

Measures for the Dissemination of Environmentally Friendly Vehicles

Kenji Nagamatsu
Senior Representative
Japan International Transport Institute
January 28, 2004

OVERVIEW

Basic Approaches for the Dissemination of
EFVs

Japan's Current Policies

Future Measures

Studies

Conclusion



BASIC APPROACHES FOR THE DISSEMINATION OF EFVs

Regulatory Measures –

- Mandatory emission regulation
 - Fuel economy regulation
 - Others
- Effective in controlling performance, but restrict consumer choice.
-

Economic Measures


- **Subsidies** – Not sufficient for mass dissemination of EFVs
 - **Tax Reform** – Effective for dissemination of EFVs by internalizing the external costs of environmental damage and adding these costs to the automobile's operation
- Market mechanisms can direct consumers to EFVs while encouraging them to reduce their use of cars for unnecessary trips, and give manufacturers greater development incentives.
-

JAPAN'S CURRENT POLICIES

Regulatory Measures

- Emission regulation for new vehicles
 - Retrospectively applied emission regulation for in-use vehicles in metropolitan areas
 - Fuel economy regulation based on the “Top Runner System”
-

Economic Measures

- **Subsidy programs, low-interest financing**
 - **“Green” taxation:**
 - Reduction of the Automobile Tax on certain EFVs, increase in the Automobile Tax on less environmentally-friendly vehicles (introduced in FY 2001)
 - Reduction of the Acquisition Tax on certain EFVs
- “Green” taxation has resulted in an earlier achievement of regulatory standards, but has not significantly reduced CO2 emissions.
- 

DESIRABLE FUTURE MEASURES

Regulatory

- **Emissions (General):** Through the implementation of anticipated stricter regulations, there should be almost no problems for new vehicles after 2010. The problems will be with those vehicles already on the road
 - **CO₂:** Fuel economy standards must be reviewed in light of new technological developments. Tighter new standards will be needed.
-


DESIRABLE FUTURE MEASURES

Economic

- Fundamental reform of the automobile-related tax system and expansion of subsidy programs will be necessary to achieve mass dissemination of EFVs.



Characteristics of the Current Japanese Automobile-Related Tax System

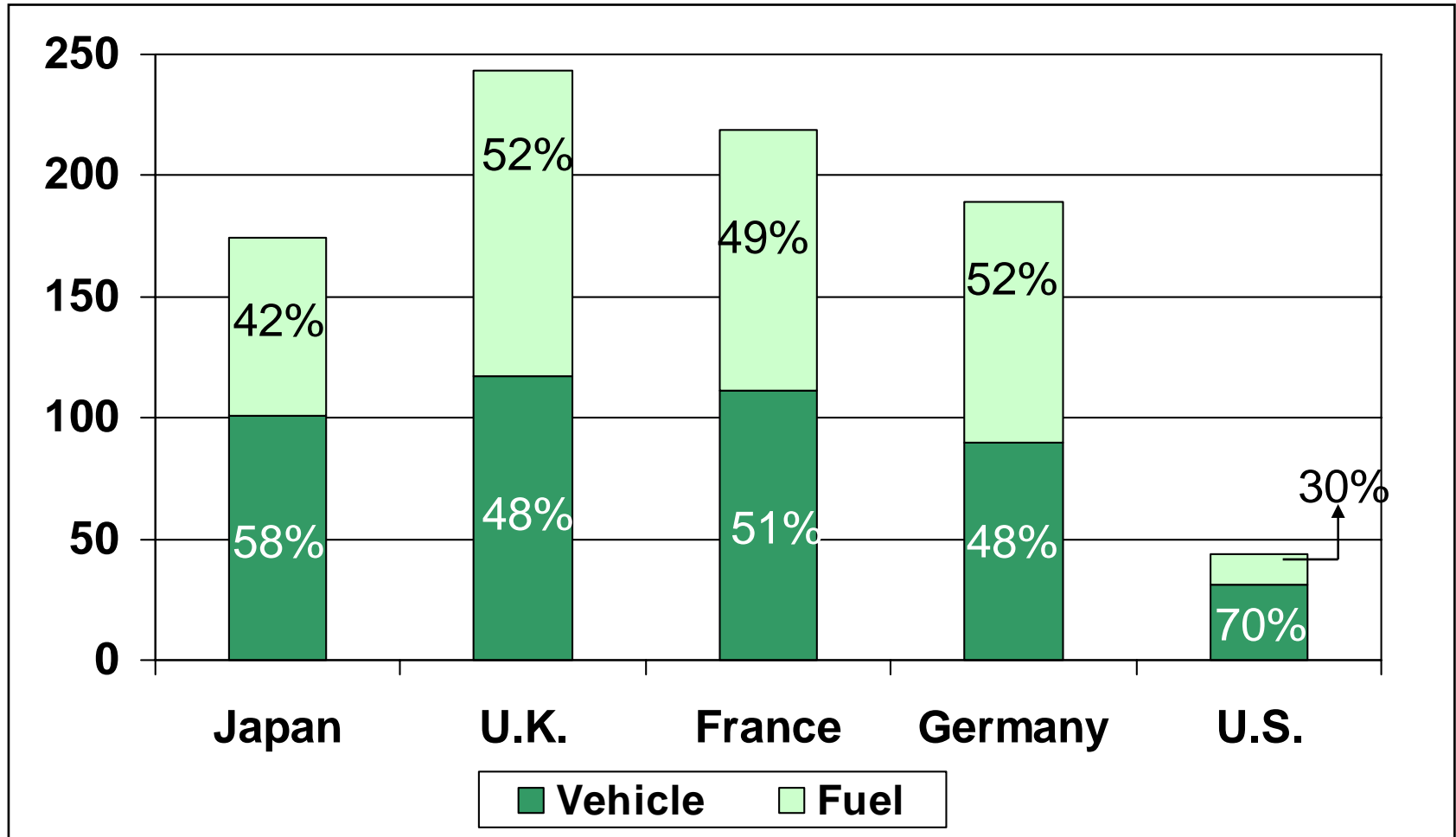
- **Complex:** 9 different taxes are assessed at the acquisition, ownership and operation stages
 - **Limited Revenue Application:** Many of the taxes are designated as road revenue sources
 - **Higher Ratio of Ownership and Acquisition Taxes:** Compared to other countries
 - **Tax Rate Differentials:** For example, between gasoline (¥53.8/l) and diesel (¥32.1/l)
- 

Automobile-Related Taxes in Japan

	Type of Tax	Government Level	Revenue Application
Acquisition	Consumption	National	General Revenue
	Acquisition	Prefectural	Road (regional)
Ownership	Tonnage	National	Road (national)
	Automobile	Prefectural	General Revenue
	Minicar	Municipal	General Revenue
Operation	Volatile Oil	National	Road (national)
	Regional Road Tax		
	Diesel Handling Tax	Prefectural	Road (regional)
	LPG Tax	National	Road (50% national, 50% regional)
	Consumption	National	General Revenue

Comparison of Taxes in Selected Countries

(¥1,000)



Source: Report by the Tax Commission of the Japanese Government, July 2000

Basic Approaches

- Realization of a new tax system in which the external costs of environmental damage are internalized in the cost of operating the vehicle



Basic Approaches

- At the acquisition and ownership stages: Higher taxes on vehicles with higher emissions (including CO₂); lower taxes on vehicles with lower emissions
 - Revenue neutral
- At the operation stage: Tax increases with increased use; those that use their vehicles more will pay more
 - Revenue neutral



	Measure	Intended Effect	Problems
Acquisition Stage	Higher tax on vehicles with higher emissions, lower tax on vehicles with lower emissions (EFVs)	Encourage the purchase of EFVs	<ul style="list-style-type: none"> • A one-time impact • May encourage increased use
Ownership Stage	Higher tax on vehicles with higher emissions, lower tax on vehicles with lower emissions (EFVs)	<ul style="list-style-type: none"> •Encourage the purchase of EFVs •Impact of the tax is felt each year of use 	<ul style="list-style-type: none"> •May encourage increased use
Operation Stage	Higher fuel tax (includes elimination of differential between gasoline & diesel)	<ul style="list-style-type: none"> •Encourage the purchase of EFVs •Reduce fuel consumption •Heavier polluters pay more •Impact of tax felt at the pump 	<ul style="list-style-type: none"> •Regressive tax •Effectiveness depends on rate of taxation



SELECTED STUDIES

“Automobile Fuel Tax Reform and its Effectiveness in Reducing Environmental Burden: Application of Dispersed Selection Model to the Selection of Automobiles” (Satoshi Hibiki and Toshihide Arimura, October 2001)

- Focuses on air pollution and how the automobile tax system influences air pollution by simulating how people select cars
- Findings:
 - NOx emissions will be reduced if the fuel tax rate differential between gasoline and diesel is changed to reflect the higher emissions from diesel fuel consumption.
 - If the tax on diesel fuel is raised, drivers will shift from high exhaust cars to low exhaust cars.
 - If the fuel tax is revised, drivers who tend to go long distances will shift to more environmentally friendly vehicles.

“Welfare Evaluation of Tax Policies to Reduce CO2 Emissions by Road Transport,” Toru Fujiwara, Katsuto Hasuike and Yoshitsugu Kanemoto, in Journal of Applied Regional Science, No. 7, 2002

- Discussion of the results of a simulation study evaluating the impact of various tax policy measures aimed at reducing CO2 emissions.
- Findings:
 - Revenue neutral changes in ownership and acquisition taxes have very small effects on CO2 emissions.
 - Raising the fuel tax is more effective in reducing CO2 emissions.
 - Combining an increase in the fuel tax with a reduction in the ownership tax substantially reduces CO2 emissions and at the same time yields higher social benefits than other measures.

CONCLUSION

- Automobile taxation reform can be an effective measure to encourage consumers to choose EFVs, reduce unnecessary use, and provide incentives to auto manufacturers for better development of EFVs.
 - Options for automobile taxation reform should be analyzed further, such as combining an increase in the fuel tax and a decrease in the acquisition and ownership taxes.
-

- Tax reform discussions should include consumers, as they, too, are significantly impacted.
- Broader applications of automobile-related tax revenues should be promoted beyond road-related uses, such as EFV R&D and promotion of increased public transportation use.

