

## **Economics of Tobacco for the East Asian and Pacific (EAP) Region**

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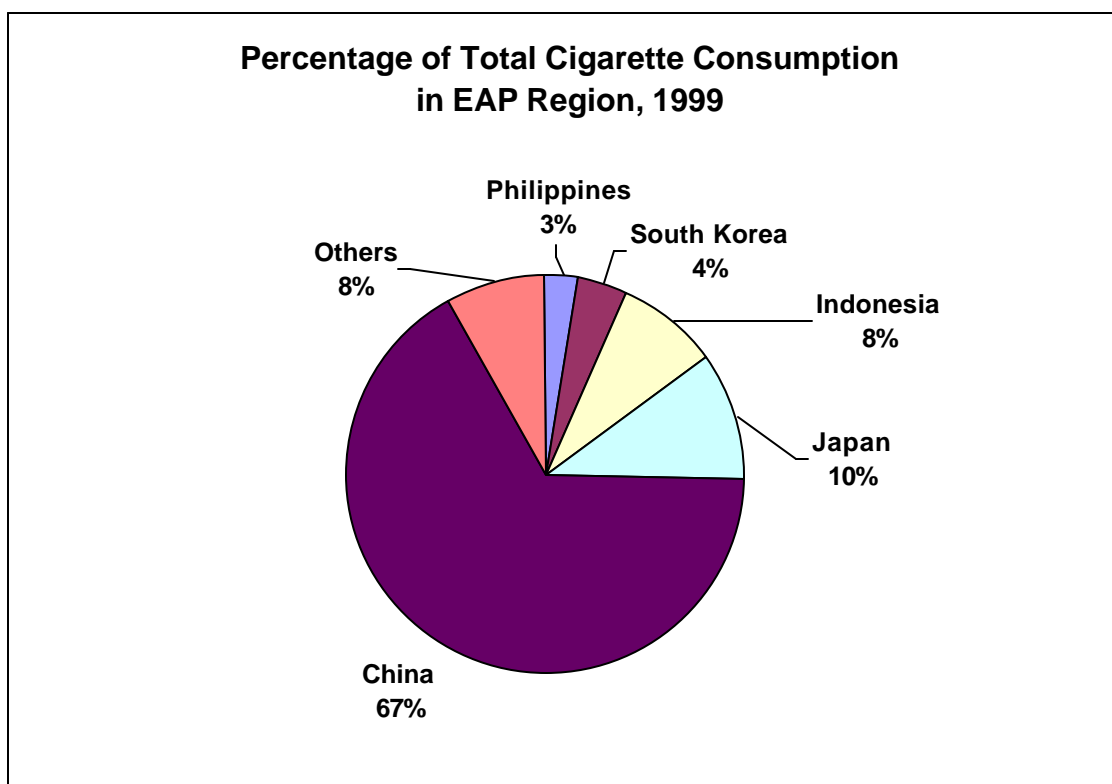
## **I: Executive Summary**

The East Asia and Pacific (EAP) region includes 23 countries / (regions): Australia, Brunei, Cambodia, China, Fiji, Hong Kong, Indonesia, Japan, North Korea, South Korea, Lao, Macau, Malaysia, Mongolia, Myanmar, New Zealand, Papua New Guinea, Philippines, Singapore, Solomon Islands, Taiwan, Thailand and Vietnam. In 1999, EAP accounted for half of the world's total cigarette consumption, and one third of the world's population. In the EAP region, average cigarette consumption per person 15 years and older was 82 packs in 1999, relatively high compared with other regions. China is the single largest tobacco country within this region, accounting for about two thirds of total consumption and production.

## **II: Cigarette Consumption and Smoking Prevalence**

In 1999, total cigarette consumption for the EAP region was 2,495 billion pieces, accounting for nearly half of the world's total consumption. In terms of population, EAP region accounts for about one third of world total.

Figure 1: Percentage Shares of EAP Cigarette Consumption in 1999

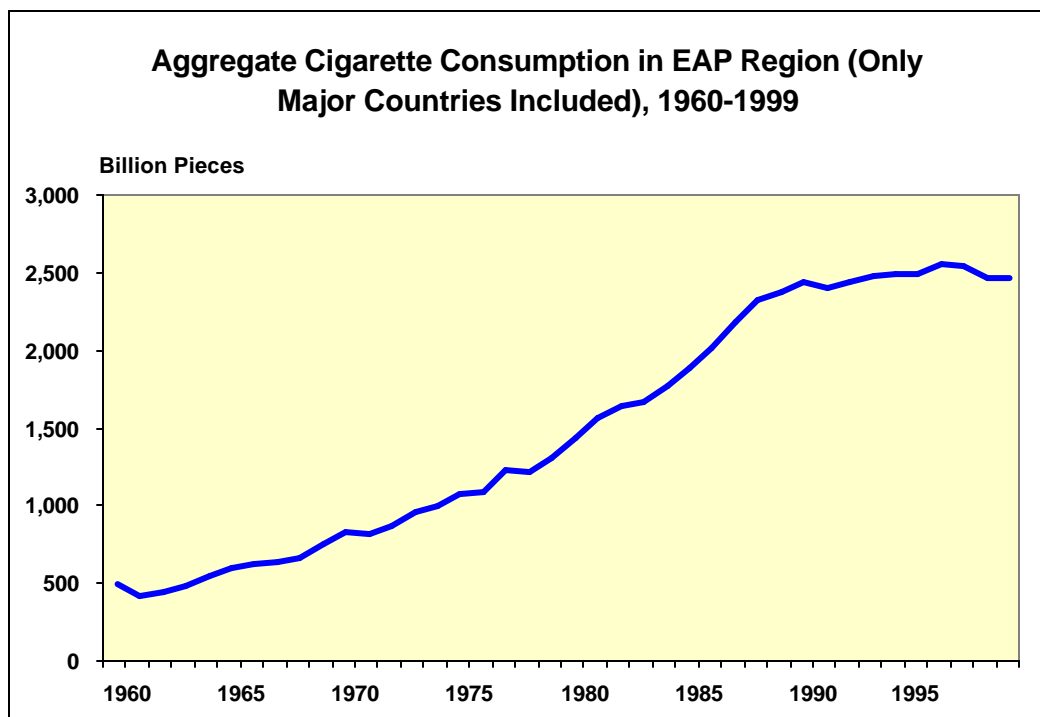


Sources: USDA and ILO

Note: Mongolia is not included in the EAP total consumption due to lack of information.

For EAP region, total cigarette consumption has been increasing slowly in 1960s and 1970s, and then accelerated in 1980s. The momentum diminished significantly in 1990s and began to level off in mid-1990s.

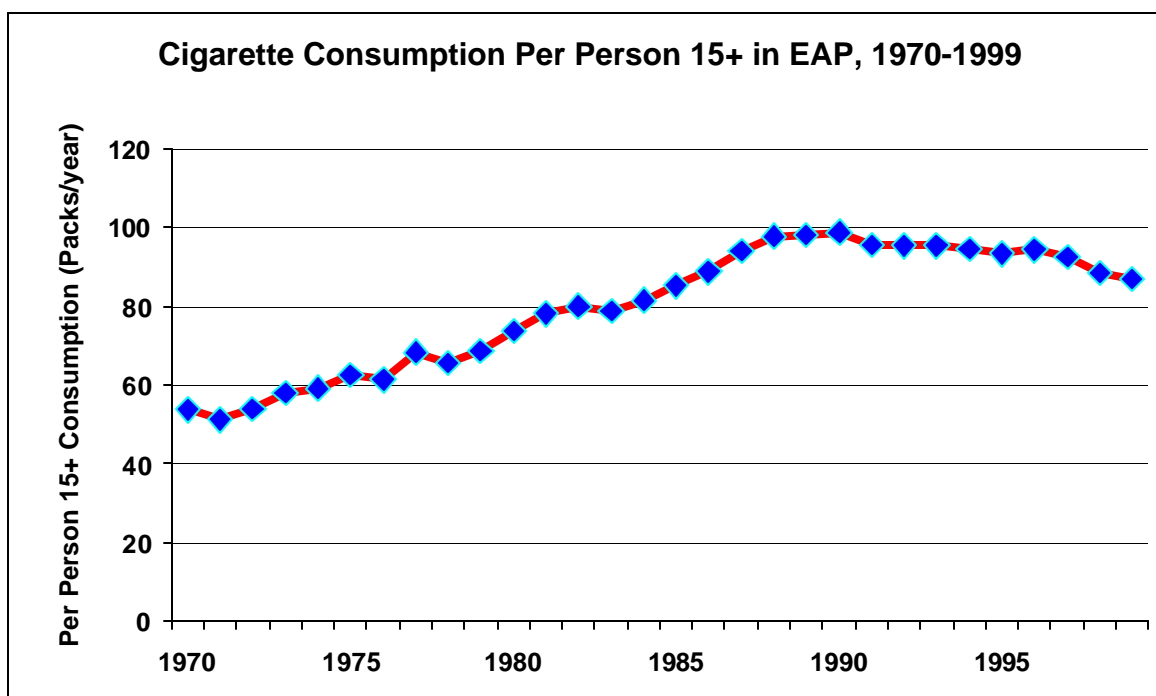
Figure 2: Cigarette Consumption in EAP, 1960-1999



Sources: USDA. Countries (and Regions) included are Australia, China, Indonesia, Japan, Malaysia, North Korea, Philippines, South Korea, Taiwan and Thailand, representing 97% of EAP's consumption in 1999.

Per capita consumption in EAP followed a similar pattern as total consumption. The cigarette consumption per person 15 years old and over was increasing during 1970s and 1980s. It reached a peak at about 100 packs per year in 1990, then declined slightly in 1990s.

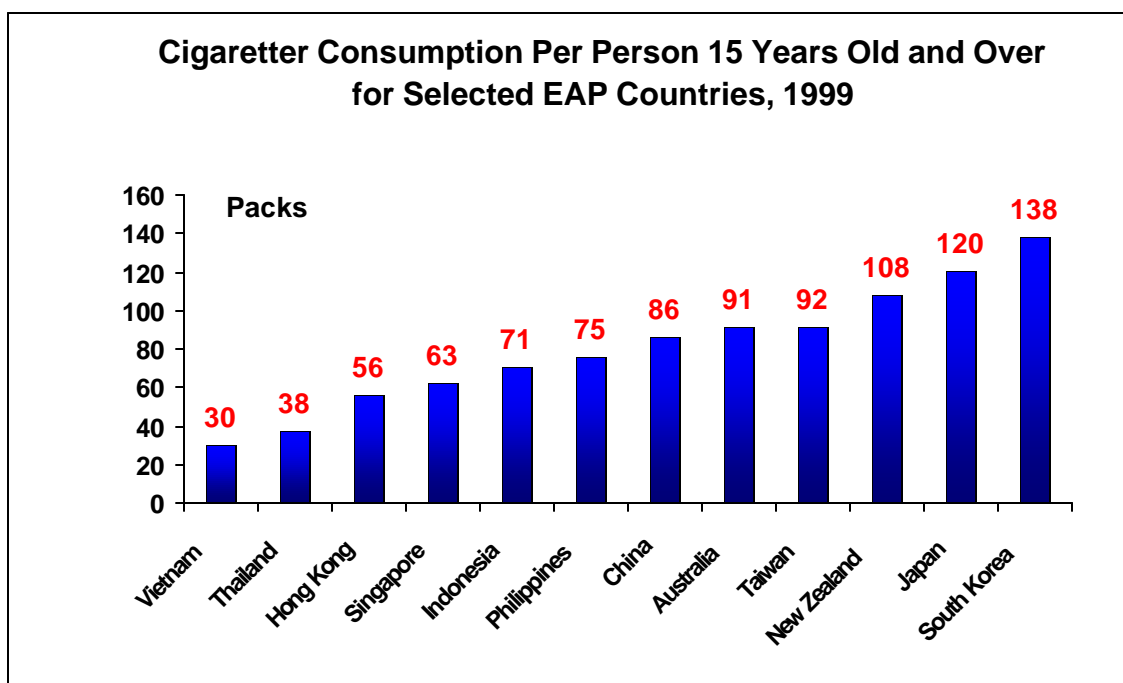
Figure 3: Cigarette Consumption per Person 15 Years and Older, 1970-1999



Source: World Bank Estimates. Countries included are Australia, China, Indonesia, Japan, Malaysia, North Korea, Philippines, South Korea and Thailand.

Across countries, the per person 15+ consumption varies substantially. In 1999, Average South Korean and Japanese 15 years old and over consumed 138 and 120 packs of cigarettes on average. In Vietnam, the figure was as low as 30 packs.

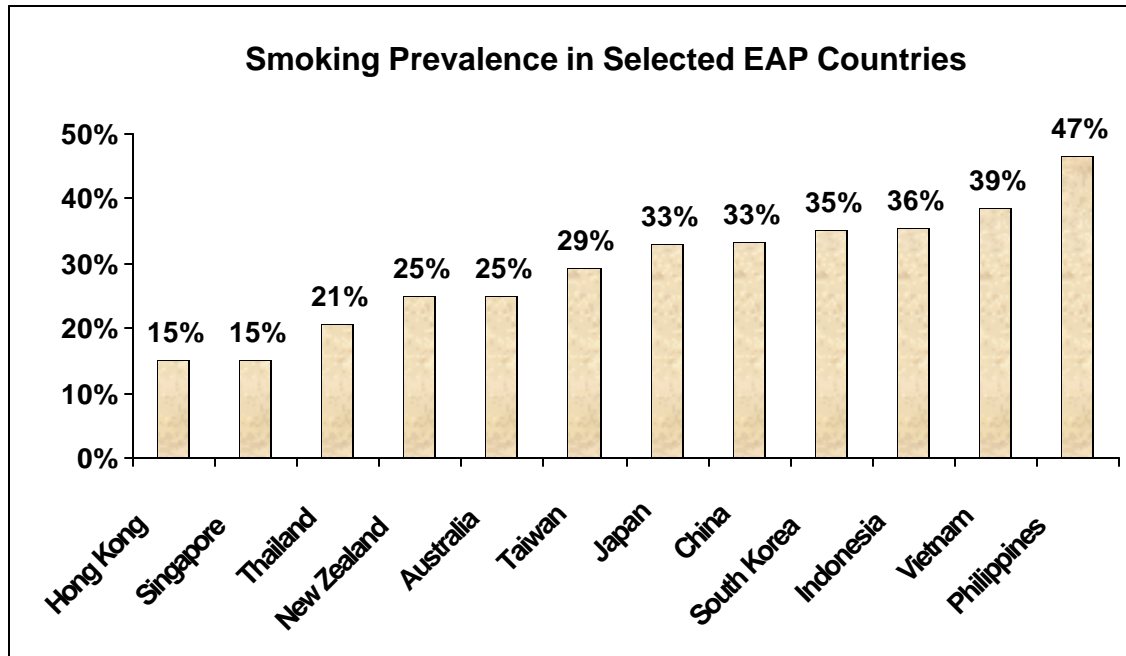
Figure 4: Cigarette Consumption Per Person 15 Years Old and Over, 1999



Source: World Bank Estimates

Smoking prevalence ranges from 15% in Hong Kong and Singapore to 47% in Philippines.

Figure 5: Overall Smoking Prevalence in Selected EAP Countries/(Regions)

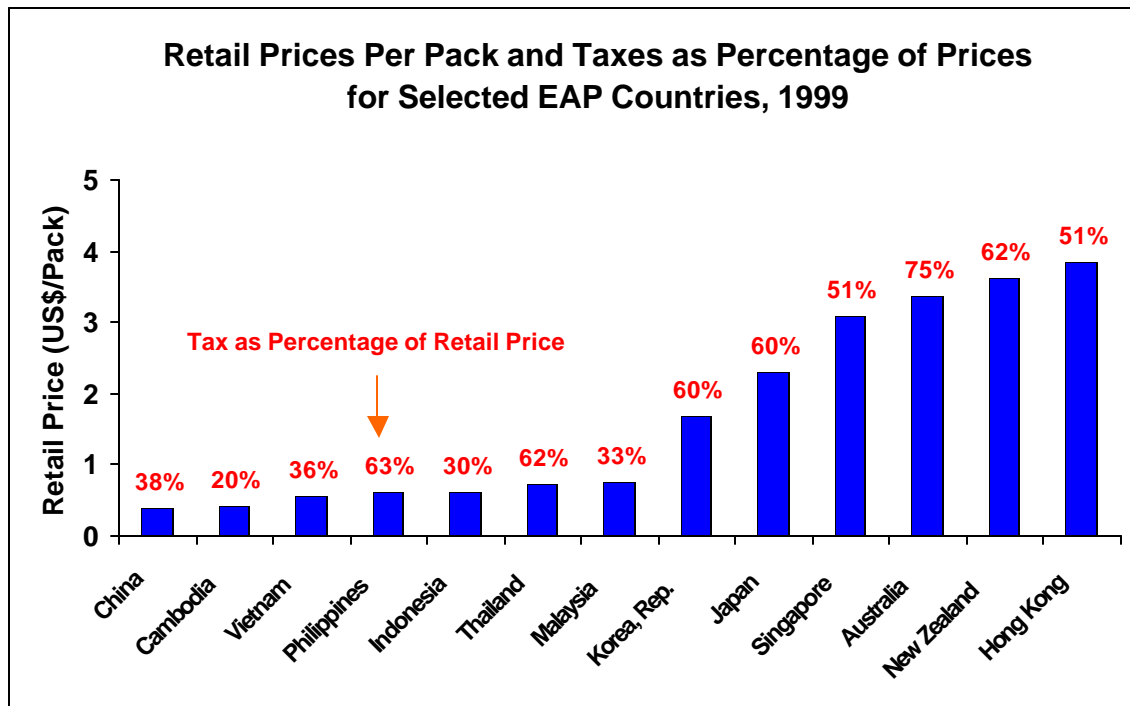


Source: World Bank Estimate

### III: Cigarette Taxes and Prices

In 1999, total cigarette tax as percentage of retail price (excise, VAT and import taxes) varied from 20% in Cambodia to 75% in Australia.

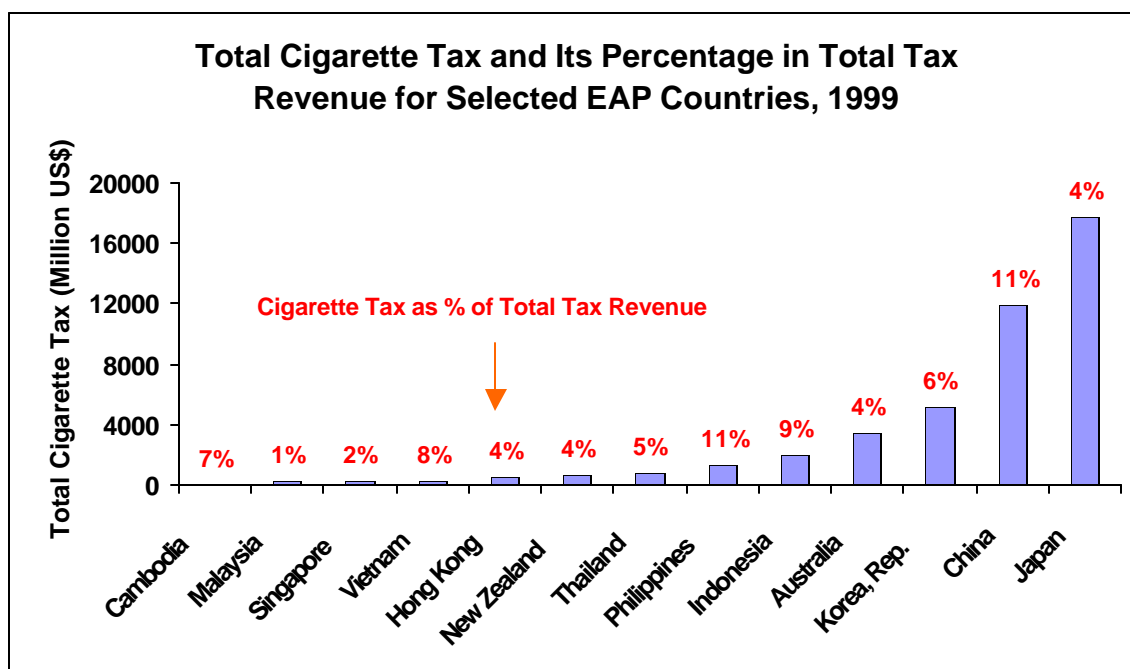
Figure 6: Prices of Most Popular Brand; Total Cigarette Tax as % of Retail Price, 1999



Source: World Bank Estimates

The importance of tobacco tax as a source of government revenue also differs widely across the EAP region. For countries for which information is available, the share of cigarette taxes in total government revenue is shown below.

Figure 7: Estimated Cigarette Tax and Its % of Total Government Tax, 1999



Source: World Bank Estimates

#### **IV: Tobacco Control Measures**

Tobacco control regulations and practices are quite diversified in EAP region. We have constructed a tobacco control index for each EAP country, which aggregates information on five policy areas. For each country, we ask the following questions: (1): Are cigarette packages required to carry a health warning and list of contents? (2): Are there any restrictions on cigarette advertisements? (3): Are sales to minors allowed? (4): Are there health education programs and anti-smoking campaigns? (5): Is smoking restricted or banned in public places? For each question, scores are assigned as follows: 2 for strong tobacco control measures, 1 for mild control, and 0 for very weak or no control. Scores to the 5 questions are aggregated to arrive at a total scores for each country. Australia has the most strict tobacco control measures.

A simple multivariate regression was run, to explain cigarette consumption as a function of average cigarette price, tobacco control index (all are 1999 data) and income level. The adjusted R-square is 0.34, All three variables have the expected signs. Income is shown to be the most significant factor influencing per 15+ cigarette consumption in EAP.

Figure 8: Results of Multivariate Regression for Cigarette Consumption

<i>Regression Statistics</i>	
Multiple R	0.72
R Square	0.52
Adjusted R Square	0.34
Standard Error	26.11
Observations	12

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	3	5851.4	1950	2.86	0.10
Residual	8	5453.0	682		
Total	11	11304.4			

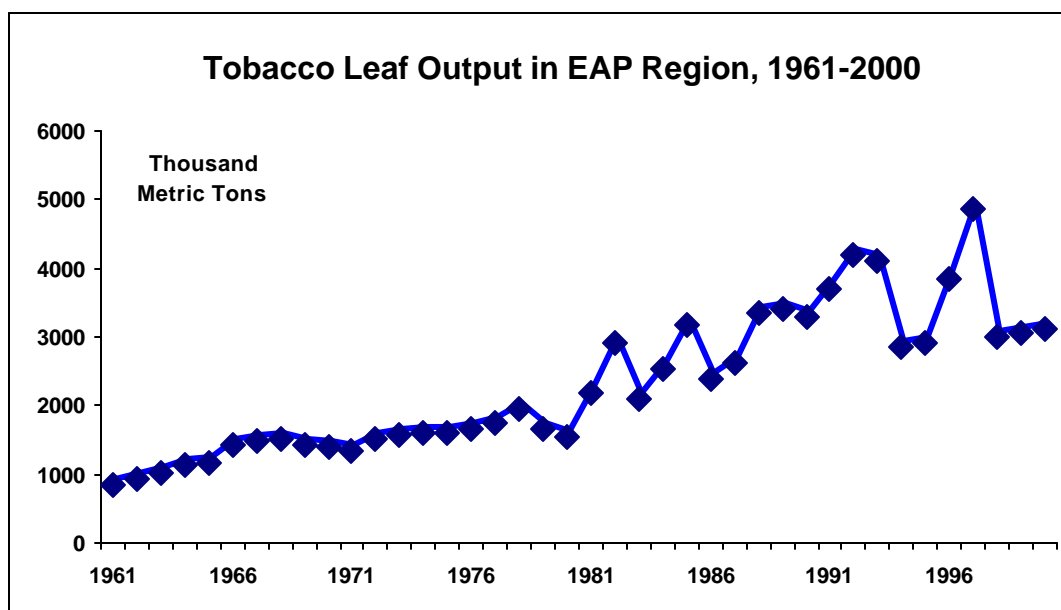
  

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	110.3	40.3	2.7	0.03
Local (US\$)	-13.6	9.4	-1.4	0.19
Tob. Control index	-6.6	6.0	-1.1	0.30
high or upper middle income	74.2	26.8	2.8	0.02

### V: Production and Trade

Demand for tobacco leaves in EAP region are mostly met locally. In 2000, EAP countries produced 3 million metric tons tobacco leaves, down from a all-time high level of 4.8 million recorded in 1997. Leaf net import in this region was only about 2% of regional production in recently years.

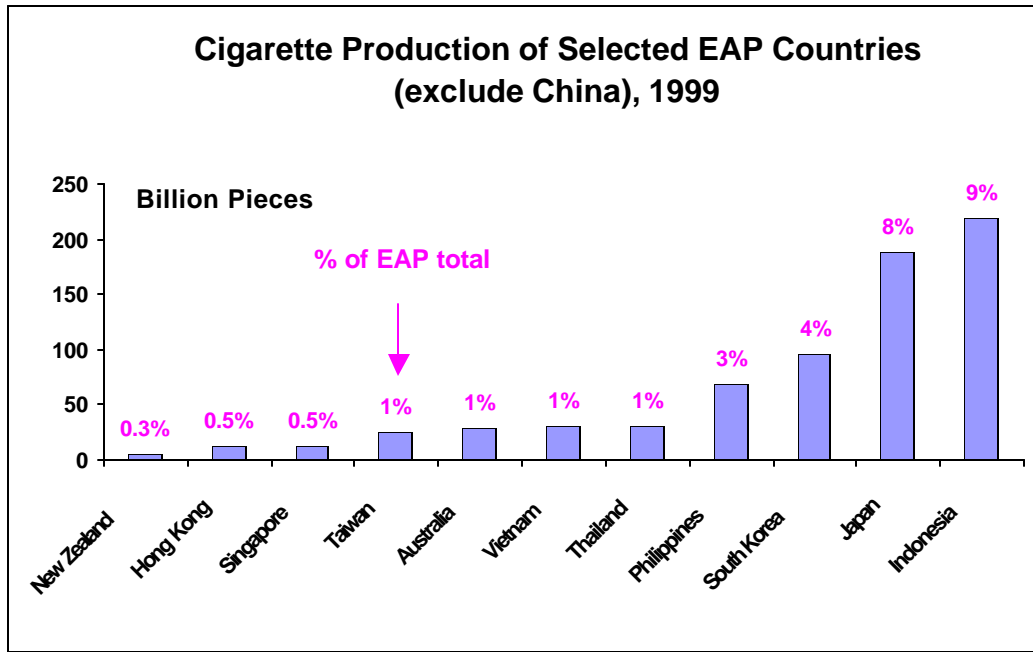
Figure 9: Tobacco Leaf Production in EAP, 1961-2000



Source: FAO

In 1999, EAP countries produced 2455 billion pieces cigarettes, of which China accounted for 68%. The following graph shows the cigarette production and its percentage share in EAP for major countries except for China.

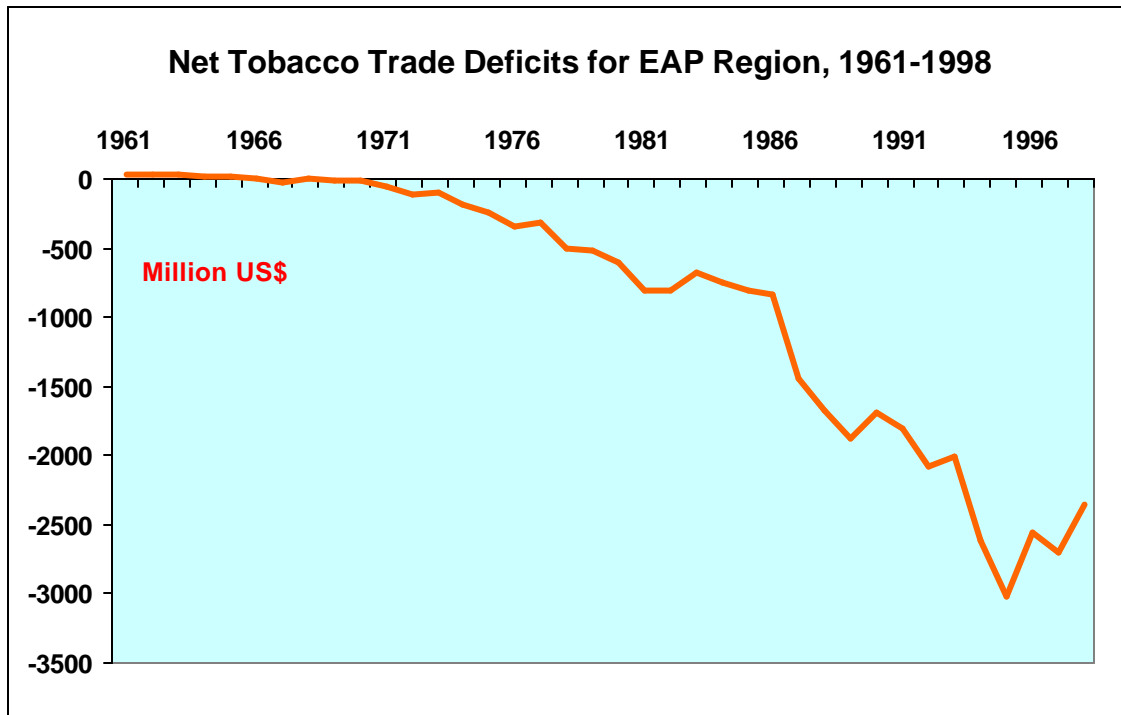
Figure 10: Cigarette Production and Percent of EAP Total (exclude China), 1999



Source: USDA

Overall, EAP region has an increasing tobacco deficits. In 1995, tobacco products imports exceeded exports by more than 3 billion US dollars in this region.

Figure 11: Tobacco Trade Net Deficits for EAP Region, 1961-1998



Source: FAO

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