

The impact of increasing the retirement age on economic growth and the labor market in Vietnam

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Outline

1. Country context
2. International experience of the impact of increasing retirement age
3. Our results
4. Conclusion and policy recommendation

I. The country context

Like other countries, Vietnam faces some pressure to increase the statutory retirement age (SRA)

- Population aging has resulted in a shortage of labor supply at the standard working ages
- Increasing life expectancy puts pressure on funding for the pension system
- The labor market is changing in favor of skilled and more productive labor
- Employment is available that is suitable for the elderly

Vietnam economy is doing well: Average annual growth rate of GDP, 2010-2017 (%)



The growth of the economy, trade and investment has positive impacts on job creation

During the period 2006-2016, every 1% GDP growth resulted in 0.315 % employment growth; for every 10% growth in exports and imports, employment grew by 1.1% and 1.3 % respectively; if total investment increased by 10% then employment grew by 1.49%

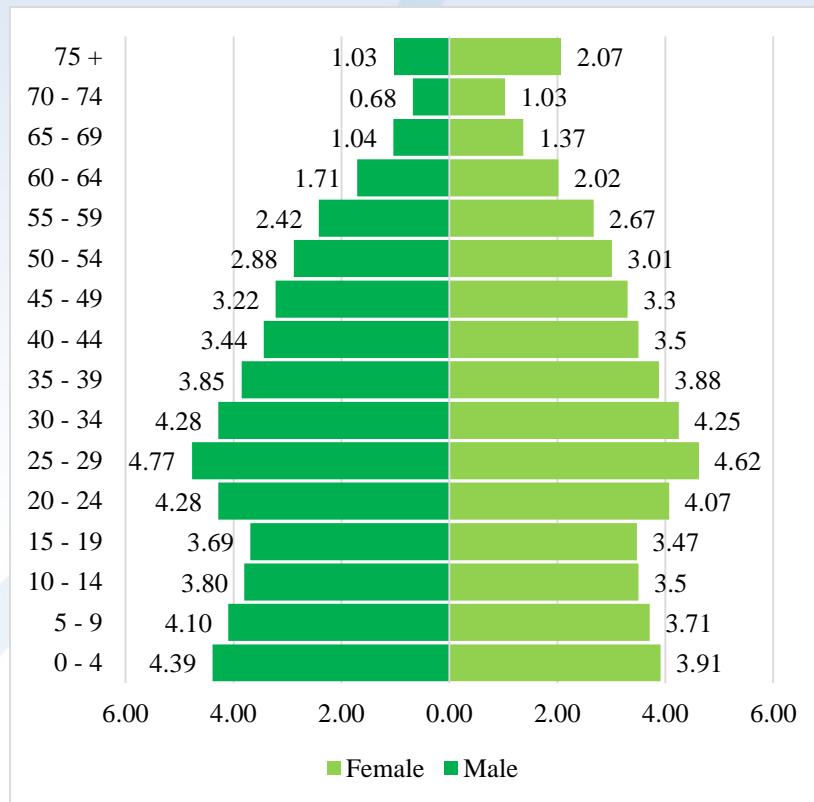
1	LnGDP	LnXK	LnNK	LnK
Macro variables	0.315*** (0.024)	0.116*** (0.008)	0.139*** (0.011)	0.149*** (0.007)
Constant	6.200*** (0.356)	9.485*** (0.094)	9.210*** (0.126)	8.771*** (0.092)
Observations	11	11	11	11
R-squared	0.949	0.957	0.947	0.982
Standard errors in parentheses				

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

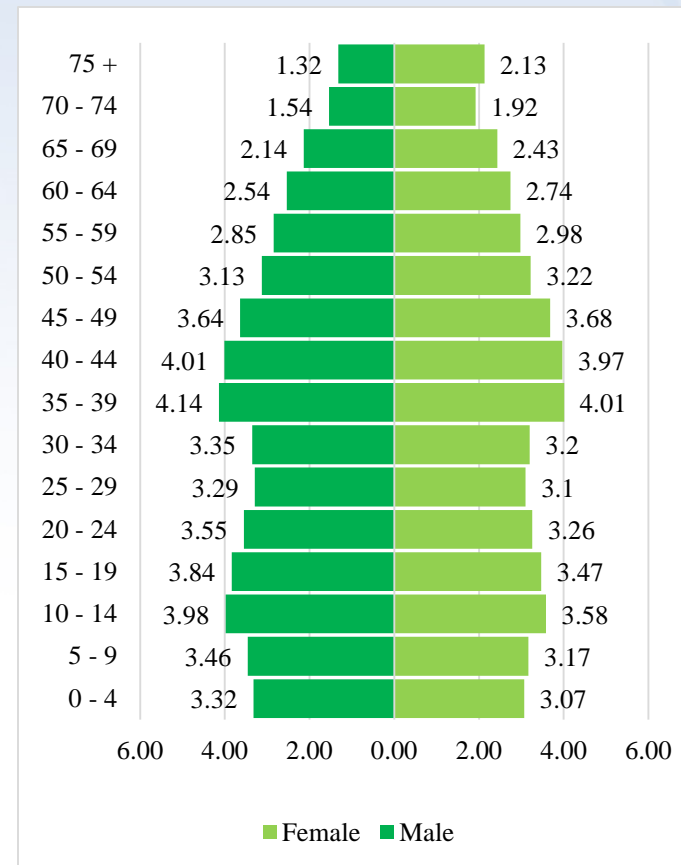
Viet Nam, like many countries in Asia, has a young population but faces population aging, which may reflect the challenge of “getting old before getting rich”

	2010	2016	Changes from 2010 to 2016	Annual growth rate (2010-2016), %
Population (million people)	86.947	92.695	5.748	1.1%
Male	42.993	45.705	2.712	1.0%
Female	43.953	46.989	3.036	1.1%
Urban	26.515	31.986	5.471	3.2%
Rural	60.431	60.709	0.278	0.1%
Age distribution (%)				
0-14	24.7	23.1		
15-64	68.5	69.9		
15-24	20.0	16.4		
15-29	29.1	25.8		
65+	6.8	7.0		
Population growth (%)	1.07	1.1		
Share of urban/ total population (%)	30.5	34.5		

While Viet Nam has benefitted significantly from the “demographic dividend” in recent decades, the labor force and the working age population are aging



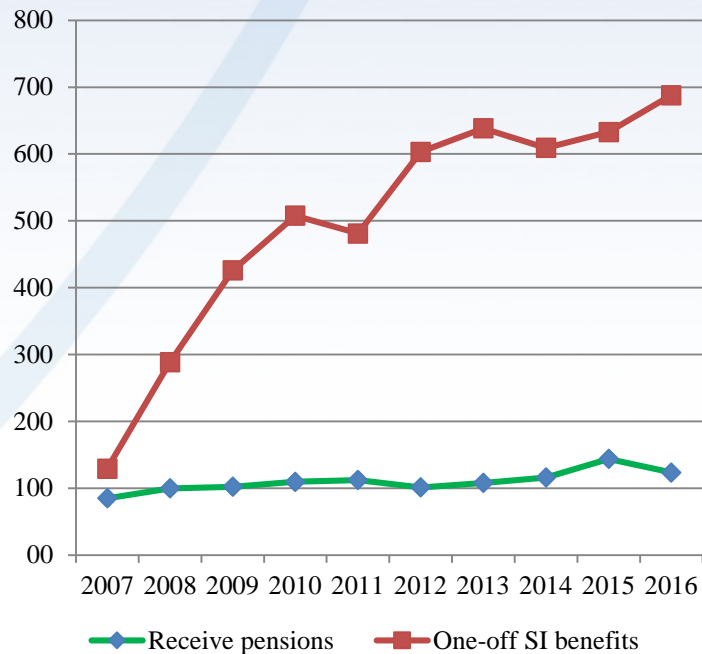
2017



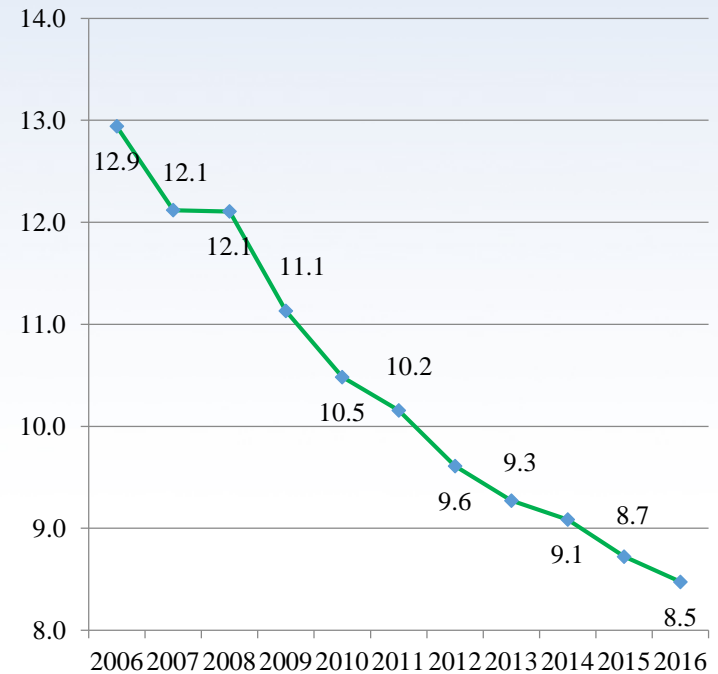
2030

Social security is getting more expensive

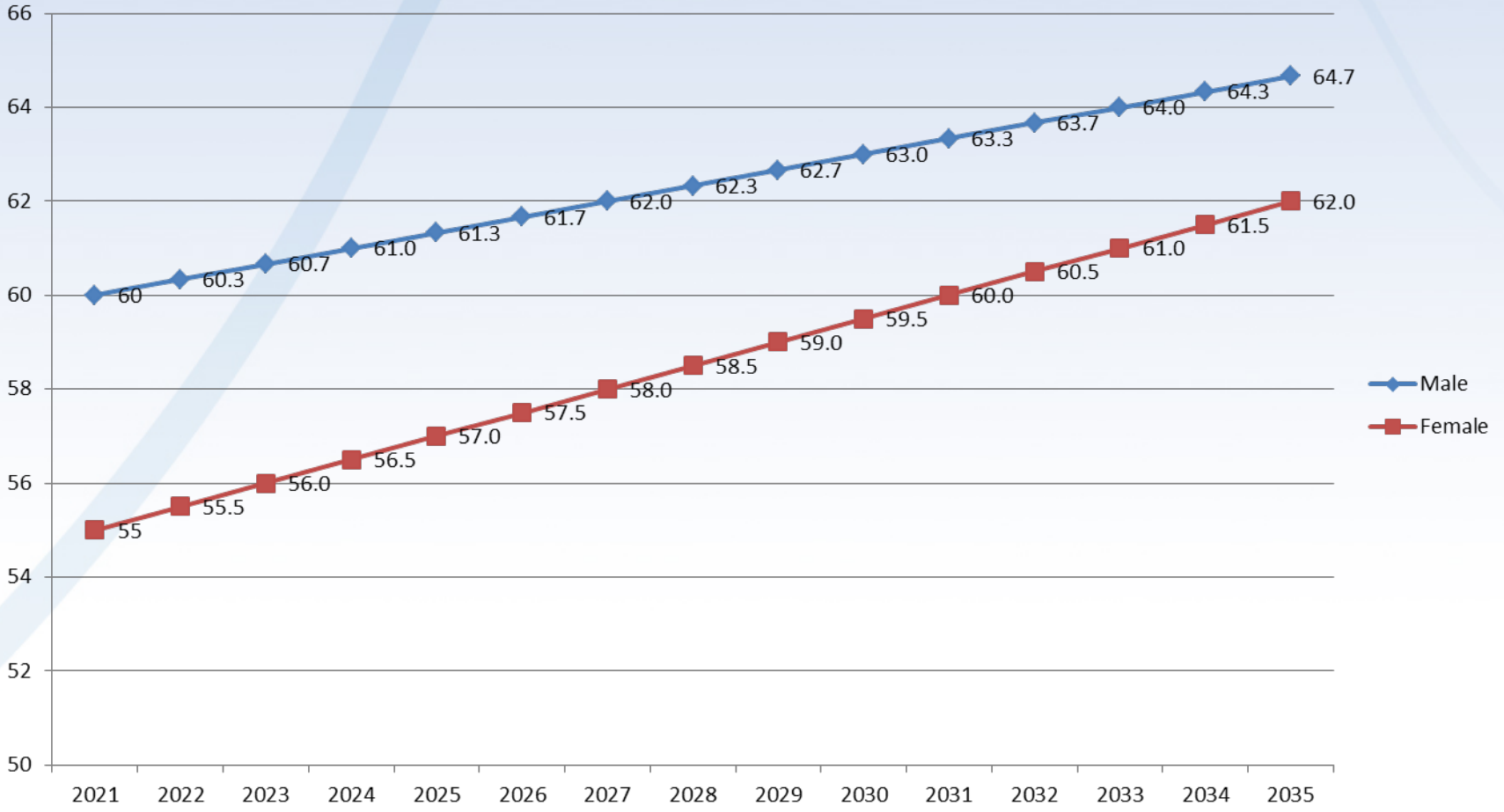
Number of beneficiaries of one-off social insurance benefits



Number of contributors per 1 beneficiary of social insurance

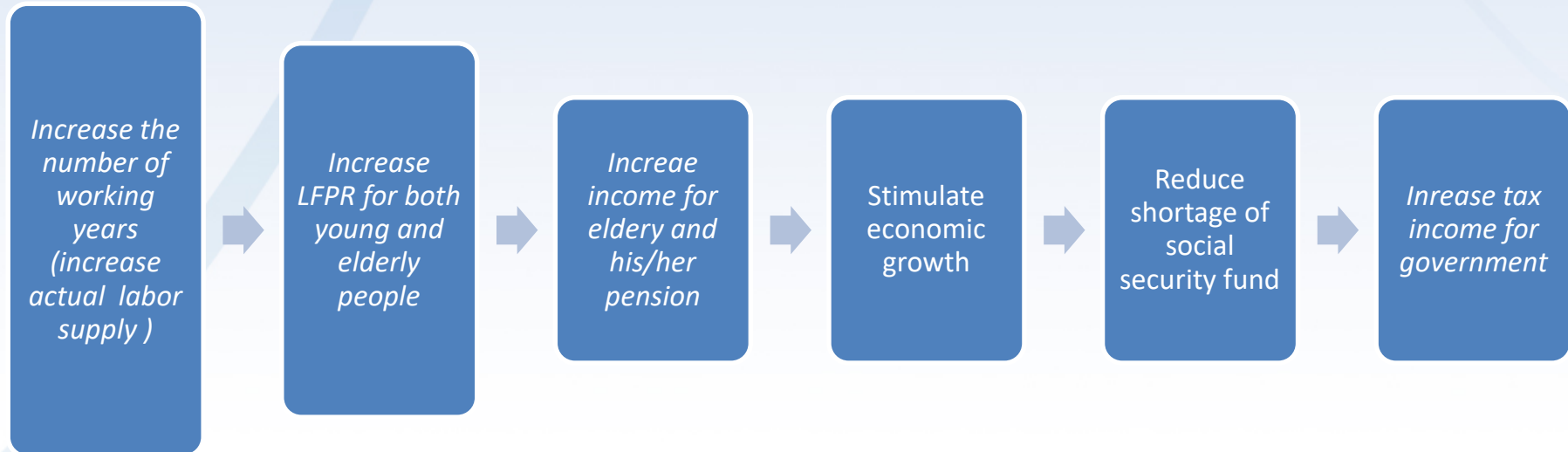


Government plans to increase the retirement age for both men and women, 2021-2035



II. International experiences of the impact of increasing retirement age on economic growth and the labor market

The main impacts



The theory of lump-labor for RA

- ✓ *Negative impact on labor market*
- Increase LFPR would lead to increasing unemployment for young and unskilled labor and thus social transfers for poor households and the unemployed.
- The assumption is that labor demand is fixed and depends on other factors, so employment reallocation effect is also limited

Negative impact

- Studies of Staubli và Zweimiller (2009), Pierre Courtioux (2010), Pacolet J.- Hedebouw G (2004) indicate that increasing the retirement age creates unfair competition with the young and unskilled workers rather than those already in the labor market or with higher skills or education

The theory of lump-labor

- ✓ *The positive impact on the labor market*
- Labor demand is an induced demand, so if an increase of RA leads to an increase of the LFPR of more experienced and skilled labor, this will lead to better economic growth, saving, and re-investment in the economy and in this way will create more and better employment

The theory of lump-labor

- ✓ *The impact on economic growth at macro level*
- $Y/N = A \times G(L/N, K/L)$
- Where Y is national gross income; L is labor; K is capital; A is total labor productivity (TFP); N is population at 15 years old and above
- So, if LFPR (L/N) increases, this would result in an increase of income per capita ((Y/N))
- Because it is induced, labor demand also increases

The theory of lump-labor

- The increase of RA does not have a significant impact on the consumption pattern of the other labor groups, so it does not have a strong impact on the labor inflow and outflow between national sectors
- Within households, more income from the elderly may increase investment in training and education, leading to an increase in productivity and total employment

Increase of labor supply of elderly

- The most direct impact of the raising the retirement age is to increase the labor supply by increasing the number of working years
- Most of the country follows a PAYGO social security financial model
- Due to the calculation formula, people tend to retire when they reach the number of contribution years

Impact on independence and public transfers

- Studies of (Staubli và Zweimuller (2009); Rust and Phelan (1997); Hay, Grubber and Wise (2004); Mastrobuoni (2009): The increase of RE leads to increased LFPR, reducing government transfers in terms of pensions and other social assistance
- In the US: Increase in RA from 65 to 67 has led to an increase of LFPR: A retirement age increase by 2 months will postpone retirement by 1 month

Impact on young workers

- Pierre Courtioux (2010): The young (15-24) can get more education and can delay participation in labor market, increasing their labor productivity in the future

The gender aspect of increasing the RA

One of the objectives of raising the retirement age is to reduce the gap between men and women in the labour market and give women more earning opportunities (especially highly qualified women). Two issues need to be addressed:

- Achieving gender equality
- Addressing the needs and behavior of women: Trade off between labour and household income?

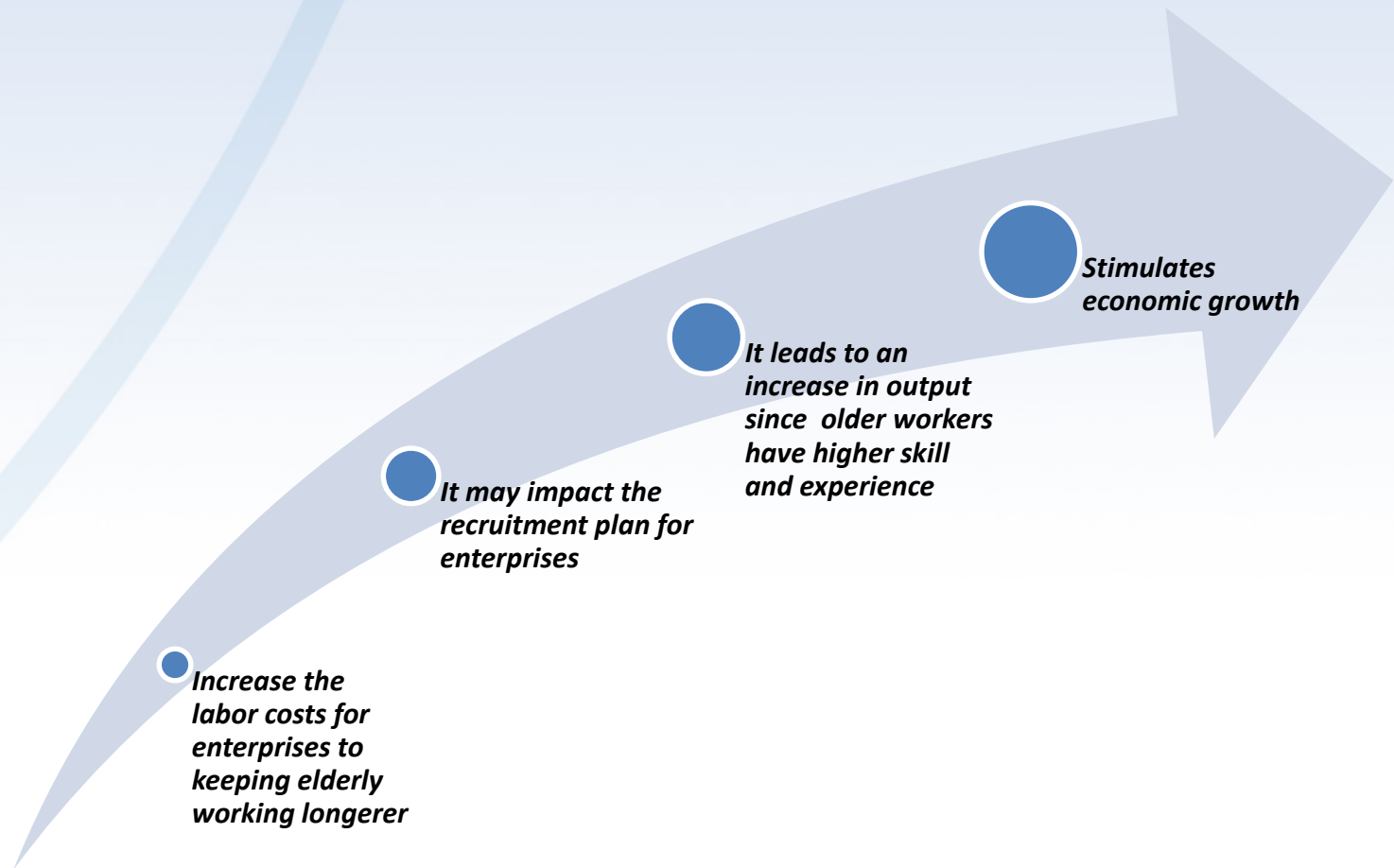
Reduce gender gap

- Vanja Ivosevic, 2009: This could lead to increase the LFPR of young women as they have more opportunity to participate in the labor market
- (Sabharwal Gita, Than Thi Thien Huong, 2007, M. Bütler (2010): One of the objectives of retirement reform is to reduce the gender gap in the labor market and in the retirement ages of men and women

Reduce the unpaid work of the women

- Ivošević, 2009: As women work more, they can reduce their unpaid work at home and increase the GDP
- However, it should be noted that it may be more productive for elderly women to look after their grand children, if their labor income is low

How enterprise behaves? What happens to labour demand curve?



Increase of the costs for elderly workers

- Lezear (1979) pointed out that enterprises often pay less than individual productivity at the beginning of work life and then increase pay as workers age
- If the elderly continue in the workforce, costs for enterprises could go up, especially if the government imposes requirement for better treatment of the elderly (flexible work time, no overtime, etc.)

Change the recruitment plan and human resource development

- If the RA increase plan is not announced soon enough, enterprises have to keep their workers longer and cannot recruit new ones. Blanchet (2004), however, pointed out that some of the elderly with low productivity would leave the labour market; only the more productive ones want to stay, so enterprises can benefit from their skills and experience

III. MEASURING THE IMPACT OF INCREASING THE RETIRMENT AGE

We look at the falling impact

Impact on the LCD and first demographic dividend

Impact on the labor force participation rate

Impact on total employment and the employment of young workers, women, and the elderly

Total impact on the economic growth

Impact of the the social security fund balance

The impact of rising retirement age on labor income and consumption and total LCD: NTA approach



The flow account identity

- Inflows
 - Labor Income
 - Asset Income
 - Transfer Received
- Outflows
 - Consumption
 - Saving
 - Transfers Paid

$$\underbrace{Y^l(a) + Y^a(a) + \tau^+(a)}_{\text{Inflows}} = \underbrace{C(a) + S(a) + \tau^-(a)}_{\text{Outflows}}$$

$$\underbrace{C(a) - Y^l(a)}_{\text{Lifecycle Deficit}} = \underbrace{Y^a(a) - S(a)}_{\text{Asset-based Reallocations}} + \underbrace{\tau^+(a) - \tau^-(a)}_{\text{Net Transfers}}$$

Age Reallocations

NTA assumptions

- Economic growth is the result of household productivity growth and reduction of the dependency ratio
- Labour income will be higher than consumption if workers are productive or the first demographic dividend is longer
- Working longer reduces dependency and reduces public transfers (pensions and other assistance)

Data used

- Vietnam Household Living Standard Survey 2014 and 2014
 - 2007 input-output table
 - Enterprise survey 2014

Combined with needs assessment survey

- Before increasing RA: Compare labor income (if still working) and pension income (if retired) => human behavior :
 - Who wants to keep working? Who wants to retire?
 - At what age are people likely to retire?
 - What is LFPR change if they want to work longer?
- If increase RA: Who will be impacted most, by age group and by gender?
 - How will working longer change income and consumption?
 - And how will it affect the consumption of other household members?

Labour market participation of the potential working elderly

- Early retirement age:
10.6% for women age 50-54 and 16% for men age 55-59
- LFPR of the women and man with new RA is
35% for women and 50% for men (currently 75% for women and 86% for men)
- The income and consumption pattern of the working elderly are the same as for women age 50-55 and men age 55-60

Results (1): Summary of the Lifecycle Deficits

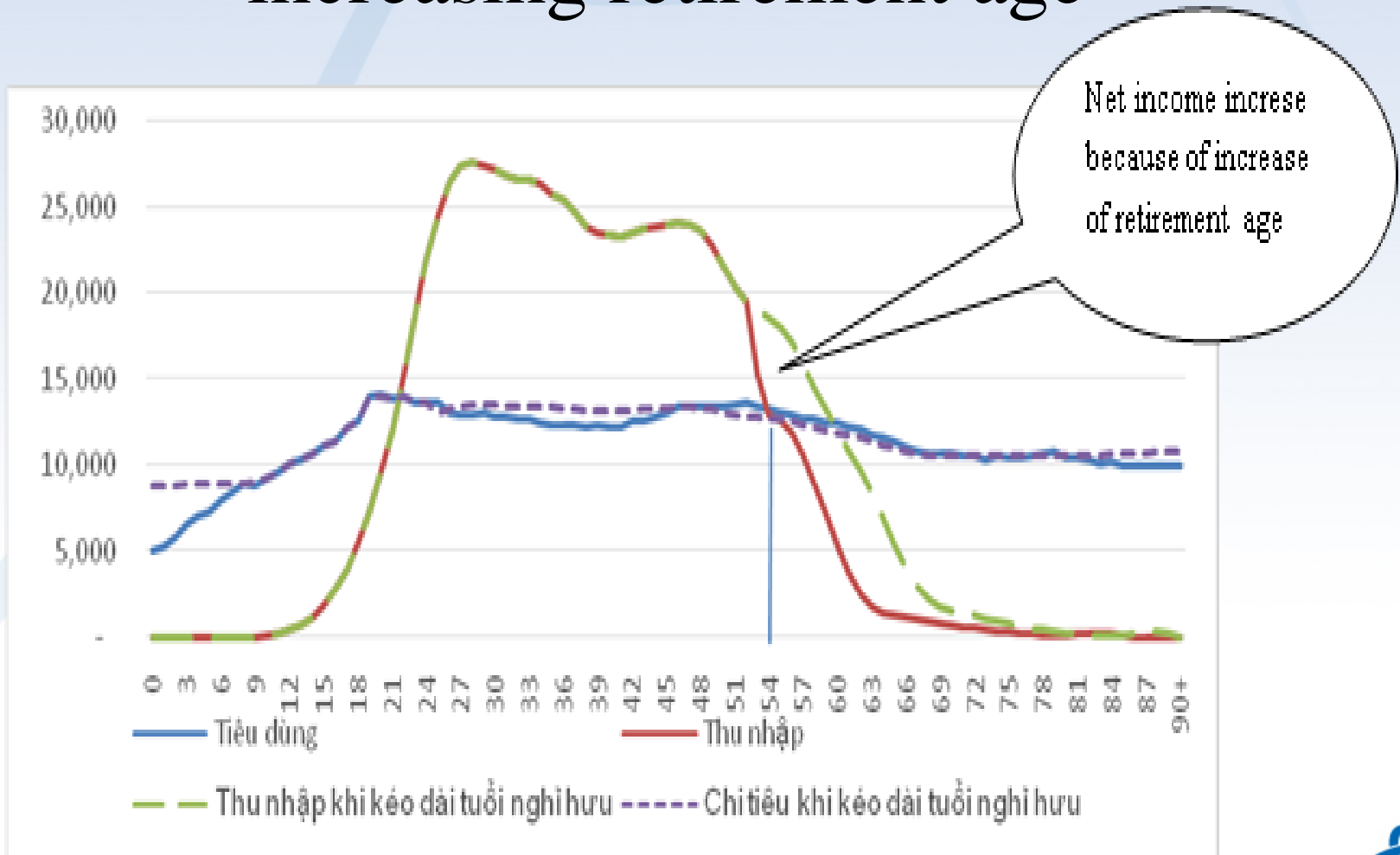
Before increasing RA

- Age of lifecycle surplus: 23 - 53
- Total 237.439 billion VND

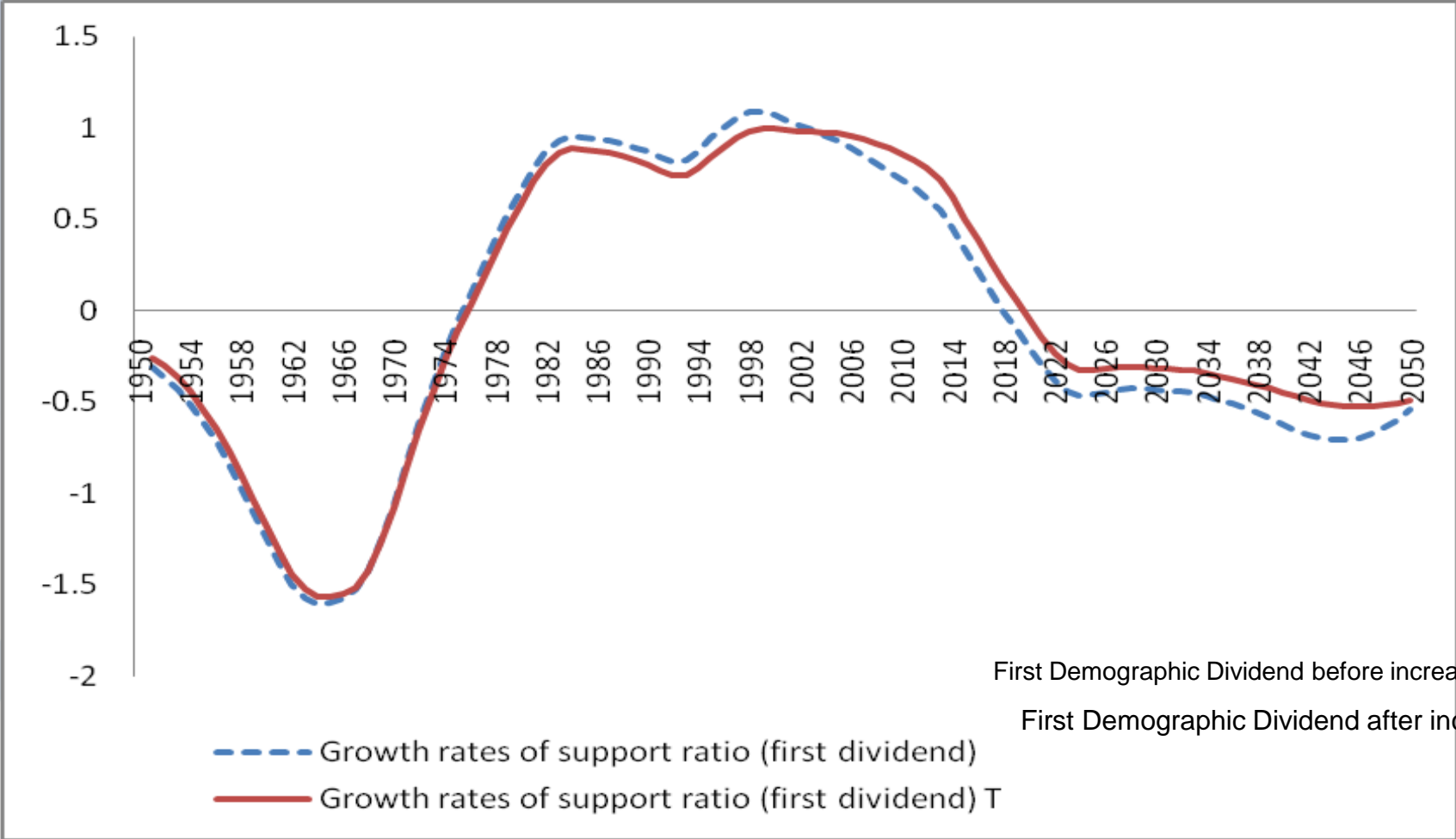
After increasing RA

- Age of lifecycle surplus: 20 - 60
- Total surplus: 425.439 million VND
- Maximize surplus, minimize deficit → increase age of lifecycle surplus, decrease age of lifecycle deficit

Comparison between income and consumption by age before and after the increasing retirement age



Change of first demographic dividend (3 years more)



First Demographic Dividend before increasing retire
 First Demographic Dividend after increasing r

Decomposition of change

Increase by:

- Increase individual productivity
- Reduce dependency ratio
- Reduce public transfers to the elderly (pension and social assistance)
- Increase tax income for the government

Decrease by:

- Increase cost of health care for the elderly
- Increase public transfers to the young and working age population due to unemployment
- Private education expenditure as young want to invest in education
- Increase government spending on poor households due to rising unemployment
- Increase total consumption of households due to increase of income

Measure the impact on economic growth

- Economic growth:

$$\Delta Y = Y_1^t - Y_0^t = F(K_0^t, L_1^t) - F(K_0^t, L_0^t) \quad (3)$$

$$\ln Y_0 = \alpha_0 + \alpha_1 \ln K_0 + \alpha_2 \ln L_0 \quad (4)$$

if (K_0) is constant,

$$\ln Y_1 = \alpha_0 + \alpha_1 \ln K_0 + \alpha_2 \ln L_1 \quad (5)$$

- Total employment increase:

$$\text{Emp}_t = \text{Emp}_{t56-60} + \text{Emp}_{t61-65};$$

- Total labour demand year t when increase the retirement age $L_1^t = L_0^t + \text{Emp}_x^t$

Results (2)

The positive economic impact of increasing the RA

- 1% increase of elderly workers will increase GDP by 0.068%
- Most of the sectors will experience a positive impact
- Some sectors (e.g., mining) will not benefit from an increase of elderly workers

Table 1. Estimated impact of raising retirement age on economic growth

Dependent variable (Logarit VA)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Logarit (K)	0.245** *	0.389** *	0.426** *	0.285** *	0.347** *	0.489** *	0.276** *	0.176** *	0.046** *	0.186** *	0.206** *
	(0.004)	(0.017)	(0.040)	(0.037)	(0.007)	(0.046)	(0.009)	(0.007)	(0.015)	(0.013)	(0.009)
Logarit (Young)	0.881** *	0.641** *	0.714** *	0.995** *	0.759** *	0.651** *	0.734** *	1.027** *	1.363** *	0.937** *	1.016** *
	(0.006)	(0.026)	(0.057)	(0.065)	(0.010)	(0.073)	(0.015)	(0.012)	(0.027)	(0.023)	(0.018)
Logarit (Elderly)	0.068** *	0.058* *	-0.120* *	-0.034	0.096** *	0.157* *	0.089** *	0.204** *	0.078	0.050	-0.028
	(0.008)	(0.032)	(0.061)	(0.068)	(0.013)	(0.083)	(0.019)	(0.020)	(0.047)	(0.031)	(0.027)
Constant	2.966** *	1.864** *	2.675** *	2.199** *	2.364** *	1.075** *	3.250** *	3.049** *	3.048** *	3.962** *	3.373** *
	(0.020)	(0.092)	(0.240)	(0.218)	(0.041)	(0.266)	(0.059)	(0.038)	(0.093)	(0.081)	(0.056)
Observation	52,333	3,851	614	763	12,999	356	7,798	13,393	2,166	3,535	6,858
R square	0.607	0.417	0.531	0.624	0.697	0.741	0.522	0.580	0.708	0.600	0.532

Standard deviation in the bracket

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

(1) Total economy; (2) Agriculture; (3) Fishery; (4) Mining; (5) Food Processing; (6) Electricity and gas; (7) Construction; (8) Trade; (9) Hotel and restaurant; (10) Logistics and warehouse; (11) Other

Source: Enterprise survey, 2014

28/7/2018



Estimated impact on labor market

- Step 1: The relationship between economic growth and employment is based on the employment elasticity to growth: (ε) (when the GDP growth ΔY or $\Delta Y/Y_0$ (%), then employment increased by $\varepsilon * \Delta Y/Y_0$ (%))

- Step 2: Estimate labour demand : $\text{Ln}L = \beta_0 + \beta_1 \text{LnGDP} + \beta_2 \text{Ln}K$ (6)

- Step 3: Estimate employment of the young

$$\text{Ln}ld(15-34) = a_0 + a_1 \text{Ln}ld(60) + a_2 \text{Ln}Va + a_3 \text{Ln}TFP + a_4 \text{SOE} + a_5 \text{Private} + a_6 \text{K/L} + a_7 \text{Ln}(W) \quad (7)$$

Where:

$Ld(15-34)$ là logarit young labour; $ld(60)$ is logarit male labour over 60; (or $ld(55)$) is female over 55

TFP is total factor productivity

K/L is the capital/labour ratio; W is average wage of the enterprise

SOEL = state-owned enterprise; Private = private enterprise

Coefficient a_1 : relationship between the elderly and young labour; if enterprise tends to reduce young labour, then a_1 is negative; if employment of the elderly has a positive impact on demand for young labour, then a_1 is positive

Results (3)

*Positive impact
on total labour
demand*

- Increasing the RA leads to economic growth, which leads to an increase in total labour demand by 0.32% or 173,000 workers

*More positive
impact on
female labor*

- Increasing the RA leads to increasing employment of the young by 0.29%, or 28,000 female workers
- Increase of 1% of elderly women in the workforce leads to an increase of 0.48% of young female workers; or two elderly female workers can lead to jobs for one additional young female worker

Table 2: Impact of economic growth on labour demand

	(1)	(2)	(3)	(4)	(5)
Dependent variable	Lnld(15-34)	Lnld_female (15-34)	Lnld	Lnld(15-34)	Lnld_female(15-34)
Logarit (L_male 60+)	0.222*** (0.018)				
Logarit(L-female 55+)		0.488*** (0.014)			
Logarit VA	0.549*** (0.005)	0.477*** (0.006)	0.437*** (0.001)	0.431*** (0.001)	0.357*** (0.001)
Logarit TFP	-0.016*** (0.001)	-0.017*** (0.001)	-0.008*** (0.000)	-0.008*** (0.000)	-0.010*** (0.000)
SOE	-0.488*** (0.069)	-1.093*** (0.059)	0.230*** (0.018)	-0.207*** (0.021)	-0.558*** (0.022)
Private	-1.037*** (0.036)	-1.254*** (0.042)	-0.838*** (0.010)	-1.020*** (0.012)	-1.335*** (0.012)
K/L ratio	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
Ln(Average)	-0.197*** (0.014)	-0.204*** (0.014)	-0.300*** (0.002)	-0.244*** (0.003)	-0.250*** (0.003)
D			0.327*** (0.006)	0.124*** (0.007)	0.294*** (0.008)
Constant	-0.051 (0.067)	-0.072 (0.074)	1.394*** (0.015)	0.966*** (0.018)	0.873*** (0.019)
Observations	13,465	13,335	216,673	198,621	170,380
R square	0.582	0.564	0.550	0.459	0.399

Standard error in bracket

NTA workshop, Mexico City
28/7/2018

*** $p < 0.01$, ** $p < 0.05$, * < 0.1
Source: Enterprise survey 2014



The impact on social security financing

Total contribution of social security fund

$$I_{i,t,s} = \sum AW_{i,t,s,w} \times k_{t,s,w} \times P_{i,t,s,w}$$

Where:

$I_{i,t,s}$: Contribution year t, age (t), sex (s);

$P_{i,t,s,w}$: Total contributories year t, age (t), sex (s) and economic sector (w);

$AW_{i,t,s,w}$: Average wage for calculating, year t, age (t), sex (s) and economic sector (w)

$k_{t,s,w}$: Contribution rate year t, age (t), sex (s) and economic sector (w)

Pensions and other benefits received by pensioners/employees

$$E_{i,t,s,w} = \sum AW_{i,t,s,w,p} \times P_{i,t,s,w,p}$$

Where:

$I_{i,t,s,w}$: Receive year t, age (t), sex (s) and economic sector (w);

$AW_{i,t,s,w,p}$: Average pension year t, age (t), sex (s) and economic sector and social pension mode (p);

$P_{i,t,s,w}$: Number of contributors year t, age (t), sex (s) and economic sector (w) and social pension mode (p)

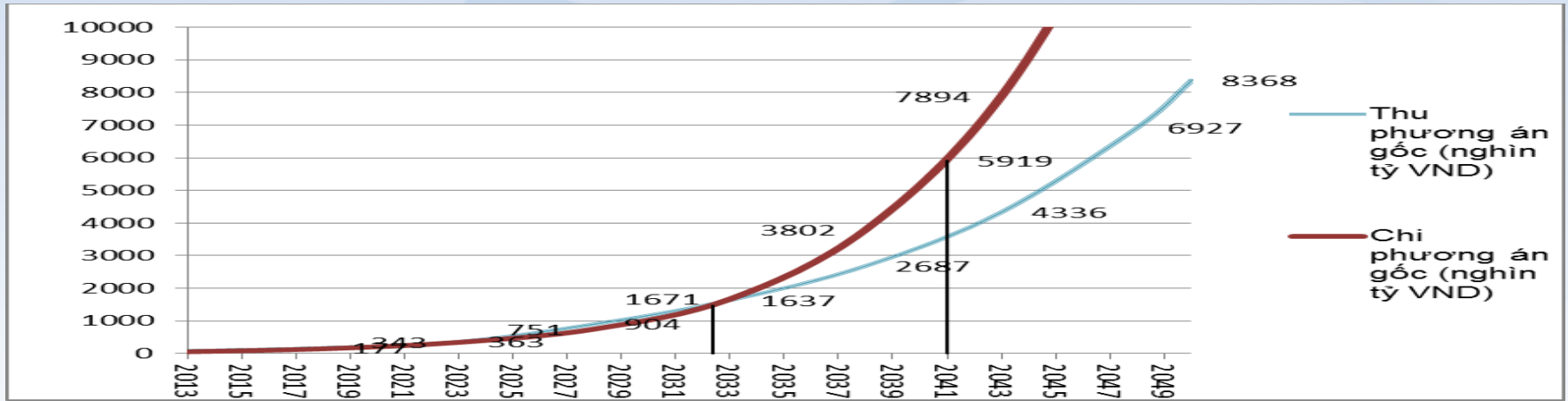
Results (4): Impact on pension participation

- If increase RA by one year: Total contributors increase 0.27% , for a total of 2.06% in 2020, 6.07% in 2030, 8.75% in 2040, and 9.46% in 2050
- Increase the contribution period by three years
- Total revenue of social security fund will increase 0.29% per year (base year 2015): 1.95% (in 2020), 5.85% (in 2030) and 8.29% (in 2040)

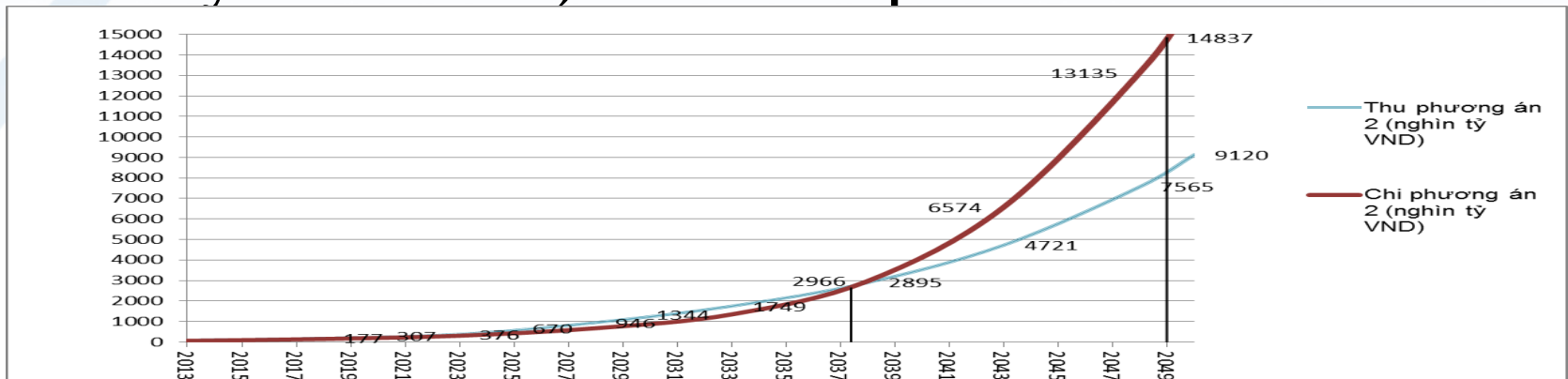
Results (4): Impact on pension expenditure

- Increase of RA reduces the number of retired by 5.64% in 2020, 17% in 2030, 23% in 2040, and 17.03% in 2050
- The time in which retired people receive pensions is reduce by three years (assuming that the life expectancy of the elderly remains constant)
- Total expenditure of the social security fund goes down by 7.78% in 2020, 17.26% in 2030, 19.87% in 2040, and 10.72% in 2050

Base case: No increase in RA: Fund is not balance in 2032 and is depleted in 2042



If increase RA: Fund is in balance until 2037 (5 years more) and is depleted in 2049



Conclusion

1. The impact assessment provides evidence for the government to consider increasing the retirement age
2. The impact = before - after
3. The result show that the impact is positive
 1. LCD improves
 2. Economic growth
 3. Labour market demand increases
 4. LFPR increase for the elderly and young workers, the positive impact is especialy strong for women
 5. Reduces the predicted shortage of pension funds

Conclusion (cont.)

However, in the short run:

1. May increase the unemployment of the young and unskilled labour
2. Many people want to retire earlier given the current retirement ages
3. Enterprise incur more costs by employing the elderly instead of young workers and their are effects on recruitment plans and investment plans in the future

Recommendation

1. Give people the choice of whether they want to retire or continue working
2. Try a pilot project focusing on occupations dominated by high skills and high productivity
3. Make a government plan to help enterprises adjust to later retirement ages
4. More evidence/justification needed

Thank you

NTA
workshop,
Mexico city
28/7/2018

