

「東アジアにおいて、燃料税は逼迫する交通インフラの財源問題を解決しうるか」

Is fuel pricing the answer to transport infrastructure finance hurdles in East Asia?

Institute for Transport Policy Studies,
Research Fellow

パルモグ ミッシェル ガン
Parumog Michelle G.

本日の報告内容

1. 研究の背景と目的
2. 東アジア諸国における燃料税導入の根拠
3. 燃料税導入に対する問題点
4. 先進国の事例からの示唆
5. まとめ

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Economic growth and transport infrastructure in East Asia

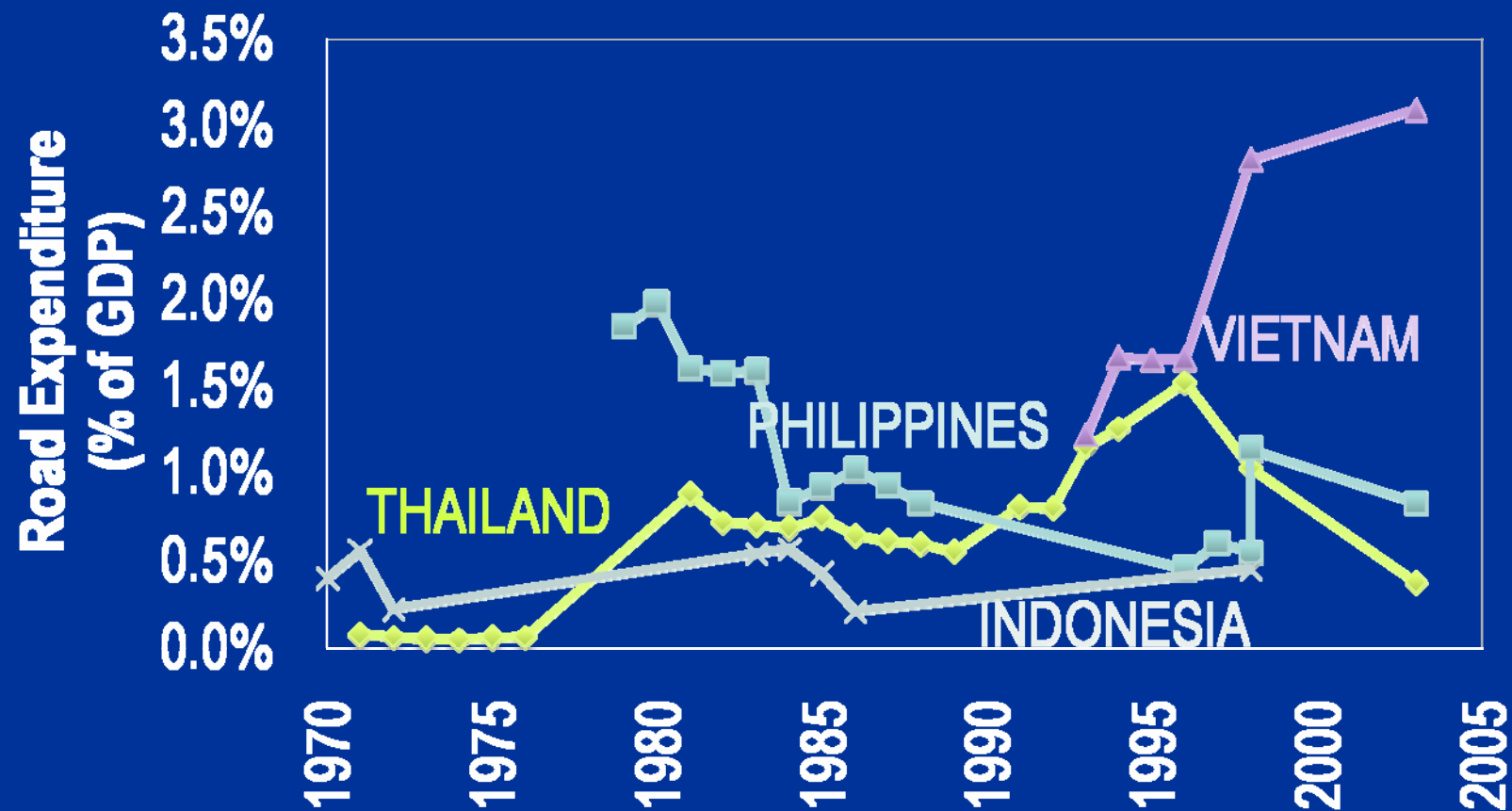
国際競争力：インフラ部門

2007 Global Competitiveness Index: Country Ranking

COUNTRY	OVERALL	INFRASTRUCTURE
Germany	5	1
France	18	2
Singapore	7	3
Japan	8	9
Korea	11	16
Thailand	28	27
China	34	52
Indonesia	54	91
Philippines	71	94

Source: 2007 Global Competitiveness Report, World Economic Forum

道路整備への投資額の推移(対GDP比)



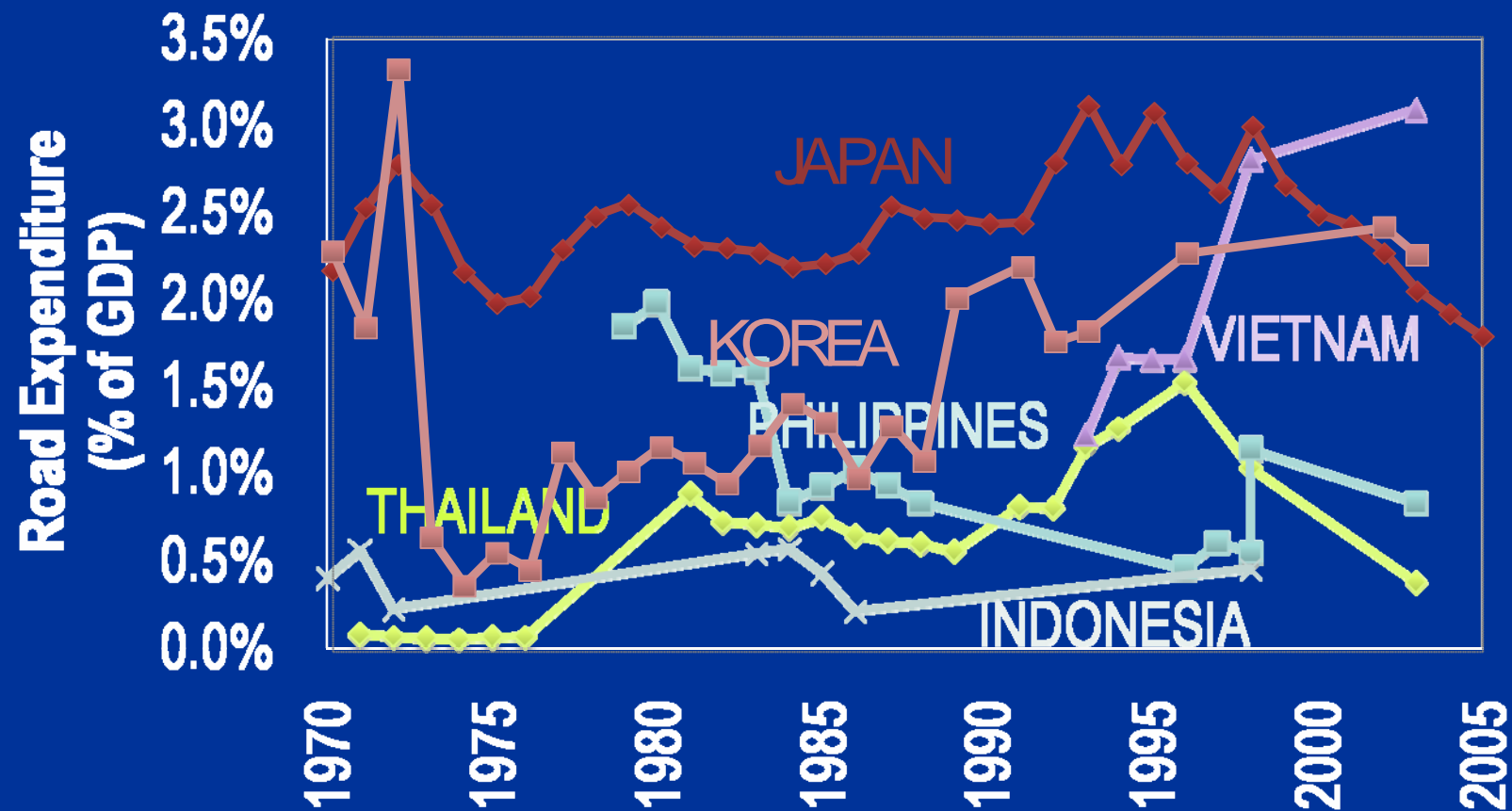
Data source: 1970-2003 World Road Statistics, IRF

Connecting Asia, ADB

道路ポケットブック

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道路整備への投資額の推移(対GDP比)



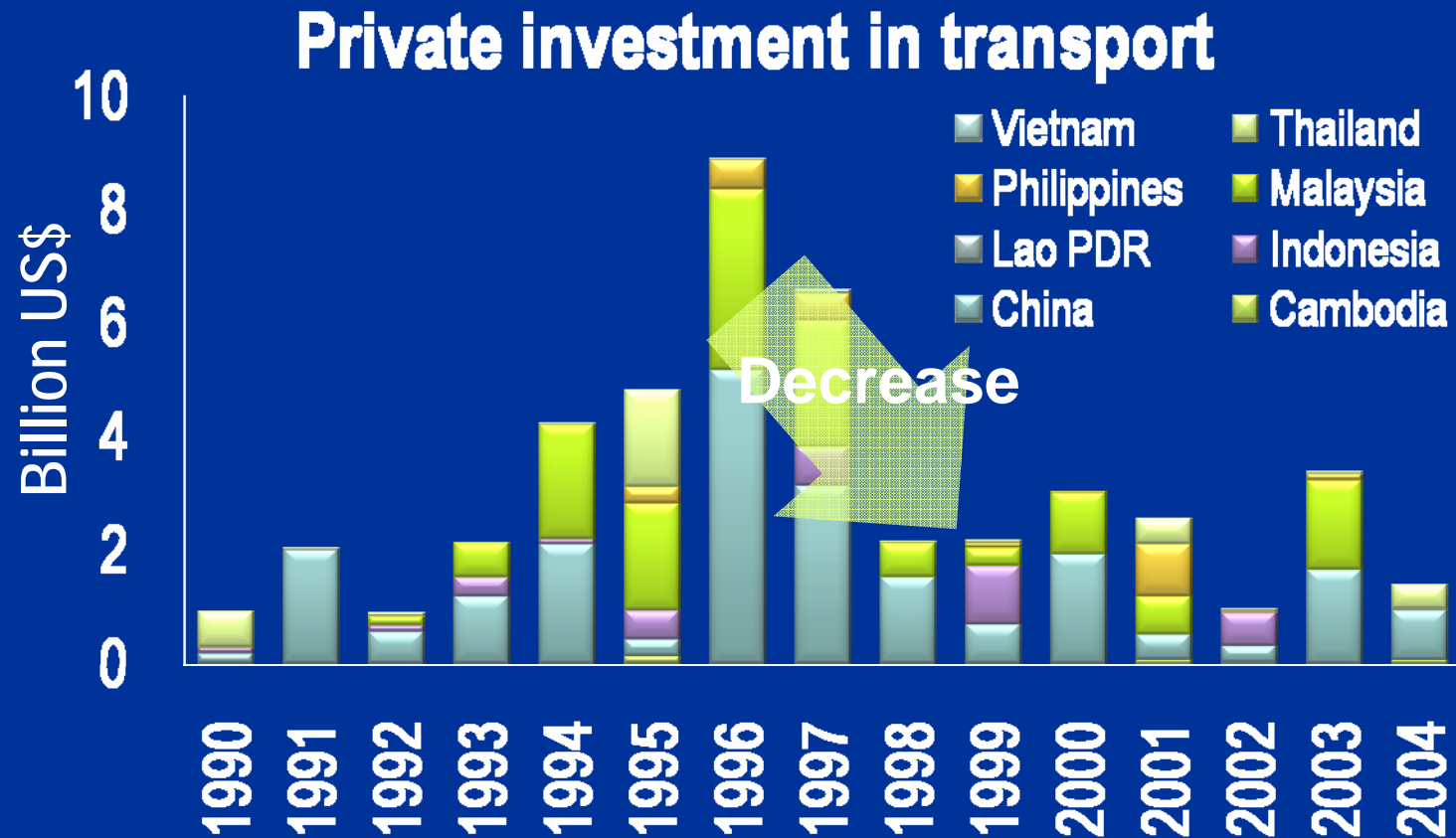
Data source: 1970-2003 World Road Statistics, IRF

Connecting Asia, ADB

道路ポケットブック

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民間部門の交通投資の減少



Data source: 2007 Private Participation in Infrastructure Database, WB

東アジアにおける資金調達の課題

- Widening the gap between the (1) transport infrastructure investment needs vs. (2) funding and financing means
- Need to increase funding capacity of the public sector

本研究の目的

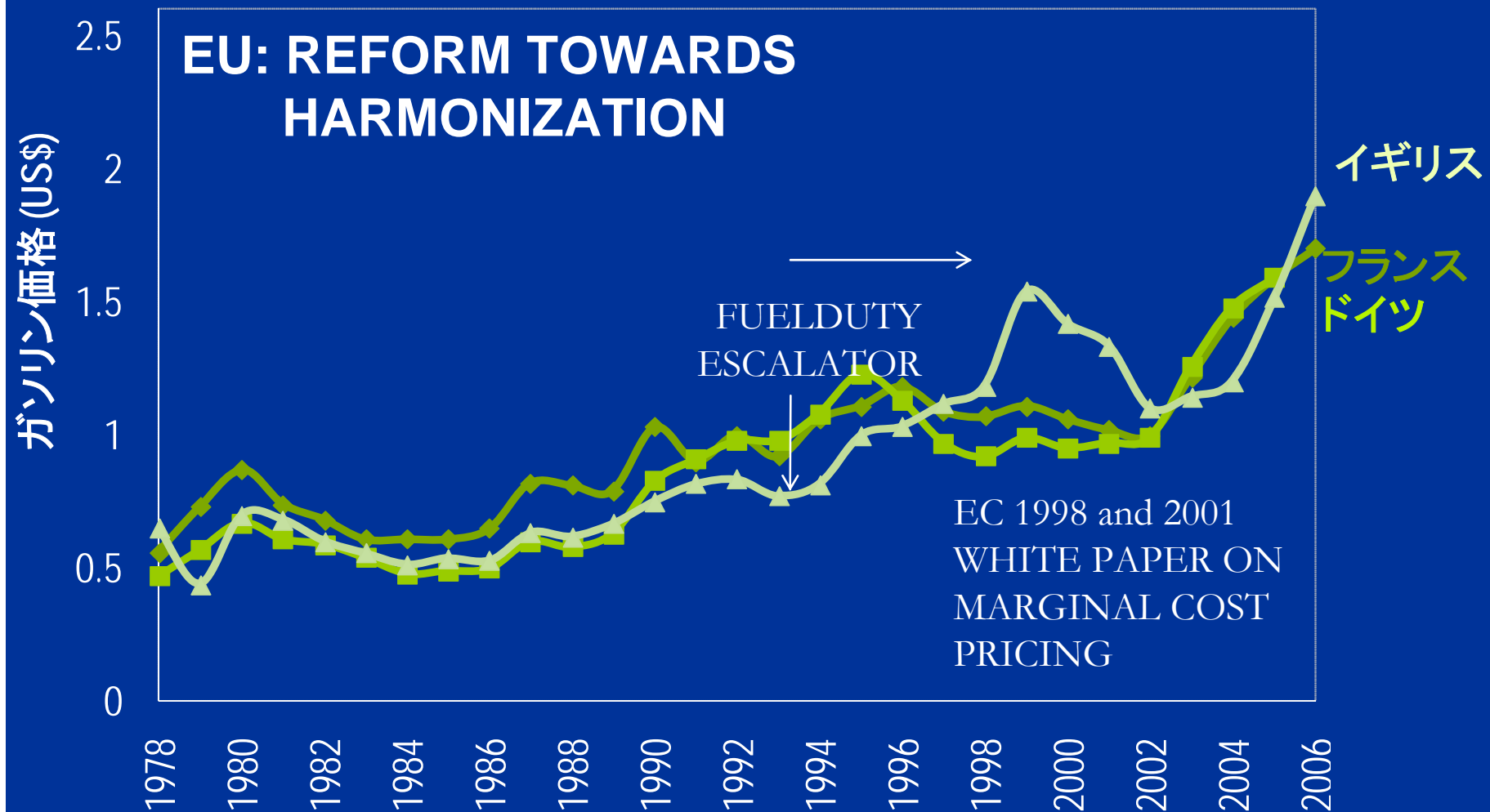
- Review and assess the fuel tax as a **instrument for road pricing and revenue-raising in East Asia**:
 - Identify issues and challenges in introducing fuel tax in EA countries;
 - Investigate alternative schemes of fuel tax earmarking in major countries;
- Recommend **fuel pricing reforms and institutional mechanisms for self-financing** transport infrastructure investments in East Asian countries.

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2.1 燃料価格の推移

ガソリン価格の推移

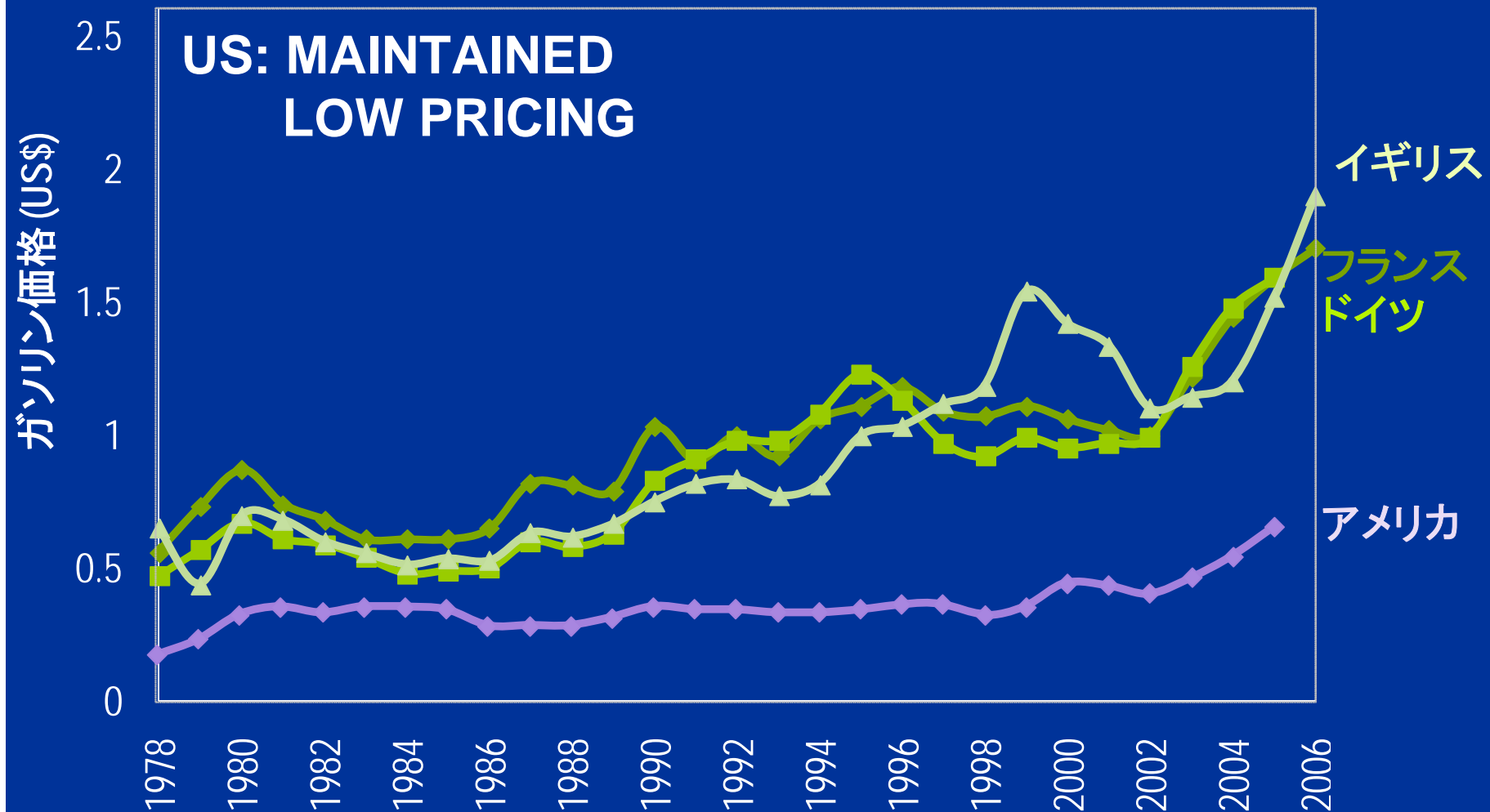


Data Source: Energy Prices and Taxes, IEA

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2.1 燃料価格の推移

ガソリン価格の推移

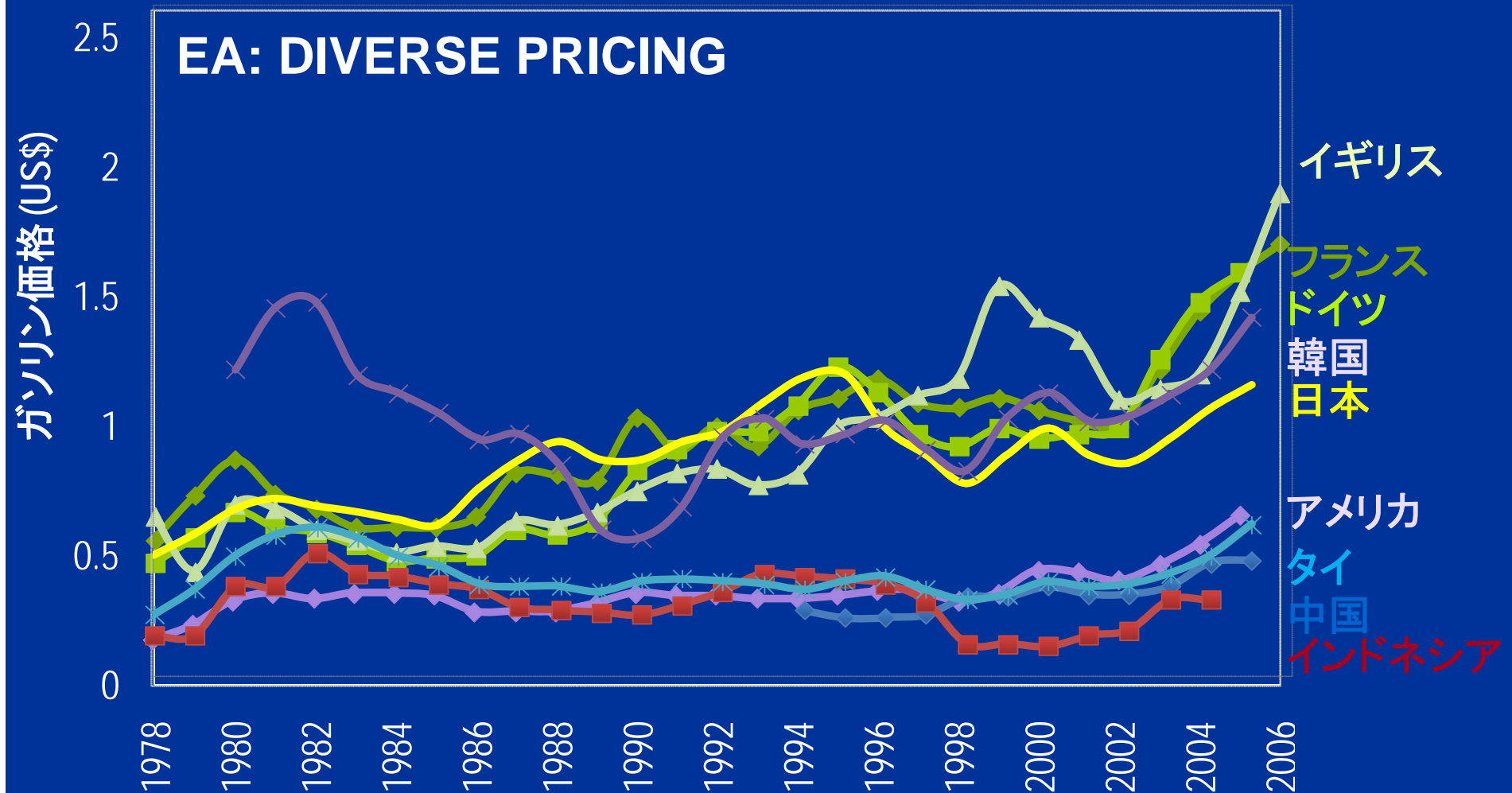


Data Source: Energy Prices and Taxes, IEA

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2.1 燃料価格の推移

ガソリン価格の推移

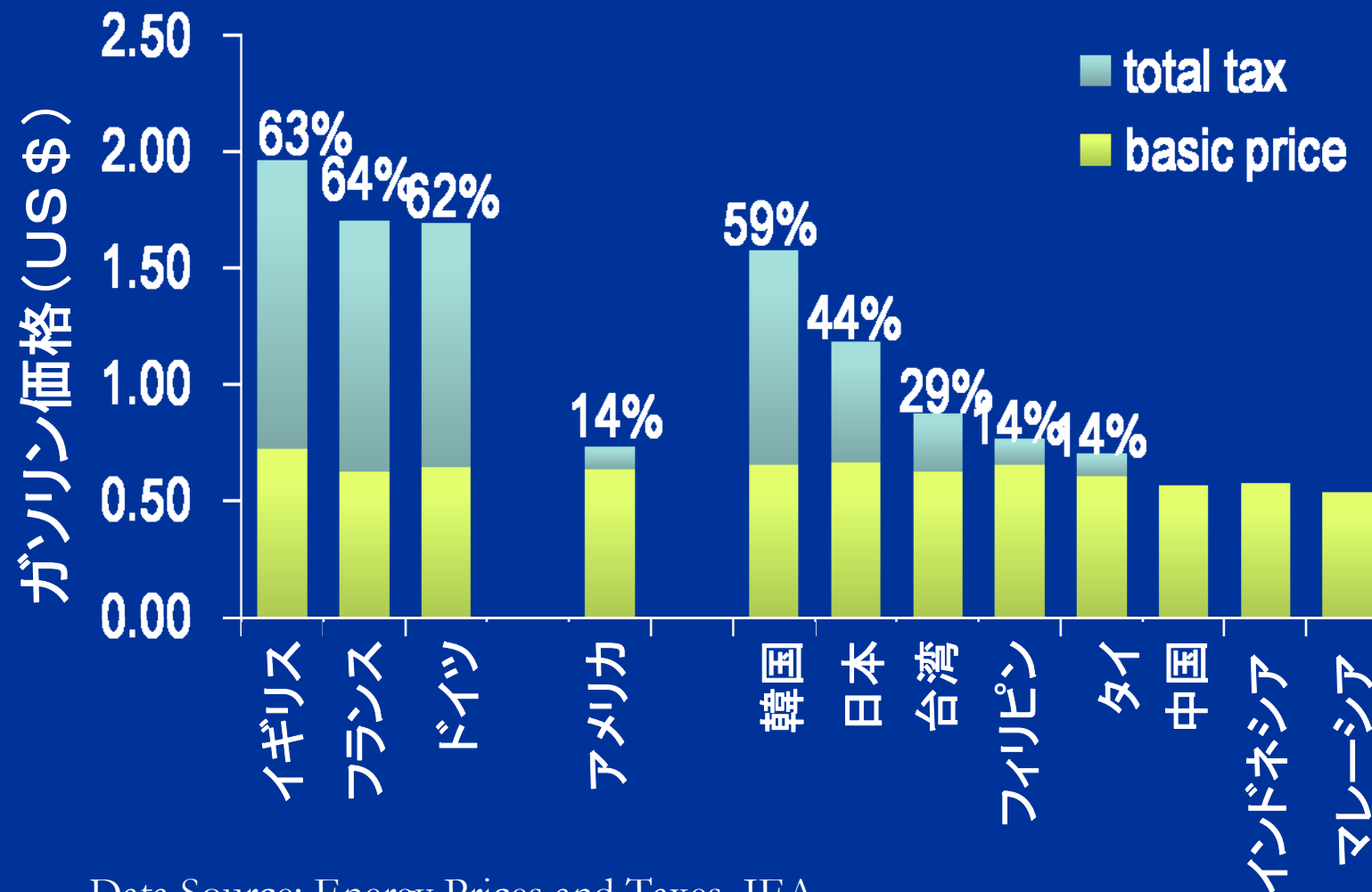


Data Source: Energy Prices and Taxes, IEA

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2.1 燃料価格の推移

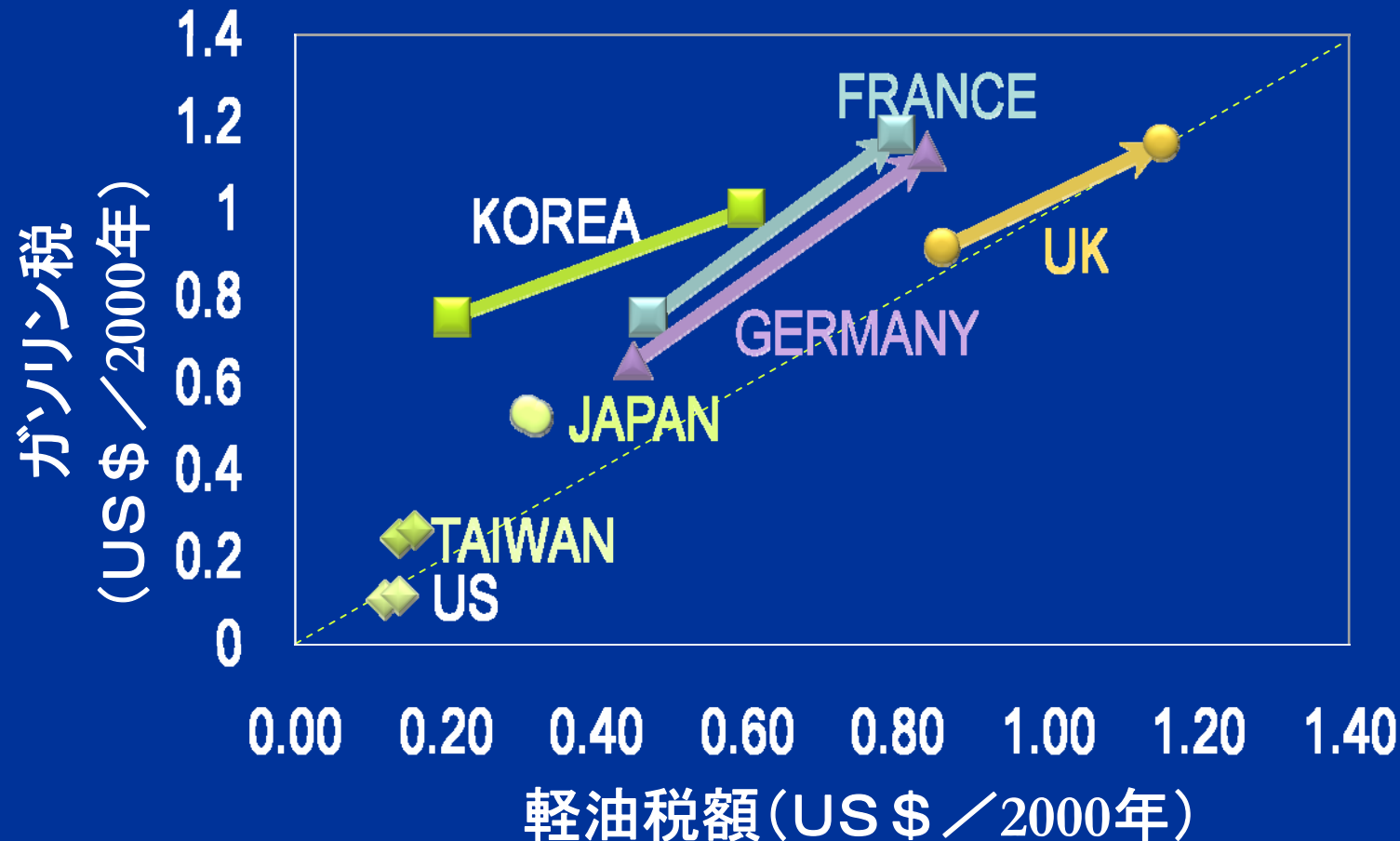
ガソリン価格の国際比較(2006年)



Data Source: Energy Prices and Taxes, IEA
International Fuel Price, GTZ

2.1 燃料価格の推移

ガソリン税と軽油税の推移 (2000-2005)



Data source: Energy Prices and Taxes, IEA

Note: Taxes include excise, VAT and others

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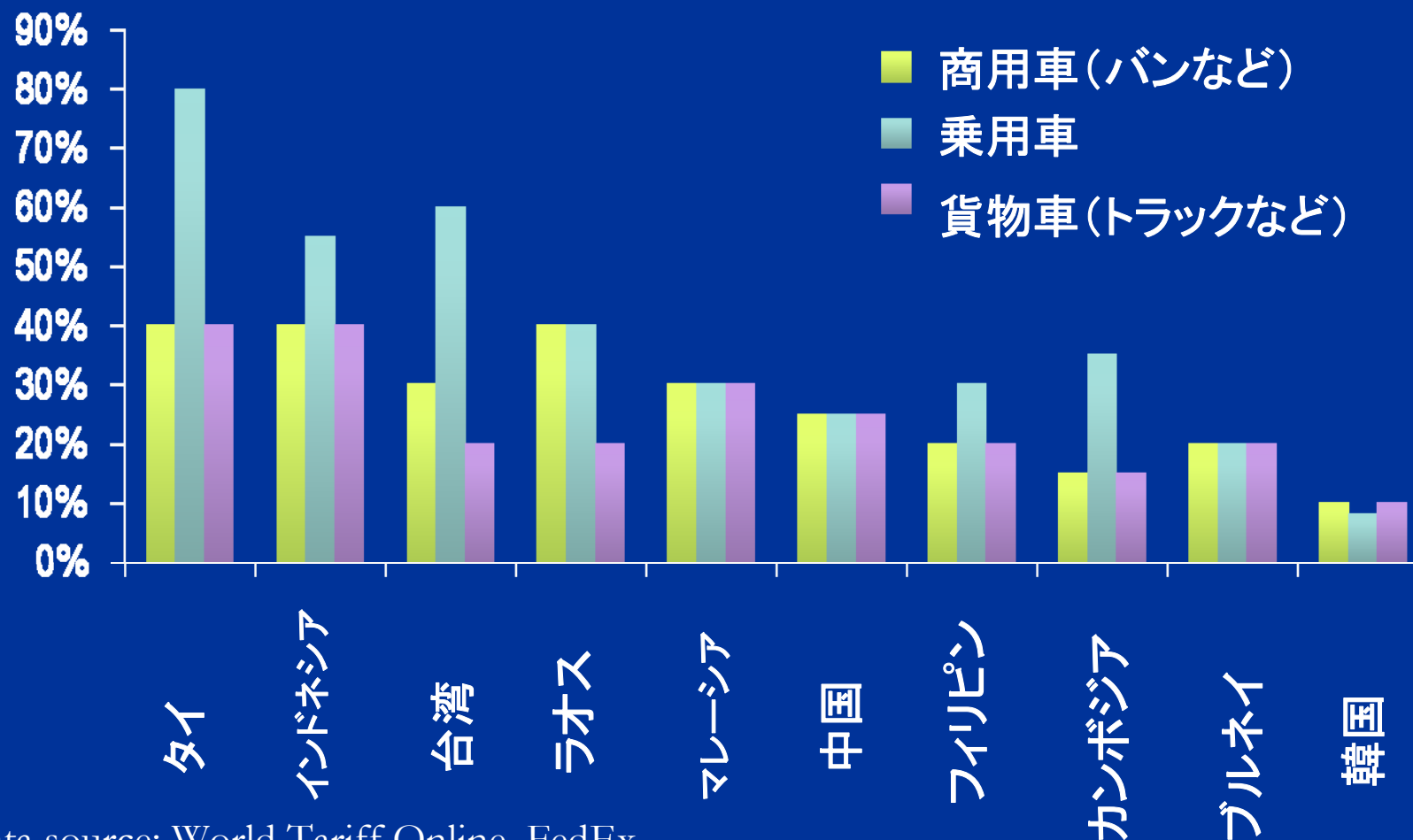
2.2 燃料税導入の根拠

- General revenue raising
- Internalizing transport externalities
- Travel demand management
- Energy security

2.3 東アジアにおける市場の統合と税制改革への示唆

- Amended 1999 CEPT and the AFTA aims to achieve an eventual free-trade area in the region by removing all import duties by 2018
- Efficiency of market integration rely on the harmonization of market instruments

自動車に対する関税 (%)



Data source: World Tariff Online, FedEx

Note: Passenger car is >2000cc, HOV is <6t and 2000-3000cc ,
and goods automobile is 10t-20t

自動車の生産・購入段階における諸税 および付加価値税(VAT)

	自動車の生産・購入段階の諸税						消費 税 ・ VAT
	乗用車			貨物車			
	最低	最高	対象	最低	最高	対象	
タイ ^(a)	32.5%	38%	排気量	40%	40%	排気量	10%
インドネシア ^(b)	10%	75%	排気量	20%	25%	車 齢	10%
マレーシア ^(c)	80%	200%	排気量	122%	272%	排気量	10%
フィリピン	2%	\$ 9295 +	価 格	2%	\$9295 +	価 格	12%

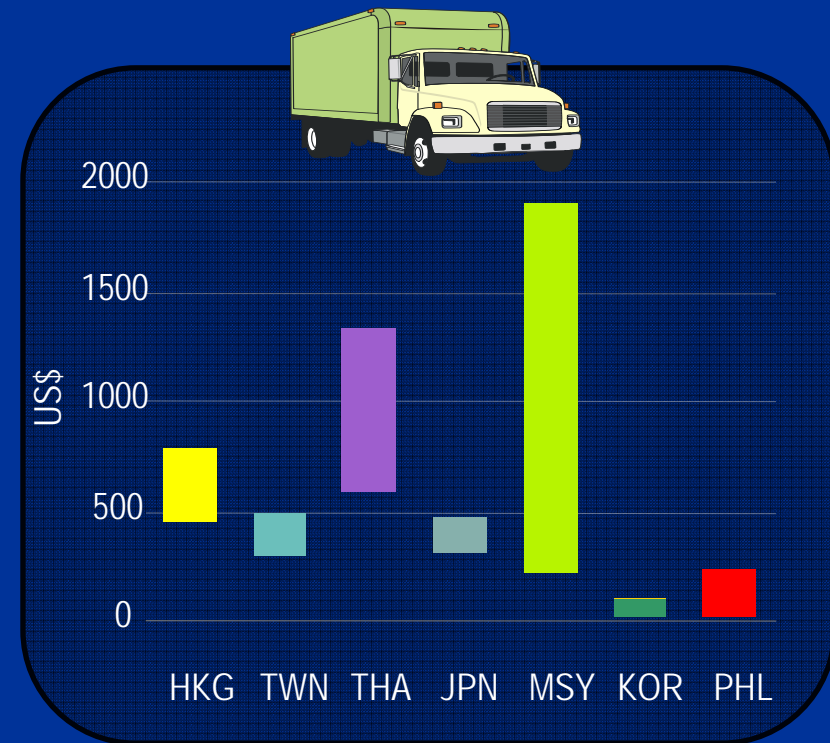
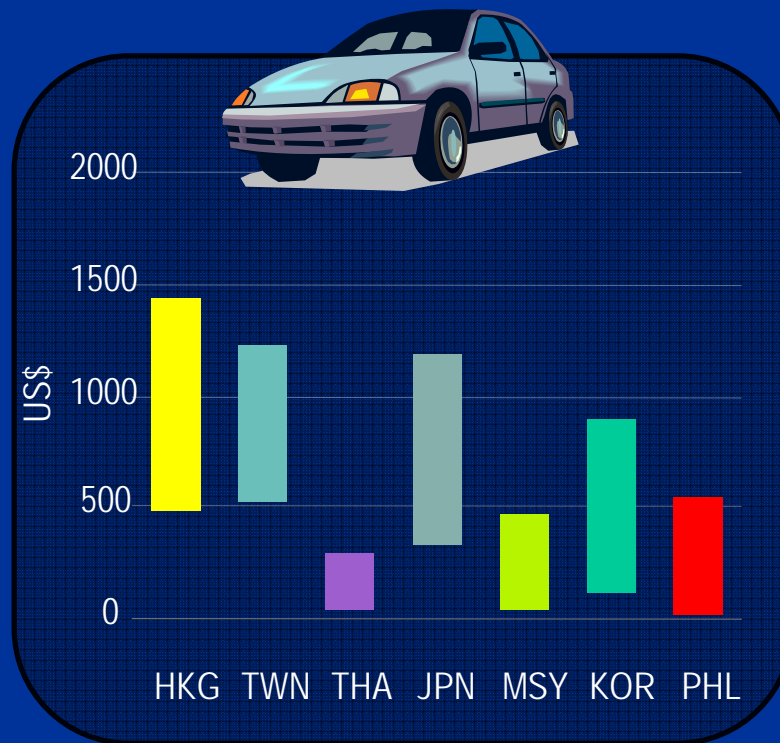
Source: US DCIT (2006), taxation and revenue regulations of different countries

^(a) Excise tax is computed as (automobile price*excise tax rate)/(1-(1.1*excise tax rate))

^(b) Luxury tax

^(c) 50% reduction on excise tax on nationally produced Proton and Perodue.

自動車保有税の国際比較



Data source: IRF (2003), UNPAN (2002), Taxation Agency ROC (2005), RP (2000)

- Conflicting pricing preference for commercial and private vehicles

東アジアにおける自動車関連税の比較

	輸入段階	生産・購入 段階	保有段階	走行段階
香港	None	Low	High	High
日本	None	Low	High	High
韓国	Low	Low	Middle	High
シンガポール	None	Low	High	Middle
中国	Low	Middle	Low	Low
フィリピン	Middle	High	Low	Middle
ラオス	Middle	Low	Middle	Middle
マレーシア	Middle	High	Low	Low
台湾	High	Low	High	High
タイ	High	Middle	Low	Middle
インドネシア	High	High	Low	Low
ベトナム	High	High	..	Low

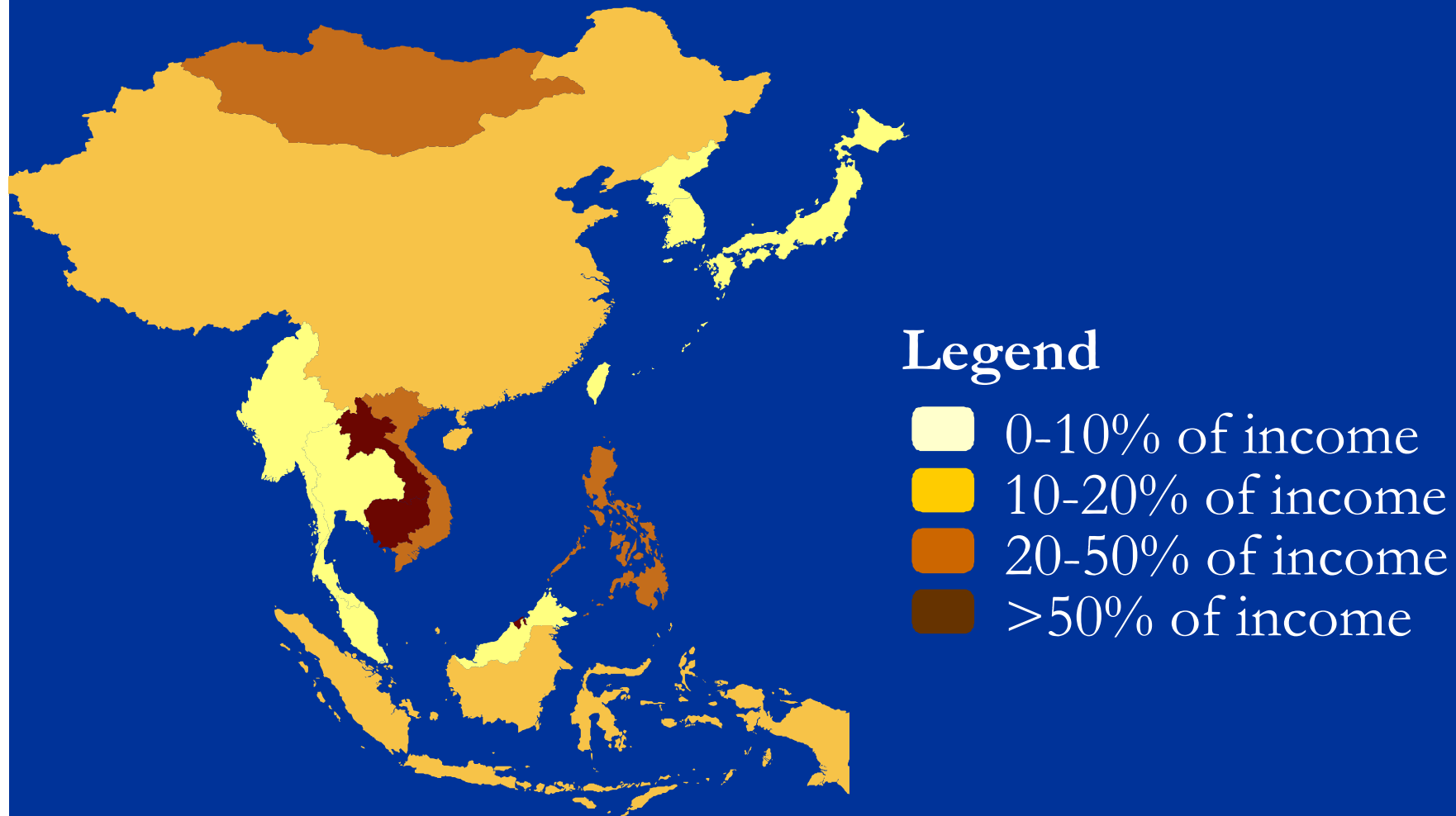
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3.1 燃料税導入に反対する諸理由

- Possible economic distortions
- Inflationary impact
- Volatile oil market do not fit rigid pricing
- Strong resistance from the people and transport sectors
- Avoiding household income burden

3.2 各国の1日の所得に占めるガソリン1ℓ購入費の割合(2006年)



インドネシアにおける燃料費補助金

- Subsidize fuel used by households, fishing boat, fuel, transportation, and public service facilities
- Indonesia remove some subsidies on October 2005, to lessen fiscal burden
- Average cost > market price > taxation
- Implemented financial support package that include:
 - March 2005: free education fees for poor student; targeted health insurance; and infrastructure grant for 13,000 poor village
 - October 2005: cash transfer to about 19,000 low-income households

3.3 インドネシアにおける燃料費補助金の推移

Subsidizing marginalized sectors in Indonesia



Source: Statistics, Bank of Indonesia

Oil Prices and Subsidies: An Explanation, Economic Planning Unit, Malaysia

*Indonesia Minas

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燃料費値上げに対する反対運動



Kuala Lumpur in 2005



Jakarta in 2005



Manila in 2002

3.4 燃料税導入における主要課題

- Differentiated pricing for low-income household, freight sector, and public transport,
- Packaging and “branding” of tax or charge is important, the purpose of tax must be clear
- Should have price stabilizing effect

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4.1 燃料税増減の効果と特定財源化

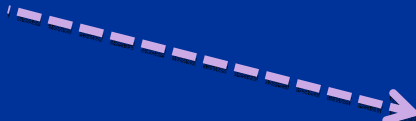
■ Increase fuel price



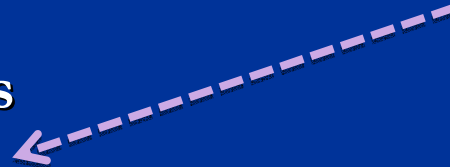
- To internalize externalities
- To raise revenues
- For energy security
- ...

■ Decrease fuel price

- Social equity
- For int'l competitiveness
- Increase productivity
- ...



Revenues from the increased price may be used efficiently to achieve objectives to decrease price



4.2 特定財源化の主要パターン

CASE 1: Road fund- Japan

CASE 2: Cross-financing rail - Switzerland

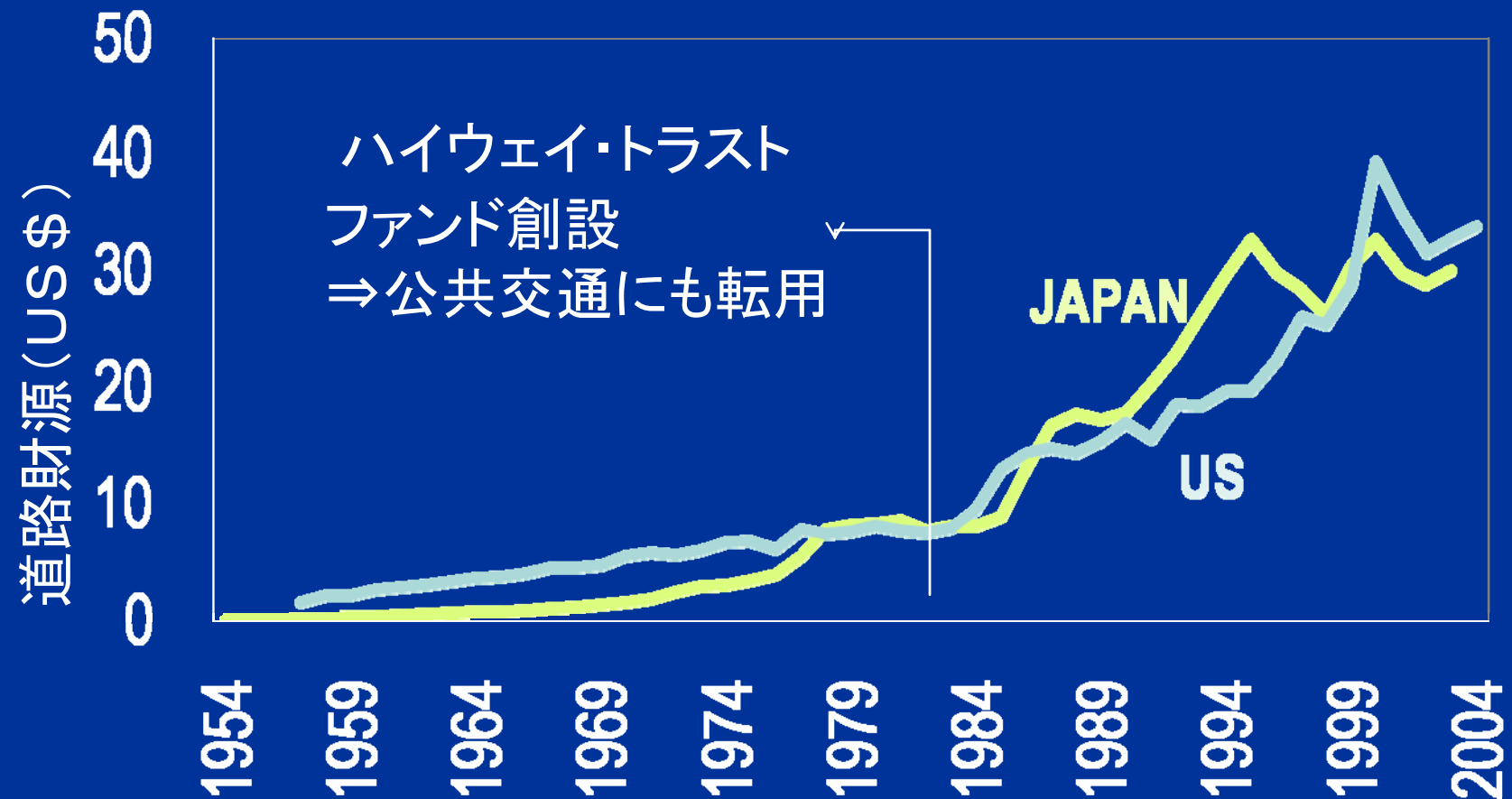
CASE 3: Integrated transport fund - Korea

CASE 4: Multiple objective fund- Germany

CASE 1: 道路整備特定財源: 日本

- Road sector revenue for road sector spending
- Direct correspondence means easier acceptability
- Long-term stability of the fund
- Spending diversification needed at some stages
- Danger of being in place long after needed

CASE 1: 道路特定財源規模の日米比較



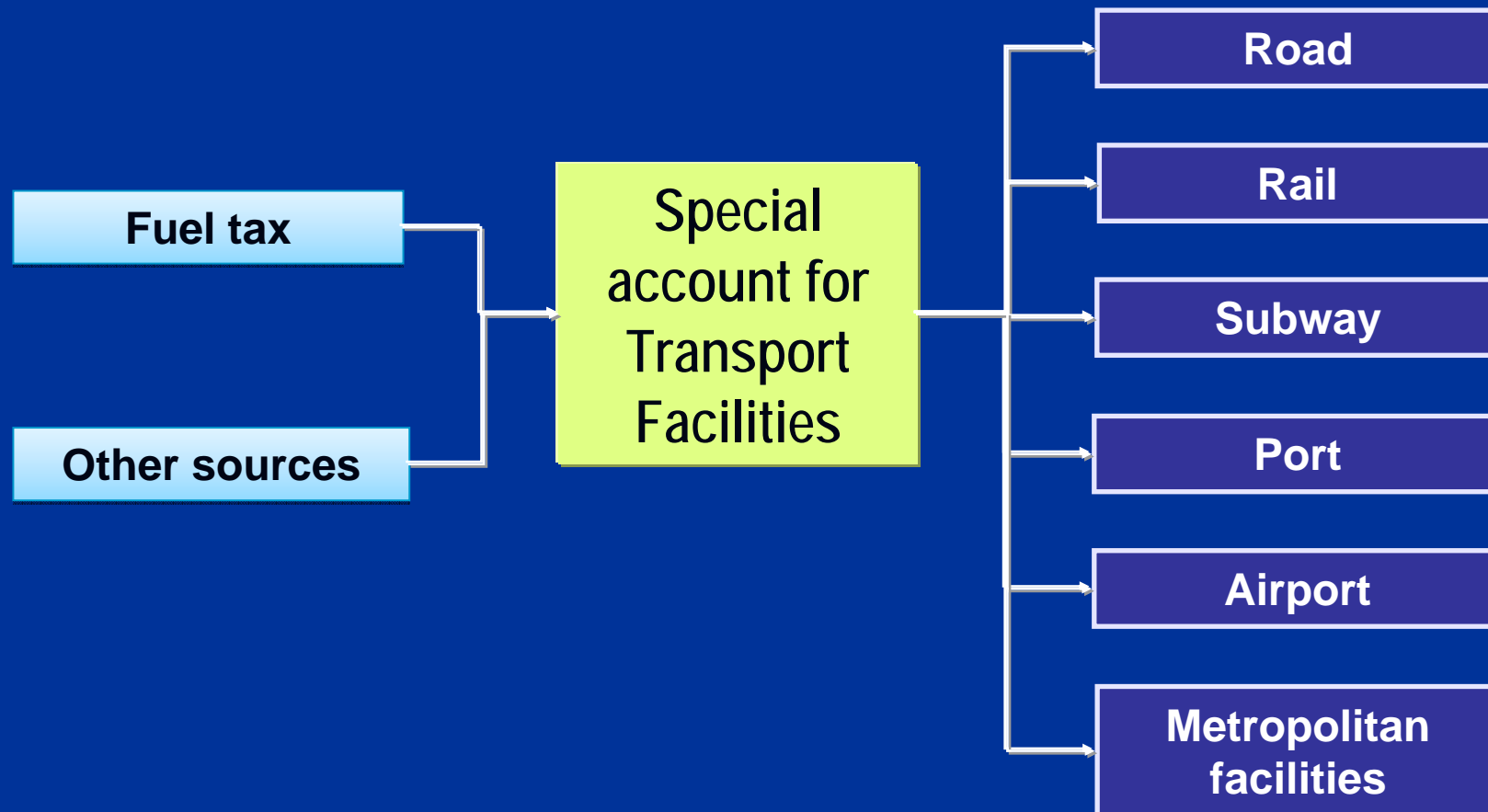
Source: Federal Highway Trust Fund (<http://www.fhwa.dot.gov/>)
Ministry of Land, Infrastructure, and Transport website

CASE 2:交通施設特別会計;韓国

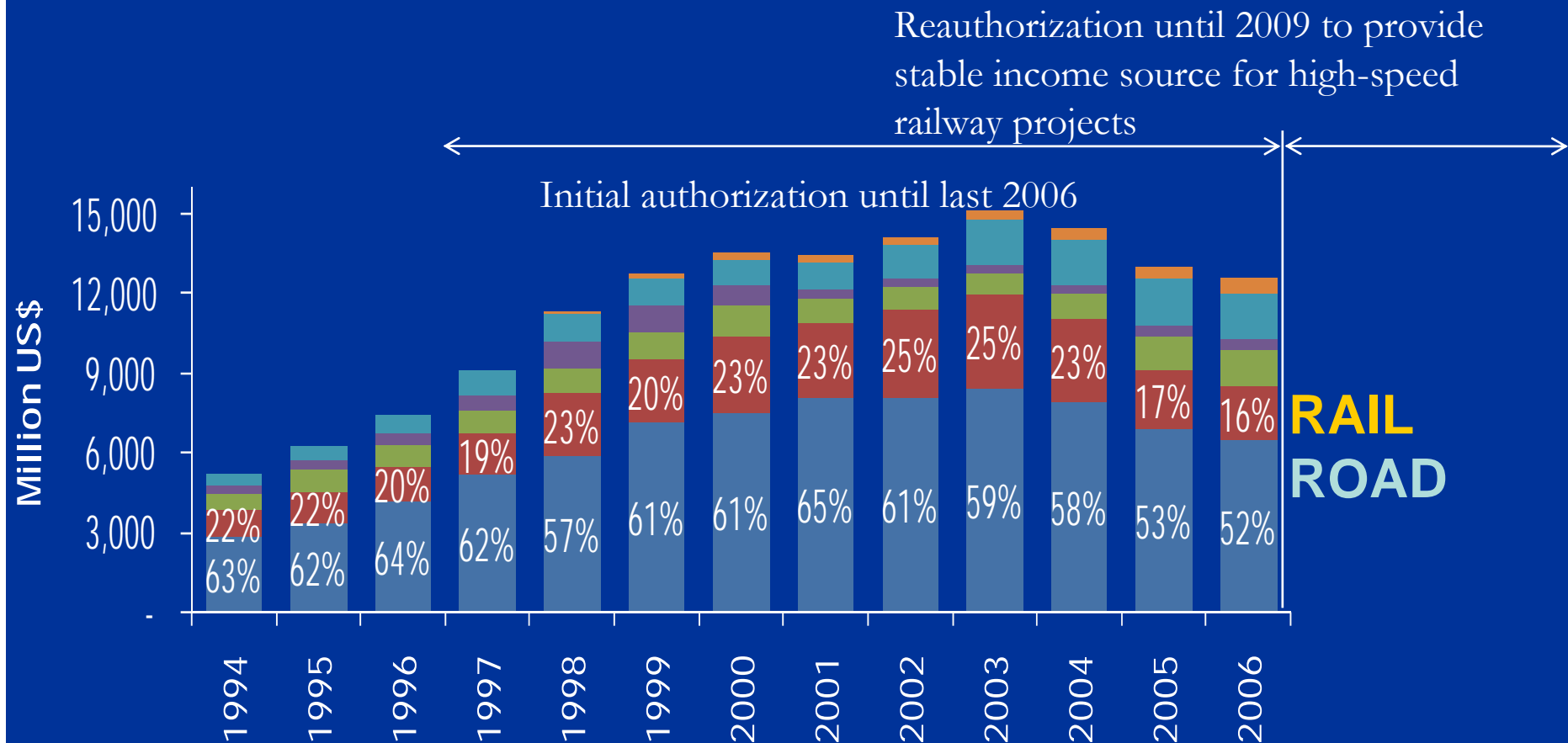
- Special Account for Transport Facilities
- Development-oriented, target-oriented
- Weak pricing-revenue linkage
- Capital mobilization

CASE 3: 交通施設整備財源の統合

Revenue sources and Spending



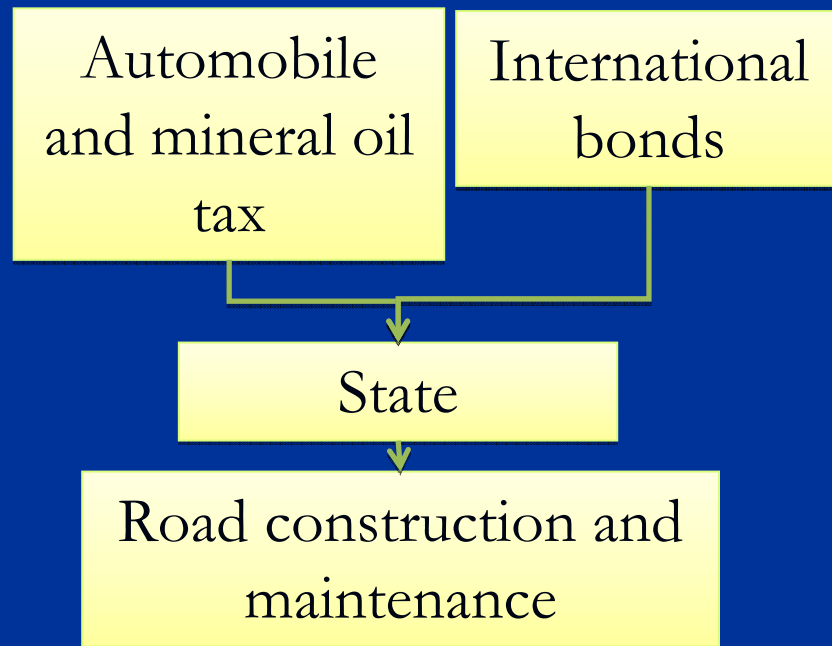
CASE 3:交通施設整備への投資額の推移



Source: Kim, (2003), Sung (2007)

Account expenditure, 1994-2006

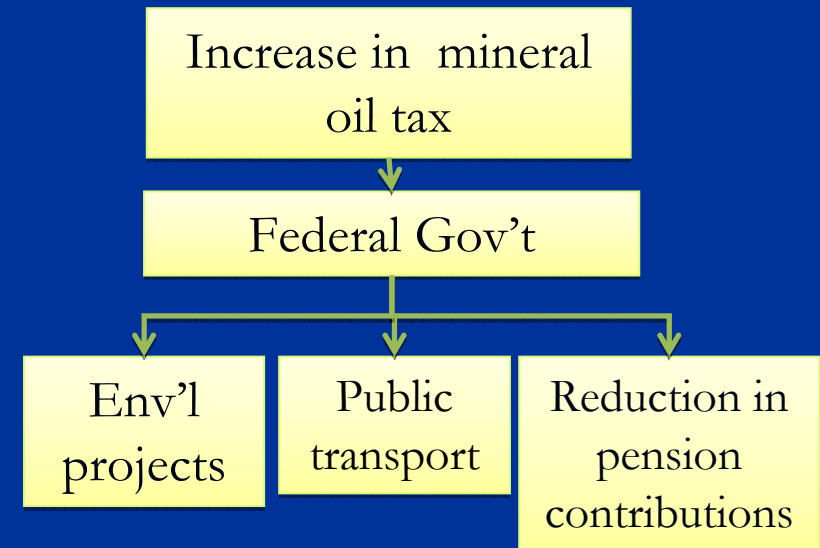
CASE 3: 一部を一般財源に転用;ドイツ



Dedicated funding

1927-1930s

- for the purpose of maintaining public roads



Eco-tax reform

1998-

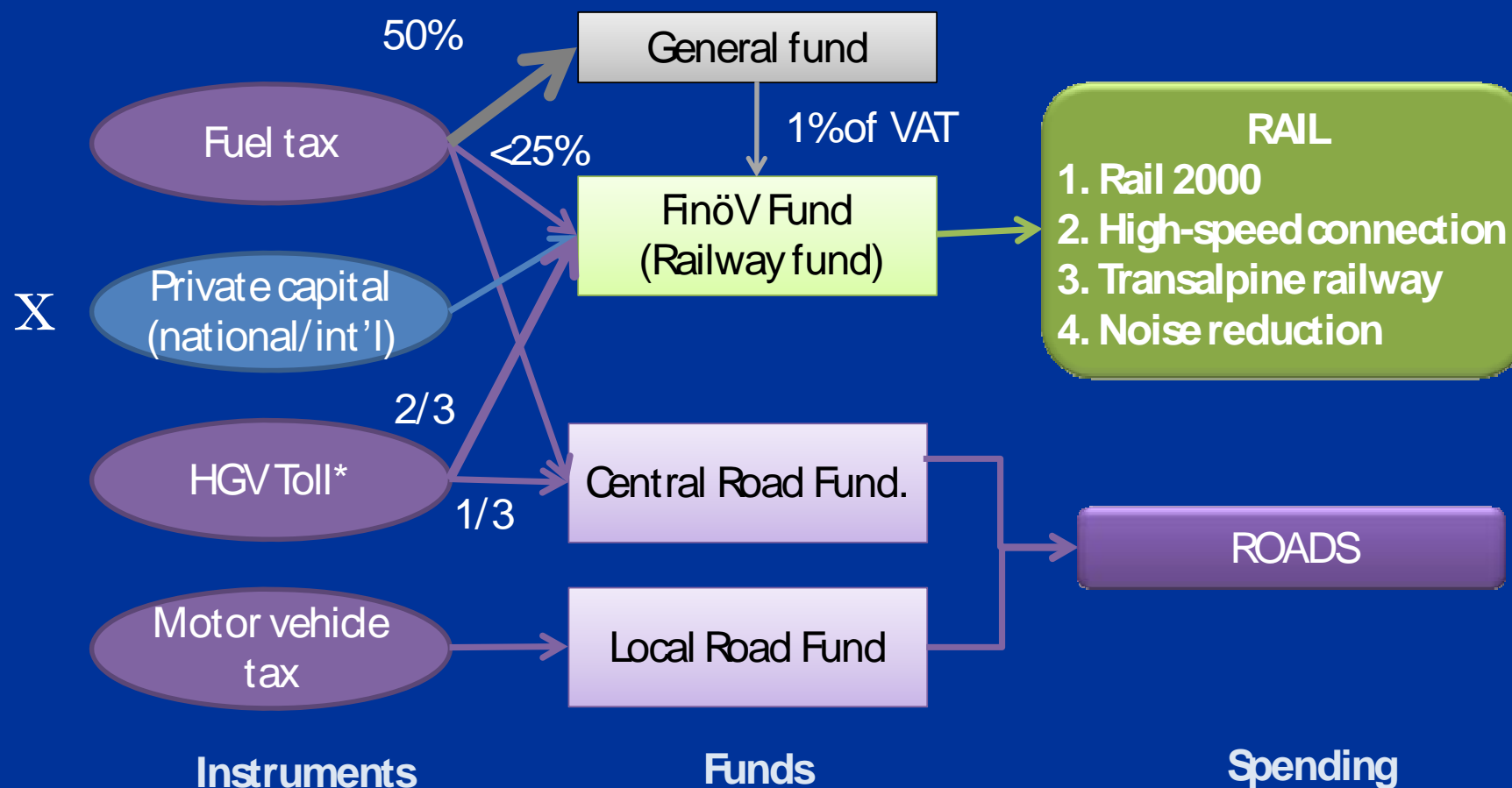
- Aimed at the double dividend of **protecting the environment** and **creating jobs**

CASE 4: 公共交通への内部補助; スイス

- Road pricing revenues cross-financing rail investments
- Funding pre-determined transport investment program
- Private capital considered in the framework

Source: Laird & Nash(2007) IMPRINT-NET

CASE 4: スイスにおける道路から鉄道への内部補助のスキーム



Source: Laird & Nash(2007) IMPRINT-NET

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5.3 特定財源化に関する留意点

- Tax earmarking for transport may increase the acceptability of fuel taxation
- Considering timing of funding and financing institution is important
- Potential of private sector involvement
- Consideration for growth-oriented earmarking

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5.1 燃料税の増税による税収増大の効果

Potential revenue from a two cents increase in motor fuel taxes
(million USD)

Country	Potential revenue for two cents increase per liter	Two cents percentage in price	One percent of GDP (transport spending need indicator)	Potential revenue to spending ratio
China	2376	5%	16,400	15%
Indonesia	594	7%	2,370	25%
Malaysia	298	6%	1,040	29%
Philippine	161	6%	805	20 %
Thailand	375	6%	1,430	26%
Vietnam	119	6%	397	30%

Data source: Energy Balance, IEA
World Development Indicators, WB

5.2 まとめ

- Institutionalizing/ increasing automobile use taxes, particularly fuel tax, and enhancing its acceptability,
- Institutionalization of efficient pricing policy on the context of optimal pricing and transport investments,
- Price setting and instrument design for sectors such as low-income households, and freight transport

5.3 まとめ ～燃料税の特定財源化における課題

	Needs/Considerations	Possible solution
Fund source	<ul style="list-style-type: none"> ■ Fuel tax may not be reliable in times of high market price ■ Fuel tax is an interim fund source 	<ul style="list-style-type: none"> ■ Fund source diversification ■ Programming of fund
Investment vis-à-vis maintenance funding	<ul style="list-style-type: none"> ■ Consider scale and uphill/downhill spending pattern for investment 	<ul style="list-style-type: none"> ■ Revenue –based financing for capital investment ■ Direct revenue channeling for road maintenance
Fund administration	<ul style="list-style-type: none"> ■ Should circumvent political constraints ■ Maintain some government control 	<ul style="list-style-type: none"> ■ Privately managed fund/ public-private participation

Thank you very much for listening.