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Early Lessons from Country Experience with Matching Contribution Schemes for Pensions

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Early Lessons from Country Experience with Matching Contribution Schemes for Pensions*

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Abstract

Matching defined contribution schemes are gaining popularity in both rich and poor countries as a promising means to reduce gaps in the participation in formal pension systems. Matching contributions by employers, the government, or both to defined contribution schemes are used alone or jointly with other interventions to motivate participation in pension schemes. Although it remains far too early to develop firm conclusions or policy guidance, this chapter provides an overview of the currently available evidence that is presented in this volume and offers preliminary observations about the potential use of this design. This experience, mostly derived from higher-income countries that is now being supplemented with some early experience from other settings, suggests that matching is moderately effective in increasing program participation but not generally measurably effective in raising contributions and thus benefit levels. Other interventions—which are increasingly guided by lessons from behavioral economics and finance—may prove to be more effective and typically cost much less, which may help explain some of the differences in outcomes across countries. It is not yet clear how transferrable the experience in higher-income environments will be to other settings; considerable further evaluation is needed before any firm conclusions can be reached.

Keywords: pensions, defined contributions, matching contributions, pension coverage.

JEL: G23, H55, J32.

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1. Addressing the Coverage Gap

Achieving broad pension coverage and adequate levels of income protection in old age remains an elusive goal for nearly every country. In general, coverage has advanced with development and growth in income, and there is a strong relationship between the level of per capita income and participation in formal pension systems. However, there are considerable differences among countries at similar levels of development in pension coverage and in the way in which participation in pension systems has evolved in different settings. The differences in experiences and outcomes indicate that context, the design of the system, and the path of its development play a central role in the dynamics of pension coverage and benefit levels.

In the vast majority of countries, less than half the working population is currently covered by a formal pension scheme. In low-income and developing countries, the number of working-age adults participating in a pension scheme is very often less than 1 in 10. Many middle-income countries have seen coverage rates decline in recent decades despite the expansion of coverage mandates and efforts to reform their systems to establish stronger individual incentives (Rofman and Oliveri 2012). In higher-income countries, coverage levels under mandated schemes remain high, but fiscal pressures caused by the generous benefits provided to early cohorts and exacerbated by rapidly falling fertility rates are now imposing the need for reductions in future benefit levels. Such reductions will require a substantial increase in supplementary retirement savings if income replacement rates are to be maintained.

All of these factors have brought the imperative for the extension of coverage to the forefront of the pension policy debate. An earlier World Bank publication investigated the role of social pensions and other transfers to increase retirement income support across countries of different development levels (Holzmann, Robalino, and Takayama 2009). This volume extends the consideration of how to provide adequate income to elderly populations by focusing on the potential role of matching contributions to induce broader participation in pensions and other retirement saving to help close the coverage and adequacy gap.

1.1 The Potential Promise of Matching Contribution Systems

An approach that has been adopted in a growing number of high-income countries is the provision of matching contributions. These contributions provide more tangible incentives for individuals to participate in pension funds than the more traditional approach of mandating participation and providing preferential tax treatment, especially for low income groups and individuals who may not participate in the formal labor force and therefore receive no advantage from tax-based incentives.

In principle, matching contributions may be provided for public programs or by the sponsors of private occupational plans and could be associated with either defined contribution or defined benefit systems. In practice, there are numerous cases of both public and private schemes utilizing the design; however, nearly all current examples are associated with various types of individual retirement savings accounts. This volume, which reviews experience to date and seeks to derive some initial observations and policy lessons, focuses on what is here termed matching defined contribution (MDC) schemes.

In all of these systems, the matching design feature has the common goal of increasing system participation and saving levels. Four characteristics are common to MDC schemes examined here: individual accounts, defined contribution, direct contribution from sponsor to complement individual contributions, and prefunding of benefits. The prevalence of defined contribution systems is likely a reflection of two factors. First, although in theory it is possible to incorporate a contribution match in a defined benefit system, the linkages between the match and the benefit received are complex and less transparent. More importantly, the populations these arrangements are seeking to reach, especially lower-income groups or those in developing countries, may have irregular earning patterns over their life cycle or be predominantly engaged in the informal sector. The systems reviewed vary considerably in the structure and level of the matching contribution. Although the majority of schemes provide ex ante matches, some provide ex post matches.

The use of individual accounts with defined contributions as the underlying structure provides direct linkages between density and level of contributions to align individual incentives and provides transparency in the value of benefits. Directly matching contributions provides an immediate and easily understandable value proposition to prospective entrants to the system. Funding of the accumulated contributions and returns with financial institutions should offer credibility, portability, and appropriate returns. The expected saving incentives created by MDCs are an alternative or complement to other potential incentives such as preferential tax treatment and the presentation of choices in a way intended to influence behavior (what Thaler and Sunstein have termed “nudging”), as well as efforts to create a more conducive old-age saving environment such as financial education and straightforward advocacy. MDC schemes are also attractive because they define and constrain future fiscal exposure. They should increase coverage but not

encourage informality. If individuals are sufficiently incentivized by the match, the accumulated amounts at retirement may reduce or even eliminate the need for basic benefits. Including funded supplemental coverage will facilitate reductions in mandated public systems for higher-income groups. Ideally, coverage should increase and the level of labor informality decrease at lower fiscal costs than expanding non contributory systems or subsidizing earnings-based defined benefit programs.

1.2 Policy Questions

Addressing the coverage gap raises a range of interrelated policy questions that vary by setting. In low- and middle-income countries, the primary challenge is to expand pension coverage beyond civil servants and the small proportion of the workforce employed in the formal sector. When much of the labor force has no fixed employer, or is self-employed, the traditional method of expanding coverage through wage-based mandated contributions is not a viable option. In these countries, establishing pension systems with incentives for participation that are attractive to low-income and young people with no prior experience with social insurance and saving systems imposes enormous challenges. These groups nearly always struggle to meet short-term needs and require liquidity in any savings that they are able to accrue in order to manage a variety of risks. Effective solutions must not impose disincentives for participation in the formal sector through high payroll tax contributions or create adverse redistribution through tax-based subsidies that provide value only to the highest-income groups.

In other middle-income settings, the challenge is to maintain the coverage rates achieved in earlier decades in the face of increasing informality of the workforce due to transitions from centrally planned economies or changes in labor patterns resulting from economic development and competition in a global economy. In middle-income and most higher-income countries, the imperative is also to establish retirement income and saving systems that are able to supplement the diminished capacity of earlier earnings-based public systems in order to provide adequate income replacement for future cohorts. The social policy concern is accentuated by low, stagnating, and at times falling coverage of old-age pensions and other social programs—a stark contrast with expectations that emerging economies would follow the same path as the current high-income economies, achieving coverage expansion in step with income growth.

When initially confronted with this coverage challenge, policy makers believed that reforms designed to establish better links between contributions and benefits in mandated and earnings-related schemes, often by creating individual and funded accounts, would overcome these problems. To date, limited success has been achieved, however, and in some cases coverage has declined following such reforms.

Closely related to these social policy issues are broader economic concerns over the high and often rising level of informality. This growth is perceived as hampering economic development because workers in the informal sector are considered less prone to learn, innovate, and use productivity-enhancing technologies. Applying basic coverage options—such as universal or means-test benefits for the elderly—to take care of informal sector workers may prove counterproductive, because such options reduce the incentive to become formal while increasing the pressure on formal sector workers to become informal as their tax burden increases. A number of recent studies indicate that this may be happening in countries across Latin America (see, for example, Aterido, Hallward-Driemeier, and Pagés 2011; Levy 2008; and Ribe, Robalino, and Walker 2012) although at present the empirical evidence remains tentative.

In all settings, fiscal concerns arise from the cost of coverage expansion through non contributory basic schemes, the need to control the fiscal costs of traditional national earnings-based defined benefit systems, and the effects of sustained informality on productivity and public revenues.

All three issues are potentially linked in a downward spiral in which (1) coverage concerns lead to the introduction or strengthening of basic provisions, which (2) constrain employment and increase informality, (3) increasing pressure to leave the formal sector, (4) worsening the fiscal position of the public pension scheme, (5) leading to benefit cuts, which in turn increase the need for better basic benefits. Against this background, policy options in low- and middle-income countries are limited and largely untested. The most obvious and direct approach is to establish stronger incentives for participation in formal pension and saving schemes. The key challenge is to develop a design that will motivate lower-income groups—which require powerful, immediate, and readily understood incentives to overcome their inherent consumption preference and liquidity constraints—to direct their limited resources to retirement income. Such a system must also be attractive to informal sector workers, many of whom may be of moderate or even higher-income levels, while not increasing the incentives for workers to leave the formal sector.

1.3 Purpose and Organization of this Volume¹

Several high-income countries, most notably Germany, New Zealand, and the United States, have adopted the MDC design to complement benefit levels under public schemes. Other countries, including Japan and the United Kingdom, have recently initiated MDC schemes to raise savings earmarked for retirement income. This has fostered interest in the design in a variety of other settings. Emerging economies in Asia (China, India, Thailand) and Latin America (Chile, Colombia, Mexico, Peru) have implemented or are considering implementing MDC-based schemes to encourage participation in voluntary and sometimes mandated schemes by individuals who would otherwise have no coverage at all. Such matching incentives may not in principle be restricted to defined contribution schemes, but examples of their use in defined benefit systems are rare (only the case of a new system in Republic of Korea is included in this volume) but worthwhile to review.

Despite the growing experience, there is little consolidated knowledge to provide evidence-based policy guidance about the role and limits of MDCs for expanding retirement savings, about best practice in the design and implementation of MDC programs, or about the interaction of MDC policies with other interventions such as financial literacy as complementary (or substitute) approaches. Nearly all of the experience with these arrangements and associated research has come from higher-income countries. Applicability to the vastly different circumstances in middle-income and developing countries remains uncertain.

Against the backdrop of pilots in emerging and developed economies, the Social Protection Unit of the World Bank's Human Development Network, in cooperation with the Research Institute for Policies on Pension and Aging (RIPPA) of Japan, organized a conference in June 2011 to provide a forum for sharing information and analyzing experience from around the world with this emerging design. The Spanish Bank BBVA, which manages pension funds in a number of Latin American countries, participated in the conference and subsequently joined with the World Bank and RIPPA to provide the resources to supplement and organize the material presented at the conference and produce this publication.

This volume—based on the presentations at the conference—provides overviews and analyses intended to inform the ongoing design and use of MDC schemes. The publication thus presents a first stocktaking of country experiences and some limited observations about the potential role and effectiveness of the design that can be derived from experience to date. It is not an effort to formulate or articulate a World Bank policy position or to provide any specific direction to countries considering the design. The evidence is far too limited to support such an effort, and as noted above, there is insufficient evidence to assess the transferability of the more extensive experience from higher-income countries to other settings. Not considered at the conference and in the volume are similar matching design approaches to increased coverage under health care or other social insurance programs. There is, however, considerable value in consolidating the knowledge that can be gleaned from the wide range of experiments with the design, considering what lessons are beginning to emerge and how these can inform future initiatives and a research agenda; these issues are summarized in this introductory chapter.

The book contains four parts. Part I provides an overview of the more general issues and experience in expanding supplementary pension coverage in Organisation for Economic Co-operation and Development (OECD) countries to establish a broader framework of the challenges of coverage expansion. Part II reviews experience with MDCs in high-income countries. Part III describes early efforts in lower- and middle-income settings. Part IV provides an overview of lessons from the emerging field of behavioural economics and reviews key issues in the enabling environment and the main parameters likely to be relevant in establishing an MDC in a developing country context.

The remainder of this introductory chapter is organized as follows. The next section offers a conceptual framework for the objectives, intervention, mechanisms, and modalities of MDCs. The following sections provide country examples, extract some tentative lessons from their experience, and draw preliminary policy conclusions.

¹ We refer to the book of Hinz et al (2012) in this paper. All chapters to which we refer from here.

2. Objectives, Interventions, Mechanisms, and Modalities

Assessing the effectiveness of a policy intervention starts with consideration of the objectives, a clear understanding of how the core elements of the intervention are defined, and how it expects to achieve the desired outcomes. Such a “theory of change” is critical to assess the effectiveness of any intervention and is at the core of monitoring and evaluation efforts²

2.1 Setting Objectives

Policy discussions in countries that have or are planning to introduce MDC systems suggest three primary objectives: expanding pension coverage, reducing informality, and increasing fiscal efficiency. Considering these requires some degree of conjecture as countries are rarely explicit about the objectives of a policy intervention and even less specific regarding how to measure outcomes. Furthermore, the political discussion is often overloaded with secondary objectives driven by group interests or political imperatives.

2.1.1 Expanding Coverage

The increase in basic or supplementary benefit coverage is probably the primary objective in most countries that have or are planning to introduce MDC-type pension systems. This objective is particularly relevant for low- and middle-income countries, where most people are not afforded even basic coverage for old-age income and health care.

Supplementary coverage is additional coverage for people who participate in mandated systems (as workers or beneficiaries) but whose benefit levels are considered inadequate. Providing such coverage is particularly relevant in high-income countries, where the large majority of the population is covered under earnings-related schemes or everyone is covered under universal schemes that only partially replace their income in old age.

One measure of the success of the basic benefit coverage is the number of people who receive a benefit at or above a minimum level (typically the poverty line). For supplementary benefits, success in coverage expansion may be measured by the number of people whose benefits rise above a threshold of a specified percentage or amount. In this case, however, the benefit increase may be caused by shifts in savings from unsubsidized to subsidized forms without an increase in net wealth.

Obviously, the success of the program rarely depends entirely on the financial incentives provided but will also be affected by government and operational capacities in addition to other factors.

2.1.2 Reducing Informality

Reducing the incentives to participate in the informal sector (that is, evading the costs of participating in mandated social insurance schemes) is another important objective of an MDC system, particularly in middle-income countries. This objective may be conceptualized as establishing conditions that will encourage individuals to make contributions and acquire rights for the first time or contribute more to an MDC scheme. Success can be measured in terms of the number of registered participants as well as by changes in the contribution density of participants. MDCs should also not create incentives to reduce the level of pension savings by those already contributing.

In developing countries, mandated participation in pension systems is often conditional on the number of employees in a firm; workers in firms below a certain size may be exempt from mandatory contributions. In other instances, workers may not be able to contribute because the firm is not formally registered or licensed. In such cases, an MDC alone may not be the appropriate intervention.

2.1.3 Increasing Fiscal Efficiency

MDCs create fiscal costs—either directly, through the matching contributions by governments, or indirectly, through preferential tax treatment of individuals or their employers. A simple measure of success would be the increase in the coverage rate or adequacy target per currency unit of public

² All modern monitoring and evaluation books apply a similar logic, although they may use different terminology. For recent highly readable publications on monitoring and evaluation, see Gertler and others (2010); Khandker, Koolwal, and Samad (2009); and Leeuw and Vaessen (2009). Also see the websites of the Massachusetts Institute of Technology's Poverty Action Lab (<http://www.povertyactionlab.org/>), the World Bank (<http://www.worldbank.org/oed/eed>), and the World Bank's Strategic Impact Evaluation Fund (<http://go.worldbank.org/X81HJAZSG0>).

expenditure for matching and/or foregone tax revenue resulting from the increased savings that is excluded from taxation.

Another fiscal element that is often explicitly part of the design of an MDC scheme is the cost saving through reduced transfers to the elderly in the form of universal or means-tested benefits. These kinds of ex post transfers may include the costs for minimum benefits in an earnings-related scheme. Very optimistically, one could imagine a take-up of low-level matching contributions that largely eliminates the need for these transfers, with the saved fiscal costs well exceeding the new fiscal costs of the matching payments. Very pessimistically, one could imagine that MDCs merely shift savings from unsubsidized to subsidized forms—or, even worse, that most people substitute public funds for individual savings, with take-up concentrated largely in the upper-income strata.

2.1.4 Other Objectives

In a system with progressive income tax rates, favorable tax treatment of pension contribution disproportionately favors people with higher incomes. By providing a subsidy that is directly proportional to the contribution, an MDC scheme may not suffer from this shortcoming unless, again, the take-up is concentrated among high-income earners.

MDCs may also be linked with the objective of facilitating the transition to a fully or partially funded system by inducing individual contributions to support a funded or capitalized reserve from which benefits will be paid.

2.2 Defining the Intervention: Core Elements of Matching Defined Contribution Schemes

The following features define an MDC scheme:

- **Individual account.** Accounting records should be maintained to clearly distinguish individual contribution and retirement saving outcomes.
- **Defined contributions.** Benefits are solely based on the accrued value of contributions and earnings on accumulated assets.
- **Sponsor.** Employers, the government, or other sponsoring entities make direct financial contributions to encourage individuals' participation.
- **Own contributions.** Regular and own contributions by individuals are expected, although sometimes after an initial "kick-start" contribution.
- **Funding.** In principle, schemes can be funded or unfunded (using a derived crediting rate and notional accounts). In practice, there are no examples of matching being incorporated into unfunded retirement savings schemes.
- **Mandatory or voluntary.** Mandatory schemes typically focus on extension of coverage. Voluntary schemes are typically employer based or designed to supplement other systems with broad coverage but relatively low benefit levels.

Other known design elements of MDCs are complementary and potentially substitutive to matching. As with matching, these intend to encourage the participation of individuals in retirement saving programs. The main examples include the following:

- Tax preferences for contributions and/or benefits under a comprehensive income tax approach that aims to eliminate distortions of taxation on savings and move toward a consumption-type structure (exempting contributions and interest from taxation but taxing the disbursement, or taxing contributions but leaving interest earnings and disbursement tax free)
- Nudging or choice architecture (Thaler and Sunstein 2009) to motivate individuals to participate in savings plans; specific mechanisms include automatic enrolment, default contribution levels, investment options, and thresholds for matching levels
- Financial education and related interventions to create the enabling environment for individuals to learn about the importance of planning and retirement saving and offer them support to acquire the requisite skills, attitudes, and behaviors.

2.3 Envisaged Mechanism: The Theory of Change

Identifying the mechanism through which outcomes will be achieved begins with an analysis of the problems to be solved and the rationale for government intervention. Public interventions are traditionally undertaken for two key reasons: to correct market failures and to redistribute income. Market failures are often linked to asymmetric information, which leads to poorly functioning (or nonexistent) markets. Government interventions are intended to substitute for or improve market outcomes. Redistribution is undertaken to correct perceived failures in the way markets generate and distribute income. To these motivations for public intervention, a third has been added in recent years: to correct the behavioral limitations of individuals. A fourth reason may be to correct government failure itself—by, for example, redesigning social insurance programs that do not achieve sufficient coverage due to poor design or implementation.

Individuals may rationally evade government social insurance programs for a variety of reasons, including the high costs associated with participation in the formal sector, liquidity preferences, the poor fit between a program and individual preferences, and lack of trust. These factors can be conceptualized as increasing the discount rate individuals apply to pension schemes. An MDC scheme seeks to increase the internal rate of return of a pension scheme in order to increase participation, contributions, or both.

Individuals may fail to employ market-based social risk management instruments to address long-term contingencies, such as old age, for a variety of reasons, including the absence of appropriate instruments, the inability to plan ahead, and the existence of more immediate shocks for which risk management instruments are not available. In the absence of an additional external motivation, these factors may make it rational for some people to focus on the short rather than the long term. Under such circumstances, matching may actually distort rational individual decisions and divert resources from, say, human capital accumulation to retirement saving.

Whether contributions grow as a result of the provision of a match is a priori undetermined. A saving subsidy in the form of a match potentially creates both a substitution effect (which makes current consumption more expensive and hence increases current saving) and an income effect (which increases the demand for current and future consumption and hence decreases current saving). MDC interventions with multitier structures have even more complicated effects on individuals, which depend on the position of the individual before and after the introduction of or change to the intervention. Some configurations are predicted to clearly encourage or discourage saving; the effect of others is indeterminate. The predictions are broadly borne out in the country lessons discussed in the chapters.

2.4 Design and Administrative Modalities

The main design features of MDC schemes include the following:

- **Matching rates** typically range from 25 percent to 100 percent but can reach 300 percent and more. For supplementary MDCs offered by employers, there may be complex structures with lower match rates for higher contribution levels or no match for a first tier before a declining match applies. For basic matches offered by governments, flat-rate and multi-tiered matching contributions (which address informal sector workers, for whom earnings cannot be easily established) are more typical.
- **Thresholds and ceilings** on the contribution base (linked to a multiple of average income) or overall limits on matched amounts direct subsidies to lower-income groups and limit fiscal costs.
- **Eligibility conditions** for matching include very specific characteristics of the beneficiary (income level, age, family status, number and age of children, employment status, company size, level of formality) to focus the match on a target population.
- **Matching contributions** provide an ex ante transfer linked with ex post transfer (minimum pension) that is conditional on a required amount of prior contributions (length or level) by the beneficiary or family members.
- **Withdrawals** can be made to purchase a first home or to buffer periods of unemployment or other contingencies.
- In addition to the match, consumption-type tax treatment is provided for savings, subject only to income tax at time of receipt (similar to other pension savings plans).
- **Payout modalities** include lump sums, phased withdrawals, mandated immediate or deferred annuitization, and annuitization defaults (for example, minimum annuity levels, deferred annuities).

Administrative modalities include the following:

- Contribution collection by employer, financial institution, social security institution, or local “aggregators” (nongovernmental organizations or others that collect payments from contributors)
- Recordkeeping and client communication by financial institution or regional or national social security fund
- Asset management by pension/health funds, specialized asset manager, or regional or national social security institution
- Benefit disbursement by financial institution or regional or national social security institution.

3. Country Examples

MDC schemes reflect diverse policy objectives at different stages of the pension system development. Common features can be organized by the main coverage extension scenarios:

- Supplementing universal (basic or means-tested) benefits
- Supplementing low or reduced earnings-related benefits
- Expanding coverage within the mandated social insurance scheme
- Expanding coverage outside the mandated social insurance scheme (universal approach)
- Expanding coverage outside the mandated social insurance scheme (sector- or group- specific approach).

This section illustrates these coverage objectives with country examples detailed in later chapters in this volume to distil lessons and to raise policy and research questions.

3.1. Supplementing Universal (Basic or Means-Tested) Benefits

Two countries have sought to use MDC schemes to supplement universal benefits or limit mandated provisions: New Zealand (which introduced such a plan in 2007) and the United Kingdom (which had intended to introduce such a plan in 2010 but cancelled the program following the election of a new government).

New Zealand is one of the few countries with an old-age program in which everyone receives a pension (this type of program is known as a *demogrant*). Every resident of New Zealand age 65 and older who has lived in the country for at least 10 years receives a flat rate pension based on a certain percentage of the average wage. Provision for old age above this basic and taxable benefit was left to voluntary savings, creating issues of adequacy of retirement income.

After discussions and a defeated referendum on introducing mandated earnings related benefits to eventually replace the demogrant, the government introduced an MDC-type scheme, the design of which was, to a significant degree, informed by the emerging field of behavioral economics; this design is both complex and comprehensive. The KiwiSaver program, described in chapter 5, utilizes several tiers of matching-type incentives. It provides a flat contribution (known as a kick-start) on the opening of an account, a tax credit (actually a pure subsidy) for contributions, and mandates matching contributions by employers (2 percent of payroll, to increase to 3 percent by 2013). Employees can choose to contribute 2 percent, 4 percent, or 8 percent of their earnings. It combines these subsidies with an auto-enrolment feature in which new employees are automatically enrolled in the system but afforded the ability to opt out after a specified period. It allows preretirement withdrawals for several purposes, most notably the purchase of a first home.

The United Kingdom has had a Beveridge-inspired basic pension scheme with flat-rate contributions and benefits since the 1940s. The country has a long history of trying to improve saving outcomes of all types—from short term (precautionary) saving to very long-term pension and retirement income saving—in order to complement basic pension plan provisions. The Saving Gateway program, described in chapter 6, planned to use matching contributions to increase the savings of people with low incomes. Programs— tested through limited-scale pilot efforts in 2002-04 and 2005-07—experimented with different matching rates, contribution limits, eligibility rules, and recruitment mechanisms.

In 2008, the Labour government then in power decided to roll out Saving Gateway nationally to up to 8 million people, or 20 percent of the population between the ages of 16 and 65. In May 2010, the newly elected Conservative-Liberal Democrat coalition government cancelled the scheme as part of its broader program of fiscal retrenchment. However, with the National

Employment Savings Trust (NEST), the U.K. government is aiming to increase coverage of the privately funded pension system from 2012 by using auto-enrolment together with matching as another example of nudging behavior. A minimum contribution requirement is gradually being introduced, ultimately reaching 4 percent of wages by individuals, 3 percent from employers and 1 percent from the government in tax relief. Employees and employers are free to contribute more, and some employers will match higher contributions. Auto-enrolment is being used because such employer matching has been in existence for many years, and many employees did not join schemes even when very generous matches were offered by employers.³

3.2. Supplementing Low or Reduced Earnings-Related Benefits

A number of MDC schemes are related to low levels of income replacement or reforms that reduced the generosity of public earnings-related schemes, primarily in high-income OECD countries. There are wide variations in design and operation across countries.

A number of high-income countries have introduced compensatory supplementary and funded pensions with more modest amounts of direct fiscal support through flat-rate and similar subsidies (beyond consumption-type tax treatment). To provide some background on the overall issue of providing supplementary coverage, chapter 2 reviews the experience among OECD member countries with policies that encourage private pension saving.

The 401(k) plans used in the United States (named after a section of the tax code that authorized the particular type of tax-preferred saving arrangement), examined in chapter 3, are probably the most important and most investigated MDC scheme in the world. These plans emerged in the early 1980s as part of the employer-sponsored pension system that supplements the relatively low (on average, less than 40 percent) income replacement rates of the mandatory public social security system. These were part of the transition in voluntary employer pension coverage from defined benefit to defined contribution plans. The underlying arrangement enables workers to determine the level of pre-tax contributions (technically known as salary deferrals) to a defined contribution plan. To ensure that the value of this tax preference did not disproportionately favor individuals with higher incomes (who not only had a greater ability to save but who, because of the progressive income tax system, obtained a larger value from the tax deferral), rules were established that limited the amount higher-income workers could contribute; this amount is linked to the overall average share of income deferred by all participants. This rule led employers to create a wide range of matching contribution designs to induce higher contributions from low- and average-income workers to enable the higher-paid to take full advantage of potential tax preferences. The widespread use of 401(k) plans and the diversity of matching arrangements have been the subject of extensive study and are the source of much of the knowledge about the behavioral effects of various matching designs that are discussed in chapter 15.

In 2001, Germany introduced another important variant of the supplemental arrangement that is known as the Riester pension (in recognition of the former minister of labor and social security who was a main proponent of the initiative) after having imposed a significant prospective reduction in the value of public pension system benefits. The Riester pension plans that were introduced in stages from 2002 to 2008 involve a means-tested match of contributions from the government, an additional per child subsidy, a tax preference on contributions up to a maximum level, and an associated (largely annuitized) payout plan. The development of and experience with this system is discussed in chapter 4. This MDC scheme is heavily subsidized by the budget and at times substitutes for corporate pensions. After a slow start and several design changes, including simplifications, in 2005, Riester pension plans took off very quickly. Saving incentives have been effective in reaching households with children; they have been somewhat less successful in attracting low-income earners.

In more recent years, Japan has, like the United States, sought to expand its occupational pension system to include defined contribution plans as it attempts to address dramatic demographic changes that will constrain the public social security system and thereby relieve some of the pressures on traditional corporate defined benefit plans. The Japanese pension system and the new defined contribution plans are discussed in chapter 7. In an interesting variation, matching was introduced in 2011 with a design in which the employee is permitted to match the employer's contribution to the defined contribution plan—reversing the typical arrangement. Thus far, however, there is no evidence that this design will meet with any more success than other defined contribution plans, which have had only very limited acceptance, thus indicating the importance of context and incentives in matching arrangements.

3 2. See http://www.direct.gov.uk/en/Pensionsandretirementplanning/Companyandpersonalpensions/WorkplacePensions/DG_200722 for an overview of the government's plans and time schedule.

3.3. Expanding Coverage within the Mandated Social Insurance Scheme

Social insurance schemes in middle-income countries have difficulty expanding coverage to low-income groups. Some vulnerable groups, such as youth, are difficult to reach, but their early integration into a social insurance scheme is important for later behavior. Everywhere in the world, self-employed workers exhibit low participation and contribution efforts, particularly in rural areas.

A number of countries are attempting to encourage participation by groups that are difficult to integrate by offering matching incentives within the mandated social insurance scheme. The match is financed by the budget or through redistributed contributions.

Korea's social insurance pension scheme, discussed in chapter 8, was established in 1988 and made universal in 1999. It covers all working-age (age 18-60) adults who make or are exempted from making contributions. Contribution delinquency remains an issue, creating concerns for future pension adequacy. To strengthen participation of farmers and fishers, the government has, since 1995, when the national pension extended its compulsory coverage to all rural residents, offered contribution subsidies of 50 percent of the total contribution (with a cap). This subsidy is scheduled to end in 2013. Although the Korean pension scheme is of the defined benefit type and does not squarely fall into the MDC definition, it offers one of the few matching schemes in middle-/high-income countries that have been evaluated. As the subsidy does not apply to other self-employed groups beyond farmers and fishers, it offers a natural experiment for testing its effectiveness. It is found to have had a moderate effect in increasing participation in the system by individuals who would otherwise be expected to evade making contributions.

In Colombia—which is examined along with Mexico and Peru in chapter 10—at least three MDC schemes have been established to encourage voluntary contributions. Two are already in operation, one as part of the funded individual account system and one as part of the alternative unfunded defined benefit scheme. Individuals must choose between the two schemes. In both cases, the match provides minimum income guarantees for retirees and is financed by contribution income.

Mexico has had at least two matching-type schemes in operation since the mandated individual account pension scheme was established in the late 1990s. The first scheme targets low-wage workers by providing a flat-rate "social contribution" to all participants below an income ceiling (introduced in 2009) equal to 5.5 percent of the presumed minimum wage for each day of work. A second scheme, for civil servants, was introduced with the 2007 reform that moved their pensions toward a funded defined contribution scheme. The match—a government match of Mex\$3.25 for each Mex\$1 of employee contribution, with a ceiling of 2.0 percent of the contribution base for the employee and 6.5 percent for the employer—should increase contributions.

Peru's MDC scheme, originally legislated in 2008, was designed to promote coverage for workers in small and microenterprises while enhancing competitiveness and encouraging participation in the formal labor market. The matching component of this law, the Welfare Pension System (Sistema de Pensiones Sociales), has recently been included in the 2012 reform of the private pension system. This scheme is focused only on microenterprise employees (those working in firms with no more than 10 employees) and is mandatory for people under age 40 and earning less than 1.5 times the legal minimum wage. Both the contribution rate and the government matching are to be defined during the year. It is likely that the government will finally implement this scheme.

Chile, examined in chapter 9, introduced two youth employment subsidy schemes, with the objective of promoting formal youth employment through incentives for both the supply of and demand for labor. The schemes' introduction, in 2008, occurred around the time of a major pension reform that introduced ex post subsidies—in particular, guaranteed old-age income through the solidarity pillar of the pension system. The Subsidio Previsional a los Trabajadores Jóvenes (SPTJ) scheme provides an explicit subsidy for social security contributions. A first component (introduced in October 2008) amounts to 50 percent of social security contributions at minimum wage. This, however, is paid to the employer to provide a subsidy for the cost of hiring younger workers while also providing an incentive for contributions to the social security system. A second component (introduced in July 2011) provides a matching payment to the worker of the same amount to subsidize contributions.

3.4. Expanding Coverage outside the Mandated Social Insurance Scheme (Universal Approach)

In most low- and many middle-income countries, the majority of workers work in the informal sector. Integration of the workers into the formal sector pension scheme is unlikely to be realistic in the near term. A few countries, including India and Thailand, do offer voluntary coverage outside the mandated social insurance scheme and provide a government match to induce participation.

In India, discussed in chapter 12, less than 10 percent of the population works in the formal sector—and much of the formal sector employment is in the public sector. To address a looming pension problem in an existing defined benefit system for central government workers, the reform of 2004 introduced a funded defined contribution scheme for new entrants to the civil service and unbundled recordkeeping and asset management. With an administrative structure established through this reform, the New Pension Scheme provided the potential infrastructure for an MDC scheme for all informal sector workers. An effort to expand the system was initiated in 2010, by which an annual matching contribution of Re 1,000 (about \$20) was offered for all workers who enrol and pay contributions of Re 1,000–12,000 (about \$20 to \$225) a year, with no means test applied. To enhance the decision architecture, the scheme uses “aggregators” at the village level to collect contributions and has a simplified account structure with lower fees. The scheme’s very recent implementation makes it impossible to draw conclusions about its success. An early look at a small set of data indicates that participation in the scheme may be associated with income and education levels and might be negatively associated with access to alternative sources of retirement savings.

Thailand, discussed in chapter 14, initiated a national MDC scheme for informal sector workers in 2012. Individual deposits can be made at any time, with a minimum deposit of B 50 (about \$2). The government match and ceiling are graduated by age, with a 50 percent match for people age 15–30 up to a maximum of B 3,000 (about \$100), an 80 percent match for people age 31–50 with a maximum of B 4,800 (about \$155), and a 100 percent match for people age 51–60 with a limit of B 6,000 (about \$200).

These efforts in India and Thailand trigger many questions that will require further evidence and rigorous evaluation to answer, including the following:

- What is the appropriate matching structure for informal sector workers in low and middle-income countries? In particular, how important are matching rates compared with contribution ceilings?
- What is the role of matching compared with other participation determinants, such as the decision architecture and potential members’ perceptions of the service providers?
- How effective are aggregators and efforts to increase access through “points of presence” (the establishment of a means to make contributions in a village such as a bank or post office) in increasing participation into rural areas?
- What mechanisms encourage continued pension saving efforts beyond increased participation?

3.5. Expanding coverage outside the Mandated Social Insurance Scheme (Sector- and Group-Specific Approaches)

In countries with a large informal sector and the desire to increase formal sector participation, a universal voluntary system for informal sector workers may not be the best way to achieve higher levels of pension coverage. A focus on specific groups may be justified, however. Self-employed workers lend themselves to such an approach, as they are difficult to integrate into a formal mandated scheme.

A number of countries have started to move in this direction. China, discussed in chapter 11, started a voluntary MDC pilot for the rural sector in 2009; the program was expanded to the urban sector in 2011, and full national coverage is envisaged by 2013. These voluntary schemes will coexist with the mandated urban pension scheme, which covers about half the urban workforce.

China’s introduction of the National Rural Pension Scheme and the Urban Resident Pension Scheme has been one of the most ambitious voluntary pension saving and minimum elderly assistance schemes in a low- or middle-income country. Both schemes have innovative features. They provide a basic pension benefit from age 60 on if a vesting period of 15 years is fulfilled. Individuals select a contribution level of between Y 100–500 (\$16–\$80) per year. A partial match is then provided by local governments, with a minimum required match of Y 30 (\$5), although this may be at a higher level that is locally determined. The rapid expansion of these voluntary schemes that now are reported to cover more than 350 million participants may be linked to the minimum pension benefit, which is offered immediately if conditions are fulfilled. But it also reflects

the influence the government has on inducing participation in public social insurance systems as well as a solid advocacy campaign.

Another important challenge in developing countries is reaching independent workers, who offer their labor in often irregular patterns—such as fishers in offering their labor and skills to the owners of boats. Because this employment model does not lend itself to long-term relationships, these kinds of workers cannot make steady contribution payments into a social insurance fund. Their situation calls for innovative new payment and financing solutions adapted to the particular circumstances of the targeted workers that include nudging elements as well as matching-type contributions by contractors. An exploratory study of Cape Verde and Tunisia, presented in chapter 13, offers an outside-of-the-box thought piece on this issue.

These country examples of innovative MDC schemes suggest that coverage can be expanded by moving beyond simple matching design to improving the decision architecture. Linking ex post and ex ante transfers, as China has done, or offering new financing and payment structures, as proposed for Cape Verde and Tunisia, exemplify this approach.

4. Tentative Lessons from the Experience with Matching Contributions

The country experience and reported results offer a rich, although incomplete (and likely somewhat biased), body of evidence on the use of matching contribution arrangements. Most of the rigorous evaluation of the dynamics and outcomes of matching are focused on participation and contribution effects in 401(k) plans. These address particular groups (generally higher-income employers in a high-income country who are offered the chance to participate in an employer-sponsored plan) and therefore may not be relevant for other countries. These studies do not address some of the key questions for other settings such as impact on informality or overall fiscal effectiveness, as the matching is by employers and any fiscal effects are indirect. Most other country experiences have not (yet) been subject to rigorous evaluation; in many circumstances, there has been no evaluation at all. Consequently, the discussion presented below includes more hypotheses than lessons that have been inspired by empirical results and validated in other countries.

4.1. Expanding Coverage

4.1.1. Participation

There is consistent empirical support across country income levels that matching is effective in increasing participation. The evidence from a few high-income countries (mostly the United States) indicates positive but modest effects of matching on participation, with overall effects increasing participation in the range of 5-10 percent of potential beneficiaries. The associated finding that a 25 percent match of individual contributions is associated with about a 5 percent increase in participation appears to be robust across a range of programs and analysis in the United States. This magnitude is also broadly consistent with results from Korea, where a 50 percent match for farmers and fishers increased the probability of making a pension contribution by 7.4 percent. The presence of a large initial match—a significant element of the KiwiSaver system in New Zealand—elicited enrolment from many people with little or no earnings, including children, providing further evidence of the potential effectiveness of significant matches on at least initial enrolment.

4.1.2. Increase in Retirement Saving

The effect of the match on the saving rate is typically found to be small, and the sign is not always positive or statistically significant. This finding is consistent with the theoretical ambiguity arising from the conflict between substitution and income effects. What seems to emerge consistently is that the structure of the match—the matching rate, thresholds, and caps—does have significant consequences. Consistent across estimates (essentially from the United States and, to a lesser extent, the United Kingdom), the match threshold seems to have a greater impact than the matching rate. Providing a lower match of 25 percent on contributions for a higher level of 10 percent of pay will induce individuals to save more than a higher match of 50 percent for a lower level of 5 percent of pay, although both formulations result in similar costs to the organization providing the match (see chapters 3, 6, and 15). A possible explanation for this result is that matching acts as a signalling device or implicit advice on saving levels. Also notable is the “stickiness” of saving levels, as evidenced by the fact that most people remain at contribution levels that were established as defaults even when the defaults are subsequently reduced.

4.1.3. Increase in Overall Saving/Total Pension Wealth

Comprehensive evidence from the United States on the effect of scheme saving on other saving is mixed, but suggests up to 20–30 percent net increases in saving levels (see chapters 3 and 15). In the United Kingdom (chapter 6), the saving rate increased but the measured net worth of individuals did not change. Evidence from Germany (chapter 4) suggests that matched saving did not squeeze out other saving.

4.1.4. Other Determinants for Participation and Contribution Efforts

The evidence from developed and developing countries strongly suggests that other features of savings programs and related interventions may have a critical—perhaps even a dominant—effect on participation and contribution levels. Most of these features have not yet been subject to the rigorous testing across a range of settings that could begin to distinguish between inherent effects and those associated with a particular set of circumstances, cultural setting, or population group.

- Automatic enrollment and defaults. Evidence from the United States, the United Kingdom, and New Zealand suggests that making participation the default option has two to four times the impact of the match. (Of course, an automatic enrollment default option works only under formal employment conditions.) The role of other default schemes on contribution efforts is mixed and at times negative, possibly because of inertia or the low default contribution rate.
- Simplification of design and access. Empirical results for the United States and the United Kingdom and lessons from the German Riester pensions suggest that simplified design affects participation and, perhaps, contribution/saving efforts.
- Social marketing and advocacy. Retirement saving remains an objective that most will embrace but find difficult to implement. In the United States, employers have found that information sessions and advocacy are a useful adjunct to the incentives of matching contributions. In Germany, take-up of the match increased with greater awareness of the scheme associated with information campaigns. New Zealand has coupled introduction of its system with information and advocacy campaigns which are perceived to have had the expected effect. There is some very preliminary evidence of a positive impact through the introduction of account aggregators in India. Yet rigorous empirical evidence is missing on the effectiveness of information campaigns for short-term participation and long term contribution efforts.

4.2. Reducing Informality

Evidence on the effect of MDC schemes on informality is very limited and mixed. There is no empirical evidence that the modest matching schemes in Colombia or Mexico have reduced informality or increased coverage, nor any clear expectation that the soon-to-be-implemented matching scheme in Peru will lead to these outcomes. This is possibly because of the small size of the programs and important distortions in the labor market. Data from national household surveys in these three South American countries show an enormous potential for saving in the informal sectors. The estimate for Korea suggests that the match for farmers and fishers had a modest positive impact on participation in the national pension scheme. The matching programs in Chile to incentivize the participation of young workers in the formal labor market—and hence in the pension scheme—increased participation, but the programs have not yet been subject to rigorous evaluation. The rural pilots in China that started in 2009 reportedly reached 358 million rural workers as of the end of 2011, and full coverage (of some 500 million people) is envisaged in 2013. The pilots increased coverage but, strictly speaking, had no effect on informality. This is likely to be because the target group had very little potential to become formal sector workers to begin with.

A number of countries (including China, India, and Thailand) have established or are planning voluntary matching programs in parallel to formal matched or unmatched schemes. Individuals joining these voluntary programs have no obligations to join the mandated scheme (as they do in Germany and the United States). Not enough evidence is available to determine whether these schemes create disincentives to formalization.

4.3. Increasing Fiscal Efficiency

Assessing the effect of matching schemes on coverage and informality is relatively straightforward, and effectiveness comparisons can be done within or across similar schemes. To measure fiscal efficiency requires the pricing of the intervention and comparison with alternatives or a counterfactual. This analysis is hardly ever done, however, as these schemes are designed and implemented—making consideration of potential fiscal effects more art than science.

In considering the possible fiscal efficiency of matching schemes, two comparisons are proposed: (1) a comparison of the fiscal costs with the additional savings volume created by the match and (2) a comparison of fiscal costs for the match with the costs of alternative interventions such as ex post subsidies. The most useful comparison may depend on the purpose of the intervention. If the objective is to promote supplementary coverage, evaluating the marginal increase in savings seems more relevant. If promoting basic coverage is the objective, the more relevant comparison is with alternative interventions.

4.3.1. Comparison to Additional Savings Created

Comparison of total fiscal costs with MDC savings created can be done on a flow and stock basis. Each requires some heroic assumptions.

- **Comparing the annual contributions by participants to annual fiscal costs.** Assuming that all contributions are new saving, fiscal effectiveness requires that the ratio of the annual flow of new savings to the annual cost of matches (a fiscal efficiency ratio) be larger than 1 so that the public expenditure and potential public dis-saving are at least compensated by additional contribution revenues of equal magnitude. Taking account of distortions (for example, through changes in general revenue collections) would increase the opportunity costs and therefore increase the required fiscal efficiency ratio. Using empirical results of new savings created of, say, only a third, fiscal effectiveness would require an efficiency ratio greater than 3. For the German Riester pensions, for example, the share of annual contributions to direct fiscal costs is slightly above 2 and falling (chapter 4).
- **Comparing the additional national capital stock created with the accumulated fiscal expenditure.** The idea behind this comparison is that on a net basis (aggregate new savings less aggregate cost of the subsidy), the match should increase the pension wealth of the elderly and the capital stock on which future benefits are paid by more than the overall cost of the subsidy. Such a calculation would take account of compensating or strengthening effects. Ex ante projections with an appropriate overlapping generations model would offer first indications of effects; for the more relevant ex post evaluation, the data and estimation requirements need to be developed.

4.3.2 Comparison to Ex Post Subsidy

Are matching contributions (ex ante subsidies) for voluntary or mandated schemes less expensive than non-contributory or subsidized benefit levels (ex post subsidies)? Measuring fiscal efficiency requires considering the likely cost and comparing it with alternatives. Doing so yields the following considerations:

- A demogrant provides everyone with a minimum transfer in old age, regardless of individual circumstances. This approach is very effective in distributive terms, but not fiscally efficient because the leakages are high as many receiving the benefit do not need it to maintain the level of consumption in old age that such a benefit is intended to achieve. The same minimum income support for needy elderly can be generated at much lower cost when targeted transfers are provided in the form of general social assistance or categorical social pensions (Grosch and Leite 2009). Of course, targeting, however well done, will lead to inclusion and exclusion errors.
- Compared to both demogrant and targeted ex post benefits, an MDC scheme can be constructed that is fiscally more efficient as long as individuals do some additional saving and targeting works effectively. If individuals are not induced by the match to increase their saving, for whatever reason, then matching leads to distributively inferior results. This has implications for the lowest-income groups where saving capacity for old age is limited. If individuals do some saving but ex ante targeting does not work well, it can lead to either fiscally less efficient outcomes than ex post targeting or distributionally less efficient outcomes or both. This will depend on the size of the inclusion and exclusion errors and the reaction of individuals to the subsidy provided. Unfortunately, the relevant experience and data are not available to undertake such a comparison.

None of the countries reviewed appears to have established a comprehensive set of outcome measures or undertaken estimates of the fiscal effectiveness of the matching design in relation to alternatives. No studies have been undertaken to provide comparative measures even at the conceptual level of the cost-effectiveness of key parameters. Such a study should be relatively simple at the individual level; however, at the macro level, the comparison would have to make a number of heroic assumptions to allow for comparability.

5. Preliminary Policy Conclusions and Next Steps

Because few MDC schemes have been subjected to a rigorous impact evaluation, policy lessons are by necessity very preliminary. Based on the evidence presented in this volume, a few conclusions and suggestions for future analysis can nevertheless be drawn:

1. Empirical evidence, collected largely from high-income countries, suggests that MDC schemes raise participation in pension systems moderately and have at best modest (and in some instances ambiguous) effects on contribution levels of participating individuals. Both findings are consistent with theoretical predictions. The persistence of any of these effects—and ultimately their influence on lifetime wealth accumulation and the provision of retirement income—will require much longer-term assessment. The net impact of matching on individual wealth and macroeconomic savings levels is empirically even more difficult to assess and subject to conflicting views. The weight of the limited evidence to date for high-income and perhaps some high-middle-income countries is that MDCs will make a helpful but insufficient contribution to solving the challenges of pension coverage, income maintenance, and informality of labor. They may, however, be effective for special groups that are difficult to reach by other means.
2. It is unclear to what extent the results for high-income countries will translate into the context of lower- and middle-income countries. The groups for which there is experience in high-income countries may not be representative of the broader population, nor are they likely to share characteristics and behavior patterns with target populations in low- and middle-income settings, which are likely to be characterized by many more constraints in their everyday life and much larger shocks for which social risk management instruments are not available. As a result, the incentives by MDC programs to enhance retirement savings may translate less well or at least differently. Since few programs of this kind existed until recently in developing economies, and none has been subject to rigorous impact evaluation, not much is yet known about how the experience in other settings will translate; caution is therefore advised.
3. The threshold and other parameters of the match seem to have as much, or even a greater, effect as the overall level of the match on behavior and saving outcomes in high-income countries. Similar empirical evidence is not yet available for low and middle-income countries. In view of the many more binding constraints in developing countries, complex matching rates and other parameters may be required to achieve the envisaged outcomes. A key design challenge in these settings will be to balance this with a need for simplicity and transparency. At least equally important for participation and saving effects are interventions directed toward overcoming behavioral and other limitations, in particular through the provision of information and financial education, a choice architecture consistent with the observed inertia in behavior, and social marketing, public service announcements, and other types of advocacy. Key considerations in designing such programs include the following:
 - Information about the subsidized scheme and its operation is critical in creating awareness, which seems to be an important factor in changing behavior (in general and for retirement income saving in particular).
 - Many (but not all) experts believe that the ability to understand the offered saving products and to apply that knowledge is a critical factor for participation in social risk management programs (whether mandated or voluntary, unsubsidized or matched).
 - The setting of defaults and other forms of choice architecture are increasingly recognized as key determinants of outcomes. Policy makers need to take advantage of lessons from behavioral economics about harnessing the power of inertia (in particular through automatic enrolment with limited opt-outs), simplifying administrative processes, and setting parameters.
 - Advocacy and education efforts—such as seminars, public service advertising, social marketing, publicly sponsored retirement savings information websites, and entertainment education—may be very important in promoting MDC schemes.
4. Individuals at all income levels evade participation in mandated schemes for a variety of reasons, including ineffective design choices, poor alignment of incentives with the environmental context, and lack of trust in public and financial institutions. Addressing these issues may go a long way toward increasing participation. These efforts should be undertaken before matching schemes are introduced.
5. The effect that pension-related matching incentives may have in changing employment patterns or reducing the level of informality in developing and transition economies remains wholly unknown. Thus far, there is little evidence that these schemes are sufficient to change individual decisions. This remains a difficult issue to effectively evaluate, but one that merits investigation despite the methodological challenges.

6. Examples and a framework are lacking for a comprehensive cost-benefit analysis for MDC designs to compare them with potential alternatives. Rigorous impact evaluation focused on microeconomic assessment is necessary to guide program design. This needs to be complemented by a more comprehensive welfare analysis, including cost-benefit evaluation of alternative approaches. Such analysis should address areas not covered in the research to date including consideration of the following:
- A pure saving instrument (and pooling risks over time by individuals) or a traditional risk management instrument (pooling risks across individuals) in relation to matching designs
 - Differentiation of MDC outcomes in relation to various income groups; theoretical considerations and empirical indications suggest that matching to improve retirement saving is not likely to be effective for the poorest in society, and initial evidence suggests large substitution effects among higher-income groups
 - Gender analysis of MDC, addressing differences in labor force participation longevity, and other factors likely to create different outcomes
 - The longer-term role of matching designs and possible development of exit strategies for their use as a transitional device to generate participation as economies meet thresholds where coverage expansions become feasible.
7. Finally, it will be important to consider the possible future role and new designs of MDC schemes under different social policy scenarios, such as the following:
- The marginalization or even the demise of pay-as-you-go earnings-based (Bismarckian) public pensions in countries with a high level of informality
 - A further reduction of the mandatory defined contribution pension systems in countries with low informality but also facing demographically driven reductions in the generosity of public earnings-related and basic schemes
 - The need for more portability of social benefits and the portability of the subsidy element of MDCs across borders.

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