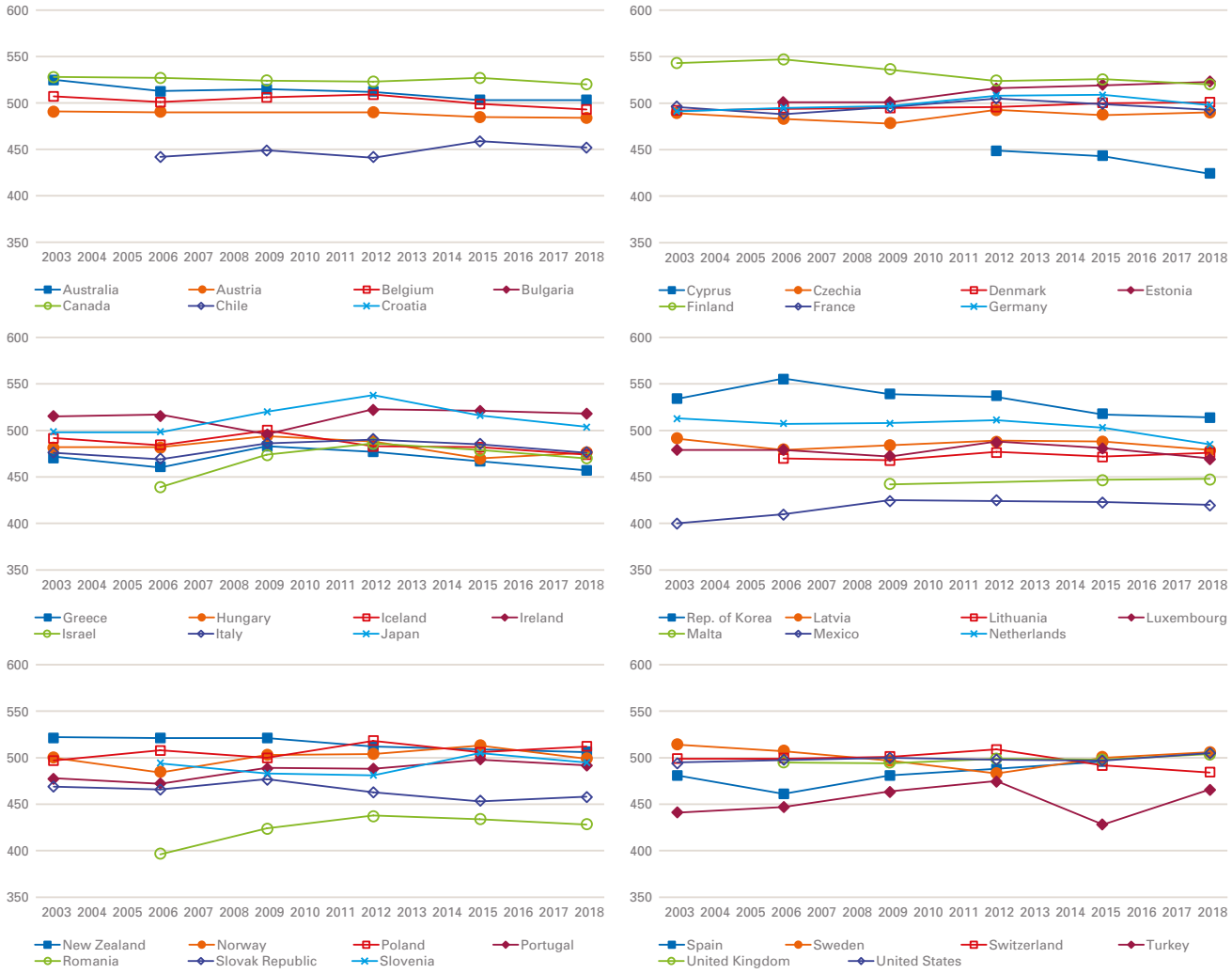
4.1.4 Conditions related to higher and lower reading performance in PISA

Overall, there was a small fall in average PISA reading literacy scores across this set of high-income countries from 2003 to 2018 (with measurement at three-year intervals) (*see Figure 18*). OECD, which administers PISA, has undertaken a detailed analysis of these trends (from 2000 to 2018). Twelve of the high-income countries show positive trends in reading performance, of which two – Estonia and Portugal – display steadily positive trends. Five countries – Czechia, Ireland, Slovenia, Spain and the United Kingdom – exhibit U-shaped trends, with positive improvements in recent waves. A further five countries display positive but flattening trends: Chile, Germany, Israel, Poland and Romania (OECD, 2019).

In contrast, 16 of the high-income countries display negative trends in reading performance. Two of these countries – the Netherlands and the Republic of Korea – show increasingly negative trends. Steadily negative declines are seen in six countries: Australia, Cyprus, Finland, Iceland, New Zealand and Slovakia. And a further seven – Belgium, Greece, Hungary, Latvia, Luxembourg, Switzerland and Turkey – have inverted U-shaped trends that indicate declines in average reading literacy scores in recent years. Lastly, Sweden displays a negative but flattening trend.

Stable trends are seen in the remaining 13 countries: Austria, Bulgaria, Canada, Croatia, Denmark, France, Italy, Japan, Lithuania, Malta, Mexico, Norway and the United States.

Figure 18. Less than one third of countries display stable trends in average PISA reading literacy scores over recent years



Note: Data report the average PISA reading literacy scores by country, as reported in the PISA surveys from 2003 to 2018 (with measurement at three-year intervals). Trend lines run from the first to the last observed data points; markers represent years with observed data – for years with no markers, no data for that year were reported for that country. Source: OECD PISA (2020).

Which economic, social and policy conditions are most directly linked to higher and lower reading performance among children in high-income countries? The QCA employs six conditions to explain the presence or absence of the outcome – that is, a higher or lower average PISA score for reading literacy, defined as "students' capacity to understand, use, evaluate, reflect on and engage with texts in order to achieve one's goals, develop one's knowledge and potential, and participate in society" (OECD PISA, 2019, 27).

The six conditions employed in the analysis are GDP per capita, child relative income poverty rate, public spending on family benefits, pupil-teacher ratio (lower secondary level), public education expenditure, and youth NEET rate (15–19 years). The outcome and conditions have been calibrated into fuzzy-set membership scores as per the methodological guideline in Appendix 2.

The analysis of necessary conditions finds no condition that meets the required consistency threshold of 0.85 to be a necessary condition for either higher or lower reading performance in the group of countries. The conditions that come closest to being necessary are a lower child poverty rate (consistency, 0.65) for higher reading performance; and a lower pupil-teacher ratio (consistency, 0.70) for lower reading performance. These conditions fit within the status of necessity for the measured outcome in a large number of cases, but there is also a large number of outliers in which the status of necessity does not apply.

Turning to the analysis of sufficient conditions, there are three combinations of conditions that explain *higher reading performance* in high-income countries (*see Table 13*).

- ✔ Configuration 1 shows that a higher child poverty rate, higher pupil-teacher ratio and lower youth NEET rate explain higher reading performance in Japan and New Zealand.
- ✔ Configuration 2 indicates that a lower child poverty rate, higher expenditure on education and a higher youth NEET rate are sufficient conditions for higher reading performance in Estonia, Ireland and Sweden.
- ✔ Configuration 3 reveals that a higher GDP per capita and a higher youth NEET rate are sufficient to explain the presence of the outcome in Ireland, Sweden and the United States.

In the three pathways, the specifics linked to a higher GDP per capita, investments in education, the pupil-teacher ratio and the youth NEET rate define the way in which the combinations explain higher reading performance in the country group. Notably, social protection spending on family benefits is not part of any of the combinations of sufficient conditions that explain the presence of the outcome. The evidence is also context-specific and may fit more than one pathway, as is the case for Ireland and Sweden, which each have membership of two combinations.

Furthermore, the solution coverage score of 0.42 indicates that the three combinations together explain less than half of cases (roughly 42 per cent) with higher reading performance among the countries in the group. This means that the outcome can also exist without the conditions assessed here, and there may be other conditions that better explain higher reading performance.

Table 13. Combinations of sufficient conditions that explain higher reading performance in PISA in high-income countries

Condition	Configuration 1	Configuration 2	Configuration 3
Higher GDP per capita			✓
Lower GDP per capita			
Higher poverty rate	✓		
Lower poverty rate		✓	
Higher spending on family benefits			
Lower spending on family benefits			
Higher pupil-teacher ratio	✓		
Lower pupil-teacher ratio			
Higher expenditure on education		✓	
Lower expenditure on education			
Higher youth NEET rate		✓	✓
Lower youth NEET rate	✓		
Cases	Japan, New Zealand	Estonia, Ireland, Sweden	Ireland, Sweden, United States
Consistency	0.90	0.99	0.87
Raw coverage	0.15	0.20	0.25
Solution consistency	**0.90**		
Solution coverage	**0.42**		

Source: Author's calculations.

The analysis of sufficient conditions for *lower reading performance* employs the same set of six conditions and results in a solution encompassing three combinations of conditions that explain the absence of the outcome (*see Table 14*). The consistency score of the overall solution encompassing the three combinations is high (0.92), but the coverage score is moderate (0.41).

- ✔ Configuration 1 shows that lower spending on family benefits, a lower pupil-teacher ratio and higher expenditure on education explain lower reading performance in Latvia and Switzerland.
- ✔ Configuration 2 indicates that a lower GDP per capita, a higher child poverty rate, lower spending on family benefits and higher expenditure on education are sufficient conditions for the absence of the outcome in Lithuania and Mexico.
- ✔ Configuration 3 finds that a higher GDP per capita, lower pupil-teacher ratio and higher youth NEET rate together represent a sufficient pathway to lower reading performance in Italy and Slovakia.

Several conditions are repeated in the combinations explaining the absence of the outcome: lower spending on family benefits, a lower pupil-teacher ratio, and higher expenditure on education. The conditions of higher expenditure on education and a lower pupil-teacher ratio may represent poor investment choices affecting children's reading performance. Similarly, the interlinkage between lower spending on family benefits and a higher child poverty rate may reflect the well-versed connection between deprivation and vulnerability in childhood and poor learning outcomes for children.

Table 14. Combinations of sufficient conditions that explain lower reading performance in PISA in high-income countries

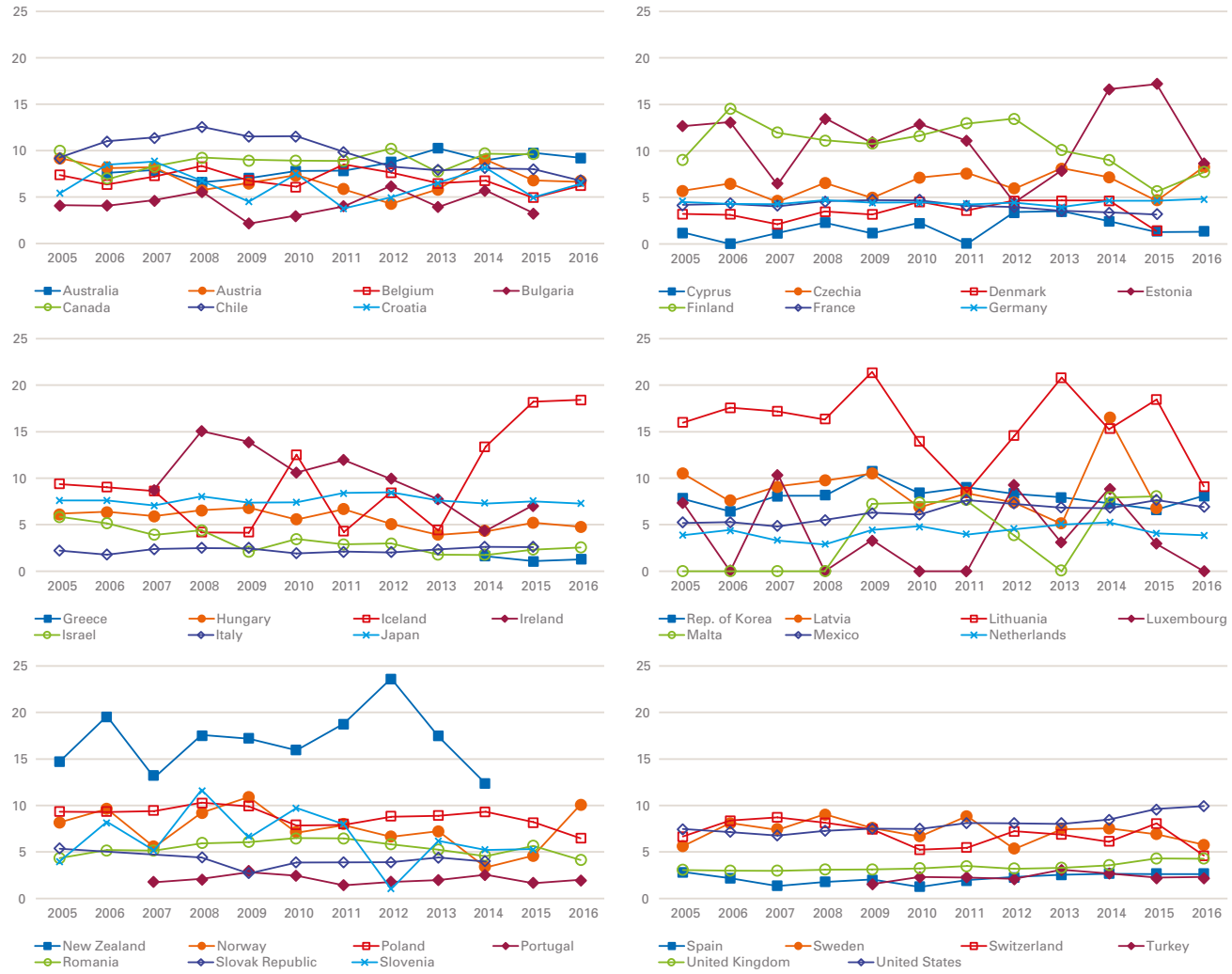
Condition	Configuration 1	Configuration 2	Configuration 3
Higher GDP per capita			✓
Lower GDP per capita		✓	
Higher poverty rate		✓	
Lower poverty rate			
Higher spending on family benefits			
Lower spending on family benefits	✓	✓	
Higher pupil-teacher ratio			
Lower pupil-teacher ratio	✓		✓
Higher expenditure on education	✓	✓	
Lower expenditure on education			
Higher youth NEET rate			✓
Lower youth NEET rate			
Cases	Latvia, Switzerland	Lithuania, Mexico	Italy, Slovakia
Consistency	0.91	0.91	0.95
Raw coverage	0.16	0.18	0.15
Solution consistency	**0.92**		
Solution coverage	**0.41**		

Source: Author's calculations.

4.1.5 Conditions related to higher and lower suicide rates among youth aged 15–19 years

Trends in rates of suicide among youth aged 15–19 years in high-income countries are difficult to identify because of the small numbers involved and fluctuations from year to year (*see Figure 19*). On average, from 2005 to 2016, the suicide rate among this age group in high-income countries was less than 1 suicide death per 100,000 youth aged 15–19 years. Comparing the average of the first three years of the period shown in the trend charts (2005–2007) with that of the most recent three years shown (2014–2016), the suicide rates in Finland and New Zealand display the largest declines, down by more than 3 suicide deaths per 100,000 youth aged 15–19 years. In contrast, Iceland's rate increased the most over the same period, by more than 7 suicide deaths per 100,000 youth, while Estonia's rate went up by more than 3 suicide deaths per 100,000 youth.

Figure 19. Although volatile, suicide rates among youth aged 15–19 years have typically been low in high-income countries in recent years



Note: Data show the number of suicide deaths among youth aged 15–19 years per 100,000 of this population. Trend lines run from the first to the last observed data points; markers represent years with observed data – for years with no markers, no data for that year were reported for that country. Source: WHO (2020).

Which economic, social and policy conditions are most directly linked to higher and lower rates of suicide among youth aged 15–19 years in high-income countries? The QCA of suicide rates among youth employs five conditions, namely GDP per capita, child relative income poverty rate, health expenditure per capita, youth NEET rate, and whether health services are free to access at the point of consumption.

The analysis of necessary conditions finds no condition that meets the consistency threshold of 0.85 to be a necessary condition for either a higher or lower suicide rate in the country group. The conclusion is that, within this group of countries, there is no condition that can explain the presence or absence of the outcome. The closest a condition comes to being necessary for a higher suicide rate is a lower youth NEET rate (consistency, 0.72). For a lower suicide rate, a lower GDP per capita (consistency 0.63) and lower health expenditure (consistency, 0.62) are the conditions closest to being necessary conditions.

For the analysis of sufficient conditions, there are four combinations of conditions that lead to a *higher suicide rate* in high-income countries (*see Table 15*). The consistency score of the solution encompassing the four combinations is 0.82, which suggests that this combined solution is empirically robust. The coverage score of 0.64 indicates that the four combinations together explain nearly two thirds of cases (roughly 64 per cent) with a higher suicide rate in the group of countries. A number of cases have overlapping set membership, as is the situation for Latvia and Lithuania, which each have membership of two combinations.

- ✔ Configuration 1 shows that a higher poverty rate, a lower youth NEET rate, and health services that are free at the point of consumption are sufficient to explain higher suicide rates in Japan, Latvia and Lithuania.
- ✔ Configuration 2 indicates that a lower poverty rate, higher health expenditure per capita, a lower youth NEET rate, and health services that are not free at the point of consumption explain the presence of the outcome in Finland, Iceland and Norway.
- ✔ Configuration 3 finds that lower health expenditure, a lower youth NEET rate, and health services that are free at the point of consumption are sufficient to explain higher suicide rates in Czechia, Latvia and Lithuania.
- ✔ Configuration 4 reveals that a higher GDP per capita, a lower child poverty rate, a higher youth NEET rate, and health services that are free at the point of consumption are sufficient conditions for higher suicide rates in Canada and Ireland.

The results of the four combinations show the complex interlinkages that explain higher suicide rates in different contexts. That a lower NEET rate is repeated in three of the four combinations may indicate that youth activation is not a protective factor, or that individuals at risk of suicide may feel greater social pressure or isolation when part of a relatively more successful peer group. Similarly, the availability of health services free at the point of consumption may not reflect well the availability of psychological services required to treat mental health needs. In either case, a more nuanced appreciation of the complex interactions between complementary or competing well-being outcomes is needed.

Table 15. Combinations of sufficient conditions that explain a higher suicide rate in high-income countries

Condition	Configuration 1	Configuration 2	Configuration 3	Configuration 4
Higher GDP per capita				✓
Lower GDP per capita				
Higher poverty rate	✓			
Lower poverty rate		✓		✓
Higher health expenditure per capita		✓		
Lower health expenditure per capita			✓	
Higher youth NEET rate				✓
Lower youth NEET rate	✓	✓	✓	
Health services are free to access: Yes	✓		✓	✓
Health services are free to access: No		✓		
Cases	Japan, Latvia, Lithuania	Finland, Iceland, Norway	Czechia, Latvia, Lithuania	Canada, Ireland
Consistency	0.87	0.83	0.86	0.80
Raw coverage	0.23	0.20	0.20	0.12
Solution consistency	**0.82**			
Solution coverage	**0.64**			

Source: Author's calculations.

The analysis of sufficient conditions for a *lower suicide rate* employs the same five causal conditions. Within the pool of cases with lower suicide rates, the results show one combination of conditions that explains the absence of the outcome (*see Table 16*).

✔ Configuration 1 indicates that a lower GDP per capita, a higher youth NEET rate, and health services that are free at the point of consumption are sufficient to explain lower suicide rates in Greece, Hungary, Israel, Slovakia and Spain.

The consistency score of this combination is very high (0.98), but the coverage is low (0.26) – the combination explains only about one quarter of cases (roughly 26 per cent) with a lower suicide rate in the country group. Notably, the conditions relating to child poverty and health expenditure are not present in the combination of sufficient conditions for the absence of the outcome. Considering the complex mechanisms at work that influence suicide rates among youth, more research is needed to fully understand the presence or absence of this outcome in high-income countries.

Table 16. Combination of sufficient conditions that explains a lower suicide rate in high-income countries

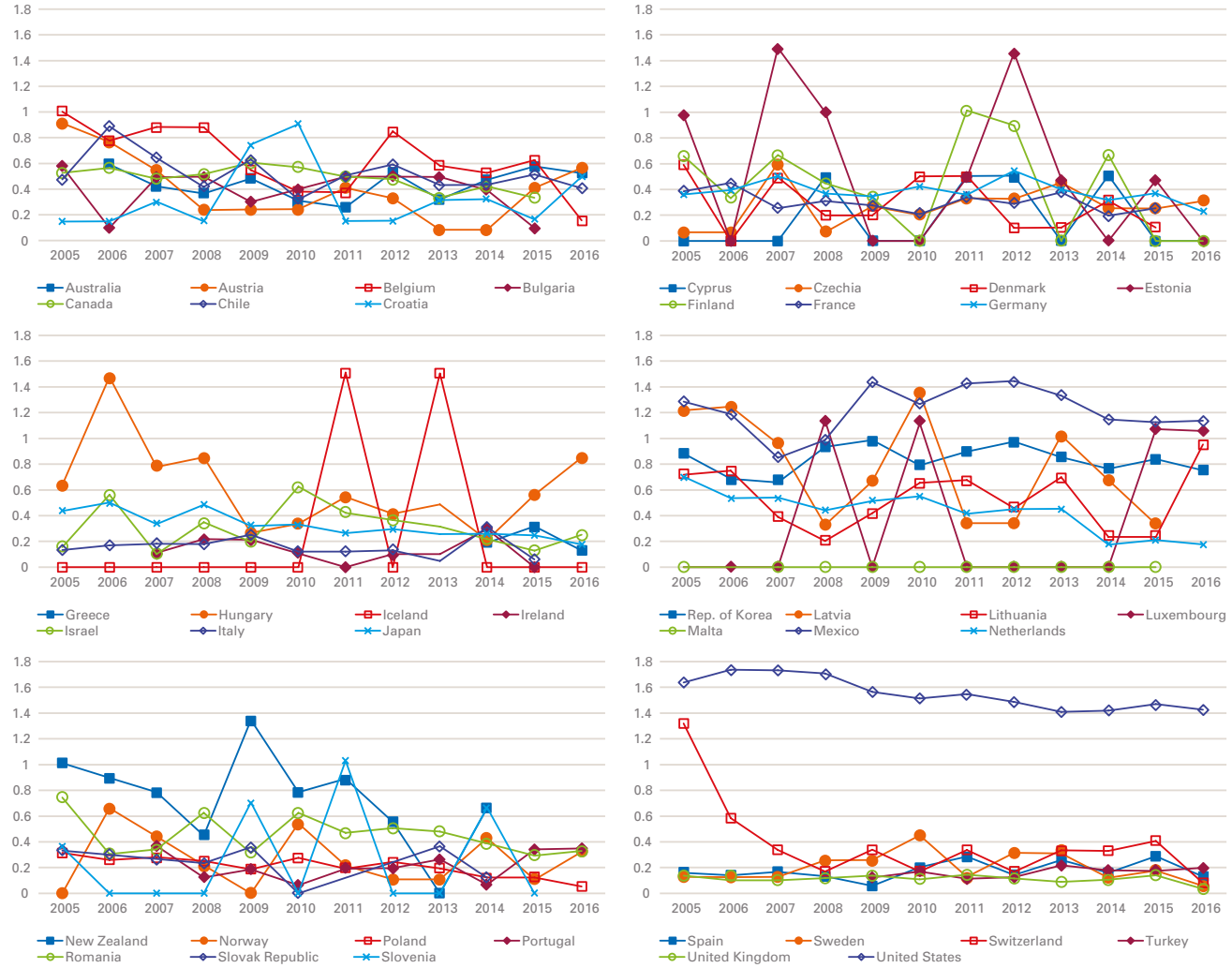
Condition	Configuration 1
Higher GDP per capita	
Lower GDP per capita	✓
Higher poverty rate	
Lower poverty rate	
Higher health expenditure per capita	
Lower health expenditure per capita	
Higher youth NEET rate	✓
Lower youth NEET rate	
Health services are free to access: Yes	✓
Health services are free to access: No	
Cases	Greece, Hungary, Israel, Slovakia, Spain
Consistency	0.98
Raw coverage	0.26
Solution consistency	**0.98**
Solution coverage	**0.26**

Source: Author's calculations.

4.1.6 Conditions related to higher and lower child homicide rates among children aged 0–14 years

The general trend in deaths through intentional injury among children aged 0–14 years is relatively stable in most countries, with some improvements seen in recent years (*see Figure 20*). Comparing the average of the first three years of the period shown in the trend charts (2005–2007) with that of the most recent three years shown (2014–2016), the child homicide rates in Estonia and Latvia fell by more than 0.6 child homicides per 100,000 children aged 0–14 years.[15] Rates also fell by more than 0.4 child homicides per 100,000 children in Belgium, Hungary, the Netherlands and Switzerland. No country shows a strong and clear increase in its child homicide rate in recent years. Only Mexico and the United States display consistently higher-than-average trends.

Figure 20. Wide variation is seen in child homicide rates among children aged 0–14 years in high-income countries in recent years



Note: Data report the number of child homicide deaths per 100,000 children aged 0–14 years. Trend lines run from the first to the last observed data points; markers represent years with observed data – for years with no markers, no data for that year were reported for that country. Source: WHO (2020).

15 Note that child homicide data for Estonia are somewhat patchy.

Which economic, social and policy conditions are most directly linked to higher and lower incidence of child deaths by intentional injury in high-income countries? The QCA of child homicide rates among children aged 0–14 years assesses five conditions: GDP per capita, child relative income poverty rate, public spending on family benefits, population density, and a measure to gauge the level of political stability and the absence of violence in the country.

The analysis of necessary conditions has been conducted for both a higher and lower child homicide rate. There is no condition that meets the strict consistency threshold of 0.85 to be a necessary condition for either the presence or absence of the outcome in the pool of countries. With a consistency score of 0.77, however, the condition of lower population density comes close to being a necessary condition for a higher child homicide rate in high-income countries. Two outliers fail to fulfil this necessity logic: Luxembourg and the Republic of Korea, each of which has a higher child homicide rate but is not sparsely populated. For a lower child homicide rate, the condition that comes closest to being necessary is a lower child poverty rate (consistency, 0.65).

The analysis of sufficient conditions assesses the combinations of conditions that explain a higher or lower child homicide rate. For a *higher child homicide rate*, two combinations of conditions are sufficient to explain the presence of this outcome in the pool of countries (*see Table 17*).

- ✔ Configuration 1 shows that a higher child poverty rate, higher spending on family benefits and a higher level of political stability and absence of violence explain higher child homicide rates in Luxembourg and New Zealand.
- ✔ Configuration 2 indicates that a higher GDP per capita, a higher child poverty rate and lower population density are sufficient conditions for a higher child homicide rate in the United States.

A higher child poverty rate is present in both combinations and this relative deprivation, combined with the other conditions, comes foremost in the explanation of higher child homicide rates in the country group.

The consistency score of the solution encompassing the two combinations is 0.84, which suggests that this combined solution is empirically robust. The coverage score of 0.31 is low, however, indicating that the two combinations together explain only about one third of cases (roughly 31 per cent) with a higher child homicide rate in the group of countries. The outcome may thus exist outside of these combinations, and there may be other conditions that better explain higher child homicide rates in high-income countries.

Table 17. Combinations of sufficient conditions that explain a higher child homicide rate (among children aged 0–14 years) in high-income countries

Condition	Configuration 1	Configuration 2
Higher GDP per capita		✓
Lower GDP per capita		
Higher child poverty rate	✓	✓
Lower child poverty rate		
Higher spending on family benefits	✓	
Lower spending on family benefits		
Higher population density		
Lower population density		✓
Higher level of political stability and absence of violence	✓	
Lower level of political stability and absence of violence		
Cases	Luxembourg, New Zealand	United States
Consistency	0.80	0.94
Raw coverage	0.20	0.19
Solution consistency	**0.84**	
Solution coverage	**0.31**	

Source: Author's calculations.

The analysis of sufficient conditions for a lower child homicide rate indicates that there are three combinations of conditions that explain the absence of the outcome (see Table 18).

- ✔ Configuration 1 shows that a lower child poverty rate and lower spending on family benefits leads to lower child homicide rates in Canada, Czechia, Ireland, the Netherlands, Poland, Slovenia and Switzerland.
- ✔ Configuration 2 reveals that higher spending on family benefits and a lower level of political stability and absence of violence are sufficient conditions for lower child homicide rates in Belgium, Estonia, France, Germany, Israel and the United Kingdom.
- ✔ Configuration 3 indicates that lower spending on family benefits, higher population density and a higher level of political stability and absence of violence explain lower child homicide rates in Japan, the Netherlands and Switzerland.

A lower child poverty rate, higher level of political stability and higher spending on family benefits stand out in the three combinations as influential conditions for a lower child homicide rate. But only in combination with the other conditions do they lead to the absence of the outcome. Notably, the set membership of the Netherlands and Switzerland overlaps two combinations, which reflects the complexity of conditions that explain a lower child homicide rate in these two countries.

The high consistency score (0.90) of the solution encompassing the three combinations suggests that this combined solution is empirically robust. The coverage score of 0.56 indicates that the three combinations together explain more than half of cases (roughly 56 per cent) with a lower child homicide rate in the country set. It indicates too that the outcome may also be absent without the conditions assessed here, and future research should test additional conditions that may better explain lower child homicide rates in high-income countries.

Table 18. Combinations of sufficient conditions that explain a lower child homicide rate (among children aged 0–14 years) in high-income countries

Condition	Configuration 1	Configuration 2	Configuration 3
Higher GDP per capita			
Lower GDP per capita			
Higher poverty rate			
Lower poverty rate	✓		
Higher spending on family benefits		✓	
Lower spending on family benefits	✓		✓
Higher population density			✓
Lower population density			
Higher level of political stability and absence of violence			✓
Lower level of political stability and presence of violence		✓	
Cases	Canada, Czechia, Ireland, Netherlands, Poland, Slovenia, Switzerland	Belgium, Estonia, France, Germany, Israel, United Kingdom	Japan, Netherlands, Switzerland
Consistency	0.91	0.92	0.93
Raw coverage	0.31	0.27	0.20
Solution consistency	**0.90**		
Solution coverage	**0.56**		

Source: Author's calculations.

4.2 Economic impacts on child income poverty and child well-being outcomes in high-income countries

This section looks at the elasticity of child income poverty and child well-being indicators in relation to the economic and social determinants, using macro-pooled time series regressions covering data from 2003 to 2018 for the group of high-income countries.

4.2.1 Economic impacts on child income poverty in the short to medium term

This first subsection focuses on child income poverty and the associations between contractions in economic growth and poverty – both how economic growth affects poverty, and how poverty affects economic growth. It looks across a five-year timeline to assess impacts in the short to medium term, providing an indication of the changes required to fiscal stimulus and social protection support.

Existing empirical analyses looking at the relationship between the level or growth of GDP per capita and poverty have traditionally followed two pathways. The first pathway refers to the impact of economic growth on poverty. There is an extensive literature in this direction, starting from Ravallion and Chen (1997), Dollar and Kraay (2002) and Bourguignon (2003), works that first highlighted the beneficial effects of economic growth on poverty reduction, to later studies corroborating this evidence (Fosu, 2008). The second pathway refers to the empirical evidence on poverty causally affecting economic growth. Several authors have studied the possible mechanisms through which poverty may inhibit economic growth and, in turn, how poverty reduction may support economic growth – albeit without reaching a consensus. One of the few studies focusing on the impact of poverty on economic growth is that of Ravallion (2012), looking at developing country settings. The author shows that countries with a higher initial incidence of poverty tend to experience a lower subsequent rate of economic growth.

Often the case is made that causality is likely to run both ways, so that economic growth and poverty are two parts of a simultaneous system of mutual determination. Indeed, as pointed out by Lustig et al., (2002) and Perry et al., (2006), the relationship between poverty and economic performance is a two-way relationship, in which the direction of causality is still unclear. Poverty will not decline without growth, but economic growth, although necessary, is an insufficient condition for poverty reduction unless the constraints affecting the poor are addressed.

Therefore, it is unclear to what extent the correlation between the two variables is attributable to poverty reduction caused by improvements in GDP per capita, or by growth in GDP per capita generated by lifting people out of poverty. It is thus necessary to examine the causal relationship between economic downturns and poverty, and vice versa. To this end, both the response of the child income poverty rate to a shock to GDP per capita, and the response of GDP per capita to a shock to child income poverty are examined simultaneously.

4.2.2 Assessing the impact on child income poverty of economic shocks: Results of impulse response function analysis

To understand both directions of the potential relationship between GDP per capita and child income poverty simultaneously, the following analysis employs a bivariate panel vector autoregression (P-VAR) approach. The P-VAR model unifies the two directions of causality by examining simultaneously the impact of GDP per capita on child income poverty and vice versa, and through impulse response function (IRF) analysis, the dynamic responses between the two variables can be assessed (Sims, 1980; Holtz-Eakin et al., 1988; Love & Zicchino, 2006). (*For further details, see Appendix section A2.2.*)

More specifically, IRF analysis is used to map the effects of a shock upon a system, in this case the effects of an economic shock (impulse) on child income poverty (response), as well as to assess the potential for reverse causality, i.e., the effects of child income poverty (impulse) on economic growth (response). The IRF analysis is conducted with two lags. Due to the limited number of observations per country, this analysis forecasts the effects of a shock over a period of five years.

Figure 21 maps the response of child income poverty to a GDP per capita negative shock in year 0 (left-hand panel) and the response of GDP per capita to a negative child income poverty shock in year 0 (right-hand panel). To read the results, note that the x-axis records years since the exogenous shock (1 per cent fall in GDP per capita, or 1 per cent increase in the child poverty rate) while the y-axis reports the cumulative effects of this shock in terms of a percentage change in the dependent variable (the line) and the associated confidence interval (shaded area). Significant results are those in which the confidence interval does not cross the '0' line (no change). The results by year reported in Figure 21 are cumulative and must be interpreted as such – in the left-hand panel, for instance, year 3 poverty outcomes are determined by the accumulated effects of the GDP per capita shock over the previous years.

The results are notable. Although child income poverty has no contemporaneous response to an unexpected one-standard-deviation fall in GDP per capita, the short- and medium-term effects of the shock show significant increases in child income poverty, starting from year 1 and remaining high and significant for up to five years following the shock (although the estimates are reported with increasing uncertainty). More specifically, an unexpected 1 per cent fall in GDP per capita leads to an increase in child poverty of almost 3 per cent on average across the group of high-income countries. More simply put, if the average child income poverty rate was 20 per cent at year 0, it increases by 3 per cent on average, rising to 20.6 per cent at year 1.

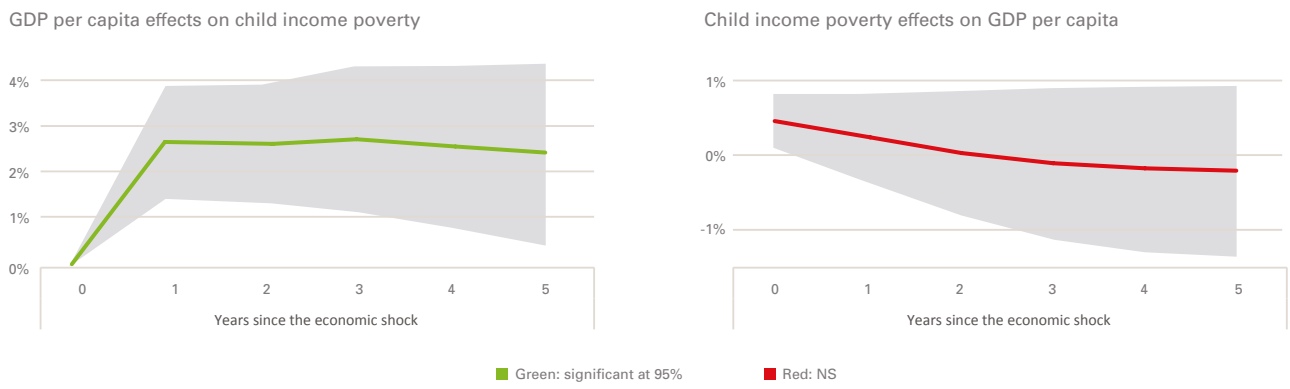
A quick reading of child income poverty as reported in Table 3 (19.6 per cent, on average, across the high-income countries), suggests that a 1 per cent fall in GDP per capita is associated with an average increase in the child poverty rate in high-income countries of about half a percentage point. Most telling is the persistence of this increase, which remains significantly higher post-shock across the country group for at least five years (longer projections are limited by data availability).

This finding brings into sharp relief the need for long-term planning to address child poverty risks due to the economic crisis related to COVID-19 – something not seen in the initial public policy responses in high-income countries from February to 31 July 2020.

In contrast to the effects of a shock to GDP per capita on child income poverty, a negative and unexpected 1 per cent shock to child income poverty leads to an initial negative effect on GDP per capita (within the first year) before the trend line begins to converge to zero, turning statistically insignificant from year 1 onwards. In other words, there is an initial negative response in GDP per capita to a sudden increase in child income poverty, but the effect is not sustained.

An unexpected increase in child income poverty is bad for the economy, but the economy recovers quickly; a shock to the economy is bad for child income poverty and it does not recover quickly. Similarly, improvement in the economy can reduce child income poverty, and keep it low, whereas a fall in child income poverty is likely to have only contemporaneous benefits for the economy. This finding alone may explain why, from the perspective of decision makers prioritizing longer-term economic growth, addressing child income poverty may not be a priority. Nevertheless, short-term fiscal stimulus, as seen in response to COVID-19, can be aided by efforts to reduce child income poverty.

Figure 21. Economic contraction effects of child income poverty are long-lasting



Note: IRF analysis for a five-year period – broad sample. On y-axis, percentage; on x-axis, number of years since the negative shock. Confidence intervals are estimated using Gaussian approximation based on bootstrap methods (200 Monte Carlo replications) from the estimated P-VAR model, with α =0.05. Variables expressed in logs. Source: Author's calculations using data from various sources (see Appendix Table 1.1).

4.2.3 Social and economic determinants of child well-being

This final subsection covers the results of the macro-pooled time series regressions reported in Appendix 3. These analyses seek to determine the effects of a contraction in GDP per capita on child well-being outcomes in the following year. Controlling for various social and economic conditions introduced above, the regressions result in a set of findings that can be used to predict the direction and extent of changes in child well-being based on economic contractions in high-income countries, after accounting for differences in pre-existing economic, social and demographic conditions. Full details on the methodology, and full results tables, are provided in Appendices 1 and 3.

Figure 22 presents the key results from the tests of economic contractions on child mortality rates, youth NEET rates, PISA reading literacy scores, youth suicide rates and child homicide rates. The effect sizes reported are indicators of elasticity, and report the percentage change for the indicators in the region for a given percentage change in GDP per capita. The figures are for a regional sample and therefore indicate an average effect for all high-income countries. Significant results are presented in bold.

As with many macro-pooled time series studies, the inclusion of additional control variables can result in changes in the number of countries included in the final tests (only cases with no missing data, per model, are included in the tests). Therefore, results need to be interpreted with reference to these changes (number of control variables and number of observations).

Child mortality rate among children aged 5–14 years

Prior to controlling for other variables, GDP per capita is significantly associated with child mortality in the following year (*see Figure 21*). In short, children are at higher risk of dying due to unintentional causes in the years following an economic crisis. This association remains significant after the inclusion of controls across all model specifications, including those accounting for social

expenditure, health expenditure, demographic factors and poverty risks, to name a few (*see Appendix Table 3.1*).

When included in the model, the child income poverty rate is consistently and positively associated with child mortality rates – with or without controls accounting for social expenditure overall or health expenditure per capita. This independent effect of poverty suggests that household-level factors (beyond levels of benefit income) are critical to mitigating children's risk of avoidable death.

When looking at the role of social interventions – in this case, total social expenditure in the year before the measurement of the child mortality rate – the most advanced model in the analysis (specification 7 in Appendix Table 3.1) shows a negative and significant association, whereby higher social expenditure is reported alongside lower child mortality rates in the following year. This specification also controls for child income poverty, which remains positively associated with child mortality rates.

Most notably, models 5 to 8 in Appendix Table 3.1 also include a control for economic recession, which is interacted with total social expenditure and health expenditure per capita to evaluate the presence of mitigating effects of these interventions. In periods of crisis, increased spending on social protection does seem to mitigate the effects of economic recession on child mortality – although missing data mean this test is for a subsample of countries with income poverty data in specification 7, rather than for the larger sample in specification 5. On the other hand, health expenditure per capita appears to be a valid mitigation tool for all high-income countries, whether including the controls for child poverty risks or not (compare specifications 6 and 8 in Appendix Table 3.1).

Youth aged 15–19 years not in education, employment or training (NEET)

As with the child mortality results discussed above, the results for youth NEET rates are reported in full in Appendix Table 3.2. The model specifications follow the same pattern, starting with a simple model showing the association between GDP per capita and rates of youth inactivity in the following year. Later models include controls, specifically for child income poverty and social expenditure (results reported in Figure 21 are for model specifications 1 and 8). The results for youth NEET rates do require cautious interpretation, however, since the results largely reflect only the conditions in European countries. This is because the inclusion of public education expenditure excludes Canada, France, Greece, Japan, Luxembourg, the Republic of Korea, Turkey and the United States from the sample. Adding child income poverty further reduces the sample size, as Australia, Chile, Israel, Mexico and New Zealand are also excluded.

Results show that, prior to including controls, the coefficient for GDP per capita is significant and negative, indicating that increases in GDP per capita are positively associated with youth activity. Once controls are included, however, the association remains significant but switches direction – although why this is the case is unclear, it is in line with the QCA finding discussed earlier in the report (*see Table 11*). The results of the economic recession variable and interaction term suggest, however, that sudden shocks to GDP per capita do not affect the youth NEET rate in the very short term within this selected group of countries.

As with child mortality, increased social expenditure – this time on education – does seem to exert a significant influence on youth inactivity, reducing its prevalence. Moreover, some key demographic factors are also at play. Statistically significant results are found for urban population growth (negative), unemployment (positive) and population density (positive). Unlike the other findings, the results for these demographic factors are consistent across the different specifications and robust to the changes in sample composition.

Reading performance in PISA

For the analysis of economic, social and policy determinants of countries' average PISA reading literacy scores, data used in the models were first adjusted to reflect PISA survey frequency (three-year averages given for all the controls and the dataset collapsed to six data points per country: 2001–2003, 2004–2006, 2007–2009, 2010–2012, 2013–2015 and 2016–2018). Full results are reported in Appendix Table 3.3.

Prior to the inclusion of controls, lagged GDP per capita is found to be a significant and positive determinant of a higher average PISA reading literacy score. Following the inclusion of controls in model 8, the full specification model, however, the effect of GDP per capita on reading performance is insignificant (*see Figure 21*).

The lagged child income poverty rate is negative and significant, suggesting that higher rates of poverty at the household level feed through to lower reading performance at the national level. Relatedly, social expenditure on families and children is positively associated with higher learning outcomes on average, whereas lagged public education expenditure (% of GDP), as shown in specification 7, is not (this may be due to different accumulation effects in education or fungibility in cash transfers). The results, although weak, seem to suggest that it is the distribution of wealth at the national level, not the average level of wealth, that is more closely related to national literacy achievement.

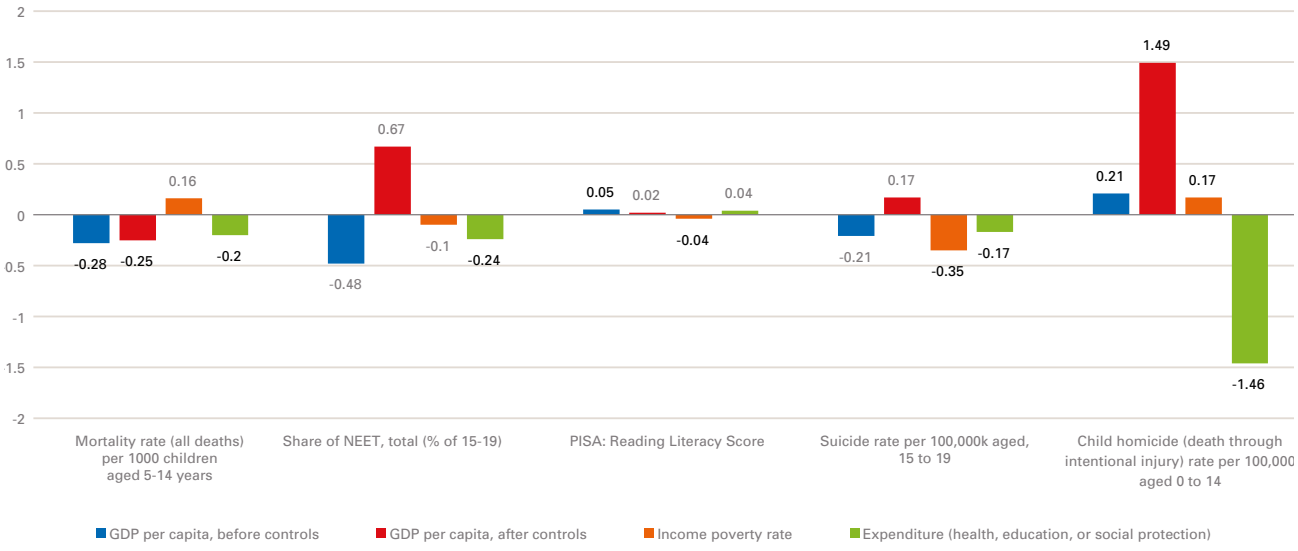
A further and notable determinant of reading performance, consistent across six of the eight models, is youth inactivity – higher youth NEET rates are associated with lower average PISA reading literacy scores.

Notable by their insignificance in relation to reading performance are both public education expenditure (as discussed above) and the pupil-teacher ratio at lower secondary level.

Suicide rate among youth aged 15–19 years

None of the chosen predictors shows a significant relationship with the youth suicide rate, whatever the sample composition selected. The only exception is a weak negative relationship between the child income poverty rate and youth suicide rate (*see Figure 21 and Appendix Table 3.4*). This absence of strong macroeconomic and macro-social determinants of suicide rates is consistent with the QCA findings discussed earlier – as is the counterintuitive association with child income poverty, seen in some country groupings (*see Table 15*).

Figure 22. Public expenditure can mitigate risks to various child well-being outcomes brought on by economic crisis and income poverty



Note: The effect sizes reported are indicators of elasticity, and report the percentage change for the indicators in the region for a given percentage change in GDP per capita. The figures are for a regional sample and therefore indicate an average effect for all high-income countries. **Significant results are presented in bold**. Expenditures relate to different sectoral expenditures according to outcome. In the case of child mortality rates, this is total social expenditure; for youth NEET rates, total public expenditure on education (% of GDP); for PISA reading literacy scores, share of expenditure on families and children (% of GDP); for youth suicide rates, total social expenditure; and for child homicide rates, health expenditure per capita. With the exception of GDP per capita before controls, all results are for after the inclusion of controls (which vary by model), with year and country fixed effects. Specifications by model are presented in Appendix 3, all effect sizes are taken from the most complete model specifications. All variables presented above are measured in the year before the measurement of the outcome (lagged). Findings should be interpreted with reference to model specifications and changes in numbers of observations. Source: Author's analysis of data from various sources (*see Appendix Table 1.1 and Appendix 3*).

Child homicide rate among children aged 0–14 years

All of the chosen predictors show a non-significant association with death through intentional injury, similar to what is seen for the youth suicide rate (*see Figure 21 and Appendix Table 3.5*). The only exception is health expenditure per capita in the previous year: higher rates of health expenditure per capita are associated with lower child homicide rates.

These results do not indicate that economic contractions, or economic shocks, will result in a higher risk of child homicide in the short term, but they do confirm a role for public intervention through the health system. More work could be done to understand the specific mechanism via which health investment may lead to lower child homicide rates – prime candidates for further exploration are mental health interventions, prevention through primary health care, and efficiencies in the provision, monitoring and reporting of secondary health care.

5. DISCUSSION: ADDRESSING COVID-19 RISKS TO CHILD WELL-BEING IN THE SHORT AND MEDIUM TERM

This final section of the report brings together the evidence from the literature review, the contextual evidence, and the understanding of the pre-existing conditions for, and determinants of, child income poverty and child well-being reported in the previous sections. In doing so, this section seeks to answer the last two of the five research questions, namely:

- Are initial government social protection responses to the crisis likely to accentuate or mitigate risks to children's well-being?
- How could future public policies be optimized, in the short and medium term, to protect outcomes for children?

Recommendations should be read with reference to the SDG indicators in Table 3 and the COVID-19 caseload data and lockdown strategies across the high-income countries.

5.1 What risks are children facing during the COVID-19 crisis?

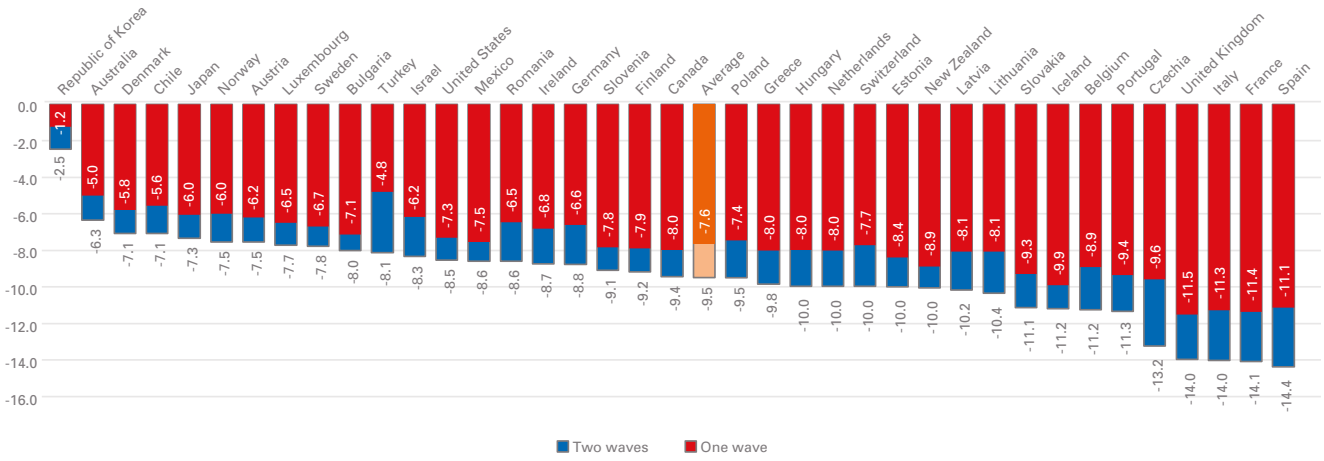
To put COVID-19 in context, around the time of the global financial crisis, economic growth in high-income countries averaged 1.3 per cent in 2008 and -4.4 per cent in 2009 (World Bank, 2020). Today, analysis by OECD (2020b) predicts a contraction of either 7.6 per cent of GDP on average in the OECD area under a single-wave scenario, or 9.5 per cent of GDP on average under a double-wave scenario – with France, Italy, Spain and the United Kingdom all seeing contractions of more than 14 per cent of GDP (*see Figure 23*). At the time of writing, countries in Europe are experiencing a second wave of COVID-19 and lockdown strategies are being revisited – including national lockdowns (e.g., as in France as of end October 2020, and Italy in mid-November 2020).

To combat the virus, and facilitate implementation of the lockdown strategies, high-income countries together spent an estimated $10.8 trillion PPP on the COVID-19 response from February to 31 July 2020. This combined sum of the countries' massive financial packages to address COVID-19, including through social protection responses, vastly outweighs the collective response to the global financial crisis.[16]

16 See Almenfi et al., (2020) for a comparison of global financial crisis and COVID-19 fiscal stimulus responses in 41 countries worldwide: the latter (9 per cent of GDP per country on average) is more than double the former (4 per cent of GDP).

Figure 23. Economic growth is expected to fall by almost 10 per cent of GDP on average in high-income countries in 2020, after a second wave of COVID-19

Predicted fall in economic growth for one and two COVID-19 waves, 2020



Note: Data are not available for all non-OECD European countries (Croatia, Cyprus and Malta are missing). Source: OECD dot.stat (2020b).

As members of society, children will be affected by both the health crisis – and associated lockdown strategies – and the looming economic crisis. This is evident from early reports of the impacts of school closures, heightened child protection risks and reduced access to health care as well as increased deprivations in recent months. The risks that children face as a result of COVID-19 can lead to short- and long-term costs, both to the children themselves and to the societies and economies in which they live. It is not beyond the means of societies and governments to substantially reduce these risks early on, through effective social interventions. The evidence from previous crises discussed in the report suggests that there are tried-and-tested methods for mitigating negative effects on children. So, what are governments already doing, and what conditions are they working with?

Prior to COVID-19, children in many high-income countries were already struggling (*see Table 3 and section 3.3*). Child income poverty rates have been stubbornly high for more than two decades in the majority of countries, worsening as previous crises have hit. Furthermore, results in educational outcomes are mixed, while youth NEET rates, youth suicide rates and child homicide rates are not showing consistent improvements. These trends prevail despite increasing knowledge, in at least two of these areas, of how macroeconomic and social conditions and, importantly, policy responses can improve children's active engagement in society and their safety.

In the years leading up to COVID-19, the economic, social and policy conditions in high-income countries also paint a mixed picture. Countries have had variable success in addressing income inequality and unemployment and in maintaining levels of investment in key cash transfers and human services. Age-dependency ratios are increasing in the majority of cases, as is government debt. Taken together, this means there are fewer workers available to manage higher social costs and national debt. Increases in national debt throw into sharp relief the sustainability of public services

and the risk of austerity – both of which can have severe implications for children. Furthermore, evidence of the slow recovery from the global financial crisis suggests that the recovery from COVID-19 will be such a long-term endeavour that it could result in poorer economic conditions for a decade or more. As described in the conceptual framework outlined in section 2, and in the evidence presented in section 3, all of these conditions matter, individually or in combination, for all of the outcomes studied here.

The evidence from the results, and the literature review, also shows how spending on different social policies and, importantly, the design of such policies are critical tools in mitigating the effects of health and economic crises on children. Yet a closer look at social protection policies implemented in response to the COVID-19 crisis reveals a lack of direct intervention for children, and very low levels of investment overall, when compared with other interventions.

In high-income countries, 47 of the 159 COVID-related social protection responses implemented to 31 July were specifically designed to support children or families with children. Global costs have been reported for 15 of these child- and family-focused policies – at a median cost of $2.0 billion PPP per policy. Costs are also available for 31 of the other 113 social protection policies, and give a lower median cost of $1.0 billion PPP per policy (although a substantially higher average cost, and overall level of expenditure). Spending on fiscal stimulus responses – 182 of which were in place by the end of July and 145 of which are costed – at a median value of $8.8 billion PPP per intervention. Extrapolating from median costs, and the number of policies overall, suggests that spending on corporate welfare interventions in high-income countries could have reached as much as $10 trillion PPP by 31 July. This compares with the $804 billion PPP spent on social protection as a whole, with approximately 31 per cent of that money (or $250 billion PPP) allocated to children and to families with children. In responding to what now appears to have been only the first wave of COVID-19, high-income countries have spent the equivalent of 8 per cent of global GDP in just five months.

Although children do indirectly benefit from fiscal stimulus, and indeed the social protection delivered to families, workers or even the elderly, this approach to COVID-19 suggests that governments are willing to trust existing mechanisms of 'trickle-down' approaches to child welfare, relying on businesses to do the right thing, something that is not always without risk (e.g., fraud, error, implementation gaps – for an example from the United Kingdom, see National Audit Office, 2020, p. 50). The approach also under-represents children living in families not attached to the formal labour market, who are arguably those most in need, and in so doing will accentuate the inequalities suffered by these children prior to the present crisis.

Beyond the broad fiscal stimulus strategy, and the amount of money spent on children, *how* the money is spent is also of concern. There are only seven examples of family allowances implemented in response to the COVID-19 crisis by 31 July. Less than half of the countries have accounted for new childcare needs. Just seven countries have implemented additional food support for schoolchildren. No country, perhaps with the exceptions of Italy and the Republic of Korea, has thus far taken a multi-pronged approach to providing for families with children – that is, accounting for food support, care support, income support and health needs. To add to this, where policies for children were put in place by the end of July, they often planned for short-term interventions, despite the long-term consequences of economic crises.

Taken together, the conditions of childhood in some high-income countries prior to the crisis left significant numbers of children at risk of poor outcomes. The lessons from the global financial crisis and other crises show that, for many of these children, the situation will worsen. Finally, the evidence

of government responses to the first wave of COVID-19 suggests both that children as a group are at risk of being left behind (school closures, lower relative 'direct' investment in social protection, etc.) and that direct and indirect investments in COVID-19 responses that could benefit children are largely blind to the most vulnerable. What this means for child income poverty and child well-being, and what can be done about it, will be covered in the following sections.

5.2 What do we expect to happen to children during and after the COVID-19 crisis?

The results of the analysis in this report are clear. Children will be severely affected by the economic crisis imposed by COVID-19. Child income poverty is likely to increase and remain higher than pre-COVID levels for at least five years, a finding of great concern given that this is on the back of more than two decades of slow or no progress in child poverty reduction in most high-income countries. Child well-being outcomes are also at risk. In the regression models, child mortality increases are associated with falls in GDP per capita – after controls. And using similar tests, education, youth activation and child safety are significantly associated with the poverty risks noted above. In short, the economic crisis will affect child income poverty and child health, and through poverty, the crisis will influence child well-being.

For some countries that are more or less resilient to shocks, the situation will be different. Children's risks of poverty and poorer well-being are expected to be higher in countries more susceptible to unemployment, inequality and higher age dependency and, importantly, in countries where social expenditure is lower. All of the above conditions are, to varying degrees, influential in determining poorer child well-being outcomes.

Notably, without investment in child services and benefits, outcomes are likely to be substantially worse. Yet the ability of countries to mitigate these risks is becoming increasingly limited, as indicated by both high levels of general government debt and the sheer size of expenditure in response to the first wave of COVID-19 – both of which will need to be paid for.

5.3 What are governments doing for children in high-income countries, and what do we need to see?

How much public money is spent matters

That businesses receive such a large proportion of a country's overall fiscal stimulus is an indication of who in society will receive the most direct support in response to COVID-19. Although there are very few cases of informal work in high-income countries, it stands to reason that unemployed individuals and workers in low-paid and insecure positions will not benefit equally from the fiscal stimulus. While understanding that there is of course a need to support businesses at times of lockdown and economic crisis, it is striking that the vast majority of the spending has been directed through businesses, including furlough schemes and other interventions designed to support working people.

Evidence from the literature on what supports families, facilitates employment and indeed reduces the likelihood of further infectious outbreaks, from across multiple economic crises and health crises in high-income countries, shows that corporate welfare approaches are not enough to mitigate the effects of such crises on families and children. Indeed, for children and their families, across the range of income poverty and well-being outcomes reported here, the evidence is overwhelmingly in

favour of social protection support paid in the form of social assistance. In contrast to social insurance, social assistance does not require a history of social contributions for families to be eligible (although other eligibility criteria may be set).

As a second wave of COVID-19 threatens further closures, more needs to be done to rebalance – among people and corporations – the government responses to the crisis. Increasing the share of the overall sum available that is directed towards social protection must be matched by a greater commitment to child-specific interventions to stave off increases in poverty and its associated effects on children's education, health, safety and transitions to adulthood.

How money is spent on families also matters

Of the 159 social protection interventions allocated funds by 31 July 2020, just 47 were for children or for families raising children. About one third of all high-income countries offered no new policies specifically aimed at supporting children through this initial phase of the crisis. Of 47 policies introduced for children and for families with children, 16 addressed childcare needs (two of which were part of general paid leave policies), 12 concerned extensions of family allowances, 8 provided for school feeding and 3 for family food support, and 1 concerned an extension of maternity pay. Most of these benefits built upon pre-existing eligibility to benefits (not accounting for the near poor) and/or had work conditions (and so missed children in the poorest households) – only eight did not. For the family policies with data, the most common duration of implementation was just 3 months (5.6 months on average), addressing neither the length of the health crisis itself nor the expected long-term effects of COVID-19 on child income poverty.

Furthermore, given the expected depth and persistence of the present economic downturn, and how this is likely to affect both existing inequality and poverty risks, social protection benefits in high-income countries should also recognize that existing definitions of poverty and vulnerability are not 'COVID-proof'. As such, benefits targeted to and costed for the caseloads defined by poverty pre-COVID-19 will need to be flexible to expansion in the short and medium term. Simply put, new policies need to account for the 'new poor' resulting from the COVID-19 crisis. Where benefits involve the extension of eligibility, or increases in leave or payments to those already eligible, these overlook the new poor and therefore will not provide full coverage of need. This is true in the case of the four additional income support measures provided to existing recipients of family benefits.

From the perspective of social protection as a whole, the majority of the benefits delivered to 31 July were in support of workers. This excludes people with a weak attachment to the labour market, such as informal workers and unemployed individuals. Where social insurance is used, this is paid on condition of the payment of social security contributions prior to the crisis, which can mean that new migrants and new recruits may also be excluded or paid only on condition of job retention throughout the crisis. Social assistance interventions – which are most likely to cover the poorest and most vulnerable in society, and which have been well evaluated in the literature – make up only about two thirds of the social protection responses and just over one quarter (28 per cent) of all interventions.

Overall, the combination of the circumstances mentioned above means there is a strong likelihood that many children across high-income settings will receive no COVID-19 support whatsoever (neither directly nor indirectly), despite their present needs and despite their futures being at risk like everyone else's. These children are not responsible for the social and economic crisis, nor the health crisis it stems from. And if they are left behind, as they have been in previous crises, the management of the response is likely to accentuate inequality among children. According to the United Nations

Convention on the Rights of the Child, and the stipulations of the SDGs, the rights of *all* children – irrespective of their personal attributes, family backgrounds or existing living conditions – should be protected during and after the COVID-19 crisis, including the right to development.

To begin to meet the needs of all children, governments need to ensure that social protection benefits, and specifically social assistance benefits, are complementary to both social insurance options and stimulus benefits/employment support – this will maximize coverage. Governments should then diversify their social protection responses to ensure that money is spent smartly. The COVID-19 context, in which movement is restricted, schools and workplaces are closed, and earnings and jobs are at risk, calls for packages that include: income support, school feeding (and replacement services), childcare support and health support (and, where necessary, health insurance schemes), as well as waivers for utility bills and rent or mortgage payments to avoid further indebtedness or evictions. To help in these extraordinary circumstances, eligibility criteria for social insurance and social assistance policies can be relaxed, including any conditions related to employment; and time frames for implementation of the benefits should reflect both immediate needs based on conditions imposed by lockdowns as well as potential longer-term consequences (e.g., delivery of food packages to remote communities and intergenerational households, plus longer-term cash support).

In line with the ambitions of the SDGs and the requirements of the Convention on the Rights of the Child – and because the virus is affecting everyone – COVID-19 benefits packages should meet both the demands for universal coverage and the need to address existing inequality by meeting the standards of progressive universalism. This means that, *in combination*, the benefits cover all families with children, with increments paid in the case of families with greater needs related to household size, members with disabilities, health status, employment status, etc. When paid over the long term, these benefits should be indexed, preferably to a retail price index, to allow for fluctuation in inflation and living costs. Among other advantages, this will address coverage for the most vulnerable children and families, as well as those that are near poor, and limit the exacerbation of existing inequality and poverty risks, as seen during previous crises.

Where countries need to find the money to undertake the necessary expansions, a rebalancing of present fiscal stimulus and social protection options would be the first thing to consider. The rebalancing can be seen as an investment in strengthening the social protection system in a time of crisis – a worthwhile effort that has the potential to outlive the crisis and further strengthen social development priorities, and anti-poverty measures in particular.

Fiscal recovery: Protecting children from austerity

Evidence in this report highlights the damaging effects of austerity on children and their families – whether from the increased risks of violence, homelessness, poor health outcomes or institutionalization, among other risks. Many high-income countries have relied on borrowing to finance their fiscal stimulus responses to COVID-19 and, in the absence of growth and inflation, will have debts to repay. Should fiscal stimulus lead to austerity there will be serious impacts on families and children. Governments should at all costs avoid austerity that affects child-focused benefits and services. Given the relative underinvestment in children during the first wave of COVID-19 – and the costs of school closures to child development – austerity in this form would see children and families paying twice over, and for costs they did not accrue.

Planning for the future

Planning for the future necessitates understanding the needs of families and children in short-, medium- and long-term scenarios, as well as the efficacy of using one type of public policy response over another. Both aspects are subject to speculation to some degree, but can also be informed by evidence from the past and by strengthening the evidence base today.

In the short term, as a second wave of COVID-19 hits, getting the immediate steps right for children is critical. The call for a greater share of investment to go directly to children, as set out above, sits alongside a call for greater diversification in the policy portfolio to support families of all types. This is necessary to avoid accentuating existing inequality and poverty risks, and to protect children's well-being and their futures. Relatedly, the lessons of the global financial crisis indicate that social protection responses to address child income poverty and child well-being must reflect the reality of the recovery time frame. This requires medium-term plans for social protection that set payment schedules accordingly – and which allow for expanded coverage to meet the needs of the near or new poor.

That said, with economic contractions that promise long-term effects on GDP per capita, and with existing spending on the COVID-19 response already at record levels, what today's choices mean for the sustainability of public policy responses requires some careful forethought. Short-term plans should therefore consider what immediate spending may also mean for medium- and long-term austerity risks and in terms of the need to support families to contribute to the strongest recoveries. How to support families with children now, without it resulting in damaging cuts later, is a particularly relevant topic of discussion in those countries where general government debt is already at very high levels.

In the long term, the need for sustained physical distancing, and the changes in norms that this can bring about, may mean more permanent changes to work patterns, schooling and travel. Whom people choose to see in person, where and how they source goods and services, where they work and where they spend their leisure may all change. This will lead to innovation in how business is done, how markets are managed and what types of work become essential. Fundamental changes in living conditions (relationships, resources, family functioning, work) imposed by the pandemic will inevitably open up the discourse on how countries plan their public policies, including social protection policies. This planning may include austerity, but equally may provide an opportunity to strengthen social protection schemes – and other important social sectors such as education and health – for the benefit of children, families and society as a whole. With more home-based work the norm, it will be even more critical to address the gender inequalities inherent in both social protection policies and care responsibilities. Advocates for children, and for gender equality, need to be prepared for these discussions.

In terms of the evidence needs for planning, work is needed at the national level to better understand the total costs of social protection benefits. Costs are important for understanding the sustainability and affordability of the benefits, and the impact on overall government debt, as both will partly dictate calls for austerity and how cuts will affect social protection policies. Following the collection of better data on the global costs, understanding the amount of the global cost transferred is important for two assessment reasons. First, to help assess more accurately the social impact of the benefits. Second, to help assess whether new reforms are more cost-effective than reforms building on existing social protection programmes. Good research on the global gross and net cost-effectiveness would contribute vital data to inform decision-making on crisis reforms as well as decisions around the justification for establishing stronger social protection infrastructure in normal times.

The review of studies on actions to mitigate crises for families and children reveals that there are no studies on the direct effects of fiscal stimulus on children – only studies on its direct effects on family incomes and poverty rates in the overall population. More needs to be known about the equity of corporate welfare interventions, both across the population and across the life course, and about how to optimize the social returns in the most equitable and child-friendly ways. Future efforts to ensure more child-friendly fiscal stimulus would go some way towards alleviating concerns regarding the underinvestment in child-focused social protection responses to date.

Finally, as governments and international partners work together to address this unprecedented crisis, country-level stakeholders need to monitor both the conditions and the combinations of conditions that increase the risk of poor outcomes for children, and to apply the evidence base to assess whether or not policy responses will mitigate the effects of these conditions.

When policies are inadequate to meet the needs of children, we need to ask why – and then help to provide the evidence and action needed to facilitate effective policy reform for all children.

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APPENDIX 1: SUPPORTING CHARTS AND TABLES

Appendix Table 1.1. Indicators used in the analysis: Outcomes, determinants and contexts (2003–2018)

Variable	Available data by country	Source
Child mortality rate (all deaths per 1,000 children aged 5–14 years)	All countries (2003–2018)	United Nations Inter-agency Group for Child Mortality Estimation
Share of youth not in education, employment or training (% of population aged 15–19 years)	All countries (2003–2018), except Austria, Bulgaria, Croatia, Malta and New Zealand (2004–2018); Japan (2005–2014); Lithuania (2005–2018); Chile (2009–2017); and Cyprus, Israel and Republic of Korea (no data)	Organisation for Economic Co-operation and Development (OECD)
Average Programme for International Student Assessment (PISA) reading literacy score	All countries (2003–2018), except Spain (2003–2015); Chile, Estonia, Israel, Lithuania, Romania, Slovenia and United Kingdom (2006–2018); Malta (2009–2018); Cyprus (2012–2018); and Bulgaria and Croatia (no data)	OECD PISA
Youth suicide rate (suicide deaths per 100,000 youth aged 15–19 years)	All countries (2005–2016), except New Zealand, Slovakia (2005–2014); Bulgaria, Canada, Denmark, France, Italy, Latvia, Malta and Slovenia (2005–2015); Australia (2006–2016); Ireland (2007–2015); Portugal (2007–2016); Turkey (2009–2016); and Greece (2014–2016)	World Health Organization (WHO) mortality database
Child homicide rate (deaths through intentional injury per 100,000 children aged 0–14 years	As for suicide rates above	WHO mortality database
Age-dependency ratio (% of dependants relative to working age population)	All countries (2003–2016), except Greece (2003–2005); Turkey (2003–2006); Bulgaria and Croatia (2003–2013); Denmark (2003–2014); Portugal (2003–2015); Chile (2003–2017); Malta (2004–2015); Canada (2005–2011); Australia and Belgium (2005–2016); Germany (2006–2016); Luxembourg (2012–2015); United States (2013–2014); Japan (2013–2016); Republic of Korea (2016–2016); and France (no data)	World Bank world development indicators
Unemployment, total (% of total labour force) (modelled on International Labour Organization estimates)	All countries (2003–2018)	World Bank world development indicators
Gross domestic product (GDP) per capita (constant 2010 US dollars)	All countries (2003–2018)	World Bank world development Indicators
Immunization rate for diphtheria, pertussis and tetanus (DPT) vaccine (% of children aged 12–23 months)	All countries (2003–2018)	World Bank world development Indicators
Life expectancy at birth (total years)	All countries (2003–2018)	World Bank world development indicators
At-risk of poverty rate among children aged 0–18 years (threshold: 60% of median equivalised income after social transfers)	All countries (2003–2018)	Eurostat

Variable	Available data by country	Source
Urban population growth (%)	Austria, Belgium, Denmark, Greece, Ireland, Luxembourg and Norway (2003–2018); Iceland (2004–2016); Spain, Estonia, Finland, France, Italy, Portugal and Sweden (2004–2018); Cyprus, Czechia, Germany, Hungary, Latvia, Lithuania, Malta, Netherlands, Poland, Slovakia, Slovenia and United Kingdom (2005–2018); Turkey (2006–2017); Bulgaria (2006–2018); Chile and Romania (2007–2018); Croatia (2010–2018); and Australia, Canada, Chile, Israel, Japan, Mexico, New Zealand, Republic of Korea and United States (no data)	World Bank world development indicators
Population density (number of people per sq. km of land area)	All countries (2003–2018)	World Bank world development indicators
Pupil-teacher ratio (lower secondary)	All countries (2003–2017), except Greece (2004–2017)	World Bank world development indicators
Political stability and absence of violence/terrorism: Estimate	All countries (2003–2017), except Greece (2004–2017)	Worldwide Governance Indicators
Share of expenditure on families and children (% of GDP)	All countries (2003–2018)	Eurostat
Public education expenditure, total (% of GDP)	All countries (2003–2017), except Cyprus and Finland (2003–2013); Croatia, Greece, Iceland, Slovakia (2003–2016); Switzerland (2004–2017); Austria (2005–2017); Spain and Mexico (2006–2017); Lithuania (2010–2016); Malta and Republic of Korea (2011–2017); Canada and Sweden (2012–2017); Ireland (2013–2015); Italy and Netherlands (2013–2017); Germany (2014); Turkey (2014–2017); and Bulgaria, Hungary and United States (no data)	World Bank world development indicators
Domestic general health expenditure per capita (current international dollars PPP)	All countries (2003–2018)	WHO
Current health expenditure per capita (current international dollars PPP)	All countries (2003–2015), except Poland (2003–2014); Australia, Mexico, Turkey and United States (2003–2016); Chile, Israel, New Zealand and Republic of Korea (2003–2017); and Bulgaria, Croatia, Cyprus, Malta and Romania (no data)	WHO
Social expenditure per capita (constant 2010 US dollars)	All countries (2003–2018), except Ireland (2012–2018) and Bulgaria, Iceland, Italy, Japan, Latvia, Norway, Sweden, Switzerland, Turkey and United States (no data)	OECD

Note: Data were downloaded in June 2020.

Appendix Table 1.2 Total days, by closure decree or restriction, between end January and end July 2020

Country	School days		Workplaces		Public events		Lockdowns		Travel bans	
	Date	Days	Date	Days	Date	Days	Date	Days	Date	Days
Australia	..	0	..	0	18-Mar	86	..	0	1-Feb	182
Austria	16-Mar	79	16-Mar	29	11-Mar	121	16-Mar	46	9-Mar	87
Belgium	14-Mar	83	18-Mar	54	14-Mar	140	18-Mar	82	20-Mar	134
Bulgaria	5-Mar	149	..	0	13-Mar	78	..	0	17-Mar	116
Canada	20-Mar	52	1-Apr	3	..	0	..	0	18-Mar	136
Chile	15-Mar	139	16-Mar	5	25-Mar	129	25-Mar	51	18-Mar	136
Croatia	16-Mar	138	20-Mar	38	18-Mar	69	23-Mar	49	19-Mar	118
Cyprus	13-Mar	141	..	0	10-Mar	106	24-Mar	58	15-Mar	139
Czechia	11-Mar	102	14-Mar	37	11-Mar	75	15-Mar	37	30-Jan	184
Denmark	13-Mar	141	..	0	..	0	..	0	11-Mar	143
Estonia	16-Mar	60	27-Mar	45	12-Mar	81	..	0	17-Mar	41
Finland	16-Mar	59	..	0	12-Mar	103	..	0	6-Feb	177
France	16-Mar	98	17-Mar	55	29-Feb	133	17-Mar	55	17-Mar	137
Germany	18-Mar	62	..	0	20-Mar	134	..	0	16-Mar	138
Greece	10-Mar	83	..	0	9-Mar	76	23-Mar	68	14-Mar	123
Hungary	11-Mar	83	..	0	11-Mar	100	27-Mar	38	9-Mar	145
Iceland	16-Mar	49	..	0	16-Mar	138	..	0	20-Mar	134
Ireland	13-Mar	141	27-Mar	52	12-Mar	106	28-Mar	51	..	0
Israel	13-Mar	109	1-Apr	25	4-Mar	150	20-Mar	102	2-Feb	181
Italy	4-Mar	150	10-Mar	55	4-Mar	150	10-Mar	55	30-Jan	129
Japan	..	0	..	0	..	0	..	0	1-Feb	157
Republic of Korea	24-Feb	95	6-Apr	14	21-Feb	59	21-Mar	28	4-Feb	151
Latvia	13-Mar	141	..	0	13-Mar	60	..	0	17-Mar	85
Lithuania	16-Mar	75	16-Mar	42	12-Mar	81	..	0	16-Mar	105
Luxembourg	16-Mar	70	16-Mar	56	13-Mar	73	17-Mar	34	..	0
Malta	..		..		..		..		..	
Mexico	23-Mar	131	26-Mar	67	24-Mar	130	30-Mar	63	21-Mar	133
Netherlands	16-Mar	91	15-Mar	57	12-Mar	111	23-Mar	49	19-Mar	135
New Zealand	24-Mar	51	25-Mar	34	16-Mar	59	23-Mar	52	2-Feb	181
Norway	12-Mar	60	..	0	24-Mar	70	..	0	15-Mar	139

Poland	12-Mar	142	..	0	10-Mar	81	31-Mar	9	15-Mar	139
Portugal	16-Mar	117	19-Mar	46	19-Mar	119	19-Mar	50	10-Mar	144
Romania	11-Mar	143	..	0	8-Mar	101	25-Mar	51	9-Mar	120
Slovak Republic	16-Mar	138	..	0	10-Mar	85	8-Apr	6	13-Mar	99
Slovenia	16-Mar	79	20-Mar	31	19-Mar	135	..	0	10-Mar	144
Spain	16-Mar	138	30-Mar	35	10-Mar	68	14-Mar	74	10-Mar	144
Sweden	..	0	..	0	..	0	..	0	19-Mar	135
Switzerland	13-Mar	85	17-Mar	41	28-Feb	155	..	0	13-Mar	141
Turkey	16-Mar	138	..	0	16-Mar	128	21-Mar	119	5-Feb	168
United Kingdom	23-Mar	70	21-Mar	51	22-Mar	132	23-Mar	51	..	0
United States	..	0	..	0	..	0	..	0	2-Mar	152

Note: School closing reported start and end data where national decrees required closing at some levels or categories, e.g. just high schools, or if all schools were closed. Workplace closure reported start and end data of national requirement to close workplaces or work from home in all-but-essential workplaces (e.g. stores, doctor surgeries). Public events show start and end date of a national requirement to cancelling public events. Lockdowns report a start and end date of national requirement to not leave the house with exceptions for daily exercise, grocery shopping, and 'essential' trips, or not leave the house with minimal exceptions (e.g. allowed to leave once a week, etc.) Travel bans cover bans on arrivals from some regions or all regions (total border closure). Data was missing for Malta. Source: COVID-19 data: Johns Hopkins University and Medicine (2020); closure dates and codebooks: Blavatnik School of Government (2020).

APPENDIX 2: METHODOLOGICAL NOTES

A2.1. Notes for fuzzy-set qualitative comparative analysis

The analytical tool that this study employs is fuzzy-set analysis, a relatively novel technique within the broader qualitative comparative analysis (QCA) methodology (Cebotari & Vink, 2013; Manuamorn et al., 2020; Ragin, 2008; Schneider & Wagemann, 2012). The QCA methodology is suitable for studying complex socio-economic phenomena, as it is geared towards capturing the configurational logic of conditions leading to an outcome.

In contrast to traditional quantitative analyses, which are oriented towards capturing the empirical relevance of independent variables, QCA does not make such assumptions of independence. Instead, QCA uses mathematical algorithms of Boolean logic to assume conjunctural causation, and aims to analyse how individual conditions alone or in combination explain weaker or stronger values of an outcome. By analysing both sides of an outcome, QCA takes into account the asymmetrical nature of complex phenomena. This unique feature of QCA sets it apart from other methodologies.

QCA is suitable for small and medium N-samples and combines the quantitative evidence with a case-oriented approach, where a good knowledge of cases in the sample is essential to select relevant conditions and to explain interlinkages between theory and findings. Cases can be a unit that fits the contextual logic of the analysis. In the current study, cases are high-income countries, as this unit of analysis captures well the employed conditions and outcomes. The outcomes and conditions can employ micro-, meso- and macro-level data and may include evidence explaining individual, context and policy characteristics. The ability to include and analyse data at different levels is one major advantage of the QCA methodology.

The QCA fuzzy-set technique is based on defining and analysing subset relations of necessary and sufficient conditions that lead to the presence or absence of the outcome. The analysis employs three steps, as follows:

1. The conceptual, empirical and theoretical evidence feeds in *raw data* that are composed of an outcome and conditions for the employed cases. The raw data are collected using available empirical evidence or are gathered qualitatively using in-depth knowledge of each case.

2. The raw values of data for outcomes and conditions are *calibrated* into fuzzy-set membership scores using middle-, upper- and lower-level thresholds that are informed by evidence or data characteristics.

For this study, the calibration used the average values as a middle-level threshold when defining the set membership in the outcome and conditions for the country group. The ½ standard deviation values above the mean were used as the upper-level threshold, while the ½ standard deviation values below the mean were used as the lower-level threshold to define the set membership for each outcome and conditions.

The calibration using the three thresholds leads to fuzzy-set membership scores for the outcome and conditions that are included in the interval between [0] (non-membership) and [1] (full membership). Fuzzy-set scores that go beyond the crossover point of 0.5 are closer to full membership while scores below this point are closer to non-membership. The fuzzy-set scores that are defined during the calibration process are sensitive to variations in the use of thresholds and cut-off points. The current study pays particular attention to the standardization of the cut-off thresholds, as described above.

3. The calibrated scores are used to analyse the configuration of *necessary* and *sufficient* conditions leading to the presence and the absence of the outcome.

    a. The status of being a *necessary* condition is fulfilled when the outcome is consistently a subset of a condition in the pool of cases. In other words, a condition is necessary when the outcome cannot be present without the condition being present as well (if Y = 1 then X = 1). A necessary condition is therefore a constraint for the outcome to exist. The status of necessity holds powerful policy implications, as it emphasizes a single prerequisite that alone has an actionable change on the outcome.

    b. The status of being a *sufficient* condition is fulfilled when the condition is a subset of the outcome, where the fuzzy-set scores of the condition are lower or equal to the fuzzy-set score of the outcome. A sufficient condition ensures the occurrence of the outcome, but the outcome can also exist without the condition, or a configuration of conditions, being present (if X = 0 then Y can still be = 1).

The analysis of sufficient conditions produces three types of solutions: complex, parsimonious and intermediate. Following recommended good practice, the solutions used in this study are of the parsimonious type, as this represents the superset of the intermediate and complex solutions and embeds well those cases exposed to limited diversity (Cebotari & Vink, 2013; Manuamorn et al., 2020).

The analyses of necessary and sufficient conditions employ two parameters of fit. The first parameter, *consistency*, indicates the degree to which the subset relation is approximated. The parameter of consistency takes into account both the degree of deviation of cases from the pattern of necessity and how large is this deviation. Higher consistency values indicate a better subset relation and a better fit with the status of being a necessary or sufficient condition in the pool of cases. A consistency score of 0.80 is generally seen as the minimum accepted value for being a sufficient condition. For the analysis of necessary conditions, a higher consistency threshold is needed, although there is no universally accepted value for such a cut-off point. In most cases, however, a score of 0.85 (or higher) is advised as the cut-off point for consistency in the analysis of necessary conditions.

The second parameter of fit is *coverage*, which indicates the relation in size between the condition set and the outcome set. For the analysis of sufficient conditions, the coverage shows the proportion of cases covered by a condition or combination of conditions. For the analysis of necessity, the coverage indicates how much smaller the set membership Y is in relation to set membership X. Higher coverage scores for necessary conditions would reflect the fact that the relation in size of sets X and Y is more in proportion to each other, reflecting a higher relevance of being a necessary condition.

A2.2. Methodology for child income poverty projections

As a consequence of the reverse causality problem, the standard ordinary least squares (OLS) assumptions are violated, therefore standard OLS techniques will produce biased and inconsistent parameter estimates. Our strategy to deal with gross domestic product (GDP) and poverty simultaneity is to employ a panel vector autoregression (P-VAR) approach. The P-VAR model seeks to capture the interrelations of a set of endogenous variables in a system of equations over a certain period of time, by describing each variable as a linear function of its lagged values (Sims, 1980; Holtz-Eakin et al., 1988).

The P-VAR combines the traditional vector autoregression (VAR) approach, which treats all of the variables in the system as endogenous, with the panel data approach, which allows for unobserved individual heterogeneity (Love & Zicchino, 2006, p. 193). The generic bivariate P-VAR model of order *p* for child income poverty and GDP per capita is given in Equation 1.

$$x_{it} = \alpha_0 + \alpha_1 x_{it\text{-}1} + \cdots + \alpha_p x_{it\text{-}p} + \varepsilon_{it} \qquad (1)$$

with x_{it} being,

$$x_{it} = \begin{pmatrix} InChildPov018_{it} \\ InGDPpc_{it} \end{pmatrix} \qquad (2)$$

Where in this approach, the vector x_{it} is a (2x1) vector of dependent variables including $InChildPov018_{it}$, a variable for the 'at-risk of poverty rate estimated for children between 0-18 year olds at the cut-off point of 60 per cent of median equivalised income (after social transfers)' gathered from Eurostat, and $InGDPpc_{it}$ representing the 'gross domestic product per capita (constant 2010 US$)' from the World Bank world development indicators. The errors, ε_{it}, are assumed to be independently and identically distributed.

We believe our empirical approach has significant advantages over traditional (time series) VAR models or panel data models, because P-VARs capture additional complexity than either traditional VARs or panel data models.

First, the P-VAR not only allows for the examination of the correlation between child income poverty and GDP per capita, but also for the dynamic responses of these variables. Second, this method unifies the two directions of causality by examining simultaneously the impact of child income poverty on GDP per capita and vice versa. Finally, by using annual country-level data, we can potentially draw some conclusions about both the short-term and long-term effects of child income poverty and GDP per capita. To the best of our knowledge, we believe this is the first work examining the impact of child income poverty on GDP per capita and vice versa in both a short- and long-term fashion, addressing the simultaneity bias using a P-VAR model. We use a bivariate P-VAR model, which has been frequently employed in the traditional time series VAR literature. By its nature, however, this approach is not free of limitations – not least there is the fact that child income poverty and GDP per capita can both be affected by several other possible shocks in the time frame under consideration. The use of a pooled cross-section does limit the number of variables that can be included in the P-VAR without losing observations. For the purpose of this exercise, however, we are interested in the cumulative response of child income poverty and GDP per capita, and our approach allows for a parsimonious, valid identification framework.

We use a panel of 32 high-income countries for the period 2003–2018 with gaps.[17] The sample consists of all high-income countries for which Eurostat provides poverty data and for which the World Bank supplies GDP per capita data for all years considered.

Based on the P-VAR results, impulse response functions (IRFs) can be derived to show how a variable reacts to a unit standard deviation shock in the disturbance term in period t holding all other unobserved shocks constant. In other words, IRFs describe the response of an endogenous variable over time to a shock to another variable in the system (Love & Zicchino, 2006).

We start by selecting the correct lag length for a P-VAR model: having short lags fails to capture the system dynamics, leading to omitted variable bias; conversely, having too many lags will result in an overparameterization of the model, due to a loss of degrees of freedom. Based on the three model selection criteria by Andrews and Lu (2001) and the overall coefficient of determination (CD), a second-order P-VAR is the preferred model because this has the smallest CD, Akaike information criteria (MAIC) and the Hannan-Quinn Information criteria (MQIC). Therefore, we set the number of lags to two for IRF analysis.

Appendix Table 2.2.1. Selection order criteria

lag	CD	MBIC	MAIC	MQIC
1	0.999839	**-41.1239**	0.23698	-16.4434
2	**0.999307**	-39.1352	**-11.5613**	**-22.6816**
3	0.999546	-20.1062	-6.31929	-11.8794

Note: Number of panels is 32; for the maximum likelihood-based model selection criteria, MBIC is the Bayesian information criterion (Schwarz,1978), MAIC is the Akaike information criterion (Akaike, 1969), and MQIC is the Hannan-Quinn information criteria (Hannan & Quinn, 1979).

Before estimating IRFs, we first check the stability conditions of the estimated P-VAR.[18] The resulting table of eigenvalues confirms that the estimates are stable since all eigenvalues lie within the unit circle.

Appendix Table 2.2.2. Eigenvalue stability condition

Real	Imaginary	Modulus
0.937637	0	0.937637
0.412563	0.063884	0.417479
0.412563	-0.06388	0.417479
-0.29786	0	0.297859

Note: All of the above eigenvalues are within the unit circle.

17 The sample comprises: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

18 Stability implies that the P-VAR is invertible and has an infinite-order vector moving-average representation, providing known interpretation to estimated IRFs (Abrigo & Love, 2016).

A3.3. Methodology for elasticity of child well-being measures

To assess how short-term shocks to aggregate income affect children's and young people's welfare in high-income countries, the first step is to build a database of macroeconomic and macro-social indicators from 2006 to 2018, covering all countries. As detailed in Table A1.1, data are obtained from different sources.[19] Some of the indicators presented gaps in the time series. Missing values were imputed as follows: For those countries with less than five years of missing data points, we replaced missing values with plausible values calculated as the moving average of the last three years (if missing data were at the end of the series) or as the moving average of the following three periods (if missing data were at the beginning of the series). In the event of a gap in the middle of the series, we took the average of the year before and after, and substituted the value accordingly. Countries with more than five years of missing values in any of the indicators within each specification were dropped from the analysis.

With these data, the within transformation estimation procedure is used to analyse the relationship between aggregate income and the outcome variables (*see Appendix Table 3.1*). The advantages of the within transformation estimation procedure are that it can allow the individual- and/or time-specific effects to be correlated with the explanatory variables. Time fixed effects that control for global or region-wide shocks affecting all countries, and country fixed effects that control for unobserved country-specific characteristics that do not vary over time, are included to reduce concerns about the exclusion restriction.

The aim of the analysis is not to infer causality but rather to evaluate the extent to which fluctuations in aggregate income are associated with outcomes for children and young people. To analyse the relationship between aggregate income and an outcome variable for children and young people, regressions of the following specification form are run:

$$Y_{ct} = \beta \log GDP_{ct\text{-}1} + \alpha_c + \delta_t + \varepsilon_{ct},$$

where Y_{ct} is the outcome variable for country c at time t; $\log GDP_{ct\text{-}1}$ is the lagged natural logarithm of GDP per capita; α_c is a set of country fixed effects; δ_t is a set of time fixed effects; and ε_{ct} is the error term. Whenever possible, the outcome variable Y_{ct} is transformed into a natural logarithm. In this case, the log-log regression model can be interpreted as elasticity of variations in GDP per capita with respect to the outcome variable.

The relationship between the outcome variable and aggregate income can be mediated by other indicators, thus violating the independence of aggregate income and the error term. To resolve this, the baseline regressions are augmented to estimate the following specification:

$$Y_{ct} = \beta \log GDP_{ct\text{-}1} + \lambda X_{ct\text{-}1} + \alpha_c + \delta_t + \varepsilon_{ct},$$

where $\lambda X_{ct\text{-}1}$ is a series of lagged control variables, which include population density, age-dependency ratio, income inequality, health systems and expenditure, labour force participation and employment rate, and education level completion rate as well as food supply and governance indicators.

19 Further information on data coverage is available for each indicator from the trend charts reported in section 3 or upon direct request to the authors.

One limitation of this approach is the potential reverse causality occurring between GDP per capita and the outcome variable. From a methodological standpoint, the presence of reverse causality may bias upwards the fixed effects estimate of the impact of GDP per capita. To mitigate the issue of endogeneity of GDP per capita on the outcome variables, the value of GDP per capita is lagged. Lagged explanatory variables are a common strategy used in response to endogeneity concerns and simultaneity bias (Vergara, 2010; Clemens et al., 2012) although recently subjected to several critiques (Reed, 2014; Bellemare et al., 2017). The argument is that although current values of GDP per capita may be endogenous to Sustainable Development Goal outcomes, it is unlikely that past values of GDP per capita are subject to the same endogeneity issue. A natural development of such analysis would be to understand the causal linkages between GDP per capita and the outcome variables by instrumenting GDP per capita within an instrumental variable setting. Coefficients produced using a level-log model have been standardized using the average for the set by dependent variable in the main text of this report.

ANNEX 3: FULL STATISTICAL TABLES FOR ELASTICITY ANALYSIS AND REGRESSION ANALYSIS

Appendix Table 3.1. Analysis of child mortality rate (all deaths per 1,000 children aged 5–14 years)

	(1)	(2)	(3)	(4)	5	6	7	8
Ln GDP per capita (current 2010 US dollars) = L,	-0.275***	-0.157**	-0.215**	-0.256***	-0.165**	-0.217**	-0.196***	-0.247***
	(0.065)	(0.079)	(0.091)	(0.086)	(0.081)	(0.092)	(0.067)	(0.085)
Ln social expenditure (current 2010 US dollars) (OECD) = L,		-0.135**			-0.126**		-0.199***	
		(0.053)			(0.054)		(0.074)	
Ln domestic general health expenditure per capita (PPP, current US dollars) = L,			-0.013	-0.009		-0.011		-0.004
			(0.055)	(0.053)		(0.055)		(0.053)
At-risk of poverty rate, aged 0–18 years (60% of median equivalised income after ST) = L,				0.158***			0.114***	0.164***
				(0.037)			(0.033)	(0.036)
Economic recession = 1					0.270	0.267**	0.485***	0.360**
					(0.198)	(0.132)	(0.170)	(0.147)
Economic recession # social expenditure					-0.030		-0.054***	
					(0.022)		(0.019)	
Economic recession # domestic general health expenditure per capita						-0.034**		-0.046**
						(0.017)		(0.019)
Ln DPT immunization (% of children aged 12–23 months) = L,		-0.754***	-0.462***	0.071	-0.776***	-0.468***	0.131	0.065
		(0.153)	(0.145)	(0.112)	(0.152)	(0.145)	(0.242)	(0.114)
Life expectancy at birth (total years) = D,		0.005	0.001	-0.000	0.002	-0.001	0.004	-0.003
		(0.015)	(0.013)	(0.011)	(0.015)	(0.013)	(0.012)	(0.011)
Urban growth (%) = D,		-0.004	0.006	0.006	-0.003	0.005	-0.002	0.005
		(0.010)	(0.010)	(0.008)	(0.011)	(0.010)	(0.008)	(0.009)
Ln age-dependency ratio (% of working age population)		0.045	0.218	0.534***	0.038	0.215	0.371**	0.525***
		(0.137)	(0.138)	(0.147)	(0.137)	(0.138)	(0.152)	(0.144)
Ln population density (people per sq. km of land area)		0.145	0.239*	-0.033	0.132	0.216*	-0.352**	-0.113
		(0.144)	(0.125)	(0.146)	(0.144)	(0.127)	(0.175)	(0.151)
Constant	2.985***	5.604***	2.680**	0.087	5.790***	2.820**	3.073*	0.353
	(0.668)	(1.523)	(1.334)	(1.136)	(1.546)	(1.374)	(1.716)	(1.189)
Observations	615	479	614	425	479	614	315	425
R-squared	0.968	0.971	0.969	0.981	0.971	0.969	0.985	0.981
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Within R2	0.0518	0.142	0.0866	0.180	0.147	0.0927	0.255	0.198
Number of countries	55	50	55	46	50	55	39	46

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Ln = natural log, L indicates a year lag,, D, indicates first difference, and # the use of an interaction

Appendix Table 3.2. Analysis of youth NEET rate (% of population aged 15–19 years)

	(1)	(3)	(5)	(7)	(8)
Ln GDP per capita (current 2010 US dollars) = L,	-0.484***	0.213	0.701**	0.225	0.672**
	(0.154)	(0.232)	(0.291)	(0.230)	(0.289)
Ln government expenditure on education, total (% of GDP) = L,		-0.332***	-0.237	-0.329***	-0.242*
		(0.112)	(0.144)	(0.113)	(0.145)
Economic recession = 1				-0.283	-0.162
				(0.187)	(0.209)
Economic recession # Ln government expenditure on education				0.175	0.116
				(0.115)	(0.125)
Unemployment, total (% of total labour force) (modelled ILO) = L,		0.124**	0.192***	0.128**	0.198***
		(0.0626)	(0.0604)	(0.064)	(0.061)
Ln population density (people per sq. km of land area)		1.384***	1.679***	1.417***	1.706**
		(0.479)	(0.645)	(0.482)	(0.659)
Urban growth (%) = D,		-0.0987***	-0.117***	-0.091***	-0.109***
		(0.0314)	(0.0371)	(0.031)	(0.038)
Ln age-dependency ratio (% of working age population)		0.265	0.323	0.259	0.292
		(0.374)	(0.510)	(0.374)	(0.508)
At-risk of poverty rate, aged 0–18 years (60% of median equivalised income after ST) = L,			-0.0872		-0.098
			(0.129)		(0.129)
Constant	6.817***	-6.875*	-13.92***	-7.123*	-13.600***
	(1.579)	(3.991)	(4.374)	(3.982)	(4.442)
Observations	544	400	300	400	300
R-squared	0.890	0.897	0.873	0.897	0.873
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Within R2	0.0274	0.0915	0.121	0.0951	0.124
Number of countries	34	25	19	25	19

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Ln = natural log, L indicates a year lag,, D, indicates first difference, and # the use of an interaction

Appendix Table 3.3. Analysis of average PISA reading literacy score

	1	2	3	4	5	6	7	8
Ln GDP per capita (current 2010 US dollars), 3-year avg = L,	0.046***	0.051***	0.006	0.029*	0.021	0.003	0.053***	0.022
	(0.014)	(0.017)	(0.014)	(0.017)	(0.018)	(0.014)	(0.016)	(0.017)
Ln government expenditure on education, total (% of GDP), 3-year avg = L,		0.006	0.015				-0.000	
		(0.026)	(0.027)				(0.039)	
Ln share expenditure on family and children (% GDP), 3-year avg = L,				0.011	0.021**	0.012		0.043**
				(0.009)	(0.010)	(0.011)		(0.015)
Economic recession = 1							-0.037	-0.001
							(0.099)	(0.023)
Economic recession # Ln government expenditure on education,							0.010	
							(0.038)	
Economic recession # Ln share expenditure on family and children (% GDP)								-0.030
								(0.019)
Ln population density (people per sq. km of land area), 3-year avg		-0.009	-0.003	-0.004	-0.004	-0.003	-0.009	-0.006
		(0.006)	(0.006)	(0.006)	(0.005)	(0.005)	(0.006)	(0.005)
Urban growth (%), 3-year avg		-0.018*	-0.005	-0.010	-0.009	-0.005	-0.019**	-0.007
		(0.009)	(0.007)	(0.006)	(0.005)	(0.006)	(0.009)	(0.006)
Ln age-dependency ratio (% of working age population), 3-year avg		0.058	0.166**	0.084	0.144*	0.161**	0.063	0.127*
		(0.080)	(0.076)	(0.070)	(0.071)	(0.069)	(0.079)	(0.070)
At-risk of poverty rate, aged 0–18 years, 3-year avg = L,			-0.037*			-0.032		
			(0.021)			(0.020)		
Ln youth NEET rate (% of youth aged 15–19 years), 3-year avg,		-0.044***	-0.027*	-0.022	-0.041**	-0.028*	-0.042***	-0.038**
		(0.016)	(0.016)	(0.016)	(0.018)	(0.016)	(0.015)	(0.017)
Ln pupil-teacher ratio (lower secondary), 3-year avg,		-0.000	0.002		0.001	0.002	-0.000	0.001
		(0.002)	(0.002)		(0.002)	(0.002)	(0.002)	(0.002)
Constant	5.730***	5.585***	5.636***	5.639***	5.523***	5.705***	5.555***	5.558***
	(0.144)	(0.289)	(0.272)	(0.269)	(0.252)	(0.255)	(0.255)	(0.202)
Observations	188	110	80	130	104	87	110	104
R-squared	0.277	0.583	0.450	0.342	0.479	0.469	0.587	0.502
Time trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	No	No	No	No	No	No	No	No
R2	0.277	0.583	0.450	0.342	0.479	0.469	0.587	0.502
Number of countries	39	30	26	28	27	27	30	27

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Ln = natural log, L indicates a year lag,, D, indicates first difference, and # the use of an interaction

Appendix Table 3.4. Analysis of youth suicide rate (suicide deaths per 100,000 youth aged 15–19 years)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Ln GDP per capita (current 2010 US dollars) = L,	-0.208	-0.013	0.283	0.081	0.205	0.387	0.165
	(0.235)	(0.305)	(0.381)	(0.477)	(0.323)	(0.374)	(0.478)
Ln social expenditure (current 2010 US dollars) (OECD) = L,		-0.070			-0.167		
		(0.212)			(0.226)		
Ln domestic general health expenditure per capita (PPP, current US dollars) = L,			-0.310	-0.153		-0.319	-0.160
			(0.293)	(0.369)		(0.291)	(0.370)
Economic recession = 1					-1.168	0.125	0.419
					(0.764)	(0.550)	(0.705)
Economic recession # Ln social expenditure					0.123		
					(0.086)		
Economic recession # Ln domestic general health expenditure per capita						-0.027	-0.059
						(0.070)	(0.091)
Ln population density (people per sq. km of land area)		0.334	0.456	-0.323	0.651	0.558	-0.417
		(0.717)	(0.635)	(0.995)	(0.681)	(0.623)	(1.004)
Urban growth (%) = D,		-0.037	-0.033	-0.012	-0.048	-0.039	-0.019
		(0.067)	(0.062)	(0.071)	(0.065)	(0.059)	(0.068)
Youth NEET rate (% of youth aged 15–19 years)		-0.115	-0.119	-0.134	-0.103	-0.116	-0.133
		(0.100)	(0.091)	(0.110)	(0.101)	(0.092)	(0.111)
Ln age-dependency ratio (% of working age population)		-0.186	0.202	-0.185	-0.008	0.286	-0.098
		(0.605)	(0.609)	(1.024)	(0.596)	(0.597)	(0.991)
At-risk of poverty rate, aged 0–18 years (60% of median equivalised income after ST) = L,				-0.372*			-0.350*
				(0.203)			(0.196)
Constant	3.880	2.077	-1.200	5.494	-1.350	-2.937	4.720
	(2.404)	(6.026)	(5.531)	(8.697)	(5.753)	(5.322)	(8.407)
Observations	446	350	392	294	350	392	294
R-squared	0.811	0.815	0.802	0.780	0.817	0.804	0.781
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Within R2	0.00151	0.00793	0.0128	0.0199	0.0193	0.0206	0.0230
Number of countries	28	22	25	18	22	25	18

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Ln = natural log, L indicates a year lag,, D, indicates first difference, and # the use of an interaction

Appendix Table 3.5. Analysis of child homicide rate (deaths through intentional injury per 100,000 children aged 0–14 years)

	(1)	(2)	(3)	(4)	(5)
Ln GDP per capita (current 2010 US dollars) = L,	0.214	1.021	1.181	1.021	1.489
	(0.510)	(0.779)	(0.982)	(0.797)	(0.999)
Ln domestic general health expenditure per capita (PPP, current US dollars) = L,		-0.693	-1.399*	-0.692	-1.458**
		(0.523)	(0.733)	(0.527)	(0.733)
Economic recession = 1				-0.033	-0.508
				(0.824)	(1.076)
Economic recession # cL domestic general health expenditure per capita				0.004	0.049
				(0.104)	(0.139)
Ln population density (people per sq. km of land area)		0.595	1.038	0.601	1.604
		(1.268)	(1.838)	(1.296)	(1.975)
Urban growth (%) = D,		-0.095	-0.168	-0.095	-0.165
		(0.093)	(0.133)	(0.093)	(0.132)
Ln age-dependency ratio (% of working age population)		0.620	2.790	0.622	2.994
		(1.158)	(2.097)	(1.168)	(2.115)
Political stability and absence of violence/terrorism: Estimate		0.145	0.286	0.144	0.301
		(0.175)	(0.247)	(0.176)	(0.249)
At-risk of poverty rate, aged 0–18 years (60% of median equivalised income after ST) = L,			0.138		0.174
			(0.385)		(0.387)
Constant	-3.204	-11.176	-18.584	-11.214	-24.756
	(5.212)	(13.533)	(19.804)	(13.767)	(20.557)
Observations	398	398	271	398	271
R-squared	0.677	0.682	0.628	0.682	0.630
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Within R2	0.000537	0.0136	0.0354	0.0136	0.0403
Number of countries	25	25	17	25	17

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Ln = natural log, L indicates a year lag,, D, indicates first difference, and # the use of an interaction

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