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Rural Pension Reform: The Case of China and the Experience of Latin America

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ABSTRACT

Latin America has a longstanding experience in pension reform that can be useful to guide current reform endeavors in China. Over the last years, China developed a New Rural Pension System (NRPS) that rapidly extended coverage to all rural counties, benefiting a large fraction of the rural population. The core aim of this paper is to critically review what has been achieved in by the NRPS in terms of coverage, as well as current challenges facing NRPS regarding benefit adequacy and suitability. These challenges could be sorted out through the enactment of more generous non-contingent social pension and a voluntary matching defined contribution pay-as-you-go system. Both reforms are inspired in lessons drawn from other countries, particularly from Latin America.

Keywords: old-age pension, rural population, China, Latin America

Introduction

In 2009, the Chinese government began introducing the New (aka National) Rural Pension System (NRPS). The goal has been to rapidly extend pension coverage to rural areas. During the past five years, NRPS coverage has been extended to all rural counties. The number of rural residents covered increased from 71 million in 2009 to 477 million by the end of 2014 (National Development and Reform Commission, 2015), achieving coverage for about 77% of the rural population including almost all rural residents over age 60 (Ministry of Human Resource and Social Security [MHRSS], 2015). Today China's NRPS covers more rural residents than any other pension program in the world and it is currently providing pensions to more people than any other pension scheme in the world. This rapid expansion in coverage represents a major step forward for China's rural population.

NRPS is based on two very modest components, one is a noncontributory social pension (SP) pillar and the other is a voluntary funded defined contribution (FDC) pillar. Adult rural residents become eligible for the SP benefit after they have contributed to the FDC pillar for at least 15 years and have reached retirement age (60 for both men and women). At that point they become eligible for a pension benefit based in part on the assets (or credit) in the FDC pillar and in part on the noncontributory SP.

The NRPS currently provides a strong incentive for participation, particularly for working age adults with retirement-age parents. The major incentive is a very innovative "family-binding" policy making a SP benefit available immediately to rural residents over age 60, but only if their adult children enroll in and contribute to the NRPS (MHRSS, 2015). Many developing countries have introduced FDC schemes (e.g., Chile) and a few (e.g., Brazil) have introduced SPs for their rural populations (Rofman, Apella, & Vezza, 2015), but China's

innovative model has been particularly successful in attracting participation in its "voluntary" FDC pillar.

However, in the decades ahead new incentives will be needed to assure that young adults choose to participate in this voluntary program. The impending problem is reflected in the strong preference among many working age enrolled residents to select the lowest allowable voluntary contribution level. This choice assures that their retirement age parents are eligible for a SP, but it will also lead to very low pensions when they themselves retire (Lei, Zhang, & Zhao, 2013). The primary goal for many working age adults is to be to make their parents eligible for a social pension now, not to maximize their own future pensions. While NRPS seems to be working well relative to schemes typically found in rural areas of most other developing countries, given its current structure, there are reasons to believe that issues of sustainability and adequacy are likely to become increasingly problematic in the decades ahead.

This leads us to the questions that will be the focus of our analysis: Is it likely that the NRPS as currently structured will be able to assure an adequate, affordable, and sustainable form of old-age security for rural Chinese residents in the decades ahead? If not, are there lessons from the experience of other countries, particularly various Latin American countries, that may be helpful to those seeking to reform the NRPS in ways that will make it even more effective in reducing rural old-age poverty?

For the past three decades, Latin America has been a hothouse for the implementation of ideas about multi-pillar schemes that include FDC pillars. However, in recent years many Latin American FDC schemes initiated during the 1980s and 1990s have experienced poor coverage and low benefits for low-income workers, including informal workers in urban areas and most residents in rural areas. In several of these countries like Chile, Mexico, or Bolivia, there has

been a recent wave of pension reforms that have often focused on noncontributory SP schemes (Calvo, Bertranou, & Bertranou, 2010). This paradigm shift in several Latin American countries reflects efforts to make these schemes more inclusive and the benefits more adequate, particularly for the rural poor, but also for urban residents working in the informal sector. The reforms have often involved expanding noncontributory programs or making the requirements for the contributory schemes more flexible (Rofman et al., 2015).

Despite the numerous differences between the two regions, China shares a number of similarities with several Latin American countries. One is having middle-income transforming economies with dualistic rural-urban economic structures, many rural migrants, large informal sectors in labor markets, and particularly the challenging task finding ways to alleviate rural poverty. Regarding rural pension systems, models that combine SP and FDC pillars have been emphasized in recent reforms across Latin America (Calvo et al., 2010). For this reason pension policy reforms in Latin America may provide a useful source of ideas for ways to reform NRPS in China. Although some researchers have compared the largely urban pension systems in Latin America with urban pension policy in China (Calvo & Williamson, 2008; Shen & Williamson, 2010; Titelman, Vera, & Pérez Caldentey, 2009), few have attempted to compare pension policy for their respective rural populations. In the discussion that follows we begin by briefly reviewing some additional details, some recent developments, and some of the challenges NRPS will be facing in the decades ahead. Then, we provide an overview of relevant developments in Latin America with a focus on potential pension policy lessons from Latin America for China and briefly comment on some potential lessons from China for Latin America. We conclude with comments about some promising options for reforming NRPS that are currently being discussed by pension policy analysts in China.

Due to space limitations we will not be discussing other components of the Chinese pension system, such as the Urban Enterprise Pension System, the Urban Resident Pension Scheme, the military pension system, or the pension systems for government workers and civil servants. Our focus will be on the primary pension system for China's rural population that makes up approximately half of the Chinese population. Other sources are available that provide descriptions of recent developments and critical assessments of Chinese pension schemes for the urban population, and other groups such as civil servants and government workers (Chen & Turner, 2015; Williamson & Béland, 2015). Of particular note is how fragmented the Chinese pension system is and the lack of integration between the urban and rural schemes is an important part of this fragmentation (Chen & Turner, 2015).

Progress and Challenges in China's NRPS

NRPS includes contingent SPs for working and retirement age rural residents, but the nature of the contingency differs. The SP that working age adults become eligible for after reaching retirement age is contingent on having contributed to the FDC pillar for 15 years. This SP is financed by contributions from the government (typically split between local and provincial government). The other SP currently of 70¥ (11US$) per month is available to those who are already of retirement age, but is contingent on their adult children "voluntarily" enrolling in and contributing to the FDC component of NRPS. This SP is entirely financed by the central government in the less affluent central and western provinces. In the more affluent eastern provinces the SP is financed half by the central government and half by local government (Chen & Turner, 2015). The FDC personal account component is funded by contributions from enrolled workers who select one of five annual contribution levels ranging from 100 to 500¥ (16

to 81US$) (MHRSS, 2014). Local governments are required to match a portion of workers' contributions to these FDC accounts and in more affluent areas the matching contributions are substantially above the required minimum of 30¥ (5US$) per year. The current incentives for enrollment in the NRPS are proving to be very effective in getting rural residents to enroll despite the voluntary nature of the program (Williamson & Béland, 2015). As a result, we have seen a rapid increase in coverage over the past five years. Figure 1 shows that by the end of 2013 approximately 474 million (75%) of rural residents were covered. Among participants, 128 million of those over age 60 were covered as beneficiaries, meaning that almost all rural elders are currently benefitting from this system (MHRSS, 2014).

After several years of ambitious expansion, NRPS coverage may soon be reaching an upper limit. As shown in Figure 1, China's rural population has declined substantially in recent years and this trend will continue given the rapid pace of urbanization. As millions of young adults are moving from rural areas to the cities in search of employment, many related changes are taking place in rural areas that also have implications for the ultimate success of NRPS. Of particular note is the aging of the rural population due largely to the decrease in family size and the migration of many young adults from the countryside to cities. Both of these trends have implications for the sustainability of NRPS in the decades ahead.

[FIGURE 1 ABOUT HERE]

Coverage issues: The "full coverage" goal has not been fully realized, particularly for young adults. The term "full coverage" is sometimes used by the Chinese government to mean that this program has been implemented in all rural counties and every rural resident is being given the opportunity to participate in access to system. It does not mean all rural residents are enrolled in NRPS as either contributors or pension recipients. The family-binding policy limits

pension eligibility for some rural elders, particularly the poorest, whose children are often very poor themselves and unable or unwilling to make even the small annual contribution to NRPS required to make their retirement-age parents eligible for a SP without having contributed to the system. While poor coverage in rural areas is not currently a major issue, this could change in the years ahead, if an increasing number of younger adult rural residents elect not to participate because their parents are already SP eligible based on their own work histories. In short, the influence of the family-binding incentive will gradually decline in the decades ahead and it may be necessary to replace this incentive with others, if current high coverage rates are to be maintained.

Benefit adequacy: The current social pension benefit of 70¥ used in many areas is very low, making voluntary participation in the NRPS unattractive to many middle-income and most high-income rural residents. This benefit is about 36.5% of the official poverty line in rural areas, 8.5% of the average income in rural areas, and 3.5% of the average pension benefit of urban retirees in 2014 (National Bureau of Statistics, 2015). In addition, there is no mechanism in place that indexes NRPS benefits to inflation or income growth, leaving the rural elderly at substantial risk of pension devaluation over the years. From Figure 2, one can see that the average monthly (total) pension benefit for rural pensioners increased from 60 to 81¥ (14US$) between 2010 and 2013. However, NRPS benefit generosity remains very far behind levels found in most Latin American countries (188$US PPP on average, see Table 2). In addition, given that the majority of participants select the minimum allowable *annual* contribution level, 100¥ (16US$), pension credits generated in these FDC accounts will remain very small even after contributing for the required minimum of 15 years. Clearly, the resulting pension does not meet the pension adequacy needs of the rural population today and unless some major changes are made, the issue

of adequacy will become even more of a problem in the decades ahead as price and wage levels increase.

[FIGURE 2 ABOUT HERE]

Incentive problems: Some analysts have shown that the attractiveness of the NRPS comes mainly from the SP for elder parents financed by the government. Rural residents, especially young adults without retirement age parents, generally have very little incentive to participate (Lei et al., 2013; Zhang, 2010). A major reason for this incentive problem is the design of the FDC component. Currently some or all of the assets are notional. That is, the contributions from rural workers are often diverted by the government to finance pension due to residents who are already retired. Personal pension accounts are established to keep a record of these contributions which hold notional (unfunded) credit, but often no actual cash is placed in these accounts. The promise is that the government will take into consideration any funds contributions that have been diverted when the person reaches retirement age, but many rural residents are understandably skeptical as to how adequate the eventual compensation will be. In those cases where contributions are not diverted there is another problem. The contributions must be deposited in government owned banks paying interest rates set by the government with yields that are typically far below market rates and generally provide negative real rates of return. This adverse incentive problem gets worse for those electing to contribute at more than the minimal level allowed for those who enroll.

Financial sustainability: Some analysts have serious concerns about the financial sustainability of the NRPS system (Cai, Giles, O'Keefe, & Wang; Shen & Williamson, 2010). One of the most important is the fiscal ability of local governments particularly in poor areas to fund their share of SP benefits. There is also the burden of providing matching funds (currently

30¥ per year for each covered worker) to the personal FDC accounts of enrolled workers. In addition there is the increasing burden population aging which in turn is linked to the migration of young adults from rural to urban areas in such of better jobs.

Pension Reform in Latin American Countries

During the past decades a very important and influential series of experiments in social security reform have been underway in Latin America. Since 1981, in this region 11 countries have shifted from old-age pension schemes based on the pay-as-you-go (PAYG) defined benefit model to schemes based at least in part on FDC pillars, with Chile taking the lead in the development of this model. Many nations around the world followed Latin America down this policy path during the late 20th century, but this trend has slowed somewhat due in part to the erratic performance of international financial markets during the first decade of the 21st century, especially after the 2008 worldwide financial crisis. The FDC schemes have had a number of benefits, but vulnerabilities have also come into focus, including limited coverage, high administration cost, and adverse income distribution consequences. In response to these vulnerabilities, in recent years there has been a second round of pension reforms initiated to strengthen the public component and address the problems created by individual accounts (Calvo et al., 2010).

Pension protection in Latin America is less adequate in rural areas than in urban areas. As shown in Table 1, most contributors to FDC pension schemes reside in urban areas, where labor markets are better organized and government agencies have more enforcement power. The average pension coverage rate in rural areas is roughly half of what it is in urban areas. To better illustrate these inequalities, Figure 3 presents total, rural, and urban coverage as indicated by the

percentage of beneficiaries age 65 and over. The average coverage gap is around 18 percentage points, but the gap gets as high as 40 percentage points in the case of Panama.

[TABLE 1 AND FIGURE 3 ABOUT HERE]

Some analysts argue that noncontributory pensions make more sense as ways to increase overall pension coverage, particularly in rural areas. Noncontributory SP schemes, sometimes called tax-financed pensions, have become an important option in Latin America not only for extending coverage, but also for reducing poverty (Organization for Economic Co-operation and Development [OECD], 2014; Rofman et al., 2015).

Table 2 presents an overview of SPs in Latin American countries in 2013. Most of these SPs were introduced during the past two decades and target individuals in their 60s or 70s, but do not provide universal benefits. On average, these SPs cover 31% of the population age 60+ and provide benefits range from 10 to 547US$ (PPP) per month. Although these benefits represent 25% to 1,439% of international extreme poverty line, the threshold for this poverty line is exceedingly low (1.25US$ per day). Perhaps a better measure of pension adequacy is benefits as a percentage of GDP per capita, which ranges from 1% to 33%. Sixteen of these countries provide noncontributory benefits that are more than 100US$ (PPP) per month. Benefits in the other 11 mostly range from 60 to 94US$, which is still substantially more generous than China's NRPS benefit. The total cost of SP is below 1% of GDP for most of these countries (HelpAge, 2015).

[TABLE 2 ABOUT HERE]

Major changes have been made to strengthen noncontributory pensions in the region. Chile has increased coverage particularly in rural areas with improvements in its so-called "solidarity pillar," which now finances SPs for those in the bottom 60% of the income

distribution who have not made "mandatory" contributions. It has also increased pension benefits for those who have participated in the formal labor market, but only intermittently and those with low wages (Berstein, 2010). Similar programs are now also found in several other countries such as Bolivia, Colombia, Dominican Republic, and Panama (International Social Security Association, 2014).

Noncontributory pensions make a substantial contribution to coverage in several Latin American countries. As illustrated in Figure 4, in Ecuador, Costa Rica, Chile, and Bolivia, those who receive only noncontributory benefits in some countries represent a substantial fraction of the elderly. In Brazil, there is a large noncontributory quasi SP system that covers rural workers. Other countries, like Mexico, have some local subnational level noncontributory SP schemes (e.g., Mexico City).

Brazil provides a particularly useful case for highlighting the viability of SP schemes in rural Latin America. In Brazil the rural population has almost universal access to pension benefits at both the family and individual level. There has been limited provision of noncontributory SPs for workers in the rural sector can be traced back to 1963, but the entitlements were until recently restricted to the very old. The scheme was gradually expanded during the 1970s, in response to mobilizations of rural workers and pressures for land reform. The 1988 Constitution led to a range of rural pension reforms implemented in 1991. First, the age of pension eligibility was reduced from 65 years of age to 60 for men and 55 for women. Entitlement to old-age, disability, and survivor pensions was extended to workers in subsistence activities in agriculture, fishing and mining, and to those engaged in informal employment. Whereas prior to 1991 only heads of household were entitled to a pension, the 1991 reforms extended entitlement to all qualifying workers, thus expanding coverage to female rural workers

who were not heads of household (Beltrao, Pinheiro, & Barreto de Oliveira, 2004). Due to the high level of spending on Brazil's rural pension scheme and the high coverage rate of formal sector workers by contributory pensions, elderly households are less than half as likely to be found at the bottom two quintiles than is the case for households with no elderly members (OECD, 2014), covering around 90% of the rural population, even though barely 5% of the employed rural population contributes (Bosch, Melguizo, & Pagés, 2013).

Bolivia has a universal noncontributory SP scheme, which has gained considerable attention across Latin America. Following the Chilean model, in 1996 Bolivia launched a pension reform package in which included a universal SP scheme called Bonosol in response to low coverage rates for the existing FDC pension system. Since then, great improvements have been made in its design including: a reduction in the age of eligibility from 65 to 60 years old, a monthly payment instead of an annual one, and a higher amount for those not covered by the contributory system. In 2008, Bonosol was replaced by Renta Dignidad. By 2013, Renta Dignidad covered all elders with a monthly payment of 250 Bolivianos (36US$), at a cost of around 1% of GDP (HelpAge, 2015). Studies show levels of per capita income and consumption were significantly increased in households receiving the Renta Dignidad, and this system had a very positive impact on households by reducing poverty rates and improving their living conditions (HelpAge, 2015).

Lessons from Latin American Countries and China

In this section we ask whether or not there are potential lessons for China based on the experience of one or more of the Latin American countries and whether there are lessons for Latin America based on China's experience with the NRPS. Any such effort is necessarily highly

tentative given the many obvious differences between China and various Latin American countries, particularly with respect to size, pension policy legacy, and government administrative structure. What is working well in one or more of the Latin American countries, may not work well in China and vice versa for a variety of reasons; but evidence as to what is working well or not in Latin America is evidence that Chinese policymakers may want to consider when reforming and refining Chinese pension policy in the decades ahead.

Coverage and FDC pillars: There is much evidence from various Latin American countries suggesting that the introduction of FDC pillars did not increase coverage rates for countries that already had PAYG schemes in place. Coverage rates presented in Table 1 suggest that the Latin American countries that have introduced an FDC still have a substantial fraction of their population without coverage. The promise made by numerous early advocates of privatization was that the introduction of FDC schemes would provide an economic incentive leading to increased participation and coverage (Mesa-Lago, 2005). In Latin American countries this did not happen, particularly in rural areas. Until quite recently this pattern was mirrored in China as well, and without the recent introduction of the NRPS, it is likely that the pattern in China would still parallel that in Latin America. The evidence from the NRPS to date can be viewed as a possible lesson for Latin America from China that when participation in a FDC pillar is linked to a SP benefit for retirement age parents, it is possible to get high participation rates even in rural areas.

Coverage, the rural/urban gap: In most Latin American countries there is a substantial coverage gap between urban and rural regions. This has long been an issue for China as well. The evidence from Latin American suggests that it would be difficult to close this gap in China, particularly with a scheme that includes a mandatory FDC pillar, but no SP. China has not tried

the typical Latin American mandatory FDC model in rural regions, but has tried a voluntary FDC model combined with a SP and that model has been very successful in helping to close the rural/urban gap in coverage. The evidence from China suggests that when a voluntary FDC pillar is linked via a family-binding policy to a SP for retirement age parents, it is possible to dramatically increase rural coverage while at the same time greatly reducing the coverage gap between urban and rural areas.

Generosity of SPs: SPs play an important role in several Latin American countries. They play a particularly important role in extending coverage and reducing extreme poverty levels. There is every reason to believe that similar schemes could be used to greatly reduce poverty rates in rural China. The current NRPS does include SPs for retirement age rural residents after 15 years of contribution, but the projected monthly benefit is very low (Dorfman, et al., 2013). There is also an immediate benefit for those who are of retirement age who have not contributed, but that benefit is even lower 70¥ (about 11US$) per month and it is contingent upon their adult children enrolling in and making contributions to the NRPS. When the adult children are unwilling to contribute, the retirement age parents are not eligible for the immediate SP benefit. Another important difference between the SPs in China and Latin America is that those in China are more modest and as a result they do not go as far in lifting the rural poor out of poverty. The Latin American evidence demonstrates that even very poor countries can find a way to finance SP benefits that are substantially more generous than those currently in place in China (see Table 2).

Incentives for the FDC pillar: The recent reforms in Latin America point to the potential utility of combining contributory and noncontributory components in pension system design. Models that include SP and FDC components are of particular relevance to the debate in China

about how to reform the NRPS. It is clear that SPs play an important role in coverage extension in both regions, but this pillar focuses primarily on income redistribution and reduction of extreme poverty. The Latin American evidence suggests that the most effective way to provide adequate retirement income while at the same time extending coverage is to find incentives that increase participation in programs and foster saving for old-age during the period of active employment. Since China has a traditional culture of saving preference which is much stronger than that in Latin America (Calvo & Williamson, 2008), if market rates of return were provided for the voluntary FDC component of the NRPS, it is entirely possible that coverage levels in China would increase rather than decrease in the decades ahead. At the same time it would promote higher levels of benefit adequacy and system sustainability.

Where Next?

In this section we look to the future by asking where to go next with Chinese rural pension policy. We focus on two promising proposals, one for reforming the SP pillar and the other for reforming the FDC pillar. Both proposals are currently getting a close look by at least some Chinese pension experts (Cai, et al., 2012).

The rural pension scheme for China definitely needed an SP component and given the generally cautious nature of the Chinese government, it is not surprising that NRPS began with a modest SP pension benefit. But looking to the future there is reason, based on the evidence from Latin America, to believe that a country as economically developed as China should be able to finance a substantially more generous rural social pension scheme. While there is no agreement at this point as to how much the SP should be increased, based on the evidence from various Latin American countries a substantial increase should be possible. For example, assuming an

average benefit level of 100¥ per month in 2014 for all rural residents aged at 60 and above in rural areas indexed to GDP per capita thereafter, the overall SP expenditure would have been approximately 0.3% of GDP in 2014 (MOHRSS, 2014). SPs have often been financed at a cost of less than 1% of GDP in several Latin American countries, including Brazil, Chile and Costa Rica, even including some that are substantially less affluent than China (see Table 2). Were such a change made, the SP would do a better job with respect to poverty reduction.

One of the most promising alternatives for reforming the FDC pillar would be to transform it into a Matching Defined Contribution (MDC) scheme (Cai,, 2012). The MDC model is similar to the FDC model, but it differs in one major way, it calls for a "matching" contribution from the government. Currently China does this on a very small scale because local governments are required to contribute at least 30¥ per year to the FDC pillar of NRPS. So technically China already has an MDC scheme in place for its rural population, but much more than this very meager contribution is what advocates of the MDC model have in mind. If the contributions were placed in a government MDC fund paying something approaching a market rate of return, such a pillar could go a long way toward dealing with benefit adequacy, income replacement, and poverty reduction (Dorfman, et al., 2013). The incentive associated with such a model might help increase, or at least help reduce the decrease, in participation rates among working-age adults with retirement age parents who will increasingly be eligible for SPs based on their own contribution histories. That is, it would at least partially replace some of the reduction in the incentive to contribute that can be anticipated the current family-binding incentive gradually weakens.

If the NRPS is to reach its long-term goals, the pension benefits must become more generous than they are today. The increase can come in part from matching contributions

financed by government (local, provincial, central), which may in turn provide stronger incentives for rural residents to participate in the system. In addition, there is need for larger SP benefits, higher annual contributions from working age residents, and higher interest rates on the assets (or notional credits) in the contributory pillar.

Most OECD countries with MDC schemes provide incentives of at least 10% of contributions—the average is around 20%—although this provision is typically financed through tax deductions for employers who provide these subsidies (Holzmann, Robalino, & Takayama, 2009). Examples of MDCs in developing countries include a scheme for informal sector workers recently introduced in Rajasthan and Madhya Pradesh, India. In some Latin American countries including Chile, Columbia, and Peru, MDC mechanism also have been implemented in coordination with the FDC pension reforms (Hinz, Holzmann, Tuesta, & Takayam, 2012).

As noted earlier, China already has a variant of the MDC model in place in that local government is required to partially match the FDC contributions at a very low level (currently 30¥ per year). Affluent and fiscally sound local governments are urged to (and often do) provide more matching funds. Since the matching benefit is generally very small, this policy, as currently implemented, does not seem to do much to help increase the voluntary amount workers contribute. But over time, as rural China becomes more affluent and as evidence accumulates that larger contributions do lead to substantially higher retirement pensions, it is reasonable to expect that contribution levels will gradually increase. At the outset the incentive for contributing more than the required minimum to the voluntary MDC component would be modest, but if the matching contributions from government sources were to steadily increase and the rate of return on contributions were to increase substantially, it is likely that the long-run returns on contributions to the MDC pillar would eventually become a powerful incentive to contribute, as

seems to be the case in some high income countries including U.K., New Zealand, and Japan (Hinz et al., 2012).

In China the proposed individual account MDC pillar of the NRPS would be voluntary. This pillar could be prefunded or alternatively could be financed on a PAYG basis with "notional credit" reflecting the worker's contributions made over the years and with annual credit added to the account based on trends in wage levels. Given the volatility of China's financial markets and the relatively poor track record to date for the current FDC pillar associated with its pension scheme for urban workers, it would make sense to give serious consideration to the Notional (unfunded) Defined Contribution (NDC) alternative for this pillar (Williamson, Price, & Shen, 2012). It could be structured along the lines of the NDC pillar currently in use in the Swedish pension system, but modified to include the addition of credit by the government making it an MDC pillar. Under an MDC model, rural residents could contribute a flat amount, as opposed to a percentage of earnings, and it could be designed to allow flexible contribution schedules. To create incentives to enroll, the government could match contributions (with additional notional credit) up to a specified maximum level selected. This could be done in such a way as to focus the subsidy on the lower end of the income distribution, an alternative that may make sense during the early years when funding may be more of an issue. Since there is a strong saving and thrift culture in rural China, maybe even stronger than urban areas (Calvo & Williamson, 2008), a good MDC design could work particularly well in rural areas.

Looking to the future, it is possible that the FDC pillar of NRPS will evolve into an MDCs pillar (Hinz, e, 2012). In addition the current contingent SP pillar may evolve into a much more generous noncontingent SP pillar (Cai, et al., 2012. These reforms could be part of a long-term strategy to avoid a reduction in coverage and, hopefully, to further increase coverage, with

the additional goal of substantially reducing old-age poverty in rural China. If policies along the lines of those outlined in this article were implemented, poverty reduction over the short run would probably depend primarily on the more generous and SP pillar. Looking further into the future, increased income replacement might well depend largely on the shift from a FDC to a generous (near market rate) MDC pillar.

References

Beltrao, K., Pinheiro, S., & Barreto de Oliveira, F. E. (2004). Rural population and social security in Brazil: An analysis with emphasis on constitutional changes. *International Social Security Review, 57*(4), 19-49. doi:10.1111/j.1468-246X.2004.00201.x

Berstein, S. (Ed.). (2010). *El sistema chileno de pensiones.* Santiago, Chile: Superintendencia de Pensiones.

Bosch, M., Melguizo, Á., & Pagés, C. (2013). *Mejores pensiones, mejores trabajos. Hacia la cobertura universal en América Latina y el Caribe.* Washington, DC: Inter-American Development Bank.

Cai, F., Giles, J., O'Keefe, P., & Wang, D. (2012). *The elderly and old age support in rural China: Challenges and prospects.* Washington, DC: World Bank.

Calvo, E., & Williamson, J. B. (2008). Old-age pension reform and modernization pathways: Lessons for China from Latin America. *Journal of Aging Studies, 22*(1), 74-87. doi:10.1016/j.jaging.2007.02.004

Calvo, E., Bertranou, F., & Bertranou, E. (2010). Are old-age pension system reforms moving away from individual retirement accounts in Latin America? *Journal of Social Policy, 39*(2), 223-234. doi:10.1017/S0047279409990663

Chen, T. & Turner, J. A. (2015). Fragmentation in social security old-age benefit provision in

China. *Journal of Aging & Social Policy, 27*(2), 107-122. doi:10.1080/08959420.2014.977647

Dorfman, M.C., Holzmann, R., O'Keefe, P., Wang, D., Sin, Y., Hinz, R.(2013). *China's pension system : a vision*.Washington, DC: World Bank. Retrieved from http://documents.worldbank.org/curated/en/2013/01/17406669/chinas-pension-system-vision

HelpAge. (2015). *Pension watch database* [Data file and codebook]. Retrieved from http://www.pension-watch.net/

Hinz, R., Holzmann, R., Tuesta, D., & Takayam, N. (2012). *Matching contributions for pensions: A review of international experience.* Washington, DC: World Bank.

Holzmann, Robert; Robalino, David; Takayama, Noriyuki (eds.). (2009). *Closing the coverage gap: The role of social pensions and other retirement income transfers.* Washington, DC: World Bank.

International Social Security Association. (2014). *Social security programs throughout the world: The Americas.* Washington, D.C: U.S. Social Security Administration.

Lei, X., Zhang, C., & Zhao, Y. (2013). Incentive problems in China's New Rural Pension Program. In C. Giulietti, K. Tatsiramos, & K. F. Zimmermann (Eds.), *Labor market issues in China* (pp. 181-201). Bingley, UK: Emerald Group Publishing Limited.

Mesa-Lago, C. (2005). Assessing the World Bank report Keeping the Promise. *International Social Security Review, 58*(2-3), 97-117. doi:10.1111/j.1468-246X.2005.00218.x

Ministry of Human Resource and Social Security. (2014). *Statistical communiqué of human resource and social security.* Retrieved from http://www.stats.gov.cn/

Ministry of Human Resource and Social Security. (2015). *Statistics report of human resource*

and social security. Retrieved from http://www.stats.gov.cn/

National Bureau of Statistics. (2015). *National statistics data* [data file]. Retrieved from http://www.stats.gov.cn/

National Development and Reform Commission. (2015). *Report on the implementation of the 2014 plan for national economic and social development and on the 2015 draft plan for national economic and social development.* Retrieved from http://www.npc.gov.cn/

Organization for Economic Co-operation and Development. (2014). *Pensions at a glance: Latin America and the Caribbean.* Paris, France: OECD Publishing.

Rofman, R., & Oliveri, M. L. (2012). *Pension coverage in Latin America: Trends and determinants.* Washington, DC: World Bank.

Rofman, R., Apella, I., & Vezza, E. (2015). *Beyond contributory pensions: Fourteen experiences in Latin America.* Washington, DC: World Bank.

Shen, C., & Williamson, J. B. (2010). China's new rural pension scheme: Can it be improved? *International Journal of Sociology and Social Policy, 30*(5/6), 239-250. doi:10.1108/01443331011054217

Titelman, D., Vera, C., & Pérez Caldentey, E. (2009). *Pension system reform in Latin America and potential implications for the chinese case* (The IDEAs Working Paper No. 06/2009). Santiago, Chile: Economic Commission for Latin America and the Caribbean.

Williamson, J. B., & Béland, D. (2015). The future of retirement security in comparative perspective. In L. K. George & K. F. Ferraro, *Handbook of Aging and the Social Sciences* (pp. 281-294). San Diego, CA: Academic Press.

Williamson, J. B., Price, M., & Shen, C. (2012). Pension policy in China, Singapore, and South Korea: An assessment of the potential value of the notional defined contribution model.

Journal of Aging Studies, 26(1), 79-89. doi:10.1016/j.chieco.2014.05.014

Zhang, C. (2010). Intention of the peasants on participating in New Rural Pension Program and its influencing factors. *Journal of Agrotechnical Economics,* 6, 4-10.

Table 1. Pension Coverage in Rural and Urban Areas (%)

Country (Year)	Contributors/Economically Active Population				Contributors/Employed Population				Beneficiaries/Population Age 65+			
	Rural	Urban	Total	Gap	Rural	Urban	Total	Gap	Rural	Urban	Total	Gap
Argentina (2010)	NA	47.77	NA	NA	NA	51.14	NA	NA	NA	90.43	NA	NA
Bolivia (2007)*	3.40	21.83	15.00	18.43	3.44	22.17	15.11	18.73	6.19	28.64	17.22	22.45
Brazil (2009)	26.30	56.78	51.96	30.48	27.00	61.60	55.86	34.60	91.97	85.14	86.27	-6.83
Chile (2009)*	67.20	73.77	73.12	6.57	75.19	83.81	82.94	8.62	40.23	60.24	57.23	20.01
Colombia (2009)*	11.63	38.21	32.72	26.58	12.18	41.52	35.28	29.34	6.64	28.02	59.68	21.38
Costa Rica (2008)*	63.34	68.61	66.67	5.27	70.70	65.22	68.68	-5.48	29.91	46.95	40.99	17.04
Dominican Republic (2009)*	16.45	28.68	24.98	12.23	18.57	33.48	28.85	14.91	5.62	14.43	11.10	8.81
Ecuador (2009)*	23.45	33.67	30.44	10.22	23.69	35.66	31.76	11.97	8.11	28.29	20.30	20.18
El Salvador (2009)*	12.27	35.91	28.61	23.64	13.20	38.40	30.66	25.20	3.08	18.51	13.37	15.43
Guatemala (2006)	15.93	34.97	26.67	19.04	16.03	35.71	27.17	19.68	8.24	22.04	15.41	13.80
Honduras (2009)	7.09	30.78	19.11	23.69	7.20	32.22	19.70	25.02	1.27	9.68	5.11	8.41
Mexico (2010)*	16.30	42.36	36.98	26.06	16.43	42.91	37.36	26.48	9.27	30.92	25.21	21.65
Nicaragua (2005)*	6.53	26.07	18.52	19.54	6.66	27.46	19.26	20.80	5.55	26.76	18.72	21.21
Panama (2009)	27.01	59.38	49.06	32.37	27.60	63.09	51.49	35.49	20.03	59.98	44.97	39.95
Paraguay (2009)	6.89	23.28	16.93	16.39	7.12	24.92	17.87	17.80	4.60	25.26	16.61	20.66
Peru (2010)*	4.65	25.41	18.48	20.76	4.66	26.64	19.05	21.98	5.60	38.05	25.93	32.45
Uruguay (2009)*	70.30	66.61	66.83	-3.69	72.02	70.68	70.76	-1.34	79.50	86.08	85.71	6.58
Venezuela (2006)	NA	35.30	NA	NA	NA	37.85	NA	NA	NA	31.27	NA	NA
Average	23.67	41.63	36.01	17.97	25.11	44.14	38.24	18.99	20.36	40.59	33.99	17.70

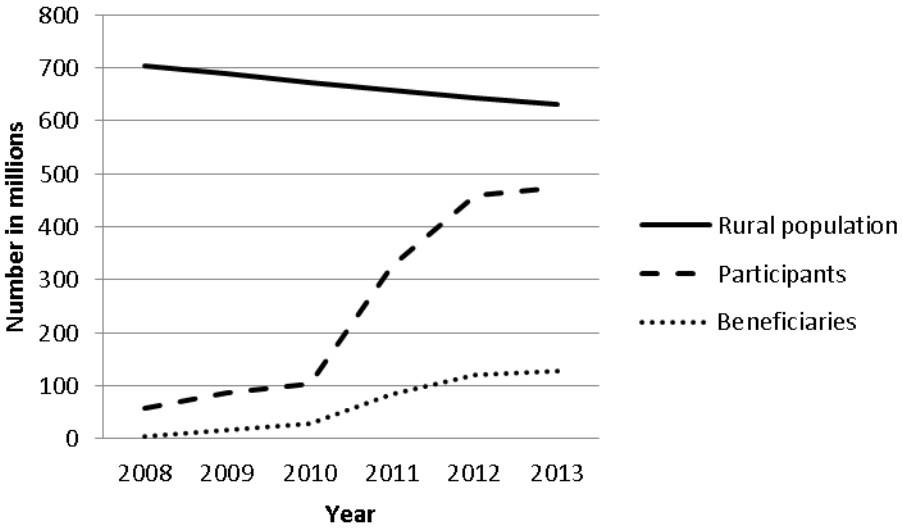
Notes: Authors' elaboration using Rofman & Oliveri (2012). NA = not available. Countries marked with a star have FDC schemes.

Table 2. Characteristics of Social Pensions (SPs) in Latin American Countries

					Benefit			
Country	**Year**	**Age**	**Universal**	**Coverage (pop. 60+)**	**US$ PPP**	**% GDP p/capita**	**% poverty line**	**Cost (% of GDP)**
Antigua and Barbuda	1993	77	No	NA	123	8%	323%	0.02%
Argentina	1994	70	No	1%	547	25%	1439%	0.04%
Bahamas	NA	65	No	6%	333	12%	876%	0.08%
Barbados	1937	65.5	No	22%	490	23%	1289%	0.74%
Belize	2003	65-67	No	21%	94	12%	248%	0.13%
Bermuda	NA	65	No	NA	NA	NA	NA	NA
Bolivia	1997	60	Yes	103%	68	15%	180%	1.08%
Brazil	1963	55-60	Yes	28%	340	31%	893%	0.98%
Brazil	1996	65	No	8%	340	33%	893%	0.26%
Chile	1974	65	No	39%	196	12%	515%	0.05%
Colombia	2003	54-59	No	26%	44	5%	115%	0.13%
Costa Rica	1974	65	No	20%	169	15%	444%	0.37%
Ecuador	2003	65	No	42%	60	7%	158%	0.24%
El Salvador	2009	70	No	5%	96	15%	251%	0.07%
Guatemala	2005	65	No	11%	79	18%	208%	0.13%
Guyana	1944	65	Yes	96%	136	18%	358%	1.06%
Jamaica	2001	60	No	18%	15	2%	39%	0.04%
Mexico	2001	65	No	42%	61	5%	160%	0.20%
Mexico	2001	64-70	No	9%	10	1%	25%	NA
Panama	2009	70	No	23%	74	5%	195%	0.17%
Paraguay	2009	65	No	17%	169	27%	445%	0.44%
Peru	2011	65	No	11%	75	8%	197%	0.11%
St. Vincent and Grenad.	2009	67	No	53%	106	10%	279%	NA
Suriname	1973	60	Yes	106%	212	19%	557%	1.61%
Trinidad and Tobago	1939	65	No	45%	469	27%	1234%	1.41%
Uruguay	1919	70	No	5%	362	22%	953%	0.24%
Venezuela	2011	55-60	No	19%	208	18%	548%	0.60%
Average	1987	66	No	31%	188	15%	493%	0.42%

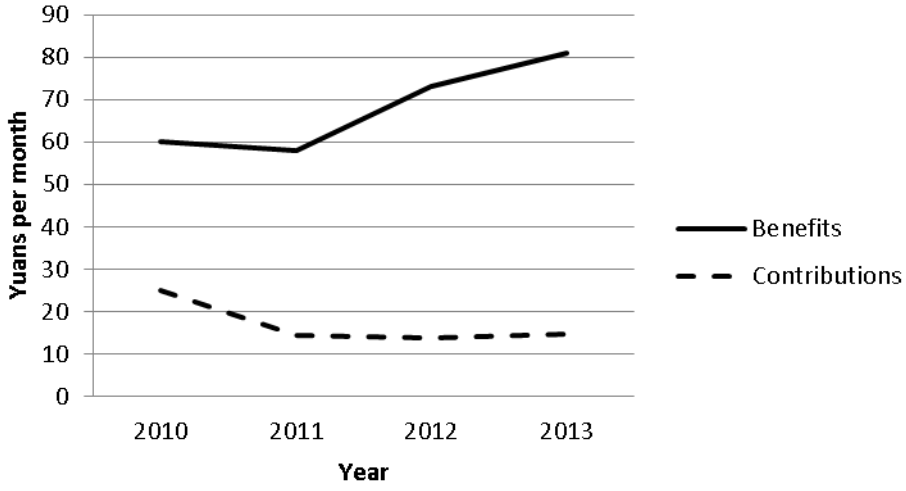
Notes: Authors elaboration using HelpAge (2015). NA = not available. Both Brazil and Mexico have two social pensions.

Figure 1. Trends in Rural Population and Coverage of NRPS



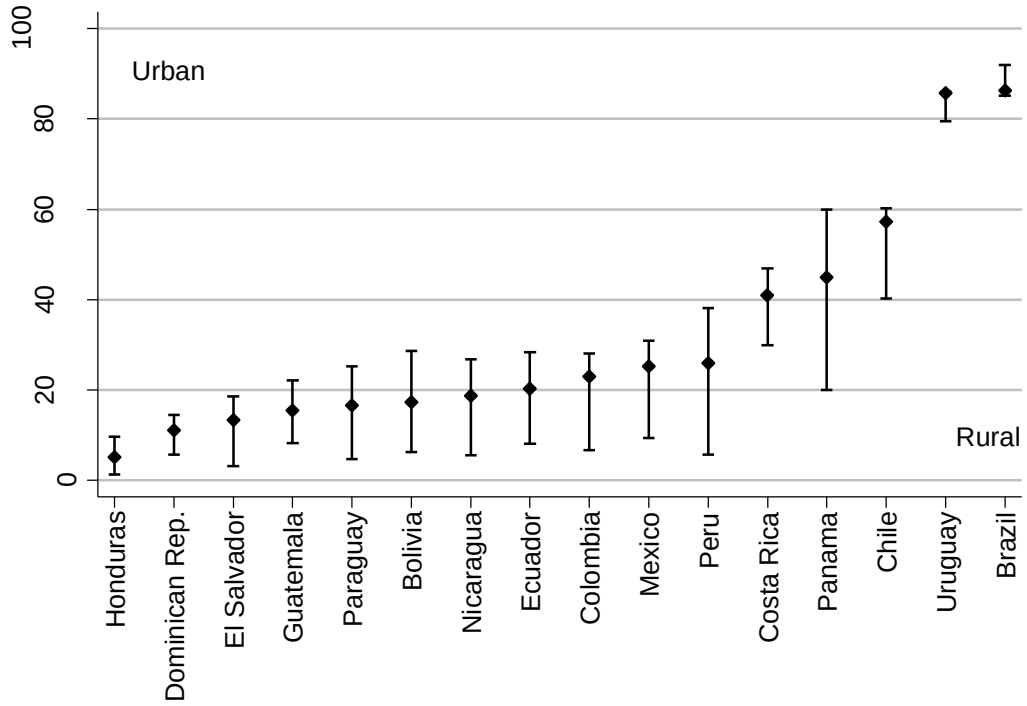
Notes: Authors' elaboration using MHRSS (2014). The number of beneficiaries for 2012 was estimated by the authors. An old rural pension plan was in place in 2008. Our data for "participants" includes both beneficiaries and contributors.

Figure 2. Trends in Average Benefits and Contributions to NRPS



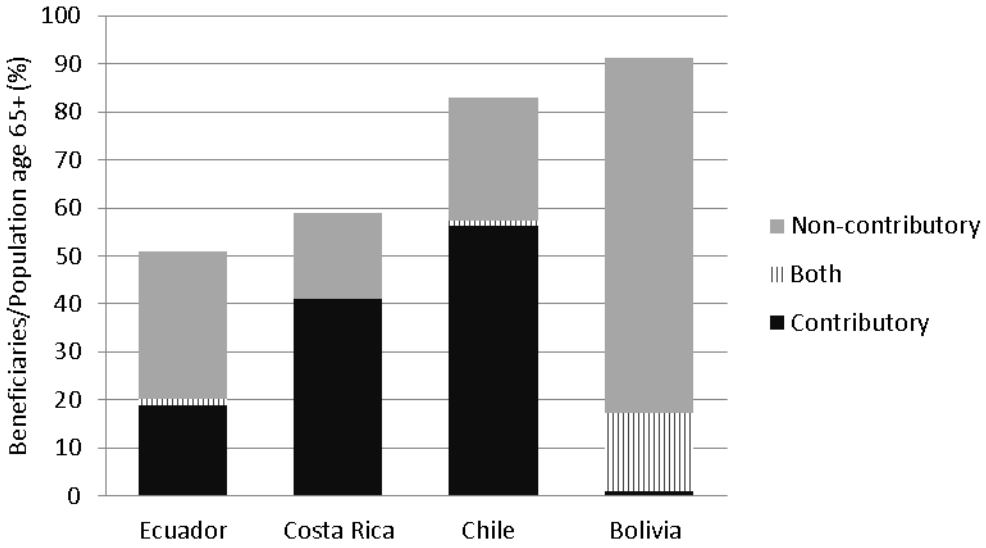
Notes: Authors' elaboration using MHRSS (2014).

Figure 3. Inequality in Pension Coverage at Age 65+ within countries by urban and rural area



Notes: Authors' elaboration using Rofman & Oliveri (2012). The dark circles represent average pension coverage calculated as the percentage of the population age 65+ receiving income from pensions. The end-points at the top of the bars indicate coverage in urban areas, and the end-points at the bottom indicate coverage in rural areas. The end-points are inverted in Brazil, where coverage in rural areas is larger.

Figure 4. Percentage of the Population age 65+ Receiving Contributory and Noncontributory Pensions



Notes: Authors' elaboration using data from Rofman & Oliveri (2012). Estimations for Bolivia in 2007, Costa Rica in 2008, and Chile and Bolivia in 2009.