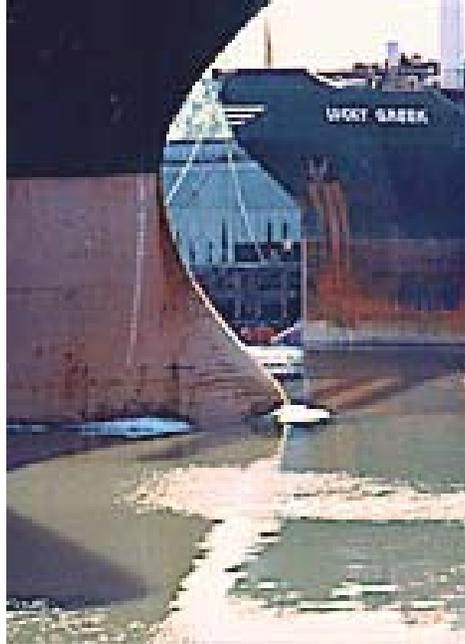




Asia-Pacific  
Economic Cooperation

Asia Pacific Energy  
Research Centre



# Urban Transportation Energy Use in the APEC Region

**APEREC Mini-Workshop at the EWG32  
Yuzhno Sakhalinsk, Russia  
5 October 2006**

**Asia Pacific Energy Research Centre  
Naoko Doi**



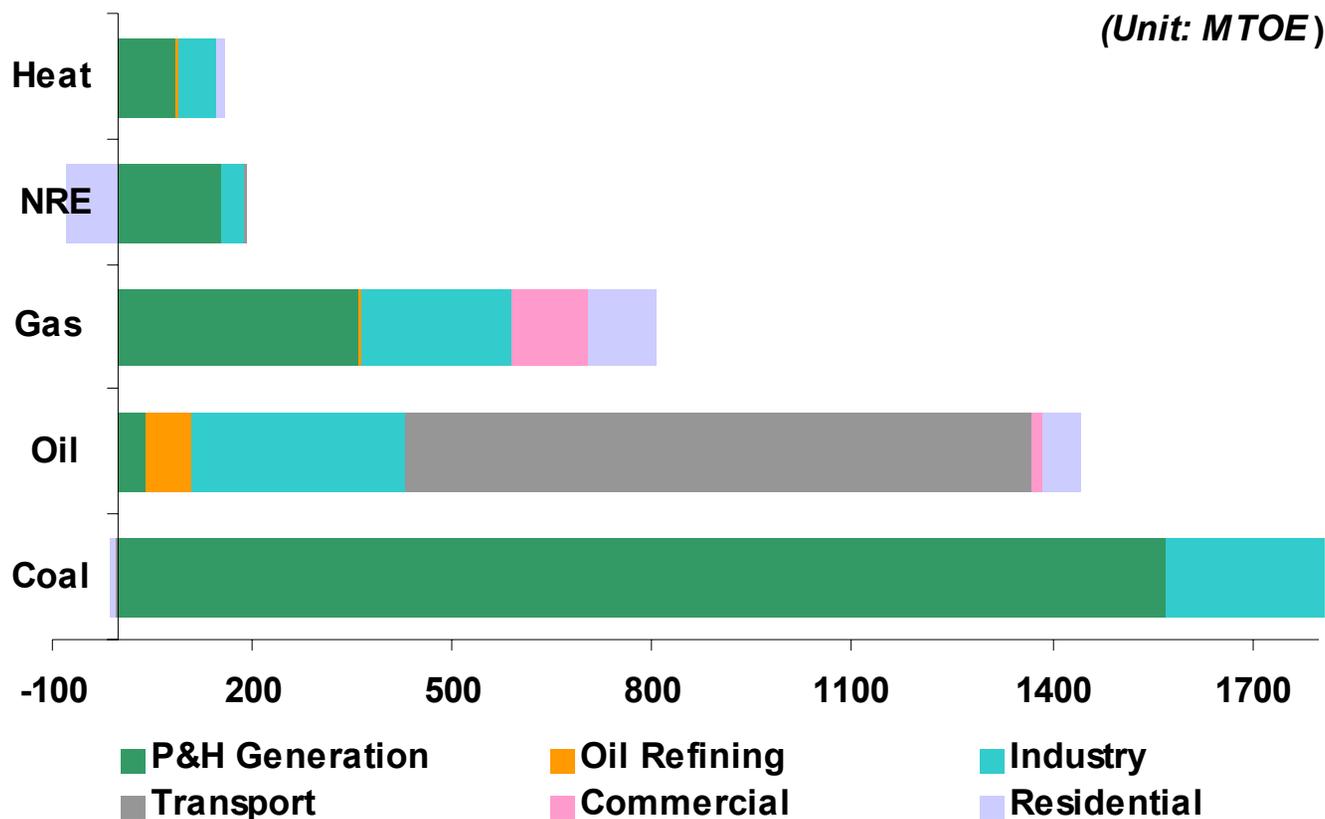
# Contents

- Background
- Objectives
- Progress
- Way Forward



# Sectoral Contributions to the Incremental Growth by Source in APEC (2002-2030)

*The power sector to lead coal demand, the transport sector to drive oil demand, and the power and industry sectors to increase natural gas demand*





# Rising Oil Import Dependency

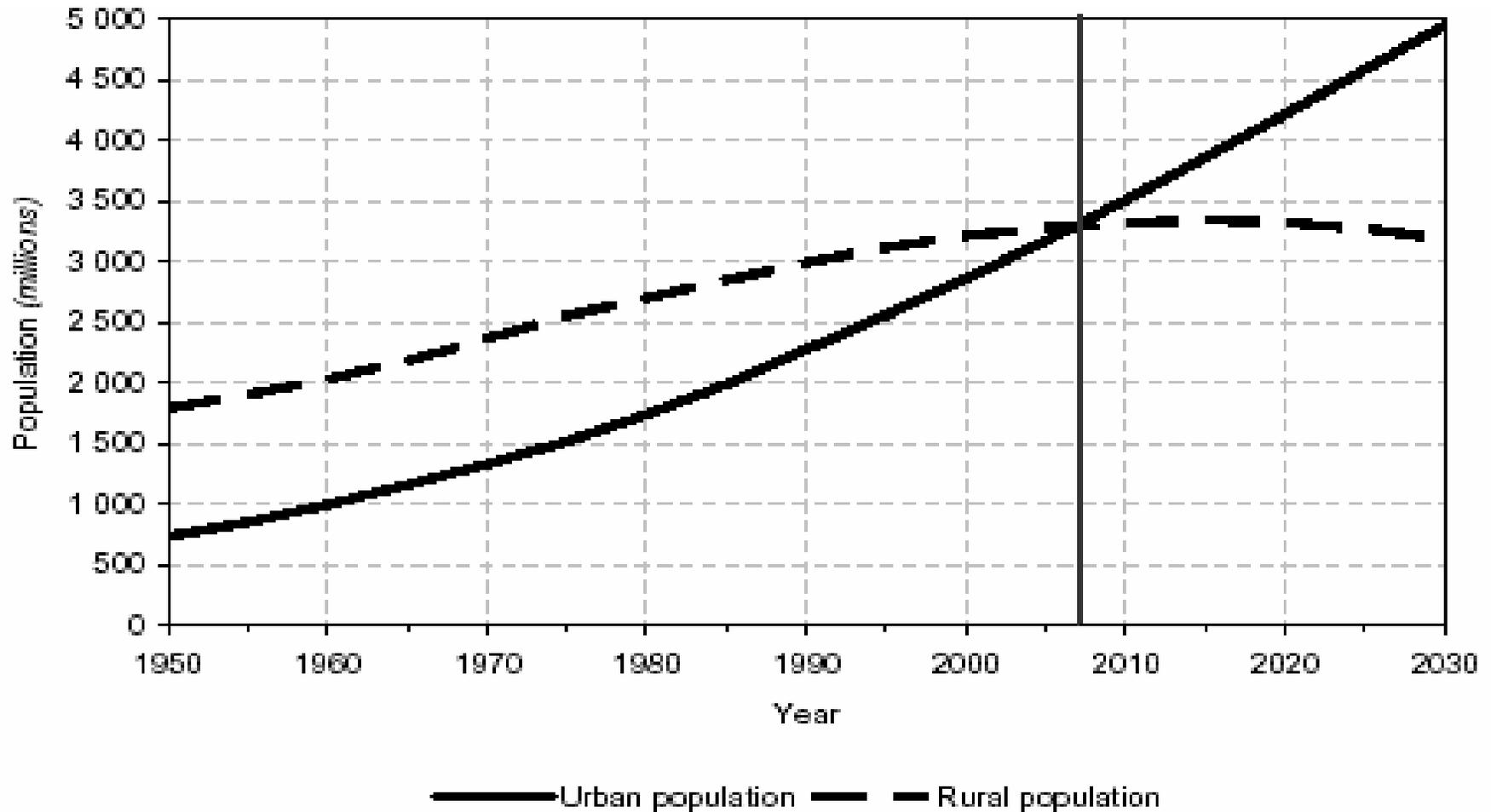
*Rising Oil Import Dependency across the Region*

	<b>APEC</b>	<b>Northeast Asia</b>	<b>Southeast Asia</b>	<b>North America</b>	<b>Oceania</b>	<b>China</b>
<b>2002</b>	<b>36%</b>	<b>100%</b>	<b>19%</b>	<b>55%</b>	<b>26%</b>	<b>22%</b>
<b>2005</b>	<b>37%</b>	<b>100%</b>	<b>27%</b>	<b>53%</b>	<b>29%</b>	<b>34%</b>
<b>2010</b>	<b>38%</b>	<b>100%</b>	<b>35%</b>	<b>49%</b>	<b>42%</b>	<b>44%</b>
<b>2015</b>	<b>41%</b>	<b>100%</b>	<b>44%</b>	<b>51%</b>	<b>50%</b>	<b>46%</b>
<b>2020</b>	<b>44%</b>	<b>100%</b>	<b>56%</b>	<b>50%</b>	<b>55%</b>	<b>57%</b>
<b>2025</b>	<b>50%</b>	<b>100%</b>	<b>63%</b>	<b>53%</b>	<b>59%</b>	<b>65%</b>
<b>2030</b>	<b>52%</b>	<b>100%</b>	<b>69%</b>	<b>56%</b>	<b>62%</b>	<b>70%</b>

(Source) Asia Pacific Energy Research Centre (2006), "APEC Energy Demand and Supply Outlook"



# World Urbanisation to reach 50% by 2007





# Urbanisation in Asia and the World

	Percentage Urban		Annual Growth Rate (%)	
	2003	2030	Urban	Rural
<b>World</b>	<b>48</b>	<b>61</b>	<b>2.1</b>	<b>0.4</b>
More developed regions	74	82	0.5	-0.5
Less developed regions	42	57	2.8	0.5
Least developed countries	27	43	4.3	1.7
<b>Eastern Asia</b>	<b>43</b>	<b>63</b>	<b>2.6</b>	<b>-0.8</b>
China	39	61	3.2	-0.8
Hong Kong	100	100	1.1	—
Japan	65	73	0.3	-0.1
Republic of Korea	80	86	0.9	-0.6
<b>South-eastern Asia</b>	<b>42</b>	<b>61</b>	<b>3.3</b>	<b>0.0</b>
Indonesia	46	68	3.9	-0.9
Malaysia	64	78	3.0	0.1
Philippines	61	76	3.1	-0.3
Singapore	100	100	1.7	—
Thailand	32	47	1.9	0.6
Viet Nam	26	43	3.2	0.7

(Source) United Nations (2003), "Urban and Rural Areas 2003"

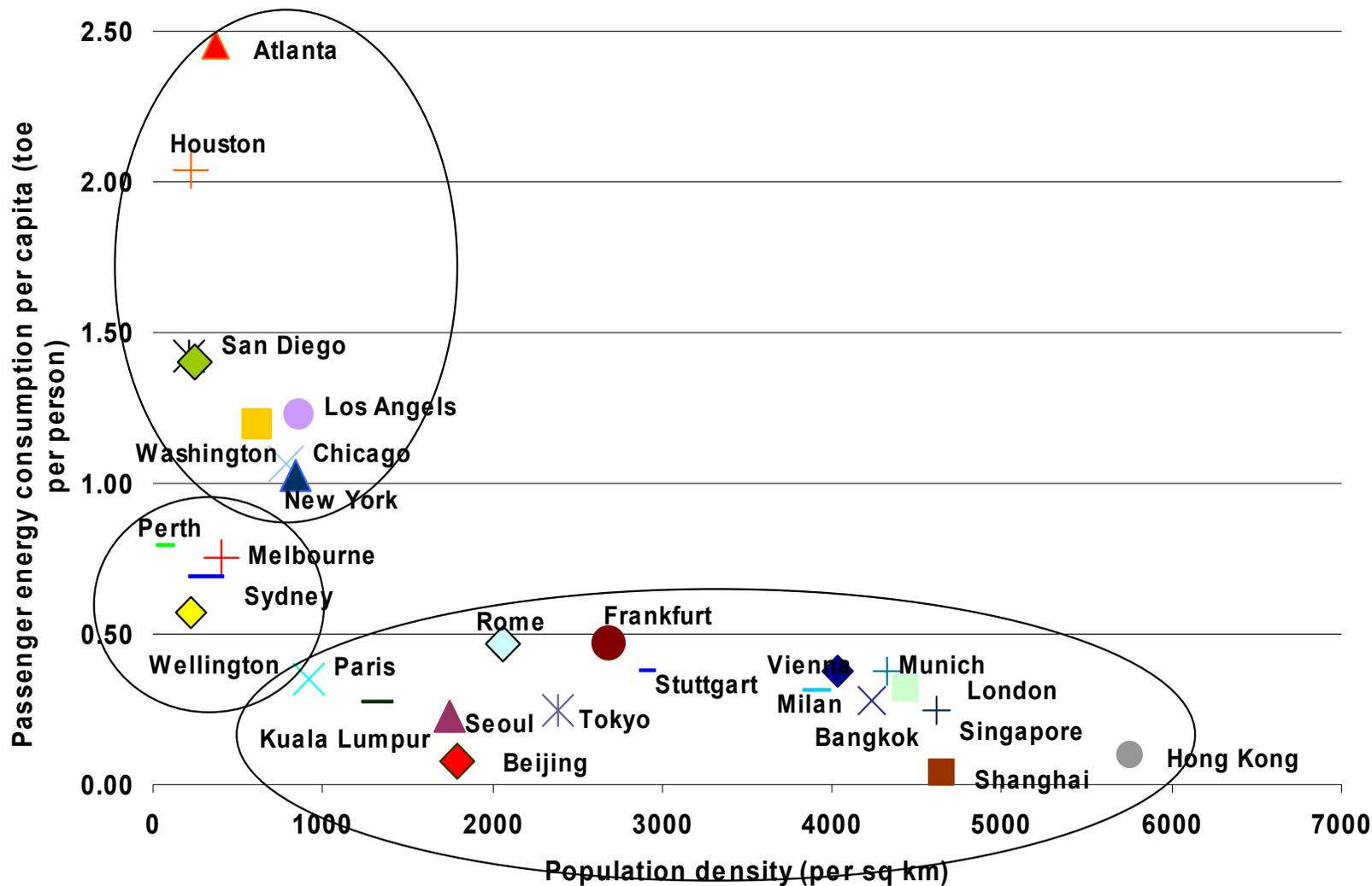


## Study Objectives

- Analysis of factors affecting urban transportation energy consumption in the major urban areas of APEC
- Drawing policy implications for enhancement of energy security and sustainable development



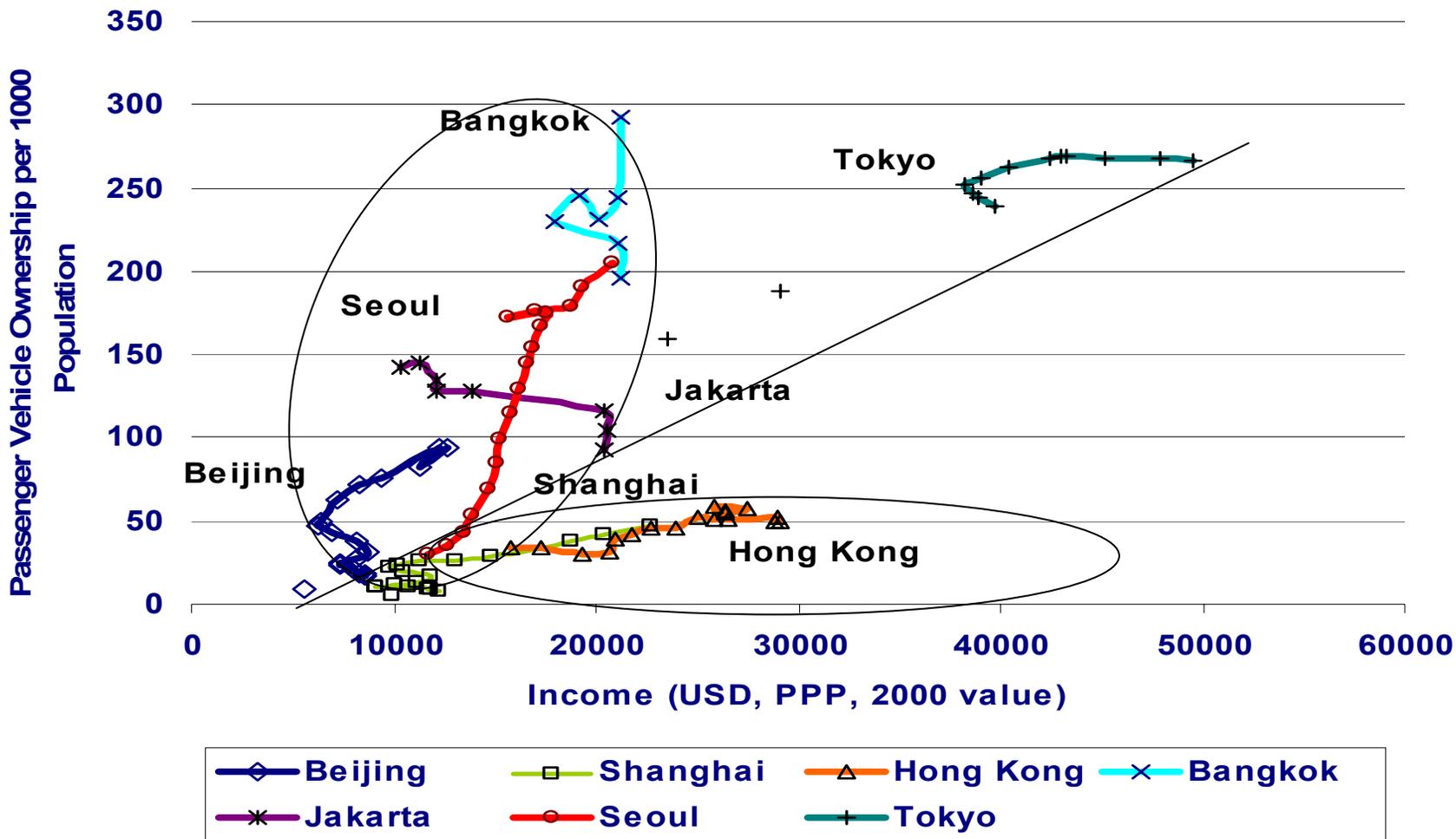
# International Comparison of Urban Vehicle Energy Consumption



(Source) APERC Analysis (2005), original data from UITP (2001), "The Millennium Cities Database for Sustainable Transport"



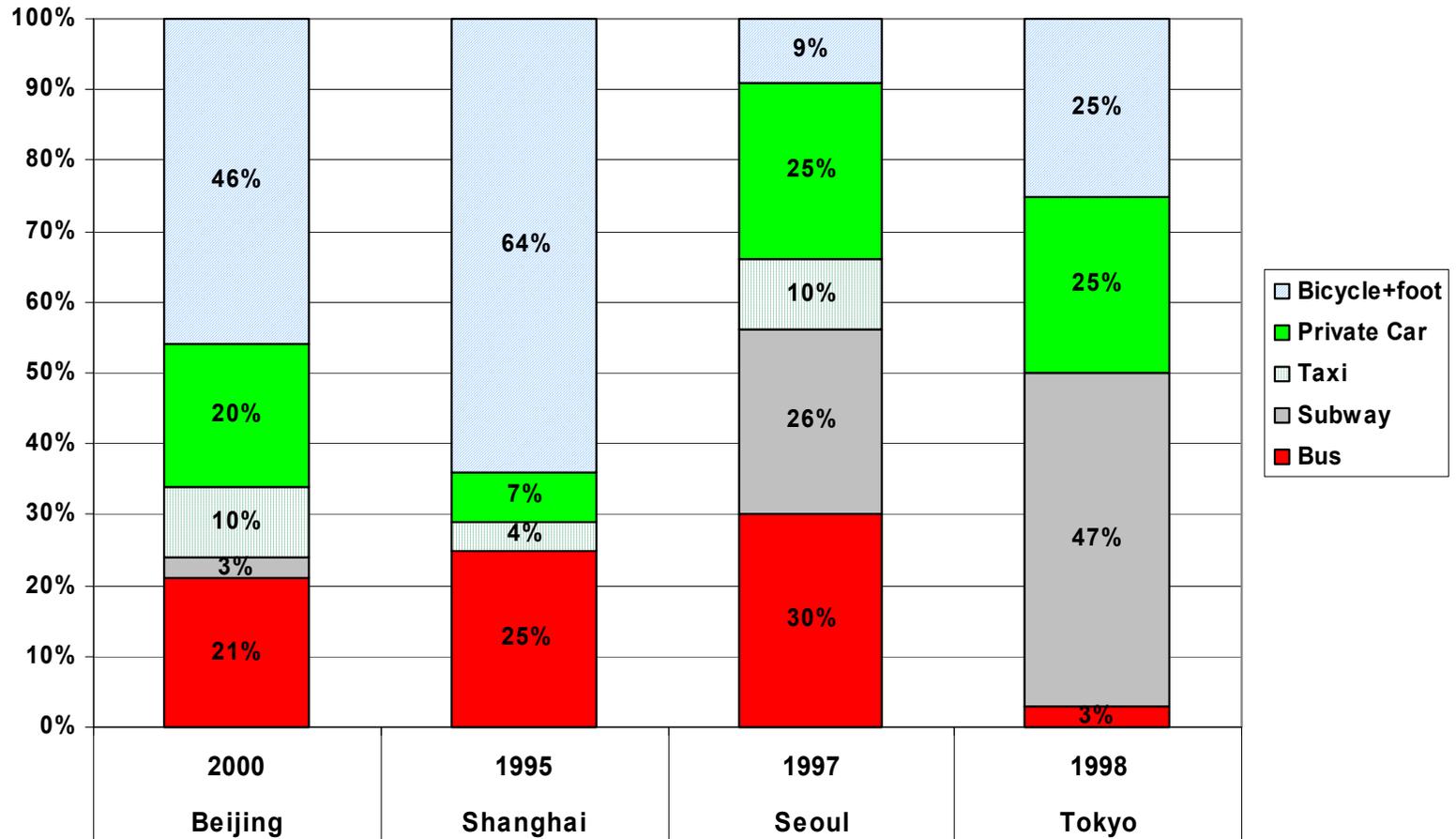
# Income and the Number of Passenger Vehicle Ownership (1980-2002)



(Source) APERC Database (2005)



# Modal Split in Asian Cities





# Drivers for Passenger Vehicle Energy Consumption

- **Income Growth**
- **Infrastructure Availability**
  - Road
  - Parking
  - Public Transport – Bus, Subway
- **Oil Products Prices**
- **Cost of Vehicle Ownership**



# Way Forward

- **Data Collection and Information Gathering**
  - Gasoline/Diesel Sales
  - Modal Split
  - The Number of Passenger Vehicle Stocks
  - Plan for Introducing Alternative Fuels
  - Urban Infrastructure Design Plan
- **Characterisation of Transportation Energy Use in the Major Urban Areas of APEC**
  - Grouping of Major Urban Areas of APEC
- **Analysis of Policy Instruments for Transportation Energy Demand Management**