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Can Social Protection Be an Engine for Inclusive Growth?

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Foreword

The potential role of social protection in the development process has received heightened recognition in recent years. Yet, making a strong investment case for social protection remains particularly challenging in many emerging and developing countries. On the one hand, the overall economic impact of social protection investments remains insufficiently documented. On the other hand, views are still mixed about social protection's contribution to growth and equity. At a time when debates about universal social protection are generating much attention, better documenting the economic benefits of social protection programmes and building a more solid economic case for investing in such programmes appears critical.

Can Social Protection Be an Engine for Inclusive Growth? challenges us to think deeply about the economic rationale for social protection investments through an inclusive development lens. It sharpens our understanding of the links between social protection, growth and inequality, of how to measure those links empirically, of social protection's impact on inclusive growth, and of how to build a more solid economic case for greater social protection investments.

The report adds to the debate on social protection in three important ways. First, it proposes a methodological framework to conceptualise and measure the impact of social protection on what the OECD defines as inclusive growth. Second, it provides new empirical evidence on the impact of different social protection programmes on inclusive growth. Third, it helps strengthen the case for greater investments in social protection while also calling for better data to measure impacts.

In these ways, this analysis contributes to the OECD Development Centre's work on inclusive societies and helps partner countries identify emerging issues, design innovative solutions to social challenges and build more cohesive societies. This analysis was undertaken as part of the EU Social Protection Systems Programme, co-funded by the European Union and implemented by the OECD Development Centre and the Government of Finland to support developing countries in building sustainable and inclusive social protection systems.

A key conclusion of this study is that besides the moral and legal basis for directing more resources to social protection, backed up by more recent evidence that social protection schemes can deliver real results in terms of poverty reduction and progress towards decent work, investing in social protection can also make good economic sense.

We hope this publication will convince more policy makers of the broad-based economic opportunities to be gained, as well as of the economic and social costs to be averted, by investing in extending social protection.

Mario Pezzini
Director of the OECD Development Centre
and Special Advisor to the OECD Secretary-General on Development

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Abbreviations and acronyms

ADB	Asian Development Bank
AFD	Agence Française de Développement
BB	Basic benefit
BPJS	Bandan Penyelenggara Jaminan Sosial [Social Insurance Administration Organization], Indonesia
BRL	Brazilian real
BSM	Bantuan Siswa Miskin [Cash Transfers for Poor Students], Indonesia
BSP	Benefício para Superação da Extrema Pobreza [Benefit to Overcome Extreme Poverty], Brazil
BV	Benefício Variável [Variable Benefits], Brazil
BVJ	Benefício Variável Jovem [Variable Youth Benefit], Brazil
CCTs	Conditional cash transfers
DFID	Department for International Development
ECD	Early childhood development
EUR	Euro
FAO	Food and Agriculture Organization of the United Nations
FRDD	Fuzzy regression discontinuity design
GDP	Gross domestic product
GHS	Ghanaian cedi
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICT	Information and communication technology
IDB	Inter-American Development Bank
IDR	Indonesian rupiah
ILO	International Labour Organization
INSS	Instituto Nacional do Seguro Social [National Social Security Institute], Brazil
IPEA	Instituto de Pesquisa Economica Aplicada [Institute for applied economic research], Brazil
ISSA	International Social Security Association

IV	Instrumental variable
IZA	Institute of Labor Economics
JHT	Jaminan Hari Tua [Old Age Insurance], Indonesia
JKK	Jaminan Kecelakaan Kerja [Occupational Injury Benefit], Indonesia
JKM	Jaminan Kematian [Survivor Allowance], Indonesia
JP	Jaminan Pensiun [Pension Protection], Indonesia
KIP	Kartu Indonesia Pintar card [Indonesia Smart Card], Indonesia
KPS/KKS	Kartu Perlindungan Sosial/Kartu Keluarfa Sejahtera card [Social Security Card/Family Welfare Card Indonesia], Indonesia
LAC	Latin America and the Caribbean
LEAP	Livelihood Empowerment Against Poverty, Ghana
NDPC	National Development Planning Commission, Indonesia
ODI	Overseas Development Institute
OECD	Organization for Economic Co-operation and Development
PES	Public Employment Services
PIP	Program Indonesia Pintar [Smart Indonesia Program], Indonesia
PKH	Programme Keluarga Harapan [Family Hope Programme], Indonesia
RDD	Regression discontinuity design
SDGs	Sustainable Development Goals
SJSN	Sistem Jaminan Sosial Nasional [National Social Insurance System], Indonesia
SOEP	German Socio-Economic Panel
SUSENAS	Indonesian National Socio-Economic Survey
UCT	Unconditional cash transfer
UN DESA	United Nations Department of Social and Economic Affairs
UNDP	United Nations Development Programme
USD	United States dollar

Executive summary

Over recent years, social protection has gained an ever-greater recognition on the global and national development policy agendas not only as a fundamental human right but also as an effective way to tackle poverty and vulnerability. This attention has been generated by overwhelming evidence that social protection schemes can deliver real results in terms of poverty reduction and progress towards decent work. Yet, the economic impact of social protection investments remains insufficiently documented. This, together with competing claims for scarce government funds, makes the investment case for social protection particularly challenging in many emerging and developing countries. In this context, the need to better document the economic benefits of social protection programmes and to build a more solid economic case for investing in such programmes becomes critical.

This study has two main objectives. First, to contribute to fill-in important knowledge gaps as regards the impact of different types of social protection programmes on the micro drivers of growth across different income groups – our understanding of inclusive growth in this report. Second, to create more solid economic arguments for investing in social protection that can feed budget discussions and social dialogue.

This report is based on an in depth review of the theoretical and empirical literature on the impact of social protection on growth and equity, enriched by 11 new impact evaluations of social protection programmes implemented in four countries – Brazil, Ghana, Germany and Indonesia - that represent a diverse set of conditions in terms of income level and geographical location. This report adds to the global debate on social protection in three important ways.

First, from a methodological perspective, it identifies the transmission channels from social protection investments to inclusive growth and proposes a practical way to measure empirically the impact of social protection on inclusive growth. The study shows that while social protection investments may affect growth and inequality through a multiplicity of effects at micro, meso and macro level, a focus on the micro determinants of inclusive growth for which a theoretical link exists with social protection investments has a number of measurement advantages. It thus looks at the more direct effects of social protection investments and shows that theoretically at micro level a pure (positive or negative) growth effect may be expected from enabling households to accumulate productive assets; preventing the loss of productive capital after a shock; enabling innovation and entrepreneurship; affecting labour market participation and savings; and supporting investments in human capital. Such a growth effect induced by social protection investments may further interact with an effect on inequality that is more apparent in the case of social assistance.

Second, from an empirical point of view, the study provides recent and new evidence on the impact of social assistance and social insurance programmes on the micro-level drivers of inclusive growth at different stages of the life cycle. While the study acknowledges important challenges related with the availability and quality of suitable

data to measure and understand inclusive growth impacts that call for caution in the interpretation and the generalisation of its results, it shows that social protection investment can make good economic sense. Overall, social assistance seems to have a strong pro-poor growth effect that tends to operate mostly through better outcomes for children and youths in low-income households. Moreover, while the overall effect of social insurance on inclusive growth is less apparent than for social assistance due to a negative, albeit moderate, impact on labour supply and savings, social insurance tends to spur economic growth through a positive effect on consumption and a small negative effect on fertility and skilled emigration.

Third, from an advocacy perspective, the study may help strengthen the case for greater investments in social protection. Based on its findings, and notwithstanding the inherent limitations of the study, it argues that investing in social protection makes sense from a number of perspectives. Besides well-established right-based arguments that present the moral and legal basis for directing more resources to social protection, and more recent arguments based on the evidence that investing in social protection can deliver real results in terms of poverty reduction and progress towards decent work, the study shows that investing in social protection can also make good economic sense.

Assessment and recommendations

Recent years have seen a heightened recognition of the potential role of social protection in the development process. Social protection now constitutes an essential component of the global agenda for sustainable development and it occupies a large place in several regional and national commitments. To a large extent, this infatuation for social protection has been fuelled by the recognition of social protection as a human right under international human rights law, as well as overwhelming evidence that investing in social protection is crucial for tackling poverty and vulnerability, and for improving job quality. Making a strong investment case for social protection during budget discussions can remain a difficult task, however. Not only the economic impact of social protection investments, beyond cash transfers, remains insufficiently documented empirically, but contrasting views still exist about the contribution of social protection to growth and equity. Some, and there are many, might see social protection investments as drivers of overall economic growth and inequality reduction. Others, in contrast, might emphasis the possible adverse effects of social protection on growth through tax distortions and changes in labour allocation and precautionary savings. Clearly, this shows the need to better document empirically the economic impact of social protection programmes and to build a more solid economic case for investing in such programmes.

This study investigates the rationale for social protection from an inclusive economic perspective and asks: Can social protection investments be an engine for inclusive growth? The study begins by laying out a methodological framework, which draws on the OECD concept of inclusive growth, disentangles social protection into social assistance and social insurance, identifies the transmission channels from social protection investments to inclusive growth, and proposes a practical way to measure empirically the impact of social protection on growth across different income groups. It then presents recent and new evidence on the impact of social protection on the micro-level drivers of inclusive growth through different stages of life. The empirical analysis is undertaken for countries at different stages of development and separately for social assistance and social insurance programmes.

This study has two main objectives. First, to contribute to fill-in important knowledge gaps as regards the impact of different types of social protection programmes on inclusive growth. Second, to create more solid economic arguments for investing in social protection that can feed budget discussions and social dialogue.

The study is intended primarily for the use of development practitioners, both national policy makers and social partners, as well as international and bilateral development partners. It draws on an in depth review of the theoretical and empirical literature, enriched by 11 new impact evaluations of social protection programmes implemented in Brazil, Ghana, Germany and Indonesia. The rationale for choosing these countries is threefold. First, their diversity in terms of development stages and geographical location. Second, the existence of well-enough established social protection systems for which an evaluation exercise could bring enough value-added from a global learning perspective.

Third, the availability of recent and adequate data for conducting rigorous quantitative impact evaluations of the main national social protection programmes.

This study also acknowledges some of its limitations and calls for caution in the interpretation and the generalization of its results, due to important challenges related with the availability and quality of suitable data to measure and understand growth impacts. First, the health related drivers of inclusive growth are not included in the study because of the difficulty to adequately measure health outcomes in non-specialised household surveys. Second, while new evidence from 11 impact evaluations is provided in this report, these are based on quasi-experimental approaches and not on randomized controlled trials. Third, although design and implementation issues, as well as the level of social protection benefits, are likely to play a critical role on the observed outcomes, these are not well captured in the analysis that rely mostly on quantitative methods.

A conceptual framework to measure the impact of social protection on inclusive growth

Inclusive growth is defined by the OECD as improvement of living standards and shared prosperity across all social groups. The concept of inclusive growth has gained recognition in development circles because it has broadened the discourse beyond a focus on the extreme poor, and increasingly shifted policy focus from poverty reduction to determining how growth can be made more equitable and more inclusive. The conceptual framework developed for this study refers to the OECD definition of inclusive growth, thus recognising the importance to look at redistributive issues when assessing the economic impact of social protection investments.

Social protection may affect inclusive growth through several transmission channels

Social protection refers to policies that aim to prevent and reduce poverty, vulnerability and social exclusion throughout the life cycle. Accordingly, social protection systems often provide benefits to individuals or households in order to guarantee income security and access to health care throughout different stages of life. Besides its impact on poverty and vulnerability, social protection may also influence the quality of growth. The framework developed in this study identifies three main transmission channels through which social protection may affect inclusive growth. First, social protection can help lift credit constraints by facilitating access to bank loans and extend credit to low-income households. Second, social protection can help households cope with risks and protect their consumption and assets against adverse shocks, which leads to a more efficient use of resources. Third, social protection can also affect the allocation of resources and time use in the household, which in turn have implications for income growth.

The transmission channels may operate at the micro, meso and macro levels

One way social protection can influence inclusive growth is through its direct impact on individuals and households. At such individual and household (micro) level, a pure growth effect may be expected by: (i) enabling households to accumulate productive assets, (ii) preventing the loss of productive capital after a shock; (iii) enabling innovation and entrepreneurship, (iv) affecting labour market participation and savings and (v) supporting investments in human capital. While most of these factors are expected to have a positive impact on growth, the positive growth effect may be moderated by a

possible negative growth effect of social protection induced by a decline in labour force allocation and savings, creating dependency and adverse incentives to work and save.

Such a growth effect induced by social protection investments may further interact with an effect on inequality. Social protection, especially social assistance, can indeed contribute to make the positive growth effect equalising through two main complementary paths. First, by guaranteeing a minimum level of economic and social wellbeing, serving not only as safety nets for low-income and vulnerable households and individuals to mitigate the risk of poverty, but also as spring boards that enable social mobility and help close inequality gaps. Second, by enabling equal access to opportunities, thus overcoming the savings and credit constraints among less wealthy households that can prevent human capital investments and the disruption of the cycle of inter-generational poverty.

Besides the more direct effect of social protection on inclusive growth that operates at the micro level, social protection might also affect growth and inequality outcomes at community (meso) and national (macro) levels. As regards the growth effect, at meso level, social protection investments can generate multiplier growth effects from increased local consumption and production and enable the accumulation of productive community assets. At macro level, social protection can have significant and broad growth enhancing effects on the economy by increasing aggregate household productivity, stimulating aggregate demand and thus increasing employment, in particular through counter-cyclical spending during economic downturns, and raising consumption and income tax revenues. In addition, indirect effects such as facilitating economic reforms, building human capital, enhancing social cohesion and influencing fertility can further help spur growth.

As regards the inequality effect, social protection may affect the level of inequality at meso or macro level by contributing to the provision of equal access to opportunities. Ultimately, however, such redistributive effect at meso and macro levels are likely to depend on the level of coverage, the generosity of the benefits, and the type of the programme, in particular whether it is targeted to vulnerable groups as with social assistance.

The measurement framework proposed in this study focuses on the micro-determinants of inclusive growth for which a theoretical link exists with social protection and which can be measured in non-specialised household surveys.

The conceptual framework developed in this report shows that social protection investments may affect growth and inequality through a multiplicity of effects at micro, meso and macro level. Measuring these effects is often a challenge, however. Key measurement challenges include the heterogeneity of social protection investments, the multiplicity of possible effects that may cancel each other out, the presence of endogeneity, and, for the macro effects, the scarcity of internationally comparable data on social protection investments broken down by types of programmes. For all these reasons, this report adopts a careful approach to measure the impact of social protection investments. It focuses on the micro determinants of inclusive growth for which a theoretical link exists with social protection investments and which can be measured through non-specialised household surveys. It thus looks at the more direct effects of social protection investments that can be measured in most household budget surveys.

The resultant measurement framework then identifies a number of micro determinants of inclusive growth around different stages of life – the so-called outcome variables – that can be observed with reasonably good household survey data and which are, at least in theory, likely to be influenced positively or negatively by social protection investments.

The outcomes of interest for which a strong theoretical justification exists and that can usually be measured empirically typically refer to education outcomes, early pregnancy, fertility, child labour, employment outcomes, migration, consumption, and savings.

According to theoretical expectations, many micro-level effects of social protection on inclusive growth shall be positive. Other effects would a priori be unclear or negative.

Social protection may affect the micro-determinants of inclusive growth in different ways. Many of the expected micro-level effects of social protection on inclusive growth are positive. Social protection is likely to support consumption, to improve educational outcomes in financially constrained households, and to foster innovation and investments among the poor. Social protection is also expected to reduce fertility, which may affect positively inclusive growth in low-income countries where high fertility prevails. Yet, some of the effects of social protection on inclusive growth are a priori unclear or negative. Social protection can have indeed opposite – and thus a priori undetermined – effects on labour supply and migration, and is expected to alter savings patterns.

Evidence on the micro-level impact of social assistance on inclusive growth

Social assistance programmes are a key component of social protection investments that are expected to affect economic growth and equity due to their targeted benefits to the poor and their non-contributory nature. Yet, the extent to which social assistance impact on inclusive growth remains ultimately an empirical question. Recent empirical studies and new impact evaluations undertaken for five social assistance schemes implemented in Brazil, Germany, Ghana and Indonesia are analysed for different stages of life and, whenever possible, different household income deciles. Findings show that overall, social assistance seems to have a positive impact on inclusive growth mostly through its positive impact on children and youth outcomes.

Social assistance tends to spur inclusive growth largely by improving children and youth education outcomes among low-income households

Early on in the life stages, social assistance is expected to spur inclusive growth through its effect on human capital. The effect may be particularly strong among poorer children and youth given the targeted nature of social assistance.

Empirical findings seem to support the theoretical expectations as regards the impact of social assistance on education outcomes among children and youth. For targeted cash transfers, there is solid evidence that they spur investments in child schooling, and even more so when they are conditional on school attendance. New evidence from Brazil, Ghana and Indonesia also show that the strongest effect on school attendance is found for children in poor households. Another education outcome analysed in the Brazilian and Indonesian impact evaluation studies is school attainment. These studies find a positive impact on school attainment of children and youth in the poorest income group. Similar findings arise from scholarship programmes for low-income families, which tend to have positive impacts on school attainment, especially among the poorest students. In contrast to targeted transfers, Universal Child benefits appear to have no or limited aggregate effects on children's education. New evidence from Germany is in line with previous results. This suggests that cash transfers may mainly influence the education outcomes of children and youth from disadvantaged families who may be financially constrained,

while they have little effect on better-off families for which the income effect may be too small given the relatively low level of the child benefits as a proportion of family income.

Besides education outcomes, cash transfers may also reduce the burden on children to contribute to the household income, and thereby reduce child labour both within and outside households. Transfer programmes linked to or conditional on children attending school are likely to have an even stronger effect on child labour. Empirical findings show that cash transfers can decrease child labour in some cases (mostly in Latin America) but not in others (in sub-Saharan Africa), confirming that poverty may not be the sole driver of child labour. As economic opportunities increases, so can do the demand for child labour.

An additional possible effect of cash transfers on children and youth is early pregnancy. Delaying childbearing is an important factor to improve educational and health outcomes for young women, and in the longer run break intergenerational transmission of poverty. Additional income from cash transfers can reduce young women's financial dependence on others and delay decisions on marriage and childbearing. Conditional cash transfers can also have an indirect effect on early pregnancy through its positive effect on educational attainment. Yet, empirical findings show that CCT programmes do not automatically decrease early pregnancy and that the type of conditions tied to the programme matter for the effect on early pregnancy.

The inclusive growth effect of social assistance is less apparent for the working age and elderly population

Social assistance can play an important role in ensuring income security for disadvantaged women and men of working age and the elderly, and thereby affect their behaviours in a way that can spur inclusive growth. During working age, social assistance programmes can increase consumption, affect labour and employment outcomes such as participation and intensity, but also other outcomes of the working age population such as fertility rates and entrepreneurship. During old age, social pension may impact consumption and saving patterns.

Empirical evidence shows that the impact of CCT on employment and entrepreneurship is mixed. Modest transfers do not seem to have strong impacts on employment outcomes, and when a significant impact is found, the effect may be negative or positive. CCT programmes tend also to have either a positive or no effect on investments in small businesses. New evidence for Brazil and Indonesia broken down by income groups further indicate that CCT income raises business investments only among poorer households and has no impact on investments in larger formal businesses whatever the income group.

Scholarships for the poor can also have positive spill-over effects on household consumption and investment, although there is still limited evidence. New evidence using student scholarship programme data for Indonesia show a positive impact of the programme on self-employment and consumption. Although much less documented empirically, there is also some evidence that social pension can boost consumption and investments, including investments in human capital of younger members.

Cash transfer programmes may also have effects on other household and individual outcomes, including fertility. Programmes that provide a regular cash transfers per child can encourage households to increase the size of the household to increase the amount of transfer. Concerns that cash transfers (especially unconditional) may increase fertility

rates and have negative effects on population control programmes have been put forward in policy discussions in low-income countries where fertility rates tend to be high. However, existing and new empirical evidence produced in this report does not give much support to these concerns. If anything, CCT programmes do seem to reduce fertility.

Evidence on the micro-level impact of social insurance on inclusive growth

The primary objective of social insurance programmes are not to support growth and equity but, in a more pragmatic way, to protect insured persons and their dependents against a number of life contingencies through contributory mechanisms. That said social insurance may influence inclusive growth through its direct impact on a number of micro-economic channels. Findings based on recent empirical evidence enriched with six new impact evaluation of social insurance schemes implemented in Brazil, Germany, and Indonesia suggest that while the overall micro effect of social insurance on growth and inequality is more ambiguous than for social assistance, the most straightforward way social insurance may spur economic growth is by increasing consumption and, to a lower extent, by reducing fertility. The evidence base on the impact of social insurance on other outcomes remains limited, however, and further research is needed on this.

The inclusive growth impact of social insurance for children and youth is not as obvious as that of social assistance

Findings as regards the inclusive growth impact of social insurance related to children and youth outcomes are often mixed and vary across countries both within developed and developing economies. New empirical evidence produced for this report on Brazil and Indonesia confirms the mixed effects of social insurance on education. While social insurance appears to have very limited impact in Brazil, it significantly boosts educational outcomes in Indonesia, especially among less wealthy families.

Beyond educational outcomes, other important children and youth outcomes are child labour and early pregnancy, which are known to have adverse effects on inclusive growth. Few empirical studies have analysed the potential effects of social insurance benefits on such outcomes. Most existing studies have focused on social assistance programmes – social pensions and other cash transfer programme – and find mixed effect of social transfers on participation and time spent in child labour. New empirical evidence produced for this report reveals that, in the case of Brazil, old age contributory pensions do not affect the occurrence of early pregnancies but are positively associated with child labour among poorer households.

Among the working age and the elderly, social insurance tends to support inclusive growth mostly through a positive effect on consumption and a small negative effect on fertility …

Most of the evidence on the inclusive growth effect of social insurance programmes among the working age and the elderly comes from their positive impact on consumption. Although the empirical literature often provides mixed results, a number of studies supports the theoretical hypothesis that social insurance spurs consumption. Social insurance also tends to have a small negative impact on fertility, which, in the context of developing countries where high fertility prevails, may spurs economic growth. Most available studies have focused on contributory pensions systems and find a negative

correlation between contributory pensions and fertility in both developed and developing countries, but the magnitude is generally found to be rather moderate. New results for Brazil and Indonesia find mixed results. While in Brazil, contributory pensions are negatively associated with fertility, in Indonesia, social insurance benefits, including the pension insurance programme, the old-age savings programme, the occupational accident benefit and the death benefit, are insignificant or have at best an effect, either positive or negative, of negligible magnitude on fertility.

Additional evidence points to a possible negative effect of social insurance on skilled emigration. A number of empirical studies suggest that social insurance and migration are negatively correlated in developing countries. Moreover, social insurance benefits may negatively affect the skill composition of migrants in that it favours migration outflows of low-skilled workers. New empirical evidence generated for this report goes a step further and question whether social insurance benefits affect return migration. New findings show that in the case of Brazil and Indonesia, households receiving social insurance benefits are more likely to have members that had a recent experience of migration, but the size of the effect is small. In other words, social insurance could be positively associated with return migration, suggesting that social insurance benefits may act as a substitute for remittances.

…but the positive impact of social insurance on inclusive growth may be moderated by a small negative effect on labour supply, and to a lower extent, on savings.

The existing empirical literature also points to a negative effect, albeit moderate, of social insurance on savings and labour supply. As regards the impact on savings, several studies have looked at contributory pensions and find that pensions tend to partly crowd out private savings, but mostly among the better off. Likewise, there is some empirical evidence suggesting that unemployment insurance negatively affects precautionary savings and leads to a corresponding increase in consumption. In line with previous findings, new empirical evidence for Brazil shows that contributory pensions do not seem to have any effect on household savings, except for some better-off families.

As regards labour supply, several studies find that unemployment benefits, both duration and income replacement rate, tend to have negative but frequently small effects on labour supply, and do not seem very effective in improving the quality of job matching. Yet, more recent studies that are able to control for the fact that a job-seekers' opportunities and skills deteriorate with unemployment duration find that access to more generous unemployment insurance does indeed tend to help agents to find better jobs. Moreover, activation strategies through the adoption of monitoring and sanction mechanisms – job search requirements conditioning benefits receipt – by public employment services (PES) can overcome the apparent adverse employment effects of unemployment insurance.

Likewise, evidence shows that contributory pensions may have a negative impact on labour supply in developed countries that adequate pensionable ages, limited access to early retirement and actuarially fair benefit formulas could avoid. According to the new empirical evidence produced for this report, contributory pensions in Germany have a negative impact on labour supply for the elderly. The negative impact of pensions on employment gradually increases as household income increases. As regards developing countries, there is some evidence on the negative spillover effect of contributory pensions on the labour force participation of the working age population. New findings for Brazil and Indonesia show that social insurance benefits may lead to a sizeable decrease in

employment, as measured by the number of employed household members of working age. This holds true for both men and women, but women could be more negatively affected than men. Profound differences are however found between Brazil and Indonesia when looking at the effect of social insurance across households with different income levels. While in Brazil better-off families may be the most concerned by the decline in employment resulting from contributory pensions, the reverse is true for social insurance benefits in Indonesia.

Making the case for social protection

In many emerging and developing countries, competing claims for scarce government funds make the case for more investments in social protection during budget discussions particularly challenging. Yet, findings from this study suggest that investing in social protection could make sense from a number of perspectives.

Argument 1: Under international human rights law, countries are legally obligated to establish social protection systems.

The most common argument put forward to make the case for social protection is a right-based argument emphasising the moral and legal basis for investing in social protection. This argument flows directly from the right to social security, which is articulated in Article 22 of the Universal Declaration of Human Rights and in Article 9 of the International Covenant on Economic, Social and Cultural Rights (ICESCR). The Sustainable Development Goals (SDGs) and other regional and national commitments embody many elements of a human rights perspective by explicitly mentioning access to social protection as a critical goal.

Argument 2: Social protection is an effective tool to reduce poverty and tackle vulnerability.

A more recent argument that is often made emphasises the effectiveness of social protection vis-à-vis its core objectives, which is to reduce poverty and tackle vulnerability. It relies on overwhelming evidence that social protection schemes can deliver real results in terms of poverty reduction and progress towards decent work, especially when design and implementation issues are carefully taken into account. Numerous evaluations around the world show positive impacts, including a reduction in the poverty gap, greater income security, and better health and education.

Argument 3: Social protection can also make good economic sense.

Another argument, one that can be particularly appealing for policy makers responsible for budget allocations, highlights the broad-based economic potential of social protection investments. Such argument is supported by the findings of this study about the impact of social assistance and social insurance programmes on the micro-level drivers of inclusive growth. It stipulates that a more solid economic case for investing in social protection can be built around two findings discussed in the report: (i) the positive inclusive growth impact of social assistance largely channelled through improved children and youth education outcomes among low income households; and (ii) the pro-growth effect of social insurance driven by

increased consumption, and to a lower extent, reduced fertility, that a possible small adverse effect on labour supply and precautionary savings is unlikely to offset.

All in all, this study shows that besides right-based arguments that present the moral and legal basis for directing more resources to social protection, and more recent arguments based on the evidence that social protection can deliver real results in terms of poverty reduction and progress towards decent work, there are also good economic reasons, backed up by micro economic evidence, for investing in social protection.

Yet, there is still much to be learned. As more and better data become available to measure impacts, the quantitative measurement framework presented in this study could be used to undertake new research on the inclusive growth impact of social protection investments and enrich the evidence base discussed in this study. Such quantitative framework may also be enriched through additional qualitative assessments in order to yield important insights as to the role of design issues in the observed outcomes.

Chapter 1. Measuring the impact of social protection on inclusive growth

Over the past years, social protection has gained an ever-greater recognition on the global and national development policy agendas as not only a fundamental human right but also an effective way to tackle poverty and vulnerability. This focus has been largely influenced by overwhelming evidence that social protection schemes can deliver real results in terms of poverty reduction and progress towards improving job quality. Yet, the economic impact of social protection investments remains overall poorly documented. To a large extent, this has to do with the complexity of measurement. This chapter proposes a methodological framework to capture linkages between social protection and inclusive growth. It first outlines definitions and measures of social protection and inclusive growth, then presents a new conceptual and measurement framework to assess the impacts of social protection on inclusive growth.

Inclusive growth and social protection

Inclusive growth

The current international development agenda highlights the need to shift focus from economic growth to inclusive growth, which emphasises distribution and the ability of vulnerable groups to participate in the growth process (OECD, 2018[1]; Mathers and Slater, 2014[2]). Despite unprecedented levels of wealth globally, 896 million people lived in extreme poverty and 2.1 billion lived in extremely vulnerable conditions in 2012 (UNDP, 2017[3]). Economic growth on its own is not sufficient to increase living standards, reduce inequalities and foster development. Large and persistent inequality may hamper economic growth, as it undermines the ability of the poor and most vulnerable to invest in education, affecting the opportunities and productivity of current and future generations (OECD, 2018[1]). Tackling inequalities is thus central to sustainable and inclusive development. According to the International Monetary Fund, inequality reduction resulting from redistributive policies in the form of taxes and transfers goes hand in hand with increased and sustained economic growth (Ostry, Berg and Tsangarides, 2014[4]).

Inclusive growth, defined as improvement of living standards and shared prosperity across all social groups, focuses on the pace and structure of growth. The concept of inclusive growth has gained recognition in development circles because it has broadened the discourse beyond a focus on the extreme poor, and increasingly shifted policy focus from poverty reduction to determining how growth can be made more equitable and more inclusive (UNDP, 2017[3]).

In response to increasing wealth, income and opportunity inequalities in many member countries, the Organisation for Economic Co-operation and Development (OECD) launched the OECD Inclusive Growth Initiative in 2012 (Box 1.1). It sought to develop a "people-centred growth model" that allowed everyone to participate in the growth process and get a fair share of its benefits (OECD, 2018[1]).

Box 1.1. The OECD Inclusive Growth Initiative and Framework for Policy Action on Inclusive Growth

The OECD launched its Inclusive Growth Initiative in 2012 to help governments address the challenge of persistent and increasing inequality in income, wealth and opportunities. Across the OECD, the richest 10% own around half of all household assets, while the bottom 40% hold only 3%. Similarly, at the global level it is estimated that the poorest 50% of the world's population receives only 9% of world income, while the richest 1% receives 20%.

The Inclusive Growth Initiative focuses on putting people at the centre of policy with the aim of ensuring (i) that economic growth translates into improved living standards as measured by a range of well-being outcomes that matter to people; and (ii) that these improvements benefit all segments of the population. In 2018, the OECD developed the Framework for Policy Action on Inclusive Growth as a tool to assess policies *ex-ante* in terms of their effects on economic growth and social inclusion and help governments design integrated strategies that combine greater efficiency and equity (OECD, 2018[1]).

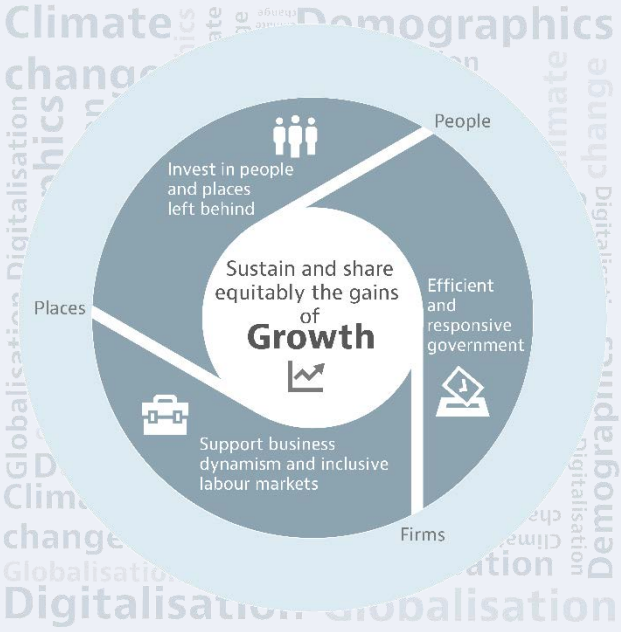
The Framework for Policy Action highlights three priority areas through which governments can sustain and more equally share the benefits of economic growth:

1. **Invest in people and places left behind, providing more equal opportunities** through early-life interventions that compensate for initial disadvantage; life-long skills acquisition; and the construction of comprehensive economic and social networks.

2. **Support business dynamism and inclusive labour markets** through the diffusion of technology and innovation; the promotion of entrepreneurship, particularly for women and under-represented groups; effective competition policies and strong social protection systems that facilitate the creation and retention of quality jobs while enhancing resilience to the Future of Work.

3. **Build efficient and responsive governments** through integrated policy packages, whole of government responses and inclusive forms of policy-making that restore trust in public governance by fostering high levels of integrity and accountability.

The Framework for Policy Action on Inclusive Growth



The Framework for Policy Action builds on data, evidence and policy insights from a range of OECD strategies and projects, including the Productivity-Inclusiveness Nexus, the Jobs Strategy, Skills Strategy, Innovation Strategy, Going for Growth Strategy, the Going Digital project and the Green Growth project. Supported by a dashboard of 24 indicators to monitor progress over time on the key outcomes and drivers of inclusive growth, it is a non-prescriptive tool that can be applied in different contexts taking account of country-specificities and social preferences. The OECD is currently piloting the Framework for Policy Action through adapted country reviews.

Source: OECD (2018[1]), *Opportunities for All: A Framework for Policy Action on Inclusive Growth*, http://dx.doi.org/10.1787/9789264301665-en.

Social protection

Social protection refers to policies aimed to prevent and reduce poverty, vulnerability and social exclusion throughout the lifecycle (UN DESA, 2018[5]; Mathers and Slater, 2014[2]). Social protection systems often provide benefits to individuals or households to guarantee income security and access to health care. Measures such as cash benefits, old-age pensions, in-kind transfers and disability benefits were instrumental in cushioning the impact of the global financial crisis among the most vulnerable, while serving as a macroeconomic stabiliser and enabling people to overcome social exclusion and poverty in both developed and developing countries (ILO, 2011[6]).

Social protection can also stimulate demand and boost consumption, and hence contribute to economic growth. During recessions, social protection spending can help revive economies and stimulate employment (UN DESA, 2018[5]).

Social protection instruments are commonly classified into three categories: 1) social assistance; 2) social insurance; and 3) labour market programmes. They vary in aspects of design, coverage and funding arrangements Box 1.2, which may have implications for their impact on growth and equality. This report focuses on social assistance and social insurance programmes directed at all lifecycle stages. It does not consider labour market programmes, which have a narrower target base but may also significantly affect inclusive growth, e.g. training schemes implemented as part of activation strategies to increase employability of the unemployed, or public works programmes targeted at long-term unemployed and other vulnerable groups. Other social policies, such as early childhood development (ECD), are also beyond the scope of this report.

Box 1.2. Social protection and social assistance

Social assistance is defined as non-contributory social protection, usually financed through taxes and targeted at low-income households and vulnerable groups (UN DESA, 2018[5]). Examples include cash or in-kind social transfers, fee waivers, subsidies and child benefits, all of which are means tested. Cash transfers have proliferated, particularly in low- and middle-income countries; over 130 countries use direct, regular and non-contributory cash payments as income support and poverty reduction strategies central to their social protection systems (Bastagli et al., 2016[7]). It is estimated that, on average, countries spend 1-2% of gross domestic product on social assistance transfers (DFID, 2011[8]). These can be unconditional or conditional on school attendance, health or job requirements (Baird et al., 2013[9]). Social assistance schemes cover approximately 31% of the world's population and have had a positive effect in reducing income inequality.

Social insurance refers to contributory programmes that protect against certain life contingencies through a risk-pooling insurance mechanism dependent on prior contributions (Mathers and Slater, 2014[2]). Old-age pensions are the most common example: employer and/or employee contributions consolidate pension funds, which finance retirement benefits. Currently, pension schemes receive contributions from 35% of the world's labour force and provide benefits to 68% of the elderly (ILO, 2017[10]). Unemployment benefit programmes are another, less widespread example that target the working-age population. Social insurance programmes also provide a proven equalising effect which, in certain contexts, is greater than that of social assistance. In middle- and high-income countries where coverage is widespread, as in Eastern Europe and Central Asia, social insurance has reduced the Gini coefficient by 16%.

An increasing number of countries have consolidated social protection systems to tackle development challenges, especially under the 2030 Agenda framework, which recognises the right to social security (UN DESA, 2018[5]). However, only 45% of the world's population is covered by at least one social protection benefit, and coverage varies widely by population group. Worldwide, 35% of children, 22% of the unemployed and 68% of the elderly benefit (ILO, 2017[10]). Although there is a long way to go to achieve the UN Sustainable Development Goal 1.3 to "implement nationally appropriate social protection systems and measures for all", a number of developing countries in all regions are close to or have reached universal pension coverage.

Social protection coverage also varies across regions (Table 1.1). Social insurance varies from 4% of the population in sub-Saharan Africa to 47% in Europe and Central Asia. Social assistance has higher coverage than social insurance in most regions. The Middle East and North Africa region shows the largest difference: social assistance covers about 55% of the population, while social insurance covers 14%. In Europe and Central Asia, social assistance and insurance cover about the same share (47%).

Coverage also varies across income quintiles. Social assistance has higher coverage among poorer populations; social insurance has higher coverage among richer populations. For instance, in Latin America, social assistance covers 67% of the poorest and 10% of the richest quintiles, while social insurance covers 9% of the poorest and 40% of the richest quintiles. The nature and coverage of programmes matter to their influence, for instance, on inequalities (Box 1.2).

Table 1.1. Middle East and North Africa show the greatest gap between social assistance and social insurance coverage

Social protection coverage by region, overall population and income quintile (2018)

	Type of social protection	% total population	% Q1	% Q2	% Q3	% Q4	% Q5
Latin America and Caribbean	Assistance	38.5	66.7	52.3	38.5	24.7	10.0
	Insurance	27.7	9.0	22.1	30.2	37.5	39.8
East Asia and Pacific	Assistance	43.6	66.2	53.0	39.8	30.8	28.2
	Insurance	28.6	22.0	22.7	26.2	33.5	38.5
Europe and Central Asia	Assistance	46.6	47.9	45.0	43.9	47.0	48.5
	Insurance	47.2	37.9	44.7	49.9	53.7	49.8
Middle East and North Africa	Assistance	54.9	57.4	57.1	56.5	56.4	46.9
	Insurance	14.1	5.3	10.0	13.6	17.7	23.9
Sub-Saharan Africa	Assistance	14.5	8.6	13.5	16.8	17.2	16.2
	Insurance	4.1	5.0	3.0	3.0	3.8	5.6

Source: World Bank (2018[11]), *ASPIRE: The Atlas of Social Protection* (database), http://datatopics.worldbank.org/aspire/indicator/social-expenditure.

Linkages between social protection and inclusive growth

Numerous studies focus on how social protection can reduce poverty and vulnerability and enhance household welfare, but few investigate programmes' potential impact on growth patterns. Social protection programmes can particularly affect the poor, as many low-income households are locked in poverty traps of low income, credit constraints and limited opportunities.

Economic development haves traditionally been seen as a trade-off between equity and efficiency. However, evidence strongly suggests that income inequality has a sizeable

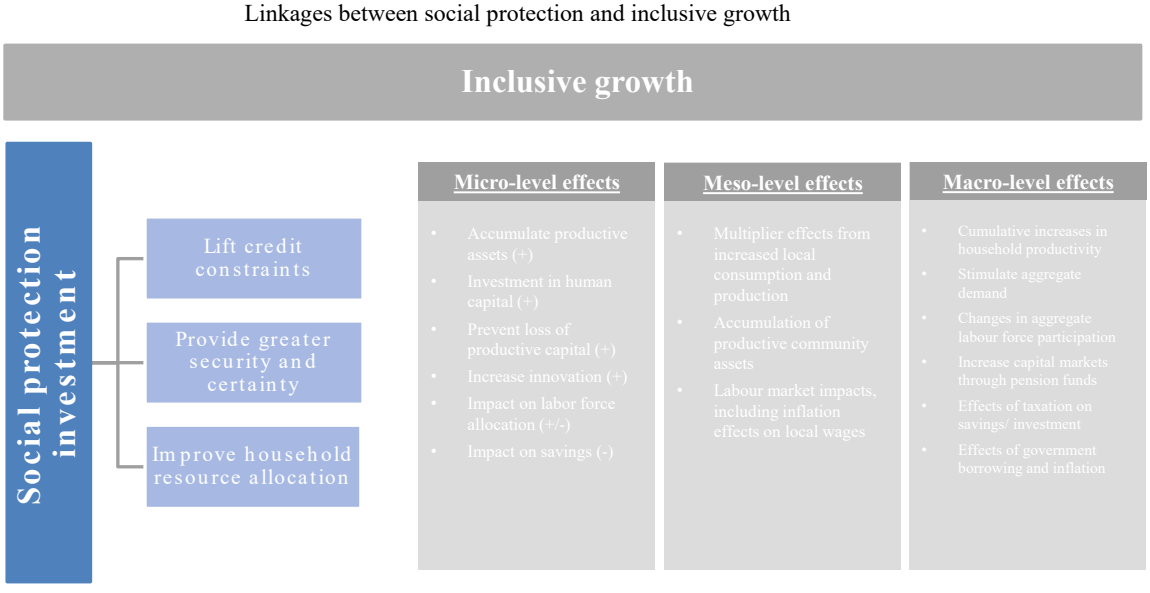
negative impact on economic growth, as it hinders investments in human capital (OECD, 2015[12]; ILO, 2011[6]). Consequently, social protection systems can also encourage growth. Past studies have already shown how social safety nets have the potential to overcome constraints on growth linked to market failures without eliminating, however, the trade-off between the dual objectives of equity and growth (Alderman and Yemtsov, 2013[13]; Alderman and Hoddinott, 2020[14]); Social accountability mechanisms matter for effective social protection as they contribute to improving both service delivery and state-citizen relations, as evidenced for instance by case studies in Ethiopia and Nepal (Ayliffe, 2018[15]; Schjødt, n.d.[16]).

Figure 1.1 summarises linkages and the three main channels through which social protection may affect inclusive growth:

- **Lift credit constraints and encourage investments.** Social protection can alleviate credit constraints by facilitating access to bank loans and extending credit to low-income households.
- **Provide greater security and certainty.** Social protection can help households cope with risks and protect their consumption and assets against adverse shocks, which leads to a more efficient use of resources.
- **Improve household resource allocation and dynamics.** Social protection can affect household time and resource allocation, which has implications for income growth related to changes in intra-household bargaining power, investments in education or child labour, household labour allocation and migration decisions.

These channels may operate on three levels: 1) individual and household (micro); 2) community (meso); and 3) national (macro).

Figure 1.1. Social protection investments can affect inclusive growth through micro-, meso- and macro-level effects



Note: (+) indicates an expected positive impact; (−) indicates an expected negative impact.
Source: Authors' elaboration based on Barrientos and Scott (2008[13]), *Social Transfers and Growth: A Review*, and Mathers and Slater (2014[2]), *Social Protection and Growth: Research Synthesis.*

Micro linkages

Growth effect

At the individual and household level, social protection policies can a priori affect economic growth through five main effects: 1) accumulation of productive assets; 2) preventing the loss of productive capital; 3) stimulating innovation and entrepreneurship; 4) altering labour market participation and savings; and 5) stimulating investments in human capital such as education and health. While most effects are expected to have a positive impact on inclusive growth, the impact on labour force allocation is ambiguous and the impact on savings is a priori negative.

These elements are captured in the first two pillars of the OECD Framework for Policy Action on Inclusive Growth: 1) invest in people and places left behind, providing equal opportunities; and 2) support business dynamism and inclusive labour markets (OECD, 2018[18]). According to the first pillar, the key dynamics for governments and the private sector to sustain are promoting life-long learning and acquisition of skills, especially in relation to the future of work; increasing social mobility; improving health and enhancing access to affordable housing; promoting regional catch-up; and investing in communities' well-being and social capital. As for the second pillar, the key dynamics for policies to catalyse are boosting productivity growth and business dynamism, while ensuring adaptation and diffusion of technologies across the board – in particular for small and young firms; achieving inclusive labour markets; and optimising natural resource management for sustainable growth.

Beyond social protection, potential policies for growth and inclusiveness include education and skills policies; labour market policies and employment protection; health policies; investment policies; taxes and transfers; territorial policies; structural and regulatory policies; data exchange, trade and competition policy enforcement; and policies supporting a low-carbon and resource-efficient economy (OECD, 2018[18]). In particular, social protection systems need to adapt to changes in family structures and living arrangements; health policies to address the wide range of social determinants of health inequalities and expand spending allocated to prevention targeted at key risk factors and population groups, especially for children; and labour market policies to coordinate with product market regulations to lower barriers to mobility of labour and reducing discrimination.

Social protection can enable low-income households to **accumulate productive assets** by increasing access to credit, supporting investments or facilitating assets accumulation directly (Mathers and Slater, 2014[2]). This increases consumption and enables investments in livelihoods (IEG, 2011[14]).

Social protection can have a positive direct impact on growth by preventing the **loss of productive capital** after a shock (Mathers and Slater, 2014[2]). By supplementing or increasing vulnerable households' ability to cope with shocks, social protection programmes reduce the need to sell productive assets, such as livestock, or to adopt harmful coping mechanisms that deteriorate human capital, such as reducing food consumption or interrupting children's education.

Social protection can foster economic growth by **enabling innovation and entrepreneurship**, as long-term and predictable income support unlocks innovation and risk taking for the vulnerable or poor, who otherwise could not afford potential failure (Mathers and Slater, 2014[2]). The certainty of future transfers, which guarantee

consumption levels and protect productive assets, diversifies livelihoods and reallocates labour to more profitable activities (Alderman and Yemtsov, 2014[15]).

Social protection can affect growth through its direct impact on **labour market participation and savings**. The employment effect can be either positive by leading to better employment opportunities or negative by creating dependency and adverse incentives (Mathers and Slater, 2014[2]). For instance, in the short term, unemployment benefits tend to increase unemployment duration and spells, contributing to higher unemployment. However, unemployment benefits allow individuals to improve job search and find jobs that better match their skills and aspirations, ultimately leading to better labour market outcomes and attachment, and a reduced risk of falling back into unemployment. Whether or not social protection has a growth-inducing effect on labour supply depends on the design and type of programmes implemented. Some unconditional cash transfers, conditional cash transfers (CCTs) and food transfers in Brazil have been shown to facilitate better employment opportunities (ODI, 2011[16]), while free health provision in Mexico has created incentives for informality (Alderman and Yemtsov, 2014[15]). The effect on savings is a priori negative, as social protection reduces the need for precautionary savings.

Last, social protection can affect investments in **human capital**. Social assistance programmes often include conditions requiring human capital investments, such as sending children to school and visiting health clinics (Barrientos and Scott, 2008[13]). Even without conditionalities, social protection may spur investments in human capital through effects on liquidity constraints, a lead cause of underinvestment in human capital, especially among poorer households. Higher educational attainment is closely correlated with future labour market opportunities. Social protection investments that lead to human capital accumulation are therefore likely to spur growth outcomes.

Overall, social protection can be a determinant of growth at the individual and household level. However, despite their common aim, not all social protection programmes are expected to affect growth equally. Social protection investments cover a range of social insurance and assistance schemes with characteristics and design features that affect growth to varying degrees in various ways (Arjona, Ladaique and Pearson, 2001[17]).

Effect on inequality reduction

As social protection policies often aim to address poverty and vulnerability, they also have an effect on inequality. Tackling inequality is important, as it hinders poorer individuals and households from making investments in human capital, for instance, and reaching their full potential, which has negative impacts on individuals and the economy as a whole (OECD, 2015[12]).

Social protection programmes, particularly social assistance programmes, are often explicitly designed to reduce inequalities by promoting equal opportunities throughout the lifecycle (OECD, 2018[1]). Although their impact varies by design, adequacy and implementation, evidence shows that they can reduce inequalities (UN DESA, 2018[5]). At a micro level, social protection systems can reduce inequalities through two main complementary paths.

First, these programmes guarantee a minimum level of economic and social well-being, serving as safety nets for low-income and vulnerable households and individuals to mitigate the risk of poverty, and as spring boards that enable social mobility and help close inequality gaps (Ali, 2007[18]).

Second, social protection programmes can enable equal access to opportunities by overcoming the savings and credit constraints that prevent human capital investments and disruption of intergenerational poverty (Mathers and Slater, 2014[2]). For instance, by addressing demand-side barriers to nutritious food, health services and education (UN DESA, 2018[5]), programmes can contribute to lower rates of malnutrition and increased rates of school enrolment and attendance, thereby reducing opportunity inequalities. Social protection policies can also support higher educational attainment (Ali, 2007[18]), which improves productive capacity and employment prospects (UN DESA, 2018[5])and indirectly affects economic growth, as it enhances productivity and human capital (Mathers and Slater, 2014[2]).

Meso and macro linkages

Growth effect

Social protection can also affect growth outcomes at community and national levels. At the meso level, social protection investments can generate multiplier effects from increased local consumption and production, and enable accumulation of productive assets at the community level. The extent of these multiplier effects depends on the nature and size of the social protection transfers and their coverage (Mathers and Slater, 2014[2]). There may also be an inflation effect on local wages, as social protection programmes, particularly labour market programmes, can push up costs of labour.

At the macro level, social protection can have significant and broad effects on economic growth. It may increase aggregate household productivity and stimulate aggregate demand, particularly through counter-cyclical spending during economic downturns, thus increasing employment and revenue collection. However, a negative growth effect may also be expected through greater dependency and lower investment due to a decline in labour force participation and reduced savings. Indirect effects, such as facilitating economic reforms, building human capital, enhancing social cohesion and influencing fertility can further spur growth (Mathers and Slater, 2014[2]).

Effect on inequality reduction

Social protection can have sizeable effects on inequality at the meso and macro levels. Social protection policies can contribute to equal access to opportunities, reducing inequalities of outcomes (Ali, 2007[18]). Social protection programmes also contribute, to varying degrees, to reduced income inequality. Social protection systems worldwide reduced the Gini coefficient by 1.8% in 2016 (World Bank, 2018[11]). Moreover, by reducing inequalities, social protection schemes foster social cohesion and have a significant indirect positive impact on economic growth (Mathers and Slater, 2014[2]).

Although social protection can reduce inequalities, its redistributive effect depends on country context and programme type. Inequality reduction through social insurance, which does not explicitly target vulnerable groups, is seems highly dependent on the extent of coverage. In middle- and high-income countries, where coverage rates are high, social insurance has a significant effect on income inequality: in eastern Europe and Central Asia, the Gini coefficient fell by 16% due to investments in social insurance (UN DESA, 2018[5]). Social protection systems in low-income countries tend to be less extensive and have limited coverage due to informality and lack of financing. Because of low coverage, social assistance programmes in sub-Saharan Africa and East Asia have proven less effective in reducing inequalities (World Bank, 2018[11]).

Micro-level impacts of social protection on inclusive growth

The conceptual framework developed in this report shows that social protection investments have multiple micro-, meso- and macro-level effects on growth and inequality. Measuring these effects, however, is often a challenge. Key challenges include heterogeneity of social protection investments, multiplicity of possible effects that may cancel each other out, presence of endogeneity, the difficulty to measure some effects in traditional household surveys, in particular health outcomes that require specific health surveys or modules, and, concerning macro effects, scarcity of internationally comparable data on social protection investments by programme type.

This report adopts a careful approach, focusing on the micro determinants of inclusive growth that have a theoretical link with social protection investments and that can be measured in standard household surveys. It therefore consider only those more direct effects of social protection investments that are more straightforward to measure empirically in standard household surveys that are used for the empirical analysis. For this reasons, health outcomes, that are another major channel through which social protection can spur inclusive growth, are not covered in the empirical part of this report.

The measurement framework further identifies a number of micro determinants of inclusive growth, or outcome variables, that operate throughout the lifecycle and which are, in theory, likely to be influenced by social protection investments (Table 1.2). Outcomes of interest typically refer to education, early pregnancy, fertility, child labour, employment, migration, consumption and savings. Annex 2.A and Annex 3.A detail methodological approaches for social assistance and social insurance, respectively.

Table 1.2. Outcome variables used in empirical analysis to capture micro-level inclusive growth effects of social protection

Lifecycle stage	Micro-level effects	Outcome variables
Children and youth	Investments in human capital	School enrolment School attendance Early pregnancy Child labour
Working age	Accumulation of productive assets Prevention of loss of productive capital Increased innovation and risk taking Impact on labour force allocation and savings	Labour force participation Employment Entrepreneurship Migration Consumption Savings Fertility
Elderly	Impact on labour force allocation	Labour force participation Employment

The choice of outcomes variables has a strong theoretical justification. The following section outlines the theoretical underpinning of the micro-level impact of social protection investments.

Social protection can support consumption and alter savings patterns

Adequate non-contributory, rights-based social assistance benefits can prevent major fluctuations in household income and smooth household consumption but have a negative impact on precautionary savings. They target vulnerable populations with a high marginal

propensity to consume and lower ability to save. Social assistance programmes are therefore expected to have a positive impact on consumption and a neutral or slightly negative effect on saving (Kabeer and Waddington, 2015[19]). Any form of family allowance or child benefits may also negatively affect aggregate household saving, as they target young households that tend to save less than middle-aged ones (Cigno, Casolaro and Rosati, 2002[20]).

Likewise, social insurance is expected to erode precautionary savings and increase household consumption (Feldstein and Liebman, 2002[21]). An actuarially generous social insurance system (i.e. contributions are less than expected compensation) would further incentivise present consumption and disincentivise savings (Cigno, Casolaro and Rosati, 2002[20]; CBO, 1998[22]). The effects of pensions in particular are assumed to last throughout the lifecycle. At working age, when contributions are paid, pension wealth is accumulated and tends to crowd out voluntary retirement saving; at old age, when benefits are received, the limited impact of social risks (e.g. sickness) on household income reduces the need for precautionary savings (Mu and Du, 2017[23]).

Social protection appear to have mixed effects on labour supply

The effect of social assistance on labour supply may vary, depending on aim and targeted population. Cash transfers aimed to reduce poverty are often means tested and target working-age populations. They can reduce labour supply through two main channels: 1) a direct additional **income effect** that reduces the need to work; and 2) a **tax effect** as additional income from work becomes less rewarding in a system with progressive marginal tax rates.

The tax effect is likely to be stronger the higher the marginal tax rates (Borjas, 2005[24]). However, if the costs of looking for a job and household credit and liquidity constraints are taken into account, social assistance may have a positive effect on labour supply. Providing cash transfers to resource-poor households can free up time and allow a part of the transfer to be invested in job-seeking activities, improving employment opportunities. Programmes, such as social pensions, to support particularly vulnerable groups with less ability to work may reduce labour supply (due to, for instance, sickness or old age), which is both expected and desired.

Under social insurance, pensions are expected to affect labour supply negatively (Krueger and Meyer, 2002[25]), especially among low-skilled workers whose income replacement rates tend to be higher (Lalive and Parrotta, 2017[26]). Contributions act as an implicit tax on labour income and, as such, can disincentivise enrolment in a pension scheme and, after a certain age, accelerate retirement through a substitution effect (French and Jones, 2012[27]). However, actuarially fair pensions, which equalise at present value lifetime individual pension entitlements (pension wealth) to lifetime individual pension contributions, can encourage workers to postpone retirement, as they reduce disincentives to working beyond retirement age (OECD, 2017[28]). Pension wealth and retirement decisions also particularly depend on individual discount rates or myopia regarding future benefits (opportunity cost of delaying consumption). Individuals with low discount rates (i.e. whose future benefit increases outweigh current benefits foregone) are more prone to remain employed and postpone retirement. In turn, unemployment insurance is expected to raise the reservation wage and lengthen unemployment spells, thereby driving down employment, at least in the short term.

Social protection seems to improve education outcomes in poorer households

Social assistance can have a positive impact on education spending in a context of liquidity and credit constraints, as beneficiary households can afford to spend more on education. CCTs are likely to have a particularly strong effect on education outcomes, since they often focus on education and are conditional on school attendance (Bastagli et al., 2016[7]; Baird et al., 2013[9]). Social pensions, like old-age grants, are also expected to have a positive impact on education expenditure, as they enable three-generation households to overcome liquidity constraints through resource pooling (Bastagli et al., 2016[7]). While this report focuses on social protection programmes, ECD, which can be considered part of social welfare policies, has clear implications for education outcomes.

Theoretical expectations concerning contributory old-age pensions and education expenditures are less clear. From a macroeconomic perspective, population ageing increases the political power of older people, which could lead governments to shift public expenditures from education to pensions (Ono and Uchida, 2016[29]). Nonetheless, pay-as-you-go pension systems can incentivise the ageing working population to invest in public education, as they would reap more benefits from increased future productivity and the resulting higher income and tax contributions (Michailidis, Patxot and Solé, 2016[30]). From a microeconomic perspective, if receiving pensions and having children are considered alternative old-age insurance strategies, pension contributors would tend to invest little in child education (Meier and Wrede, 2005[31]; Mu and Du, 2017[23]). However, as parents are assumed to be altruistic and pensions reduce the need to save for retirement, underinvestment in the formation of children's human capital is most likely to occur in liquidity- and credit-constrained households (Lambrecht, Michel and Vidal, 2005[32]; Mu and Du, 2017[23]).

Social protection can foster innovation and investments among the poor

Social protection benefits can play a significant role in lifting credit constraints and reducing risk aversion, which would encourage productive investments and adoption of innovative technologies (ILO, 2010[33]; Barrientos, 2012[34]; Covarrubias, Davis and Winters, 2012[35]). However, as wealthier people face lower barriers to investments, this applies mainly to the poor. Low-income households have a lower marginal propensity to save and invest; are disproportionately credit-constrained owing, in particular, to lack of collateral; and are, in addition, liquidity constrained. They may therefore favour occasional savings to cope with potential economic shocks at the expense of productive investments, and are less inclined to adopt technologies with high return but which involve more risk (Deaton, 1990[36]; ILO, 2010[33]; Barrientos, 2012[34]; Stoeffler, Mills and Premand, 2016[37]) . Social protection, particularly social assistance, that targets the poor and often involves cash transfers, can help households overcome risks and spur innovation, entrepreneurship and investments in, for instance, business activities.

Social protection tend to lower fertility rates

Fertility rates are a strong determinant of economic growth. While declining fertility slows growth through decreased labour supply (Prettner, Bloom and Strulik, 2012[38]), in developing countries with high fertility prevails, reduced fertility can spur economic growth (Ashraf, Weil and Wilde, 2013[39]).

Social protection can affect decisions about household composition, such as fertility. Conditional cash transfers, which are often targeted, very modest and not rights based and without limit to number of beneficiary children – are expected to reduce fertility. They

are mostly paid to women and require periodic visits to medical centres, potentially empowering women's family planning decisions and providing information and access to contraceptives (Bastagli et al., 2016[7]). Conditionalities also add a price effect to the income effect of the benefit, reducing the cost of education: if households substitute "quantity for quality" in their fertility decisions, CCTs could have a positive effect on human capital investments and a negative effect on the number of children (Simões and Soares, 2012[40]). Social assistance in the form of child-related benefits reduce the marginal cost of children and could have a positive effect on fertility, but the benefits would need to cover the high costs of bearing and raising children.

Mandatory social insurance and benefits could have a negative effect on fertility if children are considered part of the household old-age insurance strategy (Mu and Du, 2017[23]). Social insurance may also reduce fertility through its effects on access to contributory social insurance systems (OECD, 2017[41]). Social insurance is often earnings-related; children can affect permanence in the labour market, prospects of future earnings, and access and level of contribution to contributory insurance systems, such as pensions, acting as an implicit tax on childbearing (Cigno, Casolaro and Rosati, 2002[20]).

Social protection seems to have mixed effects on migration

Migration is another channel through which social protection can indirectly affect inclusive growth. With regard to social assistance, cash transfers can affect migration decisions directly, by providing the means for a household member to migrate internally or internationally, or indirectly, by providing collateral to obtain credit to finance migration. However, if transfers substitute for potential remittances from migrants, they may render migration unnecessary and reduce migration (Hagen-Zanker and Himmelstine, 2013[42]). Programme design matters as well. Recent evidence shows indeed that the impacts of cash transfers on domestic and international migration hinge on whether programmes were designed to implicitly or explicitly inhibiting or facilitating mobility (Adhikari and Gentilini, 2018[48]). Place-based programmes implicitly deter migration, in contrast with social assistance that is explicitly conditioned on spatial mobility or that contribute to relax liquidity constraints and reduce transaction costs thereby implicitly facilitating migration.

Social insurance effects on migration depends on the portability of benefits and contributions (Hagen-Zanker, Mosler Vidal and Sturge, 2017[43]). Benefits, particularly pension income, can be expected to reduce liquidity constraints and consequently facilitate financing of migration. However, the effect is neutralised if social insurance benefits have limited or no portability, i.e. the transfer could be lost when migrating, raising the costs of and disincentivising migration (Hagen-Zanker and Himmelstine, 2013[42]). In the absence of effective retirement provisions, savings derived from migration may also be seen as a substitute for formal pensions (Sana and Massey, 2000[44]).

Social protection programmes have a number of positive and negative effects on inclusive growth in theory; assessing their role in inclusive growth remains an empirical question. Subsequent chapters look at recent and new empirical evidence, drawing on an in-depth survey of the empirical literature and new empirical evidence from four countries at various stages of development: Brazil, Germany, Ghana and Indonesia.

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Chapter 2. Micro-level impact of social assistance on inclusive growth

Social assistance programmes are a key component of social protection investments that are likely to affect inclusive growth, especially given that they are non-contributory and target the poor. Yet, besides cash transfers, empirical evidence on their impact on inclusive growth remains insufficiently documented. Through a review of the empirical literature and new empirical analysis for Brazil, Germany, Ghana and Indonesia, this chapter examines the impacts of various social assistance programmes on a range of microeconomic outcomes conducive to inclusive growth that are captured in household surveys. Programmes analysed span lifecycle stages, countries and household income levels. Results make a strong case for investments in social assistance as a driver of inclusive growth but indicate that programme design and implementation, and heterogeneity of benefit levels, matter. Some aspects are difficult to measure in quantitative analysis and deserve greater attention in future data collection and research.

Progressivity of social assistance

Social assistance in the form of cash transfer programmes have rapidly expanded in low- and middle-income countries in recent years and have become central in poverty reduction and social protection strategies in many countries. Social assistance schemes currently cover 31% of the global population (World Bank, 2018[1]): some 130 low- and middle-income countries have implemented at least one non-contributory unconditional cash transfer (UCT) programme, while about 63 have at least one conditional cash transfer (CCT) programme (Bastagli et al., 2016[2]).

Still, a large share of the target population lacks access to social assistance. It covers less than 15% of the sub-Saharan African population, benefiting only about 9% of the poorest households (see Table 1.1 in Chapter 1).

New empirical evidence presented in this report is based on four country studies: Brazil, Germany, Ghana and Indonesia. The social assistance programmes analysed include three CCT programmes, a child benefit programme and a cash transfer programme for poor students (Table 2.1).

Table 2.1. Social assistance programmes included in the empirical analysis

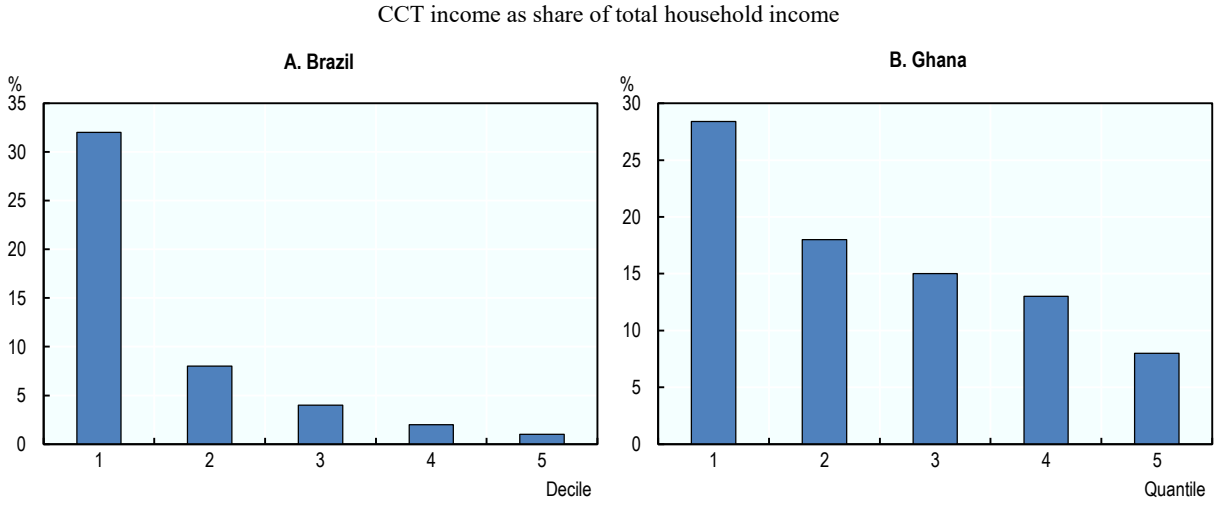
Country	Programme name	Programme type	Start year	Target group	Benefit level
Brazil	Bolsa Família	CCT	2003	Households in extreme poverty	Basic benefit = USD 30 per household per month Variable benefit = USD 10.12 per month per eligible person
Ghana	Livelihood Empowerment Against Poverty (LEAP)	CCT/UCT	2008	Households in extreme poverty	Varies by number of eligible members, from USD 13.4 to USD 22 per payment cycle (6 months)
Indonesia	Programme Keluarga Harapan (PKH)	CCT	2007[1]	Households in extreme poverty with child below age 21	USD 129 per year per household
Indonesia	Bantuan Siswa Miskin (BSM)[2]	Cash transfer for poor students	2008	Students aged 6-21 in poor households	USD 30 for elementary school to USD 68 for senior high school per year per student
Germany	Kindergeld	Child benefit	1996[3]	Households with children below age 18	USD 224 per month for first and second child USD 231 and USD 260 per month for third and fourth child, respectively

Notes: USD = United States dollar.
[1] The large-scale 2007 pilot was later scaled up nationally.
[2] Since renamed Program Indonesia Pintar (PIP).
[3] In place for longer, but a 1996 reform substantially increased benefits.

These programmes have slightly different targets, which affects the selection of households included in the analysis. The three CCT programmes analysed target poorer populations in their respective countries. CCT income as a share of total household income is higher in poorer households, indicating a certain degree of success in targeting. In Brazil, CCTs represent 32% of income among households in the first decile and less than 10% of income among those in the second to fifth deciles (Figure 2.1A). Households above the fifth decile are ineligible and therefore excluded from the analysis.

In Ghana, Livelihood Empowerment Against Poverty (LEAP) cash transfers account for 28% of total household income in the first quintile and 8% in the fifth quintile (Figure 2.1B). The latter constitutes a small but not negligible share of households in the survey sample; the analysis therefore includes all households in the survey.

Figure 2.1. CCTs constitute a large share of household income in the lowest income groups in Brazil and Ghana



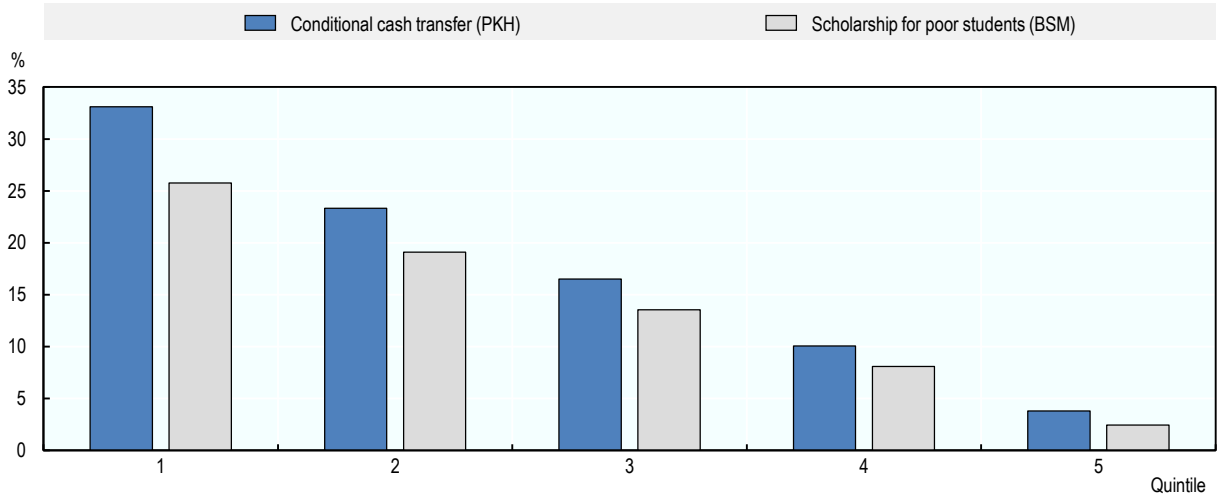
Note: CCT income share for the sixth to tenth deciles in Brazil is zero due to ineligibility.
Source: Authors' calculations based on data (2011-15) from Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html, and household evaluation data (2010-16) from Ghana's Livelihood Empowerment Against Poverty programme.

Analysis of Indonesia's Programme Keluarga Harapan (PKH) cash transfer programme and Bantuan Siswa Miskin (BSM) scholarship for poor students programme uses programme participation (i.e. whether households received social assistance transfers or not). Households in the first quintiles are substantially more likely to receive CCT income and scholarship benefits (Figure 2.2): one in three (33%) receives CCT income and one in four (26%) receives scholarships, compared with 4% and 2% among households in the fifth quintile. Analysis of the PKH and BSM thus focuses on the first three quintiles.

Germany's child benefit targets all households with children, regardless of income level. Analysis therefore includes all households in the German Socio-Economic Panel survey with at least one child. The level of benefit varies for children past the second child (see Annex 2.A).

Figure 2.2. Poorer households are more likely to receive CCTs in Indonesia

Share of households receiving CCTs and scholarships for poor students (2016)



Note: Quintiles are calculated based on income.
Source: Authors' calculations based on data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

Impact of social assistance on micro drivers of growth

While social assistance covers all lifecycle stages, most evaluations have focused on programmes targeting children, youth and working-age individuals, which is reflected in the analysis below. Some evidence addresses programmes for the elderly.

Impact of social assistance on children and youth

Many children and youth suffer from poverty, social exclusion and lack of access to necessary goods and services (ILO, 2017[3]). Social assistance can play an important role in lifting children out of poverty, reducing child labour, and improving health, nutrition and education outcomes.

Cash transfers seem to spur investments in schooling

Existing empirical literature supports theoretical expectations regarding the impact of social assistance on education outcomes (see Chapter 1). Two extensive literature reviews show a positive link between cash transfers and school attendance, with stronger impacts in the case of conditionality (Bastagli et al., 2016[2]; Baird et al., 2013[4]). Findings give ample support to the expectation that, since liquidity- and credit-constrained households tend to underinvest in education, social protection benefits can positively affect education outcomes. The reviews also suggest that conditionalities have an effect by themselves (Box 2.1). However, impacts on learning, critical in disrupting intergenerational poverty, are weaker. A few recent studies shed light on cash transfers' long-term impacts and propose that some outcomes, such as learning, might change due to long periods of exposure. However, evidence for the hypothesis remains limited. Other studies have also evidenced that unconditional cash transfer programmes can significantly increase secondary school-age enrolment and spending on school inputs, thus refuting common

perceptions (Peterman, Yablonski and Daidone, 2018[5]; Baird et al., 2014[6]; Kilburn et al., 2017[7]; Handa et al., 2016[8]).

New empirical evidence presented in this report also points to CCTs' positive effect on school attendance. Increased household income from Bolsa Família, Brazil's flagship social assistance programme, increases school enrolment rates among children and youth up to age 25 (Figure 2.3A). The effect holds in all but the fourth decile. The effect is largest among age groups above age 14, since attendance by younger groups is almost universal.

Indonesia's PKH CCT has similar effects on school attendance. Receiving a PKH positively affects the first three quintiles, with a stronger effect in the first two (Figure 2.3B). Estimations are statistically significant at a 5% level in the three quintiles. These results are in line with previous findings that the PKH significantly improves elementary school attendance (Hadna, Dyah and Tong, 2017[9]).

Ghana's LEAP CCT is an important income source for the poorest households to cover education expenditures. Basic public education is partly subsidised, but financial access is still an issue (NDPC, 2015[10]). Until recently, families had to pay substantial sums for higher than basic education, i.e. senior high and tertiary education. Analysis shows that increased income from LEAP significantly increases the likelihood that a child or youth (aged 3-24) in the lowest quintile attends school. Separate analysis of youth aged 12-24, the group most prone to dropout, found similar results. The survey question of school attendance was restricted to the current school year. An additional indicator on dropout – children and youth who ever attended school but are currently out of school – was also analysed for both age groups. As with attendance, LEAP did not have an impact on dropout among households in higher income groups but was very important for the lowest quintile.

Box 2.1. The role of conditionality in cash transfers

The increasing popularity and implementation in developing countries of CCTs have prompted debate over the role and effectiveness of conditionality – primarily whether explicit conditions and their enforcement affect the benefit's performance and thus whether CCTs are more effective than UCTs (Bastagli et al., 2016[2]). Both transfers employ means testing, such as targeting mechanisms and eligibility criteria; debate revolves around the conditions on which benefits are contingent (Pellerano and Barca, 2017[11]).

Empirical evidence suggests that CCTs tend to be somewhat more successful than UCTs in achieving education and health outcomes (Bastagli et al., 2016[2]). The extent and significance of the effect, however, depends on programme design and implementation. In developing countries, only CCT programmes with strong monitoring and enforcement mechanisms had a more significant impact on school enrolment rates than UCTs (Baird et al., 2013[4]). Moreover, stronger conditions than attendance, such as graduation, have a larger effect on secondary education enrolment and attendance (Barrera-Osorio et al., 2008[12]; Saavedra and Garcia, 2012[13]). Overall, conditionality plays an important role in education outcomes, as long beneficiaries perceive them as enforceable. CCT programmes without proper monitoring have been shown to have a smaller impact than equivalent unconditional schemes that were strongly labelled (Bastagli et al., 2016[2]).

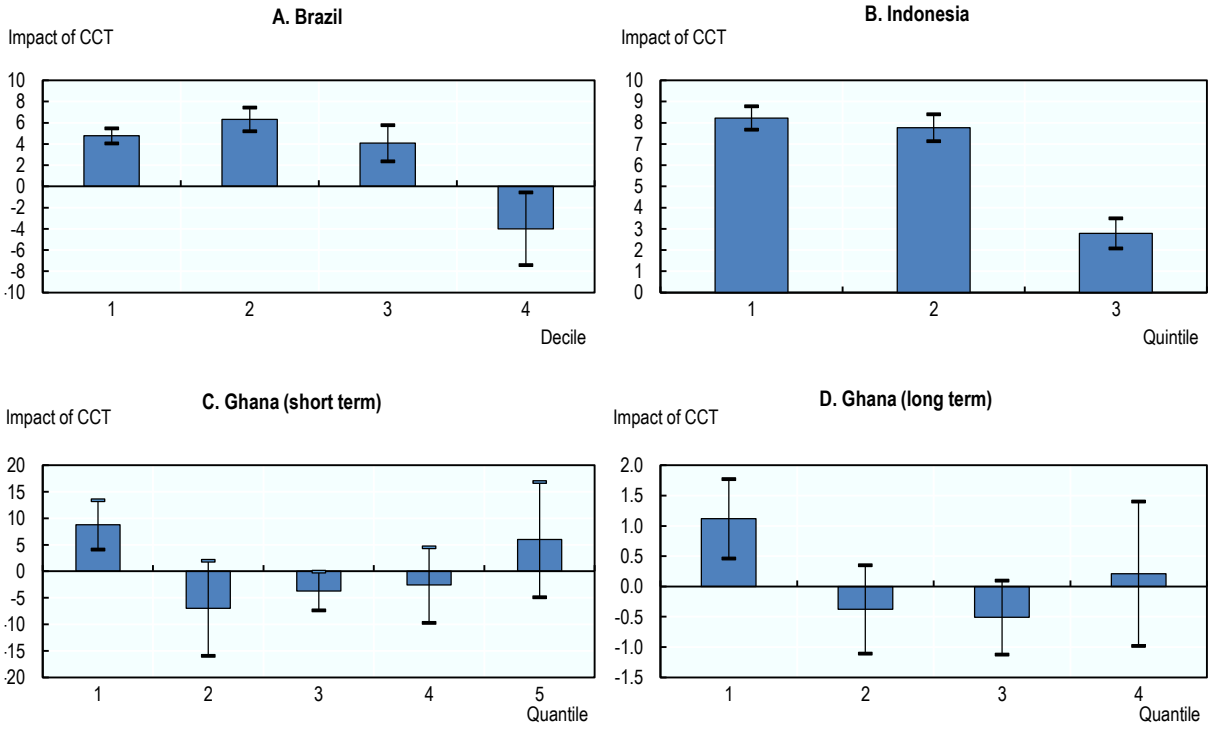
CCTs tend to have a larger positive impact than UCTs on hospital births, prenatal care visits and use of medical services. However, it is not clear whether this is due to conditionality and, unlike education outcomes, the effect depends not on enforcement but awareness (Bastagli et al., 2016[2]; IEG, 2014[14]). Several studies highlight the role of communication, perceptions and messaging. As conditionalities can have unanticipated effects, encouraging participants to take certain actions may be more effective.

Conditionality also implies costs for beneficiaries. Poorer households (the main target) that are located far away from health clinics may have higher time and transport costs to comply with compulsory health checks. Poorer households also often have more children, requiring more frequent visits. Studies also highlight CCTs' particular impacts on women, who are typically made the main beneficiaries: in some cases, CCTs may reinforce traditional gender roles and increase women's work burden.

Conditionality also implies implementation costs related to enforcement and awareness raising (Pellerano and Barca, 2017[11]). The elements that enable conditionality to have a significant impact on outcomes imply higher costs and an increased administrative burden in terms of implementation. The role and efficiency of conditionality depends on both policy design and the institutional context of each country (Pellerano and Barca, 2017[11]).

Figure 2.3. CCTs have a positive impact on school attendance in Brazil, Indonesia and Ghana

Impact of CCT programmes on school attendance, IV estimation results

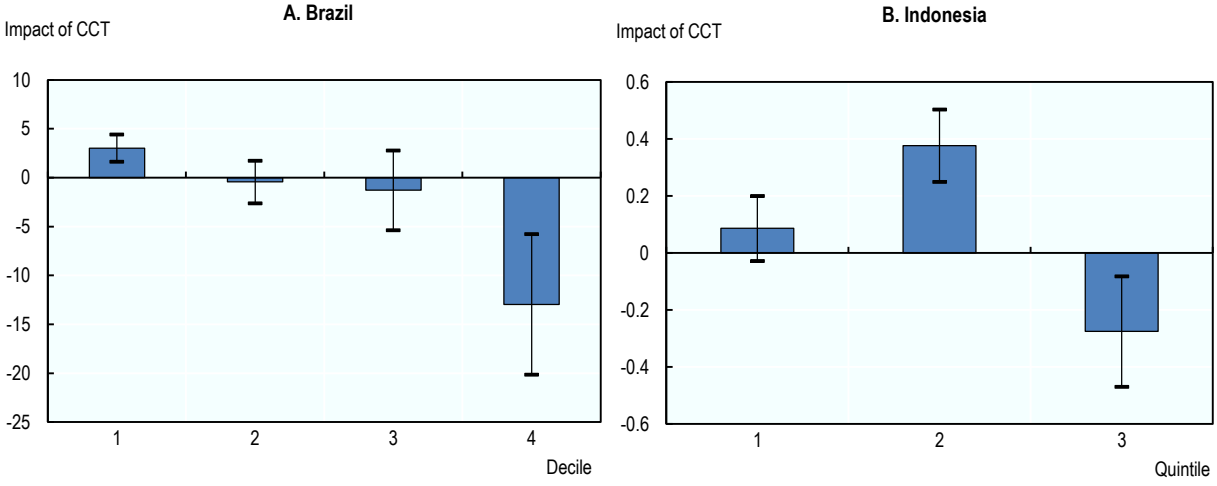


Notes: Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant. For Brazil, school enrolment is estimated for youth aged 14-25. and for Indonesia, school attendance is estimated for youth aged 5-18 LEAP impact evaluations were carried out twice after the programme started in 2008: 2012 (short-term impact) and 2016 (long-term impact).
Source: Authors' calculations based on data from Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey) (2011-15), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html, household evaluation data (2010-16) from Ghana's Livelihood Empowerment Against Poverty programme, and data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

Educational attainment (years of schooling obtained) is another outcome important for future labour market outcomes. Analyses for Brazil and Indonesia show that CCTs have a positive impact on educational attainment among the poorest children and youth (first decile in Brazil; first quintile in Indonesia) (Figures 2.4A and 2.4B). The effect, however, is negative for children in the second to fourth deciles in Brazil, although not statistically significant. In Indonesia, the effect is positive in the second quintile and negative in the third.

Figure 2.4. CCTs have a positive impact on educational attainment in the first income groups in Brazil and Indonesia

Impact of CCT programmes on educational attainment, IV estimation results



Note: Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant.
Source: Authors' calculations based on data from Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey) (2011-15), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html, and data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

Conditional cash transfers appear to have the strongest effect on poor students

These results show that the effect of CCTs on education outcomes are strongest among children in poorer households in Brazil, Ghana and Indonesia. In Brazil, the magnitude of the effect on attendance is strongest in the first two deciles, while CCTs have a positive effect on attainment in the first decile. In Ghana and Indonesia, the effect on school attendance is strongest in the poorest income groups, while the same holds for educational attainment in Indonesia.

CCTs thus appear most important to outcomes among poorer income groups, likely because the poorest households are typically more credit constrained, and additional income can play a big role in making schooling affordable. Results also point to the importance of CCTs in disrupting intergenerational poverty and their role in affecting the future labour market opportunities of the poorer part of the population, which can ultimately contribute to more inclusive growth.

Scholarships tend to impact positively on educational attainment of the poorest students

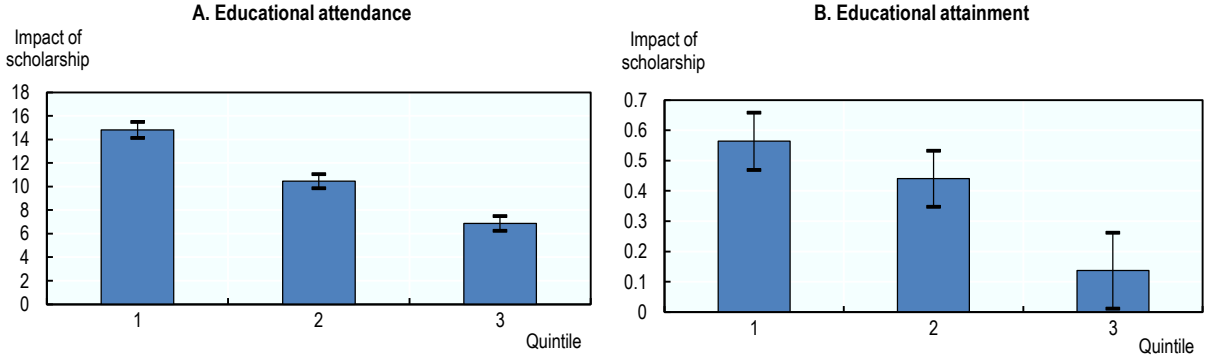
Indonesia's Bantuan Siswa Miskin (BSM), renamed Program Indonesia Pintar (PIP), is another education-focussed social assistance programme introduced in 2008 to cover indirect education costs (e.g. transport, uniforms), which can be a major barrier to access for lower-income households. Benefits are paid to poor households unable to pay elementary, junior high or senior high school tuition fees.

Estimations show that the BSM has a strong positive impact on attendance and attainment. The effect is statistically significant in all income groups, with the strongest

effect in the first quintile for both outcomes, implying that the scholarship is particularly important for the poorest students. This is in line with previous evidence showing that the BSM raises education spending and reduces child labour in households at the bottom of the welfare distribution (De Silva and Sumarto, 2015[15]). Similarly, a study on Cambodia showed that a three-year scholarship for poor students upon completing elementary school significantly increased educational attainment. However, the study found no evidence that the scholarships affect test scores, employment or earnings (Filmer and Schady, 2014[16]). Hence, scholarships for poor students can have positive effects on enrolment and attainment but do not automatically lead to better educational achievement or labour market outcomes.

Figure 2.5. Scholarships for poor students increase educational attainment in Indonesia

Impact of scholarships for poor students on school attendance and educational attainment, IV estimation results (2016)



Note: Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant.
Source: Authors' calculations based on data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

Overall, the new empirical analysis of social assistance in developing countries points to positive impacts on school attendance and educational attainment, in line with previous empirical findings for both CCT and UCT programmes (Bastagli et al., 2016[2]).

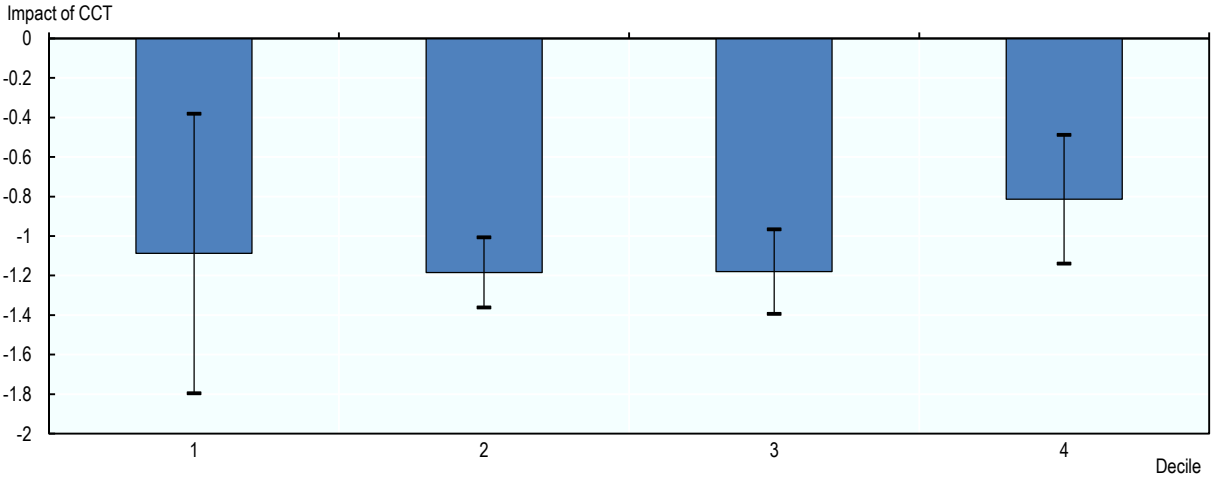
Conditional cash transfers are likely to reduce child labour

Additional CCT income may also reduce the necessity for children to contribute to household income, reducing child labour within and outside households. Transfers linked to or conditional on children attending school are likely to have an even stronger effect on child labour. About half of reviewed studies found that cash transfers showed a reduction effect on child labour participation (working or not working); all that investigated labour intensity (hours worked) found a reduction effect (Bastagli et al., 2016[2]). A majority of studies reporting a negative relationship between cash transfers and child labour participation concerned Latin American programmes, while no studies in sub-Saharan Africa found a significant impact.

The new empirical analysis of CCTs' impact on child labour in Brazil shows that Bolsa Família significantly reduces the likelihood that a child aged 4-13 works (Figure 2.6). The effect is about the same in all four deciles analysed but slightly stronger in the first to third deciles.

Figure 2.6. CCT income reduces child labour in Brazil

Impact of CCT income on child labour, IV estimation results (2011-15)



Notes: Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant. Child labour is defined as children aged 3-14 who work.
Source: Authors' calculations based on data from Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey) (2011-15), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html.

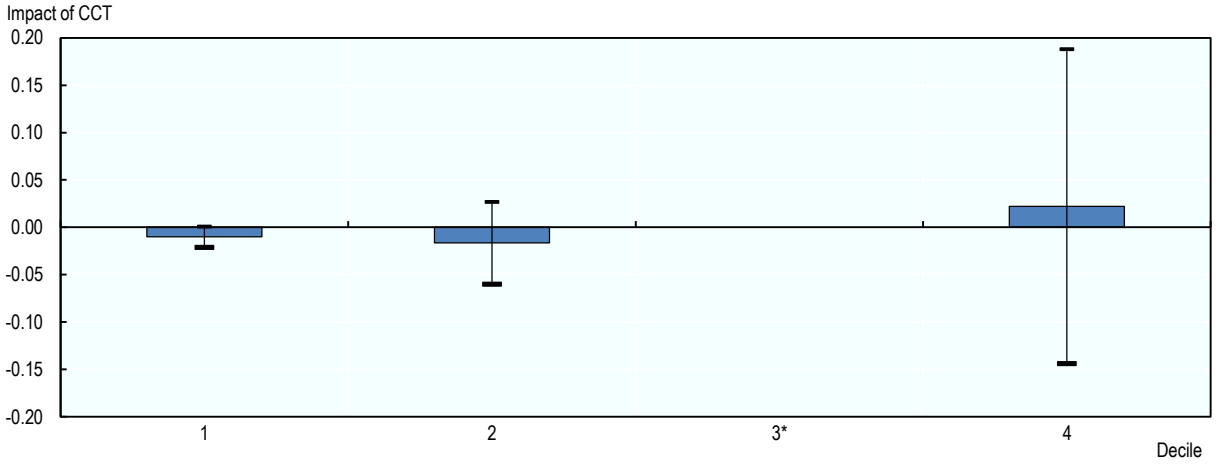
Conditional cash transfers may not reduce early pregnancy

Last, CCTs can affect children and youth through impacts on early pregnancy. Delaying childbearing is an important factor in improving young women's education and health outcomes and, in the long term, disrupting intergenerational poverty. Cash transfer income can reduce financial dependency and delay marriage and childbearing decisions (Bastagli et al., 2016[2]). CCTs can also have an indirect effect on early pregnancy through positive effects on educational attainment.

However, analysis of Bolsa Família shows that the CCT income has no effect on the likelihood of early pregnancy (Figure 2.7). The effect is negative for girls in the poorest quintiles but not statistically significant in any of the estimations. Hence, even if CCT programmes have positive effects on school attendance, their positive effect on other child and youth outcomes cannot be assumed. A study on two Colombian CCT programmes with crucial design differences showed that the type of conditions matter: conditioning on educational attainment had no reduction effect, while a renewal condition based on performance and a permanent loss of the benefit if the attendance condition is not fulfilled reduced early pregnancy (Cortés, Gallego and Maldonado, 2016[17]).

Figure 2.7. CCT income does not affect early pregnancy in Brazil

Impact of CCT income on early pregnancy, IV estimation results (2011-15)



* Decile 3 is excluded from analysis due to too few observations.
Notes: Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant. Bars show the effects of a 10% increase in household income from CCTs. Early pregnancy is defined as girls younger than age 16 who have ever had a child.
Source: Authors' calculations based on data from Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey) (2011-15), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html.

Universal child benefits seem to have no or limited effects on education

Universal child benefits, or family cash benefits, are cash transfers to cover the cost of children, reduce child poverty and improve long-term opportunities for children. They exists in almost all countries with developed welfare; 31 of 34 Organisation for Economic Co-operation and Development countries had a child benefit system in 2015 (OECD, 2016[18]).

Child benefits can affect well-being through two main channels: 1) the increase in income can allow households to buy more goods and services for children; and 2) child transfers can reduce stress and improve relationships in households, improving emotional well-being (Laetitia and Mao Takongmo, 2018[19]). Child benefits are most often universal and not based on income or employment conditions. Their effect thus likely differs from other redistribution programmes, such as CCTs, that target poor and vulnerable households.

A study of the impact of universal child benefits in Canada finds no evidence that the programme improves child and parent outcomes at the aggregate level but does show modest positive impacts on households with low education and on girls (Laetitia and Mao Takongmo, 2018[19]).

Analysis for this report looks at the impact of child benefits on educational outcomes in Germany. Child benefits, together with parental allowance and maternity benefits, are among the main components of German family policy. Child benefits' two main purposes are to ensure the minimum subsistence level of children and to boost fertility rates.

The analysis includes the ten years surrounding the 1996 child benefit reform (e.g. 1992-2001) to increase the sample size. Results do not show any statistical impact of child benefits for either outcome variable analysed: secondary school attainment and attending the best secondary school track, *gymnasium* (grammar school). Child benefits may need to be higher to have perceptible effects in a developed country with a sophisticated welfare state and close to universal benefits and services. This is consistent with results showing that child benefit income mainly has a major impact on disadvantaged families, while universal benefits do not seem to affect household well-being (Gaitz and Schurer, 2017[20]; Deutscher and Breunig, 2018[21]).

Impact of social assistance on working-age individuals and the elderly

Social protection can play an important role in ensuring income security for working-age individuals and the elderly, affecting their well-being and that of household members dependent on their income. During working age, social assistance programmes can affect both labour and employment outcomes, such as participation and intensity, and other outcomes, such as fertility rates and entrepreneurship.

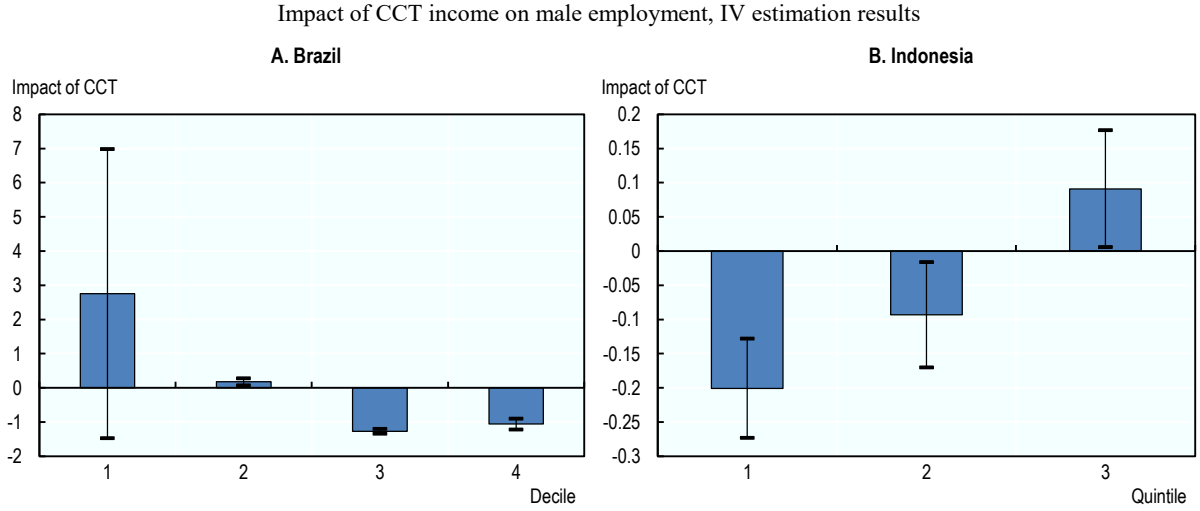
Conditional cash transfers appear to have mixed effects on employment

The impact of cash transfers on labour force participation and employment holds substantial interest for researchers and policy makers. The empirical literature shows relatively weak support for the hypothesis that social assistance dramatically reduces incentives to work. Overall, there is no systematic evidence that cash transfers discourage work and lead to dependency (Peterman, Yablonski and Daidone, 2018[5]; Banerjee et al., 2017[22]; Baird, McKenzie and Özler, 2018[23]).

Modest transfers tend not to be strongly associated with changes in labour supply in either participation or intensity (hours worked). Evidence for the most studied social assistance programmes, CCTs and UCTs, is mixed. In a review of eight studies on CCTs' impact on labour supply, only one found a negative impact on participation, while a reduction in hours worked was found in a few countries, including Uruguay and Brazil (Kabeer and Waddington, 2015[24]). Another review of the effect of CCTs and UCTs found that, of eight studies, three pointed to an increase in participation and one to a decrease. Of eleven studies reporting on hours worked, three found a decrease (one reported decreases among older people). Sixteen studies specifically addressed female participation, and four found a significant positive impact (Bastagli et al., 2016[2]). Thus, evidence in the empirical literature on the link between CCTs and labour market outcomes is inconclusive but indicates that 1) modest transfers do not have strong impacts on employment outcomes; and 2) any significant impact found may be negative or positive.

New empirical evidence on CCTs' impact on employment in Brazil and Indonesia presented in this study is also mixed. In Brazil, receiving CCT income from Bolsa Família leads to an increase in employment among men in the two lowest deciles, although the effect is only statistically significant in the second decile. In the third and fourth deciles, the effect is negative and statistically significant (Figure 2.8A). By contrast, in Indonesia, receiving a CCT is associated with lower employment among men in the lower income groups and with higher employment in the third quintile (Figure 2.8B).

Figure 2.8. Impact of CCT income on male employment in Brazil and Indonesia depends on household income



Notes: Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant. Employment is defined as individuals aged 16-64 who work at least one paid hour per week or are employed but on vacation or other paid leave.

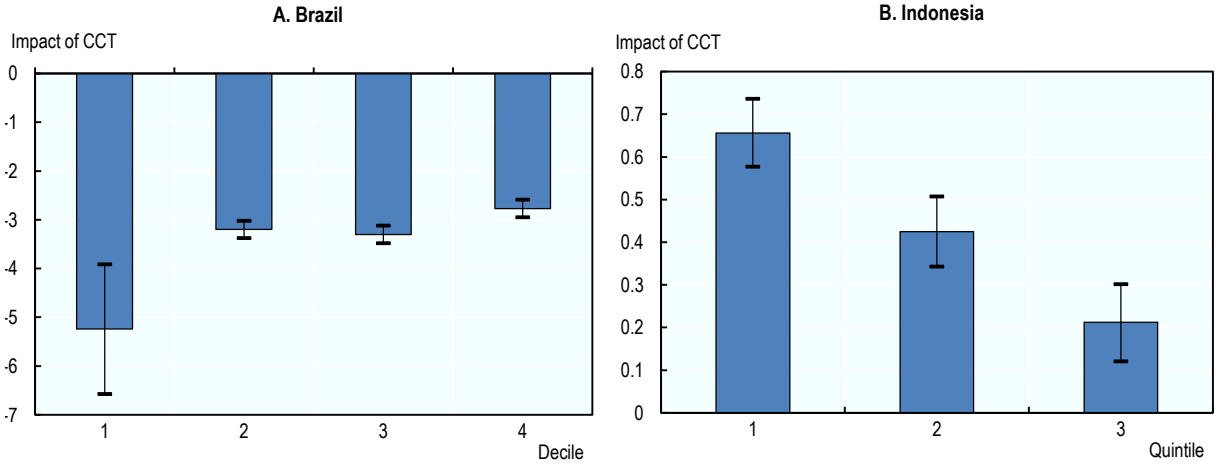
Source: Authors' calculations based on data from Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey) (2011-15), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html, and data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

The impact of CCTs on female employment is more consistent across income groups but, again, in opposite directions between the two countries. In Brazil, CCT income has a clear negative impact on female employment in all deciles, with a stronger effect in the third and fourth deciles (Figure 2.9A). This is consistent with some literature showing that, because women are often the main recipients of CCT income, time spent fulfilling conditions may hamper labour market participation. In Indonesia, however, CCT income increases female employment in all income groups (Figure 2.9B).

Both previous literature and new evidence thus paint a mixed picture of CCTs' impact on labour supply. Literature reviews of outcomes of the same CCT programme in different studies confirm this. For instance, a review of eight studies on the effect of Bolsa Família on adult employment found a positive impact in five cases and a negative impact in one (for female heads of households). Three out of five studies reported a small decrease in hours worked per week (two studies only concerned women) (Batista De Oliveira and Soares, 2012[25]).

Figure 2.9. CCT income leads to a decrease in female employment in Brazil but an increase in Indonesia

Impact of CCT income on female employment, IV estimation results



Note: Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant.
Source: Authors' calculations based on data from Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey) (2011-15), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html, and data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

Conditional cash transfers tend to have positive or no effects on investments in small businesses

Additional income from cash transfers can help households overcome liquidity and credit constraints and better cope with risks, thereby encouraging investments in business activities and entrepreneurship. Previous studies on the impact of cash transfers on non-agriculture business investments show mixed results. Four of nine studies in a review found a significant increase either in the share of households involved in non-farm enterprises or in total household expenditure on business-related assets and stocks, four found no effect, and one found a decrease in business investments from cash transfers (Bastagli et al., 2016[2]).

From the new empirical evidence on CCTs' impact on the probability of owning businesses, business owners and the self-employed are very heterogeneous, from self-employed street vendors lacking other employment opportunities to entrepreneurs generating new ideas, products and jobs. Separate analyses were therefore carried out for small, informal businesses and larger, registered businesses in Brazil and Indonesia. Data in Ghana do not allow for the distinction.

Brazil defines starting a business as households that created one in the year preceeding the interview. Business start-up includes both the self-employed and employers who have been at the activity for one year or less. CCT income has a positive and statistically significant effect on starting small, unregistered businesses in the first two deciles (Figure 2.10A). No effect was found in higher income groups: the coeffients are negative but not statistically signficant.

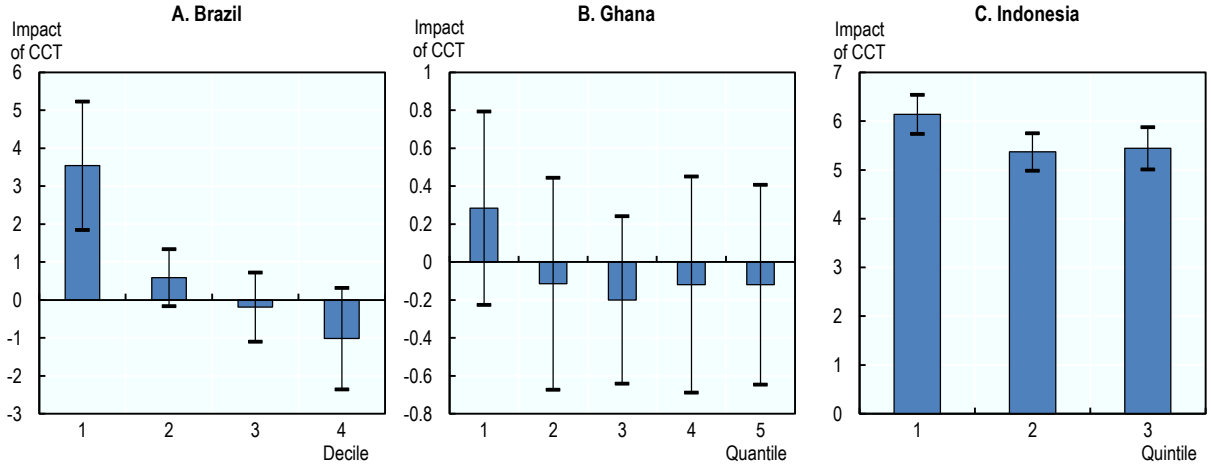
Previous studies investigating the impact of LEAP income on business investments in Ghana show that beneficiaries invest in livelihood diversification, with a significant

number engaging in non-farm businesses and livestock raising (Handa et al., 2014[26]; Handa and Park, 2012[27]). LEAP was introduced in 2008. Analysis for this report focuses on non-agriculture business start-up in the two years preceding subsequent surveys, i.e. a binary response on whether households commenced non-farm enterprises in 2010-12 (short-term impact) and 2014-16 (long-term impact). Although the coefficient for the lowest quintile is positive, results show no statistically significant impact of LEAP income on business start-up in all income groups in either the short or long term (Figure 2.10B).

Indonesia analysis looks at business ownership among self-employed individuals without employees (vs. start-ups in Brazil and Ghana). CCT income has a positive and statistically significant impact on business investments in all income groups (Figure 2.10C).

Figure 2.10. CCT income spurs business ownership among poorer households in Brazil and Indonesia

Impact of CCT income on business start-up, IV estimation results



Notes: Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant. Results for Ghana are evaluated for 2014-16 (long-term impact). Independent variables used are: household created an informal business in the 12 months before the survey (Brazil); household created a business in the 12 months before the survey (Ghana); at least one household member is self-employed with temporary staff (Indonesia).
Source: Authors' calculations based on data from Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey) (2011-15), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html, household evaluation data (2010-16) from Ghana's Livelihood Empowerment Against Poverty programme, and data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

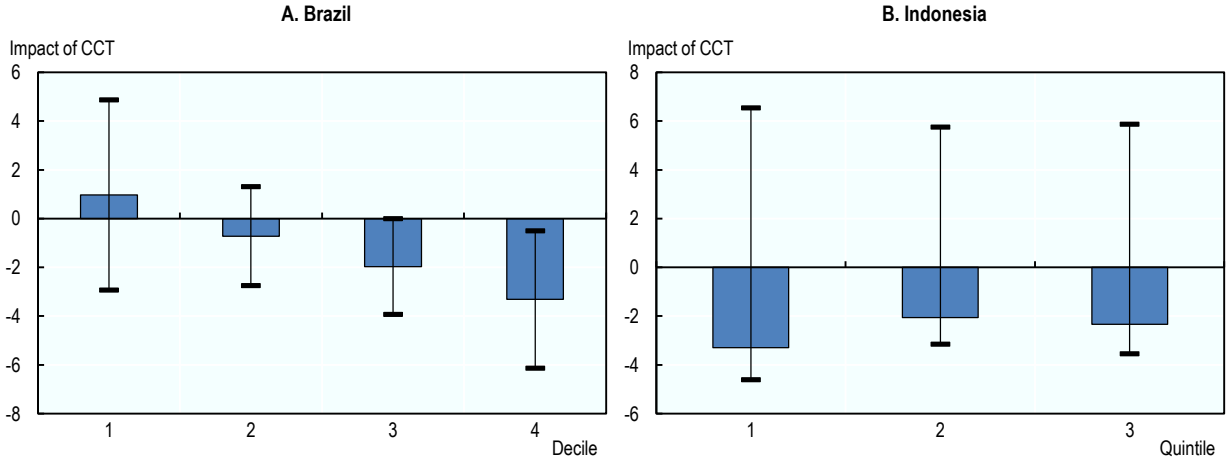
Conditional cash transfers do not seem to impact investments in formal businesses

Separate analyses were conducted in two countries for more formal business activities (probability of having started a registered business in the 12 months before the survey in Brazil and probability of running a business with employees in Indonesia). Business ownership is here defined as the self-employed or business owners who pay social security tax in Brazil and as self-employed household members with permanent staff in Indonesia. Analysis of CCTs' impact on formal business activities shows a positive but not statistically significant result in the first income group in Brazil (Figure 2.11A), while the effect in the second to fourth deciles is negative and statistically significant only in the

fourth. Indonesia shows a negative but not statistically significant effect in all income groups (Figure 2.11B). The positive impact on informal business activities among poorer households does not hold for larger or more formal businesses, which have greater potential to contribute to economic growth and job creation.

Figure 2.11. CCT income does not affect investments in larger businesses in Brazil and Indonesia

Impact of CCT income on ownership of larger businesses, IV estimation results



Notes: Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant. Businesses included in the analysis are defined as those that are registered (Brazil) and businesses with employees (Indonesia).
Source: Authors' calculations based on data from Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey) (2011-15), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html, and data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

Conditional cash transfers can reduce fertility rates

Cash transfers may affect other individual and household outcomes, including fertility. Regular cash transfers for children can encourage larger households, to increase the transfer amount, particularly if 1) transfers are on a per-child basis, instead of a lump sum household benefit; and 2) the programme remains open to subsequent children. Concerns that cash transfers (especially UCTs) may increase fertility rates and negatively affect population control programmes have been put forward in policy discussions in low-income countries, where fertility rates tend to be high. However, little existing empirical evidence supports these concerns. In fact, studies show that, in many cases, the opposite is true: cash transfers lead to a statistically significant decrease in number of pregnancies among beneficiaries (Bastagli et al., 2016[2]). As regards UCTs, recent studies have shown that the common perception according to which these transfers tend to increase fertility do not withstand rigorous evaluation (Peterman, Yablonski and Daidone, 2018[5]; Palermo et al., 2016[28]). New evidence for this report on CCTs' impact on fertility in Brazil, Ghana and Indonesia corroborates these results.

While Brazil's population will peak around 2030, it currently has a low total fertility rate (around 1.8). Higher fertility may spur macroeconomic growth. For poor families, however, higher fertility means more mouths to feed and may perpetuate poverty traps. Analysis of the impact of Bolsa Família income on fertility focuses on whether women

aged 20-49 have had a child in the last two years. Results show that the benefit significantly reduced fertility overall and in all income groups (Figure 2.12A). All results are statistically significant. This is in line with previous literature on the benefit's impact on number of children in beneficiary households (Simões and Soares, 2012[29]).

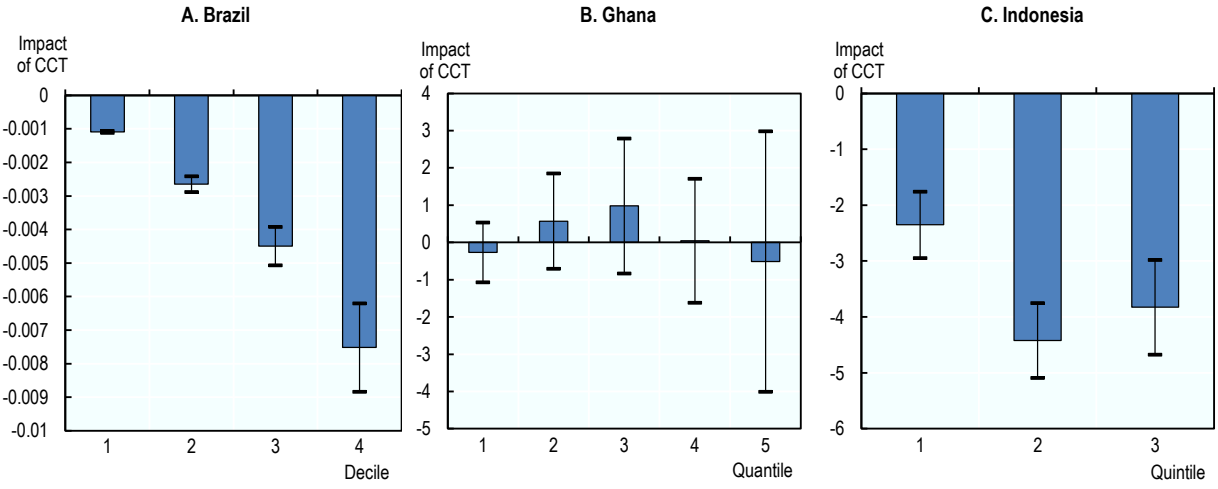
In Ghana, concerns that cash transfers may have negative effects on population control programmes and programmes that promote quality of life for poor mothers are common in the policy discourse. However, analysis of the impact of LEAP income on number of children born in a household in the two years before the survey shows no statistically significant relationship in any income group (Figure 2.12B).

The total fertility rate in Indonesia is 2.4, above the replacement level of 2.1. As in Ghana, a relatively common concern is that targeted cash transfers incentivise poor families to have more children. Estimations of the impact of CCT participation on fertility, however, show the opposite: receiving PKH CCTs is associated with reduced fertility (presence of children under age 1) in all income groups (Figure 2.12C).

Consistent with previous literature, these results run counter to concerns that CCT income increases fertility rates. If anything, they reduce them.

Figure 2.12. CCT programmes reduce fertility rates in Brazil and Indonesia

Impact of CCT programmes on fertility, IV estimation results



Note: Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant.
Source: Authors' calculations based on data from Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey) (2011-15), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html, household evaluation data (2010-16) from Ghana's Livelihood Empowerment Against Poverty programme, and data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

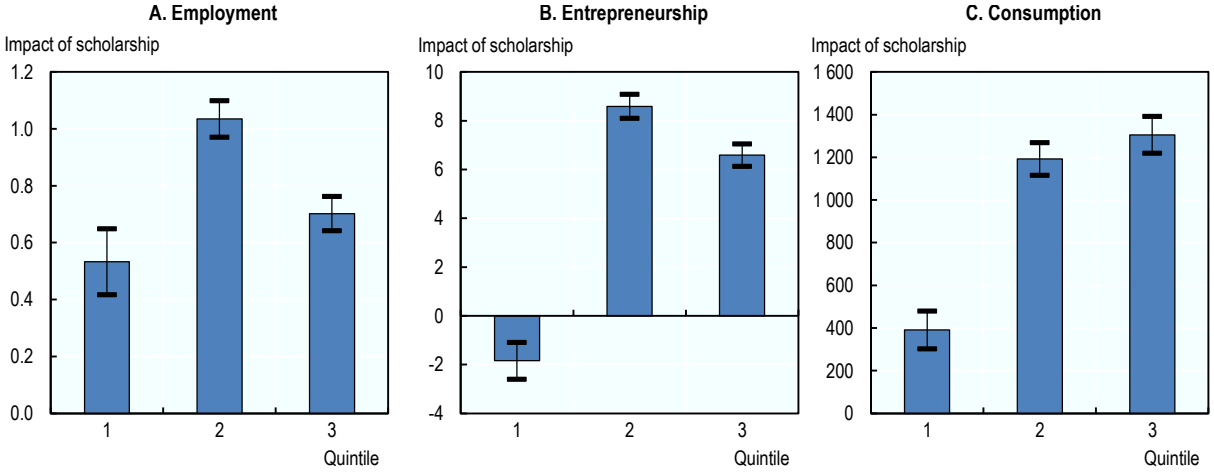
Scholarships for poor students seem to have positive spillover effects on household food consumption and investments

Education scholarships can have impacts beyond labour supply and education outcomes. Cash transfers targeting poorer households can address liquidity and credit constraints, allowing households to increase consumption and invest in productive assets and business activities. Results based on PIP student scholarship data for Indonesia show the

programme's positive impact on labour supply, self-employment and food consumption in all income groups, with the exception of self-employment in the first quintile (Figure 2.13). However, overall results are positive and statistically significant, in line with the PKH CCT programme results shown above, indicating that cash transfers for education may free up household financial resources for other investments and help boost household welfare and, indirectly, economic growth and wealth redistribution.

Figure 2.13. Indonesia's scholarship for poor students increases labour supply, entrepreneurship and food consumption

Impact of BSM income on employment, entrepreneurship and food consumption, IV estimation results (2016)



Note: Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant. Food consumption is defined as household per capita caloric intake.
Source: Authors' calculations based on data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

Social pensions can boost household consumption and investments

Since coverage of contribution-based pension schemes remains low in low- and middle-income countries (see Chapter 3), social pensions have increasingly become a way to expand coverage and address old-age poverty and vulnerability. They also have impacts on other outcomes, such as household consumption and investments. A study shows that social pensions in the People's Republic of China increase consumption and agricultural investments among rural households, particularly the poor, although they have no effect on savings (Zheng and Zhong, 2016[30]). A study in South Africa shows that social pensions received by women have a large impact on health outcomes (weight and height) of girls but no impact for boys (Duflo, 2003[31]).

Empirical evidence also shows that cash transfers are effective in raising living standards. In Zambia for instance, UCTs have far-reaching effects both on food security and consumption as well as on a range of productive outcomes, and generate large income multipliers through investment in non-farm activity and agricultural production (Palermo et al., 2016[28]).

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Annex 2.A. Social assistance in Brazil, Germany, Ghana and Indonesia

This annex provides a brief description of social assistance in the countries under study, in particular of the programmes covered in the empirical analysis.

Brazil

Despite large expenditure on social protection, Brazil spends only 1.4% of gross domestic product (GDP) on social assistance, which covers only 23.7% of the population (World Bank, 2018[1]). Schemes tend to target the poorest quintiles; however, coverage rates are significantly lower in Brazil than in the rest of Latin America and Caribbean (Annex Table 2.A.1). Nonetheless, social assistance programmes have had a significant equalising effect in Brazil, reducing the Gini coefficient by 2.8%, the poverty headcount ratio by 10.9% and the poverty gap by 23.6% in 2015 (World Bank, 2018[1]).

Annex Table 2.A.1. Social assistance coverage in Brazil and Latin America and Caribbean, by quintile

	% total population	% of Quintile 1	% of Quintile 2	% of Quintile 3	% of Quintile 4	% of Quintile 5
Brazil (2015)	23.7	58.5	33.6	17.3	7.3	1.9
Latin America and Caribbean (2008-16)	38.5	66.7	52.3	38.5	24.7	10

Source: World Bank (2018[1]), *ASPIRE: The Atlas of Social Protection- Social Safety Net Expenditure Indicators* (database), http://datatopics.worldbank.org/aspire/indicator/social-expenditure.

The federal government created Brazil's flagship CCT, Bolsa Família, in 2003, which has since benefited over 14 million low-income households (IDB, 2015[32]). It represents a large share of social assistance expenditure but a small share of overall social protection spending: Brazil spent an equivalent to approximately 0.45% of GDP on the scheme in 2015 (STN, 2016[33]).

The programme targets households in poverty or extreme poverty: according to the National Decree No. 9.396 of 30 May 2018, those with a monthly per-capita income below BRL 178 (Brazilian real) (USD 48.7 [United States dollar]) and BRL 89 (USD 24.4)[1], respectively (Federative Republic of Brazil, 2018[34]). The scheme grants several types of benefits based on household per-capita income or composition, which are conditional on health and education requirements (Annex Table 2.A.2). Households in extreme poverty are entitled to the Basic Benefit (BB) of BRL 89 per month per household, irrespective of composition. Households remaining below the extreme poverty line after all entitled benefits are eligible to receive the Benefit to Overcome Extreme Poverty (BSP), a top-up to guarantee a monthly per-capita income of BRL 89 (Federative Republic of Brazil, 2018[35]).

Households below the poverty line are also entitled to Variable Benefits (BV) of BRL 41 per pregnant or lactating woman and/or per child under age 15, and to the Variable Youth

Benefit (BVJ) of BRL 48 per youth aged 16-18 (Federative Republic of Brazil, 2018[34]). These last two benefits are conditional on maintaining a minimum of school attendance, acquiring all vaccinations and receiving prenatal care (IDB, 2015[32]; Federative Republic of Brazil, 2018[35]). Entitlement to these benefits is not automatic; even if eligibility is met, households are still subject to the amount of benefits allocated per municipality through quotas calculated every ten years based on demographic censuses.

Annex Table 2.A.2. Bolsa Família eligibility, conditions and monthly value

Benefit	Eligibility	Condition	Monthly value
BB	Per-capita income less than BRL 89 (USD 30.0)	x	BRL 89 (USD 30.0) per household
BV	Pregnant or lactating women	Prenatal care	BRL 41 (USD 10.1) per eligible person
	Children under age 15	Children under age 7: vaccinations and growth development Children aged 6-15: 85% school attendance	
BVJ	Youth aged 16-18	75% school attendance	BRL 48 (USD 11.9) per eligible person
BSP	Per-capita income with benefits less than BRL 89 (USD 30.0)	x	BRL 89 (USD 30.0) per-capita income with benefits per person

Notes: x = not applicable. BRL 1 = USD 0.2469.
Sources: Federative Republic of Brazil (2018[34]), "Decree Nº9.396, 30 May 2018", Federative Republic of Brazil; (2018[35]), *Manual do Pesquisador – Programa Bolsa Família*, Federative Republic of Brazil.

Bolsa Família has had a large effect on equality, helping 36 million people escape poverty, reducing income inequality by 13% in a decade and reducing the Gini coefficient by 21% after one year of implementation (Mathers and Slater, 2014[36]; IDB, 2015[32]). Moreover, the CCT has improved the education of the low-income population, keeping 16 million children and youth in school (IPEA, 2013[37]).

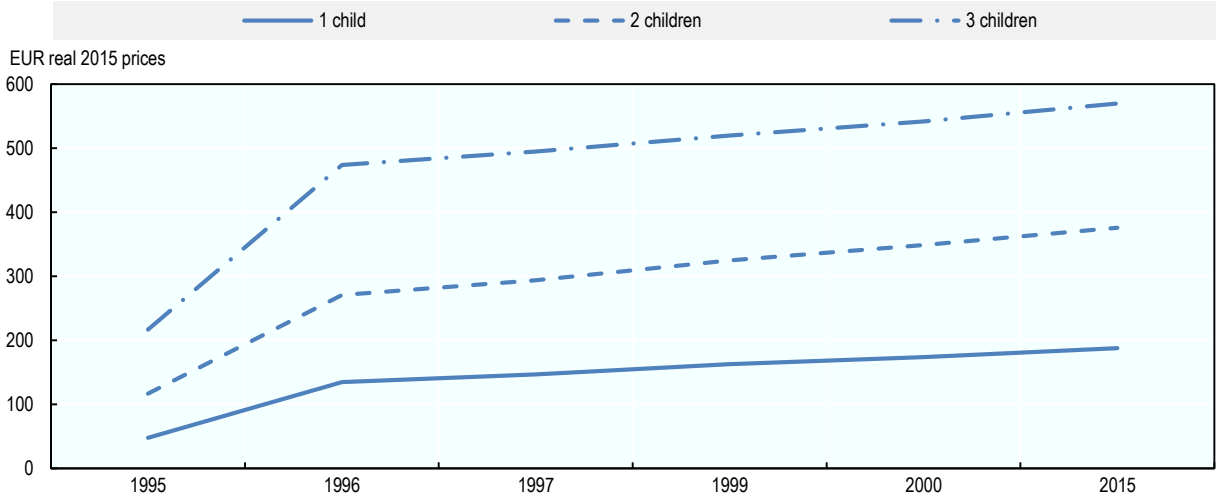
Germany

Despite being a relatively low expenditure compared with the overall social protection budget, the 2.17% of GDP allocated to social assistance is within the regional average and covers 100% of children through child benefits (ILO, 2017[3]). Benefits have ensured the minimum subsistence level of children and increased fertility rates: due to social assistance transfers, 2013 showed a 50% reduction in child poverty (ILO, 2016[38]) and 1995-2015 showed a rise in the fertility rate, from 1.25 to 1.5 (OECD, 2016[39]).

Child benefits date to 1935, but the current integrated system was established through a reform allowing households to choose cash transfers (Kindergeld) or tax deductions (Kinderfreibetrag). The reform came into effect in January 1996, affecting all families with children, irrespective of their date of birth, and introducing significant increases to benefit levels alongside the structural changes. Child-related transfers increased for almost all households, the magnitude of the increase varying by income level and number of children (Annex Figure 2.A.1). In 1995, parents of a single child received a child benefit of EUR 48 per month (euro) (EUR 576 per year) and could deduct EUR 2 824 from taxable income, which accrued savings of EUR 0 to EUR 1 497 per year, depending on their tax rate. After the 1996 reform, parents of a single child either received EUR 135 per month (EUR 1 625 per year) or could deduct EUR 4 241 from income tax. The latter was therefore favourable for parents with a tax rate higher than 38.3%.

Annex Figure 2.A.1. Child benefits in Germany increased substantially after a 1996 reform

Total monthly child benefit, by year and number of children (1995-2015)



Notes: Figure displays total value of child benefits based on number of children in 2015 constant euro. In 1995, total benefit value for households with more than one child varied by income: EUR 96-138 for two children; EUR 144-289 for three children; EUR 192-454 for four children. Figure displays mean values.
Source: Author's calculations based on Riphahn and Wiynck (2017[40]), "Fertility effects of child benefits", IZA Discussion Paper, www.iza.org/en/publications/dp/10757/fertility-effects-of-child-benefits.

Kindergeld is a monthly UCT provided to all parents or guardians of young people under age 18 (or, exceptionally, those under age 25 enrolled in vocational training) (ILO, 2016[38]). The monthly stipend per child depends on order of birth: EUR 194 for each of the first two children, EUR 200 for the third child and EUR 225 for each subsequent child (Federal Republic of Germany, 2018[41]).

Ghana

Social assistance expenditure and coverage in Ghana are low even by regional standards: equivalent to 0.6% of GDP and covering 1.4% of the total population (World Bank, 2016[42]; 2018[1]). Following the trend in sub-Saharan Africa, although social assistance programmes aim to target the poor and vulnerable, coverage rates are significantly higher in the wealthiest quintile than in the poorest (Annex Table 2.A.3).

Annex Table 2.A.3. Social assistance coverage in Ghana and sub-Saharan Africa, by quintile

	% total population	% of Quintile 1	% of Quintile 2	% of Quintile 3	% of Quintile 4	% if Quintile 5
Ghana (2012)	1.4	1.3	1.2	1.5	1.5	1.4
Sub-Saharan Africa (2008-16)	14.5	8.6	13.5	16.8	17.2	16.2

Source: World Bank (2018[1]), *ASPIRE: The Atlas of Social Protection- Social Safety Net Expenditure Indicators* (database), http://datatopics.worldbank.org/aspire/indicator/social-expenditure.

LEAP is one of five flagship social protection programmes in Ghana. It is one of the main social assistance programmes and the only cash transfer scheme, amounting to an equivalent of 0.03% of GDP in terms of expenditure (World Bank, 2016[42]). Piloted in 2008 with 30 000 beneficiary households in 21 districts, it has expanded to

213 044 households in 216 districts in a decade (Republic of Ghana, 2018[43]). It falls under the mandate of the National Protection Strategy, and aims to support basic human needs and to serve as a springboard out of poverty (Republic of Ghana, 2015[44]). Although LEAP intends to tackle poverty, not all of the extremely poor are eligible to receive the cash transfer, as only households with members that fall into certain social categories can benefit (Annex Table 2.A.4). One medium-term priority is to extend eligibility criteria to all of the poor and link the scheme to additional benefits (Republic of Ghana, 2015[44]).

Annex Table 2.A.4. LEAP eligibility and conditions

Eligibility	Condition
Older than age 65 with no support	x
People with disabilities with no productive capacity	x
Orphan and vulnerable children	School enrolment and retention
Pregnant women or mothers with infants	Postnatal clinic attendance and birth registration

Note: x = not applicable.
Source: FAO (2013[45]), *Qualitative Research and Analyses of the Economic Impacts of Cash Transfer Programmes in Sub-Saharan Africa*, Food and Agriculture Organization of the United Nations, Rome.

Currently, eligibility extends to households with members who are either older than age 65 without support, people with disabilities with no productive capacity, orphaned and vulnerable children, or pregnant or mothers with infants (World Bank, 2016[42]). The transfer is unconditional for the elderly and people with disabilities; for children and mothers, it is dependent on soft conditions, such as school enrolment and postnatal clinic attendance (Annex Table 2.A.4). The grant is paid in six instalments per year, and its value varies according to number of eligible household members, from GHS 64.0 (Ghanaian cedi) per payment for one member, GHS 76.0 for two, GHS 88.0 for three and up to GHS 106.0 for four or more (a range of USD 13.4 to USD 22)[2] (Republic of Ghana, 2018[46]).

Indonesia

The largest share of social protection expenditure in Indonesia goes to social assistance programmes, corresponding to 0.7% of GDP (World Bank, 2018[1]). Although this is below the regional average of 1.2% of GDP, social assistance coverage is more extensive in Indonesia than in East Asia and Pacific (Annex Table 2.A.5). These programmes have had a significant effect on inequality and poverty reduction, resulting in a 4.6% decrease in the Gini coefficient and a 38.2% decline in the poverty gap (World Bank, 2018[1]).

Annex Table 2.A.5. Social assistance coverage in Indonesia and East Asia and Pacific, by quintile

	% total population	% of Quintile 1	% of Quintile2	% of Quintile 3	% of Quintile 4	% of Quintile 5
Indonesia (2015)	48.7	75.6	65.9	52.6	35.9	13.7
East Asia and Pacific (2008-16)	43.6	66.2	53.0	39.8	30.8	28.2

Source: World Bank (2018[1]), *ASPIRE: The Atlas of Social Protection- Social Safety Net Expenditure Indicators* (database), http://datatopics.worldbank.org/aspire/indicator/social-expenditure.

PKH, a household-based CCT, is one main social assistance scheme. Piloted in 2007, it became a national programme to alleviate short-term poverty and increase investments in health and education (ADB, 2012[47]). Although allocated only 8.5% of social assistance expenditure, it is the most effective in Indonesia. By 2016, it covered 6 million households, providing benefits to 30.5% of the poor and 12.6% of the vulnerable, and led to a 22.0% increase in growth monitoring check-ups and a 10.0% increase participation rate in high school (World Bank, 2017[48]).

Eligibility is based on household income and composition: those classified poor or extremely poor with at least one member who is either under age 21, people with disabilities pregnant or lactating, or over age 60 (Annex Table 2.A.6). Transfers are paid on a quarterly basis and dependent on completion of relevant health, education or social welfare conditions (World Bank, 2017[48]). In 2017, the value of the benefit changed from variable based on household composition to fixed at, currently, IDR 1 890 000 (Indonesian rupiah) (USD 129)[3] per year per household (Republic of Indonesia, 2018[49]). Households receive the benefit for up to six years, as long as they remain eligible and comply with conditions. Those still under the poverty line after this period are eligible for the transfer for an additional three years (World Bank, 2017[48]).

Annex Table 2.A.6. PKH eligibility and conditions

Eligibility	Condition
Pregnant or lactating women	Complete four prenatal care visits and take iron tablets Be assisted by trained professional at birth Complete two postnatal care visits before the baby is 1 month
Children aged 0-6	Complete childhood immunisation Take vitamin A capsules twice per year Attend monthly growth monitoring check-ups
Children aged 6-21 without 12 years of education	Enrol in relevant education level with at least 85% attendance
Older than age 60	Complete health check-ups and follow day care or social activities if available
People with disabilities	Complete health check-ups and follow day care or social activities if available

Source: Republic of Indonesia (2018[49]), "Regulation of the Social Ministry of the Republic of Indonesia Number 1 Year 2018 about Program Keluarga Harapan", Government of Indonesia, Jakarta, http://peraturan.go.id/kementerian-sosial-nomor-%201%20tahun%202018-tahun-2018.html.

Launched in 2008 as Bantuan Siswa Miskin (BSM), PIP is another key social assistance scheme aimed to reduce the costs of accessing education through cash transfers to poor students. It has led to an unprecedented 4.6% increase in high school enrolment (World Bank, 2012[50]). It is the third-largest social assistance programme by expenditure and coverage, receiving 16.8% of the social assistance budget and reaching over 19.5 million students (World Bank, 2017[48]).

The scheme targets enrolled students or school-age children aged 6-21 from the poorest 25% of households who either have a Kartu Indonesia Pintar (KIP card) or a Kartu Perlindungan Sosial/Kartu Keluarfa Sejahtera (KPS/KKS card), which make them automatically eligible for the PKH (Republic of Indonesia, 2016[51]). Eligible students verified by their schools are entitled to annual cash transfers corresponding to their education level: IDR 450 000 for elementary, 750 000 for junior high school and IDR 1 000 000 for senior high school (World Bank, 2017[48]).

Annex notes

[1] Based on an exchange rate of BRL 3.654 per USD for 2018 according to OECD National Accounts Statistics: https://data.oecd.org/conversion/exchange-rates.htm#indicator-chart.

[2] Exchange rate: GHS 1 = USD 0.2079.

[3] Exchange rate: IDR 1 = USD 0.000068.

Annex 2.B. Measuring the impact of social assistance programmes on individual and household outcomes – methodological approach

Estimating the causal effect of social assistance and growth outcomes is challenging due to endogenity, stemming from three main sources: i) reverse causality, ii) sample selection and iii) omitted variables.

Estimating the impact of social assistance programmes on individual and household outcomes involves finding a credibly counterfactual, i.e. the value an outcome would have taken if a given individual or household who benefited from a social assistance programme had not benefited. However, data on this counterfactual value cannot be obtained since an individual/household is never observed having both received and not received social assistance at the same point in time.

There are different ways of estimating counterfactual outcomes, including random assignment, "quasi-experimental" methods like instrumental variables and regression discontinuity (RDD), and non-experimental methods such as regression techniques, matching, and double (or higher-order) differencing. Every estimation method has its strengths and weaknesses.

The main estimation method used to estimate the impact of social assistance on household and individual outcomes in this report is instrumental variables. A good instrument is uncorrelated with the outcome variable but related to the explanatory variable it is instrumenting. This design estimates impacts of social assistance programmes through statistical econometric models in two steps. The first is to predict program participation based on the instrumental variable. The second is to calculate the programme impact given the predicted value of the first equation. Identifying a good instrumental variable is however challenging. For example, individuals receiving social assistance may be more likely to require other family members to care for them and reduce labour force participation in the household, creating a false negative causal relation between household social assistance income and labour force participation. In addition, most cash transfer programmes with an aim to increase school attendance and attainment target the most vulnerable households, while vulnerable families are less likely to keep their children in school. If this is not taken into account in the evaluation of programme outcomes, the analysis may result in a spurious negative causal relation between cash transfer income and schooling.

An instrumental approach was used in all three countries with CCT programmes (Brazil, Ghana and Indonesia). In Brazil, the instrument used is municipality CCT benefit quota (using a proxy for municipality defined using a combination of state and sampling stratum due to lack of a municipality identifier in the survey). In Ghana, the methodological approach follow the approach by Glennerster and Takavarasha (2013[52]) by using the ex-ante treatment assignment as an instrument for the ex post treatment variable, the percentage of all income that is derived from LEAP benefits. This instrumental variable approach involves using a 2SLS method to get the estimates for the

impact of the programme. In Indonesia, instrumental variables include household expenditure, household size, household head education, area of residence, housing conditions (e.g. floor, roof), and access to basic infrastructure services, equipment and ICT (e.g. water, sanitation, electricity, refrigerator, computer).

The analysis of the child benefit programme in Germany adopted a slightly different methodology. The estimation strategy made use of a change in the level of the child benefit over time. A major reform of child benefits came into effect on 1 January 1996 and affected all families with children. Prior to the reform, the family benefit system was twofold: child benefits (Kindergeld) and tax-exempt child allowances (Kinderfreibetrag) complemented each other and occurred simultaneously. The reform integrated both systems and since 1996, households have to choose between child benefits and tax deductions. At the same time, both benefits increased significantly in value. As a result, child-related transfers increased for almost all households, but the magnitude of the increase varied according to income level and the number of children. The empirical analysis uses a difference-in-differences strategy exploiting the heterogeneity of the reform's effects of the child benefit depending on household income and number of children. The strategy does however not allow for an estimation of the effects of the child benefits by income classification (e.g. decile or quintile) since income – or its proxy, education – is used to build treatment and/or control groups.

Chapter 3. Micro-level impact of social insurance on inclusive growth

The primary objective of social insurance programmes is to protect insured people and their dependents against a number of life contingencies through contributory mechanisms. That said, social insurance may also impact inequality and growth in various ways. This chapter provides recent and new empirical evidence on the effects of social insurance schemes on the micro economic drivers of inclusive growth at various lifecycle stages. It shows that several social insurance investments can have numerous enhancing effects.

Progressivity of social insurance

In contrast to social assistance, contributory pensions and other social insurance programmes rely on employment-related contributions and do not target the poor. In developing countries, social insurance tends to be concentrated among better-off workers, leaving a large proportion of informal workers behind (OECD, 2019[1]). Social insurance coverage thus remains particularly low in developing countries: contributory pension schemes cover only 9.6% of the working-age population in Africa, 17.3% in Asia and the Pacific and 28.9% in Latin America and Caribbean (ILO, 2017[2]). In the same regions, unemployment benefits coverage does not exceed 5.6%, 22.5% and 12.2%, respectively (ILO, 2017[2]).

New empirical evidence presented in this chapter relies on three country case studies: Brazil, Germany and Indonesia. The social insurance programmes analysed include four pension schemes, an occupational accident benefit programme and a death benefit programme (Table 3.1). Annex 3.A provides a general overview of the countries and social insurance programmes under study, and Annex 3.B describes the data and methodology used in the empirical analysis.

Table 3.1. Social insurance programmes included in the empirical analysis

Country	Programme name	Coverage	Contributions	Conditions	Benefits
Brazil	Old-age and survivors' pensions	Salaried workers in the public sector, formal private sector and agriculture; self-employed workers	Salaried workers: 8-11% of monthly wage (progressive) Self-employed workers: 20% of monthly declared earnings	Retirement not necessary Statutory retirement age: 65 (men) or 60 (women) for urban workers; 60 (men) or 55 (women) for rural workers Length of contributions: at least 15 years to be entitled to pension benefits at statutory retirement age, or at least 35 (men) or 30 (women) years to be entitled before	The old-age pension amounts to 70% of the contributor's average (best 80%) monthly earnings plus 1% for each year of contribution (up to 100%) The minimum old-age pension corresponds to the legal monthly minimum wage (BRL 937 as of January 2017)
Germany	Old-age and survivors' pensions	Employees (including apprentices) and self-employed workers	Employees: 9.345% of monthly wage (over EUR 850) Self-employed workers: 18.7% of monthly income	Statutory retirement age: 65 and five months with at least five years of contributions (progressively increasing to 67 for those born after 1964)	The amount of the annual pension is calculated as the sum of pension points (a year's contribution at the average earnings of contributors earns one pension point), multiplied by an annual "pension-point value" (EUR 357.96 in 2016)

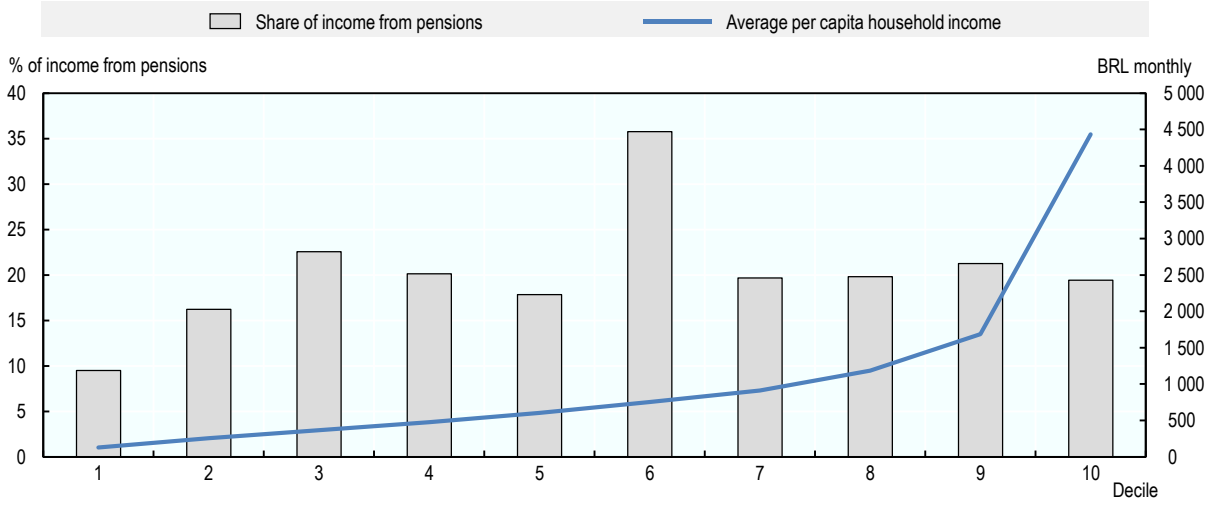
Indonesia	Pension insurance (Jaminan Pensiun [JP])	Public and private sector employees	Employees: 1% of gross monthly earnings Employers: 2% of gross monthly payroll	Old-age pension: statutory pensionable age 56 (progressively increasing to 65 by 2043) with at least 15 years of contributions Disability pension: if younger than statutory pensionable age with a total and permanent disability and a contribution payment compliance rate of at least 80% Survivor pension: spouses, children and parents eligible when the insured dies	Old-age pension: 1% of average adjusted annual earnings divided by 12, multiplied by the number of years of contributions (lump sum if less than 15 years) Disability pension: Idem. Survivor pension: 50% of the old-age or disability pension of the deceased for the spouse and 50% for a full orphan (50% of the spouse's pension for a half orphan). If no eligible spouse or child, parent is entitled to 20%
Indonesia	Old-age savings (Jaminan Hari Tua [JHT])	Employees and self-employed workers in the formal and informal sectors, including foreign workers who have worked at least 6 months in Indonesia	Employees and self-employed workers: 2% of gross monthly earnings (contribution rate of informal workers defined by the government) Employers: 3.7% of gross monthly payroll	Old-age benefit: statutory pensionable age 56 (progressively increasing to 65 by 2043) or any age under certain conditions and after at least 5 years of fund membership Disability benefit: if younger than statutory pensionable age with a total and permanent incapacity to work because of an occupational injury Survivor benefit: spouse or dependent children eligible when contributor or pensioner dies	Old-age benefit: lump sum of total employee and employer contributions plus accrued interest Disability benefit: Idem. Survivor benefit: Idem., minus any prior payments to the deceased
Indonesia	Occupational accident benefit (Jaminan Kecelakaan Kerja [JKK])	Employees and self-employed workers in the formal and informal sectors, including foreign workers who have worked at least 6 months in Indonesia	Employees: none Self-employed workers: 1% of monthly declared income Employers: 0.24-1.74% of gross monthly payroll	Accidents occurring in work relations, including on the way from home to work or vice versa, and diseases caused by the working environment	Benefits include expenses for medical services and treatment, reimbursement of transport costs, disability benefits, death benefit and funeral expenses
Indonesia	Death benefit (Jaminan Kematian [JKM])	Employees and self-employed workers in the formal and informal sectors, including foreign workers who have worked at least 6 months in Indonesia	Employees: none Self-employed workers: IDR 6 800 per month (USD 0.52) Employers: 0.3% of gross monthly payroll	Participant's death during the active period due to non-work-related accidents Eligible survivors: spouses, children, parents, grandchildren, grandparents, siblings and parents-in-law	Death grant (lump sum of IDR 14.2 million plus IDR 200 000 per month for up to 2 years) and funeral grant (lump sum of IDR 2 million)

Notes: BRL = Brazilian real. EUR = euro. USD = United States dollar. IDR = Indonesian rupiah.
Sources: International Social Security Association (2017[3]), *Social Security Association Country Profiles*, https://www.issa.int/en_GB/country-profiles; OECD (2019[4]), *Social Protection System Review of Indonesia*; https://doi.org/10.1787/788e9d71-en; OECD (2017[5]), *Pensions at a Glance 2017: Country Profiles – Germany*, https://doi.org/10.1787/pension_glance-2017-en.

Brazil has close to universal pension coverage, with 80.2% of individuals age 65 and over receiving a pension in 2014 (ILO, 2017[2]). However, benefit levels, which amount to at least the legal minimum wage for smallholder farmers and rural workers, do not weigh much in household income, especially among the poorest: contributory old-age and survivors' pensions do not exceed 10% of per-capita household income in the first decile of the distribution and 16% in the second, which is below all upper deciles (Figure 3.1). That is, the poorest households can least count on contributory pensions as a source of income to make a living. The average household income per capita in the first decile is nearly six times below the minimum wage, indicating that pension coverage is very low among the poorest households and concentrated in a few large households. Among better-off households, the contribution of pensions to household income remains modest, except in the sixth decile (36%), which is heavily populated by households with one or two members entirely dependent on old-age and survivors' pensions.

Figure 3.1. Pensions account for a residual share of household income among the poorest households in Brazil

Old-age and survivors' pensions as a share of per-capita household monthly income (2015)



Notes: Per capita household income corresponds to the sum of all household members' non-transitory incomes divided by household size. Similar results are obtained with the *Pesquisa de Orçamentos Familiares* (Consumer Expenditure Survey).
Source: Authors' calculations based on data from the 2015 *Pesquisa Nacional por Amostra de Domicilios* (Brazilian National Household Sample Survey), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html.

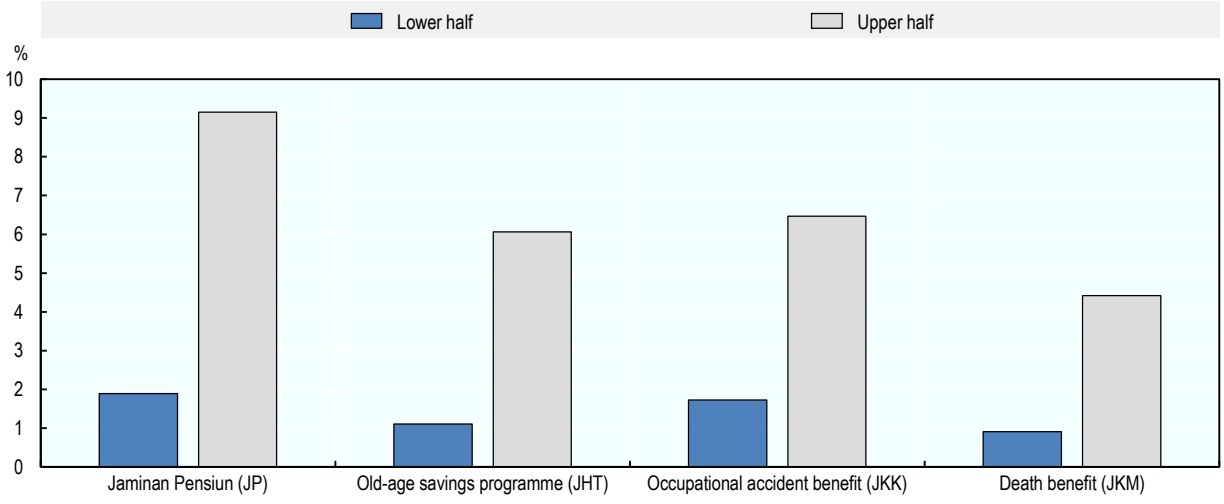
By contrast, less than 10% of the working-age population in Indonesia contributes to a pension scheme (OECD, 2017[6]). This low coverage is problematic, given the rapid demographic transition and population ageing. By 2030, ageing of the baby boom generation will significantly increase the old-age dependency ratio, reversing the continued downward trend in Indonesia's dependency ratio observed since the 1990s, triggered by the declining fertility rate (OECD, 2019[4]). Recently, Indonesia has made considerable efforts to expand contributory social protection schemes with the adoption, in 2004, of the Sistem Jaminan Sosial Nasional (SJSN; National Social Insurance System) and the creation, in 2011, of the Badan Pengelola Jaminan Sosial (BPJS) social security implementing agency. Since 2015, BPJS Labour administers social insurance benefits

covering formal and informal workers and their dependents against certain life contingencies, including old age, disability, occupational injury and death.

However, new evidence shows that social insurance coverage remains low overall and declines dramatically among less wealthy households (Figure 3.2). Recent survey data on contributory pensions show that, at best, 9.1% of households in the upper half of the per-capita household expenditure distribution receives benefits from the Jaminan Pensiun (JP) pension insurance programme and 6.1% does from the Jaminan Hari Tua (JHT) old-age savings programme. These low figures are even lower for households in the first half of the distribution, with 1.9% and 1.1% of households covered, respectively. The low coverage of old-age pensions makes the elderly particularly vulnerable to poverty (OECD, 2019[4]). The Jaminan Kecelakaan Kerja (JKK) occupational accident benefit and the Jaminan Kematian (JKM) death benefit exhibit low coverage levels as well, with significant gaps again more pronounced among poorer households.

Figure 3.2. Social insurance coverage is low in Indonesia, especially among poorer households

Share of households covered by contributory social insurance schemes, by first and second halves of the per-capita household expenditure distribution (2016)



Source: Authors' calculations based on data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

Germany is the world's oldest modern welfare state with social insurance schemes and stands out for having universal pension coverage. According to the International Labour Organization, virtually all individuals above statutory pensionable age receive an old-age pension (2017[2]). Data from the last 15 waves of the German Socio-Economic Panel (SOEP) survey used in the empirical analysis provide further evidence that the quasi-totality of individuals aged 65 and older receive a public and/or private contributory old-age pension.

However, the net pension replacement rate in Germany remains well below the OECD average (51% vs. 63% at average earnings), in particular for low earners (55% vs. 73% at half of average earnings) (OECD, 2017[7]). The lack of basic and minimum pensions means there is little redistribution in pension benefits with low-income retirees relying on the old-age safety net which is comparatively low at 20% of average earnings. This may

raise retirement income adequacy concerns for people with low incomes and partial careers (OECD, 2017[7]).

Impact of social insurance on micro drivers of growth

Social insurance schemes can vary in terms of benefits, target populations, contributory mechanisms and other factors, leading to differentiated impacts among individuals. Social insurance also affects people differently depending on lifecycle stage. Recent empirical findings, along with new empirical evidence produced for this report on the impact of social insurance on micro drivers of growth over the lifecycle, are discussed below.

Impact of social insurance on children and youth

Typically, social insurance programmes benefiting the working-age population and the elderly first impact growth prospects by influencing children and youth outcomes, such as education, child labour and early pregnancy.

The effect of social insurance on education seem to vary across countries and programmes

Existing empirical literature on the correlation between social insurance benefits and children and youth education outcomes is mixed. Moreover, the potential role of social insurance, in particular contributory old-age pensions, remains largely unexplored, especially in developed countries. In fact, three-generation households that include children enrolled in school and retired elders are relatively rare in developed countries: in Germany, they account only for 1.5% of all households, according to the 2015 SOEP survey. Other European countries also exhibit a low share.

Although the literature is limited and results are often mixed, there is some empirical evidence, in line with theoretical expectations outlined in Chapter 1, of intergenerational financial transfers flowing to younger generations in countries with ageing populations and well-established welfare systems. (Attias-Donfut, Ogg and Wolff, 2005[8]) found that, in ten European countries, children and grandchildren accounted for 80% of recipients of private financial transfers; however, barely 8% of cases were related to education. In the United States, welfare reforms introduced in the 1990s led to significant improvements in youth education outcomes (Miller and Zhang, 2012[9]). Although highlighting the importance of welfare systems, these findings do not specifically focus on the potential contribution of old-age pensions or other social insurance benefits.

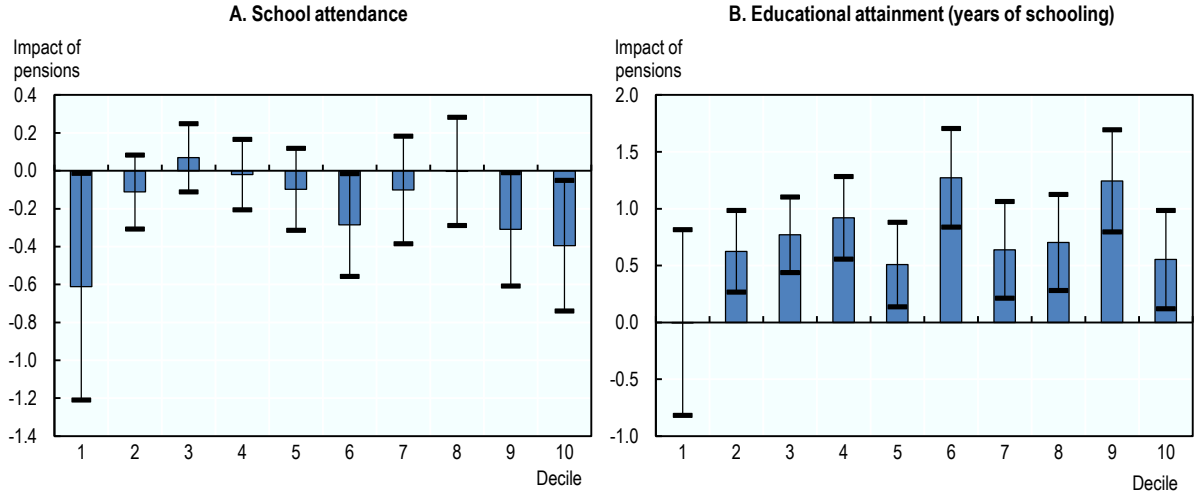
In developing countries, studies analysing the impact of social insurance, including contributory pensions, on children and youth education outcomes are also relatively scarce. Some evidence points to a positive effect. In urban areas of the People's Republic of China, expansion of the public pension programme to the non-state sector appears to increase significantly households' education investments in children (Mu and Du, 2017[10]). In Brazil, an increase of BRL 100 (Brazilian real) in household income per capita resulting from contributory old-age and survivors' pensions is associated with a 9% increase in the probability of youth studying and not working (Reis and Camargo, 2007[11]). A more recent study, however, finds that receiving pensions is not associated with higher household investments in education in Brazil, even if the pensions represent a substantial share (i.e. at least 40%) of household income per capita (Silveira and Moreira, 2017[12]).

The new empirical evidence for this report on Brazil and Indonesia confirms the mixed effects of social insurance on education outcomes, finding very limited impact in Brazil and significant impact in Indonesia.

In Brazil, contributory pensions seem to have little influence on children's education. Old-age and survivors' pensions, as a share of total household income, have a very limited influence, if any, on school attendance throughout the household income per capita distribution (Figure 3.3A). In most cases, coefficients are not statistically significant; when they are, the ends of the confidence intervals are very close to zero.[1] Pensions are positively associated with educational attainment (years of schooling obtained), but correlations are of negligible magnitude (Figure 3.3B). For instance, a 10% increase in total household income from pensions results, at best, in 0.13 additional years of schooling for youth in households in the sixth decile. There is no marked difference between lower and upper tiers of the distribution.

Figure 3.3. Pensions have no impact on school attendance in Brazil, and their positive effect on educational attainment is negligible

Impact of pensions on education outcomes, IV estimation results



Notes: Coefficients displayed are estimated for school attendance with an instrumental variable (IV) probit model, and for educational attainment, with an IV linear regression model. Pensions are defined as a share of total household income. School attendance refers to the presence in the household of individuals aged 25 or younger enrolled in any level of education. Educational attainment refers to number of years of schooling obtained (up to 16 years) of household members aged 14-24. Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant.
Source: Authors' calculations based on data from Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey) (1992-2015), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html.

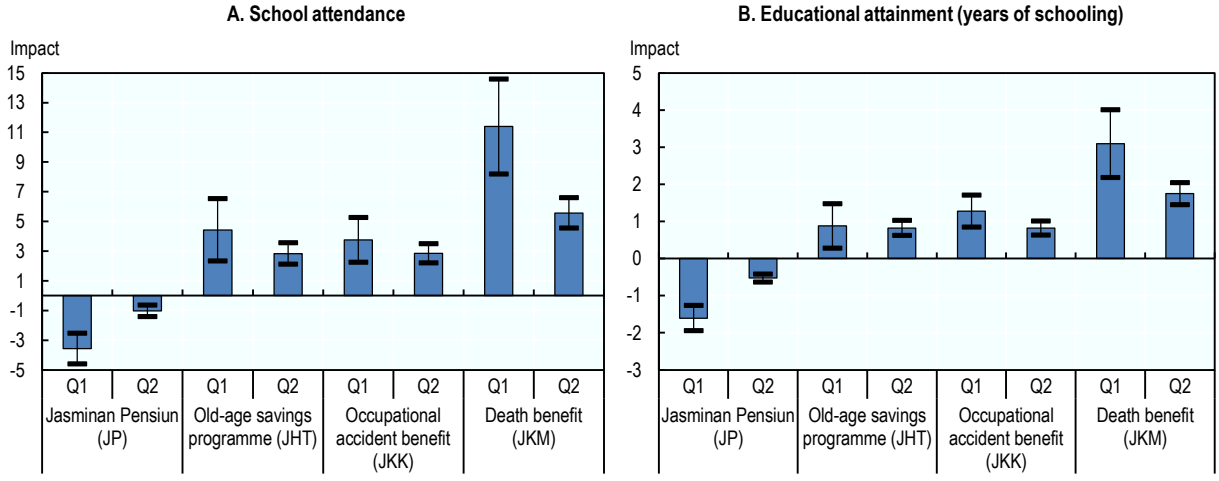
A very different picture emerges for Indonesia. Information available from national socio-economic survey data allows extending analysis to cover additional social insurance benefits, including occupational accident, disability and death benefits. It thus allows more comprehensive analysis of the interrelations between social insurance and a number of outcomes, including education. Overall, social insurance in Indonesia significantly boosts education outcomes (Figure 3.4).

Apart from the recently introduced pension insurance programme, whose impacts are more difficult to capture, all social insurance benefits under study are positively associated with education outcomes. Moreover, their impacts appear to be systematically higher among less wealthy households, which face greater risk exposure, indicating that social insurance in Indonesia contributes to inclusive growth.

The death benefit, which is mandatory life insurance, has by far the largest and most pro-poor impact, followed by the occupational accident benefit and the old-age savings programme. All cover formal and informal workers. Survivors eligible for the death benefit, who include children and grandchildren, are entitled to a lump sum and monthly stipends for up to two years. Overall, social insurance benefits relax liquidity constraints preventing households, especially the less wealthy, from greater education investments.

Figure 3.4. Social insurance benefits in Indonesia positively affect education outcomes, especially among poorer households

Impact of social insurance benefits on education outcomes, IV estimation results (2016)



Notes: Coefficients displayed are estimated for school attendance with an instrumental variable (IV) logit model, and for educational attainment, with an IV linear regression model. The explanatory variable for each social insurance benefit corresponds to the presence in the household of at least one member receiving the benefit. School attendance is defined as the presence of at least one household member aged 5-18 attending school. Educational attainment refers to the average years of schooling obtained of household members aged 5-18. Q1 and Q2 refer to the first and second halves of the per-capita household expenditure distribution. Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant.
Source: Authors' calculations based on data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

Evidence on the impact of contributory pensions on child labour and early pregnancy appears to be limited

Few empirical studies analyse the effects of social insurance benefits on child labour and early pregnancy, which are known to have adverse effects on inclusive growth. Previous studies focus on social pensions and other cash transfer programmes and find that social transfers reduce child labour participation (working or not working) and intensity (hours worked) (de Hoop and Rosati, 2014[13]; Edmonds, 2006[14]).

New empirical evidence for this report reveals that contributory old-age pensions in Brazil do not affect early pregnancy but positively affect child labour among poorer

households. Adolescent girls (aged 12-16) appear no more or less likely to have already given birth when they live in households receiving contributory old-age and survivors' pensions. This holds true across the income distribution. In countries characterised by low fertility like Brazil, increased fertility rates may be desirable from a macroeconomic perspective, but at the household level, the increased dependency ratio implies economic and opportunity costs that can be difficult for households with financial constraints to afford. These costs include, notably, reduced household income per capita and increased unpaid care work that can limit time available for household members – most often women – to engage in productive and income-generating activities. Early pregnancies can bring additional challenges. They can have severe and long-lasting negative effects on adolescent girls' education outcomes and employment prospects, as reported in Côte d'Ivoire (OECD, 2017[15]).

Old-age pensions, however, do not seem to prevent child labour in Brazil. From an economic perspective, children can be seen as assets: labour inputs that can, at an age physical development allows, participate in household chores and productive activities or the informal labour market. Such perceptions may be expected to emerge and materialise in households trapped in poverty, where child labour results from constrained choice driven by necessity to make ends meet.

The empirical analysis shows that, in the first four deciles of the household income per capita distribution, households receiving old-age and survivors' pensions are more likely to have working children (aged 5-13).[2] Poorer households tend to be large, with many dependent members, primarily children. Pensions may be expected to be lower among poorer households and not large enough, given the high dependency ratios, to reduce the opportunity cost of foregoing child labour. The positive correlation is also likely explained, in part, by the fact that households with pensioners encounter greater difficulties in sustaining their livelihoods than households with economically active members.

Impact of social insurance on working-age individuals and the elderly

Social insurance may also influence micro-level drivers of inclusive growth during adulthood, when individuals have reached working or retirement age. The empirical literature and new results for Brazil, Germany and Indonesia discussed below cover critical outcomes, namely consumption and savings, labour supply, fertility and migration.

Contributory pensions are likely to increase consumption and reduce savings

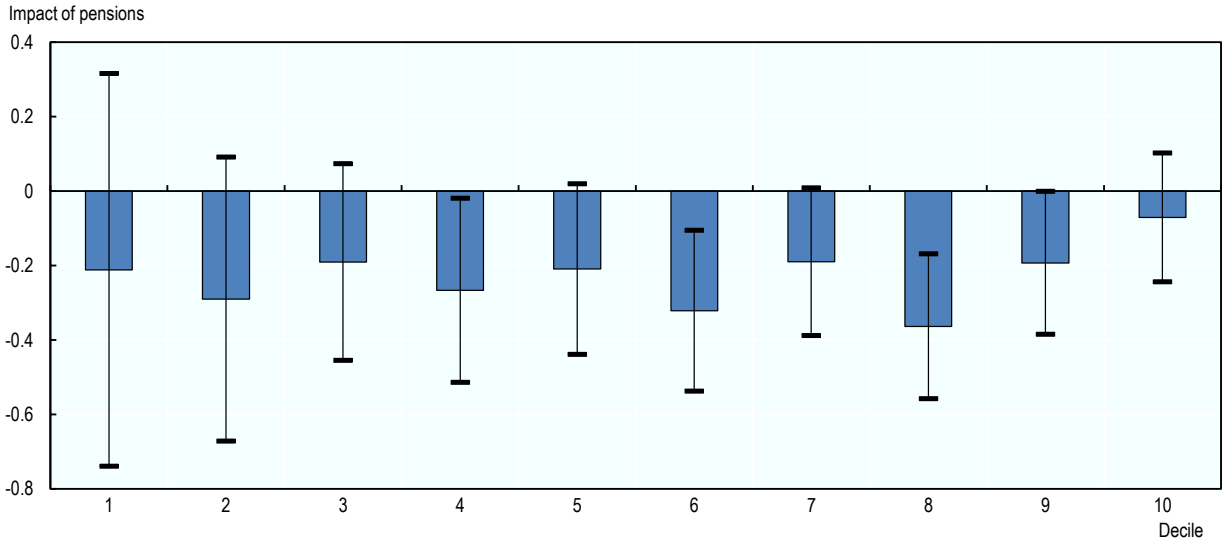
The empirical relationship between social insurance and consumption and savings has been widely investigated in the literature. Although results are mixed, a number of studies support the theoretical hypothesis that social insurance spurs consumption but negatively affects savings (see Chapter 1). The ultimate effect on economic growth is ambiguous. Lower private savings may reduce capital investments (as long as savings are used for investments), while increased consumption boosts aggregate demand and indirectly stimulates investments, which may or may not compensate for a possible adverse effect of savings on growth.

As regards pensions, studies based on time-series data prove very sensitive to methodological considerations (Leimer and Lesnoy, 1982[16]; Feldstein and Liebman, 2002[17]; Kaier and Müller, 2015[18]), and studies based on cross-country analyses led, in most cases, to inconclusive results (CBO, 1998[19]). By contrast, more recent studies based in natural experiments – e.g. pension reforms in Italy, the United Kingdom and China – display particularly robust results on the positive impact on consumption and negative impact on savings (Attanasio and Brugiavini, 2003[20]; Attanasio and Rohwedder, 2003[21]; Feng, He and Sato, 2011[22]). However, pensions and savings are not perfect substitutes (displacement effect); the degree of substitutability can even be very low or insignificant for vulnerable groups, such as young, less educated and low-income workers, who generally face liquidity and credit constraints (Euwals, 2000[23]; Engelhardt and Kumar, 2011[24]; Alessie, Angelini and van Santen, 2013[25]; Lachowska and Myck, 2018[26]). Pensions tend to crowd out private savings, but mostly among the better off. Likewise, there is some empirical evidence suggesting that unemployment insurance negatively affects precautionary savings and leads to a corresponding increase in consumption (Engen and Gruber, 2001[27]).

New empirical evidence for Brazil similarly shows that contributory pensions have no effect on household savings except among some better-off households. Pensions negatively affect household savings, but the effect is not statistically significant, except for some upper deciles (sixth and eighth) (Figure 3.5). The lack of significant effects makes sense, as pensions in Brazil usually account for a minor share of household income, especially among the poorest households (Figure 3.1). In addition, due to financial constraints, the poor have a lower propensity to save and are likely to take advantage of additional pension income to increase consumption and meet basic needs, rather than increase savings. Better-off households are not (or much less) exposed to liquidity and credit constraints, receive higher pension levels (36% of household income per capita in the sixth decile) and have a low marginal propensity to consume given their financial wealth. In addition, higher pensions erode precautionary savings. Instead, richer households are likely to take advantage of additional pension income to invest, for instance, in durable goods. Further empirical analysis shows that pensions generally do not affect the amount of their household savings.

Figure 3.5. Pensions reduce savings in Brazil only among some better-off households

Impact of pensions on likelihood of positive net savings, regression results



Notes: Coefficients displayed are estimated with a simple probit model, since data limitations impede correcting for endogeneity using instrumental variables. Pensions are defined as a share of total household income. Households are considered to have positive net savings if savings are observed over a one-year period. Household savings include mortgages but exclude investments in durables, such as vehicles. Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant.
Source: Authors' calculations based on data from Pesquisa de Orçamentos Familiares (Brazilian Consumer Expenditure Survey) (1992-2015), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html.

Contributory pensions can drive down labour supply

Existing empirical literature points to a moderate negative effect of social insurance on labour supply in developed countries (Krueger and Meyer, 2002[28]; Gruber and Wise, 2004[29]; Coile and Gruber, 2007[30]). Unemployment benefits – both duration and income replacement rate – tend to have negative but frequently small effects on labour supply, i.e. an increase in unemployment duration, spells or levels (Nickell, 1998[31]; Lalive, 2008[32]; Rothstein, 2011[33]; Amarante, Arim and Dean, 2013[34]). The duration of unemployment benefits appears to have larger negative effects on labour supply (and even on output) than the level of benefits (Tatsiramos and van Ours, 2014[35]; Acemoglu and Shimer, 2000[36]). A number of studies also find that unemployment insurance does not seem to be very effective in improving the quality of job matching, as measured, for instance, by wages and employment stability (Tatsiramos and van Ours, 2014[35]; Addison and Blackburn, 2000[37]).

However, more recent studies taking into account duration dependence, whereby opportunities and skills deteriorate while unemployment benefits decrease with length of time out of work, find that access to more generous unemployment insurance leads to finding better jobs (Nekoei and Weber, 2017[38]). Moreover, activation strategies through the adoption of monitoring and sanction mechanisms by public employment services (e.g. job search requirements conditioning benefits receipt) can overcome the apparent adverse employment effects of unemployment insurance (Fredriksson and Holmlund, 2006[39]; Kluve, 2010[40]).

Evidence also shows that contributory pensions have a negative impact on labour supply in developed countries, which could be mitigated for instance by adequate pensionable ages, limited access to early retirement and actuarially fair benefit formulas (Mastrobuoni, 2009[41]; Börsch-Supan, 2000[42]; Gruber and Wise, 2004[29]; Coile and Gruber, 2007[30]). Pension contributions act as an implicit tax on labour income and, as such, can disincentivise enrolment in a pension scheme. An actuarially fair benefit formula equalises at present value lifetime individual pension entitlements (pension wealth) to lifetime individual pension contributions. Pension wealth and retirement decision particularly depend on individual discount rates or myopia regarding future benefits (opportunity cost of delaying consumption). Individuals with low discount rates (i.e. whose future benefit increases outweigh current benefits foregone) are more prone to remain employed and postpone retirement. There is some evidence on the negative spill over effect of contributory pensions on working-age labour force participation in developing countries; in Brazil, old-age and survivors' pensions reduce the employment likelihood of young adults in the household (Reis and Camargo, 2007[11]).

Whether or not the negative correlation between pensions and labour supply is commendable depends on the individuals considered. The outcome is positive for insured individuals who have reached retirement age and who, thanks to pensions, do not need to keep working to sustain their livelihoods. The effect is detrimental for working-age individuals, who may have less incentive to work due to household resource pooling, since labour supply is a major driver of economic growth.

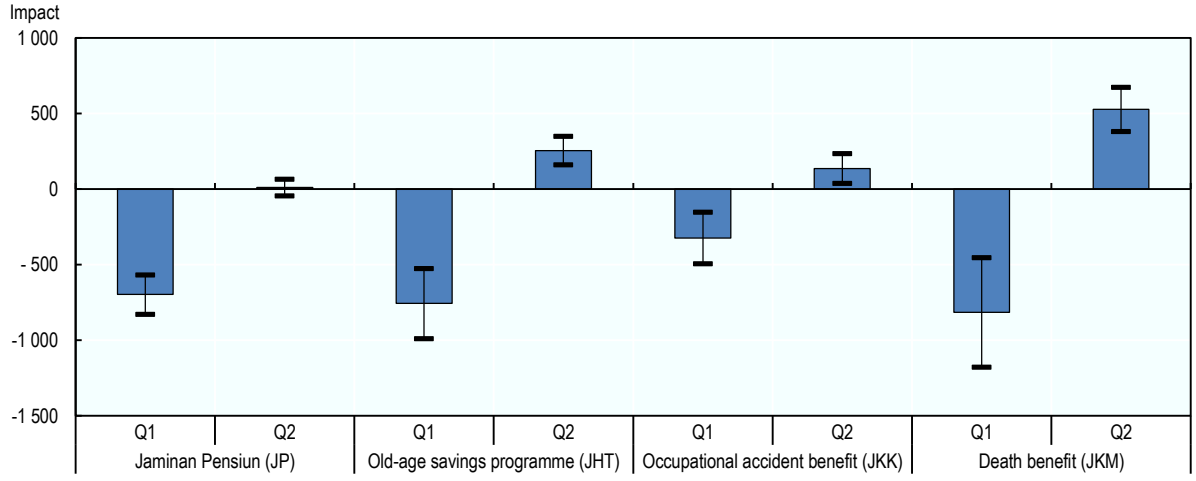
The new empirical evidence shows that contributory pensions in Germany have a strong negative and significant impact on labour supply for the elderly. The discontinuous increase in the probability of receiving a pension associated with various retirement ages[3] is used to assess such impact. Receiving an old-age or survivors' pension (public and/or private) at the statutory pensionable age of 65 reduces the probability of remaining in employment by nearly one-third. This result holds across full-time, part-time, short-time and mini-job employment. Moreover, the negative impact of pensions on employment increases across the household disposable income per capita distribution, from 19.1% in the first quintile to 48.5% in the fourth quintile, with a negative impact reaching 31.0% in the highest quintile. All estimates are robust and corrected for any potential bias. Individuals in better-off households are more prone to withdraw from the labour market at retirement age, most likely because they can count on higher pensions or other sources of income.

Analyses for Brazil and Indonesia focus on spill over effect of contributory pensions on employment of working-age household members. The negative correlation is very apparent in Brazil (Figure 3.6): pensions are associated with a significant decline in employment among both men and women. The magnitude of the effect, however, varies considerably for individuals and households across the household income per capita distribution. While relatively modest among poorer households, it exhibits a continuous and significant increase at the upper end, reaching considerable levels among the richest. As already seen, pensions are relatively low at the bottom of the distribution, where working-age individuals most likely have to engage in income-generating activities to complement pension benefits and increase household purchasing power. The impact of pensions is nonetheless far from negligible among households in the first decile.

The richer the household, the more irrelevant labour income becomes in the presence of other sources of stable revenue, such as pensions. This holds especially true for women, which could be explained by the traditional gender division of household labour, according to which women are primarily engaged in unpaid care work while men are considered the main breadwinners. The impact of pensions on female employment follows the same pattern but reaches greater magnitudes than for men.

Figure 3.6. Pensions are associated with a significant decrease in working-age employment in Brazil, especially among better-off households

Impact of pensions on employment of working-age male and female household members, IV estimation results



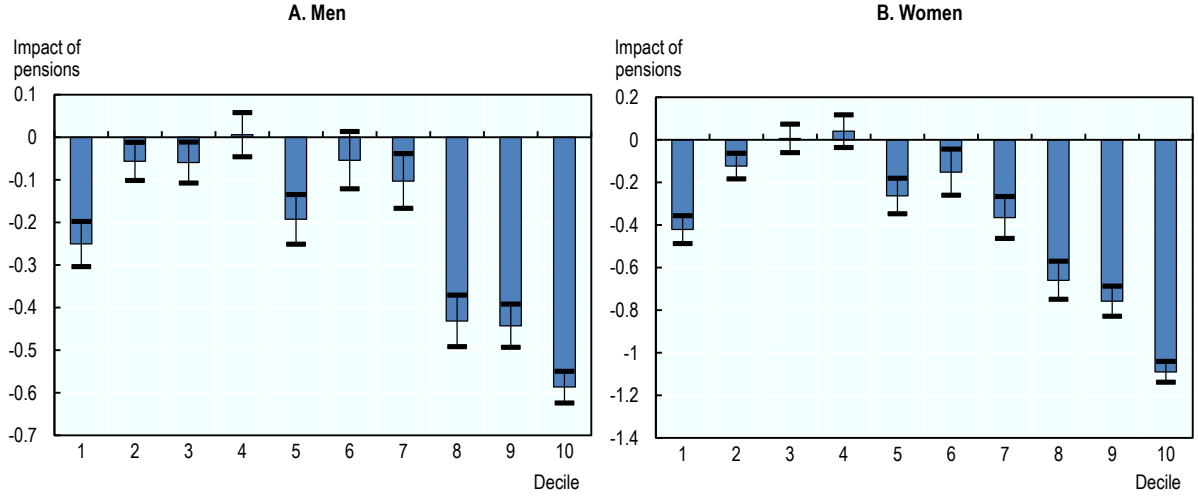
Notes: Coefficients displayed are estimated with an instrumental variable (IV) probit model. Pensions are defined as a share of total household income and are instrumented by the presence of formally employed members in the household who have either a labour card (formal private sector), public sector job or agricultural job. Employment is defined as working-age individuals (aged 16-64) who worked at least one paid hour during the reference period or who were temporarily absent from work (e.g. paid leave). Minimum working age is 16, but individuals can do an apprenticeship starting at age 14. Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant.
Source: Authors' calculations based on data from Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey) (1992-2015), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html.

Indonesia, where contributory pensions and other social insurance benefits are taken into account, is similar to Brazil. In most cases, social insurance benefits lead to a sizeable decrease in number of employed working-age household members, with women more negatively affected than men. The death benefit exhibits the greatest impacts, followed by the occupational accident benefit and the old-age savings programme. The pension insurance programme has no significant effect: coefficient estimates are either not statistically significant or of very low magnitude. However, the impact of this programme is hard to evidence because its introduction only dates back to 2015.

Indonesia exhibits profound differences from Brazil in the effect of social insurance across households' income levels (Figure 3.7). Moreover, impact gaps between poorer and richer households are very large, notably the impact of the death benefit on both male and female employment. The reduction in employment associated with social insurance benefits is much larger among less wealthy households. Poorer households face liquidity and credit constraints that social insurance benefits can relax, making employment or involvement in income-generating activities more dispensable. However, this is probably not true for the poorest households, whose social insurance benefits are not large enough to make ends meet and lift them out of poverty.

Figure 3.7. Poorer households in Indonesia are most affected by the negative impact of social insurance benefits on employment

Impact of social insurance benefits on number of employed working-age male and female household members, IV estimation results (2016)



Notes: Coefficients displayed are estimated with an IV linear regression model. For each social insurance benefit, the explanatory variable corresponds to the presence in the household of at least one member receiving the benefit. Employment at the household level is measured as the number of working-age members (aged 15-64) actually working. Q1 and Q2 refer to the first and second halves of the per-capita household expenditure distribution. Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant.
Source: Authors' calculations based on data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

Contributory pensions seem to have a small negative impact on fertility rates

Fertility is a strong determinant of economic growth. Declining fertility slows the pace of growth through its negative effect on labour supply, which is partly mitigated by induced behavioural changes driving up human capital investments (Prettner, Bloom and Strulik, 2012[43]). In developing countries, where high fertility prevails, a negative correlation between social insurance and fertility is commendable to the extent that, according to recent empirical evidence, reduced fertility spurs economic growth (Ashraf, Weil and Wilde, 2013[44]). However, lower fertility rates can undermine the sustainability of social security systems in the long term.

In practice, the theoretical expectation that contributory pensions disincentivise fertility holds to a certain extent. The expectation is based on the premises that childbearing represents an insurance strategy against old age (Boldrin, De Nardi and Jones, 2015[45]) or, conversely, that pension contributions constitute an implicit tax on childbearing (Cigno, Casolaro and Rosati, 2003[46]). Domestic constraints associated with childbearing can negatively affect individuals' labour market outcomes and therefore jeopardise future pension benefits, which depend on previous employment-based contributions.

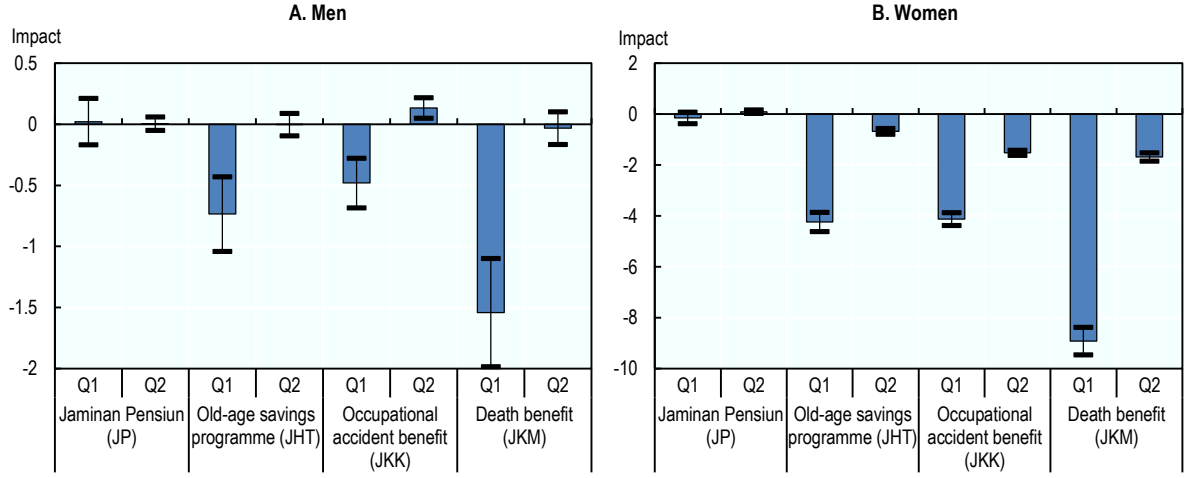
The empirical literature tends to support the negative correlation between contributory pensions and fertility in both developed and developing countries, but the magnitude is generally found to be moderate (Cigno and Rosati, 1996[47]; Cigno, Casolaro and Rosati, 2003[46]; Galasso, Gatti and Profeta, 2009[48]; Boldrin, De Nardi and Jones, 2015[45]). The associated decline in fertility is particularly significant in developing countries, where individuals have limited access to financial markets and thus resort, traditionally, to dependence on children for old-age support. However, based on an analysis of pension reforms in 21 advanced economies from 1870 to 2010, contributory pension systems do not constitute a panacea in countries with high fertility rates (Jäger, 2017[49]). There is ample empirical evidence on the contribution to fertility reduction of non-contributory social pension schemes, which in developing settings, benefit from higher coverage, especially in sub-Saharan Africa (OECD, 2017[50]; Holmqvist, 2010[51]).

In line with the empirical literature, results for Brazil show that contributory pensions are negatively associated with fertility. Estimated coefficients are systematically statistically significant and negative, and tend to be of greater magnitude towards the top of the distribution, indicating a stronger negative impact on better-off households, whose pensions generally account for a higher share of household income (Figure 3.8A). Given the low and steadily declining fertility rate – from 6.1 to 1.7 births per woman between 1960 and 2016 (World Bank, 2018[52]), the adverse effect on fertility is likely to be detrimental for both economic growth and the sustainability of the social insurance system.

In Indonesia, the effects on fertility of all social insurance benefits are insignificant or of negligible magnitude (positive or negative) (Figure 3.8B). Social insurance coverage and benefit levels are likely too low to influence fertility decisions; childbearing thus remains an essential insurance strategy against old age.

Figure 3.8. Social insurance benefits negatively affect fertility in Brazil and have no significant impact in Indonesia

Impact of social insurance benefits on fertility, IV estimation results



Notes: Coefficients displayed are estimated with an instrumental variable (IV) probit model for Brazil and an IV logit model for Indonesia. For Brazil, pensions are defined as a share of total household income. For Indonesia, for each social insurance benefit, the explanatory variable corresponds to the presence in the household of at least one member receiving the benefit. For Brazil, recent fertility is measured as the presence in the household of a woman aged 20-49 who has given birth in the three years prior to the survey interview. For Indonesia, it is measured as the presence in the household of infants below age 1. Q1 and Q2 refer to the first and second halves of the per-capita household expenditure distribution. Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant.
Sources: Authors' calculations based on data from Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey) (1992-2015) ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html, and data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

Social insurance may have a negative effect on migration outflows

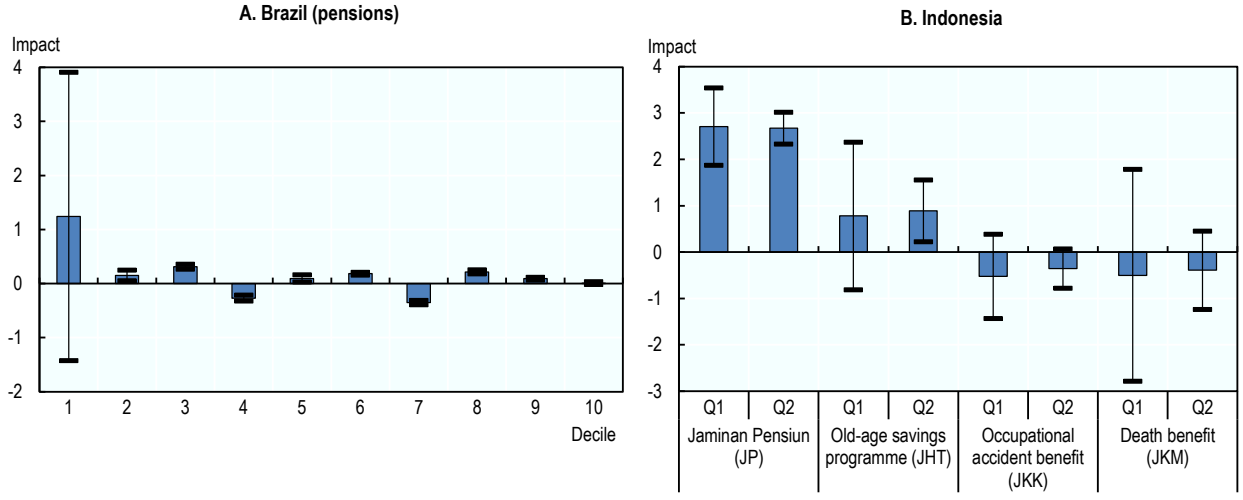
A number of empirical studies suggest that social insurance and migration are negatively correlated in developing countries (Hagen-Zanker and Himmelstine, 2013[53]). Evidence shows, for instance, that social insurance programmes in countries of origin, including unemployment benefits and contributory pension systems, reduce the propensity and rate of migration to countries of destination (Greenwood et al., 1999[54]; Sana and Hu, 2007[55]). Social insurance in home countries and out-migration can thus be seen, to some extent, as substitutes. Moreover, social insurance benefits negatively affect the skills profile of migrant populations in that it favours migration outflows of low-skilled workers (Greenwood and McDowell, 2011[56]). Low-skilled workers, who have lower earnings and contribute less to social insurance, cannot expect to benefit from social insurance as much as the high-skilled workforce and thus have greater incentive to leave.

The new empirical evidence goes a step further to question whether social insurance affects return migration. Findings show that, in Brazil and Indonesia, households receiving social insurance benefits are more likely to have members who had a recent experience of migration, i.e. social insurance seems to be positively associated with return migration.

While results are consistent with the literature and the substitution assumption, the effects of social insurance on return migration observed for Brazil and Indonesia are limited. In Brazil, estimated coefficients of the impact of contributory old-age and survivors' pensions are, in most cases, statistically significant and positive across the household income per capita distribution, but their magnitudes are small (Figure 3.9A). In Indonesia, the old-age savings programme, occupational accident benefit and death benefit do not significantly impact return migration, while the recent introduction of the pension insurance programme casts doubts on its positive effects (Figure 3.9B). Overall, low coverage and benefit levels, especially in Indonesia, likely minimise the influence of social insurance on migration decisions.

Figure 3.9. Social insurance has a limited effect on return migration in Brazil and Indonesia

Impact of social insurance on return migration, IV estimation results



Notes: Coefficients displayed are estimated with an instrumental variable (IV) probit model for Brazil and an IV logit model for Indonesia. For Brazil, pensions are defined as a share of total household income. For Indonesia, for each social insurance benefit, the explanatory variable corresponds to the presence in the household of at least one member receiving the benefit. For Brazil, return migration is measured as the presence in the household of individuals who were living in a different municipality or abroad five years prior to the survey interview. For Indonesia, it is measured as the presence of at least one household member who migrated in the previous five years. Q1 and Q2 refer to the first and second halves of the per-capita household expenditure distribution. Blue bars indicate coefficient values; black error bars indicate 95% confidence intervals. If zero is within the confidence interval, the coefficient is considered not statistically significant.
Sources: Authors' calculations based on data from Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey) (1992-2015), ibge.gov.br/estatisticas-novoportal/sociais/saude/9127-pesquisa-nacional-por-amostra-de-domicilios.html, and data from the 2016 Indonesian National Socio-Economic Survey (SUSENAS), https://microdata.bps.go.id/mikrodata/index.php/catalog/SUSENAS.

Social insurance, if properly designed, can reduce migration, especially of the medium- and high-skilled workers most likely to be covered. Since social insurance coverage is still largely confined to the formal sector in developing countries, extending it to the informal economy, which accounts for a large share of the workforce, could significantly reduce migration outflows.

Notes

[1] Results are in sharp contrast with the previous study by Reis and Camargo (2007[11]), according to which the correlation is significantly positive. However, their methodological approach did not control for endogeneity, which likely resulted in biased estimated results.

[2] Employment below age 14 is strictly prohibited by law in Brazil.

[3] Using a fuzzy regression discontinuity design, as in Eibich (2015[64]). Discontinuities are observed at ages 60, 63 and 65.

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Annex 3.A. Social insurance in Brazil, Germany and Indonesia

This annex provides a brief description of social insurance in the countries under study, in particular of the schemes covered in the empirical analysis.

Brazil

Brazil dedicates most of its social protection spending to social insurance schemes, which covered 30.5% of the population in 2015, compared with 27.7% in the Latin America and Caribbean (LAC) region (Annex Table 3.A.1). These schemes have contributed to reducing inequalities among the Brazilian population, with a 7.6% decline in the Gini index and a 49% decline in the poverty gap in 2015 alone (World Bank, 2018[57]). Pension schemes accounted in 2015 for 73% of total social protection expenditure and 10% of gross domestic product (GDP) (ILO, 2017[2]). Moreover, 78% of the elderly received pensions, and 52% of the labour force paid contributions, which greatly exceed LAC averages (54% and 40%, respectively) (ILO, 2017[2]).

Annex Table 3.A.1. Social insurance coverage in Brazil and Latin America and Caribbean, by quintile

	% of total population	% of Quintile 1	% of Quintile 2	% of Quintile 3	% of Quintile 4	% of Quintile 5
Brazil (2015)	30.5	10.6	26.3	35.9	38.5	41.3
Latin America and Caribbean (2008-16)	27.7	9.0	22.1	30.2	37.5	39.9

Source: World Bank (2018[57]), *ASPIRE: The Atlas of Social Protection- Social Safety Net Expenditure Indicators* (database), http://datatopics.worldbank.org/aspire/indicator/social-expenditure.

Entitlements to old-age pensions depend on sector, age and contributory history. The male and female pensionable ages are 65 and 60 for urban workers and 60 and 55 for rural workers, with a minimum of 15 years of contributions for those who insured after 1991 and a minimum of 5 years for those insured before (ISSA, 2017[3]). Individuals with contributions of 35 years (men) or 30 years (women) are entitled to a pension regardless of age. Employee monthly contributions depend on income bracket: 8% of salary for those earning less than BRL 1 693, 9% for those earning up to BRL 2 882 and 11% for those earning more (INSS, 2018[58]). The benefit value is calculated according to average earnings and years of contributions, amounting to 70% of the insured's average earnings plus 1% of the average earnings for each year of contributions (ISSA, 2017[3]).

Brazil also provides survivors' pensions for dependents of contributors, either partners and/or underage children, paying 100% of the old-age pension the deceased received or was entitled to receive (INSS, 2017[59]). This benefit is split equally among all eligible survivors, and its duration varies according to contributions made, extent of cohabitation with the deceased and age of dependents. For fewer than 18 months of contributions and/or fewer than 2 years of cohabitation before the death, the pension is paid for

4 months (ISSA, 2017[3]). Children are entitled to the benefit until they reach age 21, while partners can be covered from three years to life, depending on their age at the time of the death (INSS, 2017[59]).

Germany

Germany is the world's oldest modern welfare state, with social insurance programmes, including old-age pensions, introduced in the 1880s (Hennock, 2007[60]). The largest share of German social insurance expenditure goes to old-age pensions, amounting to approximately 62% of total social protection spending and 10% of GDP (ILO, 2017[2]). But public pension expenditures are expected to rise to 12.5% of GDP in 2050 owing to rapid population ageing, which will challenge the financial sustainability of the public pension system (OECD, 2017[7]). Pension contributions stand at 14% of GDP, significantly exceeding the average of 9% for OECD countries (OECD, 2017[61]). In addition, pension coverage in Germany is universal: 100% of the elderly population, compared with 95% on average in Europe (ILO, 2017[2]). However, the net pension replacement rate in Germany remains well below the OECD average (51% vs. 63% at average earnings), in particular for low earners (55% vs. 73% at half of average earnings) (OECD, 2017[7]).

The current mandatory old-age pension scheme, regulated by the Sozialgesetzbuch, was introduced in 2002, with amendments in 2016 and 2017 (ILO, 2018[62]). As of 2018, the pensionable age is 65 years and five months, increasing by one month each year until 2024 and thereafter by two months each year until 2029: the pensionable age will therefore become 67 years for anyone born after 1964 (ISSA, 2017[3]). The minimum contribution period is five years, where both employee and employer make monthly contributions of 9.345% of the salary, with the possibility of early retirement after 35 years of contributions (ISSA, 2017[3]). The amount of the pension is calculated with total earning points, which are the lifetime earnings divided by the national average earnings (e.g. EUR 36 267 [euro] in 2016), multiplied by the pension's factor and value.

Indonesia

In 2004, Indonesia mandated by law universal coverage and compulsory contributions for social insurance schemes, such as old-age pensions, unemployment benefits and death insurance; however, there have been several difficulties with implementation (ADB, 2012[63]). Since a new law on the gradual implementation of social insurance was issued in 2011, several government regulations have been consolidated. Yet, universal coverage and compulsory contributions remain far from a reality (ISSA, 2017[3]). Social insurance covers barely 8.2% of the Indonesian population, compared with 28.6% in East Asia and Pacific, with significant gaps at the expense of the poorest quintiles (Annex Table 3.A.2). Moreover, Indonesia spends only 0.3% of its GDP and 32.0% of its total social protection budget in social insurance programmes (ADB, 2012[63]).

Annex Table 3.A.2. Social insurance coverage in Indonesia and East Asia and Pacific, by quintile

	% total population	% Q1	% Q2	% Q3	% Q4	% Q5
Indonesia (2015)	8.2	1.5	3.1	6.1	10.6	19.5
East Asia and Pacific (2008-16)	28.6	22.0	22.7	26.2	33.5	38.5

Source: World Bank (2018[57]), *ASPIRE: The Atlas of Social Protection- Social Safety Net Expenditure Indicators* (database), http://datatopics.worldbank.org/aspire/indicator/social-expenditure.

Old-age benefits are the cornerstone of the social insurance system in Indonesia. Yet, only 14.0% of the elderly is covered and 10.5% of the labour force contributes to the schemes, compared with 74.1% and 20.4%, respectively, at the regional level (ILO, 2017[2]). Two schemes concern old-age contributory pension benefits: the pay-as-you-go JP pension insurance programme and the JHT old-age savings programme. Each has different structures and requirements. The retirement age for both is currently age 56, progressively increasing to age 65 by 2043 (ISSA, 2017[3]).

The JP, created in 2015, covers public and private sector employees. It requires monthly contributions of 3% of the salary – 1% paid by the employee and 2% by the employer – for at least 15 years and provides monthly payments capped at 40% of adjusted salaries once the employee retires (ISSA, 2017[3]). The JHT is a mandatory savings programme managed through a public provident fund covering employees and self-employed workers in the formal and informal sectors. It requires monthly contributions of 5.7% of the salary – 2.0% paid by the employee and 3.7% by the employer – which is paid as a lump sum plus accrued interests upon reaching the retirement age (ADB, 2012[63]). Both schemes entitle survivors (spouses, dependent children or parents) to benefits, although provisions depend on whether the deceased contributed to the JP (50% of the pension) or JHT (lump sum of the total contributions) (ISSA, 2017[3]).

Other schemes, such as the JKK occupational accident benefit and the JKM death benefit, provide insurance for employees and self-employed workers in the formal and informal sectors in the event of occupational injury, disability or death. The JKK premium is fully paid by the employer and depends on the degree of risk of the work environment, varying from 0.24% to 1.74% of the monthly payroll (OECD, 2019[4]). Beneficiaries receive both health treatment and a cash transfer amounting to 100% of the insured's salary for the first four months, 75% for the following three months and 50% thereafter (ISSA, 2017[3]). The JKM is paid to eligible survivors (spouses, children, parents, grandchildren, grandparents, siblings and parents-in-law) if the participant dies during the active period due to non-work-related reasons. It includes a death grant (lump sum of IDR 14.2 million [Indonesian rupiah] plus IDR 200 000 per month for up to two years) and a funeral grant (lump sum of IDR 2 million). For employees, the premium is paid by employers and stands at 0.30% of the monthly wage; for self-employed workers, the premium amounts to IDR 6 800, equivalent to USD 0.52 (OECD, 2019[4]).

Annex 3.B. Measuring the impact of social insurance programmes on individual and household outcomes – methodological approach

In analysing the causal effect of social insurance benefits on the outcomes of interest, it is very important to correct for endogeneity to ensure the analysis yields unbiased estimated results. Endogeneity arises when there is reverse causality, sample selection or omitted variables in the econometric model used. For instance, if contributory old-age pensions drive down labour force participation of working-age household members, but at the same time, pensions appear to benefit more households with economically inactive individuals (e.g. caregivers looking after the elderly), the estimated coefficient will be biased upward, and the negative effect of pensions will be overestimated. There is a potential endogenous relationship between all social insurance benefits and outcomes investigated.

To address the endogeneity issue, the analysis relies in empirical analysis, mainly the Instrumental Variable (IV) approach. This approach implies identifying good instruments that are uncorrelated with the outcome variable but correlated with the explanatory variable they are instrumenting. Two-step regression analyses are then performed, which first, predict the probability of receiving the social insurance benefit based on the identified IVs, and second, estimate the impact of the benefit, given the predicted value derived from the previous equation. The following presents the data and IVs used to analyse empirically the impacts of social insurance programmes in Brazil, Germany and Indonesia.

Brazil

For Brazil, the explanatory variable is the share of contributory old-age and survivors' pensions in total household income. Individuals' contribution history determines, to a large extent, their pension level and therefore constitutes a good instrument. However, because existing household surveys do not contain detailed information at the individual level, analysis focuses on the contribution history of pseudo-cohorts, i.e. cohorts to which individuals belong according to a number of selected time-invariant characteristics. Each individual is assigned to a particular pseudo-cohort based on the sex, birth State and ten-year birth intervals. Using annual data from twenty Pesquisa Nacional por Amostra de Domicilios (Brazilian National Household Sample Survey) spanning 1992 to 2015, 280 pseudo-cohorts are obtained.

The percentage of the labour force is calculated for each pseudo-cohort and each year: those 1) with a labour card (formal private sector); 2) employed by the government (public sector); or 3) working in the agricultural sector. These three variables capture the main paths leading to future pension benefits and are used as a proxy for the probability of being a pension contributor for each individual in each past year. Individuals are then assigned a weighted average of their pseudo-cohort's contribution history based on these variables and using a discount factor of 10% per year. Last, these weighted averages are aggregated at the household level to obtain the IVs.

These instruments are strongly correlated with pension receipt but are unlikely to have any impact on the outcomes variables, except labour supply. IVs selected include lagged labour market outcomes that influence present employment situation, thus raising endogeneity issues. For labour supply, IVs are therefore replaced by the presence in the household of other formally employed members (with a labour card or public sector or agricultural job). Note that, since employment situation is likely to be correlated with individual health status and, by extension, with household unpaid care work, the proxy selected may not be exogenous to labour supply decisions. Correcting for this potential bias would require further investigation on household members' health status, which is beyond the scope of this report.

Germany

Analysis for Germany follows a different methodological approach to analyse the impact of contributory old-age and survivors' pensions on the labour supply of the elderly. It exploits the discontinuous increase in the probability of receiving a pension associated with various retirement ages using a fuzzy regression discontinuity design (FRDD), as in Eibich (2015[64]). Discontinuity in retirement age is used as an instrumental variable for pension receipt. The estimation strategy involves approximating the regression functions above and below one or several cut-off points (i.e. discontinuities in retirement age).

The last 15 waves (2001-15) of the German SOEP survey are used to calculate the share of pensioners across all ages between 55 and 70. Pensioners are identified based on four alternative definitions: 1) public and/or private pensions received in the year preceding the survey interview resulting from individuals' own contributions from earnings; 2) only public pensions; 3) all pensions, including survivors' pensions; and 4) all previous definitions with a different reference period (month instead of year preceding the survey interview).

Whatever the definition, there are clear discontinuities at ages 60, 63 and 65 that occur precisely in the month individuals reach these cut-offs. The empirical analysis focuses only on age 65 because it is the only discontinuity observed throughout the sample period for both men and women, and because it is a cut-off after which there are few constraints and trade-offs in accumulating a full retirement pension. This cut-off age is used as an instrumental variable to estimate the treatment effect of receiving a pension on various employment statuses, i.e. full-time, part-time, short-time and mini-job employment.

Indonesia

Analysis for Indonesia uses data from the 2016 Indonesian National Socio-Economic Survey to analyse the impact of social insurance benefits on outcome variables. This is the largest household survey in the world, with more than 1.1 million surveyed individuals across nearly 300 000 households throughout the country. The 2016 survey is more reliable than previous years because it includes more detailed information on social protection. To correct for endogeneity, analysis relies on IVs and two-step econometric regressions. IVs include the presence in the household of individuals working in the formal sector and in various sectors of activity, and individuals who have reached the statutory retirement age (56 and older). Due to the small number of social insurance recipients in the sample survey, the empirical analysis is restricted to the first and second halves of the per-capita household expenditure distribution.

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