ENSURING ADEQUATE AND SUSTAINABLE SOCIAL SECURITY

Introduction: Proceedings of the ISSA 2014 International Research Conference

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Abstract The 2014 Research Conference of the International Social Security Association (ISSA), which offered a platform for discussion and analysis among social security administrators and academia, addressed issues concerning the adequacy and sustainability of social security. Core issues discussed were the definition and measurement of adequacy and the contribution of social security systems to social and economic development. Also addressed were "megatrends", including demographic ageing and climate change, and their impacts on social security systems. As an objective, the conference sought to evaluate the implications of these issues for social security administrations and, on the basis of national good practice and new research findings, to identify measures permitting future adaptation and innovation.

Keywords social security administration, social development, economic development, research, Israel, international

Introduction

Social security systems create positive social and economic impacts for society, particularly so if the benefits and services provided are adequate and the systems and programmes sustainable. However, the adequacy and sustainability of social security benefits are often viewed as conflicting goals, both on a macro-socioeconomic level and from a micro-behavioural perspective. The issues of the adequacy and

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sustainability of social security provisions are more complex than questions regarding benefit levels and the funding or financing position of schemes. The ISSA International Research Conference,[1] organized in collaboration with National Insurance Institute (NII) of Israel, highlighted these issues and offered a platform for debate and discussion amongst the 150 participants representing over 30 member countries from all regions of the world.[2]

Conference proceedings

Opening ceremony

In the Opening Ceremony the Director General of the National Insurance Institute of Israel, Shlomo Mor-Yosef, remarked that 2014 was the NII's 60th anniversary and reaffirmed the importance of the universality of social benefits, as conceived by the founding fathers of Israel's social security organizations, who were strongly influenced by the United Kingdom's 1942 Beveridge Report. Mor-Yosef presented an overview of Israel's highly centralized social insurance system, which provides social insurance coverage to all residents for the major income risks that occur over the life course. The major universal benefits in Israel are old-age benefits and child benefits. The NII also delivers income substituting benefits for interruptions from work as a result of work injury, maternity, unemployment, etc. Basic functional benefits include long-term care, attendance allowance and mobility benefits. The NII is also responsible for the collection of the compulsory contributions for social insurance and for health insurance. While the social insurance benefits are provided by NII's network of 23 branches, health services are provided by the four sickness funds and by hospitals, which are regulated by the Ministry of Health. The health insurance contributions are distributed by NII to the sickness funds, based on a capitation rule, established under the auspices of the Ministry of Health.

Throughout NII's existence its revenues have exceeded the payments of benefits, thus enabling the accumulation of reserves equivalent to USD 50 billion. Each year the surpluses are invested in the government's budget in the form of non-tradeable government bonds: half of the invested surplus is paced in bonds with a subsidized real interest rate of 5 per cent and the remaining half is placed with current rate of inflation indexed government bonds. According to the NII law, these reserves should have been invested "constructively", such as in infrastructure

1. See <www.issa.int/web/event-46604-issa-international-research-conference/overview> for the conference programme.

2. The 2014 ISSA International Research Conference (3–5 November) was hosted by the National Insurance Institute of Israel and held in Ma'aleh Hahamisha, a Kibbutz founded in 1938 and located in the hills of Judea near Jerusalem.

projects, etc. However over the years the surpluses were simply added to the current government deficit. A recent NII actuarial statement emphasized the need for an improvement in its financial steadiness – if the present trends of revenues and expenditures continue and if nothing is undertaken to improve the system's financial stability, the reserves are due to be depleted within four decades. The challenge ahead of the NII is therefore to find ways of improving financial stability while at the same time improving or at least not compromising the system's social stability. Part of such an improvement should therefore include a reaffirmation of the importance of the universality of social benefits, as conceived by the NII's founding fathers.

The President of the ISSA, Errol Frank Stoové, in his Opening Ceremony address stressed the importance of the conference as an empathetic platform which encourages social security organizations around the world to listen, think, discuss and thus benefit from each other's experiences. He emphasized that the conference provides a link between research and the practical implications of research for social security institutions. Research gives administrations greater control over the future, empowering them to be ready for future challenges, both anticipated and unforeseen. In the absence of necessary research, it is impossible to put in place appropriate provisions for dealing with these challenges.

Day one: Plenary session

The conference began in earnest with a plenary session, *A wider definition of sustainability: The long-term financing of adequate benefits*, which was chaired by the Secretary General of the ISSA, Hans-Horst Konkolewsky. The keynote speaker was Eldar Shafir, Professor of Psychology and Public Affairs, Princeton University, United States. Shafir presented his joint work with Harvard University economist Sendhil Mullainathan (Mullainathan and Shafir, 2013), comparing similar psychological processes underlying decision-making by top professionals who are confronted with continued time-stress (i.e. "time-poverty") and that of people suffering from a default on their mortgage debt, from severe income poverty, or even from plain hunger. Discussing field research conducted by them and others, it was argued that the common denominator of such life situations is the concept of scarcity. Scarcity is what dominates the interplay of rational decision-making of the economist's credo and the psychological evidence of people's "less-than-rational" behaviour. People facing inescapable situations of income- or food-scarcity, while being more focused on their economic decisions, nevertheless experience a "tunnelling-effect" which reduces the quality of their day-to-day functioning, narrowing their otherwise wide potential cognitive capability. Their research backed, for example, by a 1946 study on hunger, shows how scarcity captures the human mind, and how basic needs can narrow the brain power of

cognitive functioning and thus extoll a price – reduced rationality in decision-making. Scarcity, whether time, financial or other, impacts decision-making at all income levels.

A question arising from this argumentation that was posed by conference participants was to what extent a contribution-based, adequate universal social benefit could provide an efficient reduction of scarcity and mitigate the scarcity-tax on rational decision-making?

To follow, Isabel Ortiz, Director, Social Protection Department, International Labour Office, made a compelling case to demonstrate that that there is considerably more latitude to expand fiscal space to finance adequate benefits over the long term and for countries to bolster or launch their "social protection floors". A range of mechanisms either currently under-utilized or not utilized could be deployed. These include: re-allocation of existing public expenditure (e.g. subsidies); increasing tax revenues (i.e. property, inheritance and corporate taxes); increasing contributions; lobbying for increased aid and transfers (North–South and South–South); fighting illicit financial flows; tapping into fiscal and financial exchange reserves; restructuring debt; and adopting a more accommodative macroeconomic framework (e.g. tolerating some inflation or fiscal debt).[3]

Ortiz's argument represents an important political-philosophical intervention in that it emphasized that there is a need to foreground and affirm a feasibility rationale (in terms of financing social protection) that does not lie on the exclusive terrain of neoliberal/status quo rationality. It counters the view which reasons that social protection is not affordable and that cuts are inevitable during adjustment periods. This is important as it illuminates that "what is possible" is ultimately a social construct, and helps develop a discourse that liberates thinking on social protection from its existing constraints. As Ortiz pointed out, Ministries of Finance and Planning should have all possible fiscal scenarios and options and associated risks and trade-offs fully explored. Moreover, a set of alternative policy options for equitable socioeconomic development should be discussed in national social dialogue also.

Juan Lozano, Secretary General, Inter-American Conference on Social Security, touched upon the huge social challenges facing the contemporary world, ranging from rising inequality in incomes, limited access to digital technology and skills as well as to the risks of climate change, all of which contribute to significant waves of migration and the displacement of people. A further challenge is the sustainability problem caused by the combination of demographic change (population ageing) and insufficient taxes and contributions to cover the need for adequate pensions, thus exacerbating old-age poverty in the long run. Lozano suggests that these risks require a "game-changing" policy shift and that risks should be countered by

3. These are issues addressed in Ortiz, Cummins and Karunanethy (2015).

measures rooted in what he termed "pre-emptive economics". According to his calculations, public investment in changing the population's habits in favour of more health-conscious behaviour, such as the adoption of healthier diets, increased sporting activity, etc., can help reduce significantly avoidable costs of health systems, such as expenditures on treating ill-health triggered by obesity, diabetes, etc. He argues that such a strategy could have a two-pronged effect of creating savings for health and other social and economic costs and raising productivity gains, which could help finance the resources necessary for improved social protection. For example, by assessing the negative externality costs from the consumption of unhealthy foods, appropriate taxes can be levied to not only finance the treatment of such negative impacts but also create appropriate incentives to change behaviour.

Day one: Parallel sessions

The first day's parallel sessions addressed two related themes – the multidimensional adequacy of benefits and a multidimensional measure of the sustainability of social security systems. Typically, discussions regarding sustainability focus solely on a financial or actuarial measure. But sustainability should be considered on a wider basis. Sustainable social security systems require public and political support – and therefore adequate benefits – and a definition of sustainable needs also to consider environmental and demographic constraints. Climate change and natural resources scarcity are already increasing the frequency and severity of life-cycle risks that social security is designed to mitigate.

The first session dealt with issues of benefit and contribution adequacy. This session was chaired by Professor Avia Spivak from Ben-Gurion University of the Ngev, Israel. Simon Brimblecombe of the ISSA General Secretariat, project coordinator for Social Security Policy Analysis and Research, opened the discussion by defining several aspects to be considered in an analysis of benefit adequacy. The provision of benefits should meet the specific needs of the covered person and their family as well as the wider needs and objectives of society, thereby enhancing public confidence in social security and creating incentives for achieving other policy aims and providing positive economic feedback impacts. The ISSA Project on Adequacy uses a multi-parameter approach to reflect the reality that benefits should meet multiple objectives and that, for beneficiaries, there are several elements of benefits and services that have a value.

The initial model developed by the ISSA has defined the adequacy of retirement benefit using seven parameters and then tested the model in eight pilot countries selected from all regions. The seven parameters are: i) the past, current and future benefit level, ii) whether benefits support employment aims and in particular the appropriate age of exit from the labour market, iii) administrative adequacy

(including ease of access to benefits); iv) interaction with other pillars of retirement provision, v) the extent of intergenerational equity achieved and the sustainability of a given adequacy level, vi) security and stability of benefits delivered and vii) coverage of the retirement benefit system. For each of these parameters the model suggests a number of indicators to assess the score. The model can be used to assess current retirement systems (compared to the potential score of a desired position), and can also be used to assess the potential impacts of reform as highlighted by Jean-Charles Dehaye, Director Head of Mission for Director General, National Old-Age Insurance Fund for Employees, France.

Jean-Charles Dehaye, adopting the ISSA adequacy model, presented the parameters used for, and the weighting procedure of, the French old-age pension programme. Following the ISSA model, the parameters are presented as weighted spider graphs with a scoring system. An interesting feature of the French adequacy analysis is the multi-pillar approach – pension policy has five pillars. He also reported on his consultations with the Palestinian Authority, showing that the current situation produces a spider web that is very low compared to the strategic goal in the benefit level, coverage, income security and administrative adequacy, but somewhat better with regard to the intergenerational adequacy and the exit age. He also briefly compared the ISSA model's outcome for France with another adequacy model looking at retirement systems but focusing on supplementary provision, namely the Mercer Melbourne Global Pension Index.

A presentation on the adequacy of the Belgian general disability benefit was given by François Perl, Director, National Institute for Health and Disability Insurance, Belgium. Importantly for disability provisions, in addition to the standard parameters (the benefit level, sustainability and interaction with other benefits, the return to the labour market and the administrative adequacy) it was underlined that medical assessment was included as a necessary parameter. Staying with Belgium, Georges Carlens, General Administrator, National Employment Office, Belgium, presented a model on unemployment benefit adequacy which seeks to reflect the two main goals of unemployment insurance systems: income substitution and reintegration into employment. The presented model includes parameters such as coverage, the level of the benefit, the interaction parameter, the type of benefits, the period of entitlement and eligibility conditions.

Daniel Gottlieb, Head of Research and Planning, National Insurance Institute, Israel, argued that the principles of adequacy should be derived in each case from the fundamental goals of social insurance, which were much in line with the Beveridgean tradition. He then discussed the extent to which the Israeli system had achieved these goals over the last three decades and went on to analyse specific benefits in the light of these principles, such as income support in working age and in old age as well as the basic old-age pension (see also Gottlieb, 2015, in this issue).

Krzysztof Hagemejer, Expert, Social Policy Bureau, Chancellery of the President, Poland, expanded on the interdependence between adequacy and sustainability, relating them to the explicit social contract of a given country or group of countries. Similarly to the previous speakers, he posed a set of fundamental questions, which are typically addressed in a social contract. He then analysed the adequacy of old-age pension on this basis.

In the second parallel session, chaired by the NII's Shlomo Mor-Yosef, the presentations dealt with the issue of sustainability by taking into account a number of factors. Jésus Carlos Marruecos Huete, Head, Social Security Executive Recovery Unit of Ibiza, Tesorería General de la Seguridad Social, Spain, described the most relevant trends in public pensions, highlighting the prevalence of public pensions, the structural reforms carried out in Europe, as well as the expansion of coverage in Latin America and Asia. Also underlined was the adoption of the ILO Recommendation concerning national floors of social protection, 2012 (No. 202). He argued that social policy is and should remain a key competence of Government. With reference to the Spanish case study, the challenge of social security contributions avoidance was underlined. According to his estimates, Spain loses 3.36 per cent of GDP; way above the average for the countries of the Organisation for Economic Development and Co-operation (OECD). It was stated that although public pension solvency was thought not to be in jeopardy, reform was required: to reduce inequality within the system, adjust contribution rates, introduce sustainability factors and the indexation of pensions, and tackle free-riding and avoidance.

Professor Xizhe Peng, Fudan University, Shanghai, China, reported on the huge demographic changes that had characterized Chinese society and its economy for the last 45 years. Despite the important increase in the share of the working-age population (aged 15–59) – from about 53 per cent of the total population in the early 1970s to near 70 per cent in recent years – its share is forecast to decline rapidly in the next few decades. This is mainly due to the combined effect of a rapid increase in life expectancy and the one-child policy which has caused the share of children in the Chinese population to decline since the early 1970s.

In terms of international comparison, the Chinese working-age population will drop significantly more than that of the United States or India and it will get closer to the already low share found in countries such as Japan. This is a serious challenge to Chinese society, since the main support of the elderly is family based. Though currently there is an attempt to develop a social security system through continuous reform, it is still considered fragmented, with pension insurance concentrated mainly on coverage for the government and commercial sectors. Peng suggests several measures to improve China's sustainability of old-age pension insurance, including an increase in the relatively-low age of retirement (age 53), a move towards greater nationwide risk pooling (rather than at the current regional

level), the parallel objectives of increasing population coverage to thus enable a reduction in the contribution level, a relaxation of the policy for population control, steady support for social security provided through the government budget, encouragement of a multi-pillar pension system, and a nationwide economic policy aimed at enhancing the productivity of the labour force.

Refaela Cohen, Senior Director, Research and Planning Department, National Insurance Institute (NII), Israel, presented analysis of the sustainability of a social insurance scheme using the NII's model. The comprehensive menu of social benefits in Israel, combined with a vertically progressive contribution scheme, was presented. It was explained that the Government of Israel is the sole holder of all of the social security system's accumulated annual surpluses of revenues over payments. At present this surplus amounts to roughly USD 50 billion. In return, the NII is paid interest, which is presently set at 3.25 per cent. Since its inception, Israel's social security system has operated with an annual current surplus of revenues over payments, though actuarial calculations suggest a trend towards deficit that, if left unattended, will fully draw down the accumulated reserves by the 2040s. This is due to an expected increase in population ageing, despite a significantly lower decrease in the expected share of Israel's working-age population compared to other OECD countries.

This advantageous effect on the sustainability of the social insurance system is mainly due to the country's high fertility rate, particularly of its Jewish ultra-orthodox (*Haredi*) and, to a lesser extent, of its Arab population. However in order to support sustainability, the continued increase in fertility has to translate into an increase of the still-low labour force participation rate of *Haredi* men and of Arab women. These participation rates have indeed been improving rapidly over the last decade or so.[4] A further reason for the actuarial deficit is the NII's payment of expenditures, not directly related to social security, which amount to some 4 per cent of NII expenditures. An important measure, already decided upon, but to be implemented gradually only by 2017, is an increase in women's retirement age from age 62 to 64. These measures, if taken, imply improvement and stability in the NII's financial situation; of note, benefits in Israel are generally low when compared to OECD average benefit levels. This suggests that an improvement in adequacy will need to be matched by increased contributions, especially if the financial independence of Israel's social security system is to be improved.

The presentation by Ian Orton of the ISSA General Secretariat (co-authored with Simon Brimblecombe and based on work produced by the ISSA (ISSA, 2014)) emphasized the huge importance of climate change risk – a risk that is clearly not sufficiently recognized by national social security agencies. It was

4. See, for example, the National Insurance Institute's 2013 Annual Survey <www.btl.gov.il/English%20Homepage/Publications/AnnualSurvey/2013/Pages/default.aspx>.

argued that extreme events (climatic, metrological and hydrological) related to human caused (anthropogenic) climate change, will increase both in terms of severity and frequency. The impacts of these events include interruptions to business operations and sharp spikes in unemployment (e.g. 40,000 jobs lost by Hurricane Katrina), leading to a rapid deterioration in contribution payments and in contribution collection and compliance. Extreme events also engender an adverse impact on mortality and a widening of health inequalities while jeopardizing social cohesion and political stability; climate change (both short-term extreme events and longer-term changes such as prolonged droughts/desertification) will exacerbate the difficulties already posed by current international migration trends. A further complication is that social security will most likely have to operate in a more challenging macroeconomic context. On the basis of evidence gleaned from national responses to natural disasters, it was argued social security can respond in a proactive way and help adaption to the short- and long-term challenges posed by climate change.

Day two: Plenary session

The Research Conference's second day Plenary Session on the economic and social impacts of social security policy, chaired by the ISSA President, first raised two important aspects concerning social policy – the trade-off between the positive and negative macroeconomic aspects of unemployment benefits.

In terms of the positives, mentioned in the discussion were the socioeconomic effects on living standards derived from enabling unemployed workers to bridge the period of income loss, supporting a period of job search without the insured having to draw too heavily upon personal savings, and the smoothing of the negative economic cycle in recessions. In terms of the negatives, important mention was given to the disincentive effect on labour supply, which is stronger as benefit levels become more generous. The recent long recession and slowdown in many countries in the wake of the United States' subprime crisis of 2007 served Ekkehard Ernst, Chief, Job-friendly Macroeconomic Policies Unit, International Labour Office, as an empirical test for this comparison. As elaborated by Ernst (see also Ernst, 2015, in this issue), the overall socioeconomic impact of unemployment benefit systems was favourable to the economy, thus emphasizing the positive results to be expected from unemployment benefit schemes.

Pieter Vanhuysse, Deputy Director, Head of Research, European Centre for Social Welfare Policy and Research, Vienna, Austria, presented evidence co-edited with Achim Goerres (Vanhuysse and Goerres, 2012) on what they termed a bias in social policy favouring the elderly. In response to this bias, the authors propose a measure of "Intergenerational Justice" including parameters: ecological,

economic-fiscal, social and an indicator, the "Elderly-Bias-Social Spending indicator". This indicator aims to represent the ratio of social spending on the elderly divided by that spent on the working-age population and their children (EBiSS). While such calculations require certain approximations particularly in relation to the allocation of spending to different age groups, the results show a clear welfare state spending bias towards the elderly; a conclusion backed up by a number of other studies. The presentation raised interesting issues regarding assessing and measuring this impact in different countries and the measures required to address the impacts.

Zbigniew Derdziuk, President, Social Insurance Institution, Poland, gave a detailed overview of Poland's social security system, including explaining the significant changes that accompanied the implementation of the 1999 pension reform and, more recently, the adjustments made to the system.

Professor Ana Guillén, University of Oviedo, Spain, discussed co-authored work undertaken with Maria Petmesidou (Petmesidou and Guillén, 2014) concerning changes in social policies in Southern European countries in the wake of the 2008 crisis. The recent changes were undertaken against the background of previous reform packages wherein social democratic elements had been introduced in the mid-1970s to mid-1980s, following which there has been a significant expansion in social policy. Guillén showed that after an initial increase up to the 2008 crisis, real public social expenditure dropped in the Southern European countries. The sharpest drops occurred in Greece and Portugal. At least in part, the consequences of such drops were higher levels of poverty, poverty risk and unemployment.

Day two: Parallel sessions

The Research Conference's second day's parallel sessions focused on i) the question of how benefit design can strengthen economic incentives and ii) the impact of social security on social inclusion and macroeconomic effects.

The parallel session on benefit design addressed a number of practical considerations for social security policy-deciders and administrators. In his presentation, Oleksiy Sluchynsky, Senior Economist, World Bank, offered a comparative assessment of administrative expenditures of mandatory social security programmes using pension schemes as an example. The objective of his study was to take into account various factors, including staffing costs, the maturity and scale of the programme, the role of governance and investment in ICT, as possible elements to benchmark administrative performance of social security administrations (see also Sluchynsky, 2015, in this issue).

Jean-Claude Ménard, Chief Actuary, Office of the Chief Actuary, Canada, provided feedback on a current research project analysing pillar integration, basic protection, replacement rates and replacement rate sensitivity in four modern

multi-pillar pension systems. Initial findings were presented with regard to Canada concerning the balance between adequacy and affordability, mandatory and voluntary, public and private provision; the other countries in the study are Denmark, the Netherlands and Sweden.

Investigating system design features to support the realisation of universal social security coverage, Mridula Ghai, Regional Provident Fund Commissioner, Employees' Provident Fund Organization, India, presented a model based on emerging economy experiences and innovations. Specifically, the BRICS countries (Brazil, Russia, India, China and South Africa) offered lessons regarding policy challenges, risks and responses to guide the design of a bottom-up participatory model for the realisation of universal coverage (see also, Ghai, 2015, in this issue).

Offering a contrast in scale to the examples of the BRICS, Aisake Taito, Chief Executive Officer, Fiji National Provident Fund, presented an overview of the design of Fiji's social security system and its influence on economic incentives. Explaining that the Pacific island country was engaged in a process of reform, the intention of which is to attain the right balance between sustainability and incentives for members and pensioners, a series of lessons learnt concerning the timing, sequencing and monitoring of reform as well as the importance of political leadership was offered.

In the parallel session on the impact of social security on social inclusion and macroeconomic effects, Aaron Grech, London School of Economics and the Central Bank of Malta, discussed the problem of evaluating the impact of pension reform on elderly poverty using European data (Grech, 2013). After explaining the methodology, the results revealed a large variation between countries concerning pension adequacy in terms of replacement rates, with Italy, Austria and Hungary reaching relatively high replacement rates. Further results assessed pension adequacy in relation to the 60 per cent poverty (risk) threshold of median work income. In this evaluation the results for male low-income earners are quite favourable for Austria, Italy and Slovakia both for "actual" careers (based on labour force participation rates) and life expectancy at retirement age and for full careers, while the comparative rates are lower for the United Kingdom and Germany. However the comparable outcomes for women are significantly worse, thus causing considerably higher poverty incidence. This is due to a lower labour force participation, longer life expectancy and lower wages.

Roby Nathanson, Director General, Macro Centre for Political Economics, Israel, identified the low labour productivity in Israel compared to the G7 and the OECD countries as a major factor in high levels of poverty and inequality in Israel. Various strategies were cited that could improve the high income disparities in Israel through improved labour market productivity: a strengthening of competitiveness in traditional industries, an increase in the demand for labour, the promotion of a national government programme to improve vocational on-the-job

training, shifting some governmental investment in high-tech industries to traditional industries with growth potential, etc.

Simon Brimblecombe (co-authored with Shea McClanahan) of the ISSA General Secretariat presented a study on gender bias in retirement systems. While public pensions generally reduce poverty rates for people in retirement, women's pensions are typically lower than for their male equivalent, reflecting realities of the labour market and salary inequality which are often not corrected by the retirement system. In many cases, pension reforms had proven unfavourable for women; for example, a move from a system of defined benefit to one of defined contributions. Other influencing factors which could be disadvantageous for women were shorter contribution periods, lower wages, cutbacks in dependant benefits for women, etc., while tax relief structure usually favours higher earners. As part of the response, a case was made for the recognition of non-paid work, such as for childcare and care of elderly relatives, for the reform of benefit structures, eligibility conditions and minimum pensions, and for accompanying labour market measures, such as increasing participation rates for older women and improving the wages of female workers through anti-discrimination measures and their proper enforcement.

Drawing the parallel session to a close, by Raoul Arizaka Rabekoto, Managing Director, National Social Insurance Fund, Madagascar, drew attention to the challenges to sustainable social security extension in Madagascar arising from demographic factors, including a very high proportion of younger people in the population and low life expectancy, and economic factors such as the agrarian structure of the national economy. Social security provision in Madagascar was also challenged by a series of political crises, health crises and natural catastrophes, all of which acted to further exacerbate underlying economic hardship.

Conference take-home messages

The 2015 ISSA Research Conference was brought to a formal close by the NII hosts and ISSA leadership following an overview session that reflected on the conference presentations and discussions and which brought to the fore a number of key findings and implications for ISSA member organizations. From the concluding debate comprising panellist representing ISSA member organizations and academia, four final key messages were offered.

- The centrality of social security research for policy-making, policy delivery and the day-to-day administration of social security programmes.
- The necessity for research, as a set of tools, to monitor and evaluate the impact and value added for all stakeholders of social security administrative processes and practices.

• The identified positive impacts of adequate and sustainable social security systems for national social and economic development. Yet, such impacts need to be measureable over time, the design of programmes must take into account wider definitions of adequacy and sustainability, and sustainable social security systems also require well-governed management and administrations.

• Research necessarily enables appropriate forward planning, but it equally permits the necessary evaluation of current circumstances and impacts. It facilitates dialogue between social security policy and administration. This is pivotal in a context characterized by uncertainty, risk and crises, where there is a greater need to demonstrate administrative value added and for implementing efficient, effective and timely policy responses.

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ENSURING ADEQUATE AND SUSTAINABLE SOCIAL SECURITY

Benchmarking administrative expenditures of mandatory social security programmes

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Abstract This article offers a framework for the comparison and benchmarking of administrative expenditures of mandatory pension schemes as part of national social security provisions. It presents results of a quantitative analysis that builds on a framework developed around the extensive body of literature on both public and private pension programmes surveyed as part of this analysis. Our dataset includes over 100 observations and a broad set of explanatory variables. We developed and compared a number of standardized cost indices discussing their advantages and limitations. We also discuss major cost components and their shares in total programme costs. The regression analysis explains over 90 per cent of variation in administrative expenditures. It confirms some of the hypotheses expressed in the earlier studies and presents new evidence of driving factors for costs. We developed three different specifications for statistical analysis. The first set looks at the impact of design of a programme on total costs. The second group of specifications assesses differences in costs of managing pension liabilities between the public and private mandatory pension schemes. Finally, on the basis of the third model we generate benchmarks for staffing levels and for the total administrative expenditures, providing guidance for policy analysis and recommendations. Notably, the spread between low and high benchmark estimates for programmes of the same size and operating in the same economic environ-

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ment can be four-fold and is driven by parameters of design and operation (for example, asset management function, in-house collection, or operation of special supplementary schemes). Therefore, inferences about the level of administrative expenditures should always be done keeping in mind the institutional context for each programme.

Keywords administrative cost, social security administration, pension scheme, international

Introduction

There is growing pressure to improve the efficiency of public social security programmes and constrain their costs, especially in managing mandatory pension schemes. There also is significant interest in comparing the performance of such schemes when managed publicly or privately.

The first notable generation of comprehensive research inquiries into the subject of comparative studies of administrative expenditures and efficiency of mandatory pension programmes was produced in the early-to-mid 1990s. The focus was primarily on exploring administrative inefficiencies and on benchmarking operational performance by comparing expenditures of national public and private pension plans with centralized versus decentralized modes of organization. By the late 1990s, in the United States, discussions on the possible privatization of the "Social Security" programme were at their height, generating a significant body of literature on the organization and costs of various alternative provisions. Around the same time, the interest in comparing the operations of publicly- and privately-managed programmes intensified. This occurred as reforms of public pension schemes unfolded in a number of countries, shifting the mandate for retirement income provisions from the public to private sector. Systemic reforms resulted in significant changes in the machinery of administration with partial or full privatization. Other countries were closely watching and contemplating similar reforms. This prompted a second generation of studies on the costs of mandatory pension plans. However, the focus this time noticeably shifted toward privately-managed schemes and to the cost incidence with analysis of the effects of various charges levied on plan members. Finally, in response to inquiries into the efficiencies of unifying tax and social insurance contribution collection, another group of studies focused on assessing the advantages of such a consolidated administration of the collection. A key implication from that body of research is a need for a more detailed analysis of the impact of the organization of various systems on their administrative costs.

Costs may vary over time within the same programme or as the programme undergoes systemic changes. They also vary across countries often for the same programme types, even after adjusting for the size of the schemes and other important factors. High administrative expenditures may be a symptom of inefficiencies in some systems, but in other systems these high administrative expenditures may simply indicate public choice for systems of more diverse and high-quality services that come with higher costs. Factors of quality are very difficult to quantify. Those include, for example, better accessibility and greater variety of services, more competent staff and higher responsiveness of administration, greater individual choice and more transparent systems, and effective enforcement and reduced fraud. Better and more complex services require investments in systems and people.

There are also some fundamental institutional differences across countries that may create cost differentials for similar types of programmes. As James, Smalhout and Vittas (2001) noted with reference to the experiences of setting up individual account systems,

> [p]robably the least-cost alternatives and trade-offs are available for industrialized rather than for developing countries. Industrialized countries have access to existing financial institutions, lower trading costs, passive investment opportunities, and more effective governance. [. . .] In developing and transitional countries, particularly those with small contribution and assets bases, investment costs are likely to be higher and the opportunities for reducing fees lower.

Our analysis also shows that for less developed countries, a substantial institutional cost premium may be unavoidable. Hence, high costs may not represent a problem in itself, but rather point in the direction of further inquiries on a case-by-case basis. The same authors also indicate biases of simplified cost ratios, particularly evident in immature or small systems. They propose a measure of administrative cost per member over income per capita, although recognizing that it is only a crude adjustment for the higher input prices and the higher-quality services.

It is always important to understand the objectives of the studies of costs and the questions that they help to answer. While some studies help to assess the effectiveness of a particular programme, they may not be very helpful in addressing the issue of efficiency. For example, using simple cost indices may show that a programme spends as much on benefits as on administration, which may raise questions on the effectiveness of that particular programme; at the same time, it may operate efficiently from a technical perspective, that is, producing services or outputs with the most efficient use of available resources. Alternatively, some mature programmes with broad coverage and generous benefits may look

impressive in terms of the relative share of expenditures that go into administration; however, they may be overstaffed or overspending on other inputs.

Our goal in this article is to recommend a standardized measure of administrative expenditures, ensuring consistency in comparing mandatory social security programmes and pension schemes of different types. We are also interested in the composition of total expenditures and cost components associated with various functions as well as the magnitude of various factors as they enter the total cost function. Finally, the article develops standard benchmark schedules for administrative expenditures and staffing requirements from which policy recommendations can be drawn.

Scope and definition of administrative costs

When addressing the question of mandatory social security and public pension programmes' administrative expenditures, it is important to define what needs to be captured in that measure. In what follows, we discuss several important challenges and propose a set of guiding principles. In many cases the ultimate and accurate measures will be impossible to obtain and the best we can do is rely on approximations.

There are significant systemic, institutional and operational differences in how public pension programmes are designed and managed. Often the agency in charge of pensions operates multiple social security programmes. Sometimes the administration of one particular pension programme can be distributed across multiple agencies. We, therefore, identify three approaches to constructing the cost measures:

- *Programmatic.* With the programmatic approach, the focus is on the overall administration of one particular scheme. So, when administration functions are shared among multiple institutions, all such related expenses get captured, and when one agency operates multiple programmes, the costs of other programmes get excluded.
- *Institutional.* Under the institutional approach, the measure is constructed around one institution that manages one or multiple programmes (or parts of such programmes).
- *Functional.* The functional approach, in principle, allows for an across-the-border comparison of different institutional or operational elements but requires diving into the intricate details of functional organization of each programme.

There are several expense categories of administrative systems that should be considered. All administrations have to bear regular operational expenses in the form of labour cost, office maintenance, supplies, utilities, and so on. In addition, they may incur significant capital expenditures. They sometimes bear expenses that are not directly related to core benefit administration (for instance, the Social

Security Administration (SSA) in the United States provides certain tax data processing services to the Internal Revenue Service (IRS); similarly, some public pension agencies have corporate mandates imposed on them by the state to manage certain publicly-owned businesses or assets, such as state-owned recreation facilities). Some in-kind benefits, such as rehabilitation services, can arguably be treated as both benefits and costs. Other expenses are never incurred directly and come in the form of implicit subsidies (for example, use of public assets such as office premises or other infrastructure) or as opportunity costs (when office buildings form part of the pension assets under the real-estate investment schemes for pension reserves). There are also expenses that are not borne by the public administration, but incurred by participants (for example, in the form of bank charges for contribution remittances or benefit payments).

Whether it is a programmatic, institutional, or functional approach, all direct and indirect current operational expenses related to the programme administration should be included in constructing a consistent cost measure. Capital expenditures should ideally be averaged out (or amortized) over several years; alternatively, they could be completely excluded (which is the approach that we follow in our comparative analysis). We also recommend excluding all expenses for providing in-kind services (on both benefit and cost sides).

Finally, all informal costs – such as bank charges, reporting compliance and private facilitation costs, etc. – often remain unaccounted. Hence, they are excluded in most cases. However, one important policy observation needs to be made. Often, by minimizing public administration costs (that is, by not providing adequate services such as proper referral system or electronic data submission, etc.), the costs are simply pushed out to the domain of nontransparent compliance costs, perhaps producing a heavier burden for smaller businesses and self-employed workers than for medium-sized and large firms. This often is a deterrent to participation in the formal social security system.

Data and structure of costs

Availability and quality of data differs dramatically from country to country and from institution to institution. There are significant heterogeneities in how social security and pension agencies report their budgets and operational information. If anything, our survey suggests considerable scope for the standardization of accounting and reporting of costs across various social security institutions.

We collected data from over 100 public social security programmes around the world. Those programmes vary in size. The smallest in our sample is the Falkland Islands Pension Scheme with 600 contributing members. The largest scheme is the Old-Age, Survivors, and Disability Insurance (OASDI) programme in the United States that covers over 160 million active contributors and some 50 million

beneficiaries. The nature of the operation and institutional organization of the programmes in our sample also vary. We were able to obtain separate data on at least ten non-contributory pension schemes. At the other end of the spectrum, there are a significant number of social security institutions that offer a broad range of benefits, including maternity, child allowance, unemployment, sickness insurance, and others.[1]

Our first key observation is that administration expenditures are indeed not a negligible component of social security budgets. The incidence of costs will vary across countries. Some will be borne directly or indirectly by the members of the programme (active or inactive), while others will be addressed with the general budget. The cost of running a public pension programme can constitute a substantive share of the covered wage bill, with the median at 1 per cent for a sample of 70 country observations. At the high end of the spectrum in our sample, there are the National Social Security Fund (*Caisse nationale de sécurité sociale* – CNSS) of Burkina Faso, the National Social Security Fund of Kenya, the Government Institutions' Pension Fund of Namibia, the National Social Security and Insurance Trust of Sierra Leone, the Botswana Public Officers Pension Fund, the Social Security and National Insurance Trust of Ghana, the Swaziland National Provident Fund, and Solomon Islands' National Provident Fund – all with operational costs above 3 per cent of the covered wage bill. Ultimately, whether or not subsidized from public funds, most of the costs will be shared among economically active individuals.

Structural cost analysis

In what follows, we discuss key observations from the cost structures of various institutions.

For 71 observations in our sample, in which we separately provided information on "expenditures on capital investments and depreciation", we found that the median for such costs is only around 5 per cent of total administrative expenses. In some exceptional cases, however, capital expenditures are up to a third of the total operational budget (for example, in the case of Maldives, which was in the process

1. To make our data set consistent, we report data on labour resources and administrative costs related to the associated functions. Thus, where certain functions of an agency were excluded from the analysis, we had to prorate both staffing numbers and cost allocations associated with such functions (as we did, for example, with Medicare-related and reimbursable services provided by the United States SSA). Conversely, if we combined functions performed by various agencies under one observation pertaining to a particular programme, we combined both labour resources and total costs (like in the case of the Sri Lankan Employees' Provident Fund that uses collection and other services provided by the Department of Labour).

of establishing a new agency to run a new national contributory programme at the time of collecting this data).

For 74 observations, the median share of the "direct labour cost" in current expenditures is 57 per cent, although the variation is extremely broad from 6 to 90 per cent, in part due to reporting differences, with the lowest share of labour cost reported for the Swedish national defined contribution (DC) programme and the U.S. Thrift Savings Plan for public-sector employees (two programmes similar in nature of operation). We also note that for the 27 countries for which data on both direct labour costs and asset management expenses are available, the correlation between the sizes of those two cost components (as a share of total current expenditures) is negative and strong (-81 per cent), implying that as systems accumulate and actively begin to manage considerable financial assets, direct labour costs become insignificant in explaining total cost differentials.

For 39 programmes with available data on "pension asset management expenses", such expenses constitute 25 per cent, as a median, of the total current expenses. (Only a third of the programmes in this subset were DC schemes.) We find no direct association between the volume of assets and the *share* of reported asset management expenses in total current expenditures. At the same time, larger pools of assets are clearly less expensive to manage on per unit basis, while for the smaller portfolios there is a significant dispersion in asset management costs.

With 31 available observations on "office rent expenditures", the median reported amount constitutes 1.3 per cent of the total current expenses. In the Netherlands, Northern Ireland, Kosovo and the Maldives, however, where accounting recognizes these costs more explicitly, office rent expenditures reach a 10 per cent share, which perhaps is closer to the actual situation with such costs borne by the pension agencies.

The median for "benefit delivery costs" for 30 countries for which such data is available stands at around 5 per cent of total current administrative expenditures of the agency. While bank charges seem to be part of those costs, more analysis is required on the classification of expenditures in that category on a case-by-case basis. In Romania, for example, where such costs are reported at 54 per cent of the total administrative expenditures, the benefit delivery services have been outsourced. Another interesting observation is that the next three most expensive delivery services are in neighbouring Georgia, Azerbaijan, and Armenia (in the range of 40 to 50 per cent of total administrative expenses). At the same time, in all four countries, those costs as a share of the total benefit expenditures are still relatively small (between 1 and 2 per cent).

Finally, for five countries where we have information on the "delivery of individual account statements", the associated costs are small and range from less than 1 to 5 per cent of the total current administrative expenditures.

Functional cost analysis: Contribution collection and benefit payment

We also investigated resource allocation between the key administrative functions of contribution collection and benefit payment on a basis of a small administrative survey. For the nine agencies that operate in-house contribution collection and for which we received such survey data, we found that benefit administration is much more resource-intensive than the process of contribution collection on a per head basis. The beneficiary payment side may require between three and ten times more staff per member serviced compared to the contribution collection side. This finding has important implications for understanding member accounting in the cost analyses. Specifically, for the same membership size, the programmes that are responsible only for benefit payments will always look more expensive on a per-member basis compared to the programmes that collect contributions and pay benefits.

It is important to recognize here that different collection and record-keeping models may not necessarily produce differences in administrative expenditures but rather differences in the distribution of resources in the cycle of benefit administration. Some countries still have quite weak collection and record-keeping systems that do not even provide for centralized or electronic facilities, which shifts the burden of record keeping onto employers who have to support employees' claims of a right to a pension at the time of retirement with valid paper records of earnings and contributions. This implies pushing costs to the end of the administrative cycle of the programme; that is, putting fewer resources in the collection effort and more resources in claims verification and processing. So, structure of cost could be revealing about the maturity of administrative systems. Arguably, less administratively advanced contributory schemes that rely on paper-based or decentralized administration of records will have more resources allocated to benefits processing, while more advanced systems spend more effort on establishing and operating strong and robust electronic record-keeping of individual contributions. As systems mature administratively, they will be strengthening the collection side. The trend is further reinforced when new DC schemes, which have significant upfront data quality requirements, are introduced.

Cost normalization

Having all current administrative costs aggregated and converted to a common currency does not make them directly comparable given significant underlying heterogeneities in programme design, size, and institutional and operational set-up. Some normalization is required. For the purposes of reporting operational efficiency, we favour the measure suggested by James and Palacios (1995), which is

income-adjusted annual current cost per member. At the same time, justice needs to be done to other measures, and we now discuss the advantages and limitations of various alternative indices broadly used in the literature. As important caveats, we need first to consider several common biases:

• *Maturity bias.* This is evident when newer earnings-related schemes with very few beneficiaries and payouts are more expensive as compared to older and stabilized schemes.

• *Financing bias.* This implies that non-contributory schemes or contributory schemes with significant budget subsidies cannot be compared with financially-balanced contributory schemes, if contribution revenues are used as the denominator. (To address this, the sum of contributions and benefits can be used instead.)

• *Generosity bias.* This bias reveals itself when schemes of the same organization and coverage reach do not look the same when differences in the rules of accruals (or in contribution rates) are significant. We found that the share of programme revenues that finance administrative costs generally increases as the contributory mandate shrinks; however, the variation remains quite significant. (To remedy this problem, some use GDP as the denominator.)

• *Coverage bias.* This bias will disqualify GDP as a useful denominator if various sector-specific schemes or schemes with very narrow coverage (by design or implementation outcomes) need to be compared.

• *Technology bias*. Several studies point to the fact that more advanced technologies and better infrastructure are available in more developed countries, hence availing more cost-efficient solutions. This information is not easy to reflect in any of the cost indices.

• *Operational bias.* Biases of all sorts exist when resources are shared with other programmes or functions to sustain operational synergies (for example, in contribution collection or benefit administration).[2]

• *Size and membership biases.* These biases are many and diverse. First, fixed costs imply that smaller schemes will be costlier to manage. Second, we point above to the implications of the composition of the membership bases (beneficiaries versus contributors) for per-member cost accounting. Third, we obtained empirical evidence that the number of inactive members may pose important implications for any measure used. Fourth, some programmes provide service to special groups of beneficiaries, such as to widows and disabled persons, where additional administrative resources presumably would be required to assess eligibility. More generally, some programmes require complex categorical or resource eligibility checks for potential beneficiaries.

2. For example, it is common for the civil service pension schemes to rely on the personnel and payroll units of various government branches and agencies to conduct public information and contribution collection.

The choice of the denominator for comparable cost measures is important. It has to relate to something that the social security system produces, such as the delivery of a general public good, administration of contributions and benefits, management of pension liabilities, or servicing various members and beneficiaries.

Some studies use GDP as a denominator to normalize costs, which for the same coverage and programme type is sufficient. The problem, however, is that coverage is not the same across countries or even across schemes within the same country. So, the coverage bias is a major deficiency of this index.

When the focus is on financial flows, conventional indices are composed on the basis of contributions collected or benefits paid. However, these measures have the greatest number of biases associated with them, which we report in Table 1. At the same time, just as with other indices, comparison across programmes of similar size and design can be fair.

Using the number of programme members as a means of normalization of costs seems obvious. Unfortunately, the methods are not that straightforward and deserve a detailed discussion. Our approach to membership accounting is based on the principle of liability management. In broad terms, the business of pension administration is to accumulate, manage, and discharge the member pension liabilities. Hence, all those to whom such liabilities relate should be generally considered members of the programme. As far as contributors are concerned, focus should be on "active members". Not all workers regularly contribute, and hence, definitions of "active members" vary from programme to programme. In many cases, more than half of all accounts remain passive. The reasons for such differences are few. In less operationally efficient systems, in which identification means are weak, some workers end up having multiple accounts when moving from one employer to another. Other reasons include inactivity of accounts due to prolonged periods of unemployment, the coverage of temporary migrants, and the choices of members of specialized schemes (for example, for civil servants) who may have left their employer and opted for deferred retirement.

On the benefit payment side, we account for all members in two different ways. We combine the respective total beneficiaries for maternity, children, and family allowances with the numbers of pension recipients, which constitutes our totals for the beneficiary numbers in all our indices and regressions. We also account for the provision of other benefits, such as sickness, unemployment, health insurance, and personal loans, which are often managed by the same social security agency. However, given the complexity of measurement and interpretation of these types of benefits, we use a categorical variable and activate it each time when at least one of these programmes is available.

These factors should be carefully considered in the choice of the denominator in universal indices. Table 1 summarizes various options, including associated biases.

Table 1. *Choice of denominator in cost indices and associated biases*

Cost Index Denominator	Maturity Bias	Financing Bias	Generosity Bias	Coverage Bias	Technology Bias	Operational Bias	Size/membership Bias
1. Contributions		+	+		+	+	+
2. Benefits	+		+		+	+	+
3. Contributions + Benefits			+		+	+	+
4. GDP				+	+	+	+
5. Covered wages		+			+	+	+
6. Contributors		(+)			+	+	+
7. Beneficiaries	+				+	+	+
8. All members					+	+	+
9. All members (income adjusted)					(+)	+	+

Source: Author's design.

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Let us illustrate some of these biases at work. There is a maturity bias associated with (2): younger earnings-related schemes that cannot be compared to some older and financially-stabilized schemes. Financing bias is present in (1): non-contributory schemes or contributory schemes with significant budget subsidies that cannot be put on the same line of comparison as fiscally-balanced contributory schemes. To address these problems, often, we find that a composite measure (3) is used. However, there is another generic problem – generosity bias – as schemes with the same organization, coverage and operational costs will not look the same when differences in the contribution and/or benefit rates are significant (for that reason programmes in Poland and St. Kitts and Nevis, while very similar in relative coverage and institutional organization, cannot be directly compared). To remedy this problem, some would use the administrative costs per GDP ratio (4). This measure, however, has its own problem: a coverage bias. Consider, for example, the provident fund for the formal sector employees in India (Employees' Provident Fund Organization – EPFO), civil service pension plan in the United States (Thrift Savings Plan – TSP), and the national pension programme in Estonia (managed by Social Insurance Board – SIB). In these cases, the differences in total cost per GDP measure for SIB and TSP are dramatic (almost 80 times), reflecting differences in the relative size of those programmes in the economy (and perhaps additional institutional subsidies that the TSP receives). However, income adjusted per member costs are almost the same for SIB and TSP. At the same time, while the cost per GDP is three times smaller in EPFO than in SIB (with labour coverage of that programme 10 times smaller in India), the income adjusted per member cost of EPFO is seven times larger, indicating potential inefficiencies.

In summary, all these measures are quite informative, but should be used only with subsets of comparable programmes. We also note that there may be a progression in the usefulness and applicability of various indices. Indices in (1), (2) and (3) may be more relevant when a system is stable and mature. However, when administrative costs devour most revenues or investment profits, such indices will not reveal much about the health of the programme. Rather, indices in (4), (8) or (9) would be more revealing.

Data analysis and cost benchmarking

As part of our regression analysis, we developed three alternative quantitative models. We first investigate the effects of programme design on administrative expenditures (for example, private versus public management). We then study factors explaining the differences in administrative expenditures in managing pension liabilities. Finally, we proceed with benchmarking analysis for individual programmes.

We account for programme size by using the information on the total number of members. However, we track separately the active contributing or effectively insured members (where the pension agency keeps corresponding records of such members in-house) and the beneficiaries (including recipients of old-age, disability, survivors, work injury, and other pensions as well as cash benefits like maternity, family, and child allowances). We find significant differences in how total counts in these two groups affect total costs, which is in line with findings of our functional cost analysis above.

To control for heteroscedasticity,[3] all our quantitative variables are in natural logs. Corresponding coefficients, therefore, indicate percentage change in the endogenous variable as a result of the 100 per cent increase in the explanatory variables.

Administrative expenditures and programme design

The first data set is the most comprehensive and includes all observations of our sample, including 116 publicly-managed programmes and 12 additional observations of the combined administrative charges of privately-managed pension programmes.[4]

The cost function is constructed as follows:

$$\ln EXP = a_0 + a_1 \ln BEN + a_2 \ln INS + a_3 DCSCHEME + a_4 PRIVATEMGT + a_5 COLLECTION + a_6 SHUL + a_7 BP + a_8 \ln GDPpc + a_9 OUTLIERS + e,$$

where EXP is the total operating expenses;[5] BEN is the total number of beneficiaries serviced by the programme or agency;[6] and INS is the total number of active contributors (or insured). The five categorical variables are correspondingly for: DC scheme; DC scheme managed by private agency(ies); schemes where contribution collection is operated largely in-house; schemes with additional benefits (sickness, health insurance, unemployment insurance, or loans to members); and basic pension schemes. GDPpc is the national income per capita to account for differences in technology and quality of institutions.

3. When the variance of the error terms differ across observations.
4. Sources include Tapia and Yermo (2008). See also FIAP statistics <http://www.fiap.cl>.
5. This definition treats expenditures of public programmes and total charges imposed under mandatory private schemes equally. It also includes all costs associated with asset management (in-house or outsourced).
6. This generally includes old-age pensions, disability pensions, survivor's pensions, work-injury pensions, other pension benefits, maternity (parental) allowances, family allowances, child allowances, and other assistance and compensations.

Table 2. *Administrative expenditures and programme design*

Independent Variables	Ln Total Operating Expenses	
	(a)	(b)
Ln BEN	0.45 (11.97)	0.60 (17.15)
Ln INS	0.15 (6.07)	0.06 (2.59)
DCSCHEME	–	0.44 (1.87)
PRIVATEMGT	–	3.33 (8.49)
COLLECTION	–	0.05 (0.21)
SHUL	–	0.22 (1.16)
BP	–	–1.44 (–2.46)
Ln GDPpc	0.65 (8.08)	0.59 (8.86)
OUTLIERS	1.47 (3.88)	1.84 (6.40)
CONSTANT	4.29 (5.35)	3.69 (4.96)
Observations	128	128
Adjusted R2	0.72	0.84

Note: t-statistic in parentheses.

Finally, we define a group of programmes that are outliers in terms of excessive costs per member adjusted for income differences[7]; in all our regressions this variable was highly significant. Table 2 contains the results.

Our first specification is simply to account for programme size and income differences, while the second specification introduces design elements and generates considerable additional explanatory power. These are the key observations:

• In line with other studies, we identify economies of scale as the coefficients for both the beneficiaries and insured are less than one. At the same time, confirming the observations in the section 0, there are significant differences in the effects pro-

7. Notably, from 21 institutions in sub-Saharan Africa in our sample, 14 agencies are in this "outlier" category.

duced by beneficiaries versus contributors. This is consistent across all our specifications and subsets of data. There are significant differences in variable costs between two different lines of social security operations. We discuss this finding below.

• The results show the robust and significant effect of the private management of pension plans. However, as we move to our long-term specifications, we find that the effect is not robust and may, in part, reflect differences in the maturity and coverage of the schemes in the shorter term.

• The evidence of cost differentials between the defined benefit (DB) and DC schemes is weak. In fact, substituting this variable with the categorical variable for fund management produces somewhat stronger results. This indicates that the mere fact of managing financial assets (in either DC or DB schemes) is associated with some additional costs, thereby reflecting a need for advanced skills and systems.

• We expected that bringing the collection function in-house would increase costs. However, the results do not show robust evidence for such an increase. One possible explanation is that the modes of organizing the collection function vary significantly (see Anusic, 2005), so capturing such a variation under one categorical variable constitutes a measurement challenge. We also note that as far as variable costs are concerned, the function of managing active contributors is not that impactful. Perhaps the collection function, however loosely defined, is a relatively small add-on in terms of variable costs. The conclusion is that the argument for consolidation of the collection function cannot be supported on the basis of cost reduction alone, but rather on the basis of other systemic improvements (for example, reduced administrative burden, improved compliance, and overall improvements in economic efficiency due to reduced informality). This finding does not extend to start-up or other fixed costs. Where significant investments are required to establish or modernize a collection function, both tax and social security contributions systems could benefit from a well-coordinated effort.

• Administrative costs increase less than proportionately with increases in income per capita. One possible explanation suggested by earlier studies is that more developed countries can manage pension schemes more efficiently, taking advantage of better technologies, infrastructure, and institutions (see Mitchell et al., 1994; James and Palacios, 1995).

• Basic pension schemes that do not require a history of contributions to establish eligibility are less expensive to manage. At the same time, we did not find robust evidence that schemes that serve the public sector only or means-tested pension programmes are systematically less expensive on average. This can be in line with our earlier observation of the disproportional importance of the benefit-management function relative to contribution management. As long as the agency

undertakes benefit calculations and payments, the costs of record keeping do not differ much across different programme types.

Administrative expenditures and pension liabilities

We now construct a specification that would reveal the long-term effects of various design factors on costs. All retirement schemes, whether funded or not, are in the business of liability management. We use the estimated Implicit Pension Debt (IPD) of selected unfunded or partially funded mandatory DB schemes and reported assets of DC schemes (including provident funds) as a measure of pension liabilities. Out of 52 observations for which we had information on either total pension assets or IPD, 30 schemes are DC type, including 12 schemes that are privately managed. To control for maturity and generosity biases, we introduce a measure of the average member account value.[8]

The cost function is constructed as follows:

$$\begin{aligned}\ln \mathrm{EXP} = {} & a_0 + a_1 \ln \mathrm{LIABILITY} + a_2\ \mathrm{DCSCHEME} + a_3\ \mathrm{PRIVATEMGT} \\ & + a_4\ \mathrm{COLLECTION} + a_5 \ln \mathrm{GDPpc} + a_6 \ln \mathrm{ACCOUNT} \\ & + a_7\ \mathrm{OUTLIERS} + a_8\ \mathrm{GOV} + a_9\ \mathrm{SHUL} + e\end{aligned}$$

where EXP is the total operating expenses defined as in the previous equation; LIABILITY equals the total reported assets of the DC schemes or an estimated Implicit Pension Debt (IPD) for the DB schemes;[9] the categorical variables are the same as in the previous equation; ACCOUNT is the ratio of total DC assets or DB IPD over total members (to approximate maturity); GOV is the government effectiveness index.[10]

We use the same observations as in the previous regression; however, the sample is smaller due to the limited data on the implicit pension debt of public DB programmes. Table 3 presents the results.

At first look, our baseline specification reveals costs differences associated with our core set of design elements. However, as we introduce the adjustment for maturity, the marginal effects on costs of the scheme design become smaller and less significant. Some more specific observations are as follows:

8. We define members as all contributors and beneficiaries for the DB schemes and as contributors only for most DC schemes in our sample (recognizing that retiring members in most cases liquidate their balances at the point of separation).

9. Source of data is Holzmann, Palacios and Zviniene (2004).

10. Government effectiveness captures perceptions of the quality of public services, public administration, public infrastructure, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies (World Bank, 2012).

Table 3. *Factors affecting the cost of managing pension liabilities*

Independent Variables	Ln Total Operating Expenses		
	(a)	(b)	(c)
Ln LIABILITY	0.84 (16.97)	0.90 (20.08)	0.90 (21.09)
DCSCHEME	1.19 (3.46)	0.40 (1.30)	0.39 (1.40)
PRIVATEMGT	0.98 (2.83)	0.50 (1.67)	0.51 (1.82)
COLLECTION	0.55 (2.09)	0.98 (4.27)	0.87 (3.91)
Ln GDPpc	–	0.63 (4.39)	1.11 (5.57)
Ln ACCOUNT	–	–0.75 (–5.22)	–0.80 (–6.09)
OUTLIERS	–	2.01 (4.75)	2.71 (6.47)
GOV	–	–	–0.72 (–3.22)
SHUL	–	–	0.51 (2.30)
CONSTANT	–3.07 (–2.34)	–3.06 (–2.83)	–6.63 (–4.20)
Observations	52	52	51
Adjusted R2	0.88	0.93	0.94

Note: t-statistic in parentheses.

• The value of the coefficient by pension liabilities (<1) indicates economies of scale in the management of pension liabilities. The larger, older, and more generous schemes tend to be less expensive to manage per unit of liability. However, effects of these three factors are not distinguishable here.

• The DC schemes, private-sector schemes (all DC in our sample), and schemes that operate a fund management function (not shown among these results) are all associated with a cost increment. However, the results are not robust and their significance depends on the choice of specification. As the maturity indicator is added, the scheme design becomes a less significant explanation of the cost differentials. This may suggest that in the long run, design largely does not matter and the costs should not be the key driving factor in policy choices over a particular design type.

• The sign of the coefficient of the average account size is as expected and suggests that unit costs decline as schemes mature. In the long run, this factor may compensate for the possibly higher overall management costs of the DC schemes, if the same account over time can generate greater value under the DC arrangements compared to implicit wealth generated under a DB scheme. So, the policy focus should be on the wealth-generating patterns of different types of schemes and not just on cost ratios.

• This specification indicates that in-house collection of contributions is associated with higher administrative expenditures.

• We find again that the value of the coefficient for national income per capita is positive but less than one, indicating that more developed countries may have better institutions and access to better technologies, and so can manage pension liabilities more efficiently. To separate effects of technologies from institutions, we experimented with several governance indices and found an index that captures government effectiveness produces quite robust effects (specification [c] in Table 3).[11] Higher levels in that index are associated with lower administrative costs. Notably, as this index captures most institutional factors, the response to changes in the levels of national income (now proxy for available technologies) becomes close to one. These results seem to suggest that technologies as they spread become less important in explaining cost differences, and what ultimately matters is the quality of governance.

• We also note that managing special supplementary programmes and benefits produces increments in operating costs.

Administrative expenditures and institutional organization

We now proceed with the third and main model of our analysis, which we also use for performance benchmarking. The sample of programmes used in the regression contains only publicly-operated programmes and only those programmes for which we have information on staffing levels.

We adopted a two-step approach (I and II). In the first step, we assess and benchmark "technical efficiency" using the data on staffing levels. We then obtain residuals from this step as an indication for over- or under-staffing and use them in the regression of the second step in which we look at the "cost efficiency" of the same programmes. In the final results, we can then distinguish sources of deviations from the benchmarks (Table 4).

11. The governance indices were not found to be significant in other regressions.

Table 4. *Staffing requirements for pension administration*

Independent Variables	Ln Total Number of Staff		
	(a)	(b)	(c)
Ln BEN	0.66 (20.57)	0.72 (25.32)	–
(Ln BEN)2	–	–	0.03 (27.58)
Ln GDPpc	–	–0.11 (–1.98)	–0.13 (–2.57)
COLLECTION	–	0.70 (3.52)	0.67 (3.64)
SHUL	–	0.52 (3.26)	0.52 (3.52)
CONSTANT	–1.31 (–3.26)	–1.76 (–3.00)	2.41 (4.85)
Observations	99	99	99
Adjusted R2	0.81	0.88	0.90

Note: t-statistic in parentheses.

The step I regression equation is constructed as follows:

$$\ln \text{STAFF} = a_0 + a_1 \ln \text{BEN}\left[+ a_2 (\ln \text{BEN})^2\right] + a_3 \ln \text{GDPpc} + a_4 \text{COLLECTION} + a_5 \text{SHUL} + e,$$

where the new variable is STAFF as the total number of staff in the agency.

Remarkably, the number of beneficiaries (recipients of retirement benefits) alone explains over 80 per cent of the variation in the staffing levels. The level of the coefficient indicates economies of scale. We experimented with several alternative specifications and found that the number of the insured or contributors for whom records are kept in-house produced only a small additional power, and the significance of its coefficient drops to almost zero when we add various categorical variables. This may be due to the fact that the agencies do not really provide direct service to contributors and largely interact with their employers, so association with the contributor numbers is loose. Mere record keeping of the contributors does not seem to significantly affect staffing requirements, but contribution collection and special additional services does, implying the importance of fixed costs over variable costs for that line of business. We also found that design of the scheme (DC versus DB) or sectoral affiliation (public only versus private sector) did not produce any systematic differences in staffing requirements.

In most regressions, we obtained slightly better fitting results when using a squared function for beneficiaries. It may reflect the fact that the variable costs on top of significant fixed costs are relatively indistinguishable for smaller plans, so the quadratic function captures that aspect better. In our benchmarking we used quadratic functions in both staffing requirements and administrative costs regressions.[12]

An interesting observation can be made regarding the negative sign of the income per capita coefficient in the staffing regression. It indicates that as economies develop and new technologies become available, they tend to substitute capital for labour.

We obtained residuals from (c) and used them as STAFF_RES in the Step II regression:

$$\begin{aligned}\ln \text{EXP\_NAMC} = {} & a_0 + a_1 (\ln \text{BEN})^2 + a_2 (\ln \text{INS})^2 + a_3 \ln \text{GDPpc} \\ & + a_4 \text{ STAFF\_RES} + a_5 \text{ COLLECTION} + a_6 \text{ SHUL} \\ & + a_7 \text{ FUNDSMNGMT} + a_8 \text{ OUTLIERS} + e.\end{aligned}$$

The principal difference in this regression is that here we use the programme's total operating expenses net of explicit direct costs associated with asset management, often external to the administration (EXP_NAMC). Our reasoning was that practices of managing pension assets vary substantially and so do the associated costs and norms of reporting those costs. By taking out those costs, we focused on benchmarking only the core operation mechanisms. We do admit, however, that total and clear segregation of those costs was not possible in all cases.[13] To capture various related costs, we added a categorical variable FUNDMGT associated with the management of financial assets in either DC or DB schemes (Table 5).

One of the most important and already familiar observations is a striking difference in the coefficients by beneficiaries versus insured (specification [a]), which consistently reflects across all our models and specifications (including linear and quadratic). This indicates that the variable costs are much more important in the management of beneficiaries relative to the management of contributor (i.e. active member) accounts. In other words, there are significant economies of scale in managing active member accounts. Furthermore, variable costs become insignificant when the categorical variable of in-house collection is added. These findings have interesting implications for the policy of collection administration. Specifically, as significant capital investments have been made in the collection function, transferring that function to an external agency, such as tax administration, may

12. We also observed that the coefficients of linear terms become insignificant in the quadratic specifications.

13. In most such cases, investment management remains largely in-house and is often restricted to passive, limited, or illiquid portfolios, including public debt and real estate.

Table 5. *Key factors affecting costs of public pension programs*

Independent Variables	Ln Total Operating Expenses Net of Asset Management Costs	
	(a)	(b)
(Ln BEN)2	0.03 (20.52)	0.03 (27.01)
(Ln INS)2	0.003 (2.70)	–
Ln GDPpc	0.46 (9.18)	0.49 (10.15)
STAFF_RES	0.69 (6.43)	0.72 (8.08)
COLLECTION	–	0.42 (2.54)
SHUL	–	0.45 (3.52)
FUNDSMNGMT	–	0.50 (3.21)
OUTLIERS	1.47 (6.08)	1.53 (7.54)
CONSTANT	8.43 (19.39)	7.15 (15.53)
Observations	99	99
Adjusted R2	0.91	0.94

Note: t-statistic in parentheses.

not be a significant cost saver. Hence, if the capacity of an external collection agency is weak, the advantage of such outsourcing may be questionable. At the same time, significant up-front cost-saving advantages could be seized if new schemes can rely on the existing collection infrastructure.

On the beneficiary side, given significant variable costs, there may be considerable economies of scope, which may argue in favour of consolidating various benefit programmes under a unified administration (for example, universal basic pensions and earnings-related pensions or retirement benefits and various short-term or other special benefits, especially where these mostly cover the same groups of beneficiaries).

The significance of the coefficients by GDPpc and by the residual from the staffing regression again suggests that more developed countries can operate their schemes more efficiently and that a significant part of variation in costs can be explained by the deviation of staffing levels from projected benchmarks.

Additional services to active members (benefits of sickness, health, unemployment, or individual loans) increase the total costs. The significance of the coefficient by funds management may capture two aspects: a) the additional costs of managing pension assets that cannot be distinguished from the total costs are important, and b) even if costed out separately, such functions may be associated with a cost premium, for example, for higher skilled staff.

Implications for choice of cost indices

In our original full study (see Sluchynsky, 2015), we produced benchmarking of operational performance for the programmes of our sample, providing actual and fitted estimates for both staffing and total administrative expenditures. We then constructed benchmark performance ratios and performed analysis of correlation of those indices with a set of common cost ratios to offer guidance on the ultimate choice of a simple index that makes cost comparisons meaningful. Table 6 provides estimates of correlation between our expenditure benchmark ratios and a set of conventional cost indices that we discussed the section on cost normalization.

The results broadly reflect our earlier discussion of biases associated with various indices. Expenditure over GDP is not a good predictor of programme health. Using programme revenues or benefit expenditures does not produce sufficient explanatory power either. Using the combined total number of insured and beneficiaries and adjusting for differences in incomes provides better results among the commonly used indices. Apparently, even better results can be achieved by using just the number of beneficiaries in the denominator. This should not be surprising as our analysis shows disproportionate importance of the numbers of beneficiaries compared to the insured in explaining the cost differences.

Analysis of economies of scale

We used our regression results and fitted values to develop a standard schedule of economies of scale. Figure 1 depicts such a schedule as a proportion of a midsize plan with 500,000 beneficiaries.

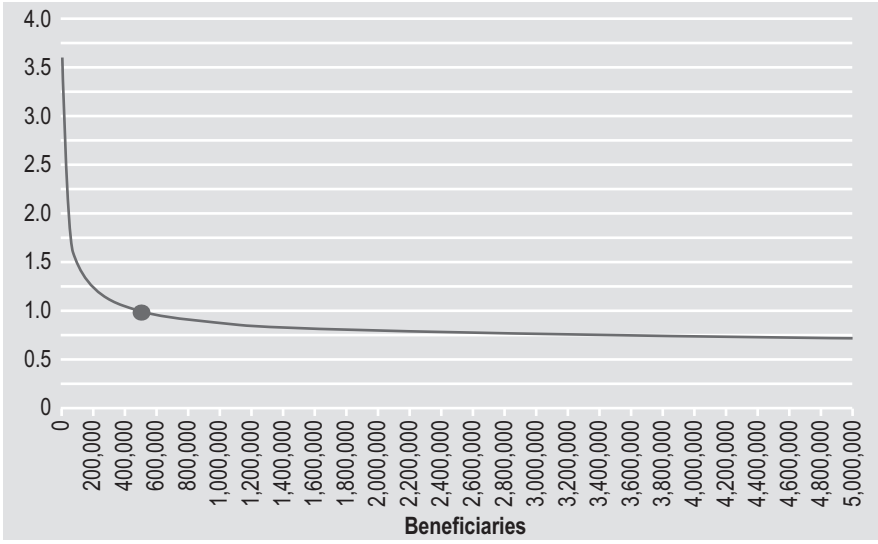
For plans with 100,000 beneficiaries, the premium for their smaller size is 50 per cent of the costs of similar plans with 500,000 beneficiaries. In turn,

Table 6. *Choice of denominator for cost index and correlation with cost benchmark*

GDP	Contribution Revenues	Benefit Expenditure	Insured + Beneficiaries (GDPpc adjusted)	Beneficiaries (GDPpc adjusted)
11%	43%	56%	69%	80%

Source: Author's calculations.

Figure 1. *Economies of scale in administrative expenditures*



Note: Per-beneficiary costs relative to per-beneficiary costs of a plan with 500,000 beneficiaries.

Source: Author's calculations.

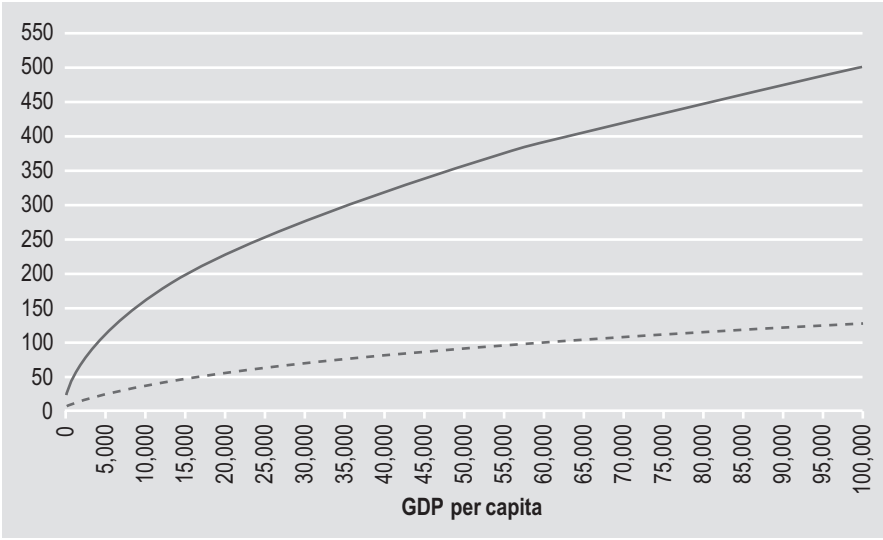
larger-sized plans could be a further 25 per cent less expensive (per beneficiary) to manage. One particular application of this schedule could be the planning of consolidation programmes.

We also developed low and high estimates of the per-beneficiary costs. The high estimate captures the extra operational expenditures associated with running in-house contribution collection, fund management and special supplementary schemes. The results indicate that with differences in functional organization and services, the spread between the high and low estimates can be almost fourfold. With such a broad benchmark, we caution against providing advice on the appropriate level of expenditures for a particular programme without detailed inquiry into its operational organization.

Figure 2 depicts low and high scenarios for per-beneficiary costs of a programme with 500,000 beneficiaries for different levels of GDP per capita. As our regression coefficients indicate, costs increase less then proportionally with increases in income levels.

To illustrate applicability of these schedules, let us assess the benchmark spread of expenditures for a plan with 100,000 members in an economy of USD 15,000 GDP per capita. First, we use from Figure 2 the spread for the 500,000 plan, which is USD 50-200. Then from Figure 1, we find that the size premium for a 100,000 plan is approximately 50 per cent. This means that the benchmark spread we are looking for is USD 75-300.

Figure 2. *Per-beneficiary cost spreads for a midsize operation (nominal USD)*



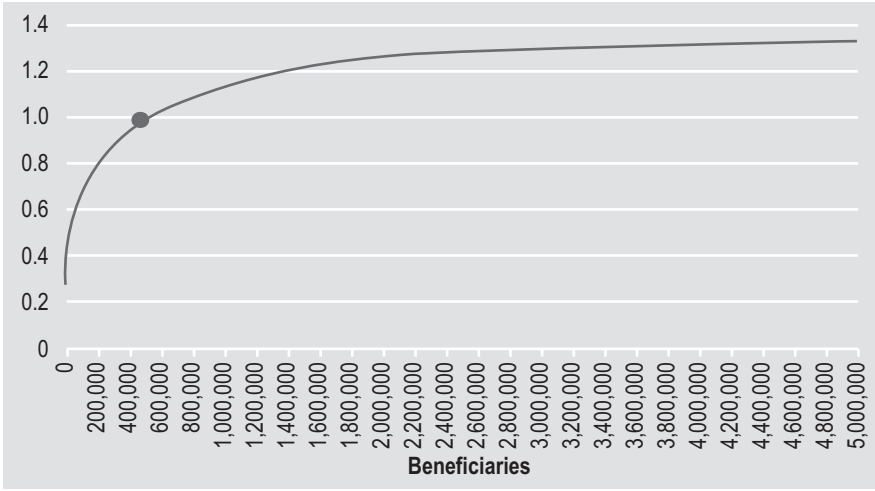
Source: Author's calculations.

We also developed similar benchmark schedules for staffing levels. For the convenience of application, we provided workload schedules in which beneficiaries are in the numerator. Figure 3 indicates economies of scale in staffing requirements to manage programmes of different sizes.

Interpretation of results is similar to the one provided for the costs schedule. Plans with 100,000 beneficiaries require approximately 30 per cent more staff per beneficiary compared to the same type of plan with 500,000 beneficiaries. At the same time, the larger-sized schemes require 30 per cent less of human resources per beneficiary.

Figure 4 depicts low and high scenarios for the workload ratios of a programme with 500,000 beneficiaries for different levels of GDP per capita. As our regression coefficients indicate in Table 4, staffing requirements per beneficiary actually decline with increases in income levels (the reverse of that relationship is presented in the workload schedule). The variation between the low and high scenarios is defined by adding functions of in-house contribution collection and the provision of special schemes, which we found statistically significant in explaining cost differences. Note that the curve on top indicates the results of the low resource requirement, and the curve at the bottom is the high resource estimate (with both of these additional functions factored in). It is important to emphasize again the wide spread in the benchmark, which is threefold between the low and high estimates. Hence, any recommendations on staffing levels should be carefully crafted

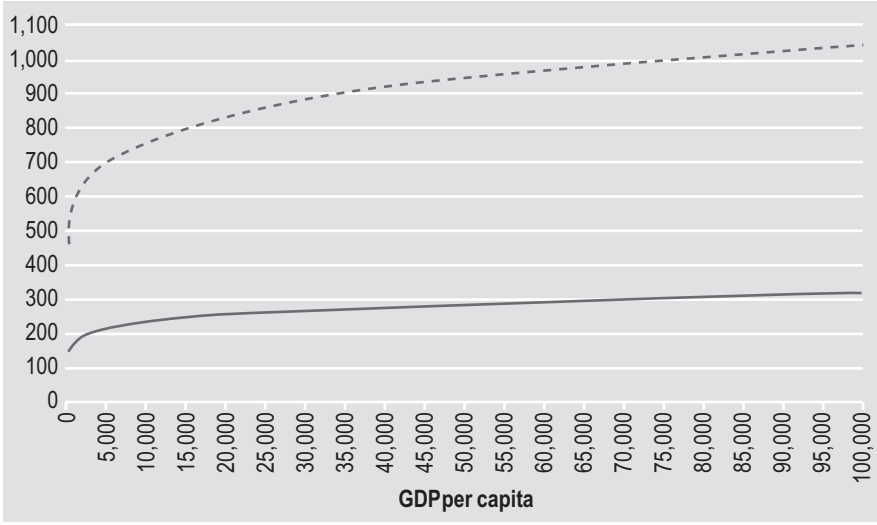
Figure 3. *Economies of scale in staffing requirements*



Note: Workload relative to workload of a plan with 500,000 beneficiaries.

Source: Author's calculations.

Figure 4. *Beneficiary per staff ratios for a midsize operation*



Source: Author's calculations.

while incorporating information on the nature of operational organization or services a particular agency provides.

Finally, service quality comes at a cost. Higher operational expenses may reflect better services (for example, more frequent and direct communications with clients, faster processing of benefit claims, and more inclusive payment methods). Unfortunately, differences in the nature of particular bundles of service or variation in their quality remain uncaptured. Hence, we need to interpret our results and recommendations on benchmarking with caution. The tools of conventional analysis with narrow sets of explanatory variables can only produce very limited inferences about the performance of various programmes. In each case, we need to look beyond our results. Special operational and beneficiary surveys could help capture information on the performance and satisfaction of various stakeholders with programme administration, including processing times, compliance costs and various overheads, and overall perception of service quality. At the same time, the methodology and findings presented in this article help point in the direction of such additional inquiries.

Conclusions

As countries develop and seek to provide pension coverage to greater segments of their population, administrative costs become an important aspect of reforms, especially where a new mandate extends to low-income or informal-sector workers. New technologies pave the way for effective outreach, monitoring and record keeping, while infrastructure improvements (including financial services) provide for better access.

Comparing and benchmarking administrative expenditures helps assess the efficiency of different modes of operational organization of public pension programmes. It provides guidance on the reform strategy, choice of alternative organizational models, and trade-offs in instituting various new operational elements. Inquiries into operational efficiency often prompt complex organizational transformations. Among trend-setting practices are cutting redundant staff, employing more advanced technologies, sharing certain functions with other public entities, and outsourcing select tasks to other agencies. To decide on optimal investments in systems, processes and people, it is important to understand the key factors that affect the costs of operating various schemes.

First, it is important to recognize economies of scale and scope in managing social security programmes, including their magnitudes in contribution collection and benefit management. Synergies with existing mechanisms should always be sought. Private management of the schemes will be more expensive compared to the public option, but differences may disappear over the long term. At the same time, funding of pension liabilities (in either DB or DC schemes) will always

involve cost premium, given advanced complementary resource requirements. These considerations will involve important policy decisions. Finally, the level of economic development has a strong impact on costs, suggesting that more developed countries can manage social security schemes more efficiently, possibly taking advantage of better technologies, infrastructure and institutions. As technologies spread over time, they may become less important in explaining cost differentials. Yet, quality of public institutions' governance remains an important predictor of the efficiency of operation of any programme in both the short and long run.

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ENSURING ADEQUATE AND SUSTAINABLE SOCIAL SECURITY

Supporting jobseekers: How unemployment benefits can help unemployed workers and strengthen job creation

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Abstract The rapid rise in unemployment since 2008 caused by the global financial crisis has created renewed interest in the effects of well-designed unemployment benefit systems on the speed at which labour markets recover and job creation resumes. On the basis of a newly-created database on labour market flows, this article makes use of a micro-founded macroeconomic model to estimate different effects of active and passive labour market spending on employment growth and the state of public finances. It demonstrates, in particular, that for the average advanced G20 country, spending on unemployment benefits yields employment gains both in the short-term and long-term that are superior to those observed for active labour market policies. Moreover, rather than tightening their budgets prematurely, advanced G20 countries would have fared much better in accepting further deterioration in public finances stemming from higher spending on social transfers in order to stimulate faster employment growth, which would have led to a more rapid recovery in the state of public finances as well.

Keywords unemployment, unemployment benefit, employment creation, international

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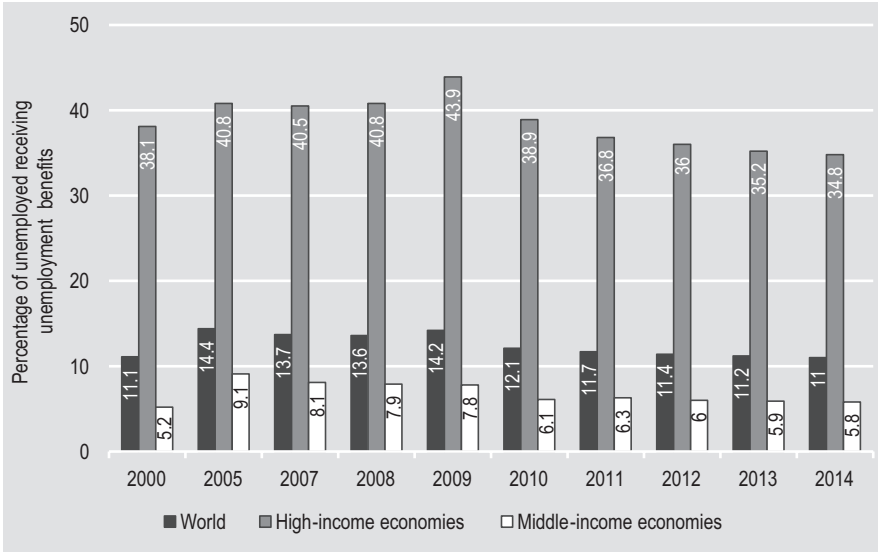
Introduction

Unemployment worldwide accelerated swiftly with the onset of the global financial crisis at the end of 2008, creating more than 20 million new jobseekers in the first 12 months of the crisis. Half of the increase was observed in advanced economies, but as the crisis continued the lack of jobs also became more and more prevalent in emerging and low-income economies. Currently, the global jobs gap – measuring the number of jobs that would have been created without the crisis in comparison to the actual number of jobs – stands at around 60 million and will continue to increase over the coming years. At the same time, the quality of jobs has also deteriorated, leaving more and more people without effective social protection or in unstable employment relations (ILO, 2015).

The rapid increase in joblessness was not accompanied by an equally important uptake in unemployment benefits to alleviate the hardship associated with the loss of employment and income. Indeed, prior to the crisis, only a limited percentage of the global workforce was covered by any unemployment protection scheme that would enable them to bridge periods of unemployment other than through personal savings or family solidarity. Even in advanced economies with relatively well-developed welfare states, less than one in every two workers are effectively covered by some form of unemployment benefits (ILO, 2015, pp. 92-93), requiring savings, family or friends to make up for shortfalls in disposable income. As the crisis continued and despite a substantial increase in unemployment, the effective coverage rate for unemployment benefits continued to fall in high-income countries, reaching levels below the rates observed prior to the crisis when unemployment rates were substantially lower (see Figure 1). Similar trends are observed in middle-income countries, but at a significantly lower level of effective coverage.

In comparison with other social security provisions, those for unemployment benefits have received considerable less attention across countries over the years (see Figure 2). Whereas benefit provisions for old-age, disability and survivorship are now found in almost all countries, those for unemployment have been introduced by fewer than half of all countries worldwide. In part, this is related to the fact that, in the presence of large informal economies with sometimes more than 60 per cent of all workers active in informal employment, the need for an encompassing insurance against income loss in times of unemployment is felt less urgently. It might also be that political pressure in favour of providing unemployment benefits is weak, as those who have left their jobs are less well organized and more concerned about returning to employment than lobbying for replacement income schemes. This has become a concern in high-income countries also, where pressure to reduce coverage and the duration of benefits mounted as higher levels of unemployment persisted after 2009.

Figure 1. *Coverage of unemployment benefits*

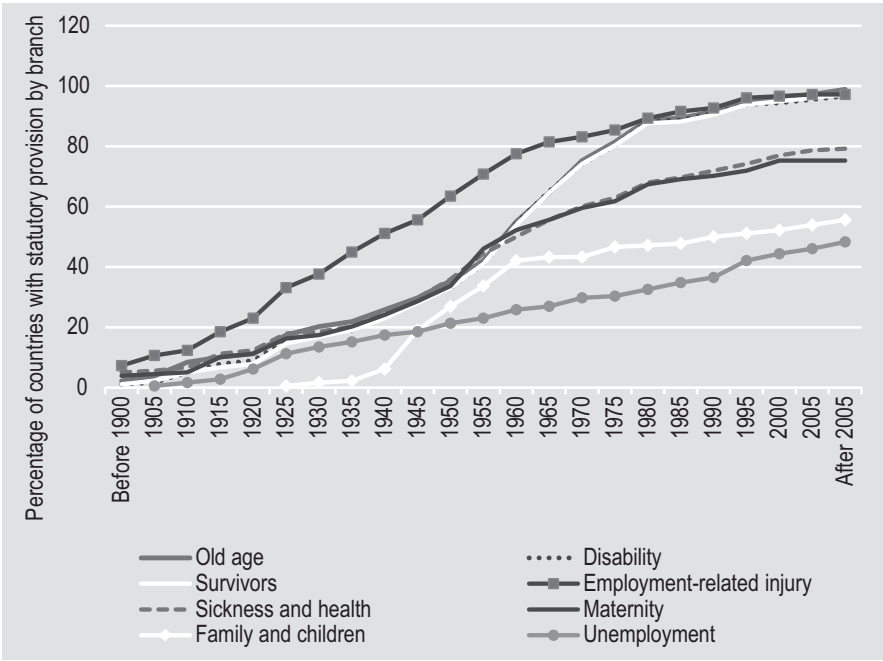


Source: ILO (2015).

The absence of well-developed unemployment benefit schemes or the cutback of existing schemes is likely to have social and economic repercussions. On the one hand, low replacement rates or tightly-managed schemes with more limited benefit duration are believed to shorten unemployment spells by strengthening incentives to return to employment. In extreme cases, in the total absence of benefits, any type of work – including informal employment – will be accepted by the jobseeker; hence, one of the reasons why informality is so widespread in developing countries where unemployment benefit schemes are largely absent. In contrast, in the presence of generous unemployment benefits paid for extended periods, recipients are believed to take longer and to search less intensively for jobs before returning to employment. This will lengthen their joblessness spells and increase the total unemployment level, creating a substantial additional burden on public finances. At the current juncture, this additional burden comes at a time when many countries' finances are already severely constrained by the impact of the crisis.

On the other hand, unemployment benefits – especially when coverage rates are high – permit an automatic stabilization of income fluctuations not only at the microeconomic level but, if properly managed, also at the macroeconomic level. Specially, such benefit systems need to be able to operate with the – temporary – deficit deriving from the shortfall in revenues and the increase in spending that is caused by a potential surge in unemployment benefit recipients. Indeed, in the absence of such programmes, income fluctuations can be large, which creates

Figure 2. *Percentage of countries with legal provisions for social security measures*



Note: Country coverage varies depending on the type of social protection. Based on 173 countries worldwide regarding pension coverage and 190 countries regarding coverage for unemployment.

Source: ILO (2014).

significant pressure on public finances to cut back on other spending items, especially when tax and other revenues are receding.

This article offers a broad perspective on these opposing forces, looking into a fully specified and estimated macroeconomic model that integrates the interaction between the microeconomic incentives shaped by the tax-benefit system and the macroeconomic income stabilization provided by properly-designed social security schemes, in particular unemployment benefits.

The next section provides an overview of recent research on the labour market effects of unemployment benefits. Thereafter, we set out the theoretical model based on a detailed microeconomic analysis of labour market flows, followed by a presentation of the empirical material and the estimates of the model. The key results are then presented, wherein different simulations are carried out for an average advanced G20 country. The results show how, when properly arranged, frontloaded increases in spending on unemployment benefits during times of crisis can have positive effects both on a faster recovery of the labour market situation and on improving the situation of public finances. A final section concludes.

The role of unemployment benefits: A literature review

Unemployment benefits, their generosity and duration have received significant attention in the literature, opposing microeconomic incentive effects to economy-wide job creation effects and macroeconomic stabilization. In this section, we review some of the recent developments in the area, discussing both theoretical transmission mechanisms and empirical evidence. Hagedorn, Manovskii and Mitman (2015) have recently summarized succinctly the different mechanisms at work, illustrating this with the following job-finding equation:

$$JobFindingRate_t = s_t \times f(\theta_t) \quad (1)$$

where Θ_t is the labour market tightness measured by the rate of available vacancies to the number of jobseekers, and s_t the search intensity of the jobseeker. In this set-up, the microeconomic incentive effects of unemployment benefits impact the job finding rate via the search intensity of jobseekers. In contrast, the (different) macroeconomic effects affect the overall labour market tightness and its fluctuation over the business cycle. We review these effects in the following sections.

Microeconomic incentive effects

The microeconomic literature on unemployment benefits has concentrated on the wedge introduced by an increase in benefit generosity between labour supply and consumption. Indeed, rising benefits create moral hazard leading to reduced labour supply and lower incentives for active job search among the unemployed. The theoretical argument works most directly when unemployment benefits are received as a lump sum and solely on the basis of a person being unemployed and independently of his or her previous employment record. In most real-world systems, however, unemployment benefits can only be accessed if a person has been employed for at least a certain amount of time prior to losing his or her job, mitigating the moral hazard to some extent. The empirical literature has identified this incentive effect with a spike of outflows from unemployment for those about to lose their benefits or face a significant cut in benefit income. This spike – well documented by, for instance, Moffitt (1985), Katz and Meyer (1990), and Card and Levine (2000) – has been interpreted as an indication of a reassessment taken by an unemployed person of the trade-off between leisure and consumption when reaching the end of the benefit duration. Recent empirical estimates of the significance of this effect, however, point to a rather small impact on measured unemployment, at least during times of large crises (Farber and Valletta, 2013).

Recently, Chetty (2008) has given a different interpretation of the observed increase in unemployment duration, linking it to the fact that unemployed households are often also liquidity constrained: unemployment benefits allow liquidity-constrained households to smooth consumption during periods of temporary short-falls of income, thereby constituting a "socially beneficial response to the correction of the credit and insurance market failures" (Chetty, 2008, p. 173). His empirical analysis indicates that roughly 60 per cent of the increase in unemployment duration is linked to this liquidity effect, thereby warranting longer unemployment benefit durations. However, even in the presence of a liquidity effect to explain longer unemployment spells, Calvó-Armengol and Jackson (2004) point to the adverse network effects caused by long unemployment duration: indeed, long spells of unemployment lead to discouragement with adverse effects on labour market participation that are not appropriately accounted for in Chetty's approach.

Unemployment benefits can also have a direct effect on the quality of job matching, mitigating to a certain extent the adverse (welfare) effects of benefit extension on unemployment duration. Indeed, by allowing jobseekers to look longer for appropriate jobs and in the case of sequential job search, the match quality can improve by allowing unemployed people to smooth their consumption in order to find a more appropriate job (Acemoglu, 2001). Survival rates of jobs after exiting unemployment have been found to be higher when unemployment benefits are paid over longer periods of time and/or are more generous (Centeno, 2004; Lalive, 2007). Hence, even though unemployed people tend to stay longer without a job in more generous systems, they experience more stable jobs once they leave unemployment with a net effect that is more positive the higher their subsequent employment survival rate (Tatsiramos, 2014).

Macroeconomic support to job creation

Besides effects on labour supply and search intensity, generous unemployment benefit systems might also affect labour demand as indicated by equation (1), above. The labour demand effect can have two components: directly, at the level of the firm via an increase in wages, or indirectly, at the level of aggregate demand by allowing households to smooth consumption over the business cycle.

Generous unemployment benefits increase the "outside option" (i.e. the cost attributed to job search) in a wage bargaining framework, thereby raising wage demands and take-home pay. Absent price rigidities, this will reduce labour demand and hence increase unemployment. Recently, Hagedorn, Manovskii and Mitman (2015) have tried to identify this effect for the United States, making use of inter-state differences in unemployment benefit duration. Their study documents large adverse effects that result from the combination of a negative labour

market shock with benefit extension. This is in line with other evidence on the impact of increases in (net) replacement rates on wage growth in Sweden, with a 1 per cent increase in unemployment benefits leading to an increase in pre-tax wages of between 0.1 to 0.2 per cent (Bennmarker, Calmfors and Seim, 2014).

However, most of these studies – even if based on a general framework – neglect the presence of price rigidities. In such a case and when the economy does not operate at its full-employment equilibrium, unemployment benefits can also act as automatic stabilisers, helping households to smooth consumption over the cycle. Recently, some studies (Di Maggio and Kermani, 2015) have tried to explicitly take this aspect into account, identifying local demand effects that arise from differences in the generosity of unemployment benefits across states in the United States. The Di Maggio and Kermani (2015) study points to the fact that both the direct support of households that suffer from unemployment as well as the indirect effect of unemployment benefits leading to higher wages – rather than depressing labour demand – can help promote aggregate demand and hence job creation, at least during periods of large shortfalls in demand. The macroeconomic effect they identify complements earlier studies at the individual level that pointed to stronger consumption smoothing when unemployment benefits increase (e.g. Bloemen and Stancanelli, 2005).

This article aims at extending this analysis on the macroeconomic feedback effects of unemployment benefits. Using a stylised New Keynesian framework with an aggregate supply curve based on intertemporal optimization, we estimate a small macroeconomic model that includes both microeconomic incentive and macroeconomic demand effects in order to assess their relative significance for the dynamics of the model. We compare the effects resulting from unemployment benefits with those from other active labour market policies, such as hiring incentives and training expenditure. The next section discusses the details of the model, followed by a summary of the estimation and a simulation of alternative policy scenarios in the current environment of depressed labour demand and high unemployment.

A macroeconomic analysis of unemployment benefits

This section presents the analytical framework used to analyse the different channels through which unemployment benefits can affect labour market outcomes and macroeconomic dynamics. The section starts with a base model representing stylized reactions on the labour market based on some of the considerations presented in the previous section. Then, this labour market model is embedded into a macroeconomic framework and estimated using time-varying cross-country data for a selection of member states of the Organisation for Economic Co-operation and Development (OECD).

Methodology

The base model. The analysis in this article is based on a flow-accounting approach of the labour market as discussed in detail in Ernst and Rani (2011). The theoretical underpinnings are provided by the labour market search and matching literature first developed by Pissarides (1990) and Mortensen and Pissarides (1994). The starting point for this methodology is the following accounting equation linking changes in unemployment to the difference between labour force growth and employment growth, on the one hand, and to the difference between unemployment inflows and outflows:

$$\Delta U_t = \Delta L_t - \Delta E_t = IN_t - OUT_t \quad (2)$$

where ΔU_t: changes in unemployment (headcount), ΔL_t: changes in the labour force, ΔE_t: changes in employment, IN_t: unemployment inflows and OUT_t: unemployment outflows.

In other words, when the labour force grows faster (slower) than employment, unemployment will rise (fall), which is equivalent to inflows into unemployment being larger (smaller) than outflows from unemployment.

How are the different flow margins affected on the labour market? Considering the process of job creation and job destruction at the firm level, total employment evolves according to the following dynamics:

$$\Delta E_t = JobCreation_t - JobDestruction_t \quad (3)$$

In other words, changes in the employment level result from the difference between created and destroyed jobs.

Following standard labour market matching models (see Pissarides, 1990; and Carlsson, Eriksson and Gottfries, 2006), job creation – i.e. the extensive margin of labour demand[1] – is determined by a mix of the following factors:

$$JobCreation_t = \alpha_1 + \beta_{11} ET_{t-1} + \beta_{12} w_t + \beta_{13} AD_t + \beta_{14} U_t + \beta_{15} V_t + \beta_{16} r_{t-1} \quad (4)$$

where ET_{t-1}: past employment, w_t: real wages, AD_t: aggregate demand, U_t: unemployment, V_t: unfilled vacancies and r_{t-1}: (lagged) real long-term interest rates; the different coefficients α and β are determined by the estimation of equation (4).

Similarly, job destruction will be affected by the rate of technological progress, the real interest rate (through the discounted future benefits of an ongoing relationship), import competition, wages and aggregate demand:

$$JobDestruction_t = \alpha_2 + \beta_{21} TFP_t + \beta_{22} r_t + \beta_{23} \varepsilon_t + \beta_{24} IMP_t + \beta_{25} w_t + \beta_{26} AD_t \quad (5)$$

1. Total labour input in a firm is determined by the number of employees (the extensive margin) and the number of hours worked (the intensive margin). In this article, we abstract from changes in the intensive margin.

where TFP_t: an indicator for total factor productivity, r_t: the real (long-term) interest rate, ε_t: the real effective exchange rate, IMP_t: a measure of either import penetration (i.e. imports relative to GDP) or real import growth.

Finally, unemployment dynamics are also affected by changes in the labour force. We reflect standard theories about the determinants of labour supply by considering the following equation for changes in the labour supply (see, for instance, Burniaux, Duval and Jaumotte, 2003):

$$\Delta L_t = \alpha_3 + \beta_{31}\Delta L_{t-1} + \beta_{32}\Delta u_{t-1} + \beta_{33}Tax_t \quad (6)$$

where Δu_{t-1}: lagged changes in the unemployment rate, Tax_t: a measure for the tax burden (either average or marginal tax rates), β_{32} represents the discouraged-worker effect whereby large (and persistent) increases in unemployment depress labour force growth.[2]

Wages in equations (3) and (4) are endogenous to job creation and destruction and, therefore, need to be instrumented. This can be done using the following wage equation, which is based on a wage-curve approach (see Blanchflower and Oswald, 1994):

$$w_t = \alpha_4 + \beta_{41}K_t + \beta_{42}CB_t + \beta_{43}\Delta u_{t-1} + \beta_{44}Tax_t \quad (7)$$

where K_t: the capital stock, CB_t: an indicator for the type of wage negotiations such as the degree of centralization in the collective bargaining system.[3]

The six equations (2)–(7) form the basis of our labour market flow model. Due to the lack of internationally comparable data on job creation and destruction rates, however, the model needs to be rewritten so as to link job creation rates to unemployment outflows, on the one hand, and job destruction to unemployment inflows, on the other hand.[4] This requires that the determinants of labour supply as specified in equation (6) are plugged into the appropriate unemployment flow equation in order to account for changes in labour supply. Indeed, some unemployment inflows come from inactivity when the economy recovers while some people who are loosing their job might drop out immediately to inactivity if they do not qualify for any benefits. Similarly, job creation can happen out of inactivity (for instance through self-employment), while some people might "flow out of" unemployment at the end of their benefit period and into inactivity. As a consequence, using unemployment flows instead of job creation and destruction rates might overestimate employment dynamics due to the failure to take out of the

2. The impact of discouraged workers on wage inflation is only indirectly taken into account via an effect on unemployment flows. Distinguishing between short- and long-term unemployed workers in the context here would require to model explicitly flows between different categories of unemployed workers.

3. This could be measured, for instance, by the degree of coordination of wage bargaining or the union density.

4. See OECD (2009) for an overview of different concepts of labour market flows.

equation flows back and forth from and to inactivity. It might also overestimate the variation of employment growth when the inactivity rate fluctuates with the business cycle (as is suggested by the discouraged worker effect).[5]

In our specification, we consider that the discouraged worker effect will create additional unemployment outflows. In contrast, increasing supply in the available workforce will show up as additional unemployment inflows. Tax-related changes in labour supply are considered to affect both unemployment inflows and outflows. Besides these adjustments to our specification, we consider both unemployment inflows and outflows to follow dynamic adjustment processes, instead of estimating them as level equations. This way, we cope with systematic underestimation or overestimation of flows over the cycle that are due to flows between (un)employment and inactivity. In addition, by considering contemporaneous interactions between the two flow directions, we also take care of the possibility that we are overestimating the impact of unemployment flows on employment variation: higher contemporaneous inflows will also increase outflows as part of it goes into inactivity. Similarly, higher outflows might partly imply an increase in inactivity that might trigger increased inflow rates. We will therefore estimate the following two equations related to unemployment dynamics:

$$OUT_t = \alpha_{OUT} + \beta_{11} OUT_{t-1} + \beta_{12} IN_{t-1} + \beta_{13} X_t^{JobCreation} + \beta_{14} \Delta u_{t-1} + \beta_{15} Tax_t \quad (8)$$

$$IN_t = \alpha_{IN} + \beta_{21} IN_{t-1} + \beta_{22} OUT_{t-1} + \beta_{23} X_t^{JobDestruction} + \beta_{24} \Delta L_{t-1} + \beta_{25} Tax_t \quad (9)$$

where $X_t^{JobCreation}$ *and* $X_t^{JobDestruction}$ correspond to the different explanatory variables in equations (4) and (5) respectively.

Macroeconomic interactions. The model set up by equations (3), (4) and (6) describes the labour market component that needs to be integrated into a larger macroeconomic framework to analyse its general equilibrium dynamics. This requires to specify aggregate demand and supply dynamics as they result from household behaviour, firm investment and government budgetary rules. In this framework we concentrate on real dynamics only, abstracting from inflationary dynamics and interventions of the central bank. In line with the purpose of this article, we concentrate specifically on spending on labour market policies and its macroeconomic and microeconomic impact.

Labour market policy spending and government revenues can influence directly the rate at which jobs are being created or destroyed. On the one hand, they can generically affect aggregate demand, thereby slowing down job destruction and speeding up job creation. Also, they can more precisely aim to influence labour

5. Another difference between unemployment and job flows stems from job-to-job transitions. Due to the lack of comparable data with long time-series, we abstract from these dynamics here.

market dynamics when active and passive labour market measures are being combined. For instance, policy-makers can set up hiring incentives for firms, reduce labour costs via wage subsidies or strengthen the matching process through training expenditures and spending on public employment services that help jobseekers in finding adequate job vacancies. On the other hand, (pro-cyclical) increases in revenues generated to finance labour market policies might mitigate or even reverse the effect, creating negative effects at the microeconomic level for job creation and/or accelerating job destruction.

To the extent that spending on both active and passive labour market policies is financed out of the general public budget, cyclical variations in spending and revenues can have first order implications for net government lending and public debt. We will make use of these links to set up the aggregate supply curve, linking long-term interest rates to both net government lending and public debt. The economic effect of changes in social protection is then determined by two feedback loops. First, automatic stabilization results from both general government spending and labour market policies that react to the state of the labour market. In particular, we expect higher unemployment outflows to be correlated with less spending and higher unemployment inflows with more spending. Second, higher public spending will act on long-term interest rates to the extent that it increases government net lending. This may happen as Ricardian effects will cause government lending to crowd out private borrowers, but also because of higher risk premia on sovereign debt that will carry over to private investors as well. In either case, higher long-term interest rates will have an adverse effect on unemployment dynamics by both lowering unemployment outflows and increasing unemployment inflows. Taking such feedback mechanisms into account when assessing the effectiveness of government interventions on the labour market is essential for countries to properly assess the long-term implications of their spending programmes.

Taking such feedback mechanisms into account when estimating the effect of policy interventions requires setting up a simultaneous equation model, such as the following:

$$IN_{i,t} = \alpha_i^{In} + \beta_{11} IN_{i,t-1} + \beta_{12} OUT_{i,t-1} + \beta_{13} X_{i,t} + \beta_{14} POL_{i,t} + \varepsilon_{i,t}^{In} \quad (10)$$

$$OUT_{i,t} = \alpha_i^{Out} + \beta_{21} OUT_{i,t-1} + \beta_{22} IN_{i,t-1} + \beta_{23} X_{i,t} + \beta_{24} POL_{i,t} + \varepsilon_{i,t}^{Out} \quad (11)$$

$$POL_{i,t} = \alpha_{Pol} + \beta_{31} OUT_{i,t} + \beta_{32} IN_{i,t} + \varepsilon_t^{Ub} \quad (12)$$

$$RIRL_{i,t} = \alpha_R + \beta_{41} NGL_{i,t} + \beta_{42} LLGDP_{i,t} + \varepsilon_{i,t}^{Rirl} \quad (13)$$

This system is based on the basic inflow and outflow equations (8) and (9), but contains additional policy variables, POL_t, that refer to (fiscally relevant) policy

interventions (including taxes, as indicated above). All spending items are measured in terms of spending on particular programmes with respect to GDP, so as to properly account for the budgetary burden that is implied by different fiscal and labour market policy options. As discussed before, the policy equation (12) is based on feedback effects resulting from automatic stabilization; no other influences are considered here. In particular, no discretionary spending or tax increases are retained. Regarding the long-term feedback effects, an aggregate supply curve (13) has been added to the model by means of a forth equation that takes the effect of government spending dynamics on (long-term) real interest rates, $RIRL_t$, into account. In this equation, the interest rate is supposed to be influenced by government net lending, NLG_t, – itself a function of government spending – and the availability of savings as measured by the amount of liquid liabilities in the economy, $LLGDP_t$.

Steady state. The above system of equations (10)–(13) can be solved for a steady state solution when $IN_t = IN_{t-1} = \overline{IN}$ and $OUT_t = OUT_{t-1} = \overline{OUT}$, effectively giving the long-term impact of policies on unemployment outflows and inflows in contrast to the estimated coefficients β_{14} and β_{24} which only indicate the effect on impact:

$$\overline{OUT} = \frac{\begin{array}{c}\left(\alpha^{\mathrm{OUT}} + \bar{X}\beta_{23} + \alpha^{\mathrm{POL}}\beta_{24}\right)(1-\beta_{11}-\beta_{14}\beta_{32}) \\ +\left(\alpha^{\mathrm{IN}} + \bar{X}\beta_{13} + \alpha^{\mathrm{POL}}\beta_{14}\right)(\beta_{22}+\beta_{24}\beta_{32})\end{array}}{(1-\beta_{21}-\beta_{24}\beta_{31})(1-\beta_{11}-\beta_{14}\beta_{32})+(\beta_{12}+\beta_{14}\beta_{31})(\beta_{22}+\beta_{24}\beta_{32})}$$

$$\overline{IN} = \frac{\begin{array}{c}\alpha^{\mathrm{IN}} + \bar{X}\beta_{13} + \beta_{12}\left(\alpha^{\mathrm{OUT}} + \bar{X}\beta_{23} + \alpha^{\mathrm{POL}}\beta_{24}\right) \\ +\beta_{14}\left(\alpha^{\mathrm{POL}}(1-\beta_{21}) + \left(\alpha^{\mathrm{OUT}} + \bar{X}\beta_{23}\right)\beta_{31}\right)\end{array}}{\begin{array}{c}1-\beta_{21}-\beta_{22}(\beta_{12}+\beta_{14}\beta_{31})-\beta_{24}\beta_{31} \\ -\beta_{11}(1-\beta_{21}-\beta_{24}\beta_{31})-(\beta_{14}(1-\beta_{21})+\beta_{12}\beta_{24})\beta_{32}\end{array}}$$
$$-\frac{\left(\alpha^{\mathrm{IN}} + \bar{X}\beta_{13}\right)(\beta_{21}+\beta_{24}\beta_{31})}{\begin{array}{c}1-\beta_{21}-\beta_{22}(\beta_{12}+\beta_{14}\beta_{31})-\beta_{24}\beta_{31} \\ -\beta_{11}(1-\beta_{21}-\beta_{24}\beta_{31})-(\beta_{14}(1-\beta_{21})+\beta_{12}\beta_{24})\beta_{32}\end{array}}$$

In the following, we will compare the effects of labour market policies both on impact (i.e. at $t + 1$) and in steady state. As can be seen from the formula, signs for different policy variables may differ between short-term and steady state effects, depending on the size of (some) of the estimated parameters. We will see in the section on results that this is indeed the case for some of the policy instruments, in particular active labour market policies but not – importantly – for the impact of unemployment benefits.

Data and empirical strategy

Data. The empirical analysis makes use of the newly-created international database on unemployment flows, available as part of the ILO Key Indicators of the Labour Market (KILM) database.[6] Unemployment flows measure the transitions of labour market participants between periods of employment and unemployment and are based on a methodology originally developed by Shimer (2012) and extended by Elsby, Hobijn and Sahin (2013). Data on unemployment flows is available at the yearly frequency for 70 developed and developing countries but due to the absence of long time series for spending on labour market policies, and in particular on unemployment benefits, the sample has been restricted to 14 OECD countries.

Macroeconomic data such as GDP and its components, interest rates and private credit come from the OECD Economic Outlook database. Spending on social benefits is taken from the OECD Social Expenditure database. Finally labour market information on employment, labour force participation and unemployment is taken from ILOStat. The data cover from 1968 to 2007 and hence exclude the "Great Recession" financial crisis; although unemployment flow data is available for most countries only as of the 1990s.

Empirical strategy. In order to estimate the model parameters, the system of equations (10)–(13) is estimated using panel fixed effects. We added institutional variables such as employment protection legislation to better account for cross-country difference in slow-moving dynamics. In the absence of sufficiently long, high-frequency time series, country-by-country estimations are not available as most unemployment flow series only start after 1990. In principle, therefore, within-estimation using OLS (ordinary least squares or linear least squares) could be applied to test the different determinants of unemployment flows and especially the effect spending on labour market policies has. Three issues arise, however, in this respect:

- Country-specific information is not always available for all variables over the entire time period.
- Both unemployment inflows and outflows are highly persistent within countries, introducing problems of autocorrelation.
- Some of the right-hand side variables are endogenous to the dependent variable (inflows and outflows).

These three problems could be addressed using the Arellano-Bond system GMM (generalized method of moments) estimator. However, in our case, the number of available observations per country is relatively high (in comparison to

6. The latest edition of ILO KILM is available, see <http://www.ilo.org/kilm>.

the number of panels), which typically leads to a rejection of the overidentification tests. We, therefore, first used a modified System-GMM estimator to identify separately drivers of unemployment inflows and outflows based on equations (8) and (9) (see Ernst, 2011). We then aim at proper identification of the macroeconomic dynamics and in the absence of few valid instruments decided to adopt a 3SLS (three stage least squares) approach to estimate the small macro-model.

Overview of results[7]

Taking the state of the macroeconomic situation into account turns out to be essential to assess the effectiveness of labour market policies and in particular of unemployment benefits (see Appendix Table A.1, for a summary of the results). The analysis reveals a detailed picture of various labour market programmes and offers a more precise understanding of the different policy trade-offs that countries are currently facing. For instance, direct job creation outside the public sector seems to come with a high amount of deadweight costs as it only seems to have a statistically significant effect on unemployment inflows but not on unemployment outflows. In other words, the programmes often seem to benefit those already in a job or who would have been hired even in the absence of such policies (see Appendix Table A.1, equation (1)). Note also that unemployment outflows do not seem to have a significant effect on spending for direct job creation, an indication that these programmes are introduced in a manner that is largely unrelated to the business cycle. In contrast to these programmes, hiring subsidies seem to have the expected effect on outflows, but do not influence unemployment inflows (the estimated effect is statistically not significantly different from zero, see Appendix Table A.1, equation (2)), an outcome to be expected in light of the particular set-up of these incentive schemes (that are used only when a firm is planning to open a new vacancy).

Expenditures on training programmes (Appendix Table A.1, equation (3)) and public employment services (Appendix Table A.1, equation (4)) have the expected (positive) effects on unemployment outflows, confirming the existing evidence in the literature. The estimated effects in Appendix Table A.1, equation (4), do not take into account the particular design of public employment services (PES) or training programmes in the countries of this sample. Some countries may actually experience much better effects of these policies on unemployment dynamics by combining them with appropriately designed unemployment benefits. Nevertheless, it should be noted that these programmes come with a strong increase in unemployment inflows as well. This seems to be an indication that measured

7. This section is derived from Ernst (2011).

unemployment rates depend significantly on programme design in as much as that the participation in certain programmes requires official inscription in the unemployment register.[8]

As such, these programmes are not only an effective way of bringing unemployed workers back to employment they also seem to constitute a useful instrument to activate those that currently have very limited ties with the labour market or have dropped out of the labour force altogether. Moreover, as we will see in the following section, the steady state effects of these programmes have a negative effect on inflows as much as other labour market policies, an indication as to their long-term effectiveness. Finally, unemployment benefit schemes come with highly significant effects on both unemployment inflows and outflows in the expected direction (see Appendix Table A.1, equation (5)). They also provide automatic stabilization as both unemployment inflows and outflows are driving (with the expected sign) spending patterns over the business cycle.

Short-term versus long-term effects

Statistical significance and quantitative importance of different policy instruments are not necessarily related in the estimates presented above. In addition, the short-term – "on-impact" – estimates are different from the steady state effects that arise when the dynamics of the above model are allowed to play out fully. In order to compare the contributions of the five different labour market policy instruments (presented in Appendix, Table A.1) to the dynamics of unemployment flows, we need to compute their contribution rates, which are calculated as the share of the panel variance of unemployment inflows and outflows explained by the variance of each individual policy instrument weighted by its regression coefficient:

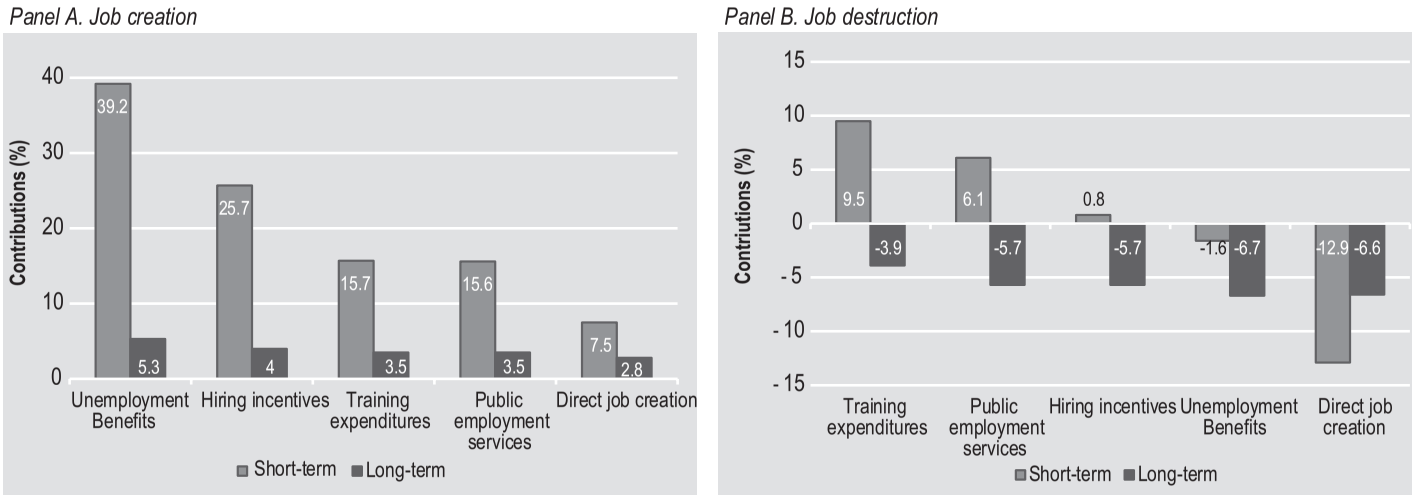
$$Contribution\ Rate = \beta^{Policy} \cdot \frac{Var(Policy)}{Var(Unemployment\ Flow)} \tag{14}$$

where *Policy* stands for one of the five policy instruments, *Unemployment flow* for unemployment inflow or outflow, β^{Policy} for the estimated policy regression coefficient and *Var* for the panel-wide variance of the variable under consideration.

Results for labour market policy options are presented in Figure 3, separately for job creation (panel A) and job destruction (panel B). Typically, policy interventions are more effective on impact than in steady state, at least as regards their impact on job creation rates. Unemployment benefits turn out to have the

8. The rise in unemployment inflows following an increase in expenditures on public employment services and training can partly be considered a statistical artefact: these measures target particularly inactive people to return them to the labour market, causing measured unemployment rates to increase while inactivity rates decline.

Figure 3. *Long-term versus short-term estimates of policy effects*



Note: The chart presents the short-term (left-hand column) and long-term (right-hand column) contributions of different labour market policies to job creation (panel A) and job destruction rates (panel B).

Source: Own calculations based on results presented in Appendix, Table A.1, and using equation (14).

strongest impact on lifting job creation rates both in the short-term and the long-term and this despite taking any possible negative microeconomic incentive effects into account. Interestingly, direct job creation – for instance through an expansion of public employment – has only a very small effect overall on job creation and can only limit job destruction in the short-term; in the long-term, unemployment benefits still fare (slightly) better. This lack of public employment to influence job creation, however, may have to do with the particular sample (period) used here during which public employment remained either stable or declined in comparison to private-sector employment. Regarding the effect of different labour market policy options on job destruction, the "positive" short-term effects for some active labour market policies turn out to be "negative" in the long-term, confirming the initial interpretation of a sample-selection problem that arises in the case of active labour market policies that aim at bringing people back into the labour market.

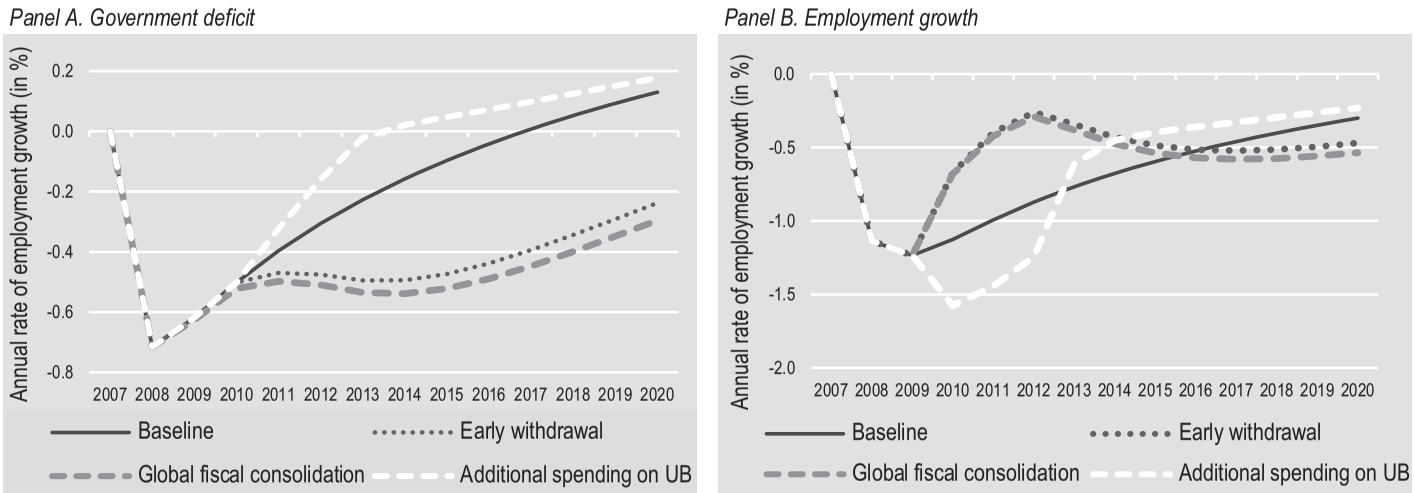
How can governments improve labour market outcomes?

The global financial crisis has left significant job gaps across the globe, depressing household incomes and weighing on government finance. The rising indebtedness of governments has been used as an excuse for cutting back on social benefits in an attempt to balance the public budget. In particular, unemployment benefits have come under scrutiny as many countries have felt the fiscal burden of these policies. The analysis in the previous section shows, however, that cutting back on labour market policies might have particularly pernicious effects, as these policies can bring about significant benefits for a stronger employment recovery. In this last section, we explore the scope for such an employment recovery and compare it with the effects of an austerity policy that aims first and foremost at addressing public deficits. More importantly, we explore alternative policy trajectories that could help strengthen labour market recovery. At the current juncture, four scenarios for policy options can be distinguished on the basis of the analysis presented above (see Figure 4).

The baseline scenario reflects the job-centred policies as were implemented at the onset of the crisis as if they had been continued through 2015 and beyond. These measures, though costly to the public purse in the short-term, would have led to fiscal deficits similar to those of an early exit strategy over a period of five years. In particular, by putting greater emphasis on labour market measures, these would have been able to limit further increases in job destruction, avoid a downward spiral of wages and boost job creation.

In contrast, the simulations show that an early exit from job-centred measures, such as the path pursued through the adoption of austerity measures in the European Union, has contributed to a significantly aggravated employment outlook. Such an early exit from stimulus can indeed improve fiscal balances in the

Figure 4. *Exit scenarios from the crisis (advanced G20 countries)*



Notes: UB=Unemployment benefits; additional spending on unemployment benefits for three years (3 % of GDP). The charts depict the simulation of different policy options on government deficit and employment growth in advanced G20 countries on the basis of the estimated model using equations (10)–(13). Scenario 1 is current policies; scenario 2 describes an early exit where deficits are aimed at being brought back to baseline within 3 years for an individual country; scenario 3 simulates a global austerity programme across all advanced G20 countries, and scenario 4 suggests an increase in public spending on unemployment benefits by an additional 3 per cent of GDP for 3 years (starting in 2010) and return to stimulus exit afterwards. Results are qualitatively similar for the full sample of countries included in the estimations presented in Table A.1.

Source: Author's calculations.

short-term, as shown in Figure 4. However, this improvement is only short-lived and comes at the cost of substantially worsened labour market dynamics both in the short-term and the long-term. The adoption of such restrictive measures causes employment to decline by (a cumulative) 3 per cent over a 5-year period. Importantly, an early exit from stimulus leads to a deterioration of fiscal positions after only a modest improvement. This reflects the fact that i) many workers move out of the labour market, depriving the economy of valuable resources and reducing the tax base; and ii) unemployment and labour market inactivity resulting from early exit measures have a strong bearing on spending. The problem aggravates if the austerity measures are implemented in a coordinated way across several countries, as shown by the third scenario.

The baseline and the two austerity scenarios are then compared with an alternative scenario of a further increase in spending on unemployment benefits over the next three years in the order of magnitude of 3 per cent of GDP. This spending scenario would lead to very strong (positive) employment reaction as can be seen from Figure 4, panel B. Importantly, the additional employment growth is sufficiently strong to overcompensate the initial deterioration of public finances (Figure 4, panel A). Four years after the first additional spending measure is introduced, public deficits would be lower than under the baseline scenario. To the extent that sufficient fiscal space is available, such a scenario proves to be welfare enhancing and can strengthen the fiscal position of a country, at least over the medium term.

The scenarios indicate that even when the microeconomic and macroeconomic effects of different labour market policies – in particular unemployment benefits – are taken into account, large shocks to the labour market, such as that which has confronted the world economy in recent years, can justify a more generous approach. Then again, none of the scenarios consider the structural challenges that arise from the crisis for labour markets. The necessary sectoral reallocation of resources and jobs that result from the asymmetric nature of the shock – large reduction in construction employment, for instance – is not properly reflected in these simulations and policy measures need to be implemented to ensure smooth transition across sectors and occupations. However, to the extent that these measures also have some fiscal implications, the scenario simulations demonstrate that those measures that develop aggregate demand effects in the short-term show superior labour market effects over the medium term with the potential to also improve the fiscal balance.

Conclusion

More than six years after the start of the global financial crisis, labour markets remain under a state of stress with high unemployment rates and declining quality

of employment for those who are employed. The global jobs gap that has opened up since 2007 is widening further, without the sign of stronger recovery in employment that would foster job creation. Such widespread unemployment and declining or slowly-growing wages have eroded the basis for public finances, pushing many governments to cut back even on essential services and social protection, such as unemployment benefits. Indeed, the legal protection of jobseekers by the benefit system – typically, one of the least developed branches of social protection systems – has started to weaken again. At the same time, such cut backs have been justified on the grounds that it would strengthen incentives for the unemployed to actively search for jobs, thereby helping to lower persistently high unemployment rates.

This article argues that to look exclusively at the state of public finances or at microeconomic incentive effects is misleading when judging the impact of labour market policies and in particular unemployment benefits on labour market dynamics. Indeed, as the analysis in this article has shown, well-designed unemployment benefits continue to provide the strongest protection against shortfalls in job creation rates and spikes in job destruction during times of crisis. Based on a micro-founded dynamic macroeconomic model, the estimates show strong and positive effects of unemployment benefits for faster job creation rates both in the short-term and the long-term, whereas active measures – such as expenditure for hiring subsidies or training – have a much weaker impact. Analysing the effects dynamically, the article also shows that premature exit from stimulus measures and the implementation of fiscal austerity through cutting down on unemployment benefits is actually self-defeating, improving the fiscal balance only temporarily and leading to much worse outcomes both for employment and public finances over the long-term.

Notwithstanding the importance of an economic short-term stimulus provided by unemployment benefits, labour market policies also need to improve the quality of labour supply. International competition and technological change require a continuous upgrading of workers' competencies and skills, in particular those facing higher risks of unemployment. In this respect, strengthening labour market institutions and fostering active labour market policies help improve their chances for matching with quality jobs that offer sustainable wage income growth.

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Appendix

Table A.1. *Labour market policies and unemployment flows – Estimation results*

	(1)				(2)				(3)				(4)				(5)			
	Direct job creation				Hiring incentives				Training expenditures				Public employment services				Unemployment benefits			
	IN_t	OUT_t	Job_t	$RIRL_t$	IN_t	OUT_t	HIR_t	$RIRL_t$	IN_t	OUT_t	TRN_t	$RIRL_t$	IN_t	OUT_t	PES_t	$RIRL_t$	IN_t	OUT_t	UB_t	$RIRL_t$
INL_{-1}	0.949***	-0.038	0.001***		0.895***	-0.146	0.001***		0.894***	0.005	0.000		0.972***	0.067	0.000		0.949***	-0.101	0.005***	
	(0.076)	(0.096)	(0.000)		(0.073)	(0.101)	(0.000)		(0.073)	(0.088)	(0.000)		(0.075)	(0.085)	(0.000)		(0.076)	(0.098)	(0.001)	
ETt_{-1}	2.625***				2.785***				3.689***				4.717***				0.807			
	(0.788)				(0.749)				(0.860)				(0.986)				(0.781)			
$\Delta POPT_{t-1}$	9.660***				9.180***				11.317***				7.097**				4.388**			
	(2.673)				(2.373)				(2.936)				(3.156)				(2.199)			
ΔTFP_t	0.250***				0.283***				0.278***				0.352***				0.12			
	(0.097)				(0.085)				(0.101)				(0.108)				(0.079)			
$RIRL_{t-1}$	0.018***				0.016***				0.016***				0.034***				0.006			
	(0.005)				(0.004)				(0.005)				(0.006)				(0.005)			
$TIND_{t-1}$	0.654				-1.211				-0.022				2.963**				0.34			
	(0.992)				(0.891)				(1.204)				(1.433)				(0.839)			
OUT_{t-1}	-0.239***	0.605***	0.000		-0.241***	0.590***	0.000		-0.291***	0.581***	-0.001***		-0.236***	0.578***	0.000		-0.293***	0.789***	-0.006***	
	(0.055)	(0.052)	(0.000)		(0.052)	(0.051)	(0.000)		(0.057)	(0.050)	(0.000)		(0.058)	(0.054)	(0.000)		(0.065)	(0.057)	(0.001)	
EPL_{t-1}	-0.032	-0.023			0.004	0.006			0.006	-0.016			-0.09	-0.057			0.016	-0.017		
	(0.035)	(0.036)			(0.034)	(0.037)			(0.037)	(0.034)			(0.070)	(0.060)			(0.035)	(0.035)		

To be continued

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Table A.1. *Continued*

	(1)				(2)				(3)				(4)				(5)			
	Direct job creation				Hiring incentives				Training expenditures				Public employment services				Unemployment benefits			
	IN_t	OUT_t	Job_t	$RIRL_t$	IN_t	OUT_t	HIR_t	$RIRL_t$	IN_t	OUT_t	TRN_t	$RIRL_t$	IN_t	OUT_t	PES_t	$RIRL_t$	IN_t	OUT_t	UB_t	$RIRL_t$
ET_t		3.689***				3.566***				4.254***				4.559***				2.760***		
		(0.967)				(0.940)				(0.898)				(1.083)				(0.946)		
UCC_t		0.007				0.000				0.006				0.006				0.031***		
		(0.005)				(0.005)				(0.005)				(0.006)				(0.005)		
WI_t		-0.086***				-0.068***				-0.070***				-0.077***				-0.070***		
		(0.023)				(0.021)				(0.021)				(0.025)				(0.018)		
INV_t		4.594***				4.173***				5.307***				5.718***				3.797***		
		(0.856)				(0.773)				(0.762)				(0.913)				(0.694)		
$\Delta YDRH_t$		0.363				0.656				0.512				0.247				0.116		
		(0.489)				(0.460)				(0.444)				(0.512)				(0.396)		
NLG_{t-1}				-0.166***				-0.159***				-0.148***				-0.095*				-0.168***
				(0.053)				(0.053)				(0.053)				(0.051)				(0.051)
$LLGDP_{t-1}$				-6.109***				-6.508***				-5.541***				-7.362***				-4.809***
				(1.350)				(1.325)				(1.319)				(1.197)				(1.228)
Job_{t-1}	-62.276***	9.273																		
	(13.590)	(14.472)																		

To be continued

Table A.1. *Continued*

	(1)				(2)				(3)				(4)				(5)			
	Direct job creation				Hiring incentives				Training expenditures				Public employment services				Unemployment benefits			
	IN_t	OUT_t	Job_t	$RIRL_t$	IN_t	OUT_t	HIR_t	$RIRL_t$	IN_t	OUT_t	TRN_t	$RIRL_t$	IN_t	OUT_t	PES_t	$RIRL_t$	IN_t	OUT_t	UB_t	$RIRL_t$
HIR_{t-1}					-9.271	71.203***														
					(15.468)	(18.955)														
TRN_{t-1}									27.543*	26.080*										
									(15.282)	(13.730)										
PES_{t-1}													70.153*	50.128						
													(41.456)	(40.310)						
UB_{t-1}																	-19.648***	8.734*		
																	(4.498)	(4.477)		
Observations	140	140	140	140	140	140	140	140	140	140	140	140	128	128	128	128	140	140	140	140
R^2	0.969	0.986	0.622	0.484	0.972	0.985	0.863	0.484	0.972	0.986	0.855	0.481	0.972	0.986	0.815	0.545	0.971	0.976	0.685	0.478

Notes: All equation systems are estimated using 3SLS. All regressions contain country fixed effects. Standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Variable codes: IN_t : unemployment inflows, OUT_t: unemployment outflows, ET_t: employment-to-population ratio, $\Delta POPT_t$: growth in working-age population, ΔTFP_t : growth in total factor productivity, $\Delta YDRH_t$: growth in real disposable household income, $RIRL_t$: real long-term interest rate, UCC_t: user cost of capital (i.e. real long-term interest rate minus capital scrapping rate), WI_t: wage-interest rate ratio, INV_t: annual change in gross fixed capital formation, $LLGDP_t$: share of liquid liabilities to GDP, $TIND_t$: share of indirect taxes to GDP, NLG_t: government net lending (positive values indicate surpluses), HIR_t: share of hiring subsidies to GDP, JOB_t: GPD share of spending on direct job creation, TRN_t: share of training expenditures to GDP, PES_t: GDP share of spending on public employment services, UB_t: share of unemployment benefits to GDP, EPL_t: strictness of employment protection legislation.

Sources: Author's calculations; ILO KILM database, OECD Social Expenditure database.

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ENSURING ADEQUATE AND SUSTAINABLE SOCIAL SECURITY

The multidimensional adequacy of social insurance benefits and insurability

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Abstract In this article the adequacy of social insurance benefits is addressed from the perspective of eight fundamental goals of social insurance. With respect to these goals, the legislated level of the benefit and other conditions represent tools to achieve adequate levels of benefits vis-à-vis contributory effort. The goals address income risks of various sorts: (i) income compensation; (ii) securing a decent standard of living; (iii) universality, implying simplicity and a high takeup of social rights; (iv) reducing income risk deriving from physical incapacity; (v) safeguarding insurability by balancing the expected payoff to the insured and the value of the contributions paid over the lifetime; (vi) intergenerational equity; (vii) containing work and savings disincentives; and (viii) risk reduction (prevention). A simple model serves to clarify what is needed to achieve benefit adequacy together with insurability and contribution adequacy. An example of income support in working age, based on Israeli data, illustrates the use of specific instruments to achieve a decent standard of living while containing economic disincentives. The example stresses the importance of synchronizing efforts with institutions outside the social insurance system.

Keywords social insurance, adequacy, benefits, contributions, insured persons rights, standard of living, Israel

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Introduction

The multidimensional adequacy of social insurance benefit levels vis-à-vis contributory effort needs to be judged on the basis of the fundamental multiple goals of social insurance. It requires the achievement of the goals to be balanced, especially when there are more goals than there are available tools for doing so. This limitation was already well understood by Jan Tinbergen (Tinbergen, 1952), who stressed the importance of equality between the number of tools and goals in economic policy analysis.

The main purpose of social insurance is to reduce income risk and more specifically poverty risk over the life course. While the reduction of poverty risk is a task for social insurance, that of reducing rates of actual poverty is the task of government. Indeed it needs to be treated by specific tools, most of which do not belong to the typical social insurance toolbox. These include various instruments such as employment policy, professional training, tax credits/negative income tax (NIT), the progressivity of income taxation, tax allowances and tax benefits, the supply of free and high quality public services such as education and health care, public infrastructure for transportation, etc. Some of these instruments are part of social expenditure, which includes the expenditure on social insurance and tax-financed social expenditure. The philosophy behind tax-financed social expenditure and insurance-based social expenditure is important to clarify: while the tax-financed part is set in the government's annual budget decisions after adequate prioritization, based on the government's chosen preferences between such basic goals as well-being and national and personal security, health, education, redistribution, economic efficiency etc., the contribution-based social expenditure reflects an inalienable right of the insured to be safeguarded from basic income hazard over the life cycle.

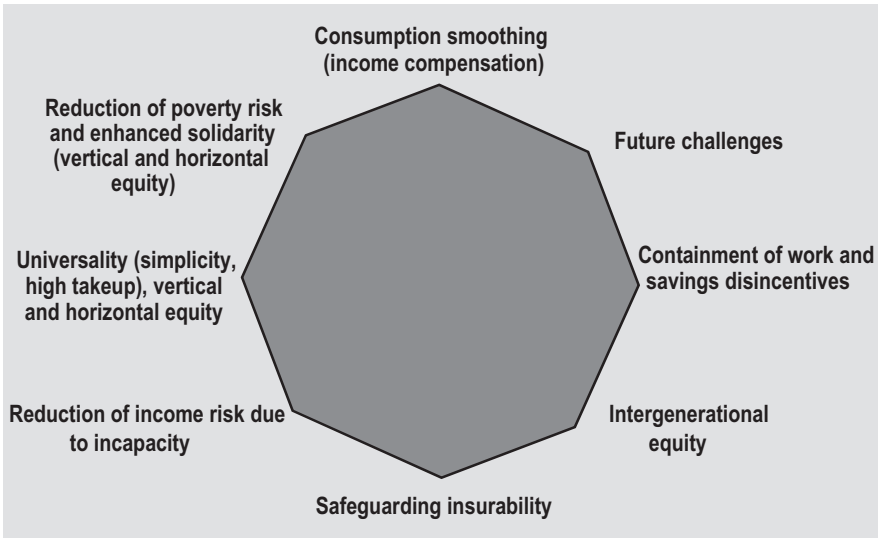
The remainder of this article is structured as follows. In the next section we discuss the main goals of social insurance. We then illustrate the issue of benefit adequacy vis-à-vis the contributory effort required to maintain a sufficient degree of insurability by means of a simple model and the example of income support in working age, before offering final conclusions.[1]

The goals of social insurance

Individuals and families encounter various income risks over the life course. Through the payment of mandatory contributions, social insurance covers major income risks facing the insured (and their children) when of working age and in

1. Income support refers here to the social assistance received either when of working age or in old age. It is based on a means test and paid as a last resort. In the Israeli case, it is administered by the social insurance agency, but financed by government taxes.

Figure 1. *Multiple goals of social insurance*



Source: *Author.*

old age, entitling them and their eligible dependants to a minimal income in the event of the occurrence of the insured hazard. We identify eight goals of social insurance (Figure 1):

(i) Consumption smoothing by means of income replacement;

(ii) Reduction of poverty risk and strengthened solidarity, assuring horizontal equity in the sense that "equals should be treated equally", implying that differently-sized families should be made comparable by using equivalence scales that reflect welfare considerations;

(iii) Universality of benefits, ensuring simplicity of administering social expenditure and the achievement of a high takeup rate, also referred to as the "decommodification" (see Esping-Andersen, 1990) of social rights. Universal benefits enhance vertical and horizontal equity because the payment of a flat amount with respect to the insured's income level and number of dependants is progressive from the income-distribution perspective;

(iv) Reduction of income risk deriving from a physical incapacity that protects the insured as a result of a general or work-related injury and disability in working age, an accident-related injury and disability and, in old age, the need for long-term care and assistance. This includes the income loss from such events and should cover the cost of supplying help for better mobility inside and outside the home. Despite its social insurance nature, in reality there are often means tests or earnings-capacity tests attached to the execution of the right.

(v) Safeguarding insurability. Insurability is usually defined from the perspective of the insurer as a situation in which an insurance programme is too costly for the insurer, because of the high risk that the insured will become eligible and the high cost of the payoff for the insurer. In the case of mandatory insurance we give this term an additional meaning from the viewpoint of the insured: due to several reasons the balance of costs (contribution payment) and benefits (total expected payoff from the receipt of benefits) for the insured individual may be negative from a certain level of income upwards. This is due to:
   - the extent of income solidarity in benefit payments,
   - the higher probability of incurring various income risks for people with low incomes,
   - the income progressivity in contributions, and
   - means testing.

When these elements are prominent, such as for example in an income support programme, these benefits should be financed by taxes rather than by contributions. They have more in common with income redistribution than with insurance and should thus not be an integral part of social insurance. When benefits are financed by contributions, this makes the contributors legally eligible to receive them without having (in theory) to pass an additional means test. The adoption of selectivity is therefore detrimental to the goal of insurability.

Selectivity (i.e. means testing), when unrelated to existential needs (i.e. the need for at least a minimum income) but nevertheless used within social insurance, is usually fiscally motivated, reflecting a reticence to raise contributions accordingly. It is preponderant in cases where the social insurance system is highly dependent on the government budget. Income-progressive contributions raise the perception of the tax nature of contributions and jeopardize their "insurance character". They reduce the incentive for middle- and higher-earner contributors to participate in social insurance – were it not mandated. The goal of insurability is further impeded due to the higher probability of needing certain benefits by lower-income earners.

(vi) Intergenerational equity addresses the goal of the long-run financial sustainability of social insurance, assuring that those yet unborn are taken into consideration in the calculation of current benefit and contribution adequacy.

(vii) Containment of disincentive effects of social insurance with regard to labour supply and savings rates.

(viii) Risk reduction. Social insurance can also act in ways to reduce the risk of the insured hazard, e.g. by encouraging a healthy life style, thus reducing health risks, etc. Such risk reduction may be channeled to the insured by a deduction in the contribution.

Income compensation and consumption smoothing[2]

In order to better understand which of the benefits should apply to each of the goals, the social benefits may be divided into the following clusters or categories: i) universal, ii) earnings-substitutive, iii) selective benefits, and iv) benefits for a physical incapacity and v) selective benefits intended to provide the insured with a decent minimum income ("existential" benefits such as income support). The first three categories may be termed insurable benefits, whereas the last category is related to straightforward income redistribution, which lacks insurability and should therefore appropriately be financed by taxation rather than by social insurance.[3] If, nevertheless, selectivity is motivated by considerations other than existential needs, then such selective benefits obviously belong to one of the three other clusters, thus creating overlap among them and the selective benefits. Commonly, such means-testing arises mainly from budgetary considerations of "saving" money, and thus contradicts the idea of insurability, disregarding the idea that they are contribution-based. Such overlapping may thus be called "budgetary selective".

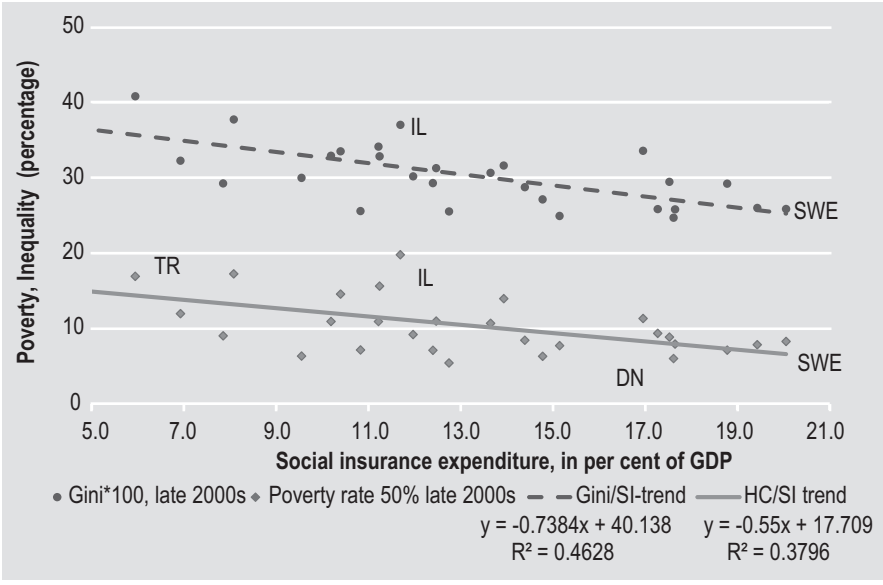
One of the major risks addressed by social insurance is the possibility of a fall in income in working age due to a cessation of work as a result of unemployment, maternity, injury at work, etc. For those of working age, the value of the benefit is commonly linked to the most recent level of work income, thus smoothing income and consumption expenditure. If that personal income was low, the notion of adequacy must also relate to the goal of poverty prevention (see also equation (2) in the model). As stated, the goal of poverty prevention may require specific tools, among which income support. Given the higher probability of unemployment for low-skilled workers, this may also affect insurability by reducing the incentive for risk sharing among the higher skilled. In a non-altruistic society this is one of the reasons for making social insurance mandatory, thereby keeping the pool of those insured as wide as possible, thus contributing to risk sharing and the lowering of average costs. Further risk sharing can be achieved by making the contribution a general and unified one for all the branches or even clusters.

Reduction of poverty risk and solidarity

The basic objective behind social insurance is to protect the general population from hazardous income losses resulting from various risks over the life cycle. Social insurance is intended to preemptively reduce the risk of poverty rather than

2. Compensation of income from earnings includes also those of the self-employed. In old age it includes the replacement of income from work by old-age benefits, work pensions and private savings.
3. This, of course, does not prevent social insurance institutions from carrying out the task as the government's agent.

Figure 2. *Correlation of Gini inequality (*100) and relative poverty (1/2 median) with average social insurance expenditure, 2000 to 2005*



Notes:

1. Social expenditure: average of years 2000 to 2005; social insurance expenditure is an estimate based on the data for social expenditure.
2. *TR = Turkey, IL = Israel, DN = Denmark, SWE = Sweden; HC = headcount poverty ratio, SI = social insurance.*

Source: OECD data base, national data for Israel.

to target the already poor population. Over the long run, prevention may well reduce the actual rate of poverty.[4] This conclusion is consistent with a comparison of social insurance expenditure (Figure 2) in 34 member countries of the Organisation for Economic Co-operation and Development (OECD) with relative income poverty, calculated by the headcount ratio of the half-median, equivalized net cash income.[5] Figure 2 also shows that the correlation of social insurance with inequality as measured by the Gini coefficient is about 40 per cent higher than that of poverty. In other words, the social gain from a given increase in the GDP-share of social insurance expenditure is higher for inequality reduction than for poverty reduction.

How to define a decent standard of living (DSL). A major task of multidimensional benefit adequacy with respect to poverty prevention is the need to provide

4. See also Korpi and Palme (1998), on the efficiency of poverty prevention versus poverty targeting.
5. The OECD uses the square root of family-size as an equivalence scale, thus accounting for the needed increase in household income to keep welfare constant in a growing family.

an operational definition of a decent standard of living. While this is a philosophical and ethical question, the decision of how much of DSL should be covered by the benefit level is a political-economic decision that involves a compromise between competing goals – in this case, the goals of poverty-risk reduction, of containing work and saving disincentives, and of maintaining sufficient insurability (see goals v and vii). This question is related to the basic sociopolitical approach to social security: a (neo)liberal planner typically attaches a higher weight to the containment of work- and saving-disincentives whereas the social-democratic planner will give more weight to the reduction of poverty risk and accept the inevitable part of distortion arising from any government intervention. Therefore the differences need not be found in the definition of DSL, but rather in the relative weighting of the goals.

A closely related concept to DSL is the definition of what poverty means, i.e. a poverty line (z) and the associated test whether a household can be considered to be living in poverty. This is also called the question of identification, as discussed in Sen (1997). Such identification can be viewed as one dimensional or multidimensional: the statistical half-median definition can be seen as one (statistical) way of looking at poverty and Sen's capability approach as a more sophisticated multidimensional interpretation (Sen, 1985; see also Kakwani and Silber, 2008; Alkire and Foster, 2011a, 2011b). Another basis question relates to issues of defining the types of income to be included in the associated income test – should it include only cash or also near- and non-cash income; should the costs of going to work be deducted from net disposable income; and what about vital but rare health expenditure, etc. A further question is whether to view poverty in relative or absolute terms.

We discuss here a limited version of monetary, multidimensional poverty, combining (i) a definition of *basic* household expenditure, and (ii) various definitions of income. This concept may be further enriched by using also near-cash or non-cash income and expenditure. This definition of poverty eventually comes quite close to multidimensional definitions of poverty, since the dimensions of income and expenditure in public goods provision, such as free schooling, subsidies in education, health care, transportation, etc., can be included in the definition of DSL without neglecting the convenience of working with a monetary poverty definition. Retaining a monetary definition helps maintain operational relevance for evaluating benefit levels in government policy.

A government or social insurance agency may decide to guarantee only a certain proportion of the DSL because of adequacy considerations concerning work or savings disincentives. This perception is also shared by the Beveridge Report on social insurance (Beveridge, 1942, see paragraph 10 among others). The report states that "[the plan for social security] . . . is . . . a limited contribution to a wider social policy . . . a plan . . . of giving in return for contributions benefits up

to subsistence level, as of right and without means test, so that individuals may build freely upon it."

The various DSL estimates presented below can be calculated for any country. We use the Israeli income and expenditure survey for illustration. While the various concepts imply sizeable differences in the levels of DSL, these differences are mitigated by the parallel definition of income resources. This explains why the differences between headcount ratios according to the various definitions are much smaller than expected from the wider scope of the DSL definition. For further details of the poverty definitions applied in this article see Appendix.

Universality (simplicity, high takeup of social rights) and social equity

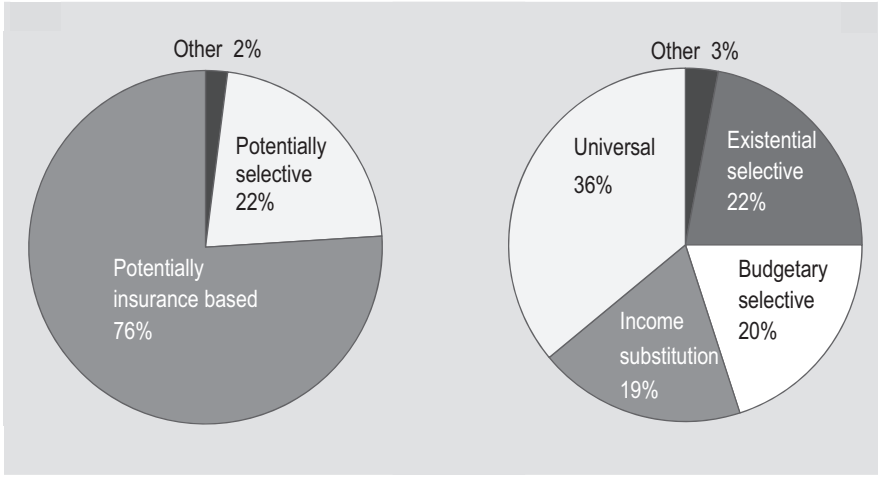
In old age, the social insurance benefit level is typically universal and equal for all. It is not conditional upon work or income level, features which stress the universal nature (goal iii). The universal benefit is inherently progressive, since an equal sum is paid out to rich and poor alike. Moreover, if the benefits are intended for families, they have to be adjusted to family size by use of some equivalence scale. Put differently, universal benefits reflect solidarity, being vertically and horizontally equitable. Horizontal equity is achieved by adjusting the benefit for family size, due to returns to scale. Child benefits are by nature horizontally equitable if defined per child.

Universal benefits, being uniform and paid to all the insured, tend to have a low cash value due to considerations of budgetary thrift and economic efficiency. While a universal benefit is by definition uniform (i.e. equal for all recipients), the earnings-substitutive benefits are inherently unequal.[6]

The earnings-substitutive component of benefits reduces the tension between the principles of solidarity and insurability, since the insured person is paid in relation to his or her income before the occurrence of the income shock, such as

6. In Israel, there is a group of benefits, mainly related to disability or need for long-term care (LTC), that are subject to means-testing, despite the fact that they are financed by insurance contributions – a fact that should make them available to all the insured. Also, in the mostly-universal old-age benefits there is a kind of selectivity for elderly people who have reached retirement age, but have not yet reached the age of entitlement to the old-age benefit. There is a means test with a disregard of about 5,000 shekels (NIS) (about USD 1,250) and a marginal deduction rate of 60 per cent for each additional shekel earned beyond this level, reducing the benefit to zero at about NIS 8,500. This means test is less limiting than regular means tests, since by continuing to work and thus foregoing the early payment of the old-age benefit, individuals become entitled to an additional pension deferral increment at age 70. For people who decide to stop working altogether at the retirement age, the means test is very soft and therefore not problematic.

Figure 3. *The distribution of benefits by type of benefit – the case of Israel, 2013*



Source and calculations: National Insurance Institute – Research and Planning Department.

in the case of unemployment, work accident, maternity, etc. The three types of benefits – universal, earnings-substitutive and benefits for a physical incapacity – comprise the bulk of insurance-based social security. The selective benefits, i.e. the means-tested benefits, do not fit into the framework of social insurance. Rather, they belong to general social expenditure, which is mainly tax financed, serving the purpose of income redistribution, just like progressive income taxation. Therefore the natural source of selective benefits is the government budget, financed by the Ministry of Finance, even if administered by the social insurance agency.

Reduction of income risk deriving from physical incapacity

These benefits include payments for attendance and mobility allowances for people with disability or benefits for people in need of long-term care. This group would need to include medical and age-related conditionalities, but not means tests. However, in reality, many social insurance schemes use means tests, mainly for the purpose of budget savings, despite the fact that they are contribution-based benefits. Since in these cases the means test is not motivated by existential but rather by budgetary considerations, we call this type of benefits also "budgetary-selective" and argue that this kind of selectivity stands in direct contradiction to the goal of insurability (see below). In the left panel of Figure 3, we suggest that abolishing the means test and thus budgetary selectivity in the Israeli context would turn these benefits into a category of incapacity benefits

which should be part of insurance-based (universal or earnings-compensating) benefits.[7]

A fundamental goal of social insurance is to ensure the social right to the benefits. A means test is conceptually alien to a social right and in that sense contradicts the idea of social insurance in which the right derives from the insurance contribution. The less strings there are attached to the exercise of a social right, the more accessible will be the expected pay-off of the insurance to the insured. Universality of benefits and high takeup are closely related to another feature: the simplicity of the processing of benefit eligibility and delivery. To deliver an age-related benefit, such as a child benefit or an old-age benefit, is a simple task and the takeup ratio is near 100 per cent. When compared to income support, general disability benefits or LTC benefits, each of which require intrusive tests, such as a frequent employability test and an earnings-capacity test (in income support), medical disability tests, activities of daily living (ADL) or instrumental activities of daily living (IADL) tests (in LTC and disability) or combinations of them, the takeup of these benefits is much lower. There may be stigma or other administrative barriers attached to receiving the benefit. This may convince some of those eligible to forego the realization of their social right. Therefore the goal of simplicity in benefit design is really one of reducing the conditions attached to a benefit to a bare minimum, sometimes at the cost of compromising equity or other goals.[8]

In the Israeli context, the share of budgetary-selective benefits is quite significant; amounting to 20 per cent of insured benefits (Figure 3). The historical development of the three main types of benefits in Israel shows that the universal and the earnings-replacing benefits, i.e. the insurance-based benefits, have been declining in importance over the years as measured by their GDP share, whereas the budgetary-selective benefits included in social insurance provisions have been rising in importance (Figure 4). This implies a weakening of the insurability goal of Israel's social insurance system.

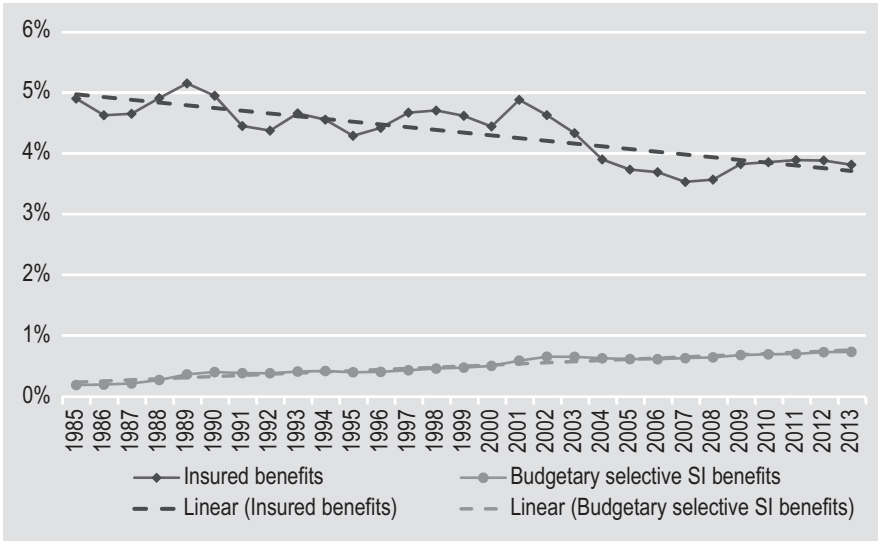
Safeguarding insurability

Insurability is an important characteristic of a well-designed compulsory social insurance system. In the context of social insurance it reflects the spirit of insurance in the eyes of the insured. This is argued here to be positively achieved when for a sufficiently high share of all insured individuals in the pool the net expected

7. More strictly, we may define most universal benefits as differential benefits. For instance, benefits with a conditionality that can be applied very simply, such as conditionality of age, etc., as in child benefits and old-age benefits.

8. As explained in Korpi and Palme (1998), targeting the "needy" population does not necessarily raise the benefit level by much, but simply reduces the budgetary cost. At the same time, it is detrimental to the goal of insurability.

Figure 4. *Universal, earnings-substitutive and selective benefits, percentage of GDP, Israel 1985-2013*



Note: SI: social insurance.

Source and calculations: National Insurance Institute – Research and Planning Department.

benefits from insurance exceed the net expected costs. Well-maintained insurability strengthens public support for the social insurance system. Claims to benefit by a sufficiently large group of insured middle-class members, who also pay significant levels of contributions, tend to keep benefit levels and the quality of the service sufficiently high, thus preventing it from deteriorating into a meagre service for the poor. While a more income-progressive contributions schedule – as in the Israeli case – raises solidarity, at the same time it weakens insurability since it pushes the social insurance to perform redistributive tasks which should be the prerogative of the government. Progressivity should be achieved by combining a linear contribution schedule with an income-progressive refund, financed by progressive (governmental) income taxation provided to the social insurance as the government allocation. A linear contribution schedule will still reflect income progressivity when there is an exemption from contributions for low-income people or a sufficiently low minimum contribution. The regressive element in contributions created by the linearity is justified among other things if income compensation is kept also for high-income earners.

The effect of universality on insurability is more ambivalent: on the one hand, the uniformity of universal benefits, being progressive, affects insurability negatively, but, on the other hand, insurability is strengthened by high takeup due to the scheme's simplicity.

A similar risk occurs in relation to direct government support for the social insurance scheme through tax-financed funds. If direct government support is very significant, this increases the dependence of the system on the government's budget, thus impairing the aspect of social insurance as a social right ("de-commodification") and increasing the system's vulnerability in periods of budget cuts.

From the point of view of different goals, that of multidimensional adequacy stands in a direct trade-off with the goal of poverty risk reduction. Multidimensional adequacy should therefore reflect this potential conflict in the weights applied to competing goals when determining benefit levels. One way to reflect this in the decision concerning the benefit level could be that the average level of the universal and the earnings-substitutive benefits should be well above the poverty line, such as to draw a clear distinction between non-means-tested general social insurance and means-tested minimal insurance, which should be more geared to some poverty line (see Appendix). Figure 4 shows the increasing relative importance of non-existential selective benefits in social insurance. Together with the increased progressivity of contributions, this points to a deterioration of insurability over time.

Insurability is an important goal, providing checks and balances to the deliberate equity or solidarity bias in favour of low-income earners. It is therefore not an absolute goal in itself, a fact underlined by the mandatory nature of social insurance. The monitoring of this goal requires the development of a measure of the insured's expected net pay-off from benefits and contributions, giving sufficient weight to a positive expected value for the insured at high levels of income. This is particularly important since not only is a given flat sum progressive but, in many cases, the probability of receiving the benefit is biased towards low-income earners also (e.g. probability of becoming unemployed).

While the insurability aspect is hard to measure, it reflects the insured's desire for insurance of various income risks over the life cycle. In absence of a social insurance, the person would be interested to buy a similar insurance product in the market. Left to the market this insurance would be more expensive and particularly so for high-risk groups, and certain insurance products, such as unemployment insurance, would in all likelihood be unavailable or unaffordable.

Intergenerational equity: Financial and social sustainability

Intergenerational equity is often equated to financial sustainability, i.e. the demand to accumulate sufficient reserves in the system that can cover future deficits due to demographic risks, such as an ageing society, etc.

An important point to keep in mind is that continued investment in a well-run economy causes the economy to grow and accumulate wealth. This makes the future economy wealthier and the future debt to the social insurance system, if it remains constant in real terms, more easily bearable. An important part of reflecting adequacy with respect to intergenerational equity is therefore the presentation of the development of the government debt to the social insurance system in terms of GDP, with a detailed account of the underlying assumptions concerning future economic growth. This implies that in a "golden-rule economy" there is space for the social insurance system to grow in line with the rate of economic growth (see Acemoglu, 2009; and Breton, 2013). The future generations' wealth gain makes them less vulnerable to income hazard, all other things remaining equal.[9]

The goal of intergenerational equity also addresses the rules determining the reserve management of the social insurance system, an important aspect of which is the degree of the system's independence from the government's yearly budget priorities. These considerations include the investment rules of social insurance budget surpluses and of the accumulated reserves. In Israel, according to a longstanding agreement, the surpluses have to be deposited in the government budget. Such practice reduces the system's independence from the government budget by linking it directly to the government's need to avoid or contain current budget deficits.

Intergenerational equity should strive for a healthy balance between financial and social sustainability in the present and future. This is particularly pertinent for questions of changing the age of entitlement to the old-age pension when dealing with improved longevity. One way to improve financial sustainability without infringing insurability could be to raise an individual's pension-benefit age automatically by multiplying the change in the politically agreed share of old-age benefit payment to longevity times the remaining uninsured portion of working-age (τ). We denote life expectancy by Θ: A politically-agreed change in life expectancy $\Delta\Theta$ of 1 year would then imply a change in the benefit age, B, of the following size:

(1) $\Delta B_i = \delta\theta * \tau * \Delta\Theta$,

where the first year of contribution payment is, say, 18.[10]

(2) $\tau = \left(1 - \frac{A - C}{B - C}\right)$ where A denotes the actual age of the insured, B the age of retirement and C the starting age of contribution payment.

9. Of course, for a full analysis we need to analyze the determinants of the growth rate, including the risks of ecological factors, globalization, economic concentration, etc., on workplace security, income security and, first and foremost, on income inequality.

10. This way of calculating the benefit age has an additional advantage: in case the person starts working at an early age this will raise the percentage of untouchable benefit age. Furthermore it allows for agreeing on a lower benefit age in occupations that tend to erode health and thus could be compensated by lowering the pension age.

$$\delta\theta = 1 - \frac{B}{\Theta}$$

Following is a numerical example:

In Israel life expectancy at birth for men is 79.5 years. For most men working age spans from age 18 to age 70. The typical interval (B-C) of contribution payments equals thus 52 years. The share of old-age benefit to life expectancy for men, $\delta\theta_i = (79.5 - 70)/ 79.5 = 11.95$ per cent. Say that at the date of increase of the benefit age an insured person reached the age (A) of 57 and thus paid 39 out of 52 years, i.e. 75 per cent of the total due contributions. His individual increase in working age would then be equal to 25%*11.95 per cent, i.e. $\tau * \delta$, of a year, i.e. about 11 days per year of increase in life expectancy, whereas for someone just starting his contribution payments the maximum increase would be about 44 days. The age of old-age benefit payments would change gradually over time, depending on changes in longevity and on the share of secured right for benefit payment. This would give the insured a sense of accumulated inalienable social rights.

Containment of disincentives to work and save

The last goal to be mentioned is the containment of work and savings disincentives for the insured. This problem arises in means-tested (selective) benefits or if benefits are exceedingly high. A typical example of work disincentive is income support in working age. Savings disincentives are not an issue here since people receiving income support are also means-tested for financial assets and these are low and insufficient, given the permanent increase in longevity. There is usually a high risk to under-save due to increasing life expectancy. In any case, a certain distortion of economic efficiency concerning work effort is thus inherent in mandatory social insurance systems. To be kept in mind is that the main goals of social insurance are those enumerated in the previous six sub-sections. This current one, perhaps, should be viewed as a constraint rather than a goal in itself. When considering the weighting of the various social goals to determine benefit levels and conditions, we need to keep in mind that the main goal is poverty risk reduction for people who, for legitimate reasons, cannot participate in the labour market. In order to discourage idleness, the extent of generosity needs to be curtailed such as to contain economic disincentives. However, the attempt to eliminate the economic disincentive altogether would imply setting the benefit level so low that the social goal would be jeopardized. Since the achievement of the social goal implies a certain trade-off with economic efficiency, some disincentive effect is unavoidable and therefore the aim should be to monitor the disincentive effect, such that it can be contained at a certain acceptable level.

Risk reduction (prevention)

One important task not yet sufficiently explored by social insurance institutions is the goal of reducing hazard risk, e.g. by encouraging a healthy life style, etc. Social insurance can try to encourage this by incentives, e.g. by giving a discount in contribution rates to those who respond positively to the incentive. This will eventually reduce risks and thus reduce benefit payments and thereby justify the reduction in contributions.

Multidimensional adequacy of benefits and contributions: A model and example

In this section we sketch a simple model in order to help clarify the considerations for answering the question of the adequacy of benefits and contributions. We assume that the social insurance reserves are already at an optimal level and the yield on investment of the reserves is assumed to be sufficient to keep the share of reserves in GDP constant.[11]

A basic model of the adequacy of benefits and contributions

Benefit adequacy. We have discussed that benefit adequacy has several dimensions: it can be related to a decent standard of living, as approximated by some poverty line (z), or in the case of the objective of earnings substitution it should reflect a person's recent steady income. In cases where the benefit is expected to compensate for a physical incapacity it should cover the cost of helping the person carry out all necessary daily functions. A further element in determining benefit adequacy for people of working age is to contain the disincentive to work. All these considerations need to be balanced versus the goal of maintaining insurability.

In the following we propose a simple model that takes into account these basic features:

- **Poverty risk adequacy**

$$B_z = \lambda * z, 0 < \lambda < 1, z > 0. \quad (1)$$

with B_z indicating the benefit level with respect to some decent standard of living, indicated by some poverty line (z). The degree of work incentive is indicated by $(1\text{-}\lambda)$.

11. The reserves are intended to function as a buffer-stock for unexpected negative shocks of macro-economic and/or macro-social nature.

The parameter λ is determined by policy-makers. It indicates the share of income support as compared to the level of a decent standard of living. A low level of λ reflects the political view that those in need should be pushed to work. It reflects a harsh, anti-social policy, which tends to make use of the "stick" rather than the "carrot". Obviously such a policy is particularly harmful when the economic stress, the need for income support that recipients are exposed to, is due to severe barriers to employment, such as an economic crisis or lack of skills, etc. There are several tools of active labour market policy (ALMP), such as professional training, job placement centres, etc., that can positively affect employability without the need to reduce income support. Many people of working age are also parents. Therefore, the use of poverty (i.e. a low level of λ) as an instrument to push people to work may cause permanent damage to children's human capital accumulation, thus raising the probability of them becoming permanently poor in the future.

The more additional instruments that are available to policy-makers "to make work pay", the less there is a need for curtailing B_z by reducing λ. Instruments considered as complementary to the benefit level include the level of disregarded income (D), the marginal rate of deduction, expenditure on job training, negative income tax, etc.

- **Income replacement adequacy**

$$B_y = \begin{cases} (a)\ B_y = \delta * y_t, \forall z < y_t < y_{max}, y = \text{income}, \delta = \% \text{ of income compensation} \\ (b)\ \lambda * z, \forall\ y_t \le z, \quad 0 < \lambda < 1. \end{cases} \tag{2}$$

- **Adequacy of incapacity benefits**

$$B_F = \kappa(F) \tag{3}$$

where κ(F) = cost of helping people with physical incapacity to perform basic functions of daily life.

Contribution adequacy. We suggest to measure insurability by calculating the net expected income gain from the difference between expected net total benefits, i.e. benefits multiplied by the probability of receiving them and the total of all social insurance contributions paid. The individual's insurability is achieved if the net benefit is positive. Insurability improves the higher the net benefit is. From a macro-social point of view, insurability is obtained when the headcount ratio of insured persons with a positive net-payoff exceeds, say, 50 per cent. We could also define an insurability intensity measure, which would weigh the size of the net surplus of the insured, similarly to the logic of the FGT measure of poverty severity developed by Foster, Greer and Thorbecke (1984).

We define an individual *i*'s adequate level of contributions as a situation in which expected benefits (EB_i) over the life course exceed contributions (C_i):

$$\sum_{t=18}^{ET} EB_{i,t} \geq \sum_{t=18}^{ET} C_{i,t} \tag{4}$$

where i are the insured individuals (or families).

We do not account for the government's allocation (G) to the social insurance system, which is intended to finance redistribution, e.g. through financing the contributions of people with low or no income, who live in poverty and have difficulties in paying contributions.

The individual's total expected benefits over the life course can be presented as:

$$\sum_{t=18}^{ET} EB_{i,t} = \sum_{j=1}^{J} \sum_{t=18}^{ET} \pi_{j,t} B_{j,t} \;\forall\, i = 1....I \tag{5}$$

where j are the types of benefits included in the insurance scheme.[12]

The contribution is assumed to be linear.[13]

$$\sum_{t=18}^{ET} C_{i,t} = \sum_{t=18}^{ET} [C_0 + \mathrm{c}_{1,t} * \mathrm{y}_{i.t}\,], \mathrm{c}_{\mathrm{o}} = \text{minimum contribution.} \tag{6}$$

The aggregated indicator may be written as the share of the insured population for which the net benefit is positive, i.e. for which equation (4) holds.

An individual's expected benefit (EB_i) is calculated as the sum of products of the probabilities (π_j) to experience an income loss due to the various hazards defined by the social insurance system, times the benefit size.

Insurability should be considered as adequate if, for the majority of contributors, the expected net benefit exceeds the contribution (C_i) paid by them over the expected lifetime.

One way to calculate the contribution rate with respect to income ($c_{i,t}$) is the following:

Equations (4) to (6) enable us to calculate an approximated adequate annual contribution ($c_{i,t}$):

$$\mathrm{c}_{1,t} = \frac{\sum EBI - N * c_0 - G}{\sum_i^N y_i} \tag{7}$$

where c_0 is the minimum contribution, G is the government allocation to the social insurance and y_i are the incomes of all the insured. This calculation is consistent

12. We may include in the expected benefits also those benefits that are fully financed by the government allocation. In that case, we would have to add the relevant expected benefits, mainly income support. Since they are fully financed by the government their net effect on equation (5) is zero.

13. In the Israeli case, it has become highly progressive in 2003, and has thus negatively affected insurability.

with the goal of intergenerational sustainability but it lacks a social dimension in that rich and poor pay the same rate.

One way to make the proposal more egalitarian would be to declare that while the social insurance's main tasks are to insure the whole population in the social benefit scheme and to distribute the universal benefits in an egalitarian way, i.e. equal amounts for all, it is the government's task to redistribute resources or incomes. Therefore the government allocation (G) could be used to reduce the rates, with the reduction (the "discount") being higher the lower the insured's labour income,

$$c_{1,t}^{gross} = \frac{\sum EBI - N * c_0}{\sum_i^N y_i} \tag{8}$$

$$c_{1,t}^{net} = c_{1,t}^{gross} - \delta_{i,t}(y_{i,t}) \tag{9}$$

where $\delta_{i,t}$ is the progressive rate of deduction of the contribution rate, which reflects the rationale of the government support of social insurance by tax-payer's money. Since the income tax is typically progressive, this scheme makes the contribution even more progressive, but its cost is financed by the government.[14]

$$G = \sum_{i=1}^{Y} \delta_i y_i, 0 \le \delta_i \le 1, \frac{\partial \delta}{\partial y} < 0 \tag{10}$$

Such a scheme has the advantage of distinguishing clearly the tasks of each institution – the social insurance is responsible for socially insuring the public, and the government is responsible for resource redistribution, even if that is technically carried out by the social insurance.

Income support: proposal to the Israeli Committee on the "war on poverty"

The basic idea of the proposal is similar to that of the United Kingdom's universal credit[15]: the National Insurance Institute (NII) of Israel proposed to combine and synchronize all benefits related to working-age families – from the universal child benefit to the selective income support benefit, including in their considerations also the "income tax-credit", municipal benefits of the housing

14. Some countries, including Israel, have a ceiling for the maximum contribution and for maximum income replacement benefits. In Israel they are 5 times the average wage.
15. See <https://www.gov.uk/universal-credit>.

tax, etc.[16] The general approach is to quantify the achievement of the goal of a decent standard of living by simultaneously looking at normative work effort (a full-time job for a single person or single mother and 1.5 jobs for a couple with young children). In order to keep the problem simple, we use the official poverty line as the DSL definition.

The first step is to identify the goals relevant to the chosen instruments – specifically, the benefit level, the disregard, the marginal rate of deduction, and the negative income tax (NIT). In the present case, three of the outlined goals of social insurance are relevant: reduction of poverty and poverty risk, universality, and the containment of work and savings disincentives. The major goal of any social organization is obviously to provide the family in need with a decent standard of living (DSL) to mitigate poverty and reduce poverty risk. This is a task of the government rather than of the social insurance institution. Related to this goal is the task of containing work and savings disincentives, i.e. preventing people from making a claim to receive income support instead of seeking work. There are several ways to address this challenge – e.g. to ensure that the combination of the minimum wage and negative income tax is sufficiently high compared to the benefit level. Given that such a benefit is typically selective, the takeup rate is expected to be rather low. The social insurance system can control the extent of the containment of work disincentives by providing a large disregard.

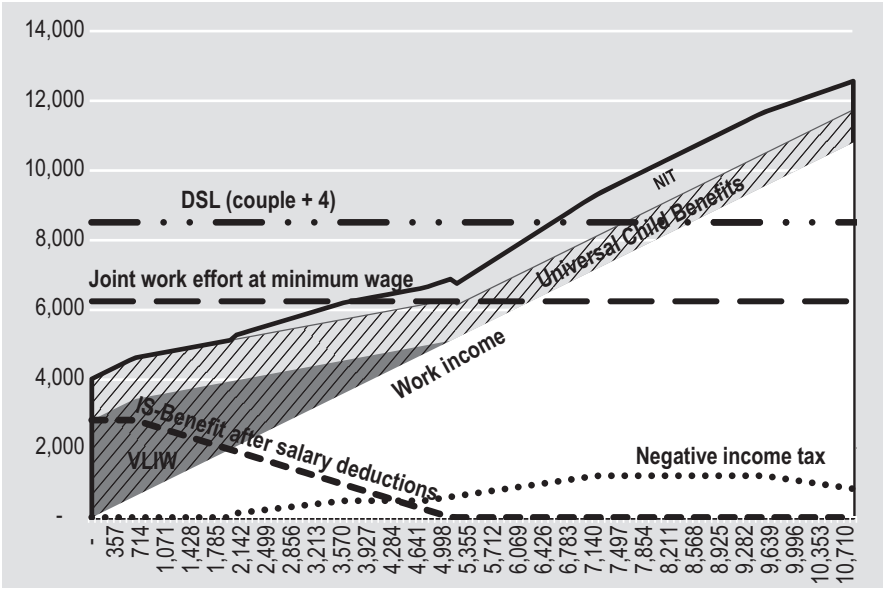
The second step is to identify the tools available for achieving the goals. In this case the obvious tools are (i) the benefit level, (ii) the disregard and (iii) the marginal deduction rate, which determines how much additional benefit the individual foregoes when earning an additional unit of currency higher than the level of the disregard.

A further important aspect of determining benefit adequacy is to synchronize the tools available in all the institutions involved, rather than being limited only to the tools under the immediate control of the social insurance institution. This should better ensure a rational overall design of social policy. This point is related to Tinbergen's insight (Tinbergen, 1952). The following example offers a case study to clarify that point: using excessively the marginal deduction rate, when there is a more efficient work-enhancing tool such as NIT, we unnecessarily impede work incentive.

As shown in Figure 5, the higher the disregard, the smaller is the disincentive to work and, moreover, if the NIT were raised to a sufficiently high level, the two instruments could be synchronized, such as to make the marginal rate of

16. See <http://www.milhamabaoni.org>, Report of the Israeli Committee on the War on Poverty, Part 1 (Report of the plenary sessions, 1–119) and Part 2 (Reports of the six subcommittees, 1–471), in Hebrew.

Figure 5. *A comprehensive view of goals and tools in income support (a family with 4 children receiving income support)*



Note: VLIW (shaded trapezoid): Benefit received at various levels of income from work.

Source: NII data on benefit levels and conditions, DSL is based on the Expenditure survey of the Israeli Central Bureau of Statistics, calculations performed by the National Insurance Institute – Research and Planning Department.

deduction obsolete.[17] Though a priori somewhat costly, this is recommended since the latter acts strongly as a work disincentive and eradicating it would probably reduce the number of eligible people and shorten their period of eligibility. As for fringe benefits, such as a discount on the municipality tax, utility bills for electricity and water, etc., if these are also provided to NIT recipients, this helps avoid the "benefit-trap", also called "poverty-trap" (Figure 7).

The example discussed below is part of a proposal submitted to the committee on the "war on poverty" in 2014.[18] In Figure 5, the income support benefit is depicted for a family with four children by the short horizontal part of about NIS 450 (the disregard), starting at the level of a little less than NIS 3,000. After the disregard has been fully utilized, the benefit is gradually reduced according to the

17. This would require an increase in the disregard and the NIT, in order for them to intersect (see broken lines in Figure 7).

18. The section on measures concerning social benefits and social work (in Hebrew) headed by Prof. John Gal, in which the NII's representatives participated, describes the detailed proposals. A full report on the proposal concerning the universal benefit (in Hebrew) can be found at <http://www.btl.gov.il/Publications/more_publications/Documents/shderot13n.pdf>.

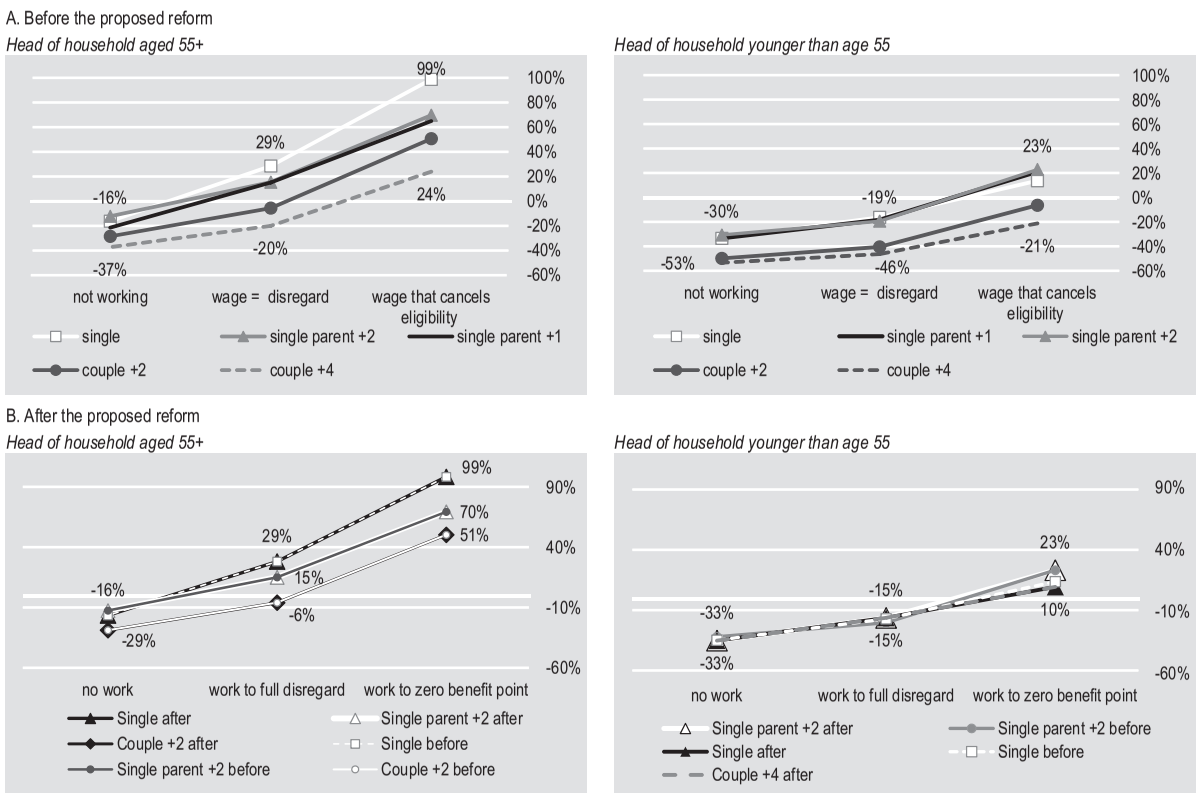
marginal deduction rate (60 per cent) as depicted in the downward-sloping section of the benefit. It is gradually reduced to zero with the increase in work income up to about NIS 5,000. Work income is shown as a triangle starting from the origin. The horizontal broken line indicates the level of "normative" income from work that can be expected to be earned jointly by both parents at 1.5 the minimum wage. The DSL for a family of six (based on the HM (see Appendix) poverty line) is indicated by the broken bi-dotted line. The overall actual living standard of the family is indicated by the full envelope-line, starting at NIS 4,000 including the income support benefit and the child benefit, at the starting point for a non-working family and then increasing gradually with work effort. The NIT comes into play at about NIS 2,000. It is indicated as a declining function of work effort by the trapezoid at the bottom (dotted line) and by its cumulative part. The shortfall of the actual living standard from the DSL is indicated by the interval between DSL and the full envelope-line of the actual standard of living. It is at its maximum at the point of zero work effort and becomes zero at around NIS 6,500.[19]

Figure 6, panel a, shows that under the definition of HM poverty (see Appendix) the actual provision of income support discriminates against younger couples (head of household younger than age 55) with children. In the proposal we suggested to raise the benefit such that it would cover 67 per cent of DSL for people aged 54 or younger if they do not work. Raising the disregard up to the point where total income would rise to 85 per cent of the poverty line and leaving the present marginal deduction rates as they are at present, would bring all the families at the point of zero benefit well above the poverty line. For those aged 55+ the situation would be even better.

The shortfall (of the actual standard of living vis-à-vis the DSL) of households in the figure indicates three points of shortfall for different family types: when there is no work effort, when the disregard is fully utilized, and when work effort reduces the benefit to zero. As a result of higher benefit levels, the shortfalls of "older" households are generally smaller than for younger households. For all households, they fall progressively. Single households are prioritized by the actual policy setting. The worst off are young large families. The situation gets even more polarized with bigger families (not shown in the figure). The shortfall falls progressively with work effort as a function of social insurance instruments and the NIT. The social insurance instruments in themselves are progressive due to the disregard. The progressivity is further enhanced by the intersection (in most cases) of the benefit schedule and the NIT. While a large absolute shortfall affects work incentive positively, it is still surprising to see that the slope effect from rising work effort is less progressive for younger families. The proposal suggested:

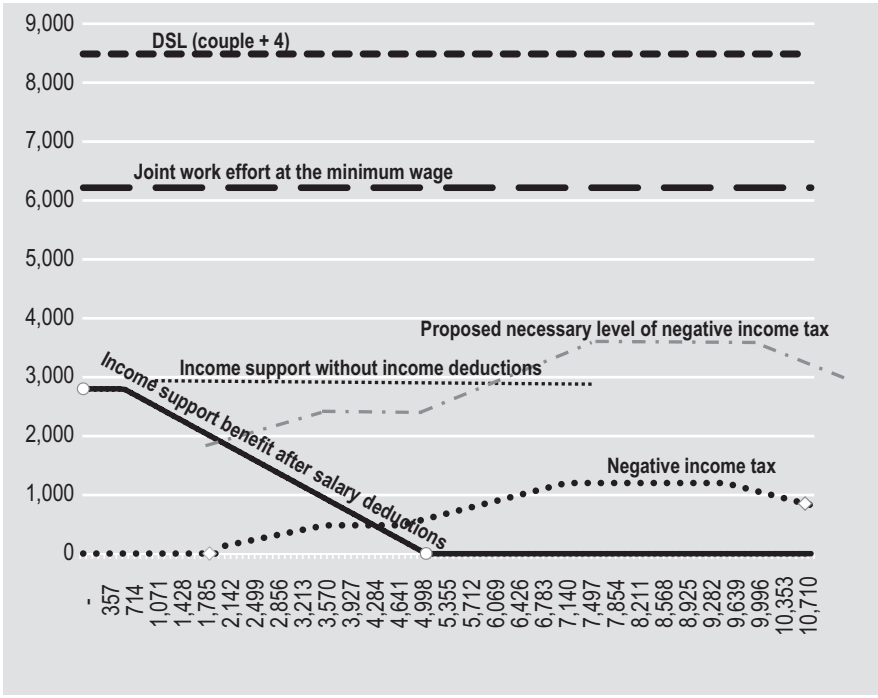
19. The figure for each family type will be different, depending among other things on the definition of DSL, the definition of the equivalence scale, legislation, etc.

Figure 6. *The shortfall of the actual standard of living from DSL as a function of work effort for various family types*



Source: NII data base; calculations by National Institute – Research and Planning Department. DSL: HM (see Appendix).

Figure 7. *Synchronizing income support and the negative income tax*



Note: DSL: definition of decent standard of living.

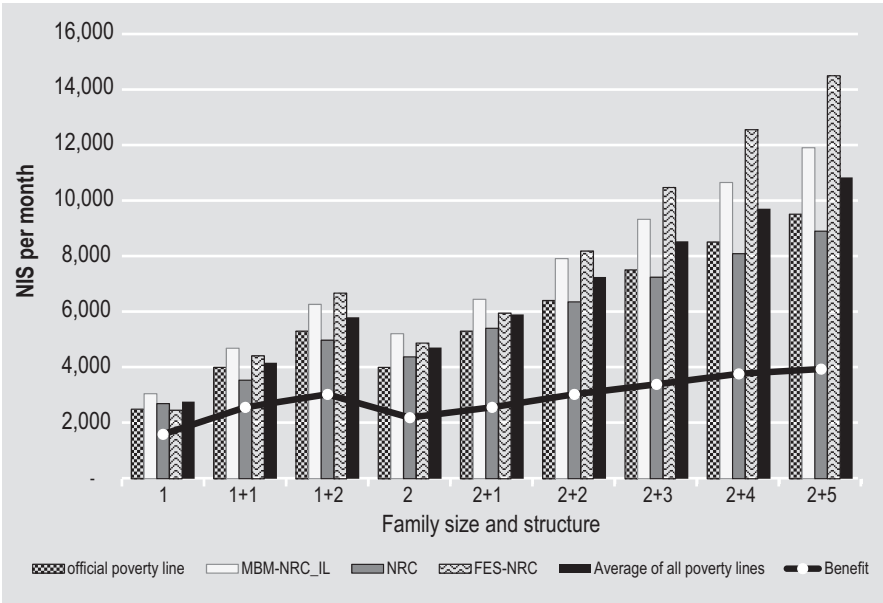
Source: NII data base and income tax authorities negative income tax.

• to change benefit levels at zero work such that the shortfall for all types of family should not exceed -33 per cent, while keeping smaller shortfalls established before the reform;

• to raise the work disregard for each household type, such that at full utilization the shortfall would be limited to no more than 15 per cent;

• to make income support and NIT mutually exclusive by forcing income support recipients to choose between the two. With NIT being more generous (Figure 5), this would encourage the move towards the regular labour market. One of the synchronizing measures is to extend supplementary benefits, such as rebates on municipal taxes etc., from income support recipients also to NIT recipients (shaded area in Figure 5). As seen in Figure 5, the marginal rate of taxation increases from the disregard to the intersection and then falls again. This irregularity in the marginal tax rate could be fixed by raising the NIT schedule such that the marginal deduction rate would become obsolete (as depicted by the broken lines in Figure 7). Getting rid of the rate of deduction would render a simultaneous

Figure 8. *The income support benefit compared to various definitions of DSL*



Notes:

1. See Appendix for detailed definitions of DSL (decent standard of living): MBM-NRC_IL; NRC; FES-NRC.
2. NIS: Shekels.

Source: Household Expenditure Survey, Central Bureau of Statistics and NII data base; calculations by National Insurance Institute – Research and Planning Department.

achievement of all three goals more likely – reducing the shortfall, reducing work disincentive, and strengthening universality.

When considering different approaches to DSL, we observe that the shortfall of the income support benefit based on alternative poverty measures is larger for most definitions and particularly so compared to the FES-NRC (see Appendix) measure (Figure 8).

Concluding remarks

This article spells out the major goals to be considered when discussing the adequacy of benefits and contributions. It divides benefits into two main classes – insurable and uninsurable benefits, the former including universal and earnings-substitutive benefits. The benefits available for a physical incapacity are an important part as well and should be more strictly defined as either universal or income replacing, rather than submitting the insured to means tests, thereby impeding the goal of insurability. This goal is indeed often neglected, since it stands in trade-off

to solidarity. In order to secure a healthy and sustainable social insurance scheme, insurability needs to be upgraded, such as to strengthen the support among the middle classes. Furthermore, this would strengthen risk pooling and thus the system's long-run financial stability. It also allows for temporary cross-subsidization between the various branches.

The example of income support reform shows the importance of synchronization between tools controlled by different institutions. Since the purpose is to provide a minimal decent living standard, the determination of the minimum benefit requires a political and socio-economic decision. One way to determine this minimum is to set the level at the poverty line. In order to answer the pertinent question whether the somewhat arbitrary poverty line chosen indeed reflects a reasonable minimum standard of living we compare a set of alternative poverty lines (Appendix).

A further tool to reduce the risk of insurability erosion is provided in a simple model for calculating insurability on an individual and macro-social basis, by juxtaposing the net expected income gain from benefits to the cost of contributing to social insurance.

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Appendix

In our context, a poor household (*i*) is identified by a vector of characteristics x_i, defining the household's income (y_i) to be below some defined poverty line (z), which is the money value of some vector of characteristics z = z(x).

We restrict ourselves here to four models of DSL or poverty lines: (i) The official half-median poverty line (**HM**), (ii) its absolute version (**AHM**), (iii) a combined version of the US National Research Council's income measure (NRC) and the basic expenditure of the Canadian Market Basket Measure (MBM), (the **NRC-MBM**), and (iv) a combined version of the basic expenditure of the World Bank's Food-Energy Share (FES) measure developed by Ravallion (1994) and the NRC income measure (**FES-NRC**).

• **The relative half-median equivalized net cash income (HM)** is one of the most popular poverty measures in advanced countries. Income is calculated net of income taxes and of social and health insurance contributions. It refers to cash income, but could conceptually also include non-cash and near-cash income components, such as income in kind (especially the expense saved by home-owners' living in their own home). While the cash income definition is simple and therefore widely accepted, it lacks information on important aspects of poverty: it ignores near-cash and non-cash income, which constitute important parts of a person's standard of living. Furthermore, it ignores the dimension of poverty, as approximated by basic household expenditure, related to a person's capability to function in society.

• **The absolute poverty line**, whose value is anchored at some point in time and space, represents a fixed real sum of money (income) or value of a basket of goods and services. In other words, the sum is updated over time for changes in prices but not in the standard of living.[20] Such an absolute income measure, based on the half-median net-cash-income, anchored in 1997, is calculated yearly for Israel by the Bank of Israel. In the United States, an official absolute poverty line, proposed by Orshansky in 1959, was accepted by the Johnson Administration in its "Great War on Poverty" in 1964. It is based on the real cost of a minimal basic food basket, multiplied by 3.[21] The World Bank's $1.00 poverty measure,[22] adjusted for purchasing power parity, is another example of absolute measures. The

20. This distinction should not be confused with the more general statement requiring a consistent poverty measure to be absolute in the space of capabilities (Sen, 1983). As stated by Sen it turns out to be relative in the realms of income and expenditure. See also Ravallion, Chen and Sangraula (2009), Ravallion and Chen (2011), and Yoshida, Uematsu and Sobrado (2014).

21. See Fisher (1997). The multiplier of 3 stems from the fact that in the late 1950s the share of food expenditure was about one third. Therefore, in order to account also for non-food expenditure the minimal amount of food expenditure was multiplied by 3.

22. This statement should be qualified, since the introduction of an equivalence scale can potentially add important dimensions to the poverty definition, since it is often based on outside information,

disadvantage of these measures is obviously the arbitrariness of the anchor chosen, making the measure less and less relevant with time.[23]

• **The NRC poverty measure**, described in Citro and Michael (1995), was defined by an expert group of the National Research Council of the National Academy of Science in the United States. To calculate the *poverty line*, it uses an average of the 30th to the 35th percentile of a basic basket of food, clothing, shelter and a small multiplier for personal goods and services. If the cost of this goods basket exceeds the family's resources, that family is considered to live in poverty. The *resource constraint* is calculated from *all* income sources. From this total, the expenses for child care (if both parents work full time or in case of a single mother) and transportation to and from work are deducted. An important near-money component is the imputed income for foregone rental expenses for people dwelling in their own home. Mortgage interest payments are appropriately deducted. The deductions include also above-average out-of-pocket health expenses.[24] If possible the income variable should include socially-motivated discounts in public services expenditure. Recently the NRC measure has been declared as the official supplemental poverty measure in the United States.[25] This measure has the advantage of providing extensive information on the conditions of poverty. Nevertheless, the 30-35 per cent poverty line is arbitrary and data collection is tedious.

• **The Market Basket Measure (MBM)**, calculated for Canada is similar in spirit to the NRC (see, for example, Hatfield, 2002), but uses a nutritionally-determined adequate, easily accessible and reasonably cheap food basket, rather than the average food expenditure based on the 30th to the 35th percentile used in the NRC or the minimal food basket used in the official United States poverty measure. The food basket, as determined in the MBM, relies on nutritional research and also accounts for the economic availability of the food items.

• **A synthesis of the MBM and NRC approaches**, adapted to Israeli data, has been constructed and calculated by Gottlieb and Manor (2005) and revised by Gottlieb and Fruman (2012). As mentioned above, this approach combines advantages from the two approaches into one measure. Similarly to the MBM approach, the basic food expenditure is set normatively by nutritional recommendations for

such as the food share in expenditures. In some cases it draws on even more sophisticated information. See Buhmann et al. (1988); Jones and O'Donnell (1995); Zaidi and Burchardt (2005).

23. Basu (2013) discusses a more ambitious goal of "shared prosperity", endorsed by the World Bank Group's Board of Governors in April 2013. It states the aim of fostering the per capita income growth of the poorest 40 per cent of people in each country. This recognition of the very limited scope of absolute poverty measures is certainly an interesting change in the World Bank's policy focus.

24. One could add the basic health component to the basic consumption basket forming the poverty line. However, in order not to inflate the basic basket by items that are used by only a few families, but are nevertheless of existential importance to the specific person, we deduct such idiosyncratic expenditures from income rather than adding them to the poverty line.

25. See <http://www.census.gov/content/dam/Census/library/publications/2014/demo/p60-251.pdf>.

each family's age-gender composition.[26] The non-food component is calculated following the above-mentioned NRC guidelines.

• **The Food-Energy-Intake and Share measure (FES)** developed by Ravallion at the World Bank (Ravallion, 1994) is another expenditure-based poverty measure. The poverty line is calculated from the cost of a basket of food and non-food. The food component is calculated (as in the MBM), based on the estimated cost of a normatively-required nutritional diet – the food norm (z_i^F). The non-food component is calculated from expenditure surveys. Ravallion calculates an empirically-observed average of two points of interest along the budget expansion path of the food/non-food composition of household expenditure. A first point of interest is ***a low level of non-food expenditure***, approximated by a conservatively estimated level of expenditure for the hypothetical case in which the household commands just enough income to buy the normative food basket. In this case the household will not spend all income on food, no matter how vital the food basket, but will spare some income to buy at least some of the most vital non-food items, sacrificing some of the vital food expenditure. By revealed preference, this implies that the chosen non-food items are considered by the household to be at least as vital as food.[27] Another reason could be that the expenditure on certain vital non-food items such as rent, electricity and water are indivisible or bulky expenditures, whereas food expenditure is easily divisible and thus more squeezable. A second point of interest is ***an upper level*** of non-food necessities (z_i^{NFU}), which is set at the level at which the family's actual food expenditure coincides with the food norm – since at that point the family spends just a sufficient amount on food, thus avoiding food insecurity.[28] Obviously, each type of household will have different pairs of poles, depending on its age and gender composition. Therefore this poverty measure creates a range of multiple non-food poverty lines over the range of household types. Ravallion's poverty line can then be calculated as the sum of the normative food basket (z_i^{F1}) and some average of the lower and upper levels of the essential non-food baskets (z_i^{NFL}) and (z_i^{NFU}):

$$z_i = z^F{}_i + \alpha\, z^{NFL}{}_i + (1-\alpha)\, z^{NFU}{}_i$$

26. The Israeli food basket was calculated by the team of Nitsan-Kaluski at the Israeli Ministry of Health for year 2002. Gottlieb and Manor (2005) and also Gottlieb and Fruman (2011) updated the basket for recent years using the nutritional values of the base year and adjusting it over time by price changes.

27. For example it is easier to cut gradually on food expenditure than on the electricity bill or the rent. They must be paid in toto.

28. Sen (1985, pp. 17–18) emphasizes the importance of the social component of food expenditure in ceremonies and festive occasions, etc. This is not captured in the FES and MBM but can be easily done.

Ravallion's FES poverty measure (Ravallion, 1994) is a more permanent interpretation of poverty since it does not include a resource constraint.[29] By adding the NRC resource constraint in the DSL definition, we include also temporary poverty. An important advantage of the FES measure is the determination of the non-food component as a rational choice rather than by an arbitrary interval of the expenditure distribution as in the NRC definition.

29. Given that consumption is more stable than income, as stated in Friedman's permanent income hypothesis (1957) and in the lifecycle hypothesis of Ando and Modigliani (1963) people tend to change their consumption expenditure only when they are convinced that the income change is permanent. A temporary change in income will change consumption expenditure only by a fraction of that change.

ENSURING ADEQUATE AND SUSTAINABLE SOCIAL SECURITY

A model for universal social security coverage: The experience of the BRICS countries

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Abstract The BRICS countries have made important progress in extending social security coverage. However, much remains to be achieved to realize the goal of comprehensive universal social security protection. Using policy experiences from the BRICS, the article explores the possibility of drawing from existing models of social security provision to design effective policy interventions for universalizing social security. Main principles of a framework for bridging the coverage gap are identified. These principles are then placed in complimentary and supplementary relationships to develop a framework for policy interventions to bridge the social security coverage gap and achieve universal social security.

Keywords coverage, model, social security administration, BRICS countries

Introduction

The world economic downturn after 2008 brought to the fore the important role played by national social security systems as regards poverty alleviation, redressing inequality, strengthening social cohesion, preventing social exclusion, absorbing economic shocks, increasing productivity, boosting domestic aggregate demand,

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improving health and reducing long-term dependence through building individuals' capacities to generate income.

The progressive long-term provision of social security in conjunction with economic, labour market and employment policies has been evidenced to directly support more sustainable and inclusive economic growth. The global policy focus has thus shifted to identifying possible strategies to universalize social security protection (Bachelet, 2011).

At present, less than one third of the global population is covered by comprehensive social protection systems, with the remainder either covered partially or without any coverage. Almost half of the global population of pensionable age (aged 65+) do not receive an old-age pension. Projections suggest that about two-fifths of the current working-age population is unlikely to receive an old-age pension from contributory schemes. Worldwide, 39 per cent of the population lacks access to adequate health care; in low-income countries this percentage commonly reaches 90 per cent. Many countries do not have any form of child and family benefits programmes (ILO, 2014).

The absence of comprehensive social security coverage is especially marked for those active in the informal economy, which is most prevalent in low- and middle-income countries. Currently, two-thirds of the global working population is active in the informal economy; in many countries this figure is greater than 90 per cent. Over 700 million informal economy workers live in extreme poverty and survive on less than USD 1.25 per day. Despite economic growth in a number of countries, this has often been accompanied by the growing informalization of jobs (ILO, 2014).

Against this backdrop, it has become imperative to universalize access to social security coverage; however the achievement of this goal is highly dependent on the effectiveness of the strategies adopted for that purpose. Special strategies are required for many informal economy workers who typically are difficult to identify, are usually not registered, are geographically widely spread, have low income, are unskilled or semi-skilled, are characterized by the absence of an employee-employer relationship, have no legal protection, have no regular income flow, and who may have seasonal employment, low levels of education, and are mostly unorganized. Given the different socio-economic-cultural environments of countries, the strategies designed for universalizing access to social security coverage need to be flexible, low cost, sustainable and adequate to address the special needs of different categories of workers. Experience suggests (ILO, 2013) that any projected model for universal coverage must:

- Recognize social security as a basic human right as affirmed by Article 22 of the Universal Declaration of Human Rights.
- Take into account the different characteristics of different categories of workers.
- Extend the coverage of labour-based social insurance schemes.

- Launch tax financed, non-contributory schemes for those unable to contribute.
- Set up a national health insurance or tax-financed national health protection system or a combination of both.
- Combine instruments within an integrated national social security strategy.

Importantly, the successful use of these elements has been evidenced in Brazil, Russia, India and China (the so-called BRIC countries). Similar achievements have been reported from South Africa, which joined the group of BRIC countries in 2010, changing the acronym to BRICS. These five countries are major emerging national economies, newly-industrialized, members of G20 (Russia is also a member of G8), representing 40 per cent of the global population, with combined nominal GDP equivalent to 20 per cent of the gross world product (GWP) and with USD 4,000 billion in combined foreign reserves.[1]

In recent years, this group of countries has effectively expanded social security coverage and achieved medium to high levels of Human Development Indicators.[2] They have increased productivity, promoted human capital, increased worker incomes and experienced sustained economic growth, high GDP growth rates, expanding financial markets and high direct foreign investment. Despite most of these countries having substantially extended social security coverage, they are yet to realize universal access to comprehensive social security for all.

Nevertheless, the experiences of the BRICS in achieving higher levels of social security coverage, especially for workers in the informal economy, offer important insights concerning what may be the core elements of an effective strategy for implementing universal, comprehensive social security coverage. The lessons drawn from these national approaches can be intertwined in a complementary and supplementary matrix with generally accepted good practices in social security extension to provide a proposed model to help achieve universal and adequate social security coverage.

The remainder of this article is structured as follows: the next section looks at the wider lessons that can be gleaned from the experiences of social security coverage extension in the BRICS. The intention here is not to describe or analyse the specific national programmes in any detail.[3] We then identify elements necessary for developing a framework model for coverage extension and discuss issues related to financing, delivering and governing such a model, including addressing the needs of specific vulnerable population groups. Concluding thoughts are then offered.

1. See <en.wikipedia.org/wiki/BRICS>.
2. See <hdr.undp.org/en/data>.
3. For greater detail concerning the extension of coverage and the design features of the social security programmes implemented in the BRICS countries, see ISSA (2013).

BRICS: Lessons learned

Taken as a whole, the BRICS have taken important steps forward in extending social security coverage. Most recently this has been pursued in the global context of economic downturn as a means to increase aggregate domestic demand by maintaining the purchasing power of their populations through, for example, cash transfers, free access to services, job search facilities, training and the development of vocational skills.

Although the BRICS have substantially extended social security coverage, much remains to be done to achieve sustainable, adequate and universal coverage. Characteristically, the majority of those who remain without social security coverage are self-employed workers, women, low-income workers, unskilled workers, and workers engaged in the informal economy. There is a huge coverage gap between workers active in rural and urban areas; while coverage rates are often high in respect of urban workers, they are extremely low for rural workers. Commonly, administrative issues such as the absence of frontline services create hurdles to improved coverage, with the result that workers may be required to travel long distances to claim benefits. Also, administrative procedures in the countries may be complex.

There can be large differences in the levels of benefit granted by schemes for public- and private-sector workers. In turn, differences are important in the scale and quality of health services provided according to the wealth of regions, and these differences are sharper still between higher- and lower-income groups. Sophisticated medical treatments and procedures are available only to a very small percentage of the well-off and out-of-pocket payments for medical care can be very high in some countries. In most of the countries, health care tends to be curative, with a lack of focus on preventive measures.

While in most of the countries coverage is high in terms of absolute numbers, especially so in populous China and India, it can be very low in terms of the adequacy of benefit levels. Social assistance schemes are funded by the government through taxes or through the general budget. However, the capacity of government to fund large national social assistance schemes may be limited, both in respect of the duration of time for which funding can be provided and the amount of funding. Most of the governments are facing constrains to finance on an ongoing basis existing social assistance schemes.

Moreover, social assistance schemes often lack effective means-testing procedures and there may also be weak monitoring of claims and a risk of the duplication of benefits. Similarly, frontline services tend to be weak, with no alternative service delivery mechanisms available.

This has clear implications for the further extension of coverage under these schemes. One response is a movement away from social assistance schemes

towards contributory social security schemes, but this first requires effective labour market policies along with actions to enhance individual income-generating capabilities generally. Coverage levels vary substantially in respect of the various contributory schemes. Significantly, workers in the informal economy, those with low income, women, self-employed workers, domestic workers, migrant workers and landless labourers are often excluded from such coverage. Typically, the attractiveness of voluntary coverage to contributory programmes is limited. In many instances, the existing contributory schemes also do not reflect local labour market realities.

For many of the active working-age population, it is necessary to increase their income and purchasing power, to support the payment of higher contributions which, in turn, would guarantee higher benefit levels. Also required is greater income security for disabled people and unemployed workers. In this regard, the schemes for disability and unemployment benefits do not give sufficient urgency to the objectives of rehabilitating and re-employing those capable of work. This would support opportunities for earning income and, thus, for paying social insurance contributions. Placing greater stress on return to work is important for better ensuring the long-term sustainability and adequacy of social security benefits while positively promoting the self-esteem of the beneficiaries concerned.

The administrative costs of social security programmes in emerging economies can be very high (for a broad discussion of this question, see Sluchynsky (2015) in this issue), for instance when measured as a ratio of the value of contributions collected, and staff and officers manning the schemes may lack appropriate training. Modern management techniques may be absent as may also be the more systematic use of information and communication technologies (ICT) to support administrative processes and programme delivery. With many national social protection systems often challenged by fragmented programme design and delivery, with over-lapping jurisdictions and poor coordination between various schemes and regions, this can lead to a multiplicity of benefits (Pino and Badini Confalonieri, 2014, p. 140).

Looking to the experience of the BRICS countries, to create incentives and encourage people to join contributory social security programmes, a strategy must be to increase employment enabling greater numbers to join the formal labour market, earn appropriate levels of income, and so to contribute to social insurance schemes. The focus is also to better target disadvantaged groups – often those on the margins of the formal labour market – with social assistance. Together, these approaches offer the first necessary steps towards comprehensive universal social security coverage.

With the goal of moving towards comprehensive universal social security coverage, by looking at the experience of the BRICS, a number of immediate insights into the key elements for an effective coverage extension model can be presented.

Sustainability. The foremost lesson is that the sustainability of the system is of utmost importance. The strategies of the BRICS underscore that sustainability has to be understood and implemented as a broader concept, as against the traditional narrower understanding of financial viability. Sustainability is to be understood in terms of the endurance of systems and processes and must be reflected in the working of the organization, in the quality of service delivery, value of benefits, effectiveness of procedures and processes, and the stability of the scheme.

The systems and the processes used by the social security scheme must be time-tested, smart, durable, free from bottlenecks, adaptable, user friendly, simple, codified and must have in-built checks and balances. These systems and processes must be robust and programmes must be sustainable over time, not least in terms of maintaining the periodicity and level of benefits.

Predictability. Predictability is an important aspect of sustainability. The covered population must be able to predict the future value of benefits accruing to them, the time likely to be taken for claims to be processed, the formalities required to be completed, and the eligibility criteria to be met.

Trust. The public at large and beneficiaries must be able to place their trust in the system, meaning that in times of need eligible beneficiaries will receive all benefits due from the system. In the case of contributions made to the system, contributors must trust that their contributions are secure, are being invested prudently, and that promised benefits will be received on time and in the correct amount.

Social justice. A universal and comprehensive social security system must be based on the tenant of social justice. The system must reduce inequalities and alleviate poverty. More specifically, it should help bridge income gaps between rural and urban regions and redistribute resources between the poorer and the richer regions generally, as well as make special provisions for disadvantaged populations. Such systems should support greater social cohesion – especially when providing at least a minimum level of income, services and facilities to all – and more inclusive growth.

Adequacy. Adequacy is increasingly understood to be a multidimensional concept (Brimblecombe, 2013). In the first instance, for a beneficiary, adequacy usually means that the benefit must be paid on time for the duration of need and the benefit type is appropriate to the need.

The wider understanding of adequacy suggests that covered persons must have a legal right to receive benefits. This also means that when the eligibility criteria ceases, the right to receive benefits should end. This ensures that the benefits go only to those who are eligible and better ensures financial viability.

The adequacy of any system is also dependent on the administrative efficiency, including providing the right benefit, at the right level, for the right duration, for the right need and at the right time. Adequacy concerning administrative efficiency also relates to measures to ensure contribution compliance and to counter evasion and fraud. Adequacy also entails the scheme design being sensitive to the special needs of various categories of people, as this is more likely to incentivize enrolment and trust.

Towards drawing a framework

Despite the BRICS countries having made progress made – and in the case of China very impressive progress (Chen and Turner, 2014) – in extending coverage, the goal of universal, sustainable and adequate social security is yet to be achieved. However, the progress to-date made by the BRICS suggests that the principles, policies, approaches, and strategies adopted by these countries must be taken into consideration in any proposed model for implementing effective universal coverage. These elements need to be intertwined in complementary and supplementary relationships with the existing strengths of other social security systems. In this regard, the system design parameters of adequacy, affordability, sustainability, equitability, predictability and robustness, which are found in the World Bank's "Pension Conceptual Framework",[4] and which overlap with many of the insights presented above, find a central place in the proposed framework.

In view of the experiences of the BRICS, it is evident that any effective framework for universalizing social security must be based on a public-private partnership that provides well-defined complementary division of responsibilities between the state, citizens, and other social partners. It must entrench social security as a basic legal right. At the very least, minimal access to facilities, services and basic income must be secured for all. Social security systems must be participatory and transparent. For social assistance programmes particularly, there is a role for local bodies and communities in the identification, effective targeting, and registration of beneficiaries and in benefit delivery.

The proposed framework must focus equally on the expansion of social insurance by ensuring that the designs of these schemes accommodate the special needs of different categories of workers. To cover the vast majority of workers who are active in the informal economy, such a framework must have flexible terms (Hu and Stewart, 2009), allowing irregular contributions that correspond, for instance, to the income patterns of seasonal industries and intermittent spells of unemployment/inactivity. For workers in the regulated economy, monetary incentives in the form of tax credits or tax rebates must be inbuilt to encourage

4. See <https://openknowledge.worldbank.org/handle/10986/11139>.

continued contributions. The model must be participatory with the free flow of information on benefits available under various social security schemes. Membership must be mandatory with legal penalties enforced for non-compliance. The existing institutional infrastructure must be used and built upon by the proposed model.

The framework design must support increasingly higher levels of social security protection to more and more people at a pace that is in line with rising levels of economic development. All interventions directed at working-age populations must have in-built productive initiatives focusing on return to work, job creation, self-employment and skills upgrading. Similarly, social assistance in the form of access to facilities, services and cash transfers to the poor and unemployed populations must be aimed at promoting income expansion. Of course, the framework must make special provisions for the vulnerable and disadvantaged groups. Legally-backed state guarantees must be provided for all children (including orphans), pregnant women, the elderly, destitute and poor, as well as disabled and unemployed persons in the working-age group.

The framework should ensure cost effectiveness, portability, better returns on investment and ease of participation, and in terms of institutional design must provide for a single national clearing agency (clearing house). Additionally, it should provide access to market information, markets, productive assets, training and soft loans. The proposed framework must have the key elements placed in a flexible mould which can be easily adapted by countries, based on their socio-economic-cultural context, demographic factors and traditional preferences, to universalize basic guarantees.

The proposed framework

Most of those who are without social security coverage are poor or live at the margin of the poverty line. They are often active in highly vulnerable forms of work and have low levels of assets. When confronted by crises, whether natural or man-made, these events can act as tipping points, leading households into abject poverty. Armed conflict or riots or any form of civil unrest can impoverish households further and increases their vulnerability. Natural events such as floods, droughts, heavy rainfall or other extreme weather conditions may also create tipping points (ISSA, 2014). Moreover, it is commonplace for people to experience a fall in income when they are hit by life-cycle risks such as old age, death of a household's "bread earner", incapacity, pregnancy or marital breakdown. As a result, they may slip into a vicious debt cycle or a life time of poverty, often in conditions of sickness, loss of job, permanent or temporary disability and diminished productive assets. The proposed framework thus draws on a deep understanding of the characteristics of those without social security coverage and the challenges

these people face and seeks to develop an asset set to empower vulnerable populations to face risks effectively.

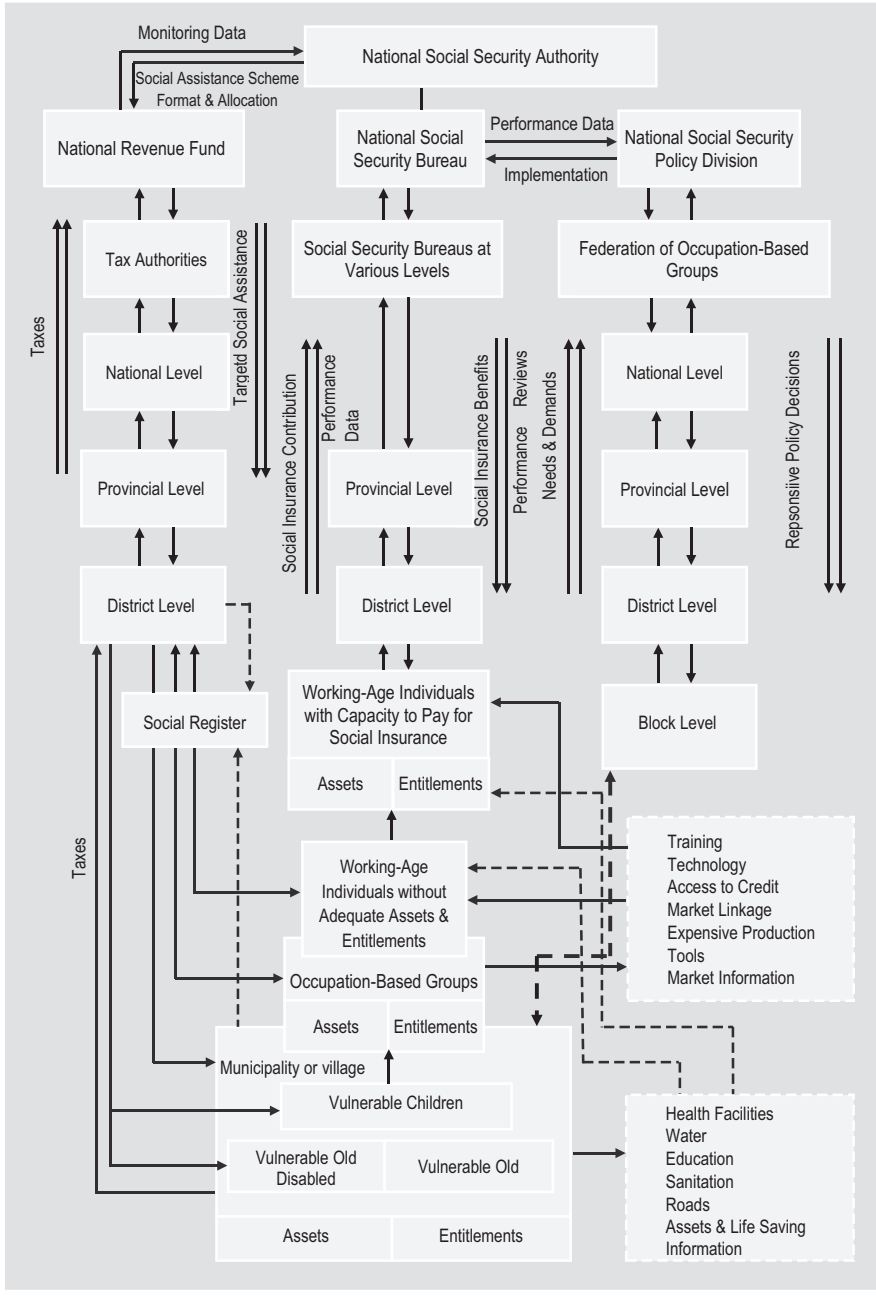
Positively, the experience of the BRICS has shown that medium- and low-income countries can expand their social security network on a large scale. Further, given the fact that the BRICS were able to extend coverage in the context of a major global economic crisis, in times of greater economic stability then this goal should be more easily attainable. They demonstrate that countries can afford to build a basic level of a comprehensive social security system with a small portion of their GDP. According to the International Labour Organization (ILO), a universal pension or social assistance programme can be launched by emerging economies with 1-2 per cent of annual GDP (ILO, 2009; Bachelet, 2011). On this assessment, the proposed framework is based on this presumption of the affordability of a universal social security system by each and every country.

The proposed framework (Figure 1) is also based on the premise that individuals, households, communities, occupational groups and regions with appropriate asset sets and entitlements will be less vulnerable when faced with risks of any kind. The framework has multiple aims. It seeks to equip people with adequate levels of assets and entitlements through targeted social assistance in combination with other strategies. It also focuses on endowing people with an appropriate level of assets (financial, human, physical and social) so as to not only enable them to face various risks but to have access to adequate minimum facilities and to be able to afford to contribute to social insurance. A key component of this framework is defined as "occupation-based groups", which are able to provide occupation-based support to their members, including facilitating the achievement of higher professional skills. This would provide their members with the ability to better produce marketable goods and services that would open the way to earning an adequate income. The enhanced income earning potential of workers, including among members of occupation-based groups, would in turn support the ability of municipalities or villages to generate enough resources to provide basic amenities to all their residents, including vulnerable occupation-based groups and individuals.

The approach presented here is fully in line with the ILO's mandate, following the adoption of the Recommendation concerning national floors of social protection, No. 202 (2012),[5] to support the putting in place of national social protection floors (ILO and WHO, 2009, 2010; Bachelet, 2011), which would make available to every person effective access to basic amenities such as water, sanitation, education, health, nutritious food, life and asset saving information, along with the provision

5. It is also consistent with ILO Recommendation concerning transition from the informal to the formal economy, 2015 (No. 204), which sets out that countries should progressively extend, in law and practice, to all workers in the informal economy, social security, maternity protection, decent working conditions and minimum wages.

Figure 1. *Framework model*



of social transfers to vulnerable groups including the working-age population with insufficient income, the elderly and children. This framework recognizes the municipality or the village as the geographical entity that would make provision for these basic amenities and services, help identify vulnerable individuals, and create effective information flows to prevent moral hazard and free loading. Thus, it is proposed that the responsibility to implement this minimum "social protection floor" would be that of the municipality or the village. What is proposed is therefore an inclusive approach to coverage extension with greater emphasis placed on "bottom-up" policy implementation.

Further, the experiences of the BRICS countries show that, to move towards achieving universal social security coverage, social assistance and social insurance schemes have to be tailored to meet the specific needs of various occupation groups and vulnerable individuals. The framework recognizes that workers in different occupations have specific set of needs and requirements which, when left unattended, can create vulnerabilities and heighten the risks of falling into indebtedness and poverty (Figure 2). As part of the social security coverage expansion strategies followed by the BRIC countries, special schemes have been formulated for various occupations. For example, there are occupation-based Labour Welfare Funds in India (van Ginneken, 2003), a non-contributory unemployment scheme for fishermen in Brazil (ILO, 2010), and China provides an Enterprise Annuity scheme offering supplementary occupational old-age pensions (ISSA, 2013).

This framework pays special attention to such occupation-based requirements and proposes the organization of working-age individuals into occupation-based groups federated at the municipality or village level. Occupation-based groups federated at the municipality or village level are the basic units of this framework. The framework's other components are social assistance (which is targeted by means of a social register), social insurance, policy-making, monitoring, and taxation. It is to these components that we now turn.

Social assistance

The framework proposes the selective and targeted use of social assistance to endow individuals or groups with assets and entitlements which would empower them to increase their income with the longer-term aim of making the payment of contributions to social insurance schemes affordable. The focus of targeting is placed on addressing moral hazard and free loading. In the longer term, by helping workers acquire the capacity to pay social insurance contributions, both the sustainability and adequacy of social insurance schemes can be better achieved.

The proposed framework envisages maintenance of a "social register" which would hold data on the risks faced by each person and permit a factual evaluation of his or her capacity to effectively manage these risks. For each registered person,

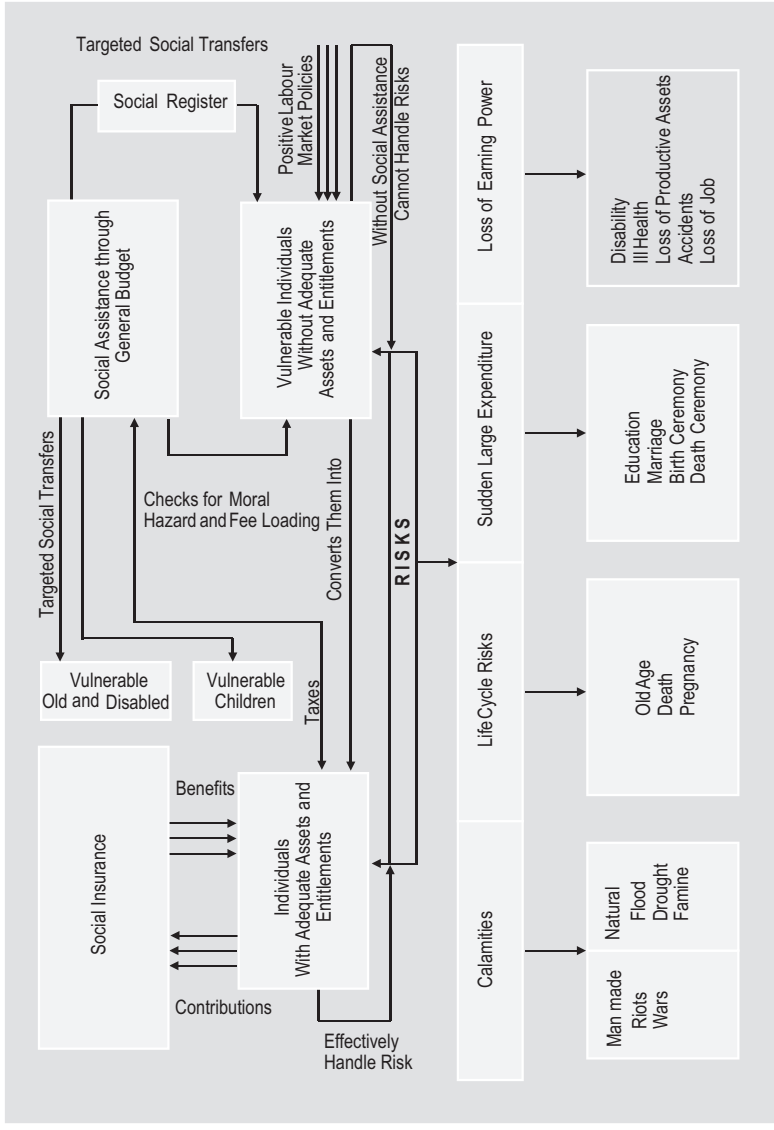


Figure 2. *Risks and responses*

the analysis of his or her current situation in relation to various social indicators is also proposed, as are details of individual assets and entitlements. The social register is conceived to have data input at the local level and then integrated with a national online database to enable the formulation of well-informed social assistance policies, as well as to control for moral hazard issues, stop free loading, and to better target and identify vulnerable groups and individuals. The identified vulnerable groups and individuals (discussed below) would be provided with well-targeted, appropriate and adequate social assistance.

The main governing principle of the framework is to use social assistance as a catalyst for vulnerable working-age individuals to acquire assets and entitlements which would address broader issues of vulnerability – by progressively addressing their vulnerabilities, workers will eventually be able to afford to contribute to the social insurance system. Those assessed as partially disabled are targeted for rehabilitation and for re-entering the active labour force. Those who are incapable of earning, such as the vulnerable elderly, children and those assessed as totally disabled, would be targeted for social assistance to alleviate the risk of falling deeper into poverty and would be provided with the support required to maintain a minimum standard of living. Basic amenities like health care and specialist health care, nutritious food, clothing, water, sanitation and housing would be ensured as part of social assistance.

Vulnerable groups and people

The framework has various provisions for meeting the needs of different categories of vulnerable groups and people. The nature of the social assistance provided, including the value and the duration of transfers, would depend upon the type and degree of vulnerability faced.

Vulnerable working-age people. All social assistance programmes for the vulnerable working-age people would be aimed at equipping these people with skills and productive assets so as to make them capable of earning enough not only to meet their current needs, but to create an asset base reducing their vulnerability. The main focus is to increase their earning capacity to enable them to pay social insurance contributions at a level that is sufficient to provide adequate benefits to meet any exigency. Labour market policies, including training, market information, assistance to find work and access to credit, should be integrated with these strategies. Access to manual public works programmes would be provided to the unskilled. Efforts would be made to train workers "on the job". Skill upgrading, training and re-training is deemed important to achieving the goal of providing income levels sufficient to join a social insurance programme and to maintain continued membership through regular contribution payments.

Disabled people. As the central idea, the framework espouses moving more and more people out of the category requiring social assistance to that of those who can afford to contribute to social insurance, thus providing access to adequate levels of benefits enabling them to handle risks more effectively. A crucial issue for people with a disability is to assess the level of disability and to determine a suitable rehabilitation plan. The framework gives municipal and village authorities the responsibility of identifying and distinguishing between those with a high degree of disability and assessed as incapable of any kind of productive work and those with lower levels of disability who can be appropriately trained and rehabilitated into productive work.

Targeted social assistance would be provided to those with low assessed levels of disability and who are willing to take up possible productive work. This group would also be provided adequate support from occupation-based groups in terms of professional training, the acquisition of skills, access to credit, professional networking and moral support. These efforts would be strengthened by having access to adequate health facilities and other basic amenities provided by municipal and village authorities. The duration of access to social assistance would be determined by individuals alleviating themselves from poverty by achieving an adequate level of income, at which point they would mandatorily be required to become members of a social insurance scheme and pay regular contributions.

Children. The framework pays special attention to vulnerable children. The objective is not only to protect children from vulnerabilities, but to invest in a future workforce that has good health, is educated and possesses market-oriented skills. Vulnerable children would be identified using the social register and be provided with targeted social assistance, which would be conditional on school attendance, vaccinations, exit from child labour and regular health check-ups. In-kind transfers would ensure the availability of nutritious food, medicines, books, clothing, and the like. Access to health services would be free, and this would be accompanied with a focus on preventive health care.

The social investment focus of preventive health care, nutrition, education and skill development, as part of social assistance to vulnerable children, is aimed at ensuring that when children reach working age, they join the labour market capable of gaining employment and earning income that is sufficient to contribute to social insurance schemes providing adequate levels of benefits.

Occupation-based groups

The framework envisages the organization of workers into occupation-based groups federated at the municipality or village level. These groups comprise working-age people without adequate assets and entitlements as well as those who

do and who have the contributory capacity for social insurance. The responsibility for identifying vulnerable people rests with the occupation-based groups. The framework proposes that these groups must use their surplus resources to strengthen the assets and entitlements of their members who are vulnerable. It is binding for the occupation-based groups to help make their vulnerable members self-reliant and thus capable of paying social insurance contributions.

Similar to the support for disabled groups, those of working age would also be provided adequate support from occupation-based groups in terms of professional training, the acquisition of skills, access to credit, professional networking and moral support. The objective is to increase the income earning capacity of all the members including vulnerable working-age people. Social assistance would also be targeted at the occupation-based groups that do not have access to resources to provide basic occupation-based facilities to their members.

Municipality or village

The municipality or village should provide essential facilities and services, such as health care, water, sanitation, roads, education, among others. Each occupation-based group would be associated with a particular municipality or village. By necessity, members would be residents of the same municipality or village.

Social assistance would also be available to the municipalities or villages that lack adequate resources to provide basic facilities to their residents. The district level authorities would play a key role in ensuring precise targeting of social transfers to municipalities and villages in need of social assistance. Data would be made available using the social register maintained by the municipalities and the villages. This data would additionally have details of various facilities and amenities provided by each municipality and village. An overview of the total number of vulnerable occupation groups and individuals would also be available at the district level.

Targeting by means of a social register

Targeting would be based on a social register maintained and regularly updated by the municipalities and villages. The municipalities or villages would update the information held on the online social register concerning occupation-based groups and individuals, based on social indicators, asset and entitlement levels. At the district level, details would be maintained on each and every municipality and village reflecting the facilities provided, the number of vulnerable people residing in each, and the degree of vulnerability of the occupation-based groups associated with them.

Social assistance would then be effectively targeted at those municipalities and villages that have inadequate levels of assets and entitlements to provide their

residents with basic infrastructure and services. Such municipalities and villages might also be unable to provide social assistance to occupation-based groups that have inadequate resources to provide support to their members. In such cases, district authorities would ensure that social assistance is granted to these occupation-based groups through their respective municipality or village, with the aim of strengthening the assets and entitlements of these groups so that they achieve self-reliance in supporting members. Social assistance is proposed to be provided from the surplus from richer municipalities and villages under the jurisdiction of the district and, failing this, from other means.

Taxation: Individual and collective self-reliance

Individual and collective self-reliance is an important goal of the proposed framework. To achieve this, reciprocal social networks are deemed necessary. The use of progressive taxation with a redistributive objective is also a significant component. The framework attempts to address the problem of the high transaction cost associated with collecting taxes and then redirecting part of them as social assistance payments targeted at vulnerable individuals or groups. Surpluses at each level are to be used to help lower units strengthen their respective assets and entitlements, so as to achieve adequate income levels, ensure minimum living standards and afford adequate social insurance protection. Each occupation group uses its surplus to help its vulnerable members achieve self-sufficiency in income and assets. Thereafter, if the occupation-based groups still have a surplus they are mandatorily required to pay for the social insurance contributions in respect of those members who are unable to pay.

In turn, the efforts of occupation-based groups are supplemented at the level of each municipality and village. The framework envisages that all municipalities and villages should use their surpluses, after provisioning for basic amenities, to strengthen the assets and entitlements of its residents generally. Again, if a surplus is available, it should be used to pay for the social insurance contributions of vulnerable people who are unable to pay and whose contributions could not be paid, in the first instance, by their occupation-based group.

Thereafter, all surpluses are mandated to be taxed progressively. The tax proceeds would be used for funding social assistance for those who are vulnerable and residing in other municipalities and villages. Vulnerable municipalities and villages would be allocated social assistance until they are able to provide a minimum social protection floor level in terms of standard of living and amenities.

Progressive taxation would also apply at the district level. When all municipalities and villages in a particular district achieve a minimum standard of living and amenities, then the surplus would be taxable by the provincial authorities. The framework stipulates that the provincial authorities must aim at achieving for all

its districts, a certain minimum level. This would be made possible by focusing on the vulnerable districts and targeting the surpluses precisely. On attaining a minimum social protection floor for all residents at the provincial level, any surpluses would be taxed by the national government. This revenue would then be redistributed as social assistance to other vulnerable provinces so as to achieve a social protection floor level for all provinces. The framework perceives international aid as the source to meet any shortfall at the national level.

Policy-making

The framework propounds a participatory and interactive model of policy-making. It envisages that the occupation-based groups would federate at various levels. These levels would include the municipal or village, the block level,[6] district level, provincial level, and the national level. The needs-based policy demands of each occupation group would aggregate at each level and move up to higher policy-makers, until the policy decision was made at the national level. The framework perceives that the national social security policy division would be able to frame needs-based, well-informed and effective policies for each occupation. Social security, social assistance, labour laws and tax structures would be tailored to address the special needs of each occupation.

Social insurance

The framework proposes to expand coverage under social insurance schemes and reduce reliance on social assistance to the minimum possible level. Precisely targeted social assistance is sought to strengthen the assets and entitlements of vulnerable individuals so as to raise their income-generating capacity enabling them to contribute to social insurance. Individuals with the capacity to contribute to social insurance should be mandated to do so. Further, the framework recognizes the importance of regular contributions in order to ensure sustainability and adequacy. To incorporate the element of regularity of payment of contributions, it is proposed that in the case of the inability of persons in occupation-based groups

6. A "block" is an Indian administrative division used for planning purposes and comprises 100 villages or municipalities, with a total population of around 100,000. In India, planning undertaken at block level is designed to address local problems entailing employment planning, growth-centre planning, and credit planning. The following activities are planned at the block level: i) Agriculture and allied activities; ii) Minor irrigation; iii) Soil conservation and water management; iv) Animal husbandry and poultry; v) Fisheries; vi) Forestry; vii) Processing of agricultural produce; viii) Organising input supply, credit, and marketing; ix) Cottage and small industries; x) Local infrastructure; xi) Social Services, including drinking water supply, health and nutrition, education, housing, sanitation, local transport, and welfare programmes; xii) Training of local youth and updating of skills of the local population.

to pay social insurance contributions, the occupation-based groups would be required to pay them, subject to their having sufficient surplus resources. In the absence of surplus resources, the municipality or village would necessarily pay, again subject to a sufficient available surplus.

Municipal or village social security bureaus would provide the interface with contributors, acting as the collection points for payment of social insurance contributions. As a part of the strategy to control contribution evasion, a close liaison would be maintained with municipality or village authorities. Social insurance contributions would be placed with the national social security fund maintained by the national social security bureau for investment.

A lesson taken from the BRICS while implementing social insurance schemes to expand coverage is that having a common fund and a central clearing house strengthens the viability and sustainability of the scheme, facilitates the portability of benefits, and improves benefit adequacy. This framework therefore envisages the setting-up of a single national social security fund that would be managed by a group of investment and financial experts. Information and communication technologies (ICT) would be leveraged to ensure the prompt flow of contributions to the investment account. The association of external asset managers, portfolio managers, financial experts and ICT specialists will better ensure that investments are prudently made and returns achieved according to the risk strategy and benchmarks.

Benefit delivery would be overseen at the municipality- or village-level bureau using appropriate ICT systems with checks and balances to ensure the correct distribution of timely and accurate benefits. In the absence of information asymmetry and with the presence of strong social networks, errors in benefit delivery would be minimalized. Close coordination among the local authorities would prevent fraudulent withdrawals, including checking the veracity of payments through the social network. In this regard, a close-knit social network makes the interface more people-oriented, sensitive and responsive.

The institution of a national social security scheme permits to extend the geographical area covered by sub-national social insurance schemes. This enables effective risk pooling in the face of geographically-localized covariate risks such as natural disasters (drought, flood, famine) and man-made risks such as riots and armed conflict. In the event of covariate risk events, a larger risk pool better enables a greater number of beneficiaries to simultaneously receive benefits and better ensures the financially sustainability of the scheme.

Monitoring

The proposed framework (see Figure 1) affords the National Social Security Bureau the responsibility of collecting the performance data for social insurance and social assistance schemes, for carrying out performance reviews, and would

both give and receive feedback to and from lower formations. Other responsibilities would include involvement in constant data analysis and in assisting the National Social Security Policy Division in both finalizing and refining policies. It would also develop social assistance scheme plans based on factual data, which would enable their effective implementation by designing policy based on actual needs, requirements and past experience. It would also provide input for new policy initiatives.

Concluding thoughts

The framework recognizes that the journey of each country towards the attainment of universal social security coverage has to be unique depending upon its socio-economic-cultural situation, demographic factors, and traditional preferences. Thus, the proposed framework presented here does not intend to provide a blueprint for countries striving to universalize social security coverage. It can only propound basic principles that should be taken into account.

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INTERNATIONAL SOCIAL SECURITY REVIEW
BOOKS

BOOK REVIEW

OECD. **Pensions Outlook 2014**. Paris, Organisation for Economic Co-operation and Development, 2014. 201 pp. ISBN 978-92-64-22090-4.

The latest edition of the OECD's *Pensions Outlook* focuses on the challenges that demographic ageing and the adverse impacts of the global financial crisis on the economic environment pose to public finances and pension systems in Member countries. It looks critically at the reforms and policies adopted to address them, their objectives, means, expectations, constraints and possible limits.

The volume looks successively at: the impact of population ageing on the economy and on pensions, and at mortality assumptions for evaluating and managing longevity risk[1] (Chapter 1); the objectives, main features and expected outcomes of the post-financial crisis pension reforms, notably for increasing the adequacy of retirement income and improving pension systems' financial sustainability (Chapter 2); the need to stimulate saving for retirement and policy options for strengthening the role of private pensions in financing retirement (Chapter 3); means to increase private pension coverage, notably via automatic enrolment, its cost for employers and the state, and the limits of other incentives that seek to encourage participation in private pensions (Chapter 4); and an assessment of pension communication campaigns that are deemed essential for extending coverage (Chapter 5).

The challenges of demographic ageing have been observed and analysed for three decades (e.g. declining fertility, extended life expectancy, shrinking active labour force and the resulting growing dependency ratio). However, looking at the early outcomes of reforms undertaken since the mid-1990s, combined with the social and economic problems encountered in the wake of the 2008 global financial crisis, the report provides useful considerations for understanding the changing context and the potential and limits for policy adjustments. It identifies increases in life expectancy as the main driving force behind population ageing, particularly in the long-term (as long as fertility rates are constant – as they have been for the last several decades), while the "baby-boom" will remain a significant factor in the mid-term (next 20 years). So the main concern is to ensure that people save sufficiently, while regulators and policy-makers should ensure that pension funds and annuity providers use regularly updated mortality tables that indicate future improvements in mortality and life expectancy.

The current economic context is characterized by low growth (or even recession) and low interest rates, combined with low or variable returns in capital markets that may lower the expected level of savings or retirement income, as well as lowering the overall resources for financing pension liabilities of both public PAYG pensions and privately funded pensions. These developments have led to the adoption of pension reforms to address the fiscal sustainability of pensions

1. Readers' attention is called to the recent OECD report that usefully complements the report reviewed here: OECD. 2014. *Mortality assumptions and longevity risk – Implications for pension funds and annuity providers*. Paris, Organisation for Economic Co-operation and Development.

by increasing the statutory retirement age, reducing early retirement options, increasing pension coverage, extending contribution periods – including by postponing retirement, and linking benefits and retirement age or maximum contribution periods to future improvements in life expectancy. Among such measures, several countries have tried to strengthen affiliation to funded private pensions and improve their complementary role for ensuring adequate retirement income. But the current gloomy macroeconomic context seems to offer little solace, as does the proposed extension of labour market participation for older workers, which runs counter to employers' hesitations to recruit in general, and more particularly younger and older workers. So, to increase the effective retirement age, the report stresses the need for public policies to reduce age discrimination and to improve working conditions, career prospects and training opportunities for older workers, while employers have to acknowledge the potential of older workers as a strategic resource. (Such measures have been successfully introduced, notably in past decades in Finland, but seem to have met their limits after the 2008 crisis. More modest achievements took place across the European Union as regards increasing the very low activity rate of older workers, but these seem to have been blocked or reversed since 2008).

The report focuses much on the implications of continued improvements in mortality and life expectancy, noting that they create problems of *solvency* in defined benefit funded pensions (e.g. PAYG-financed public pensions or funded pensions), as well as financial *sustainability* problems in PAYG schemes, and *adequacy* in defined contribution pensions.

As the retirement of the baby-boom cohort will be followed by a smaller cohort of working-age population contributing to the PAYG-financed public pensions, affecting the *sustainability* of these schemes, this will further strain public finances, already facing heavy deficits and debt and declining tax receipts.

The report also notes that life expectancy differs across different socio-economic groups and has implications for the ratio of contribution years to years spent in retirement. This ratio will be lower for people with higher life expectancy (e.g. white-collar workers, people in higher occupational levels or higher income brackets). Several pension reforms take account of these disparities by providing options for earlier retirement ages for people in occupations involving hardship or who started to work early in their lives.

As regards defined contribution pension arrangements, the main impact of ageing will be on their *adequacy*, since there is no level of guaranteed pension income in retirement in such plans. The increased reliance on defined contribution pension arrangements has led to individuals being exposed to the risk of outliving their assets. Moreover, low interest rates would reduce the returns of asset portfolios and exert pressure to reduce replacement rates. Therefore, besides encouraging increased pension savings for longer periods, the report recommends the purchase of annuity products against longevity risk, which would guarantee a certain level of income for life. However, it notes that the capacity of insurers to be able to continue providing such annuities depends on the adequacy of the mortality assumptions for evaluating their liabilities. Such adequacy may be put into question, given that the data needed for this purpose are not available across all countries and their application across different socio-economic groups is not homogenous. It warns that future improvements in mortality and life expectancy are uncertain; they may accelerate or decelerate, converge or diverge across different population sub-groups. It suggests that the regulatory framework could also help to ensure that capital markets offer the additional capacity for creating longevity bonds, but this would require more transparency, standardization and liquidity instruments.

Another obvious challenge highlighted is the need to find ways to share more fairly the financing burden of pensions across generations. Noting that since the mid-1980s relative income poverty moved from the elderly to the young, it warns that it cannot be taken for granted that the younger generations will be willing (or able?) to shoulder the rising costs of pensions and taxes for the ageing population. The policy concerns here are the affordability of such increases for future workers and how the burden can be shared across generations. The report notes that some countries might shift part of the funding of first pillar safety nets from wage-based contributions to general taxation. But while this reduces labour costs, does it go far enough towards addressing the intergenerational gaps? And, more importantly, is the younger generation (aged 15–25) able to shoulder this burden with low activity rates, high unemployment, non-employment, low pay and precarious job status increasingly widespread in a majority of OECD Member countries? This precariousness and poverty calls into question the capacity of the younger generation to save or make regular contributions to public PAYG pension schemes, and certainly to private pension funds which usually do not redistribute income to poorer retirees. This raises concerns for pension *coverage* for individuals and for the *sustainability* of pension systems and public finances. A concern that would deserve more attention in future reports.

The report points out the potential of private pensions to increase coverage via automatic enrolment, analysed in six countries – Canada, Chile, Italy, New Zealand, the United Kingdom and the United Sates. The evidence shows that success depends on the design of the system, including default options, the communication and education campaigns that accompany their launch and implementation, and interaction with other existing incentives. Employers have an essential role and can incur substantial compliance costs on top of their pension contributions, while the costs incurred by states are related to subsidies and matching contributions. The report recognizes the limits of automatic enrolment, identifying population sub-groups that may rely less on private pensions for retirement and who are exposed to the greatest risk of having low pension income. Unsurprisingly, it acknowledges that "[i]n all countries studied, the proportion of people that may have a present value of pension income below the current poverty line is higher for people on low income, women, private-sector workers and self-employed people" (p. 112). However, in three countries – Chile, Netherlands and Norway – social assistance may fully protect pensioners from poverty by providing them with a minimum income at or above the poverty threshold.

It concludes with useful indications for policy-makers on the needs for communication and information via pension statements and national communication campaigns, which should take account of the complexity and technicality of the issues, encompassing information from all pension sources (PAYG-financed pensions as well as private and funded pensions), and be understandable and meaningful for a population that has generally a low level of financial literacy.

Concern for the future sustainability and adequacy of pension systems – public and private – started initially with a rising concern regarding the impact of demographic ageing. This has been amplified by the impact of the global financial crisis that adversely affected pension assets and public finances due to declining tax revenues and growing public deficits and debt, severely threatening the financing of defined benefit schemes, boding ill for maintaining pension objectives and promises. Moreover, the financial crisis has undermined people's confidence in the capacity of pension schemes to ensure an adequate income throughout retirement.

In such an environment, the prospects for further pension reforms across OECD Member countries seem rather difficult, especially as those undertaken since the mid-1990s, and accelerated in the

post-financial crisis years, have more often than not been violently opposed by either trade unions and/or employers or the public at large, as they seemed to impose more constraints and obligations on the labour force and often on employers, while offering less convincing guarantees for adequacy and sustainability.

This report therefore constitutes a timely analysis of some of the major current and future constraints in adapting pension schemes to the new constraints. No doubt, much more experimenting and research need to be carried out on addressing the changing demographic, socio-economic and financial parameters to enable pensions schemes to fulfil their promises and objectives. These needs are fully acknowledged in the introductory editorial as well as in the body of the report, and will certainly figure high on the agenda for future editions of the OECD *Pensions Outlook*.

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