

VAT Design Issues

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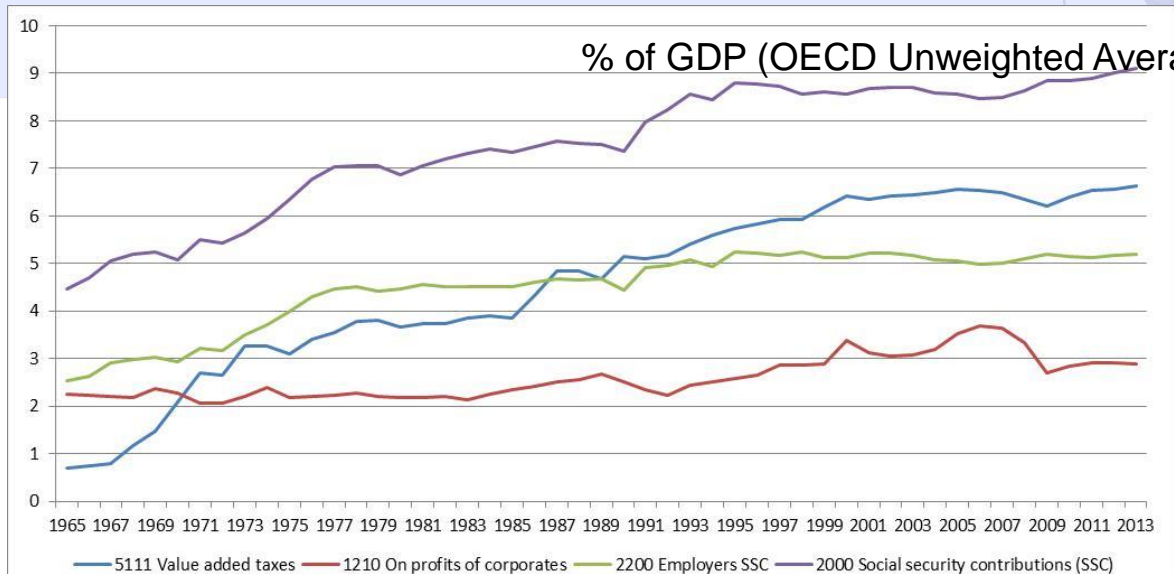
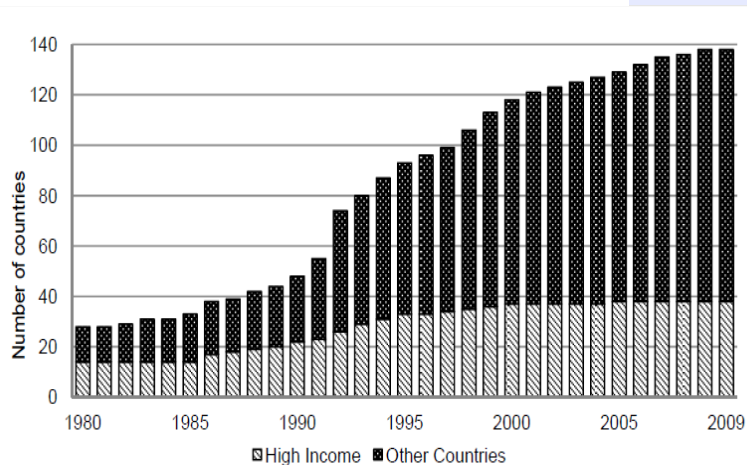
7th IMF-Japan Tax Conference for Asian
Countries

Increasing dominance of VAT

- ◆ In the last decades, (i) VAT has been widely spreading in both developed and developing countries, (ii) its share in GDP increasing relative to CIT and SSC
- ◆ There has been shift in tax mix toward consumption tax away from income taxation including SSC(Social security contribution)

⇒ VAT fits better to newly emerging economic environment namely economic globalization

The Spread of the VAT, 1980–2009



Source: IMF data.

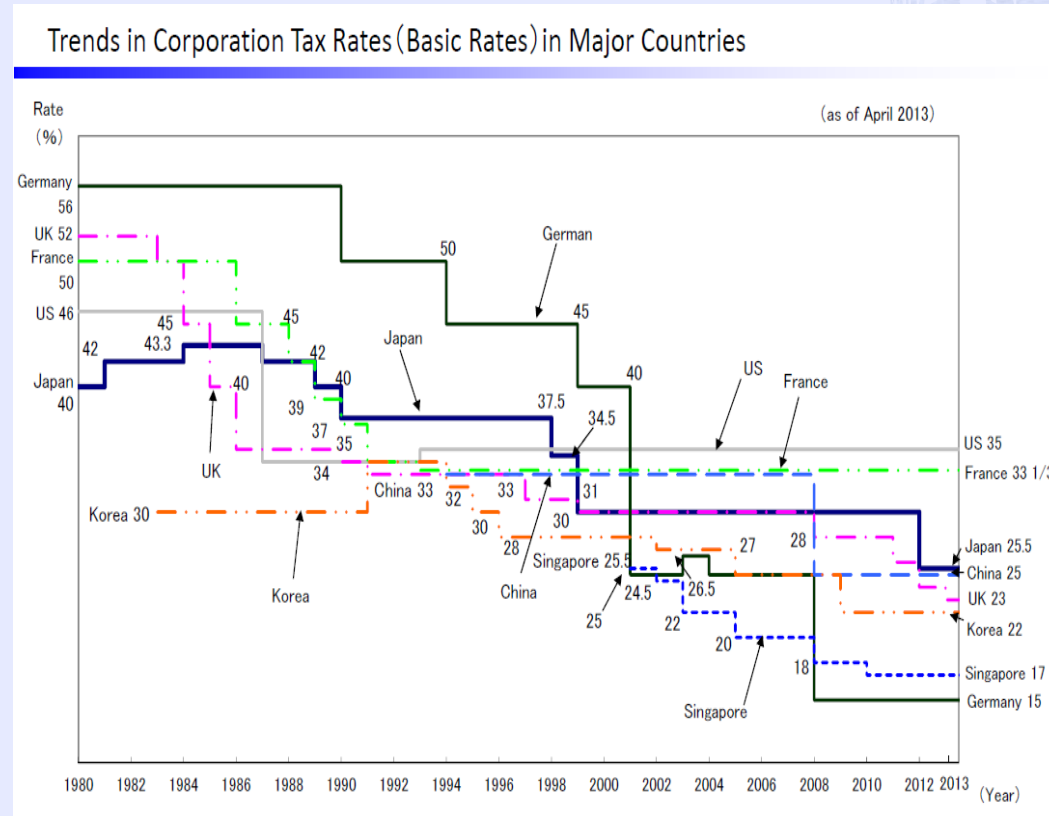
Note: Figure shows the number of countries with a VAT at each date.

Source: OECD² Revenue Statistics

Globalization and International tax competition

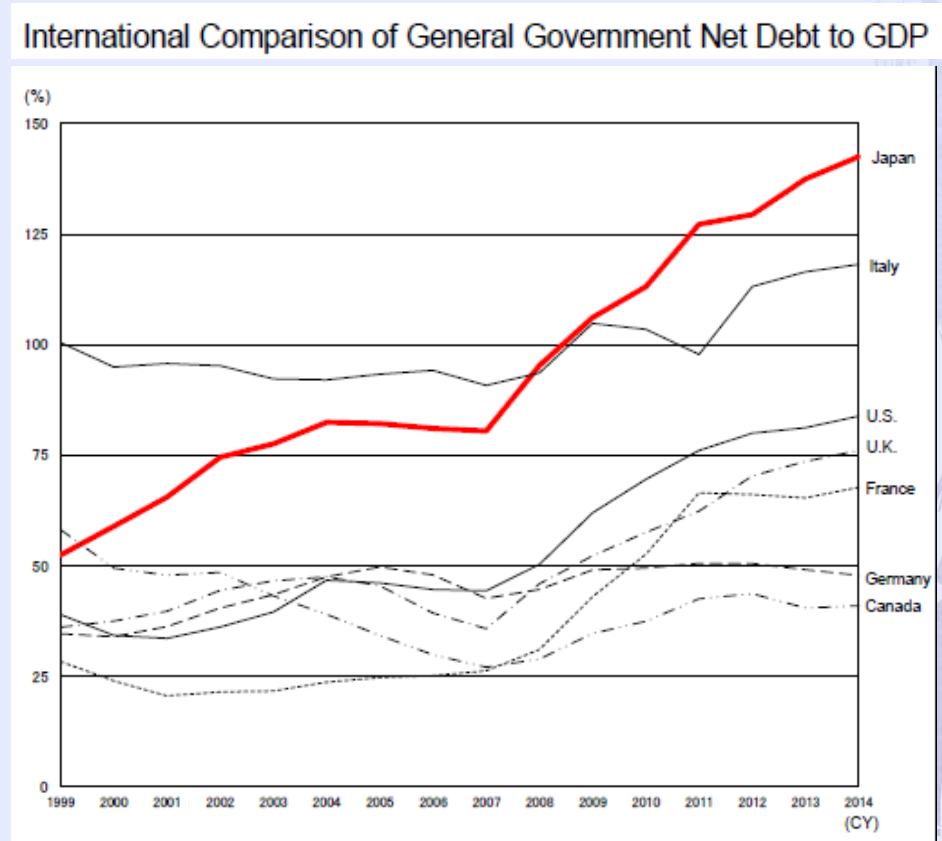
- ◆ With economic globalization, high CIT turn to be impediment to international competitiveness of domestically locating business.
- **High CIT is translated into high production cost**
- ◆ Countries now compete one another reducing own CIT to ① defend domestic business and to ② attract foreign investments/profits

⇒ Globalization intensifies **international tax competition**, consequently constraining taxing power of government,



Accumulating public debt in Japan

- ◆ Net public debt including the central and local gov.s as % of GDP exceed 120% and is growing
 - ✓ The ratio is the highest among major industrial countries.
 - ◆ Gross public debt ratio to GDP is more than 200%!
- ⇒ Government financing does not seem to be not sustainable
- Large source of fiscal deficit is increasing social expenditure including pension, health and long term care due to aging.
 - ✓ Japan is aging!
 - Deficit is “structural” not cyclical.

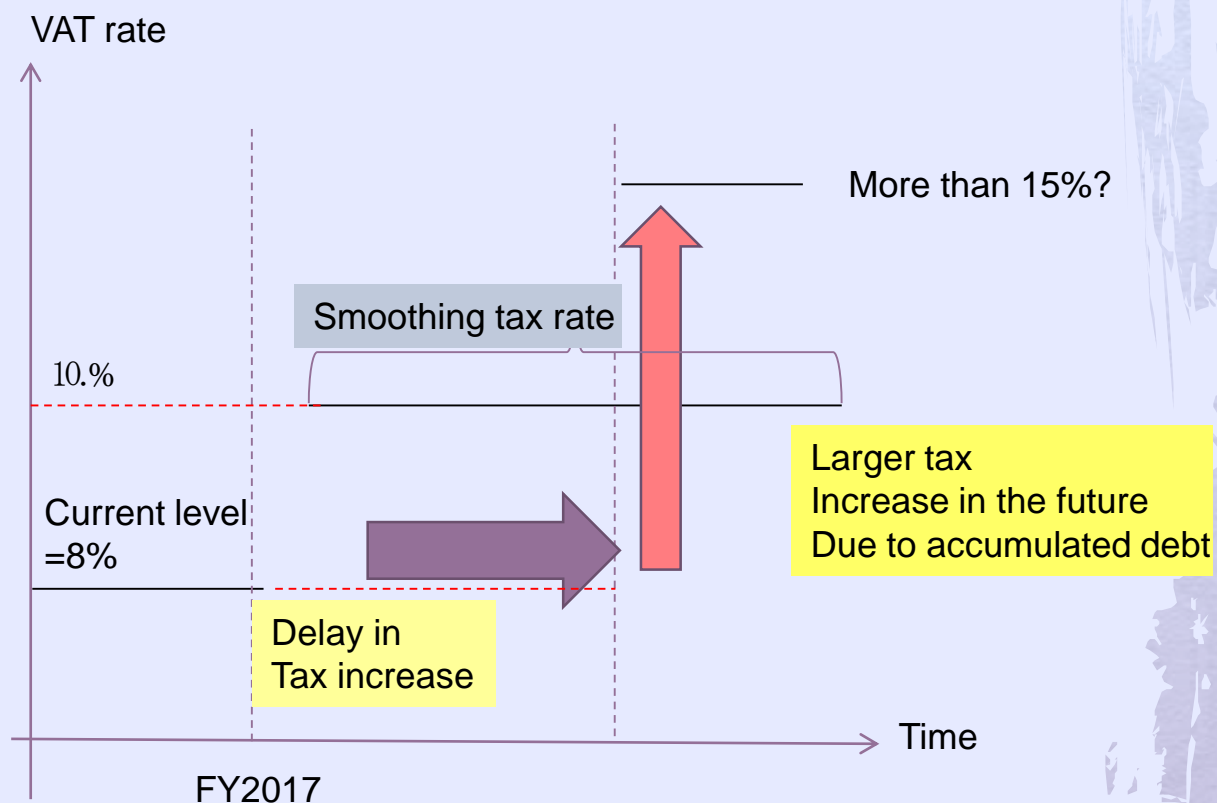


Source :Japanese Public Finance Fact Sheet 2014

Fiscal consolidation is necessary whereas dealing with (i) economic globalization and (ii) society aging

Tax smoothing

- ◆ If fiscal consolidation is inevitable, delaying tax increase requires further tax increase in the future
 - **The sooner the better**
= tax smoothing
- ◆ Which tax to be raised for the consolidation purpose?
 - Compared to other taxes like CIT, consumption tax (VAT) is **growth friendly** in the mid and long term.
- ✓ Japan gov plans to raise VAT to 10% from 8% in April 2017.



The Fiscal Consolidation Plan ---- main points ----

(Cabinet Decision on June 30th, 2015)

- **The commitments of the government**

1) **Primary Balance**: to be in surplus by FY2020

2) **Public debt (to GDP)**: to be steadily reduced beyond FY2020 over the medium- to long-term

- **Mid-term review**

In FY2018, progress will be assessed against the following benchmarks.

- **PB deficit**: approx. **-1%** of GDP in FY2018

- **Size of expenditure**: **extending the recent 3-year trajectory of the expenditure*** of the Central Government **towards FY2018**, that is, the total rise of \1.6 trillion for the 3 years, taking into account the economic and price development.

* excluding the expenditures for (i) national debt service and (ii) local allocation tax grants, etc.

- The government will consider **additional measures** in expenditure and revenue, if needed, to achieve the FY2020 target.

What is good about VAT?

- ◆ VAT burden accrues to the final consumption **domestically and internationally**.
- It does not accumulated at the production stages that assures the production efficiency.
- It does not undermine “international competitiveness”.
- ▣ In contrast, CIT as well as SSC (Social Security Contribution) distorts both (i) production efficiency and (ii) international competitiveness.
- ✓ VAT levied on every stage of transaction works to secure tax revenue as well

Key feature	Economic consequence
Tax refund/credit mechanism	Production efficiency ⇒ Growth friendly
Destination principle	International competitiveness ⇒ Fiscal devaluation

Growth friendly feature

- ◆ VAT does **not distort production process** given that its burden is not accumulated due to tax refund/credit mechanism
- ◆ It then turns out that VAT is growth friendly relative to other taxes including CIT and SSC.
- ✓ Tax burden undermines growth but **VAT is less harmful**
- ◆ There has been empirical evidence that shifting toward VAT away from income taxation under tax revenue neutrality is growth promoting

Effect on growth		Revenue neutral tax reduction			
		PIT/SSC	CIT	VAT	Property tax
0.1% increase in tax revenue share	PIT/SSC		+0.101%	-0.096%	-0.135%
	CIT	-0.118%		-0.204%	-0.240%
	VAT	+0.092%	+0.216%		-0.012%
	Property tax	+0.155%	+0.271%	+0.071%	

Source: Arnold (2008) DO TAX STRUCTURES AFFECT AGGREGATE ECONOMIC GROWTH? EMPIRICAL EVIDENCE FROM A PANEL OF OECD COUNTRIES, ECONOMICS DEPARTMENT WORKING PAPERS, OECD

Data: OECD countries

Fiscal devaluation

- ◆ VAT is not translated into high export price given that export is zero rated under the destination principle.
 - Import is taxed on the other hand which assure equal footing in competition between import and domestic goods.
 - ◆ Moving away from income taxation to VAT is a sort of equivalent to currency devaluation at least temporarily
- = **Fiscal devaluation**
- Fiscal devaluation enhances international competitiveness of domestically produced goods.

SSC and CIT
as production cost

$$\begin{aligned} & \$\text{Export product price} \\ & = \backslash \text{Export product price} \\ & \div \text{Exchange rate (ex. } \$1 = \backslash 120) \end{aligned}$$

Source: De Mooij and Keen (2013)

SSC paid
by employers

Impact on net exports of
SCR-cut financed by

SCR		
PIT	1.22	(1.21)
CIT	3.18**	(1.64)
SCE	2.64	(1.82)
VAT	2.56*	(1.57)

Remark: Net export change in terms
of % of GDP

Data: OECD countries

SSC paid by employees

Decrease in FDI
= Import reduction

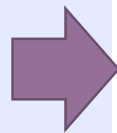
Distributional implication of VAT

- ◆ VAT is often regarded as regressive since the poor may bear more tax burden in terms of tax payment ratio to annual income
- Such regressive nature can be mitigated through targeted transfer to the poor.
- ✓ Ex. GST refund in Canada
- ◆ **Transfer or refundable tax credit is more effective measure than reduced VAT rates** on foods and other necessity goods

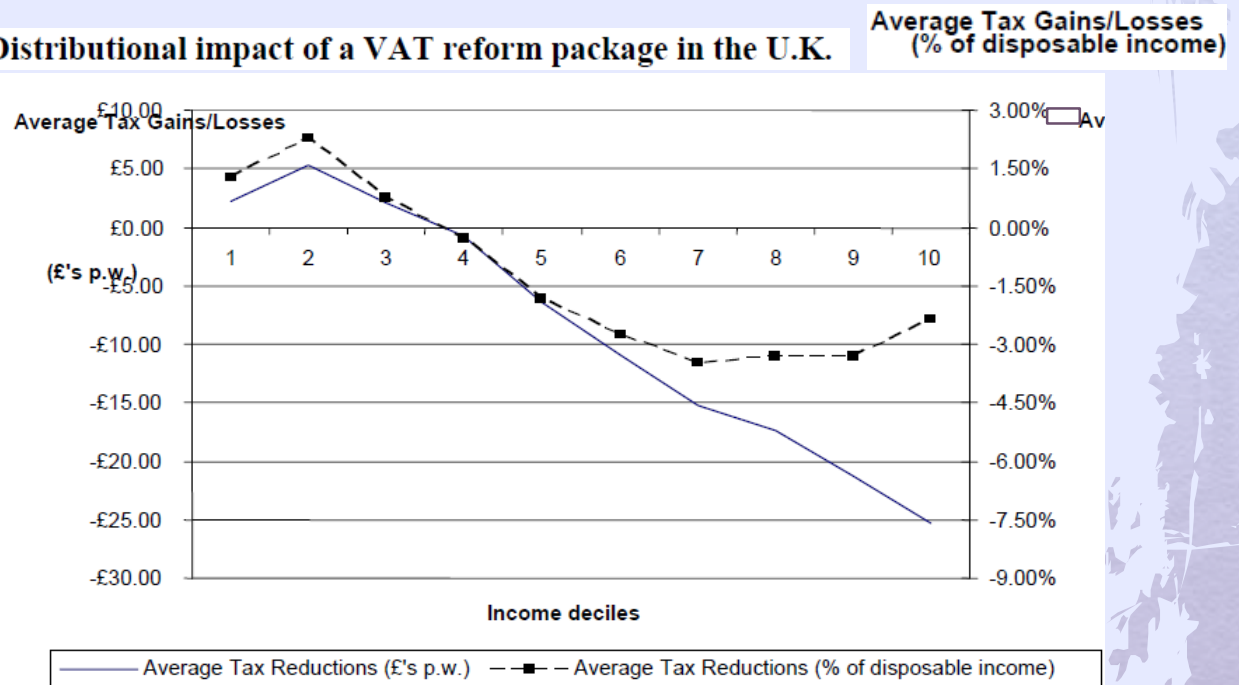
◆ Mirrlees review (UK)=Replacing reduced tax rate by transfer to the poor can achieve more equitable distribution

□ Atkinson and Stiglitz theorem

✓ **Uniform VAT with transfer to the poor** is more efficient than multiple VAT for redistributive purpose



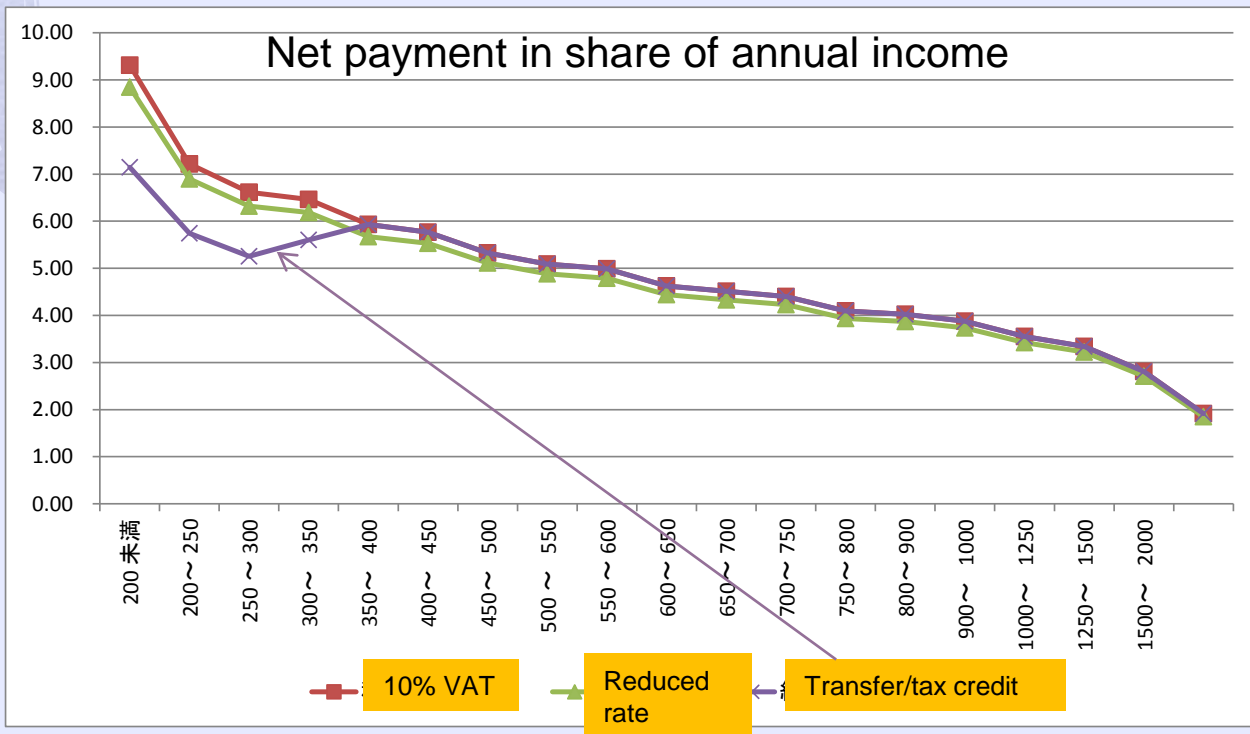
Distributional impact of a VAT reform package in the U.K.



Source: Crawford et al (2010).

Two measures: a simple simulation

- Two measures to mitigate the tax burden of the poor
- ✓ Spending 0.4% of VAT rate = About 1 trillion yen or 0.2% of GDP
- Reduced tax rate of 8% applying to foods except alcohol and restaurants
- Transfer of 2.2 thousand yen per capita reducing at the rate of 7% of annual income in excess of 3 million yen



Transfer/tax credit is better to mitigate regressive-ness of VAT



Despite that, Japan government decided to adopt reduced tax rate after VAT rate increase to 10% in April 2017

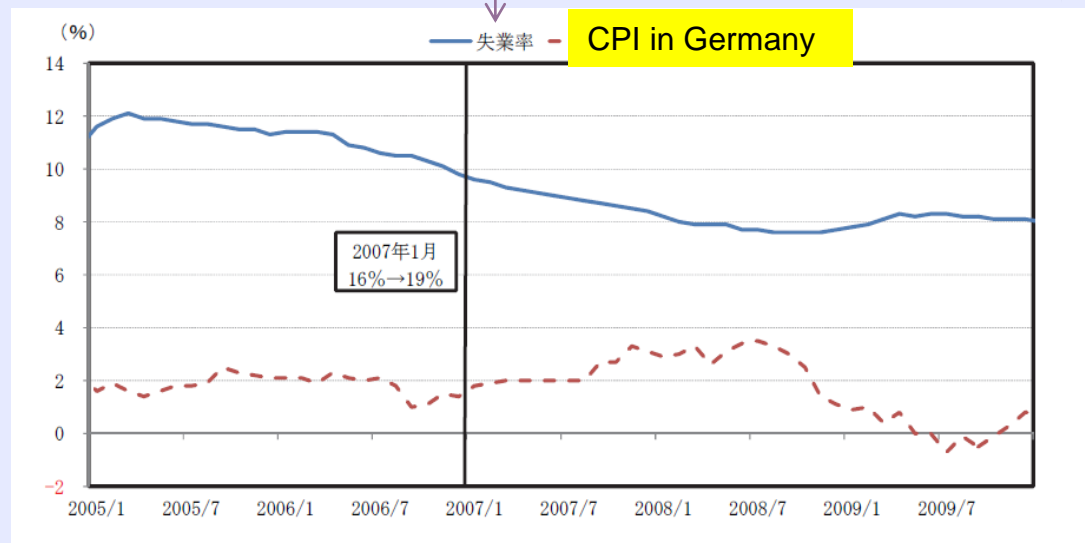
Inter-temporal effects of VAT increase

- ◆ Announcement or anticipation of VAT rate increase will induce **inter-temporal substitution of consumption**
- Given that the future tax inclusive price increases relative to the present one, consumers are motivated to spend now especially on durable goods
- ◆ Increasing the current consumption raises overall price which serves to mitigate VAT induced inflation = **Inflation smoothing**

- ◆ In Germany, core inflation rose by 0.36 percentage point in 2016 and by a further 0.40 percentage point at the time of the VAT hike in 2017
- Carare and Danninger(2008).



Disturbing impact on macro economy is mitigated

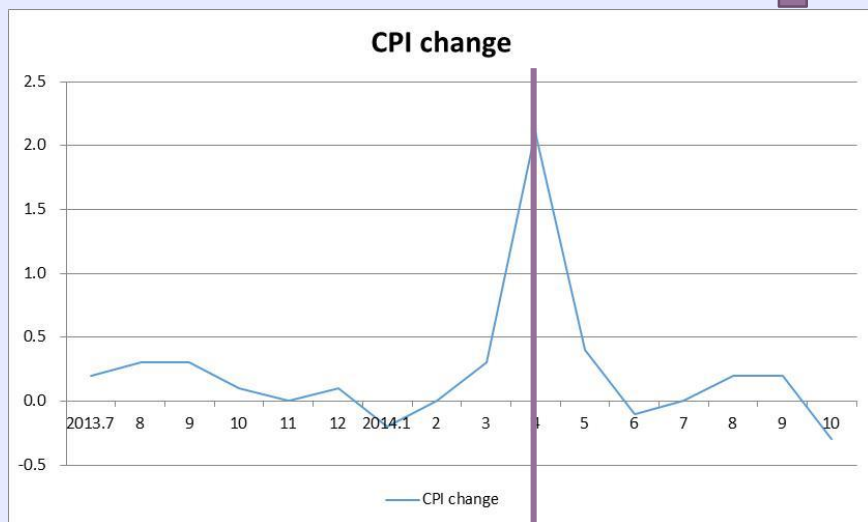


Theory and Practice: Consumption tax shock in Japan!

- ◆ In Japan, **inflation smoothing did not work** at the time of raising its VAT rate from 5% to 8% on April 2014
- Intertemporal substitution effect of consumption was substantial with consumption increasing just before the VAT rate hike and diminishing afterward

⇒ Macro economy was temporarily disturbed

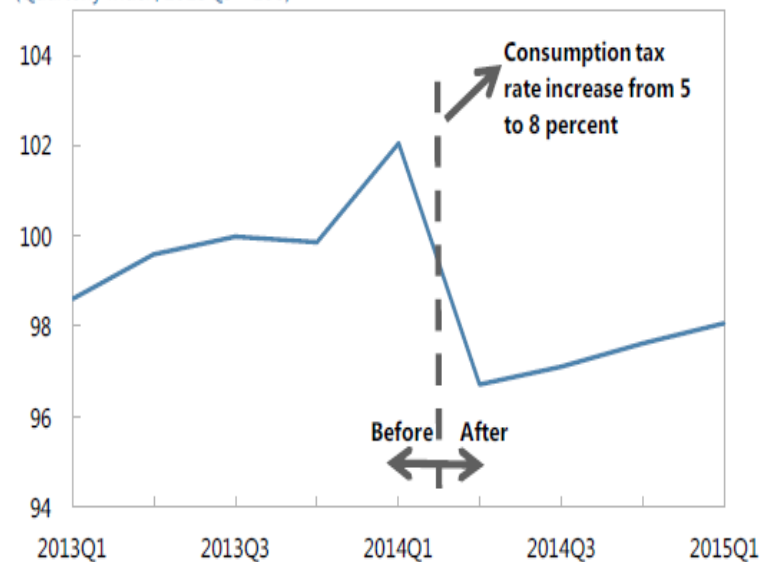
✓ Growth rate recorded minus in the two consecutive quarters 9 in 2014



VAT increase from 5% to 8%

Private Consumption before and after the Tax Increase

(Quarterly index; 2013Q3= 100)



Source :IMF Article IV Consultation 2015

Theory and Practice: Who bear VAT burden?

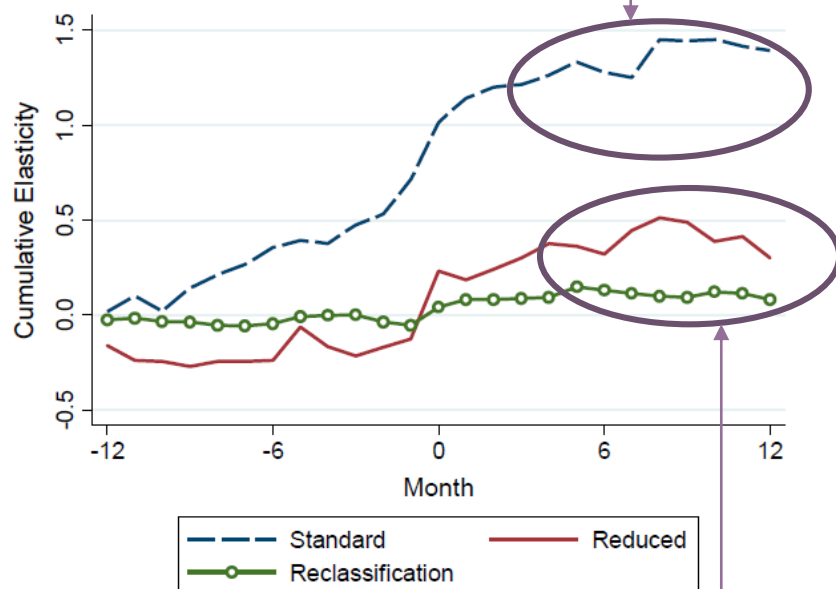
- ◆ In theory, VAT is ultimately born by final consumers.

In practice

- (i) there exist exempted/untaxed goods/services/traders and (ii) those with reduced tax rates
- Announcement/anticipation of VAT rate increase changes inter-temporal relative price.
- ⇒ substitution effect
- Market may be imperfectly competitive with producers exercising price controlling power
- Market price may be rigid, producers cannot change price frequently
- ◆ Depending on (i) VAT and (ii) market structures, incidence of VAT could change

Over-shifting

Figure 2: Cumulative Pass Through by Type of VAT Rate Change



Source: Benedek, De Mooij, Keen and Wingender (2015)

Data: Eurozone countries from 1999 to 2013

Under-shifting

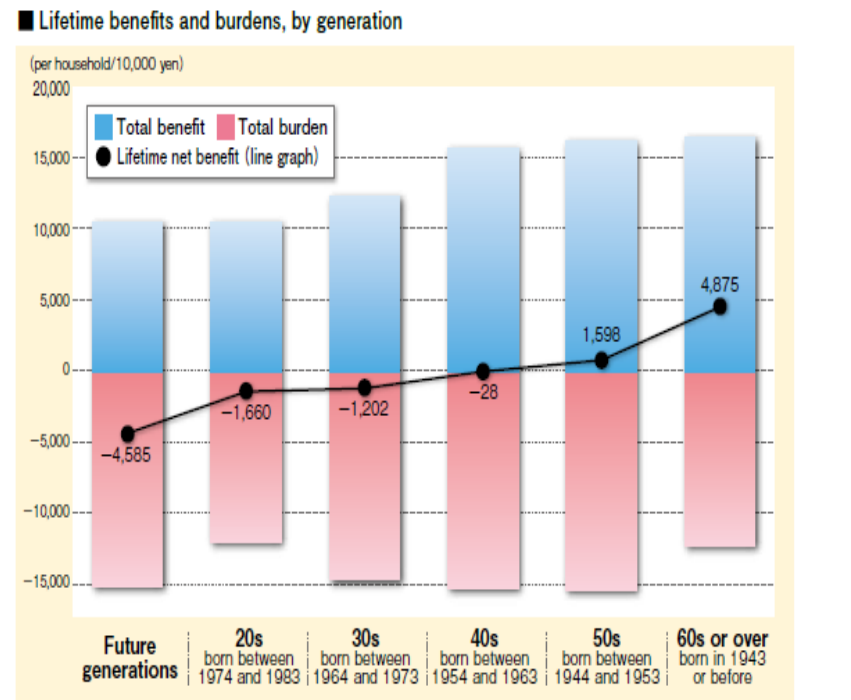
Theory and Practice: VAT and Intergenerational equity

- ◆ In theory, VAT is equivalent to tax on lifetime income.
- Lifetime consumption = Life time income

- ◆ For the elderly, VAT serves to tax on their savings/assets which they withdraw to consume
- Old time consumption = Pension + savings assets (inclusive of interests)

- ◆ Compared to SSC that is mostly born by the working age populations, VAT financed social expenditure works to improve inter-generational equity.
- ✓ **VAT as tax on the old generations!**

Intergenerational inequity in terms of benefit received and taxes/SSC paid



(Source) Cabinet Office, "Annual Report on the Japanese Economy and Public Finance FY2005"

(Note) The data in the above graph are based on a test calculation made by generational accounting, which measures the relation between the total lifetime benefits from the government sector (e.g. social security benefits and public services) and the total lifetime burdens of payments to the government sector (e.g. tax and social security premiums) for each generation.

Theory and Practice :VAT with weak tax administration

$$\text{VAT revenue} \div \text{Standard tax rate} * \text{Consumption}$$

Table 1. VAT Features by Income Group

Income Class	Average VAT Rate	Number of strictly positive VAT rates	C-efficiency
Low-Income	16	1.28	38.0
Lower Middle-Income	13	1.94	46.6
Upper Middle-Income	15	1.90	51.6
High-Income	20	2.52	55.6

INTERNATIONAL MONETARY FUND **Revenue Mobilization in Developing Countries**
March 8, 2011

Table 3.3.8. Average Informality Weighted by Total GDP in 2005

	Region	Mean	median	min	max	sd
EAP	East Asia and Pacific	17.5	12.7	12.7	51.0	10.7
ECA	Europe and Central Asia	36.5	32.8	18.2	66.7	8.6
LAC	Latin America and the Caribbean	34.7	33.7	19.3	66.1	8.0
MENA	Middle East and North Africa	27.3	32.7	18.2	37.2	7.8
OECD	High Income OECD	13.5	11.0	8.7	27.9	5.6
OHIE	Other High Income	20.8	19.5	12.4	33.4	4.8
SAS	South Asia	25.1	22.2	22.2	43.7	5.9
SSA	Sub-Saharan Africa	38.4	34.1	22.6	61.8	11.3
World		17.2	13.4	8.7	66.7	9.9

Source : Schneider et al (2013) "Shadow Economies All over the World"
Policy Research Working Paper, World Bank

◆ Weak tax administration could undermine VAT revenue capacity lowering C-efficiency..

◆ VAT levied in formal economy induces economic activities to move to informal sectors.

⇒ Do we need alternative of VAT that fits better to developing countries?

➤ Emraan and Stiglitz (2005)

◆ Need to improve tax administration capacity..

□ Both design and administration matter!

For VAT to work....

- ◆ VAT fits better to economic globalization preserving growth and international competitiveness compared to other taxes
- ◆ Distributional concern can be dealt by transfers and other expenditure measures targeted to low income class
 - Efficiency and equity can be both enhanced
- ◆ VAT can improve inter-generational equity in era of society aging, making tax burden across generations fairer.
- ◆ The presumptions are that
 - Market is flexible to allow inflation smoothing
 - Tax base is broad minimizing use of reduced tax rates
 - Inter-temporal and inter-sectoral substitution induced by VAT increase and rate differentials will disturb economy.
 - Tax enforcement is strong and tax administration is competent.