Bachelor of Economics
THAMMASAT UNIVERSITY

FN 211 Financial Markets

Class 8: Pension Funds

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The Asset Management Industry
as of 31 Dec 2011

Asset Management

For Investment

Mutual Funds

Size: 2,082,000 MB

For: retail investors

Managed by: Asset Management Companies ONLY

Private Funds

Size: 316,000 MB

For: high net worth and institutional investors

Managed by

Asset Management Companies

Commercial Banks

Securities Firms

For Contractual Savings

Mandatory

Government Pension Fund

Size: 400,000 MB

For: 1.2 million government officers

Managed by: Government Pension Fund (GPF)

Social Security Fund (pension)

Size: 755,000 MB

For: 10 million private employees

Managed by: Social Security Office (SSO)

Voluntary

Provident Funds

Size: 615,000 MB

For: 3.4 million private employees

Managed by

Asset Management Companies

Commercial Banks

Securities Firms

Insurance Companies

RMF, LTF

Size: 241,000 MB

For: everybody

Managed by: Asset Management Companies ONLY

Annuities (Insurance)

Size: 1,181,000 MB

For: 14 million policies

Managed by: Insurance Companies ONLY

Pension Funds: Introduction

Pension funds contain assets that are set aside to support a promise of retirement income. Generally, that promise is made by a private organization or a government. This organization is referred to as a plan sponsor.

There are two types of pension funds.

1. A defined-contribution plan specifies the sponsor's obligations in terms of contributions to the pension fund rather than the benefits to plan participants.
2. A defined-benefit plan is a plan that specifies the plan sponsor's obligations in terms of the benefit to plan participants.

Pension Funds: Introduction

- For a defined-contribution plan, because the benefit is not promised, the participants bear the risk of poor investment results or the benefit is not enough to cover living expenses.
  Example: Government Pension Fund (covers 1.2 million government officers)

- For a defined-benefit plan, because the sponsor has a financial obligation to pay specified future benefits, the sponsor bears a risk of not being able to make the promise.

  Example: Social Security Fund (covers 10 million employees of private companies)

Pension Funds: The Government Pension Fund

กองทุนบำเหน็จบำนาญข้าราชการ

Government Pension Fund

Contributions: 3% from employer (the government) + 3% from employee

Pension Benefits: Lump sum equals to total contributions plus investment income

Pension Funds:
The Government Pension Fund

กองทุนบำเหน็จบำนาญข้าราชการ

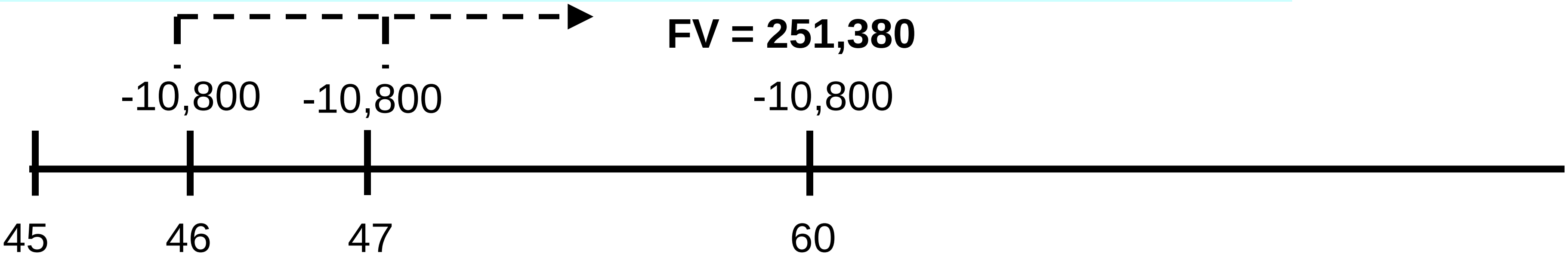
Mrs. Somsri, age 45, is a government officer and has just become a member of the GPF.

- She has monthly income of B15,000
- Her contribution = 3% x 15,000 = B450 per month
- Employer Contribution = 3% x 15,000 = B450 per month
- Total monthly contribution is then 900 Baht per month or 10,800 Baht per year.

When Mrs. Somsri retires at age 60

- Her retirement benefit is a lump sum equal to total contribution plus investment income earned during the contribution period.

Pension Funds:
The Government Pension Fund



Lump sum = 251,380

- Assuming annual investment return of 6% (annual compounding), her contribution of 10,800 per year for 15 years will grow to 251,380 Baht by the time she retires at age 60. (PV = 0, PMT = 10800, N = 15, I = 6, FV = 251,380)
- Her lump sum pension will then be 251,380 Baht.
- As a plan participant, Mrs. Somsri bears the risk that
  - Investment return may be < 6% or…
  - this lump sum amount may not be enough to cover her living expenses for the rest of her life.

Pension Funds:
The Social Security Fund

Social Security Fund

Contributions: 3% from employer + 3% from employee

Pension Benefits:

- Contribute < 15 years
  Lump sum equals to contributions plus investment income
- Contribute = 15 years
  monthly pension equals to 20% of the average of the last 5 years of salary
- Contribute > 15 years
  monthly pension equals to 20% of the average of the last 5 years of salary + bonus equals to 1.5% of the average of the last 5 years of salary for each additional year of contribution

Pension Funds:
The Social Security Fund

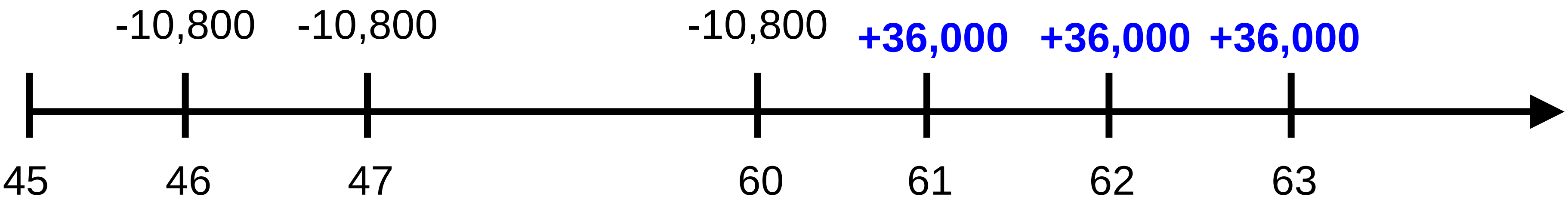
Mr. Somkid, age 45, is an employee of a private company and has just become a member of the SSF.

- He has monthly income of B15,000.
- His contribution = 3% x 15,000 = B450 per month
- Employer Contribution = 3% x 15,000 = B450 per month
- Total monthly contribution is then 900 Baht per month or 10,800 Baht per year.

When Mr. Somkid retires at age 60. (Note that he has contributed for 15 years)

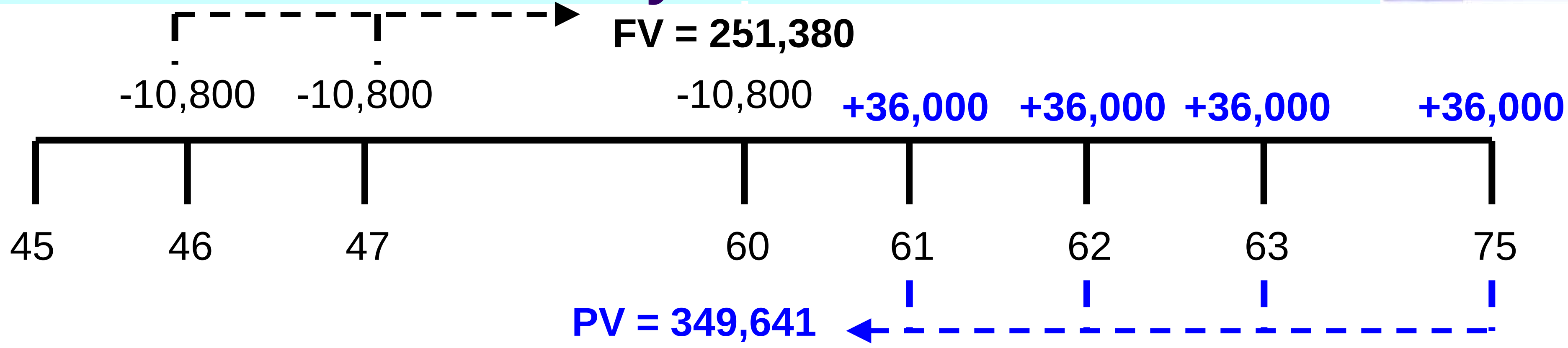
- His retirement benefit = 20% x 15,000 = 3,000 Baht per month or 36,000 Baht per year for the rest of his life.

Pension Funds:
The Social Security Fund



- Mr. Somkid has been contributing 900 Baht per month or 10,800 Baht per year for 15 years.
- He is entitled to monthly pension of 3,000 Baht per month or 36,000 Baht per year for the rest of his life.
- Although 3,000 Baht per month does not seem much, Mr. Somkid is guaranteed to receive this monthly pension benefit even if he lives long until the age of 80, 90 or 100+

Pension Funds:
The Social Security Fund



- Assuming annual investment return of 6% (annual compounding), his contribution of 10,800 per year for 15 years will grow to 251,380 Baht by the time he retires at age 60. *(PV = 0, PMT = 10800, N = 15, I = 6, FV = 251,380)*
- Assuming Mr. Somkid passes away at age 75 and a discount rate of 6%, his retirement benefits of 36,000 Baht per year for 15 years have a PV of 349,641 Baht. *(FV = 0, PMT = 36000, N = 15, I = 6, PV = 349,641)*

Pension Funds:
Summary

	GPF	SSF
Type	Defined Contribution	Defined Benefit
Contribution Rate	3% employee + 3% employer	3% employee + 3% employer
FV of Total Contribution	251,380	251,380
Benefit	Lump-sum at retirement = 251,380	Monthly pension until death = 3,000 (PV = 349,641 if live for 15 years)
Risk Taker	Participants (Mrs. Somsri)	Plan Sponsor (SSF)

Pension Funds: The Social Security Fund

Additional Notes for the Social Security Fund

To qualify for monthly pension benefits, member must…

- Be at least 55 years old - - > Minimum Retirement Age
- Has contributed $\geq$ 15 years
- Has already retired from work

SSF was set up in 1999.

- Given that members must contribute $\geq$ 15 years to be qualified for pension, SSF will start to pay pension in 2014.
- Member who retires before 2014, and thus has contributed <15 years, will be entitled to lump sum pension.

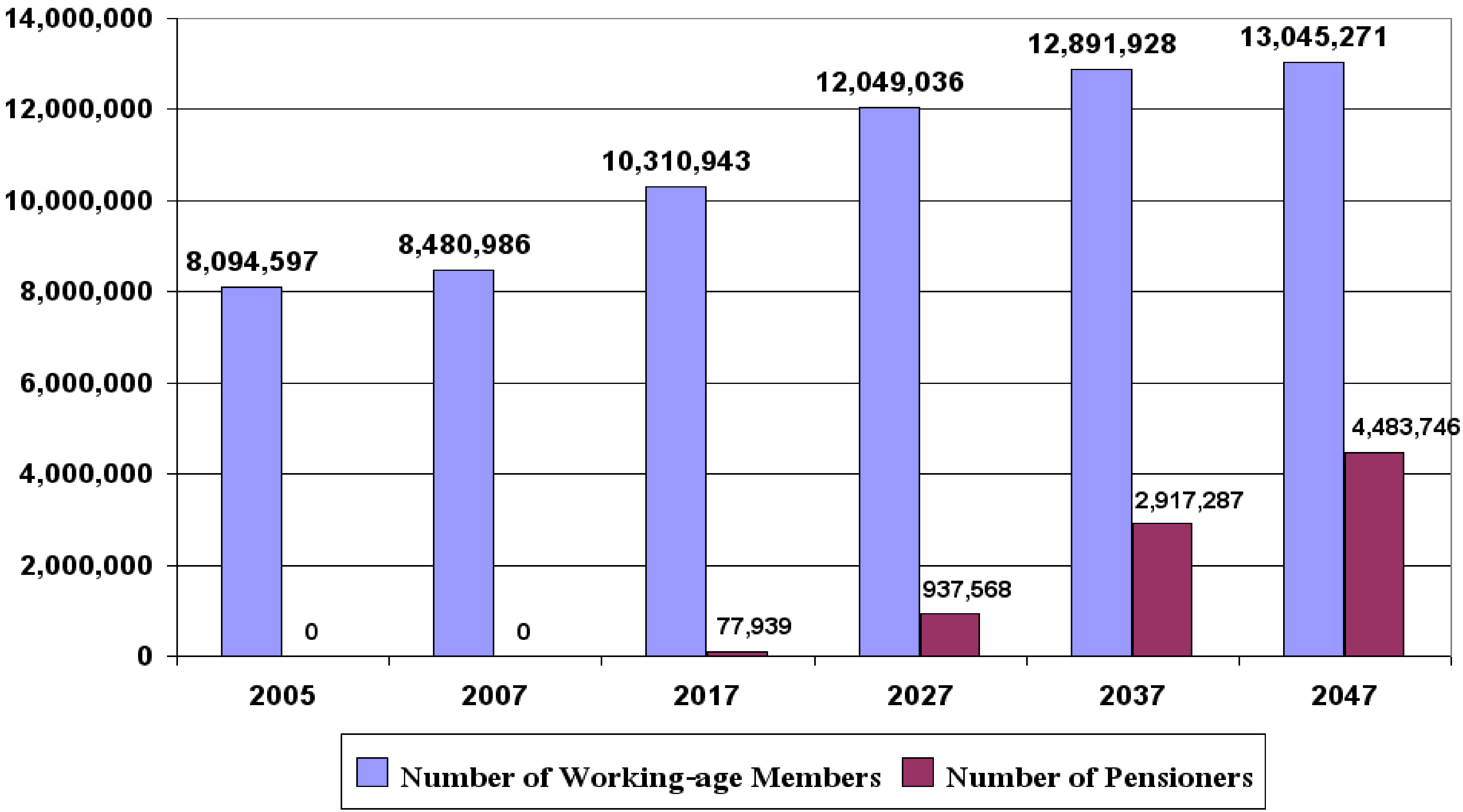
Pension Funds:
The Social Security Fund

- Notice that, as a defined-benefit pension plan, SSF is required by law to provide pension benefit to Mr. Somkid, even though the PV of benefits (349,641 Baht) is greater than FV of contributions (251,380 Baht). - - > Too generous
- Assuming investment return of 6% and life expectancy of 75 for Thai male, SSF will always make a loss.
- As the plan sponsor, SSF bears the risk of not being able to provide enough pension benefits.

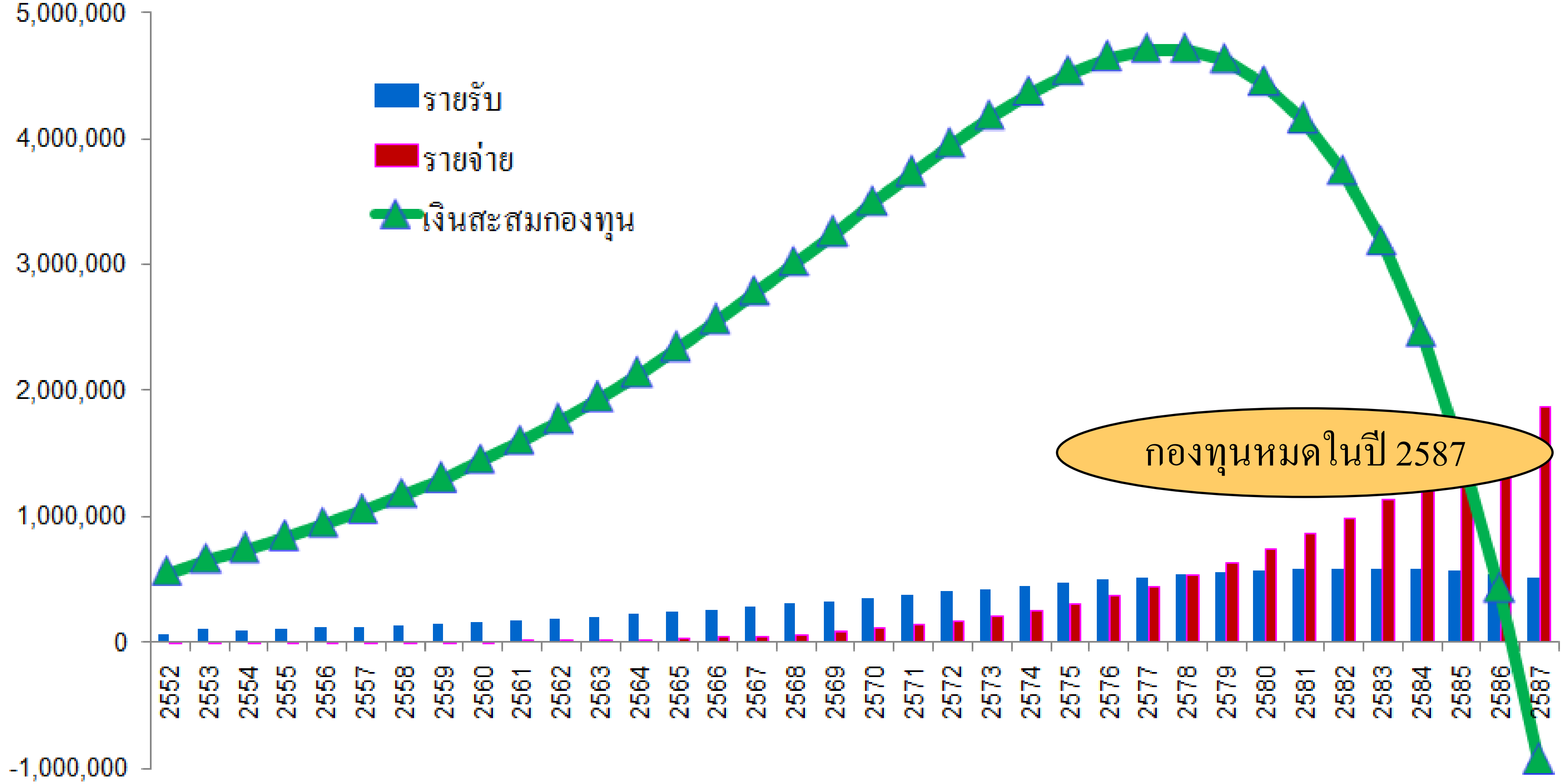
Pension Funds:
The Social Security Fund

- Given that SSF will not pay pension benefits until 2014, at the moment there is more inflow (from contributions) than outflow (from paying benefits).
- In the future, SSF may face 2 potential problems:
  1. Structural changes - more elderly people
  2. The scheme may be too generous – in case of Mr. Somkid, PV of benefits (349,641 Baht) is greater than FV of contributions (251,380 Baht).
- Altogether, there will be a point where outflow is greater than inflow. It is projected that SSF will have a shortfall in 2044.

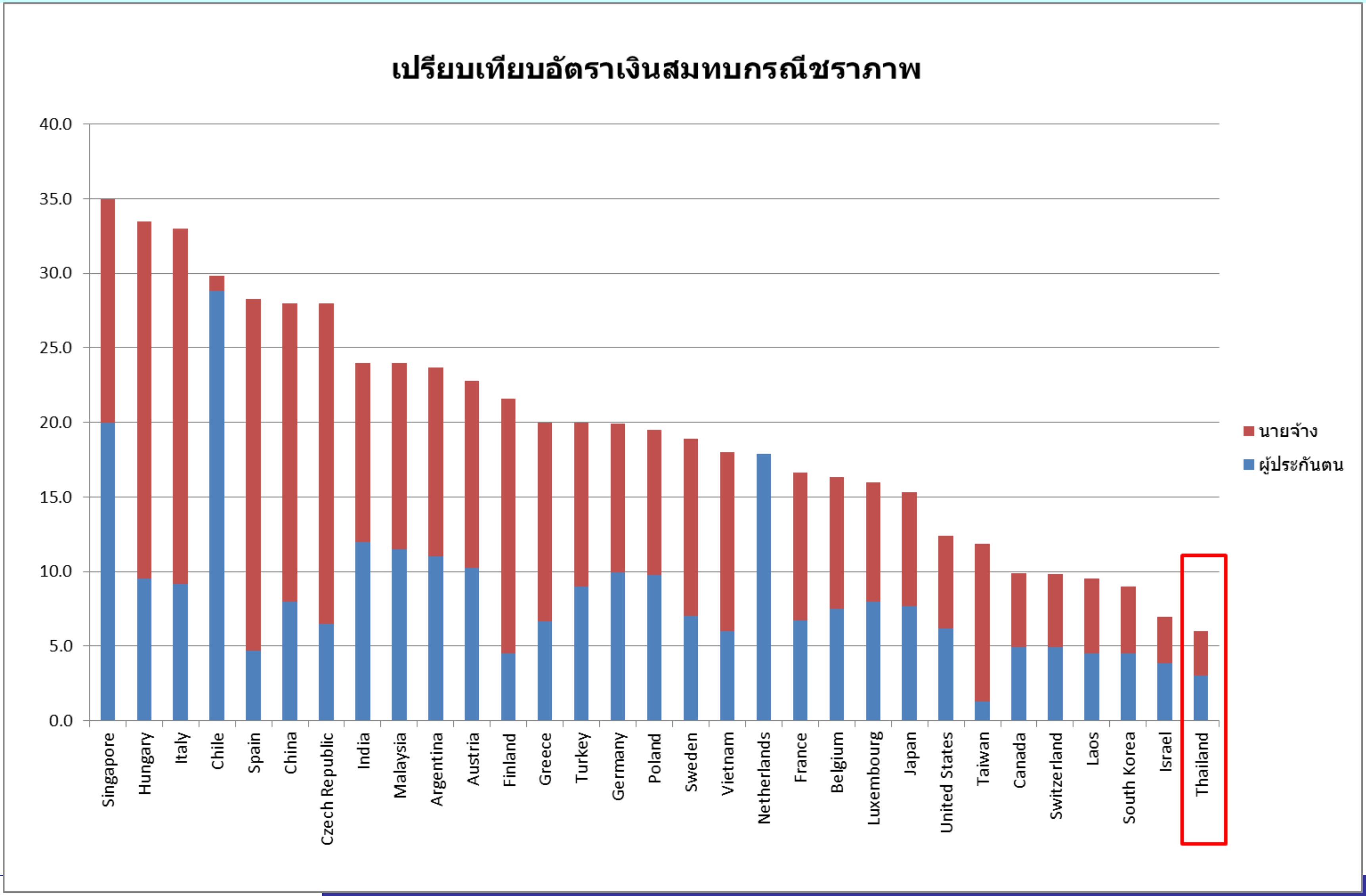
Pension Funds:
The Social Security Fund



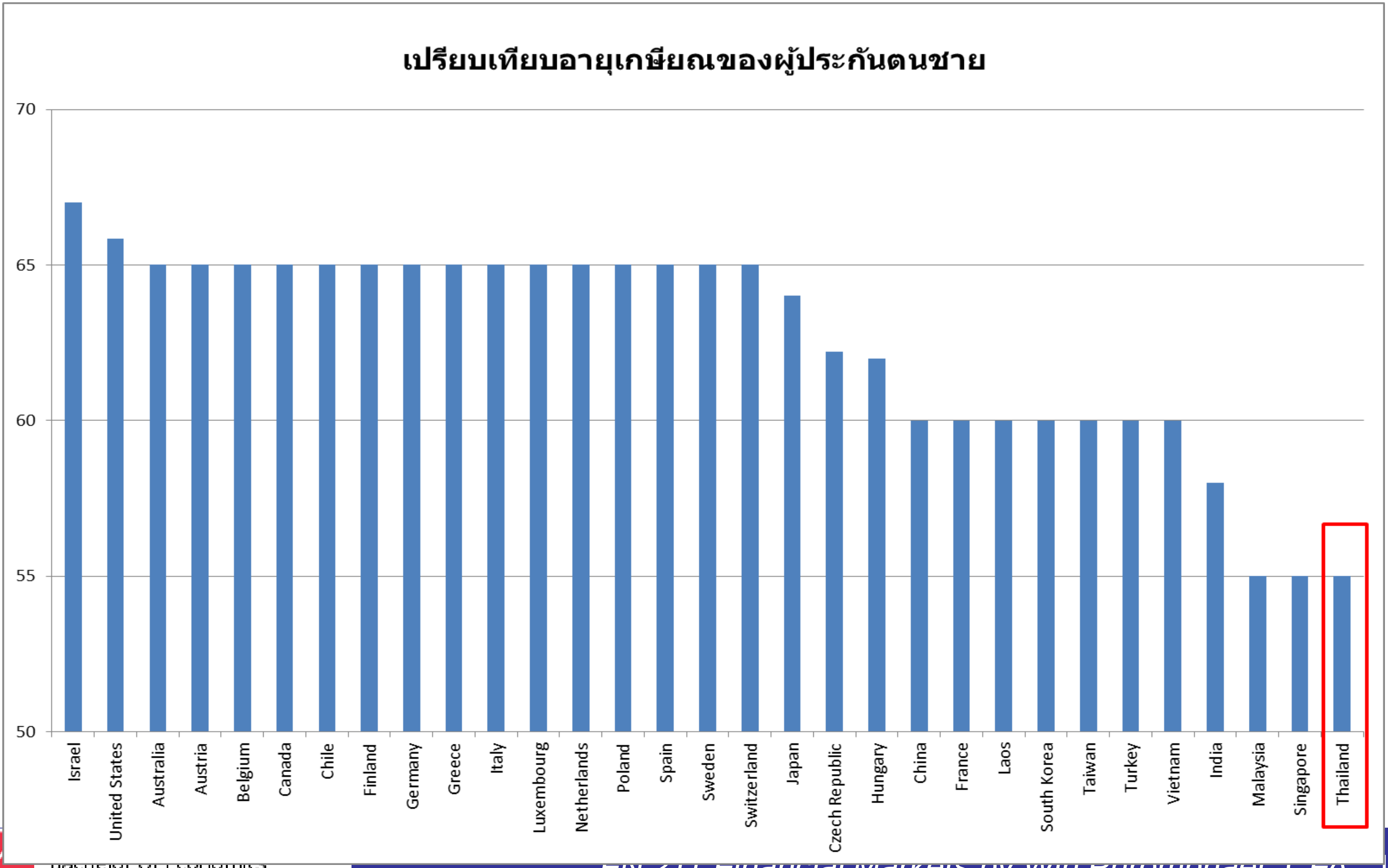
Pension Funds:
Projection of the Social Security Fund



Pension Funds:
Contribution rates of selected countries



Pension Funds:
Retirement ages of selected countries



Pension Funds:
Asset allocations of selected funds

	CalPERS	Yale Uni. Endowment	MetLife	SSF
Fixed Income	21.9%	4.4%	86.4%	90.8%
Public Equities	53.4%	16.9%	1.0%	8.8%
Private Equities	13.8%	30.3%	1.9%	-
Real Estate	7.4%	27.5%	2.4%	0.4%
Hedge Funds	-	21.0%	-	-
Others	3.4%		8.3%	-