

Natural disaster and tax: Lessons from Great East Japan Earthquake

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Plan of Presentation

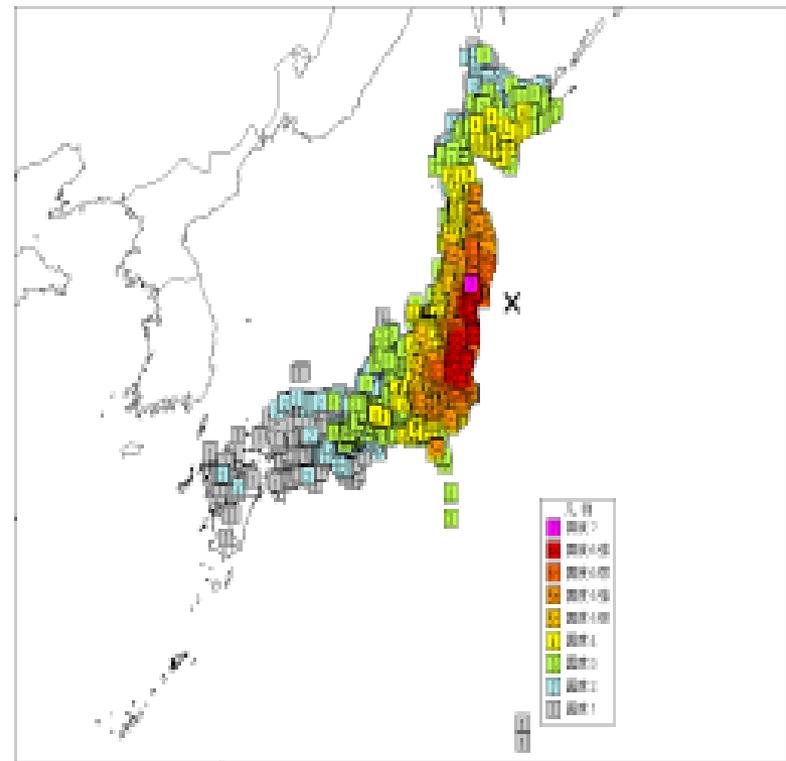
- ◆ The economic effect of the earthquake disaster
- ◆ Options for reconstruction finance
- ◆ Government reconstruction measures
- ◆ Tax and earthquake
- ◆ Structural problems
- ◆ Lesson for the future
- ◆ Lessons for others

The economic effect of the earthquake disaster

Great East Japan Earthquake

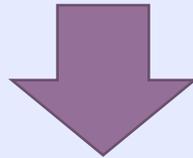
- ◆ On March 11, large scale earthquake of magnitude 9.0 hit east Japan and brought devastating disaster.
- ◆ Death and missing total **about 20 thousands**.
- ◆ The cabinet office of Japan estimates that the direct damage on the economy due to the earthquake amounts to **about 16 trillion yen or 3% of GDP**.

Figure 1. Seismic intensity of the Off the Pacific Coast of Tohoku Earthquake



Three effects of the earthquake disaster

The disaster of the earthquake is divided into different layers



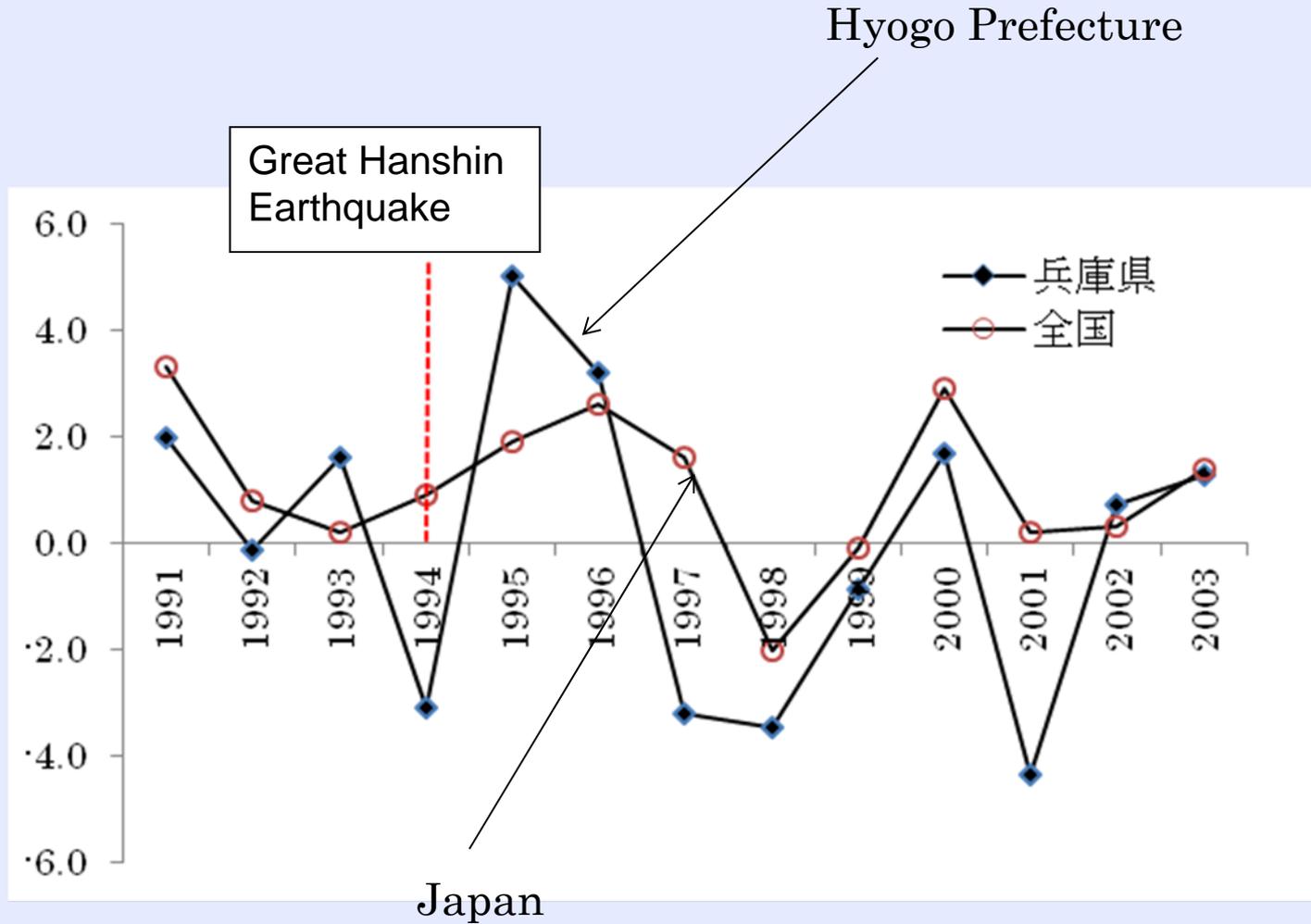
The first disaster	Direct damage of the earthquake disaster on infrastructures, housings and factory, etc.
The second disaster	Spread Influencing out of the stricken area – Disruption of the supply chain – Shortage of electricity supply
The third disaster	Outflow of business from a stricken area Loss of international competitive-ness Damage caused by rumors = The decrease of investment from overseas

Japan Economy

Changes from the previous quarter
(seasonally adjusted)

	2010		2011		
	7~9	10~12	1~3	4~6	7~9
GDP	0.1	-0.8	-1.7	-1.6	1.2
Consumption	-0.4	-0.3	-0.9	-0.3	0.6
Private Investment	-0.1	-1.0	-0.9	-0.8	-0.6
Housing	0.8	3.2	2.2	-1.5	5.2
Public investment	0.7	-3.7	-1.6	6.9	0.5
Export	-1.9	-1.0	1.0	-6.1	5.8
Import	-1.1	0.6	6.8	2.9	2.9

Real GDP Growth



(Source) SNA

Risk of Japan economy

Effect of the earthquake	
Protraction	<ul style="list-style-type: none">• Nuclear power reactor incident• Shortage of electricity supply
Damage on structure of Japan economy	<ul style="list-style-type: none">• Outflow of business and investment• Loss of international competitiveness

Opportunity cost of the earthquake

- ◆ There could have been more foreign visitors and overseas investments without the earthquake and the nuclear reactor incident
- ◆ These foregone gains (in terms of the present value) should be added to opportunity cost of the earthquake although they are not explicitly reflected in the statistics
 - ⇒ Damage on Japan economy could be substantial
- ◆ Key concept: opportunity cost

Options for reconstruction finance

The Guideline on Policy Promotion For the Revitalization of Japan

May 17, 2011 Cabinet Decision

- ◆ The Great East Japan Earthquake is a “**crisis in the midst of a crisis.**” Even before the earthquake Japan had been faced with a “crisis” of economic stagnation and social occlusion, with this recent great earthquake occurring in the middle of this crisis.
- ◆ The nuclear incident is still ongoing, and so we must do absolutely everything to tackle this incident.

Outline of the government's basic policy on reconstruction

- ◆ The total period for reconstruction will be 10 years. The first five years will be the intensive reconstruction period, during which public spending for reconstruction would be concentrated.
- ◆ The total cost of reconstruction to be at least ¥23tn over 10 years. The government intends to provide around ¥13tn over the first five years.
- ◆ The ¥13tn should be financed through spending cuts, sales of national assets, review of special accounts, cuts in public employees, non-tax revenue and temporary tax breaks.

The current situation facing Japan

- ◆ Growing budget deficits of the central and local governments
 - Decreasing credibility of JGB (sovereign debt rating)
 - Increasing demand for fiscal reconstruction
 - ◆ The aging society
 - Rise in social security costs
 - ◆ Economic globalization
 - Japan is no longer a “first class” economy
 - International tax competition (increasing demand for corporate tax cut)
- ⇒ There is less leeway in terms of either the government’s ability to finance or economic growth potential

International Comparison of General Government Gross Debt to GDP

(As a percentage of GDP, %)

CY	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Japan	86.7	94.0	100.5	113.2	127.0	135.4	143.7	152.3	158.0	165.5	175.3	172.1	167.1	172.1	189.6
US	70.7	70.0	67.6	64.5	61.0	55.2	55.2	57.6	60.9	61.9	62.3	61.7	62.9	71.1	87.4
UK	51.6	51.2	52.0	52.5	47.4	45.1	40.4	40.8	41.2	43.5	46.1	46.0	46.9	57.0	75.3
Germany	55.7	58.8	60.3	62.2	61.5	60.4	59.7	62.1	65.3	68.7	71.1	69.4	65.5	69.0	78.2
France	62.1	65.7	68.2	70.3	66.8	65.6	64.3	67.3	71.4	73.9	75.7	70.9	69.9	76.1	86.4
Italy	122.5	128.9	130.3	132.0	125.8	121.0	120.2	119.4	116.8	117.3	119.9	117.2	112.5	114.5	122.9
Canada	101.6	101.7	96.3	95.2	91.4	82.1	82.7	80.6	76.6	72.6	71.0	68.0	64.2	68.4	77.7

(Source) OECD Economic Outlook 85 (June 2009)

(Note) Figures represent the general government-based data (including the central/local governments and the social security funds).

Source: MOF

Sovereign Credit Rating



	Moody's	S&P	Fitch	R&I	JCR
Aaa/AAA	United States(↓) United Kingdom Germany France	United Kingdom Germany(↓) France(↓)	United States(↓) United Kingdom Germany France(↓)	United States United Kingdom Germany France(↓)	Japan United States United Kingdom Germany France Spain
Aa1/AA+		United States(↓)		Japan	
Aa2/AA				Spain(↓)	Italy
Aa3/AA-	Japan China(↑)	Japan(↓) China Spain(↓)	Japan(↓) China(↓) Spain(↓)	China	Portugal(↓)
A1/A+	Spain(↓)		Italy(↓)	Italy(↓)	
A2/A	Italy(↓)	Italy(↓)			

Recent movement of Japans sovereign credit rating

2011.4.27 S&P

- Change the Outlook to Negative (Rating was affirmed at AA-).

2011.5.27 Fitch

- Change the Outlook to Negative (Rating was affirmed at AA-)

2011.5.31 Moody's

- Watch Negative

2011.8.24 Moody's

- Downgrade from Aa2 to Aa3 (Outlook: Stable)

2011.11.30 R&I

- Watch Negative

2011.12.21 R&I

- Downgrade from AAA to AA+ (Outlook: Stable)

Cumulative government debt

FY1995	FY2011 (Estimates)
¥225trillion	¥668trillion
➤ 45% of Nominal GDP	➤ 140% of Nominal GDP

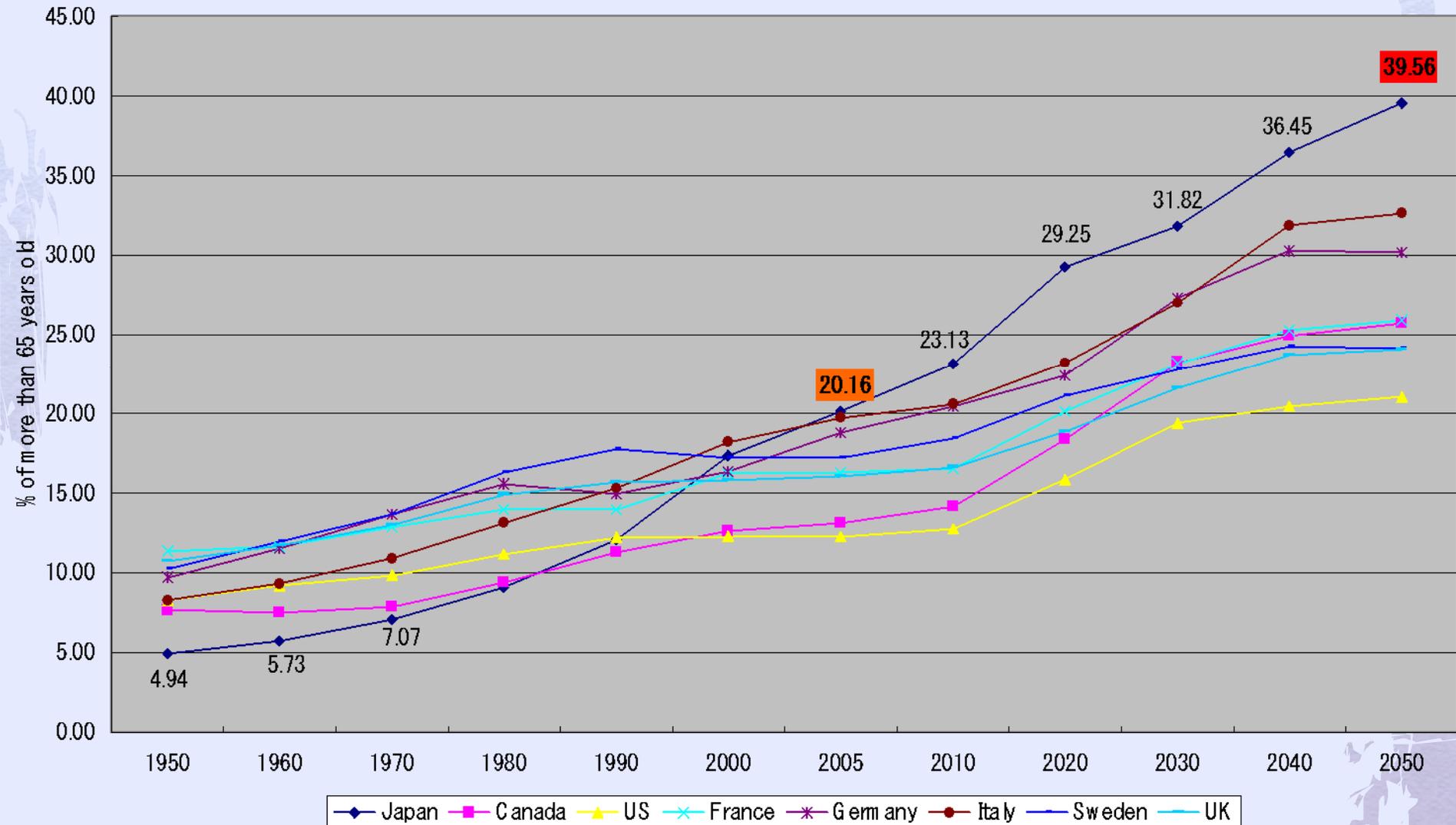
◆ Japan has already been heavily in debt = Leaving a huge burden to future generations

◆ Reducing credibility in the markets = Japan's sovereign debt rating has already been towards lower levels before the disaster

Aging of Society

- ◆ Not only the current economic crisis, Japanese government has confronted with the mid and long term challenge ⇒ Aging of society
 - ◆ Japan is aging!
 - Share of more than 65 years old is expected to increase: 21.5 % in 2007 ⇒ 40% in 2050
 - Birth (fertility) rate has declined: 1.32 in 2006.
- ⇒ Working age population (from 15 to 64 years old) will decrease
- ⇒ Negative consequences to Japanese economy in the future

Aging of Society



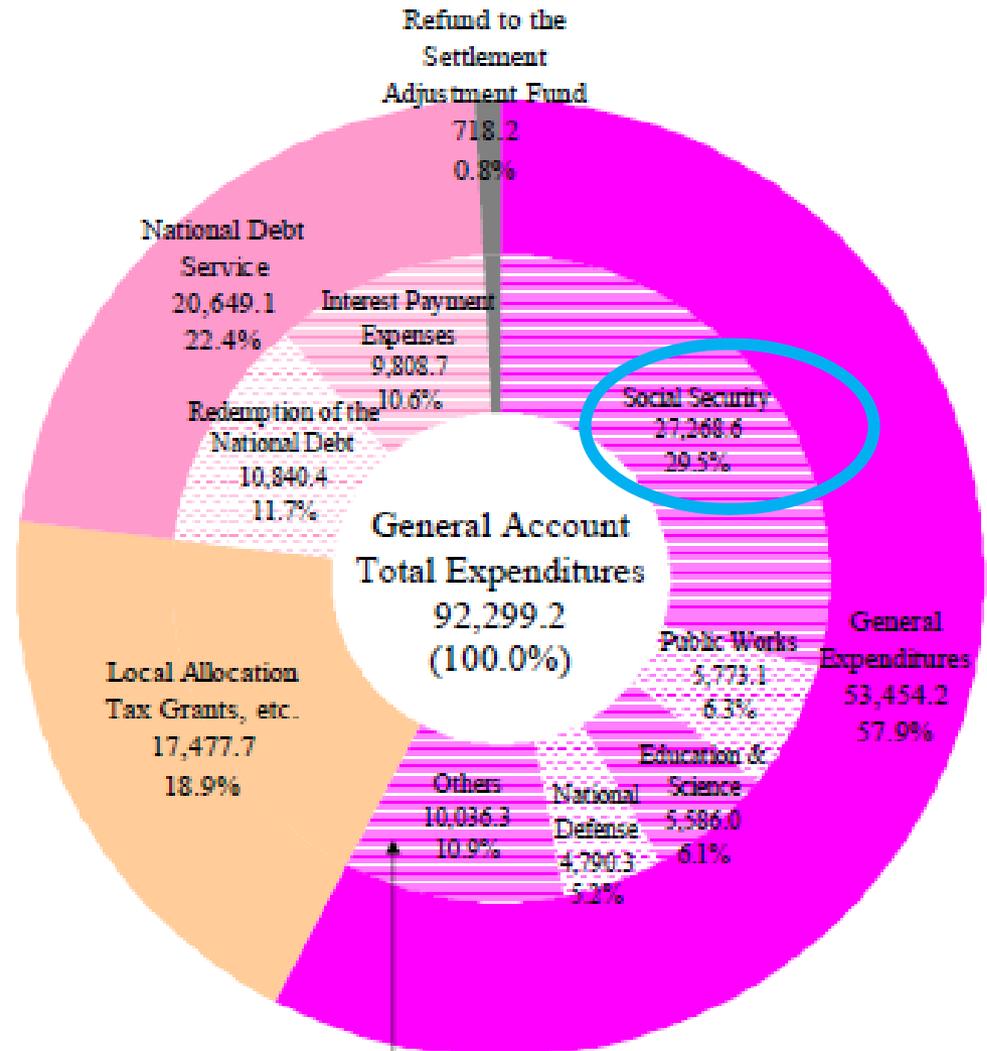
Future Increase of Social Expenditure

- ◆ Aging will increase fiscal burden on the government as it needs to spend more on (a) public pension, (b) health care and (c) long term (nursing) care.
 - ⇒ Increasing social expenditure must be financed by (i) tax and/or (ii) social security contribution, which in turn raises burden on people, especially the young.
- ◆ Remark: The projection depends upon several assumptions on economy growth, fertility rate, investment return (interest rate), inflation and so on.
 - ⇒ The projection could be wrong if the assumptions are wrong!

Central budget of FY2010

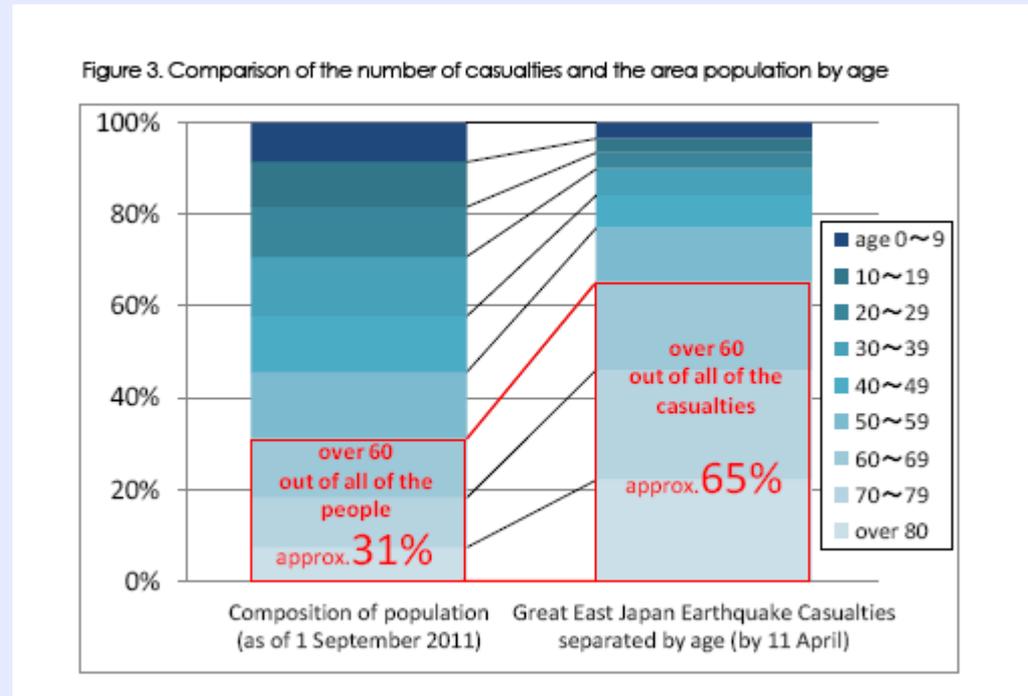
(Unit: billion yen)

- ◆ Social spending including pension and healthcare occupies the largest share, 29.5% in central budget (general account)



Aging of Japan

- ◆ Death and missing total 20 thousands with 65% of the dead over 60 years old
- ◆ The population of the disaster area has been aging

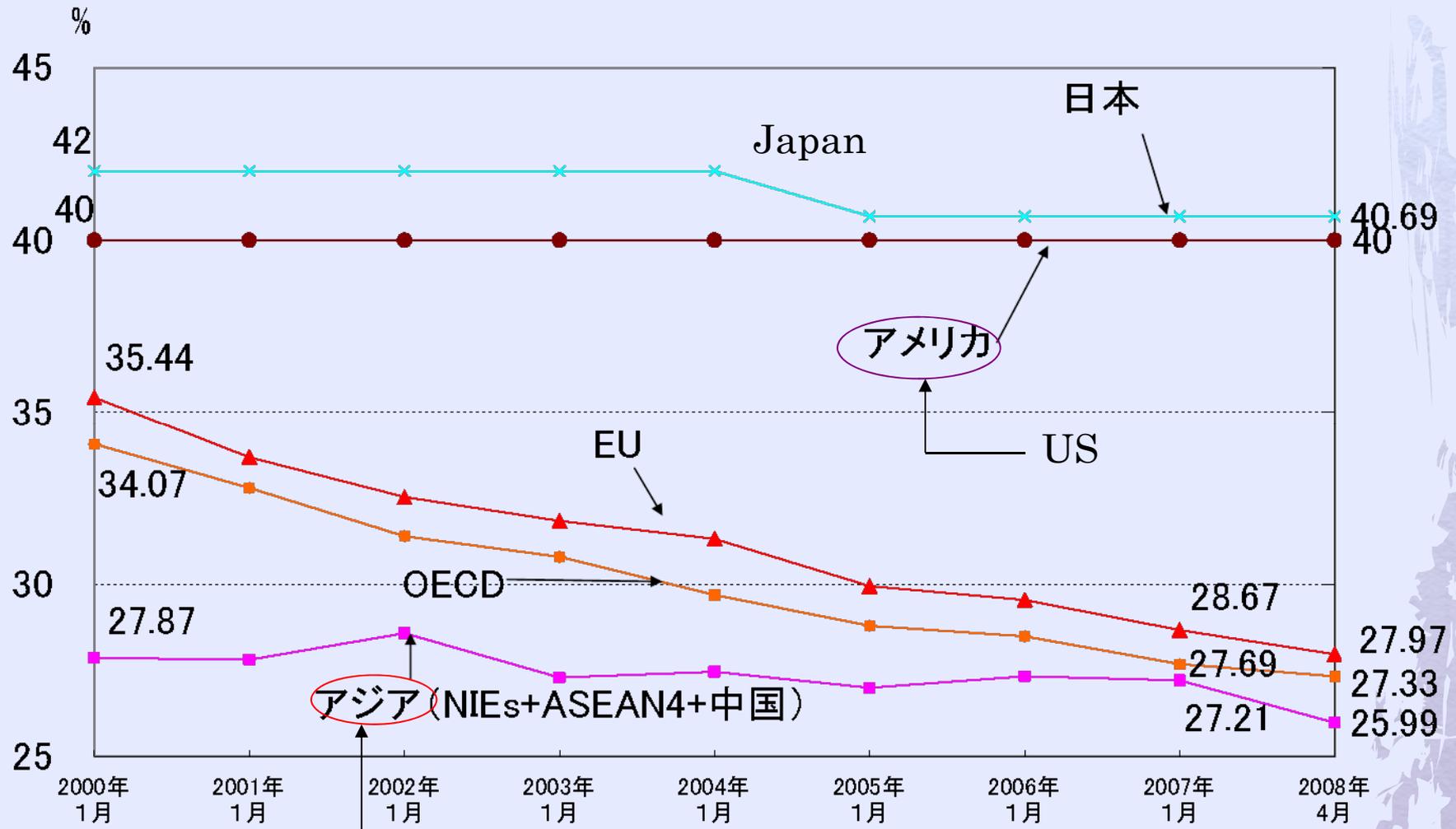


Source: White Paper on Disaster Management 2011

Globalization of Economy

- ◆ With economic globalization, it has become more difficult for the government to collect taxes
 - ⇒ Taxation could induce outflow of economic activities (i.e., capital and firms) beyond national borders.
 - ⇒ Negative consequences on national economy reducing domestic investment and employment (No business, No job!)
- ◆ The government needs to restructure own tax system to cope with this new economic environment.
 - ⇒ Cannot much rely on business taxes as business can easily move.

International tax competition



Source: OECD

Asia

Dilemma of the government

- ◆ Japanese economy is now suffered from (i) economic recession as well as (ii) increasing income gap (inequity)
- ◆ In the mid and long term, society is aging
⇒ More government expenditure is required..
- ◆ The government has been heavily indebted and has little room to borrow more to finance these expenses.
⇒ Tax increase seems to be inevitable.
- ◆ Taxation (especially on business) becomes more difficult with economic globalization, however. Plus there has been strong political opponent against consumption tax (VAT) increase!

Government reconstruction measures

Supplementary Budget

- ◆ Japan government has initiated three supplementary budgets since the earthquake to foster restoration and rebuilding

Supplementary Budget	Amount	Items
First May 2011	\4 trillion	➤ Temporary houses ➤ Public project for disaster recovery ➤ Disaster waste disposal ➤ Subsidy to local governments of the disaster area ➤ Income assistance for disaster victims ➤ Compensation for the nuclear reactor incident
Second July 2011	\2 trillion	
Third Nov.2011	\11.7 trillion	

Special zone for reconstruction

- ◆ Local governments of the disaster area draft and submit reconstruction plan to the central gov.
 - ⇒ With the central gov's consent, special treatments on tax and regulations are allowed to these areas
- ◆ Tax reduction
 - 5 year tax exemption for newly locating firms
- ◆ Block grants to local gov.
- ◆ Deregulation on land use etc



Tax and earthquake

Tax deduction/exemption

		Examples
Central	Personal income tax	➤ Deduction for casualty losses up to five years extended from current three years.
	Corporate income tax	➤ Casualty loss carry back ➤ Special depreciation allowance (up to 30%) for substitute assets
Local	Inhabitant tax	➤ Deduction for casualty losses up to five years extended from current three years.
	Business tax	➤ Tax exemption/reduction
	Property tax	➤ One year tax exemption in disaster areas

Natural disaster and tax

- ◆ Tax treatments for disaster recovery can be divided into different dimensions
 - Risk sharing
 - Charity subsidy
 - Promotion of reconstruction

	Example	Target
Risk sharing ✓ Intra- and inter-generational	Deduction for casualty losses	Disaster victims
Charity subsidy	Deduction of charity expenses	Charity donors
Promotion of reconstruction	Tax exemption/holidays for certain years	Newly locating business in disaster areas

Equity and externality

- ◆ Special/favorable tax treatments for disaster victims may be regarded as inequitable
- ✓ Casualty losses due to causes other than natural disaster are not tax deductible as generous
- ✓ Even high income taxpayers benefit from the special treatments

⇒ Violation of horizontal/ vertical equity

- ◆ There should be external benefits from supporting the disaster victims
- ◆ Prompt recovery and reconstruction of the disaster areas and victims help Japan to revitalize

Arguments against tax hike

- ◆ Arguments for and against tax hike are classified into different dimensions

	Points
Timing of tax hike	When should we raise tax ? ✓ Implementation ≠ Decision making Opposition to raising tax in the near term
Preconditions for tax hike	Spending cuts first? ➤ Utilization of hidden treasure (surplus funds in special accounts) ➤ Cut of public employees ' wages ➤ Scrap (some) policies in the 2009 party manifesto?
Items of taxation	Consumption tax or income tax

Reconstruction tax

- ◆ Issuance of JGB is widely accepted as a measure to secure revenue to finance the reconstruction costs for the time being (JGB issuance as a means of bridge finance)
- ◆ There are differences in opinion in terms of the redemption period of the reconstruction bond
 - Construction bonds = 60-year rule
 - ⇒ Redemption over the long-term = Leaving the burden to future generations
 - Early redemption = Within about 10 years
 - ⇒ Tax hike to secure revenues to redeem the reconstruction bonds

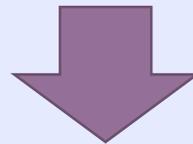
Normative versus practice

- “Temporary” increase in government spending such as reconstruction can be financed by the issuance of government bonds (budget deficits).
 - In the future, the increase in tax revenue due to economic recovery could be used to redeem the bonds.
 - Tax smoothing
-
- Intergenerational fairness = Future generations also get benefit from the reconstruction
- ⇒ Issuing debt is justifiable
- ⇔ The reality of policy making = The government can not control fiscal revenue and expenditure

Function of tax and public finance

Textbook story

	Tax and natural disaster
Resource allocation	Tax smoothing ⇒ Minimizing tax induced distortion and negative consequences on growth in temporary expenses
Income redistribution	Tax exemption/deduction for disaster victims
Macroeconomic stabilization	Overall tax cut to enhance macro consumption and investment



Fiscal sustainability and long run budget balance are assumed in the text book, which is not fulfilled in practice

Characteristics of candidates for “Reconstruction tax”

	Fairness	Size of revenue	Citizen participation
Consumption tax	Regressive	1% hike = ¥2.5tn	Thinly and broadly
Fixed rate surcharge on income tax	Progressive	10% hike = ¥1.2tn	Limited
Inheritance tax	Progressive	Inadequate	Limited
Tobacco tax, alcohol tax	Regressive?	Inadequate	Biased

Disaster reconstruction taxes

- ◆ Total amounts = ¥9.2 trillion

Tax item	Tax Increase	Period
Personal income tax	2.1 % surtax (tax on tax)	25 years from Jan. 2013
Corporate income tax	Delay of the 5% tax cut	3 years after April 2012
Local tax	¥1,000 per person (annual)	10 years after June 2014



Small but effectively permanent tax increase for PIT

Structural problems

Structural problem

- ◆ Earthquake disaster makes the problem with the current fiscal system visible more than creating new challenges.

⇒ We can not achieve the persistent reconstruction without correcting the problems with the current system

Problems	Problems made visible
➤ No proper prioritization of fiscal spending	Tend to cut spending where it is politically easy
➤ Narrow taxable income base	Difficult to raise adequate revenue

Income tax hike?

Options	Revenue increase
Raising tax rate for the highest income bracket (40%)	¥35bn
Fixed rate income tax increase (10%)	¥1.3 tn
Flat tax on the current taxable income base	¥1.5tn

Reference : consumption tax rate hike (1ppt)	¥2.4~2.5tn
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It is important to translate “crisis” into “opportunities” to promote reforms

	Stopgap measures	Opportunities for fundamental reforms
Spending	Review on the DPJ's manifesto policies	Spending reform
Tax system	Ad-hoc tax hike	Fundamental tax reform



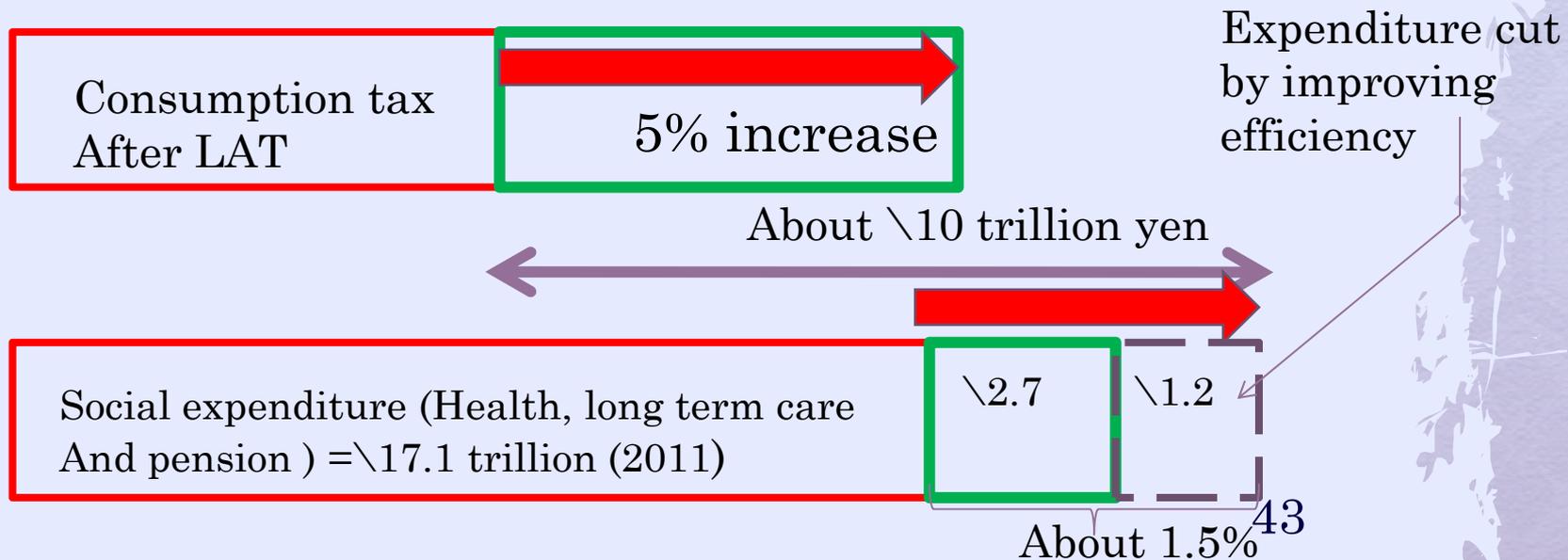
”All-too-easy spending cut”
“All-too-easy tax hike”

Consistency with reforms in other areas

	Complementarity with reconstruction plan
Integrated reform of tax and social security	<ul style="list-style-type: none">• Narrowing the inter-generation gap through burden sharing for reconstruction• Support for disaster victims (especially aged people)
Fiscal decentralization reform	<ul style="list-style-type: none">• Promotion of financially independent municipalities outside disaster
New growth strategy • TPP	<ul style="list-style-type: none">• Transform Tohoku-region into a new growth center with structural reforms• Upgrade/modernize the agriculture industry• Attract/nurture frontier industries

Fiscal consolidation in Japan

- ◆ The government has proposed to gradually double the consumption tax to 10 percent by the mid of 2010s so as to
 - (i) halve the primary fiscal deficit (about 3%) and
 - (ii) to enhance social security spending (about 1%)



Primary fiscal imbalance

- ◆ The fiscal gap is much larger at the central level than at the local level
⇒ The current revenue arrangement does not fit current fiscal balance of the two level governments.
- ◆ Local governments address that they need additional consumption tax revenue to fulfill local social spending.

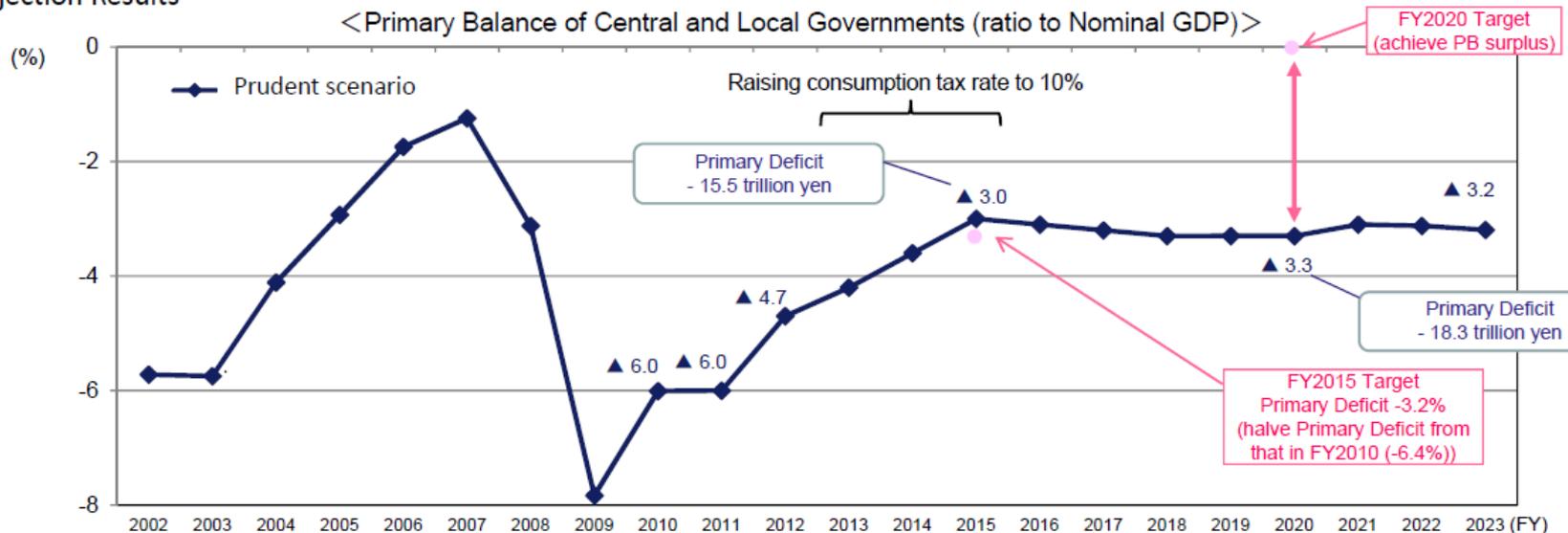
trillion yen

	FY2008	FY2009	FY2010
Central	-19.4	-43.4	-32.9
Local	+3.3	+4.9	+2.1
Total	-16.1	-38.5	-30.8

Can we avoid fiscal crisis?

- ◆ 5% tax rate increase is not sufficient for fiscal consolidation generating primary fiscal surplus by FY2020.
- ◆ Additional tax increase or measure to contain (social) expenditure needs to be in place.

Projection Results

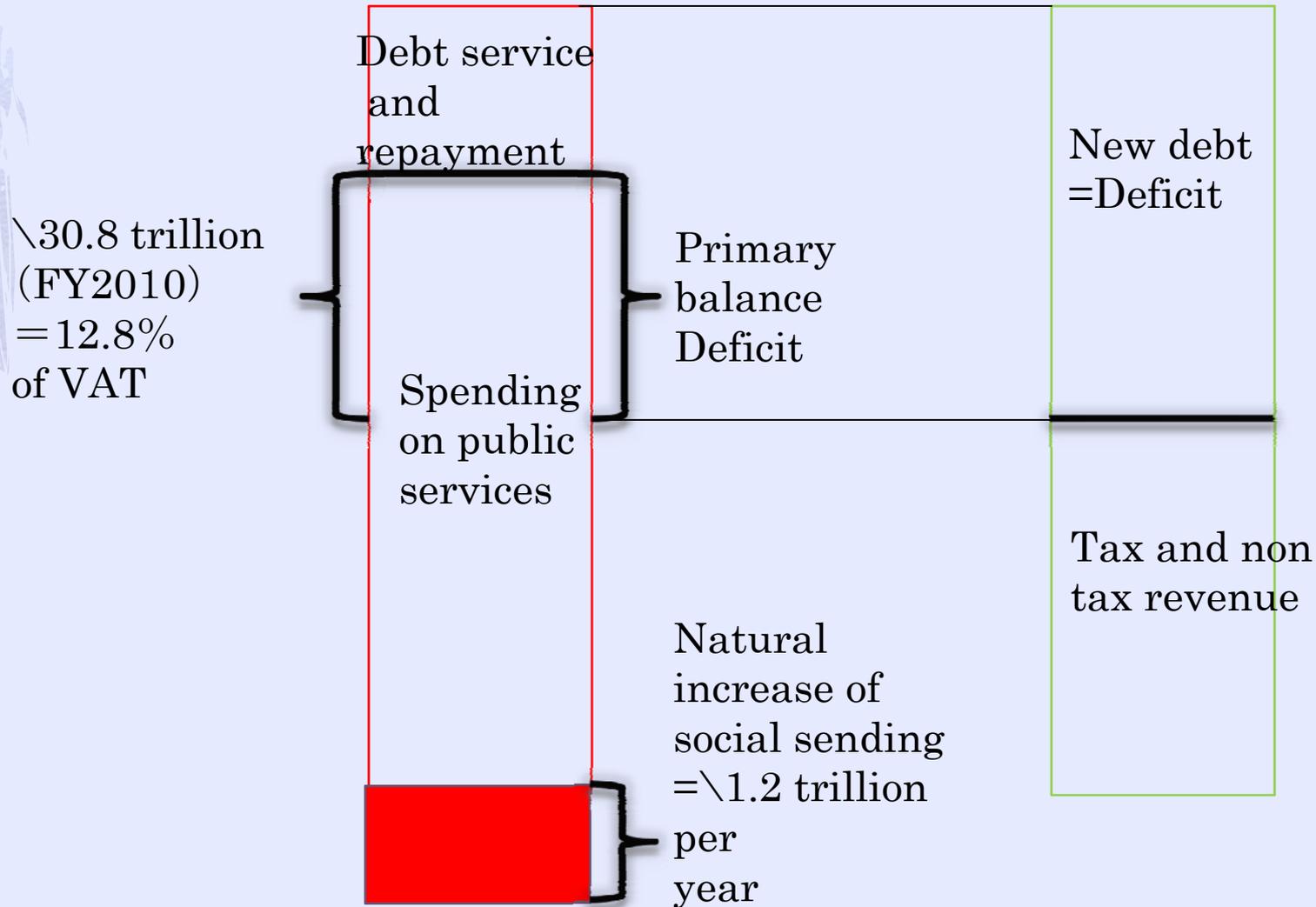


(Note 1) According to "Definite Plan for the Comprehensive Reform of Social Security and Tax", raising the consumption tax rate to 10% gradually from the latter half of FY2013 to FY2015 is mechanically assumed.

(Note 2) Based on "Basic Guideline for Reconstruction in response to the Great East Japan Earthquake", reconstruction expenditures of approx. 19 trillion yen and the corresponding temporary fiscal resources (for 10 years) are assumed.

(Note 3) Figures do not include the expenses and resources of recovery and reconstruction from the Great East Japan Earthquake.

Primary Balance of the central and local government



Reconstruction amid an ongoing crisis

- ◆ The end of the crisis at Fukushima nuclear plant is not in sight yet
⇒ Reconstruction even amid a crisis or normalization first?
- ◆ The nuclear accident, power shortage and harmful rumor should be considered to be the “factors making the future uncertain”, rather than “risks “
- ◆ Formulate alternative plans/roadmaps for reconstruction based on different scenarios about future developments such as the size of compensation payments to people who suffered from the nuclear plant accident

Turning point of the culture (people's way of thinking) about the fiscal and tax issues

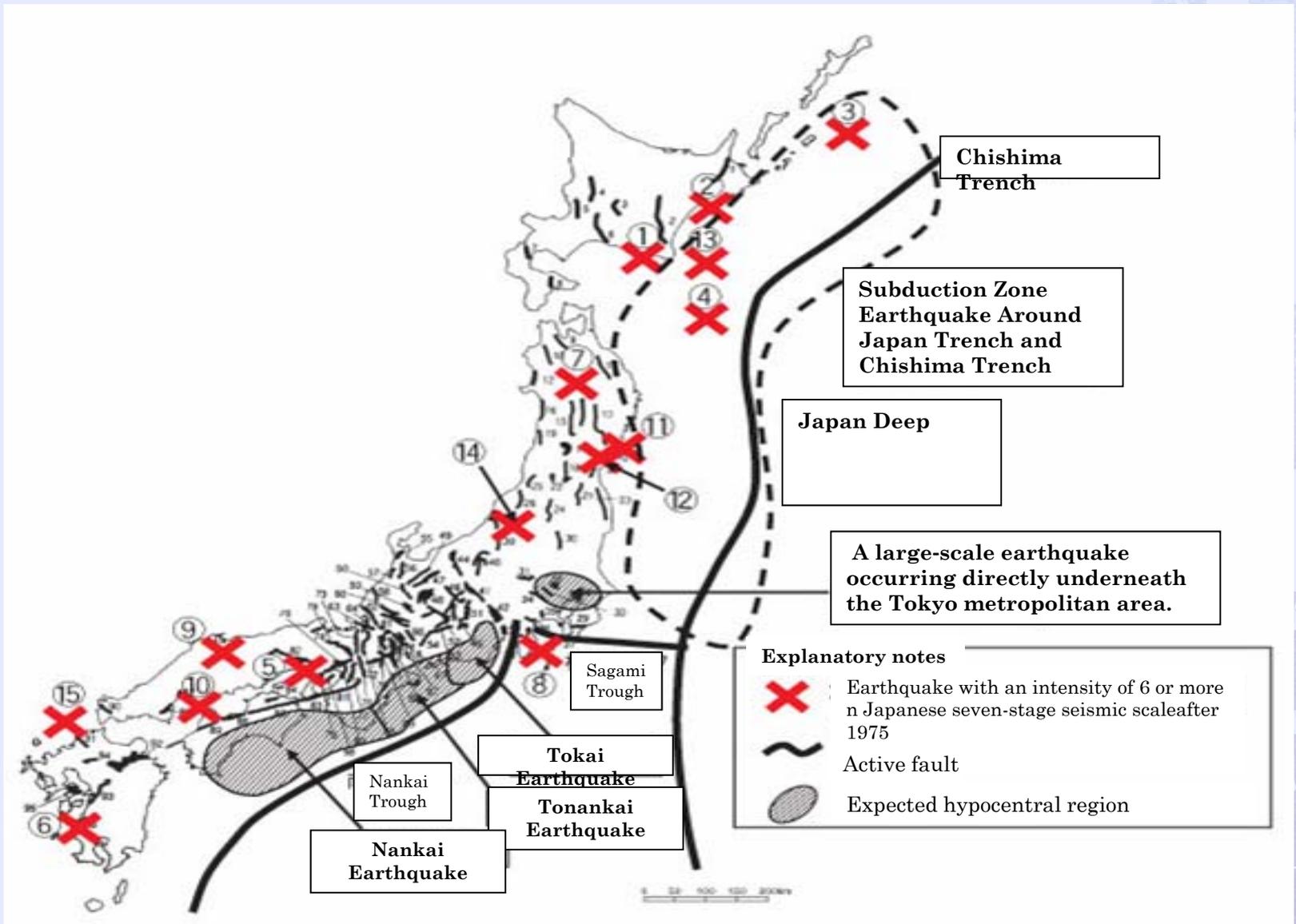
	Before the disaster	After the disaster
Fiscal deficit	<ul style="list-style-type: none"> ▪ Agreement in general but compromise on details 	<p>Relying on fiscal deficit is just like “hoarding” ⇒ Difficulty to reduce “vested interests”</p>
Tax	<ul style="list-style-type: none"> ▪ Someone else would/should bear the burden ▪ Tax increase = something unfair 	<ul style="list-style-type: none"> ▪ Everyone should bear a tax burden “broadly and thinly” ▪ Tax burden is the “fee” for being a member of the society
Consequence	<ul style="list-style-type: none"> ▪ Lack of a sense of ownership ▪ Indifference to politics and government finance 	<ul style="list-style-type: none"> ▪ Emergence of a sense of ownership among public ▪ Stronger surveillance on the government activities

Lesson for the future

Lesson for the future

- ◆ Natural disaster would will continue to hit Japan time to time in the future
⇒ Need to develop (i) preventive and (ii) post disaster measures

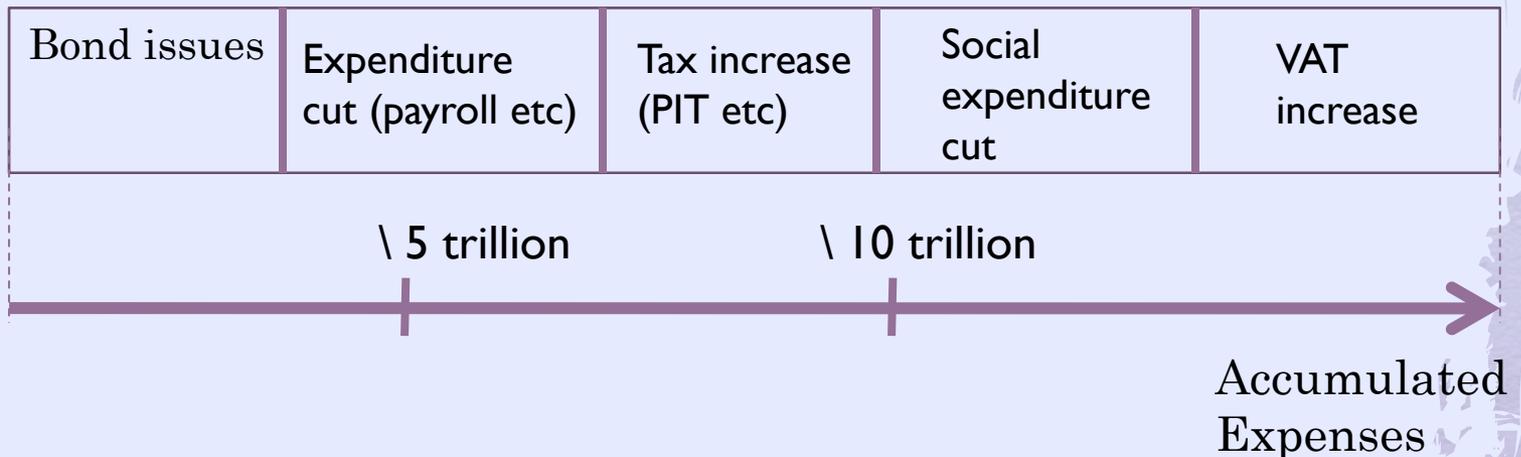
	Example
Preventive measures	<ul style="list-style-type: none">➤ Disaster proof urban planning➤ Earthquake-proofing of a residence⇒ Tax incentives
Post disaster measures	<ul style="list-style-type: none">➤ Blue print plan of reconstruction finance including tax increase⇒ Different scenarios given according different scale of disaster



Source: White Paper on Disaster Prevention 2007

Peggy back order of reconstruction financing

- According to size of reconstruction financing, we set scale and order of finance sources among (i) bond issue, (ii) tax increase and (iii) expenditure cut so as to improve predictability and avoid post disaster argument.



Lesson for others?

What can you learn?

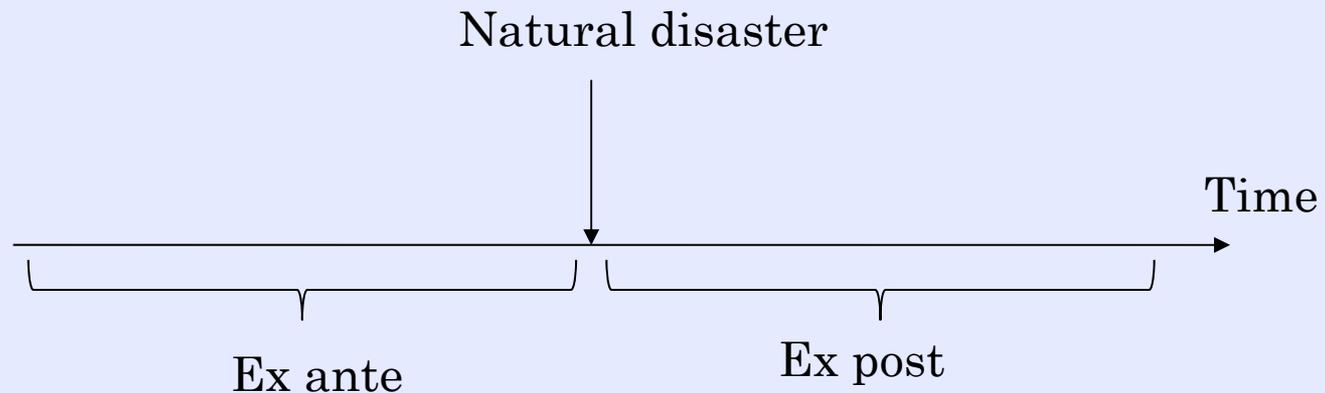
- ◆ Developing economies have suffered from natural disasters as well.
 - ◆ In post disaster regime, both economic and humanistic damages are exacerbated due to structural weakness
 - ✓ Lack of income support
 - ✓ Inadequate financial resources
 - ✓ Lack of administrative capacity of (the central and local) governments
- ⇒ The disaster impact can be mitigated by dealing with these weakness.

Disaster recovery as contingency liability

- ◆ Cost of disaster recovery and reconstruction may be regarded as contingency liability in economics term.
- ◆ Lack of insurance to hedge catastrophic risks as massive natural disaster
⇒ Need precautionary saving
- ◆ Sound fiscal condition as precautionary saving
⇒ Mitigate borrowing cost for recovery and reconstruction

Ex post versus ex ante measures

	Measure
Ex ante (Before disaster)	<ul style="list-style-type: none">➤ Sound fiscal condition as precautionary saving➤ Tax incentive for disaster mitigation
Ex post (After disaster)	<ul style="list-style-type: none">➤ Deduction for casualty losses as risk sharing➤ Strategic tax incentives for reconstruction➤ Favorable tax treatment for charity



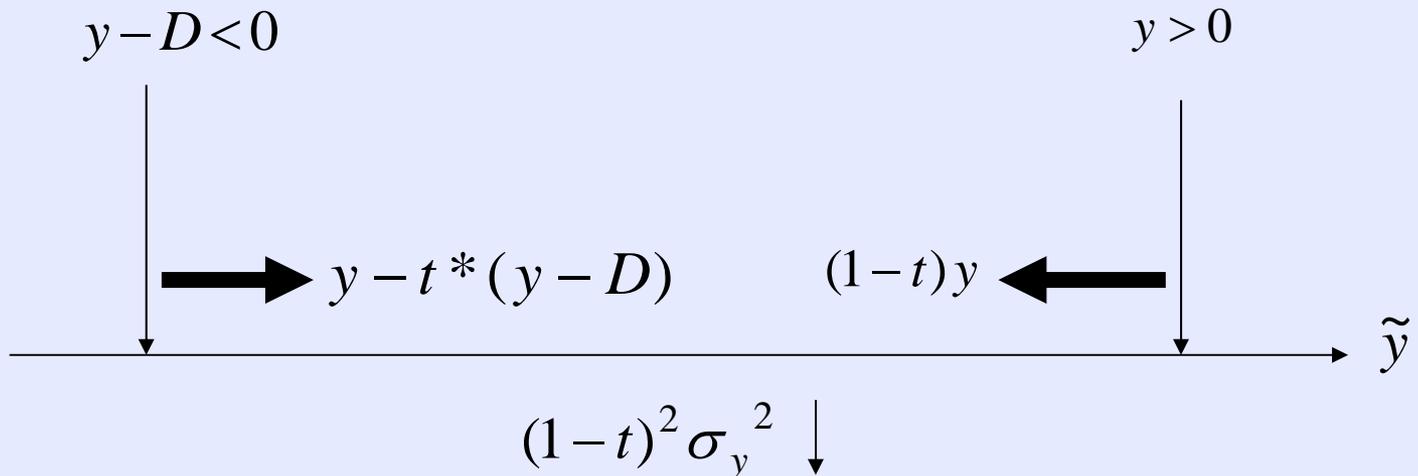
Risk sharing and risk control

- ◆ Tax measures can be designed to deal with both risk sharing and risk control

	Tax	Incentives
Risk sharing	Income tax	Tax deduction for casualty losses
Risk control	Income tax	Tax allowance for expenses on earthquake proofing
	Property tax	➤ Lower tax rate/tax holidays on earthquake proofing houses ➤ High tax (tax penalty) on housing and building in high risk zones

Function of tax

- ◆ Taxpayers can deduct expenses on casualty losses from their income tax liability
- ◆ Lower variance of disposal income
- ◆ Income tax (PIT and CIT) can serve as risk sharing device



Strategic tax measures

- ◆ In post disaster, tax can play active roles in promoting recovery and reconstruction
 - CIT/Property tax exemption/postponement for investments in disaster areas (except high risk zones)
- ⇒ Support economic development
 - Income tax deduction for charity expenses donated to disaster victims
- ⇒ Enhance social solidarity