LABOR MARKETS AND SOCIAL POLICY
IN A RAPIDLY TRANSFORMING AND AGING THAILAND

PENSION PROVISION IN THAILAND

WORLD BANK GROUP

CONTENTS

TABLES

ACRONYMS AND ABBREVIATIONS

DB	Defined benefit
EAP	East Asia and the Pacific
EEE	exempt-exempt-exempt
EET	exempt-exempt-taxed
FPO	Fiscal Policy Office
GDP	gross domestic product
GPF	Government Pension Fund
ILO	International Labour Organization
NPF	National Pension Fund
NSO	National Statistical Office
NSF	National Savings Fund
OAA	Old Age Allowance
OCSP	Old Civil Service Pension
OECD	Organisation for Economic Co-operation and Development
OLG	Overlapping Generations Model
PVD	Voluntary Provident Fund
RMF	Retirement Mutual Fund
RR	Replacement rate
SSO	Social Security Office
SSF	Social Security Fund
TGRI	Thai Gerontology Research and Development Institute

FOREWORD

This report is one in a series on strengthening social protection and labor market policies in Thailand in the context of aging and economic transformation. Other report in the series provide an overview of the social protection system, analyze the labor market implications of population aging, assess Thailand's aged care system, and evaluate the macro and fiscal implications of aging. The reports are:

- Towards Social Protection 4.0: An Assessment of Thailand's Social Protection and Labor Market Systems;
- Aging and the Labor Market in Thailand;
- Caring for Thailand's Aging Population; and
- The Macroeconomic and Fiscal Impact of Aging in Thailand.

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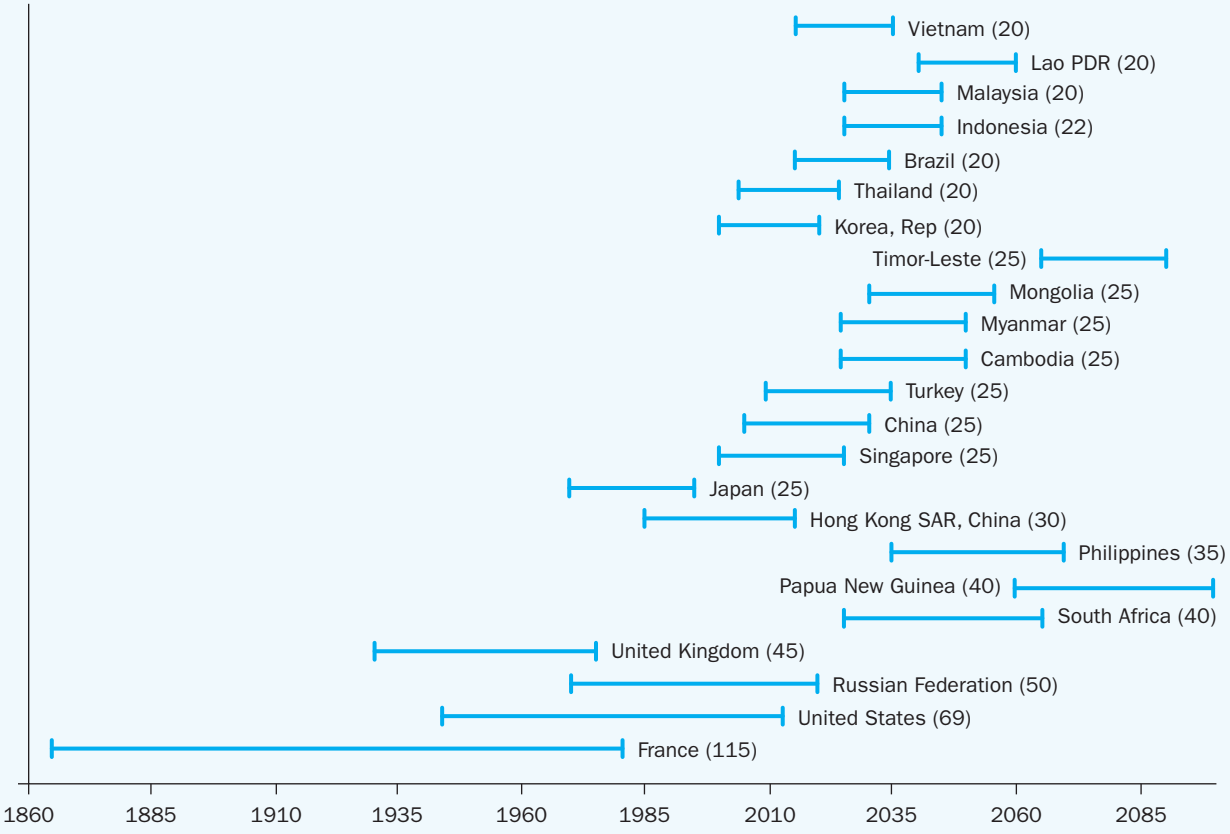
INTRODUCTION

Historically, Thailand and its East Asian neighbors have experienced the most rapid demographic transitions on record. As illustrated in Figure 1, the share of the population aged 65 and above in Thailand doubled from 7 to 14 percent in only 20 years, a pace exceeded only by Vietnam.

More importantly, Thailand is one of several East Asian countries that will reach an advanced stage of demographic aging at a much lower income level than high income countries like Japan, the United States, and most of Europe.

Figure 1. East Asia and Pacific economies are aging more rapidly than economies elsewhere

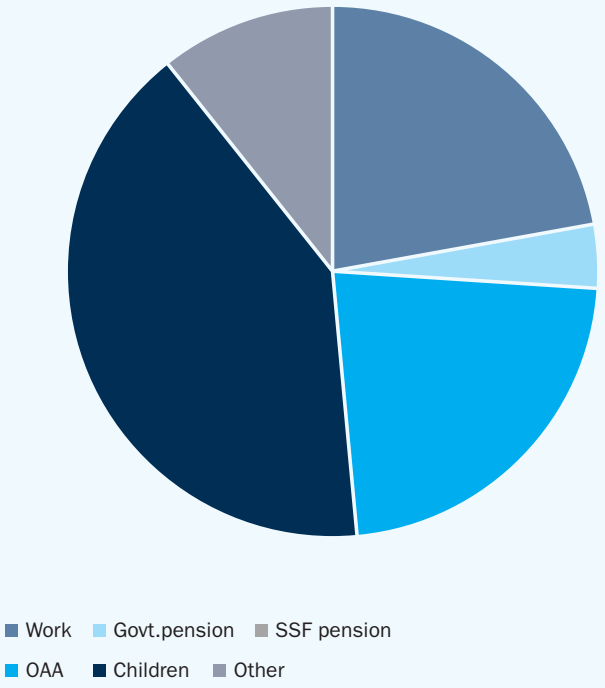
Years to move from 7 to 14 percent population share 65 years and older and the start and end years of transition



Source: Thailand Labor Force Survey 2019.

Looking forward, Thailand's success in extending life expectancy and reducing fertility rates will result in rapid population aging. Between 2020 and 2050, the share of the population age 60 and above is expected to double. The median UN projection suggests that this share would reach 36 percent. This ratio is currently 33 percent in the oldest country in the world—Japan. To reach the same level of income at the same point of aging, real income per capita would have to grow by 3.3 percent per year for the next 30 years. This unprecedented structural change will have important social and economic implications through its impact on intergenerational relations, fiscal policy, and national savings.[1]

Figure 2. The limited role of pension provision in Thailand

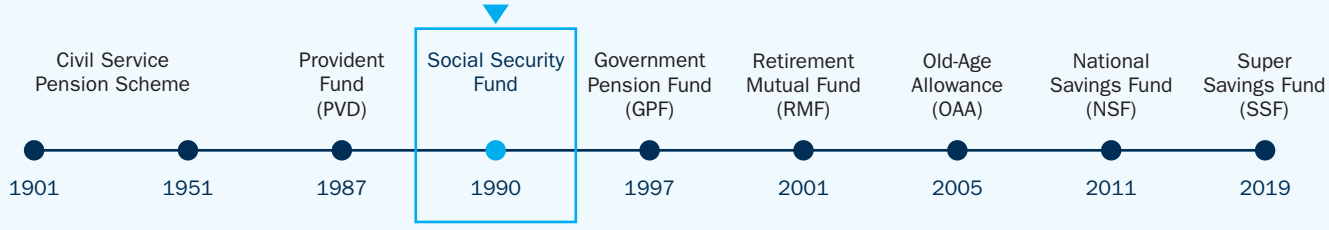


Source: NSO (2017).

The role of pensions in providing income support to the elderly in Thailand is very limited. A 2014 study by the National Statistical Office (NSO) found that more than three-fourths of Thais aged 60 and above reported that their main source of income was work or family support. As shown in Figure 2, only around five percent reported pension income as the main source of support. The vast majority of these would have been retired public sector workers. As discussed later, the figure will rise as Thailand's young pension scheme for private sector workers matures; but without a major and rapid increase in coverage, those with pension income will continue to be a minority. The Old Age Assistance program has high coverage but the benefit that it pays is by itself not sufficient to avoid poverty.

Despite multiple mandatory and voluntary schemes, more than half of working age Thais are not contributing to a pension scheme of any kind. The limited role of pension provision contrasts with the number of mandatory and voluntary pension schemes that have been introduced over the years as shown below in Figure 3. Figure 4 shows the coverage of this constellation of mandatory and voluntary pension schemes. Workers in the formal sector are covered by separate defined benefit (DB) schemes for those in the public and private sector.[2] The public sector scheme is non-contributory, has a generous benefit formula, and is mature in the sense that pensioners have been covered their entire careers. The 1997 reform of the public sector scheme shifted most young civil servants into a less generous DB scheme but added a defined contribution (DC) component. In contrast, there is a contribution of 6.35 percent for the private sector scheme managed by the Social Security Fund (SSF) and it provides more modest benefits. Many of these workers are also covered by voluntary private pension schemes known as provident funds. Several million informal sector workers have joined a voluntary plan administered by the SSF. There are also individual retirement plans that come with fiscal incentives. Finally, the government has expanded a social assistance scheme targeted to the elderly over the last two decades and as of 2018 paid a very low benefit to around three quarters of the population aged 60 and above.

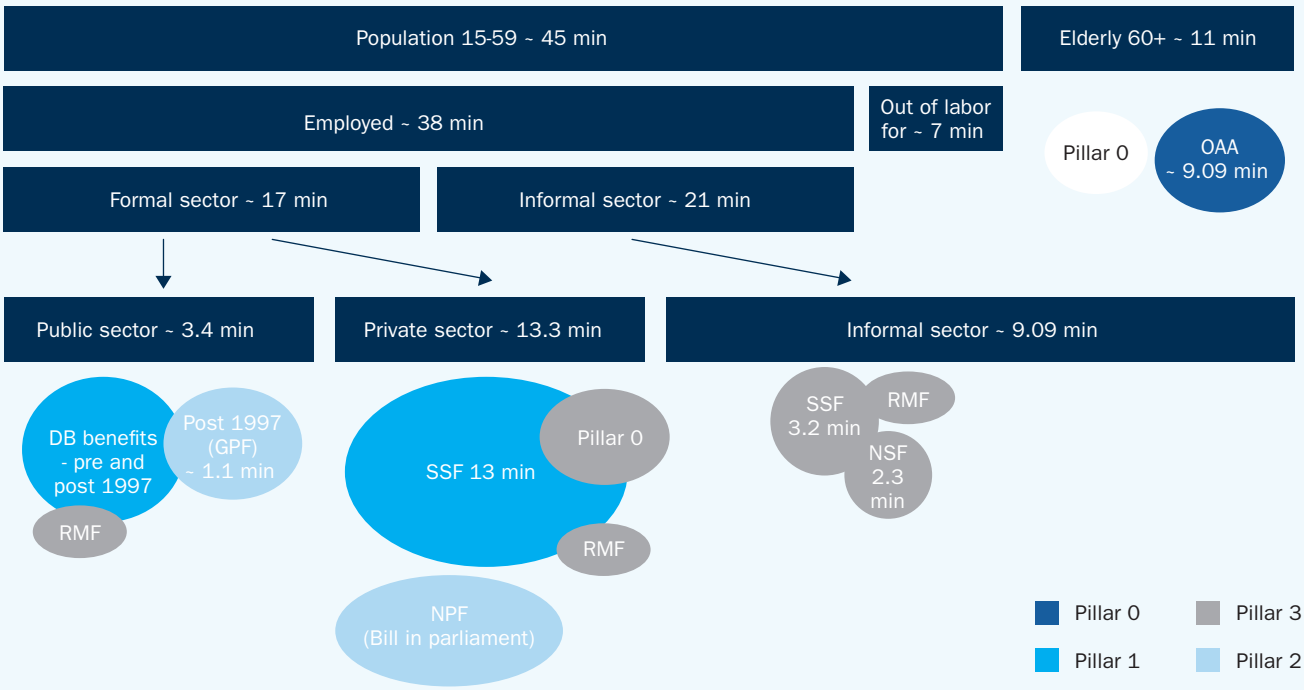
Figure 3. Year of introduction of pension schemes in Thailand



Source: FPO (2020).

[1] For an analysis of the broader fiscal and macroeconomic impact of aging, see Bandaogo and Van Doorn (2021).
[2] Private sector employees that contribute to the SSF are also insured against the risks related to unemployment, maternity, survivors, disability, family allowances, and work injury.

Figure 4. Mandated and voluntary pension schemes in Thailand, 2019



Sources: NSO (2019); FPO (2020); TGRI (2019).

* National Pension Fund (NPF) is a scheme in policy discussion at the time of writing of this report. The current draft law would mandate contributions for private sector unless the existing employer provident fund meets minimum standards, in which case they may opt out of the NPF.

This report documents the current state of pension provision in Thailand and options for reform that would increase the adequacy and sustainability of the pension system. While the focus here is on income support, the welfare of the elderly depends on many other government policies ranging from labor market policies to aged care and health services.[3] It is also important to assess the pension system in terms of its broader impact on fiscal sustainability and national savings. This analysis can be found in a companion World Bank report that looks at the macroeconomic implications of aging in Thailand.[4] The next section describes the schemes for the formal sector (public and private sector) followed by Sections 2 and 3 which cover voluntary programs for the informal sector and non-contributory or 'social' pensions, respectively. Section 4 assesses performance based on three criteria—adequacy, sustainability, and coverage and discusses recent reform initiatives. The last section concludes.

[3] For a multi-dimensional approach, see TGRI (2018, 2019).
[4] See Bandaogo and Van Doorn (2021).

SECTION 1: PENSIONS FOR FORMAL SECTOR EMPLOYEES

The formal sector in Thailand comprises approximately 38 percent of the working age population. There are separate mandatory pension schemes for workers in the public and private sector. In addition, there are two types of voluntary pension schemes available to formal sector workers.

1. PUBLIC SECTOR PENSIONS

Public sector workers, including those in central and local government and state-owned enterprises (SOEs), were the first groups in Thailand to be covered by a pension scheme. Until 1997, most public servants were part of the 'Old Civil Service Pension (OCSP)' scheme—a non-contributory, defined benefit (DB) plan (see Table 1). Under the old scheme rules (pre-1997), a civil servant who worked for 30 years would have received a pension worth 60 percent of his final salary. The pension expenses were financed directly from the budget; there were no contributions. The generosity of pensions coupled with rising life expectancy caused growing concerns around sustainability of the pension scheme.

Table 1. Public sector pension benefits pre- and post1997- reform.

Rules	Old civil service pension	New rules (reformed DB + GPF)
Coverage	Central government employees prior to 1997, local government officials, some SOEs	Those who joined after 1997
Scheme type	Non-contributory DB	Non-contributory DB + DC (mandatory contribution is 8%: 3% worker, 3% govt., 2% government contribution for those choosing to move from the old scheme). Voluntary contribution up to 15% of salary allowed
Vesting perioda	25 years (lump sum benefit if service years less than 25 years)	25 years (lump sum benefit if service years less than 25 years)
Retirement age	60	60
DB formula	2% *final base pay*year of sevice	Reformed DB = 2% * 5-year final average pay * years of service
Expected RR after 30 service years	60% of final base pay as pensions	Approx. 40–50%a from DB scheme + 15–20% from DC scheme
Benefit typea	Pension	Pension from DB scheme + Lump sum or scheduled withdrawals from DC
Benefit indexation	Ad hoc	Ad hoc

Source: Authors' compilation.
a. Individual replacement rate would depend on the steepness of the earnings curve in the last five years.

These concerns along with the objective of promoting funded pensions as part of broader financial sector reform led to the introduction of a DC scheme in 1997. All central government employees after 1997 were required to join, whereas employees who joined prior to 1997 could also switch to the new scheme. Some did; but after the economic crisis of 2008, which led to negative rates of return, the government allowed workers who joined prior to 1997 to return to the DB scheme. For those that remained in the DC scheme, retirement income would be composed of a reduced DB pension formula plus the accumulation from the new DC scheme, known as the Government Pension Fund (GPF).

The new DB formula uses an earning measure of average last five years of service instead of final salary and is therefore expected to lead to a reduction in lifetime pension benefits by about 10 percent compared to DB benefits from the old scheme. Workers in the new scheme are however entitled to additional retirement income from the GPF. The reform was designed to maintain parity in the replacement rate (RR) between retirees under the old scheme and the new scheme, so the fiscal burden to the government was only modestly reduced due to the reform. Rather, it was hoped that the reserves of the GPF would help deepen the Thai capital market and allow public servants to improve the adequacy of their pensions through voluntary contributions (Ratanbanchuen 2019).

Central government employees who joined the scheme after 1997 were moved to the new scheme (reformed DB + DC from GPF). However, local government officials retained the old system and some SOEs replaced the old scheme with provident funds. Contract workers in the government are not part of any of these schemes and most are required to join the mandatory scheme for the private sector (Paitoonpong et al. 2016). As of 2019, there were 1.1 million active civil servants in the GPF with assets equivalent to 5.5 percent of GDP (Sampatanukul 2019). The pension expenditures for central government employees from the DB schemes (pre- and post-1997) totalled Bt 223,762 million[5] or 1.33 percent of GDP in 2019. Expenditure projections of the public sector scheme do not exist to our knowledge. However, in the absence of reforms, spending will continue to rise due to the internal demographics of the public sector (see discussion on sustainabilty in Section 4) as well as rising life expectancy).

2. PENSIONS FOR PRIVATE SECTOR WORKERS

The Social Security Fund (SSF) in Thailand provides mandatory social insurance coverage for various risks, including old age pensions, disability, unemployment, maternity, child allowances, and sickness and death benefits. In 1999, the pension scheme under Article 33 was initiated for private sector workers in Thailand. The SSF Act also allows for voluntary contributions from self- employed and informal sector under Article 39 and 40 respectively (discussed in Section 2). At the end of 2017, approximately 13 million workers (out of an estimated 16 million private sector workers) paid contributions to the SSF and old age pension assets of SSF totaled Bt 1.27 trillion[6] or about 8 percent of GDP (SSO 2017).

The SSF rules under Article 33 mandate contributions from employees (5 percent), employers (5 percent), and government (2.75 percent) for private sector enterprises. The maximum monthly earnings used to calculate contributions are Bt 15,000. Out of the total contributions of 12.75 percent, 6.35 percent is for old age, 0.65 percent is for child allowance, and 5.75 percent is for other risks. Individuals who were previously contributing under Article 33 can continue contributing voluntarily under Article 39, if self-employed. Article 39 requires a flat contribution rate of BT 432, that is, 9 percent of a base salary of Bt 4,800 per month (ILO 2021).

Individuals must contribute for 15 years to be eligible for a pension[7]. The pension for individuals who have 15 years of service is 20 percent[8] times the last five-years final average pay. The accrual rate for each year of service after 15 years is 1.5 percent, with a maximum RR of 50 percent (Table 2). However, the wages on which benefits can be calculated are capped at BT 15,000 per month (US$462) for Article 33 and at BT 4,800 for Article 39. Given a monthly average wage of BT 20,854[9] as of 2020, the benefit cap translates to 72 percent of the average wage for Article 33 and 23 percent of average wage for Article 39.

The wage cap is not indexed to prices, wages, or any other indicator. If the wage ceiling of BT 15,000—used for calculating contributions and benefits—is not revised in line with nominal wage growth, the replacement rate will fall steadily each year and, in a decade, or so the benefits from the scheme will be negligible. With the wage ceiling of BT 15,000 in place, the maximum monthly pension an individual can get even after 40 years of continuous contributions is only BT 7,500 per month (US$231).[10] The unindexed wage ceiling and lack of automatic indexation of pensions mean that benefits from SSF alone would decline in value over time for private sector workers. A draft law on introducing a mandatory provident fund (National Pension Fund) to allow for additional savings has been proposed. For now, private sector workers who would like to save more for retirement can do so through voluntary schemes like the Voluntary Provident Fund (PVD) and Retirement Mutual Fund (RMF). The low coverage numbers in these voluntary retirement schemes (Table 2) mean that most formal sector workers will retire with benefits from SSF alone.

Although SSF has been operating since 1999, the first cohorts eligible for pensions were those retiring in 2014, after completing the 15-year vesting period. Workers that were out of the formal labor force for part of this period (and had irregular contribution histories) would have to wait longer to qualify for a pension and might only receive a lump sum payment at retirement. In 2017, out of a total of 443,875 retirees a mere 119,000 received pensions, and the rest received lump sum payments (SSO 2017).

Over time as the system matures and life expectancy of pensioners continues to rise, the number of pensioners is expected to increase to 1 million in 2026 and to 10 million in 2059. The most recent actuarial estimates[11] suggest that cashflow deficits will emerge in 2041 and reserves will eventually be exhausted by 2054 (SSO 2017). These estimates do not include the impact of the COVID-19 pandemic, which would likely worsen the sustainability of SSF because of investment losses, lower contribution revenue, and higher rates of early retirement (see Box 1 for Thailand's COVID-19 response in social insurance).

[5] Spending excludes pensions for SOE and local government.
[6] Total assets of SSF including reserves for other types of risk as of 2017 was about Bt 1.85 trillion.
[7] Individuals retiring with less than 15 years of service receive a lump sum. If contributions are less than 12 months lump sum is equal to employee contribution only. If contributions are between 1-15 years, lump sum is employee and employer contributions plus investment returns.
[8] The implied accrual rate is 1.33%. It can be calculated as 20 percent/15 years = 1.33%.
[9] In January 2020, the average monthly wage in Bangkok was Bt20,854 according to the NSO (http://web.nso.go.th/).
[10] In 2018 the Labor Ministry proposed revising wage ceiling from Bt 15,000 to Bt 20,000 but the proposal has not yet been implemented (https://www.bangkokpost.com/thailand/general/1533358/ministry-firm- on-proposed-ssf-hikes).
[11] These estimates assume that the ceiling is indexed (SSO 2017).

Table 2. Schemes for private sector workers

	Social Security Fund Article 33/39 (pension)	Provident Funds (PVD)	Retirement Mutual Fund (RMF)
Scheme type	Defined benefit—old age pension scheme	Defined contribution	Defined contribution
Coverage numbers	13 million	3 million	Unknown
Applies to	Mandatory for private sector, voluntary for self-employed	Voluntary. Employers need to set up PVD schemes for employees	Voluntary. For both formal and informal workers
Contribution rate	Article 33: 12.75 total contributions to SSF out of which 6.35%[a] is for old age pension. Contribution wage ceiling per month = Bt 15,000 Article 39: Contributions are a flat rate of Bt 432 per month (9% of base salary of Bt 4,800)	Employee: between 2– 15% Employer: 2–15%	Flexible contribution frequency. There is no minimum investment limit but some contribution needs to be made every year.
Retirement age	55	55	55, penalty on early withdrawal
Benefit formula	On completing 15 years: 20%* 60 months final average pay. Accrual rate: 1.5% for each year of service after 15 Earning measure: average of last five years Max RR = 50% of BT 15,000 for Article 33 and 50% of BT 4,800 for Article 39	Contributions + investment returns	Contributions + investment returns[b]
Benefit type	Pension if service years > 15 or else lump sum	Lump sum	Lump sum
Benefit indexation	No systematic indexation	n.a.	n.a.
Reserves	Bt 1.17 trillion (8% of GDP)	Bt 1.1 trillion	Bt 258 billion

Source: Authors' compilation from sources as of 2017/18. SSF and RMF asset totals include formal and informal sector— split unavailable.
Note: a. Contribution rate for child allowance and old age contributions is 7 percent, of which 3 percent each from employers and insured persons and 1 percent from government. 6.35 percent is earmarked for old age pension.
b. Individuals are eligible to receive tax benefits under RMF if they do not withdraw early.

Box 1. Changes to Social Security Fund contributions in Thailand's COVID-19 response

Under SSF rules, employers and employees are mandated to contribute 5 percent of wages each (wage ceiling of BT 15,000). This was reduced to a total of 5 percent of wages (4 percent employer + 1 percent employee) from March to May 2020. It was increased to the pre-COVID 10 percent total from June to August 2020 only to be brought down to 4 percent total from September to November 2020. Employee contributions were again reduced from 3 to 0.5 percent from January to March 2021, while the government contribution at 2.75 percent of wages remains unchanged. These changes would reduce contribution revenue for SSF this fiscal year, which, combined with investment losses and possible early retirements, would worsen sustainability of SSF in the medium term, unless reforms are carried out.

Source: https://www.lexology.com/library/detail.aspx?g=8d51ba5a-ba3c-4855-a182-ee376eb40b41.

Finally, an important complement to the SSF is the employer-based provident fund system (PVD). More than three million workers are supplementing their mandated pensions through this voluntary arrangement that garners generous tax treatment. Specifically, contributions of between 2–15 percent of salary as well as investment income and benefits are all exempt (EEE) from income taxes up to Bt 500,000 per year.[12] These benefits are paid out as lump sum payments at retirement. While we are not aware of estimates of tax expenditures for these schemes, the tax treatment is generous by international standards and favors higher income workers.

[12] Most OECD countries tax either contributions or (more commonly) benefits as income when they are paid out.

SECTION 2: PENSIONS FOR INFORMAL SECTOR WORKERS

According to Labor Force Survey estimates there were just over 20 million informal workers in Thailand in 2019. This represents about 38 percent of the working age population. These workers form a diverse group and often lack the stable employer-employee relationship of formal sector workers. They are therefore not mandated to join the pension scheme for formal sector workers. The Thai government has tried to expand pension coverage to these workers by offering voluntary schemes targeted to this group. As summarized in Table 3, Thailand currently has three prominent voluntary pension schemes where informal sector workers can contribute—the SSF (under Article 40), the National Savings Fund (NSF), and the Retirement Mutual Fund (RMF). Coverage rates among informal sector workers remain low despite matching contributions offered by the govern ment.

Table 3. Pension schemes for informal sector workers

	SSF (Article 40)	NSF	RMF
Scheme type	Defined contribution with fiscal incentives	Defined contribution with fiscal incentives	Defined contribution
Coverage	3.24 million	2.3 million[a]	Unknown
Aims to attract	All informal sector workers	All informal sector workers[b]	Voluntary for formal and informal workers
Contribution rate	Individuals can pay Bt 70, Bt 100, or Bt 300 per month and government match varies under each	Bt 50–Bt 13,200 per year. There will be a co- contribution from the government, depending on the amount they contribute and their age	Flexible frequency of contributions. Minimum 3% of salary and not less than Bt 5,000 annually
Retirement age	55	60	55, penalty on early withdrawal
Benefit type	Lump sum (all contributions + interest) at age 60. If insured pays Bt 300 per month for 15 years, they will receive an additional Bt 10,000[c]	Pension paid monthly for a lifetime amount of pension depends on the fund accumulated until age 60. Lump sum benefits if disabled or death	Contributions + investment returns

Sources: NSO (2019); FPO (2020).
Note: a. It is unclear if this figure refers to registered or active contributors.
b. Private sector workers can join the NSF and receive a matching contribution only if they do not participate in the public or private pension system that receive contributions from the government or employers. https://money.kapook.com/view127422.html.
c. https://www.thaipbsworld.com/sso-offers-more-retirement-savings-options-for-the-self-employed/.

The three voluntary schemes for the informal sector all have a voluntary DC design but vary around rules of vesting, retirement age, and the incentives provided by the government.

a) Under *Article 40 of SSF,* informal sector workers are permitted to make voluntary contributions to the SSF and are entitled to a lump sum benefit at retirement. There are three packages that informal sector workers can choose from. Under package 1, individuals have to pay Bt 70 every month, and the government will contribute Bt 30. Under package 2, individuals pay contributions of Bt 100 baht and the government contributes Bt 50. Under package 3, individuals pay contributions of Bt 300 baht and the government contributes Bt 150.[13] As of 2018, 2.6 million individuals had contributed to this scheme.

b) The *National Savings Fund* (NSF) Act was introduced in 2011 and became effective only in August 2015. This scheme targets all informal sector workers. The government requires an extremely low minimum annual contribution of Bt 50 (US$2) and a maximum contribution of Bt 13,200 (US$406). The government matches contributions for workers and the amount is capped at Bt 600, Bt 960, or Bt 1,200 based on the age of the worker. The pensionable age is 60 and the amount of pension is equal to total savings in member accounts divided by 240 (20*12 months). If pensioners die before age 80, the government pays the outstanding amount as a lump sum to survivors. Moreover, NSF members can register for an OAA when they turn 60 years old. If the calculated pension under NSF rules is more than 600 baht per month, pensioners will receive the NSF calculated pension for a lifetime. If the calculated pension is less than 600 baht per month, pensioners will receive the OAA of 600 baht per month until their account runs out. At the end of 2017, there were about 546,012 members and size of the fund was Bt 3,589 million (Ratanabanachuen 2019). Tax treatment is EEE for contributions up to Bt 13,200.

[13] https://www.sso.go.th/wpr/main/service/5_detail_detail_1_125_698/247_247.

c) The *Retirement Mutual Fund (RMF)* is a voluntary individual pension plan. The scheme is open for all groups of people who want to save money for their retirement, including informal sector workers.[14] The government provides generous tax incentives for those who save for a minimum of five years and meet the withdrawal rules (IMF and World Bank 2019). The assets of RMF, as of 2017, total Bt 258 billion. Tax treatment is EEE for contributions up to Bt 500,000 per year.

SECTION 3: SOCIAL PENSIONS FOR THE CURRENT ELDERLY

For the vast majority of elderly Thais, the only source of pension income is the Old Age Allowance (OAA). The program is one element of a broader social assistance system that includes a child grant and a targeted program that reaches a large share of poor and near poor households (Lamanna and Sharpe 2021).

The OAA has expanded coverage over the years as criteria were progressively relaxed. In 2011, progressive rates were introduced in relation to age: persons 60–69, 70–79, 80–89, and 90 or older became entitled to Bt 600, Bt 700, Bt 800, and Bt 1,000 per month respectively (Suwanrada and Wesumperuma 2013). The current average benefit is around 3.3 percent of income per capita and less than half of the national poverty line. It is clear therefore that OAA support alone is insufficient to keep individuals out of poverty.[15]

As of 2019, approximately 9.09 million individuals (around 82 percent of the current elderly population) received this allowance.[16] Over time, as the private sector scheme (SSF) matures, if private sector workers make regular contributions, and if voluntary schemes reach scale, it is possible that fewer people will have to rely solely on the OAA. The benefit under OAA is minimal so it would need to be complemented with pension income, from other sources if the goal of income security in retirement is to be attained. Unless contribution densities and coverage of the informal sector expands, the OAA will remain the only source of income. In such a situation, one could expect social pressures to increase benefit of OAA to provide income support to the growing share of elderly.

[14] https://www.set.or.th/education/th/begin/mutualfund_content09.pdf.
[15] See Lamanna and Sharpe (2021) for a more detailed analysis.
[16] See Lamanna and Sharpe (2021) for a more detailed analysis.

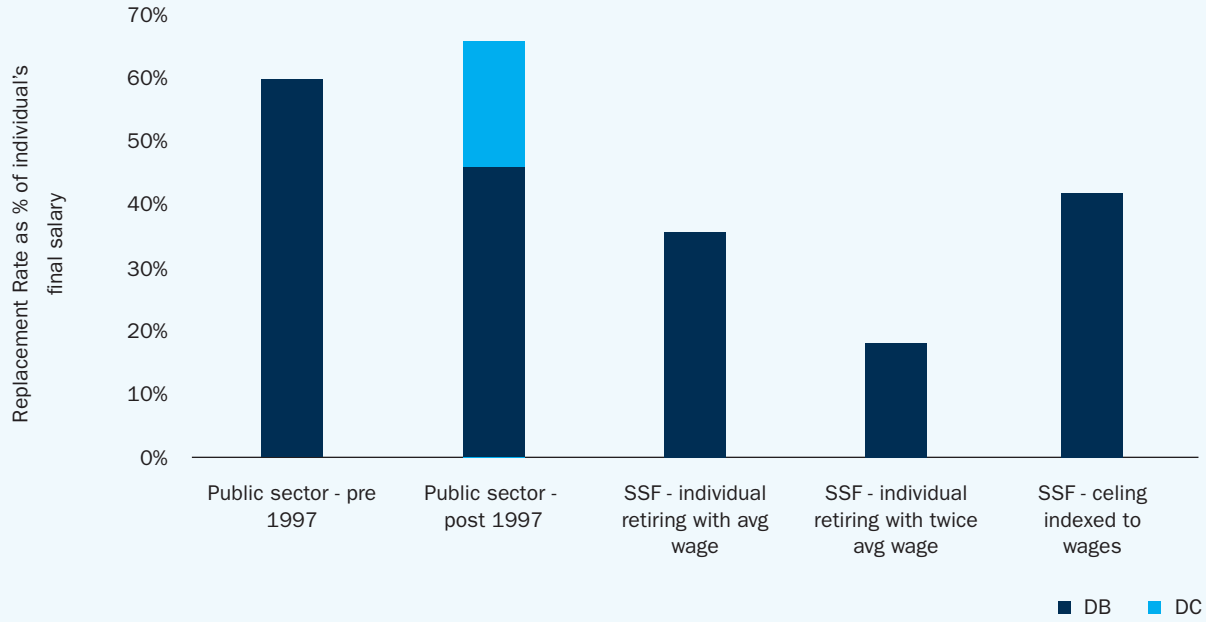
SECTION 4: PERFORMANCE OF THE PENSION SYSTEM

1. ADEQUACY AND FAIRNESS

The objective of the government in mandating contributions to a pension scheme is to smooth consumption over the life cycle. Consumption smoothing objectives are often expressed as replacement rates—the ratio of pension income to wages before retirement. As mentioned in Section 1, public sector pensions have much higher replacement rates than those produced by the SSF for private sector workers. This is evident in Figure 5, which compares the benefits at time of retirement of civil servants covered by the old DB scheme (pre-1997), those in the hybrid DB/DC scheme (post-1997), and those retiring with the mandatory private sector SSF. These simulations are carried out for an individual with a full career of 30 years of service and retiring under Article 33. In the case of the SSF, three variants are shown.

The first case (under SSF simulations) assumes that the individual retires earning the average wage in the economy, which is approximately Bt 20,850. Applying the accrual rates under SSF rules (see Table 2 above) the pension benefit would equal approximately Bt 9,190. However, due to a ceiling currently set at Bt 7,500, the effective RR is only 36 percent of the salary. This shows how the lack of indexation of the ceiling is reducing the adequacy of pension benefits, even for those with full contribution histories.

Figure 5. Simulated replacement rates as percentage of individual's final wage



Source: Authors' calculations.
Note: Simulations under all five scenarios assume that the retiring individual has an uninterrupted length of service of 30 years. Accrual rates used are as shown in Table 1 for public sector and Table 2 for private sector. We assume a real wage growth of 5 percent in these calculations.

In the second variant we consider an individual with twice the average wage retiring from the SSF scheme. Owing to the low benefit ceiling, the individual replacement rate is even lower, at about 18 percent of final salary, for the higher income individual. The third variant shows that if the ceiling was systematically indexed to nominal wages the individual would receive a replacement rate of approximately 42 percent of salary at the time of retirement. This would be close to the ILO recommended rate of 40 percent of salary for a 30-year career.

If the goal is to allow for consumption smoothing through the pension scheme, the contribution and benefit ceiling will need to be indexed to wage growth. The ceiling is not being indexed currently and therefore presents an adequacy risk to pensioners retiring from SSF. This risk is heightened for those who retire under Article 39 because the cap is much lower, at Bt 4,800. Even if someone has spent most of their life contributing under Article 33, if they become self-employed in the last five years prior to retirement, their benefit would be calculated under rules of Article 39 and be capped at Bt 4,800, which is a mere 23 percent of the average wage in the economy. The salary ceiling and benefit ceiling for both Article 33 and 39 should be revised and systematically indexed to nominal wage growth going forward, as is also standard policy in most countries with mandated DB schemes.

Indexing contributions and benefits from SSF to nominal wage growth would eventually allow workers with full careers to retire with the ILO recommended RR of 40 percent; but that would still be lower than what a public sector worker could expect (see Figure 5). This is because the accrual rate for the private sector scheme is lower than that of the public sector scheme, making the benefits from the latter more generous. The retirement age of SSF is five years lower than that of the public sector scheme, though. If life expectancy is similar between public and private sector[17] retirees, this would mean that the latter on average would receive pensions for much longer.

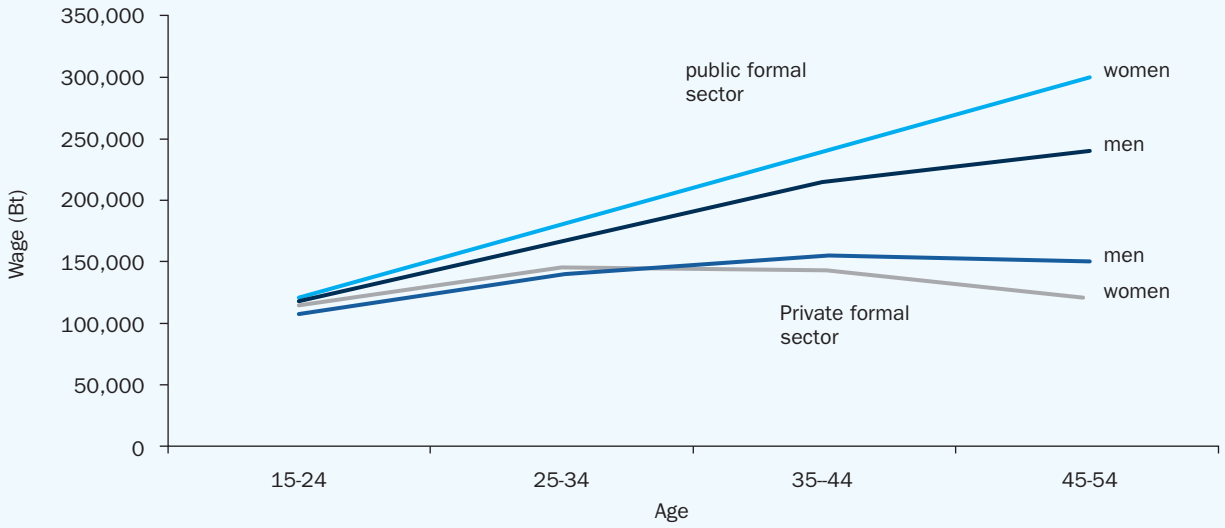
The relative generosity of public sector pensions in Thailand is a feature that is common across much of the developing world. There is some evidence that in some countries, the higher pensions granted to civil servants may sometimes compensate for lower wages relative to their private sector counterparts.[18] However, an analysis of public-private differentials in Thailand using Labor Force Survey (LFS) data does not provides any evidence of this (see Appendix for details of analysis). A simple plot of wages by age, gender, and sector (Figure 6) using LFS data shows that civil servants earn more regardless of age and gender than workers in the formal sector. The difference in average earnings between the public and private sector is approximately 41 percent.

[17] One would need to collect and compare mortality data of public sector and private sector retirees to see if life expectancy varies between them.
[18] See Jain and Palacios (2021).

However, the average differentials disguise substantial variation between people with different levels of earnings. The best way of comparing pay between the sectors is to use econometric techniques to compare pay for individuals holding the characteristics of individuals and jobs constant, and only changing the sector in which they work.

Controlling for factors like age, gender, education level, and location, the public wage premium falls to 15 percent, increases with age, and is statistically significant (see Appendix for details).

Figure 6. Median wages by age, gender, and sector



Source: Thailand Labor Force Survey 2019.

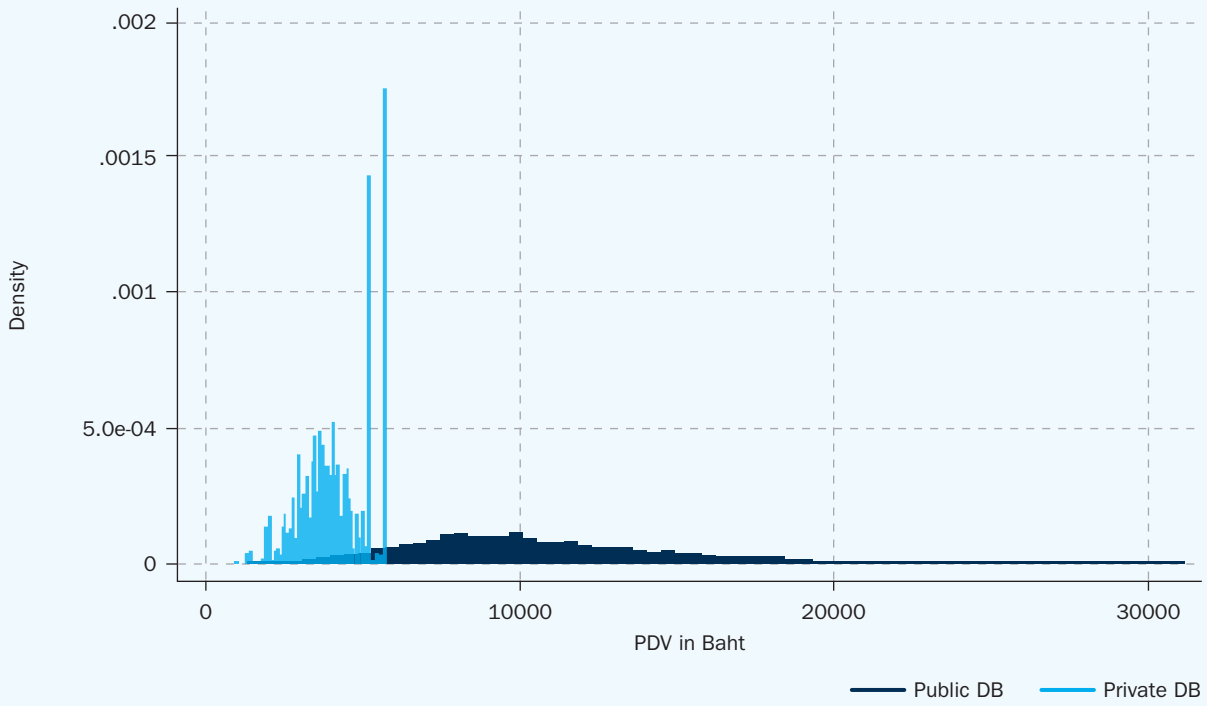
The evidence suggests that civil servants in Thailand are paid a premium relative to equivalent private sector workers and this result holds across the range of skills and education. That is, higher income/more educated workers in the public sector earn a higher premium than lower income/less educated workers in public sector. This contrasts with the findings in some countries where the positive differential tends to apply for the lower skilled positions and becomes negative at the higher levels.[19]

Incorporating pensions into the analysis shows that the difference between total public and private sector compensation is even larger. The public-private wage differential literature does not adjust for compensation such as pensions (Gindling et al. 2020). Where public and private sector workers participate in different pension schemes, this can be done by converting the accrued pension wealth in each scheme into a flow[20] that can then be added to the wage. The methodology of the differential analysis is described in detail in the Appendix.

We assume that all individuals irrespective of sector work for 30 years. Public sector workers retire at age 60 whereas private sector workers retire at age 55.[21] The ceiling on maximum pensions under SSF (Bt 7,500 currently) is assumed to grow at a real rate of 2 percent in the baseline case. Under this assumption there are private sector individuals whose pensions would be subject to the cap (see Figure 7A below). We re-run the regression analysis but include the pension rights to the wages. On doing so the public sector premium increases from 15 percent on average (when considering wage differential only) to 42 percent[22] (wage and pension—that is, total compensation differential). This increase can be attributed to several factors: (a) the accrual rate for the public sector is higher than that of SSF; (b) benefits under SSF are subject to a ceiling that grows at a slower rate relative to wage growth; (c) public sector workers retire five years later than private sector workers and so enjoy a higher wage on which lifetime benefits are calculated; and (d) pension indexation for public sector workers is assumed to be more generous than that of SSF, in line with experience.

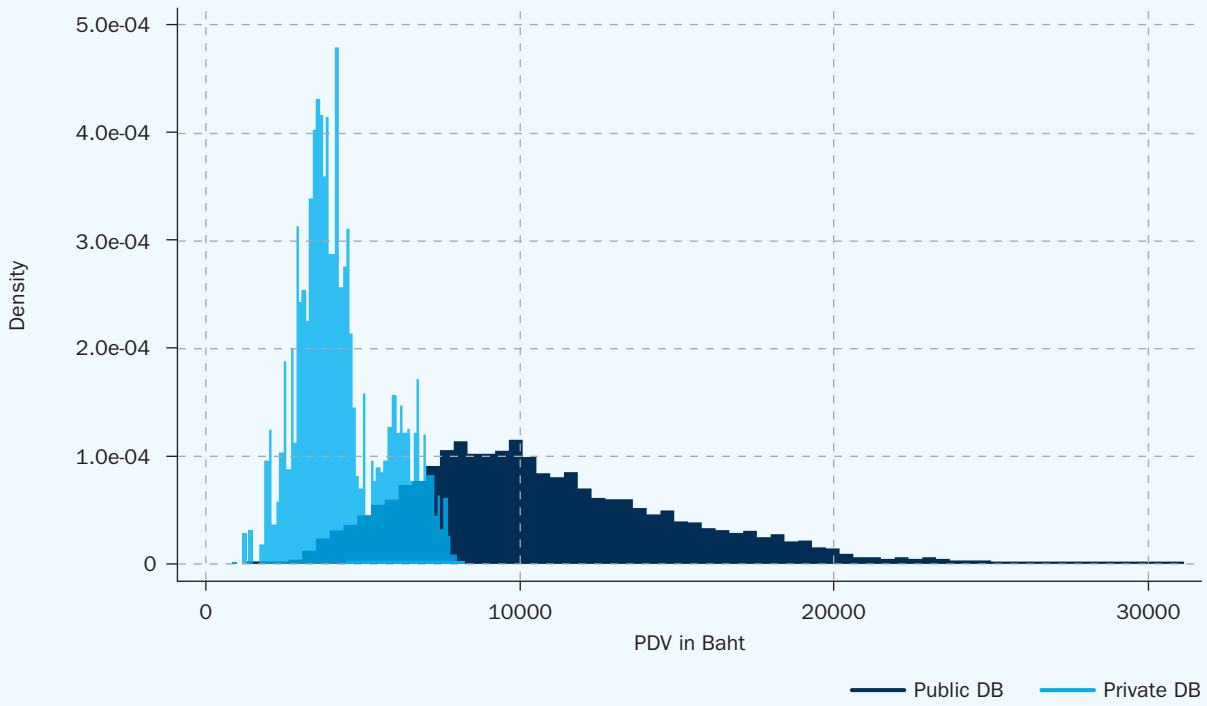
[19] See Grindling et al. (2020).
[20] This is done by calculating the present value of pension wealth and dividing it by the assumed years of service (30 years in our case).
[21] Average public sector wages are higher to begin with; and since public sector workers retire later, the analysis assumes a higher wage at retirement (other things being equal) for public sector workers than for private. The life expectancy (LE) for the private sector is slightly higher (as they retire at age 55) but our assumptions are such that the gain from wage growth for public sector dominates the gain from LE for private.
[22] The coefficient of public sector employee in Table A1 in the Appendix is 1.04. Since the dependent variable is logged income the premium of being in public sector should be interpreted at (e^1.04)–1 ~ 143%

Figure 7A. Histogram of public and private pension with pension cap growing at 3 percent real



Source: Authors' calculations.

Figure 7B. Histogram of public and private pension distribution with pension cap growing at 2 percent real



Source: Authors' calculations.

Once pensions are included in the analysis, higher income workers continue to enjoy a higher compensation premium than lower income workers (see Figures A1 and A2 in the Appendix). The high compensation premium that public sector workers enjoy supports the need for parametric reforms to ensure equity between public and private sector workers with similar characteristics, and in order to control the growth of pension spending. The public-private sector differential gap can be reduced by making the pension benefits of private sector workers more adequate, reducing the generosity of public sector pension benefits, and/or ensuring horizontal pay equity between the two sectors.

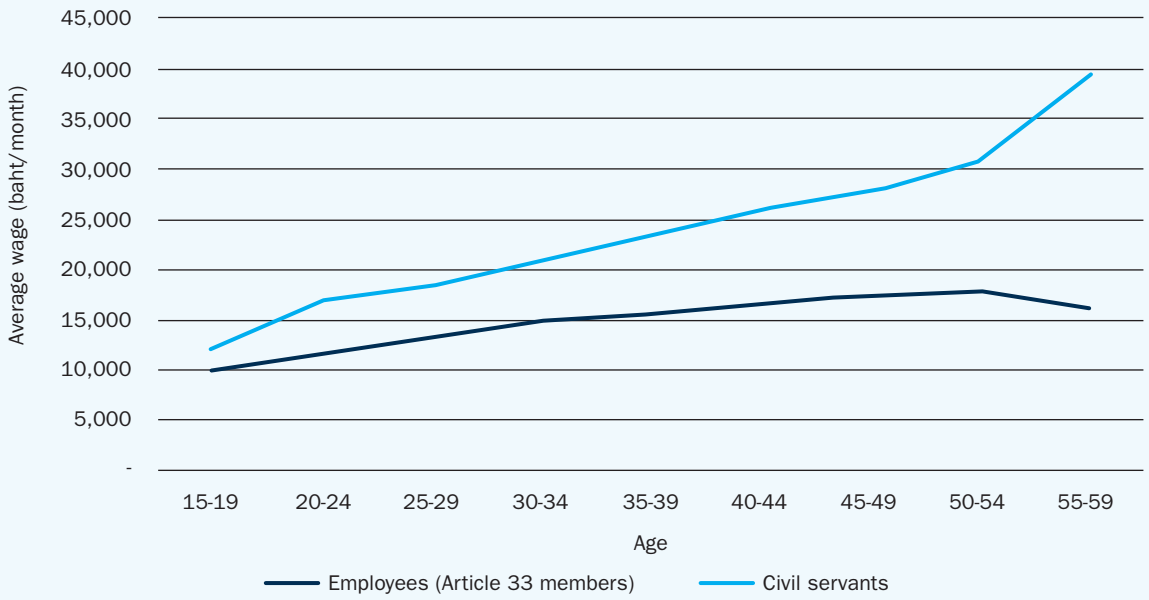
There are a few caveats that need to be noted with regard to the findings of the public-private compensation analysis. First, Thailand like many other countries in the region[23] increasingly employs contract workers in public sector for clerical roles. These workers are likely to be lower paid and with little to no social security. Alternatively, workers in the State-Owned Enterprises are part of the public sector and generally earn more than civil servants[24]. A split of public sector into SOEs, civil servants and contract workers would help assess if and how the differential changes by each sub-group. Second, most rounds[25] of LFS data do not allow us to split private sector into 'formal' and 'informal'. To the extent, informal workers in the private sector (e.g., household's drivers, maids, employees of informal SMEs) make up the majority and earn lower incomes, their inclusion[26] widens the public-private differential between public and private.

Lastly, the income variable of the LFS used for this analysis does not include bonuses, other benefits that might be available to public or private sector workers. It also does not include health insurance, which is more generous for public sector workers. Future research in this area should split public and private sector into sub-groups and analyze the differential by considering the complete package of salary, allowances, pension and health insurance. This would require using data sources beyond traditional LFS and conducting further econometric analysis.

A closer look at the wages of civil servants compared to those of Article 33 members reveals a distinct change in the earning profile five years before retirement for civil servants. As seen in Figure 8, wages of civil servants rise sharply in the last five years before their retirement age of 60. No such sharp increase is found in wages of contributors to SSF for the five years prior to their retirement age of 55. This highlights the distortion commonly found in closed schemes that use final salary or average two year/five-year salary as their earning measure. In closed schemes like the civil service, promotions prior to retirement or leading up to retirement are possible, thereby allowing their workers to retire with higher pensions. This not only raises equity issues but also contributes to growing fiscal costs of civil service pensions. A move to a longer averaging period with wage valorization would protect adequacy but reduce the perverse incentives of salary hikes prior to retirement.

[23] The rise of contract workers is reported in Indonesia, India a
[24] See Wasi et.al (2021), Appendix E for a comparison of wages between Public Sector and SOE.
[25] Note that the LFS has a module on Informality in Q3 each year but that round was not used for this analysis and is an area for future work.
[26] We control for education in the regression equation. If one believes that informal workers in private sector are 'less educated' than formal sector, controlling for education allows us to state that the differential holds true on average.

Figure 8. Distinct jump in salary for civil servants between ages 55–59



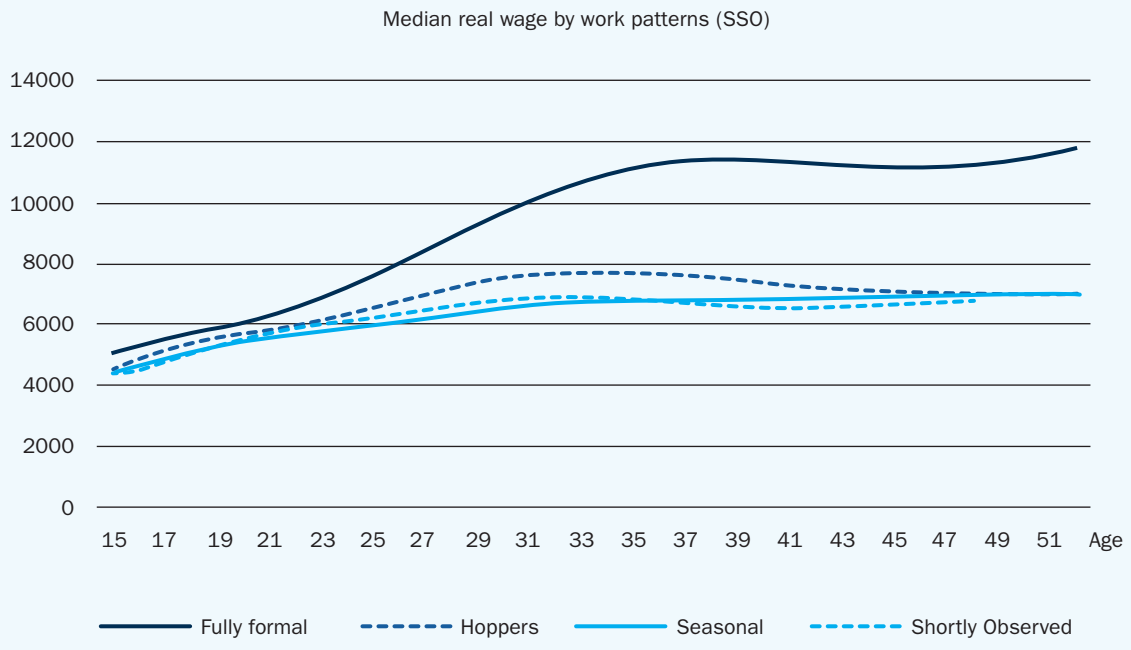
Source: ILO (2021).

While there is no evidence of salary increases prior to retirement for contributors to SSF there is evidence of a sharp difference in earning profiles within contributors of SSF. Wasi et al. (2021) used longitudinal data of SSF contributors to group them into four categories based on their employment history: "fully formal," "hopper," "seasonal," and "shortly observed." As seen in Figure 9, the authors found that semi-formal workers (hopper, seasonal, and shortly observed) made up more than half of the contributors in SSF, and had a much flatter wage-age profile compared to those always staying in the formal sector. The pension rules of SSF also use the average earnings of the last five years to calculate pension benefits. The sharp difference in earning profile between fully formal and semi-formal means that using the average wage of the last five years instead of a career-indexed wage affords disproportionately higher benefits to those who have a steeper earning profile.

This leads to a regressive outcome, as an earnings inequality further translates into disparities in old age and to the next generation through survivor benefits.

The use of the average of five years of earnings in benefit calculations for both civil service and SSF workers has been shown to give rise to perverse incentives and breed inequity. A parametric reform that involves a gradual move to lifetime average earnings with wage valorization is therefore recommended for both sectors. Doing so would not only reduce inequity between public and private sector workers but also among civil servants and contributors to SSF who have different earning profiles.

Figure 9. Median real wages by work patterns using SSO data



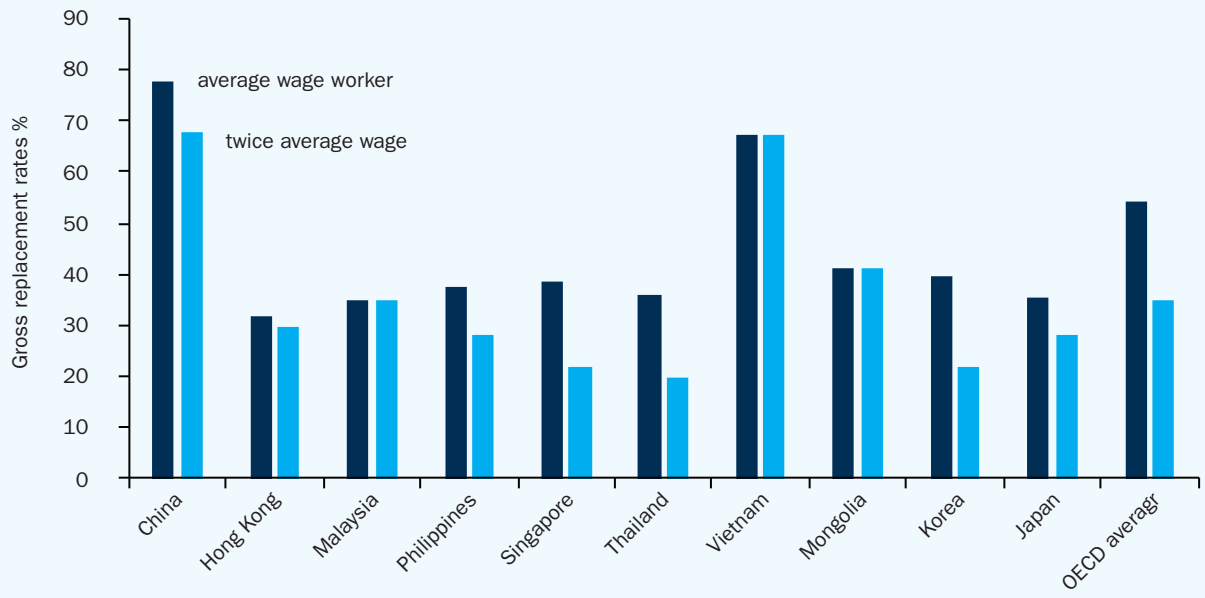
Source: Wasi et al. (2021).

Figure 10 shows that the SSF replacement rates for average wage workers are similar to those in Malaysia and the Philippines but lower than those in China and Vietnam as well as well below the OECD average. They are lower for workers with twice the average wage due to the low ceiling. These simulations apply to workers entering the labor force today and assume that contributions are made throughout the entire working life. Most workers have partial contribution histories so that this figure is an upper bound. Moreover, the figure assumes that the wage ceiling is indexed to wages over time. As noted earlier, the ceiling has remained at current levels for decades and is not indexed. Gradually, unless the ceiling is indexed to wages, Thai replacement rates for average and even below average workers will fall further to levels much lower than those in the region and globally.

While the contributory pension of the SSF is meant to help workers smooth consumption over their lifetimes, the OAA aims to meet the second adequacy objective, namely, poverty alleviation. It is the only program that can address the needs of the current elderly population as well as the future needs of younger workers that continue to be excluded from the schemes designed mainly for the formal labor force. However, as mentioned in the last section, the average benefit level of the OAA is very low (~Bt 7,900 annually[27]) relative to the poverty line (~Bt 27,300) in Thailand. The OAA benefit level, at 3.3 percent of GDP per capita and less than 9 percent of household consumption, as of 2019 is also low in international comparison (Bandaogo and Van Doorn 2021).

[27] OAA gives a flat benefit that varies by age. The average benefit has been calculated by dividing the total OAA expenditure to number of beneficiaries.

Figure 10. Replacement rates in East Asia



Source: Lamanna and Sharpe (2021).

Figure 11 compares social pensions in a large group of low- and middle-income countries along three dimensions. The x-axis measures the present value of benefits (pension wealth) relative to income per capita across countries. This indicator takes into account how many years the beneficiary can expect to receive the social pension and the level of the benefit relative to incomes in that country. The y-axis is a measure of coverage defined as the number of social pensioners as a share of the population aged 65 and above in each country.

Finally, the size of the bubble represents the budgetary commitment assuming no change in coverage or relative benefit levels—that is, the present value of spending as a share of GDP.[28] Thailand has relatively high coverage compared to other countries including its neighbors. Along with other East Asian countries, it has low benefit levels and implies a moderate long-run fiscal commitment.

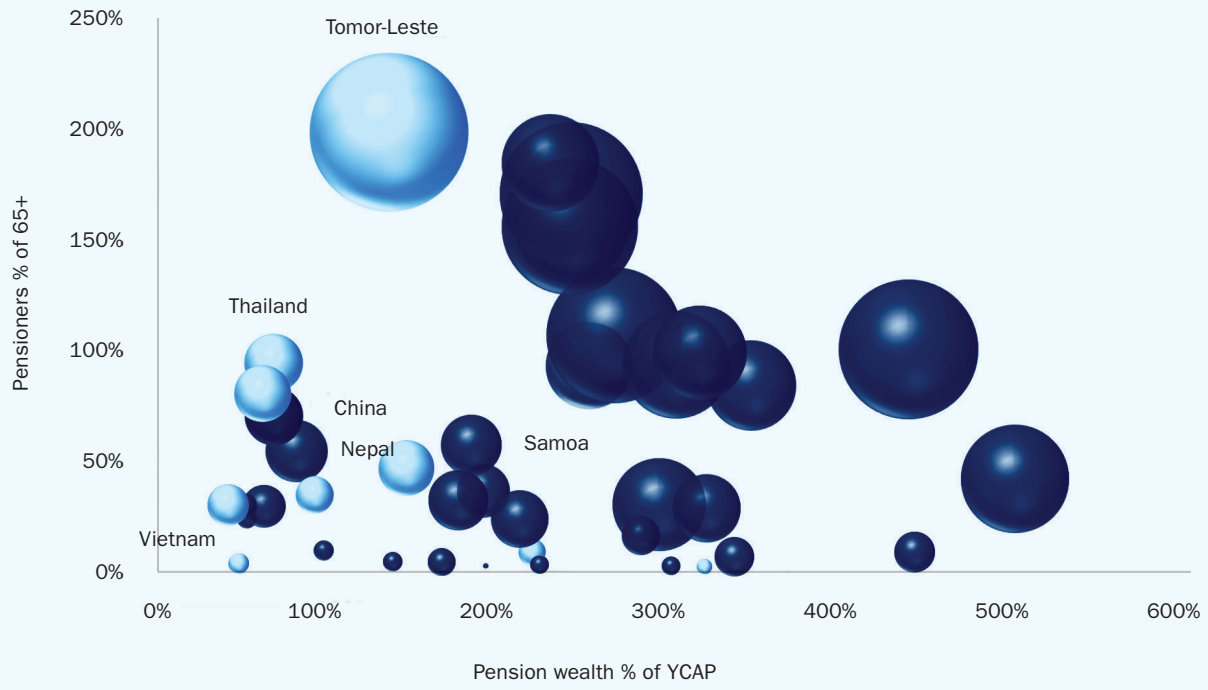
[28] Eligibility ages in some countries are lower than 65 (for example, 60 in Thailand) so the coverage ratio can exceed 100.

The replacement rate and benefit levels suggest that, with the exception of the civil servants, neither the consumption smoothing function nor the core adequacy, poverty alleviation function is achieved for the vast majority of the population. The resources dedicated to the different schemes reinforce the conclusion that pension provision in Thailand is extremely unequal.

The government spends around 1.33, 0.3,[29] and 0.4 percent of GDP on civil service pensioners, formal sector workers, and the rest of the eligible population, respectively. There are fiscal incentives for informal sector workers to participate voluntarily, but these are small relative to the government's contribution to the SSF and the tax expenditures related to the private provident funds. Meanwhile, about 80 percent of the elderly rely on meager social pensions.

[29] This figure refers to the mandated 2.75 percent of covered salaries that the government paid to the SSF in 2017 (about Bt 41 billion, plus Bt 14 billion for old age, disability, and death benefits).

Figure 11. Social pension coverage, spending, and relative benefit levels



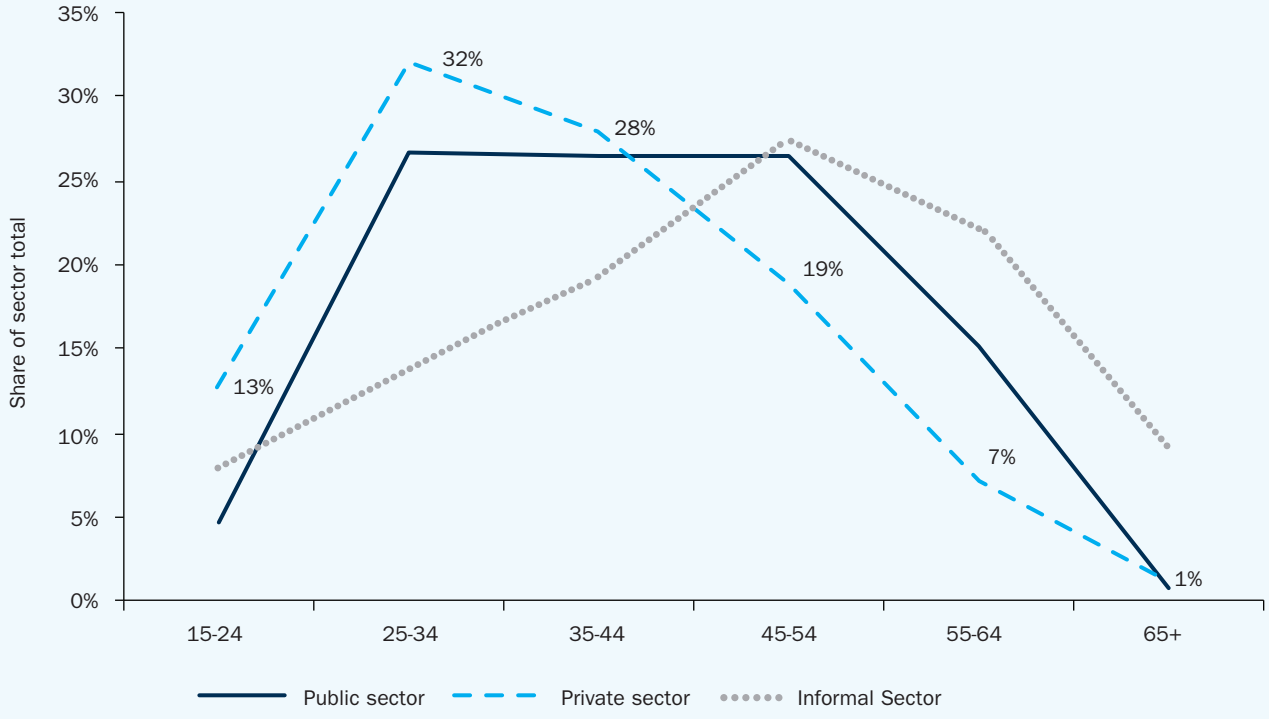
Source: Lamanna and Sharpe (2021).
Note: Light blue bubbles are EAP countries while dark blue bubbles are non-EAP countries.

These disparities have implications for patterns of labor force participation at older ages. Most formal sector workers retire and leave the labor force by age 60 while those in the informal sector must continue to work. Figure 12 shows the striking contrast in employed age distribution by sector, even though formal sector workers would likely be in better health than their informal sector counterparts at the same age.

While high labor force participation rates are a sign of deprivation for the informal sector elderly and reducing it can be a sign of improving living conditions,[30] in the case of the formal sector, it will be important for Thailand to extend working lives as the population continues to age. As discussed in the next section, the retirement incentives built into the formal sector pension schemes exacerbate the situation by encouraging early retirement. This has a negative impact on the labor force and makes formal sector schemes less financially sustainable.

[30] Paneenawat and Vechanyyongratana (2015) document how labor force participation rates among the population 61–75 years old living outside of Bangkok were reduced by 6–7 percent due to the social pension.

Figure 12. Age distribution by sector, share of sector total, 2019



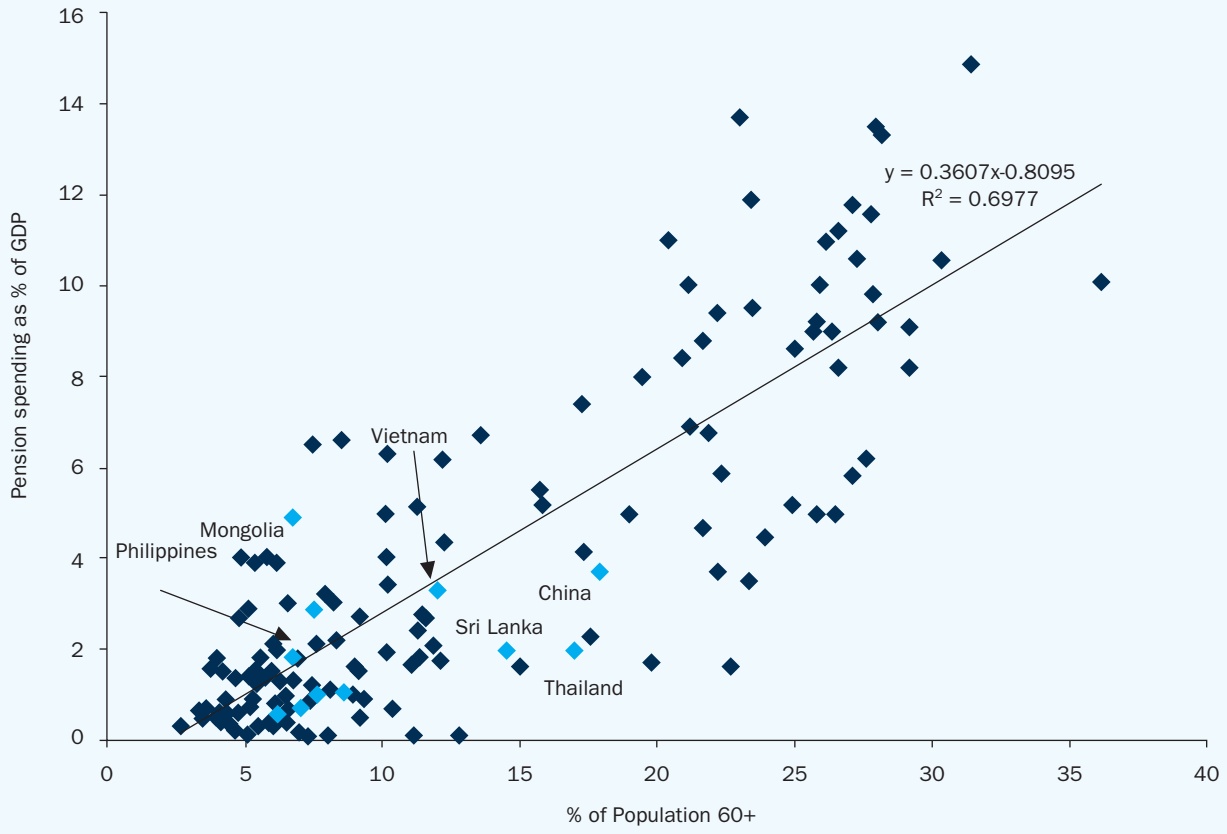
Sources: Labor Force Survey (2019).

The adequacy of the SSF pension can be improved by undertaking parametric reforms like automatic indexation of ceiling to wages and indexation of pension benefits. However, an increase in adequacy raises concerns about sustainability that must be addressed by parallel reforms such as raising retirement age in line with life expectancy, indexation of pensions to inflation, penalties for early retirement, and so forth. These changes not only make the scheme sustainable but also fairer across different cohorts. At the same time, improving the adequacy of OAA would have direct cost implications unless the age of eligibility for OAA is increased. If adequacy is to be increased to equal Thailand's current poverty line estimate and the eligibility age remained at 60, costs would more than triple.

2. FINANCIAL SUSTAINABILITY

As shown in Figure 13, Thailand spends less on pensions than other countries at a similar stage of their demographic aging process. Vietnam is younger and spends about what would be expected while China is slightly older but spends significantly more given the maturity of its pension schemes. This is true for most of East Asia due largely to the delayed introduction of mandatory pension schemes in the region as well as to relatively modest target benefit levels. The first reason implies that as the private sector scheme matures, spending will rise more quickly as the population ages than in other countries that introduced mandates earlier.

Figure 13. Pension spending in Thailand compared to other countries



Sources: Lamanna and Sharpe (2021).

Figure 14 shows that under certain assumptions about coverage and the indexation of the ceiling on earnings for contributions and benefit calculations,[31] SSF cash-flow deficits are expected to appear in the early 2040s and reserves would be exhausted a decade later. Wasi et. al (2021)[32] who did a long run assessment of pension system using an Overlapping Generations (OLG) model also found that in the baseline case where no change was made to SSF rules, the scheme would run out of reserves by 2043. To avoid this, either contribution rates would have to rise, benefits reduced, or government transfers increased.[33]

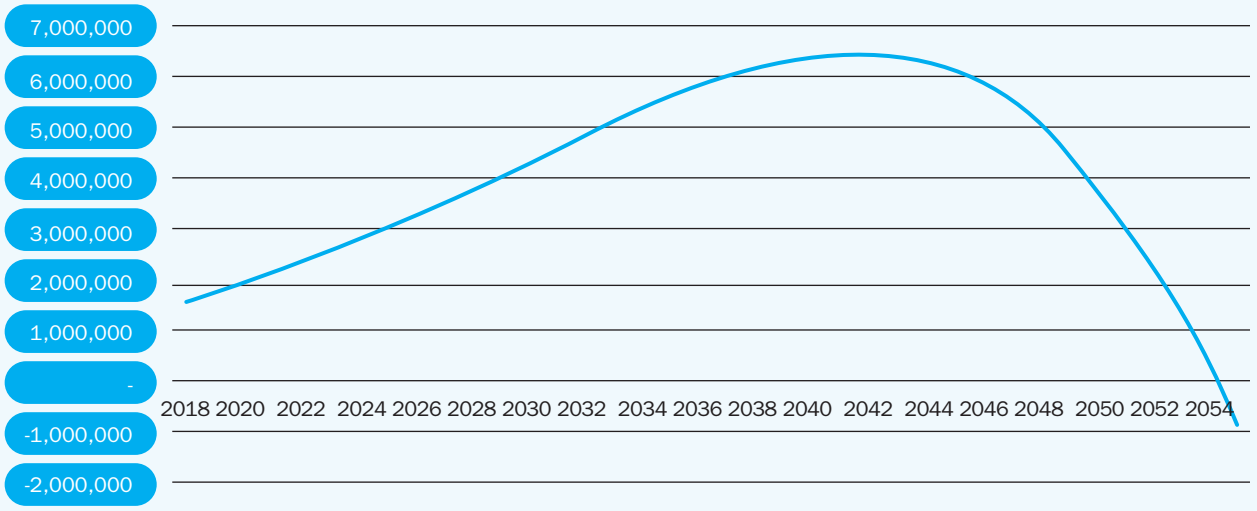
The SSF annual report listed a series of parametric reform options with their effects shown in Table 4. Even with the combination of four parametric changes, the scheme can only continue to operate for a few more years until the late 2050s when workers entering the labor market today will begin to retire. The OLG study by Wasi et al (2021) estimates that in order to make the scheme sustainable in the long run, pension benefits would need to be reduced by approximately 30 percent or total contribution rates would need to rise to 20%. The results suggest that ambitious reform measures are needed, especially with regard to raising the retirement age and increasing contributions.

[31] The projections assume indexation of the ceiling to nominal wages. This has not happened since the inception of the scheme. The contribution revenues and spending would be much lower if indexation is not introduced.

[32] https://www.pier.or.th/abridged/2021/14/

[33] Note that from a broader fiscal perspective, the projected surpluses reduce general government deficits to the extent that they are invested in government bonds. These bonds must be redeemed as reserves begin to decline.

Figure 14. Status of SSF's pension fund under the baseline scenario



Sources: SSO (2017: 53).

Table 4. SSF projections and reform scenarios

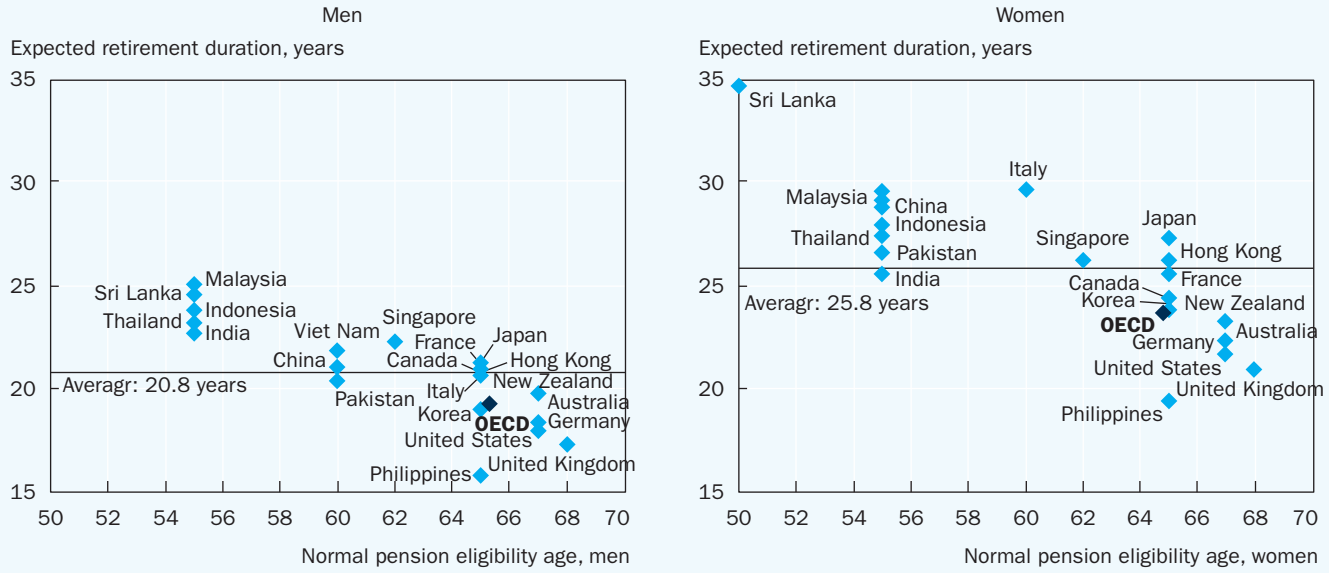
Option no.	Scenario modelled	Year reserves are exhausted
1	Baseline	2054
2	Investment return increases by 1%	2057
3	Retirement age increase to 60 by 2027	2059
4	Pension indexation to inflation	2051
5	Wage ceiling increased to Bt 20,000	2053
6	Earning measure changes to full career average earnings wage valorized	2055
7	Scenario 5+6	2054
8	Scenario 3+ 4+5+6	2057

Source: SSO (2017: 52).

The hypothetical increase to age 60 is modest given the life expectancy gains observed to date and expected in the coming decades.

Figure 15 shows that a Thai man could expect to live around 22 years after retirement compared to an OECD average of 20.8 years; a woman retiring in Thailand could expect to live close to 27 years. Meanwhile, most OECD countries are increasing their retirement ages in response to greater life expectancies and ability to work at older ages.

Figure 15. Life expectancy at retirement age in selected countries



Sources: OECD (2013).

In addition to adjusting the normal retirement age, most OECD countries now penalize early retirement and reward late retirement using actuarial adjustments to the pension value. This practice is not as common in developing countries including Asia. Only Japan and the Republic of Korea apply significant penalties or rewards, whereas in Vietnam and the Philippines there is actually an incentive to retire early (Table 5).

In Thailand, it is not possible to retire early. Raising the retirement age gradually could be accompanied by greater flexibility in terms of early retirement but with actuarially fair penalties. In addition, the current reward to later retirement in Thailand is so small that it is unlikely to affect behavior. This is also evident from the employed age distribution by sector in Figure 10, with the median age of formal sector workers lower than that of informal sector workers.

Table 5. Retirement rules and incentives for male workers in selected countries

	Normal age	Early retirement penalty	Late retirement reward
Vietnam[34]	60	15%	Not possible
Thailand	55	Not possible	1%
Korea	65	-22%	15%
Philippines	65	18%	-17%
Japan	65	-23%	23%

Source: World Bank (2016).
Note: Figures in last two columns refer to annual change in pension wealth.

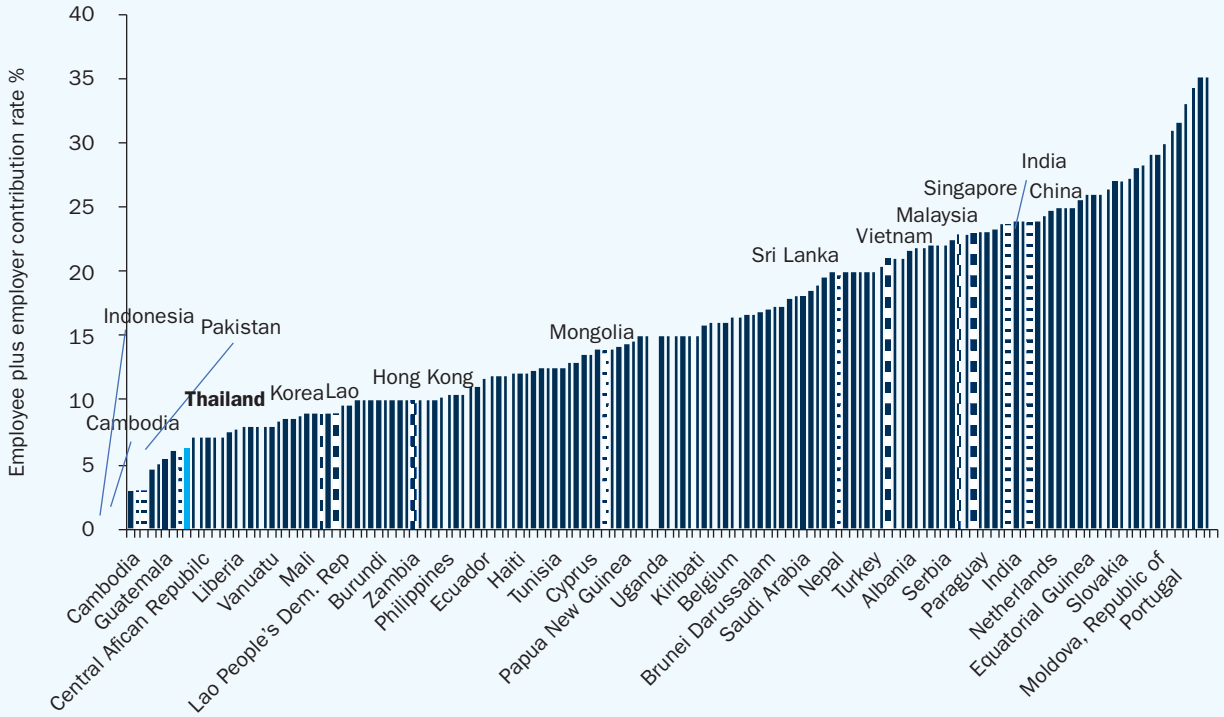
[34] At time of writing, a draft law in Vietnam would raise the retirement age gradually to 62 starting in 2020 and would increase the early retirement penalty slightly but not enough to offset the increase in pension wealth.

The parametric reforms in Table 4 do not include an increase in the contribution rate. The current 6.35 percent contribution rate for pensions is much lower than what has been estimated to be required to cover the pension benefits promised (OECD 2013).

Social security contribution rates in Thailand are also low by international standards as shown in Figure 16.[35]

[35] The rate here includes non-pension benefits like disability and child allowances but excludes the government's mandated contribution.

Figure 16. Contribution rates for social security across countries



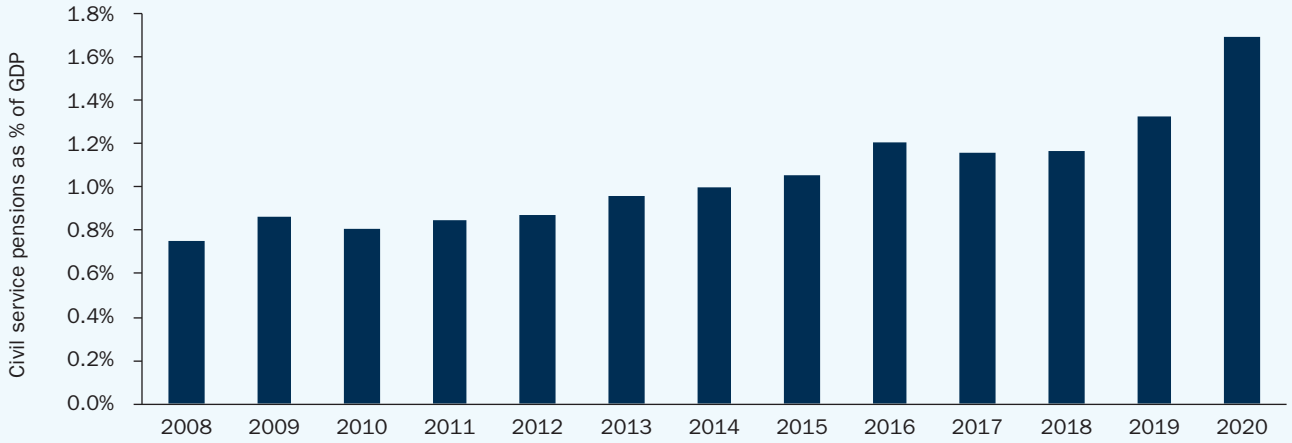
Source: World Bank Asia Social Protection Report (forthcoming, 2021) Note: Countries in Asia are dashed columns in this graph
Source: World Bank (2016).

In order to ensure sustainability of the SSF pension scheme, parametric reforms that include increasing retirement age and the contribution rate are warranted. Reforms that address sustainability ought to be coupled with reforms aimed at improving adequacy and equity of the scheme. These reforms include introducing inflation indexation of pensions, changing earnings measures, and indexing the wage ceiling, thereby improving the efficiency and ensuring long-term financial and social sustainability of the scheme. Several measures taken in response to the COVID- 19 crisis described in Box 1 further weakened the finances of the SSF.

While the fiscal pressures arising from the SSF will not arise for several decades, spending on civil service pensions are already significant and growing. While the number of civil service pensioners is likely close to around 500,000 or less than five percent of the elderly in Thailand, spending as a share of GDP has doubled from around 0.8 to 1.6 percent of GDP between 2008 and 2020 (Figure 17).[36] The increase in spending from 2019 to 2020, as a share of GDP, is being partly driven by the fall in GDP during the same period because of the COVID-19 impact on the economy. This represents more than 10 percent of tax revenues and is among the highest ratios in East Asia (Jain and Palacios 2021).

[36] This figure does not appear to include sub-national level government pensions. It also does not include the government's contribution to the GPF as employer.

Figure 17. Spending on public sector pensions in Thailand, 2008–20

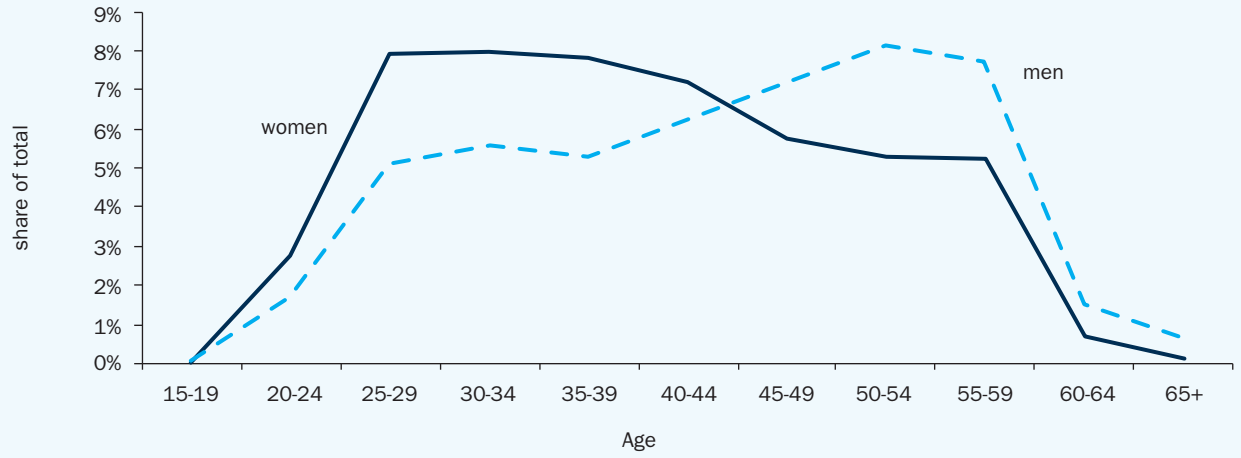


Sources: Budget Bureau, Government of Thailand. http://www.bb.go.th/topic-detail.php?id=11055.

Projections on civil service pension spending do not appear to exist in the public domain. The age structure of the public sector in Figure 18 suggests that a wave of new retirements is likely in the next decade. The dashed line represents the share of the total civil service that is male at the age noted on the x-axis.

These workers in their mid-to-late 50s have relatively high incomes based on seniority. The vast majority will be covered by the old DB scheme with its high replacement rates. The earlier discussion regarding life expectancy at retirement likely understates the duration of retirement for civil servants given that they have higher incomes and better medical services than most of the population. This points to rising public sector pension bills in the coming decade.

Figure 18. Public sector employees by age and gender in Thailand in 2019



Sources: Thailand Labor Force Survey 2019.

In addition to rising spending on formal sector workers' pensions, the aging of the rest of the population will result in an increase in spending on the OAA program. If coverage of OAA remains at current levels of approximately 82 percent of the elderly (60+), and benefit amounts grow at the same rate as GDP per capita, the cost of the OAA scheme would grow from 0.46 percent of GDP to approx. 0.94 percent in four decades.

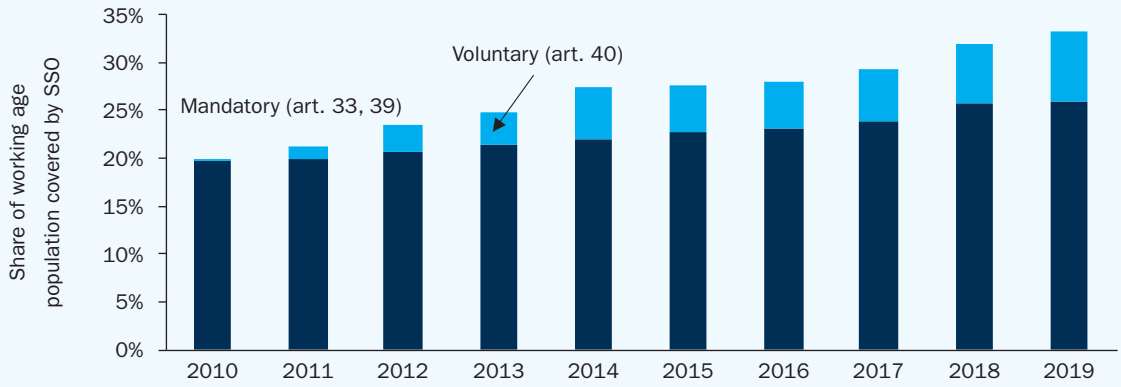
This increase in cost would be driven by Thailand's demographic aging process whereby the share of population above age 60 is expected to double by 2060. If the generosity of the OAA benefit amount is increased, to equal the poverty line, the fiscal cost would be as high as 3.32 percent by 2060. In the absence of reforms, these three programs will compete for fiscal resources along with increased health spending due to population aging (Bandaogo and Van Doorn 2021).

3. COVERAGE

By 2050, more than a third of Thailand's population will be age 60 or above, yet currently only half of the working age population is saving for retirement. Except for public sector workers, the pensions that will result will not be adequate to maintain consumption during old age. Informal sector workers completely outside of the pension system will have only the OAA to rely upon.

Assuming the size of the public sector remains steady relative to the population, the main source of coverage expansion can only come either from informal sector workers formalizing or from voluntary participation by informal sector workers. Figure 19 shows that some progress has been made in the last decade (although the longer-term impact of the 2020 pandemic is unclear).

Figure 19. Growth of SSF coverage 2010–19



Sources: NSO (2020); SSO (2020).

This gap can be addressed in two ways. Since SSF already covers around 75 percent of the elderly, increasing the social pension so that it at least provides a minimum income above the poverty line would help address coverage in terms of minimum income support. Increasing the benefit to the poverty line would double current spending. By 2050, as the share of the population aged 60 exceeded one-third, the program would cost more than 3 percent of GDP. Alternatively, at current benefit levels relative to incomes, the poverty rate among the elderly would significantly exceed that of other demographic groups without an expansion of SSF coverage.[37]

A second approach would emulate the Thai approach to reaching universal health insurance coverage. This was done by delinking formal employment status from coverage and subsidizing the premium for most of the population. This approach retains the insurance principle and budgeting can be done on the basis of transparent actuarial calculations, whether the scheme is defined benefit or defined contribution (Palacios and Robalino 2020).

The subsidy can also be differentiated according to the capacity of the individual to contribute, subject to having the requisite data through the aforementioned virtual social registry.

The COVID-19 pandemic highlighted the fact that most of the population is not covered for risks other than health. While pensions are a long-term issue, the same division between formal and informal sector based on labor market status that leads to low pension coverage also prevents short-term risks from being addressed.

Measures such as enhanced unemployment benefits or wage subsidies are possible only for the formal sector. As a result, an ad hoc enrollment and registration process was quickly put into place and emergency social assistance payments were made to most informal sector workers.

The ability to react quickly was due to the existence of several key pieces of infrastructure in Thailand. In particular, the national ID allowed for robust, on-line registration as well as the ability to cross-check different administrative databases. A digital payment infrastructure through which almost all government social assistance payments now flow was another important factor. The missing element, however, was the data needed to effectively monitor people affected by the lockdown and its economic impact.

A more inclusive registry is needed. In some countries, this is done through a social registry whereby data are periodically collected from a large proportion of households. A federated social registry approach, where data are drawn from various government databases, tends to be more dynamic and up to date. This is possible in Thailand because there are many government databases and because almost everyone has a unique identifier.[38] This is the foundation for any policy that aims for universality as proven by Thailand's experience with health insurance.

[37] This pattern has been observed in the Republic of Korea over the last two decades since contributory pension coverage became universal only in the 1990s. As a result, new social pensions have been introduced in the last few years to bridge the gap until the contributory scheme matures.

[38] As in other countries, Thailand's capacity to link these databases was an essential element for the implementation of cash transfers as part of the response to the pandemic in 2020–21. See https://pubdocs.worldbank.org/en/655201595885830480/WB-G2Px-Scaling-up-Social-Assistance- Payments-as-Part-of-the-Covid-19-Pandemic-Response.pdf.

4. RECENT REFORM INITIATIVES

Towards the end of 2021, the Government advanced two important reform initiatives that could significantly alter the course of the evolution of Thailand's pension system. Both are at advanced stages in the legislative process.

The first initiative would relax the mandate to save currently in place with the SSF. The draft amendments would allow for withdrawals of contributions in regions affected by natural disasters and allow accrued pension wealth to be used as collateral towards borrowing. Both provisions are likely to lead to lower pensions. The most important however, is to allow workers to withdraw their contributions as lump sums prior to retirement and to allow those that qualify for retirement to opt for a lump sum instead of an annuity. The likely result is that most workers will opt to eschew the annuity thereby undermining one of the key objectives of public pension policy[39], to provide longevity insurance.

In parallel, the Government proposed a new defined contribution scheme that has now been approved by the Cabinet.[40] This "National Pension Fund" (NPF) would apply to all formalsector employees except for public sector workers and those private sector workers contributing in existing PFs that meet the minimum requirement. The contribution rate will gradually increase to 7 percent for both employer and employee and retirement age is set at age 60.

In principles, this additional layer of mandated contributions for pensions would improve pension adequacy. However, it is not clear that this is the best approach for several reasons.

First, the additional contribution mandated for the NPF will increase the cost of being in the formal sector. International experience has shown that higher payroll taxes add to other incentives that encourage firms to remain in the informal sector. This has consequences for the efficiency of the economy as these firms tend not to grow and achieve economies of scale and have less access to formal sector financial products. The NPF would increase the tax on labor to more than 20 percentage points. Meanwhile, the SSO contribution rate will have to rise in the coming decades as reserves are depleted. Presumably, the majority of the firms that do not already offer provident funds to their employees and for whom this mandate would increase costs are smaller firms that are most likely to move to the informal sector or evade through underreporting of wages.

In addition, the pension that can be generated by the NPF will only be significant in two or three decades when balances have accumulated over most of the working life of those covered. Reforms to the SSF that have been recommended by international organizations including the ILO and World Bank including a gradual increase in the retirement age and the indexation of the ceiling on covered earnings would increase replacement rates for workers much sooner while increasing the scheme's sustainability.

Adding the NPF also contributes to more fragmentation of an already complex pension system in which a worker could potentially contribute to four or even five schemes over the course of her life. The transaction costs implied by so many separate schemes both in terms of administrative expenses and lack of portability (and therefore, labor mobility) are a deadweight cost to the country. Consolidating existing voluntary schemes and integrating the schemes for public and private sector workers would help address these problems.

The draft law recognizes the fragmentation problem in proposing that the NPF serve "…as a center for integration, reception, collection, exchange and connection of data relating to the entire pension system.' Again, this is a laudable goal but one that should be approached in the context of reforming the data governance of the entire government. Interoperability and data sharing across government agencies is a highly specialized matter and falls under the purview of existing agencies such as the Ministry of Digital Economy and Society or the recently formed Strategic Transformation Office. It would ideally encompass other sectors such as income tax and business registries thus allowing for the cross-checking of information useful for enforcement of the mandate. We are not aware of any international examples of a pension fund performing this function.

In principle, a hybrid DB/DC scheme can help diversify risks between a partially or unfunded scheme like the SSF and a fully funded scheme like the proposed NPF. This is already the case for members of the GPF where there is a target replacement rate and a single administrator. The same approach could be applied to the private sector if a clear target replacement rate could be specified. The parametric reforms suggested for the SSF would increase replacement rates to a point where those covered by provident funds would be achieving a reasonable level of adequacy. Those not covered by provident funds could participate in a single voluntary scheme with matching contributions which would replace the three existing voluntary pension options. This could be managed by GPF, further reducing administrative costs and ensuring portability. If large enough, subsidies of this kind have been shown to increase formalization and thus would help address Thailand's large coverage gap rather than potentially exacerbating it. In short, it would seem preferable to reconsider the introduction of the NPF at this time and focus attention on reforming and consolidating the existing schemes.

[39] See Walliser (1999).
[40] https://www.bangkokpost.com/thailand/general/2092203/cabinet-approves-plan-to-set-up-national-

CONCLUSIONS

Thailand has a rapidly aging population but only around a third of the working age population is covered by a pension scheme. Among those that are covered, only public sector workers will be able to smooth their consumption effectively without additional voluntary retirement saving. Moreover, replacement rates from the SSF scheme will continue to deteriorate as long as the ceiling on the earnings subject to contributions continues to fall relative to wages. At the same time, most of the population will continue to qualify for the Old Age Allowance. Despite its broad coverage, the benefit that it pays is not sufficient to prevent poverty among the elderly who will have to continue to work and/or rely on their children. The overall picture that emerges is of a country that will age rapidly without a coherent system of income provision for the growing elderly population.

There are essentially two ways to avoid that outcome. The first is to increase the reliance on the social pension by significantly increasing the benefit, making it the main source of income for most of Thailand's elderly population. This approach would resemble the approach of Australia and New Zealand and a few other countries that rely primarily on non-contributory pensions.

The second approach would be to go beyond the traditional model of social insurance whereby contributions are deducted from the wages of formal sector workers (see Packard et al. (2019) for details of this approach). Breaking the link between labor market status and financing of pensions—as Thailand pioneered in the case of health insurance—will require additional financing from general revenues and a blurring of the line between social assistance and social insurance. This would effectively front-load the costs relative to waiting to increase spending on the social pension as the population ages. Importantly, it would greatly reduce the distortions of the dichotomous labor market that currently exists.

Expanding coverage through social pensions or subsidized contributions for informal sector workers (or some combination of the two) is the most pressing fundamental policy change required to address the long-run problem. It is a paradigmatic reform on the same scale as the introduction of the 30-baht health insurance scheme two decades ago and similarly would take several years of preparation to implement successfully. Ambitious reforms are needed but unlike the proposed NPF, this approach addresses the key problem facing Thailand, namely a large gap in coverage.

In the meantime, there are a number of incremental, parametric reforms, several of them already proposed by the SSO,[41] that would significantly improve both the fairness and the financial sustainability of the current arrangement and increase the overall coherence of what is currently a fragmented system. The following parametric reforms are recognized as international good practice and are appropriate for both the SSF and the defined benefit scheme for public sector workers:

- Increase retirement age gradually to reach 65 in the long run with the possibility of early retirement with actuarially fair reductions
- Shift to lifetime earnings as the base for calculation of the initial pension value
- Price indexation of pensions in progress
- In the case of SSF, indexation of the ceiling for pensionable earnings to wage growth.[42]

These measures would make each of the schemes more equitable and sustainable. The retirement age increase would reduce intergenerational inequities as life expectancy continues to increase and equalize public and private sector retirement ages. Moving from end of career to a lifetime average wage base eliminates the inherent bias toward high-skilled workers who typically have steeper age-earnings profiles. It also reduces average pensions and improves the long-run finances of the scheme. Automatic price indexation is the rule in the vast majority of OECD countries because it ensures that pensioners do not lose purchasing power but reduces the arbitrary differences between cohorts that result from discretionary (and often politically motivated) adjustments to pension values. The rationale for indexing the SSF ceiling to wages has already been discussed; without it, the SSF will effectively disappear as a source of retirement income in Thailand.

The parametric reforms listed above also reduce the public-private compensation differential and set the stage for a shift towards an integrated pension system. In the last 20 years, most OECD countries have moved to integrate pension provision for public and private sector workers on the grounds of both equity and efficiency (OECD 2016). An important motivation is the desire to make it easier to move between public and private sector employment, that is, labor mobility. An intermediate solution to this problem would be to ensure portability of pension benefits when moving between sectors.[43] In this context, consideration could also be given to harmonizing the accrual/replacement rates of the two pension schemes.

[41] An increase in the retirement age was recently proposed by the SSO. See, https://www.asiaasset.com/post/23686-thaissoamend-gte-0811.
[42] Appropriate work incentives and fairness also imply elimination of the maximum replacement rate in the formula.
[43] The Philippines is one of the few countries in the region with formal mechanisms for ensuring that pension wealth is transferred along with the worker in a move between public and private sector and vice versa.

In addition to rationalizing and integrating the mandatory schemes as described above, it would be important to move to a more coherent approach to voluntary savings for old age in which all Thai citizens could participate and where government subsidies were primarily aimed at those without good mandatory coverage. This implies a consolidation of the five instruments of voluntary retirement savings that currently exist and changes to fiscal incentives based on better targeting methods. There should be complete portability between these schemes at a minimum. The most obvious measure would be to move away from the current tax treatment towards an EET approach with modest ceilings or tax credits instead of deductions.

These are important intermediate steps. However, while improving the current system they would not address the fundamental coverage problem. In parallel, the stage can be set for universal coverage by creating the appropriate recordkeeping infrastructure and designing a more effectively targeted regime of subsidized contributions.

This entails creating and managing a virtual social registry[44] that allows for differentiated levels of subsidy based on more accurate information on informal sector workers and their households. The same targeting apparatus can be leveraged to increase social pension levels for the poor while phasing them out for the higher deciles in the distribution. In the long run, the result would be a social pension that minimizes old age poverty in the short run and a contributory pension scheme with universal coverage that reduces the reliance on the social pension in the long run and makes it possible to smooth consumption as the country ages. Thailand's success in achieving universal health insurance would be matched by universal protection against the risks of declining income in old age.

[44] This is directly linked to the reform of delivery systems for social assistance as described in Bandaogo and Van Doorn (2021).

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APPENDIX: PUBLIC-PRIVATE WAGE DIFFERENTIAL IN THAILAND

PUBLIC WAGE PREMIA IN THAILAND

It is a stylized fact that public employees receive higher wages when compared to private sector employees. However, as highlighted in (Gindling et al. 2020), this wage premium is sensitive to what group public wages are compared to. We replicate this study in Thailand with data from 75 percent of the labor force survey. It should be noted however that in Thailand we were unable to use the LFS to split the private sector further into 'formal' and 'informal e.g., household's drivers, maids, employees of informal SMEs'. A more accurate comparison of public sector compensation would be to 'formal' private sector and should be explored in future research. We do control for education in the regression equation, however. The following specification is used to estimate the premium paid to public employees:

$$\ln(wage_i) = \beta Public_i + \boldsymbol{\theta X_i} + \alpha + \epsilon_i$$

Where $Public_i$ and $\boldsymbol{X_i}$ are an indicator that identifies if a worker, i , is employed in the public sector and a vector of controls respectively. These controls include age, experience (age squared), education, urban-rural location, and gender. We define wage as the income from the respondent's main job; this does not bonus, overtime, or other compensation.[45] The coefficient β will present the additional wage paid to public employees. The benchmark public wage premia with no controls is found to be 43 percent and is presented in the first column of Table 1. Adding controls to this s pecification causes the public wage premia to shrink considerably to 4 percent in the third column. It is worth noting that this specification also explains a much larger fraction of the variation in wages as the R^2 jumps from 0.08 to 0.48. To test how sensitive our estimates of β are we estimate a fixed effects model that includes province level fixed effects to control for unobservable characteristics of the 76 provinces in Thailand. To be clear we estimate the following specification that is identical to our previous specification but now includes province p fixed effects, ν_{ip}.

$$\ln(wage_{ip}) = \beta Public_{ip} + \boldsymbol{\theta X_{ip}} + \nu_{ip} + \alpha + \epsilon_{ip}$$

[45] This is the same as the definition of wages in Gindling et al. (2020). We re-run all models using all earnings for an individual (including bonus, overtime, and so forth) and find almost identical estimates of β.

Results from these estimations can be found in the fifth and seventh columns of Table A1. Controlling for province level unobservable inflates β. However, a similar pattern remains; adding controls better explains variation in wages and dramatically decreases the public employee wage premium from 55 percent to 15 percent. These estimates are within the range of estimates obtained in Gindling et al. (2020), who finds public employee wage premia ranging from approximately 20 percent to 45 percent in EAP countries.

Using the pension rules as listed in Table A1 and Table A2, one can estimate the pension wealth of a 30-year-old individual from the public sector and private sector. We assume public sector workers retire at age 60 and private sector workers at 55. Thus, the former receives wage growth for five additional years and hence higher pension income not only because of higher accrual rate but also higher wages. We also assume indexation for public sector workers to be more generous (higher by 1 percent) than private sector workers. The life expectancy for these workers varies because of difference in retirement age. The pension wealth is calculated taking into account all these factors and then discounted to present value. It is divided by 30 years to calculate the pension wealth accrued for each year of service. This (marginal) pension wealth along with wages is then included in the regression equation to understand the public employee wage and pension premium relative to the private employee. Without any controls included, the premium is about 61 percent (column 2). Controlling for factors like age and education, the premium goes down to 26 percent (column 4) and the fit improves. Further controlling for province FE gives us a public sector premium of 42 percent[46] (column 8) and a R-squared of 0.65. In Table A1, column 8 shows the baseline results where we assume that ceiling for private sector grows at 2 percent each year. In Table A2, column 8 shows results where we assume that ceiling for private sector grows at 3 percent each year. As expected, the compensation differential is lower (39 percent) in the scenario where we assume a higher rate of growth of the ceiling. Table A3, column 8 shows results where we have assumed pension indexation to be same for public and private sector workers. The compensation differential goes down from 42 percent to 36 percent in this case.

[46] Note that y variable is logged earnings so one has to calculate ($e^{\text{coefficient value}}$ - 1) to interpret. Exp(0.35)-1 is approximately 42 percent.

Table A1. Regression results assuming max pension ceiling grows at 2 percent each year

Dependent variable is logged earning

VARIABLES	(1) Wage	(2) Wage+Pen.	(3) Wage	(4) Wage+Pen.	(5) Wage	(6) Wage+Pen.	(7) Wage	(8) Wage+Pen.
Public employee	0.43***	0.61***	0.04*	0.26***	0.55***	0.70***	0.15***	0.35***
	(0.05)	(0.05)	(0.02)	(0.02)	(0.04)	(0.03)	(0.02)	(0.02)
Age in completed years			0.03***	0.04***			0.02***	0.04***
			(0.00)	(0.00)			(0.00)	(0.00)
Age Squared			-0.00***	-0.00***			-0.00***	-0.00***
			(0.00)	(0.00)			(0.00)	(0.00)
Sex = 2, Female			-0.12***	-0.09***			-0.13***	-0.09***
			(0.01)	(0.00)			(0.01)	(0.00)
Some secondary school			0.23***	0.29***			0.21***	0.28***
			(0.02)	(0.02)			(0.01)	(0.02)
Completed Secondary School			0.51***	0.55***			0.47***	0.52***
			(0.02)	(0.02)			(0.02)	(0.02)
University and higher			1.08***	1.05***			1.02***	1.00***
			(0.03)	(0.02)			(0.02)	(0.02)
Urban			0.21***	0.20***			0.07***	0.09***
			(0.05)	(0.04)			(0.01)	(0.01)
Observations	68,454,841	68,454,841	68,454,841	68,454,841	68,454,841	68,454,841	68,454,841	0.35***
R-squared	0.08	0.19	0.48	0.60	0.28	0.36	0.56	0.65
Province FE	NO	NO	NO	NO	YES	YES	YES	YES

Standard errors clustered at province level in parentheses.

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

Table A2. Regression results assuming max pension ceiling grows at 3 percent each year

VARIABLES	(1) Wage	(2) Wage+Pen.	(3) Wage	(4) Wage+Pen.	(5) Wage	(6) Wage+Pen.	(7) Wage	(8) Wage+Pen.
Public	0.43***	0.60***	0.04*	0.25***	0.55***	0.70***	0.15***	0.33***
	(0.05)	(0.05)	(0.02)	(0.02)	(0.04)	(0.04)	(0.02)	(0.02)
Age			0.03***	0.04***			0.02***	0.04***
			(0.00)	(0.00)			(0.00)	(0.00)
Age Squared			-0.00***	-0.00***			-0.00***	-0.00***
			(0.00)	(0.00)			(0.00)	(0.00)
Female			-0.12***	-0.09***			-0.13***	-0.09***
			(0.01)	(0.00)			(0.01)	(0.00)
Some secondary school			0.23***	0.29***			0.21***	0.28***
			(0.02)	(0.02)			(0.01)	(0.02)
Completed Secondary School			0.51***	0.56***			0.47***	0.52***
			(0.02)	(0.02)			(0.02)	(0.02)
University and higher			1.08***	1.07***			1.02***	1.02***
			(0.03)	(0.02)			(0.02)	(0.02)
Urban			0.21***	0.20***			0.07***	0.09***
			(0.05)	(0.04)			(0.01)	(0.01)
Observations	68,454,841	68,454,841	68,454,841	68,454,841	68,454,841	68,454,841	68,454,841	0.35***
R-squared	0.08	0.18	0.48	0.61	0.28	0.35	0.56	0.66
Province FE	NO	NO	NO	NO	YES	YES	YES	YES

Table A3. Regression results assuming pension indexation for public and private sector workers is same

VARIABLES	(1) Wage	(2) Wage+Pen.	(3) Wage	(4) Wage+Pen.	(5) Wage	(6) Wage+Pen.	(7) Wage	(8) Wage+Pen.
Public	0.43***	0.57***	0.04*	0.22***	0.55***	0.66***	0.15***	0.31***
	(0.05)	(0.05)	(0.02)	(0.02)	(0.04)	(0.03)	(0.02)	(0.02)
Age			0.03***	0.04***			0.02***	0.04***
			(0.00)	(0.00)			(0.00)	(0.00)
Age Squared			-0.00***	-0.00***			-0.00***	-0.00***
			(0.00)	(0.00)			(0.00)	(0.00)
Female			-0.12***	-0.09***			-0.13***	-0.10***
			(0.01)	(0.00)			(0.01)	(0.00)
Some secondary school			0.23***	0.29***			0.21***	0.28***
			(0.02)	(0.02)			(0.01)	(0.02)
Completed Secondary School			0.51***	0.55***			0.47***	0.52***
			(0.02)	(0.02)			(0.02)	(0.02)
University and higher			1.08***	1.05***			1.02***	1.00***
			(0.03)	(0.02)			(0.02)	(0.02)
Urban			0.21***	0.20***			0.07***	0.09***
			(0.05)	(0.04)			(0.01)	(0.01)
Observations	68,454,841	68,454,841	68,454,841	68,454,841	68,454,841	68,454,841	68,454,841	0.35***
R-squared	0.08	0.17	0.48	0.59	0.28	0.34	0.56	0.64
Province FE	NO	NO	NO	NO	YES	YES	YES	YES

HETEROGENOUS WAGE PREMIA: QUANTILE REGRESSION

To study the heterogeneity in wage premia with respect the wage distributions we run quantile regression models that estimate the marginal effects of the control (public sector employee or not) on the conditional q^{th} quantile of wage. In the following figures the green lines represent the estimated coefficient of the dummy y variable (public sector employee) on the conditional q^{th} quantile of the wage.

The dotted line is the OLS estimate (the marginal effect of the dummy 'y' variable on the expected mean of wage). A salient pattern emerges: the public wage premium is higher for higher wage earners (see Figure A1). The public wage and pension premium are even higher once we include pensions in the mix and the pattern of a higher premium for higher wage earners continues (see Figure A2).

Figure A1: Wage differential only, plotted by quantile

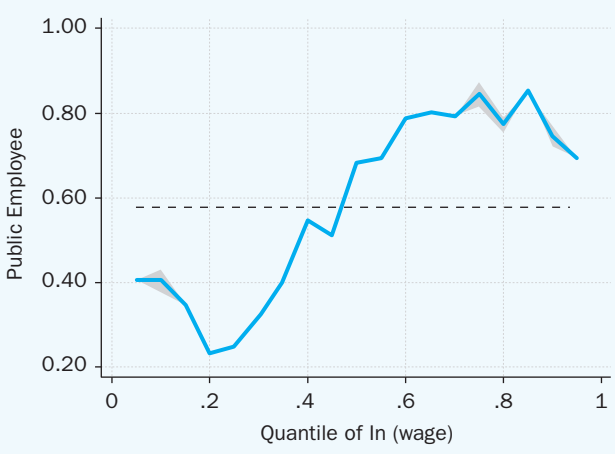
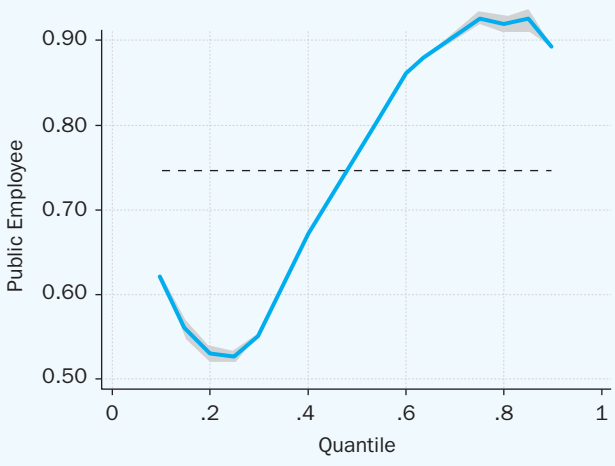


Figure A2. Compensation differential (wage and pension), plotted by quantile



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