

SOFT DRINK INDUSTRY AND THE ECONOMIC IMPACT OF EXCISE TAX ON NON-ALCOHOLIC CARBONATED SOFT DRINK IN VIETNAM

Dr. Nguyen Dinh Chuc

Introduction

- ❖ The Law on Excise Tax:
 - Ratified in 2008; 16 groups of commodities
 - Role: the economic development, state budget, production and consumption pattern, the commitments of the country with WTO,...
- ❖ 7th February 2014: a draft of the modified excise tax law => carbonated non-alcoholic drink subject to excise tax
- ❖ **The economic impact of the excise tax imposition on the soft drink industry in Vietnam?**

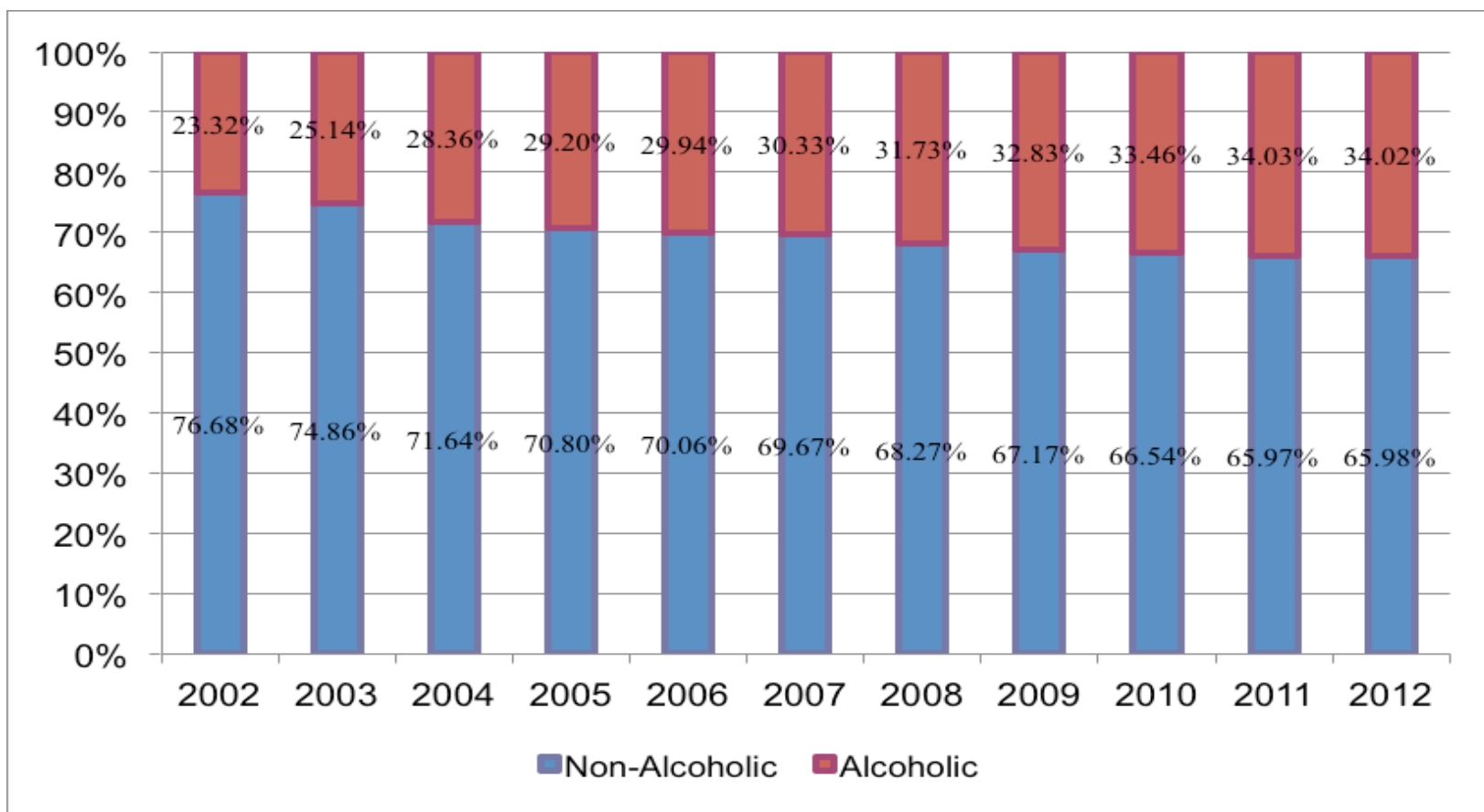
Soft drink industry in Vietnam

I. Overview

- ❖ A potential market for soft drinks: population (2011: 87.6 million, increase 1%/year), GDP per capital (1,300USD/year),...
- ❖ A highly competed with the presence of multiple players: 134 enterprises (FDI and domestic enterprises)
- ❖ The rapid development of domestic enterprises
- ❖ Average growth rate: 16.73% (2008-2013)
- ❖ Food and drink sector: VNR500 2013 => ranked 4th in revenue, 2nd in average ROA, 3rd in average ROE); contribute 15% to GDP

2. The structure of the Vietnam soft drink industry

Figure 1: Structure of Vietnam soft drink industry



2. The structure of the Vietnam soft drink industry

❖ Non-Alcoholic Drink

The volume structure: be more diversified

- Share of tea and coffee: ↓. Tea: 50.15% (2002) down to 39.97% (2012). Coffee: 15.3% (2002) down to 8.87% (2012).
- The share of Ready-To- Drink (RTD): ↑. RTD Tea: 30.84% (2002) to 52.26% (2012). RTD Coffee: 32.09% (2002) to 45.95% (2012).
- Dairy/soy beverages: 17.12% (2002) up to 21% (2012) => the efficiency of the National Strategy on Nutrition

The value structure: tea, coffee, dairy/soy beverages => main products (2012: 72.95% of non-alcoholic drinks)

The price change: increase 6.2%/year. Core sparkling drinks (↑ 8%/year), Juice drinks (↑ 6.4%/year)

2. The structure of the Vietnam soft drink industry

❖ Alcoholic Drinks

The volume structure:

- Dominated by beer: (93.73% in 2012, ↑ 10.37%/year in 2002-2012)
- The others Alcoholic Drinks: ↑ slowly (5.8%/year in 2002-2012). 2012: 40.5 million units, go up 2.8%)

The value structure: beer take most of the market

(93.73% in 2012, increase 17.22%/year in 2008-2012). 2012: US\$ 5,870.6mn, go up 18.14%. The others Alcoholic Drinks: ↑ 9.7%/year in 2008-2012.

Methodology and approaches

1. Price elasticity approaches: $E_d = (\Delta Q/Q) / (\Delta P/P)$

E_d : price elasticity of demand, $\Delta Q/Q$: percentage change of demand and $\Delta P/P$: percentage change of price

⇒ $E_d=0$: Perfectly inelastic demand; $-1 < E_d < 0$: Inelastic or relatively inelastic demand; $E_d=-1$: Unit elastic, unit elasticity, unitary elasticity, or unitarily elastic demand; $-0 < E_d < -1$: Elastic or relatively elastic demand; $E_d=-\infty$: Perfectly elastic demand

⇒ Affect revenue or output of a commodity

2. Excise tax and its impact: depend on the price elasticity of demand for those goods and services. The cost of consumers and producers for the application of excise tax

Methodology and approaches

3. An empirical approach to elasticity measurement

Functional form: $\ln Y = \beta_1 + \beta_2 \ln X$

$$\ln Y = \beta_1 + \beta_2 \ln P + \beta_3 \ln X_1 + \dots + \beta_n \ln X_n + \alpha_m \ln(X_p X_q) + e$$

The slope parameter is a direct measure of elasticity

=>

Y: the quantity demanded, P: price, X1 to X2: control variables, interaction between control variables, e: residual

Database: monthly volumes and values of soft drinks sold in the market of the **6 largest cities/provinces** (Hanoi, HCM city, Da Nang, Can Tho, Hai Phong, Nha Trang) in Vietnam in the period from 2007 to 2013 provided by professional market research company – Canadean.

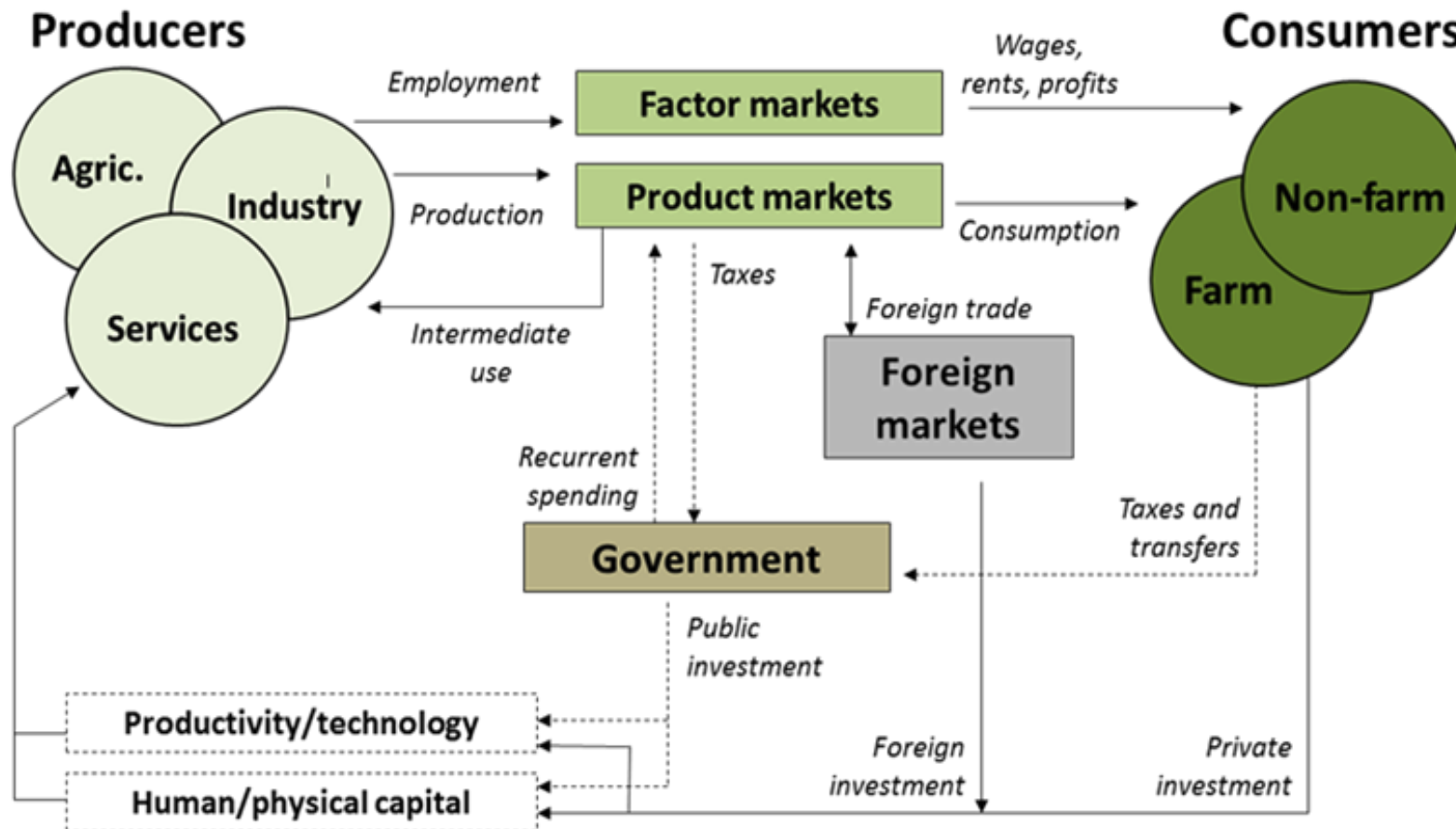
Methodology and approaches

4. General equilibrium approach

- ❖ CGE (Computable General Equilibrium) approach: analyze the impacts of industrial and sector-level policies
- ❖ Constant returns to scale; Intermediate demand: fixed technology coefficients; constant elasticity of substitution (CES) production functions allow factor substitution based on relative prices

Methodology and approaches

Conceptual Framework for the Economy-wide Model



Methodology and approaches

- ❖ Substitution possibilities exist between production for the domestic and the foreign markets. The small-country assumption
- ❖ The model distinguishes between 30 representative households that are disaggregated across the two sub-national regions (i.e., Mekong Delta and RoV), by farm/nonfarm, fish/crop-only farms, and by per capita expenditure quintiles.
- ❖ Three broad macroeconomic accounts: the government balance, the current account, and the savings-investment account
- ❖ Calibrated to the 2011 social accounting matrix (SAM) (update from 2007)

Impact of excise duty imposition

1. *Empirical results: impact on the industry*

The relationship of quantity demanded and prices of other drinks. E.g. Sparkling soft drink and its price. The regression results:

$$Y_{SSD} = -2.81 * P_{SSD} + 0.0009 * dGDP + 3.98 * P_{ED} - \\ 0.96 * P_{FJ} - 1.98 * P_{PW} - 0.55 * P_{SM} + 1.81 * PP_{SSDED}$$

Y: the quantity demanded of sparkling s ; dGDP: growth of GDP (increase in income of customers); P_{ED}, P_{FJ}, P_{PW}, P_{SM}: price of energy drink, fruit juice, packaged water, soya milk; PP_{SSDED}: the interaction between its own price and price of energy drink

⇒ Carbonated soft drinks: sensitive with the change in price. Price ↑ 1% ⇒ Demand ↓ 2.8%.

⇒ **Excise Tax Rate ↑ 10% ⇒ Demand ↓ 28%**

I. Empirical results: impact on the industry

Table: Effects of Excise Tax of 10% on Carbonated Soft Drinks in 6 largest cities/provinces

No	Items	Carbonated soft drink
1	Price elasticity of carbonated soft drinks	-2.8
2	The quantity average demand in 2013 ('000 units)	3,927
3	Average sale value in 2013 (million vnd)	470,822
4	Total sale value in 2013 (million vnd)	5,649,864
5	Average price of carbonated soft drinks ('000 vnd)	120
6	Proposed excise tax rate on carbonated soft drinks (%)	10
7	Price after excise tax	129
8	Quantity of carbonated drinks after excise imposition ('000 units)	3,102
9	Loss/gain of quantity demanded of carbonated drinks ('000 units)	-825
10	Average sale value after excise imposition (million vnd)	399,846
11	Loss/profit in a month (million vnd)	-70,976
12	Loss/profit in a year (million vnd)	-851,717

2. Empirical results: impact on the economy

Table: Vietnam in 2011

Items	Value
GDP by current price (billion VND)	2,535,008
Structure of GDP (%)	
Agriculture, forestry and fishing	22.02
Industry and construction	40.79
Service	37.19
GDP by expenditure category at current prices (billion VND)	2,535,008
GDP by expenditure category at current prices (%)	
Gross capital formation	32.63
Gross fixed capital formation	29.41
Changes in stocks	3.22
Final consumption	70.79
State	6.48
Private	64.31
Trade balance (goods & services)	-4.22
Statistical discrepancy	0.8

2. Empirical results: impact on the economy

- ❖ Excise tax on carbonated soft drinks 10% \Rightarrow demand \downarrow
 \Rightarrow output and production of the industry $\downarrow \Rightarrow$
customers and suppliers \downarrow , income of household \downarrow
- ❖ Excise tax on carbonated soft drinks (imposed on
factory prices) 10% \Rightarrow quantity of domestic
productions soft drinks \downarrow 0.58%, GDP \downarrow 0.010% (US\$
12.1 mn)

2. Empirical results: impact on the economy

• 3. Empirical results: impact on the Government budget

No	Government budget components (million VND)	Carbonated soft drink
1	Increase in government revenue due to excise tax imposition	396,541
2	The loss of value added tax revenue	-85,172
3	The loss of enterprise income tax	-77,105
4	Government revenue (revenue subtracted by losses)	234,264

- **Excise tax imposed on factory price: CGE approach:** GDP ↓ US \$ 12.1 mn => Government revenue ↓ US\$ 2.7 mn (VND 56.5 billion) => Total government revenue will **increase US\$ 8.46 mn**

Comparision with Indonesia case

A similar but more comprehensive study on Indonesia shows that, imposition of excise tax on carbonated drinks of RP 3,000 (equivalent to increase in price of 37,8%) will result in the following impacts

Decrease in soft drink industry revenues	Rp. 5.6 trillion	US\$ 487.2 mn
Decrease in government revenue	Rp. 783.4 billion	US\$ 68.2 mn
Decline in GDP	Rp. 12.2 trillion	US\$ 1,061.4 mn
Decrease in wage and salary income	Rp. 1.56 trillion	US\$ 135.7 mn

Conclusion

- ❖ ***Economic impact of excise tax imposed on non-alcoholic soft drink:***
 - Government revenue increase by 8.46 million
 - Soft drink industry revenue loss of **USD 40.5 million** (VND 851 billion)
 - USD 12.1 million (VND 253.5 billion) loss to other sectors
 - Other negative impacts: employment effect, income effect, influence on other drinks, cost of running a system of excise tax collection
 - The imposition of excise tax on carbonated soft drink is questionable economically.

Thank you!