

# U.S. Oil Dependency and Energy Security

- ✓ The Data: History and Projection to 2020
- ✓ Policy Analysis: Genesis, Concepts and Instruments of U.S. Oil Policy

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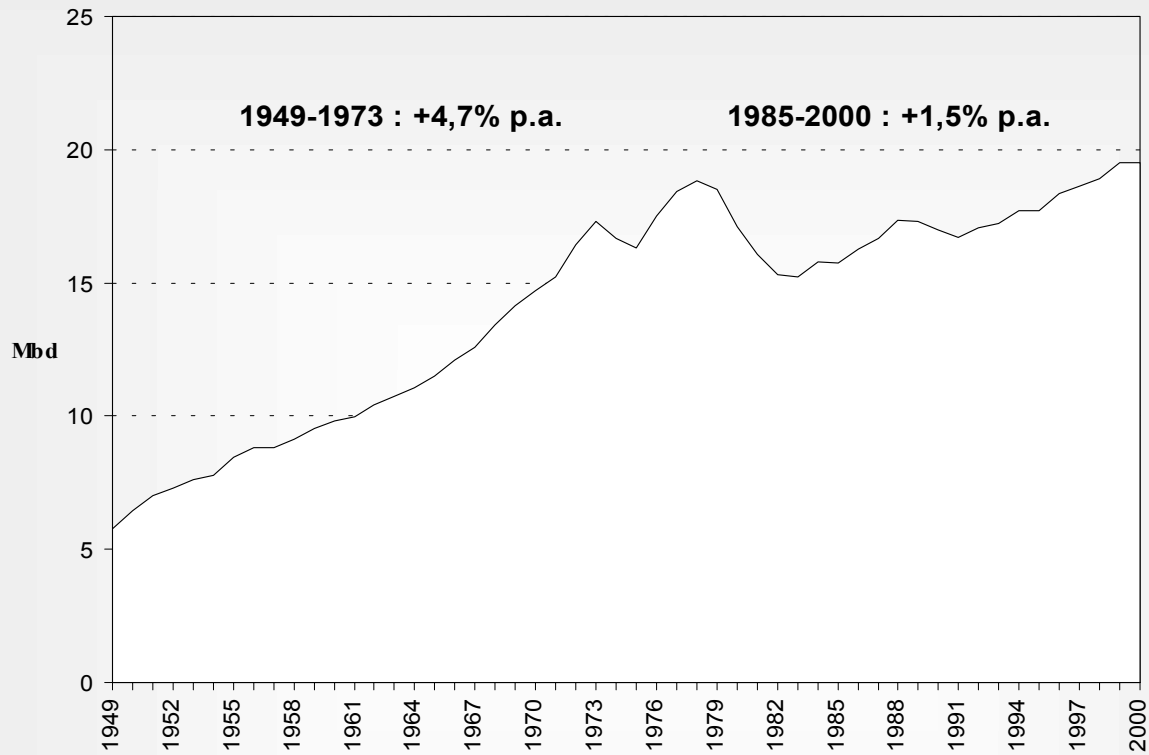
30 May 2002

# US Petroleum Imports — Historical Data and Projection to 2020

- Petroleum demand in the US
- Domestic supply
- Imports: how much? from whom?

Data from the US Energy Information Administration (EIA) of the DOE: *Annual Energy Review Database* (historical), *Annual Energy Outlook 2002* (projection to 2002)

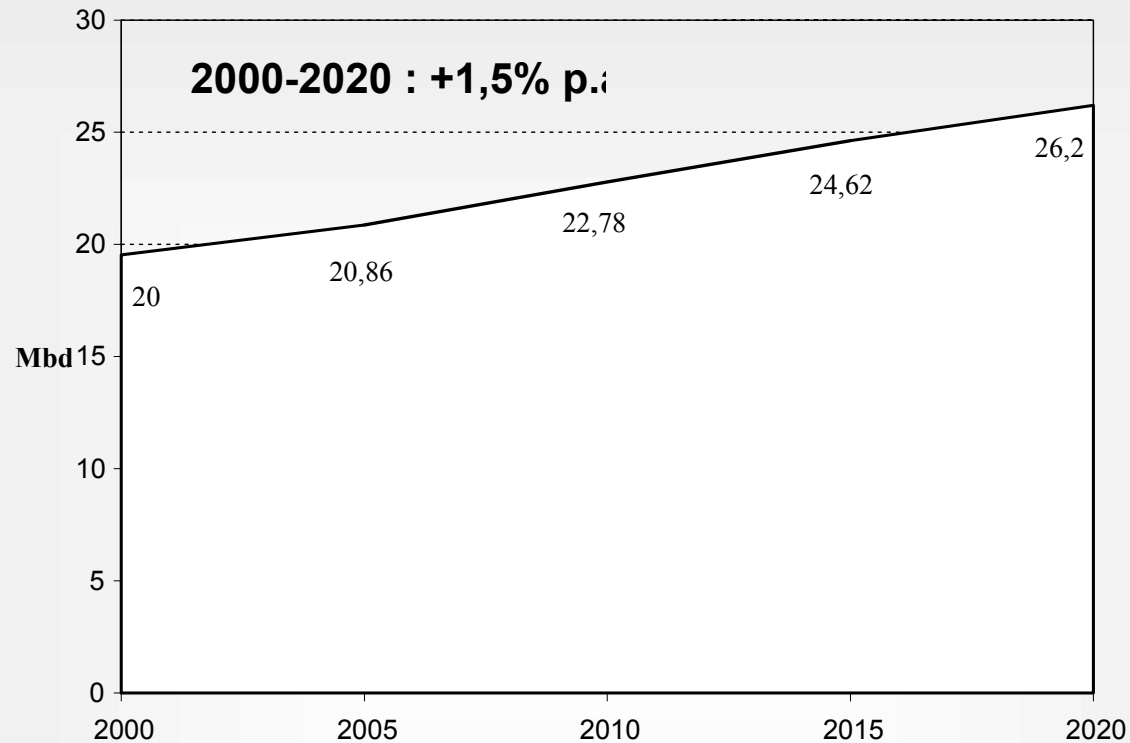
# Petroleum Demand 1949-2000



Petroleum demand growth — The oil shocks are a turning point

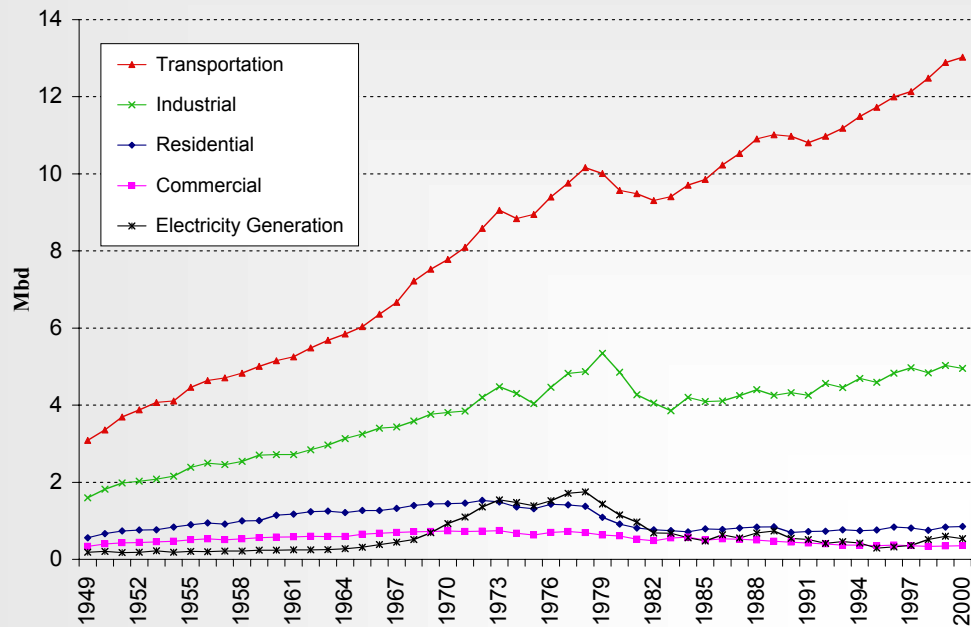
- 1949-1973: +4.7% p.a.
- 1985-2000: +1.5% p.a.

# Petroleum Demand 2000-2020



- 2000-2020 is a continuation of 1985-2000 (+1.5% p.a.)
- 26.2 Mbd in 2020

# Petroleum demand is dominated by the transportation sector



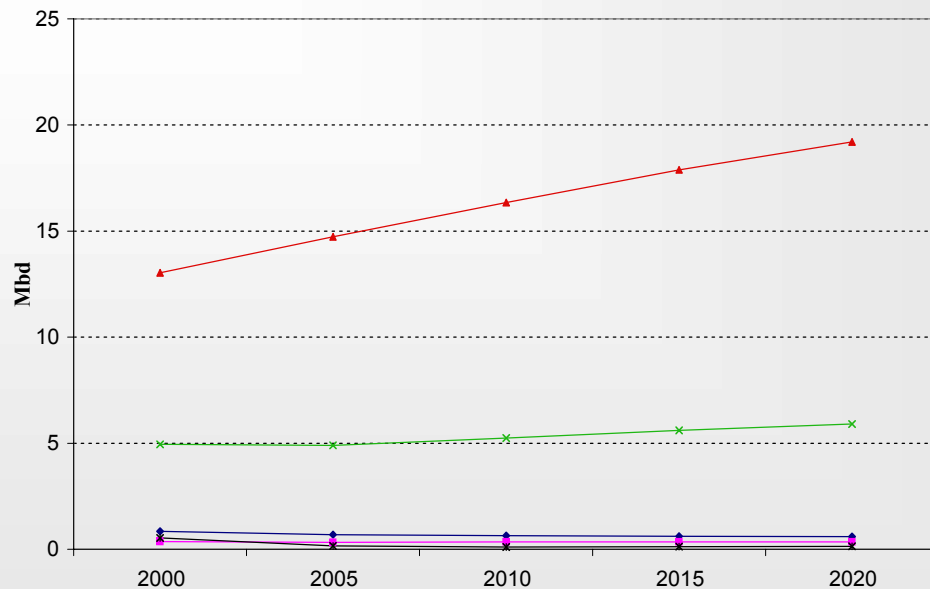
Transportation / total pet. demand

- 2000 = 65%
- 2020 = 74%

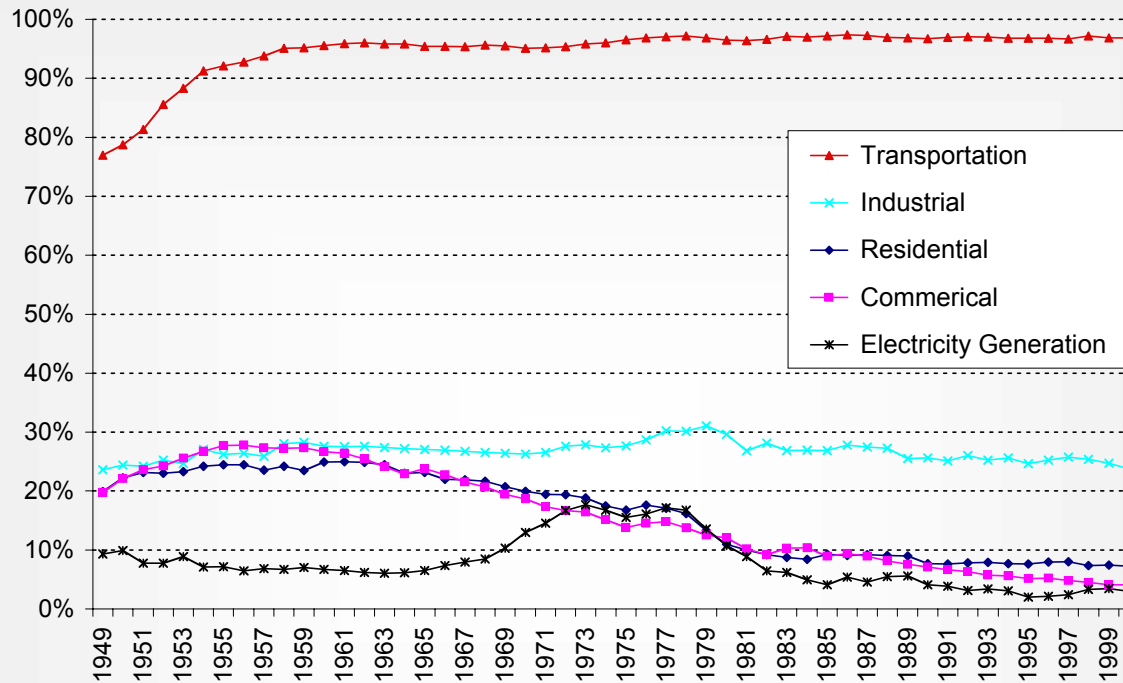
Contribution to demand growth

- 1985-2000 = 85%
- 2000-2020 = 83%

Demand for transportation in 2020 equals total demand in 2000 (19.5 mbd)

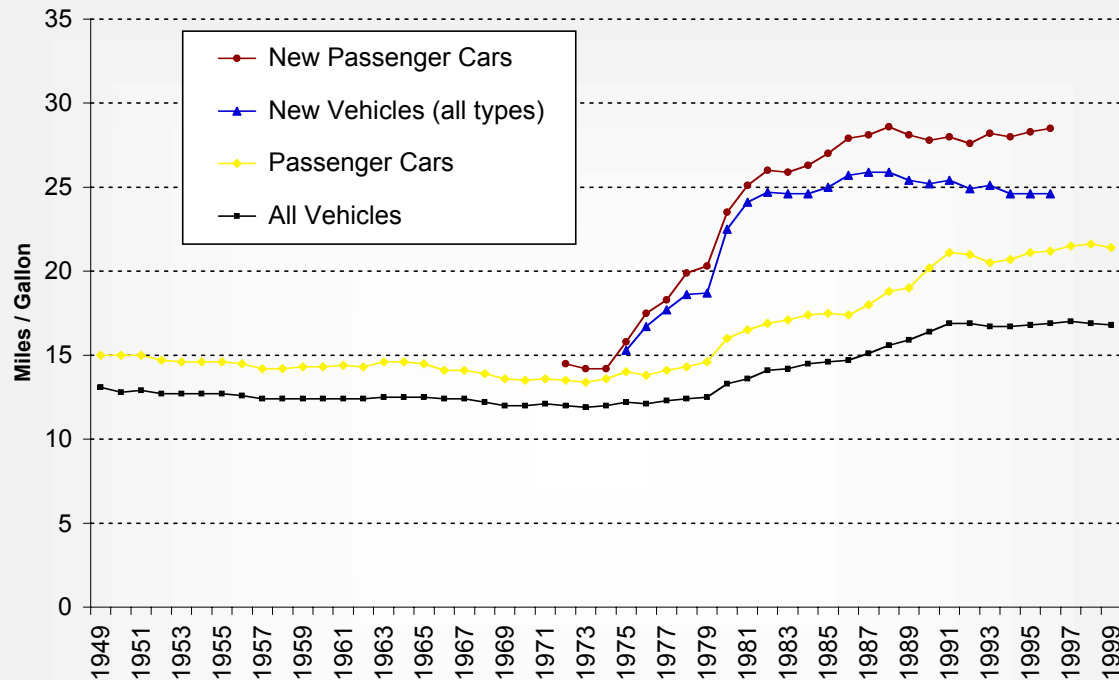


# Market share of petroleum products by sector



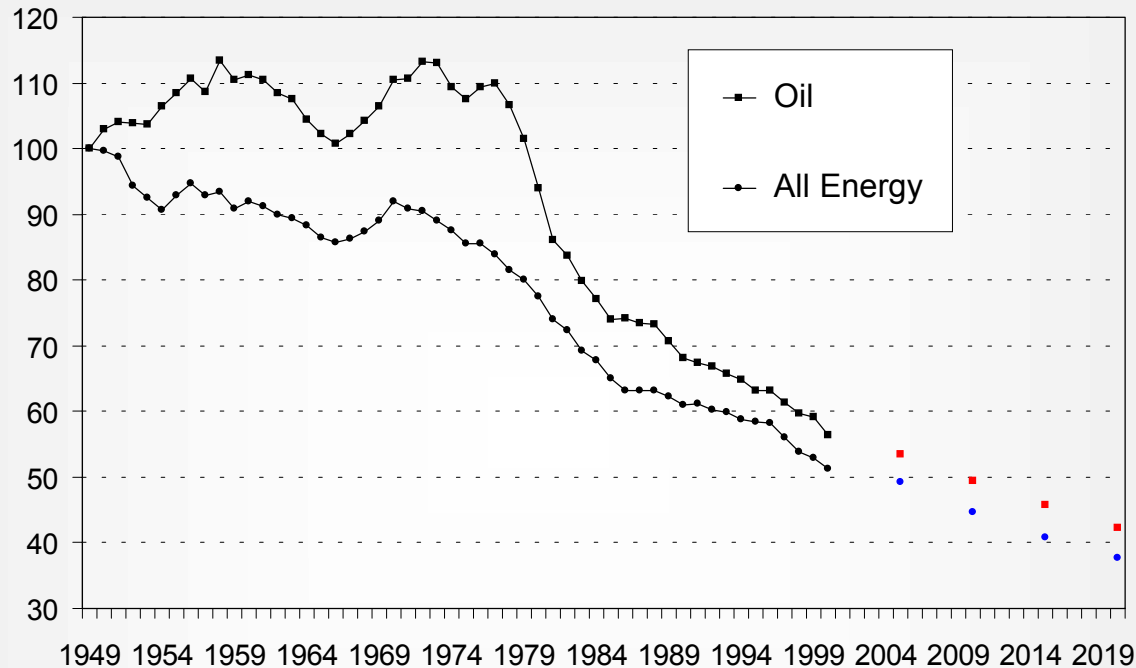
- almost 100% in transportation
- 25% (declining) in industrial
- declining in residential & commercial
- marginal in power generation (near zero in 2020)

# Energy efficiency of vehicles 1949-2000



- CAFE standards have not been raised for 10 years
- SUVs (>50% of new cars) are subject to lower standards
- No plan to raise the CAFE stds by the Bush administration

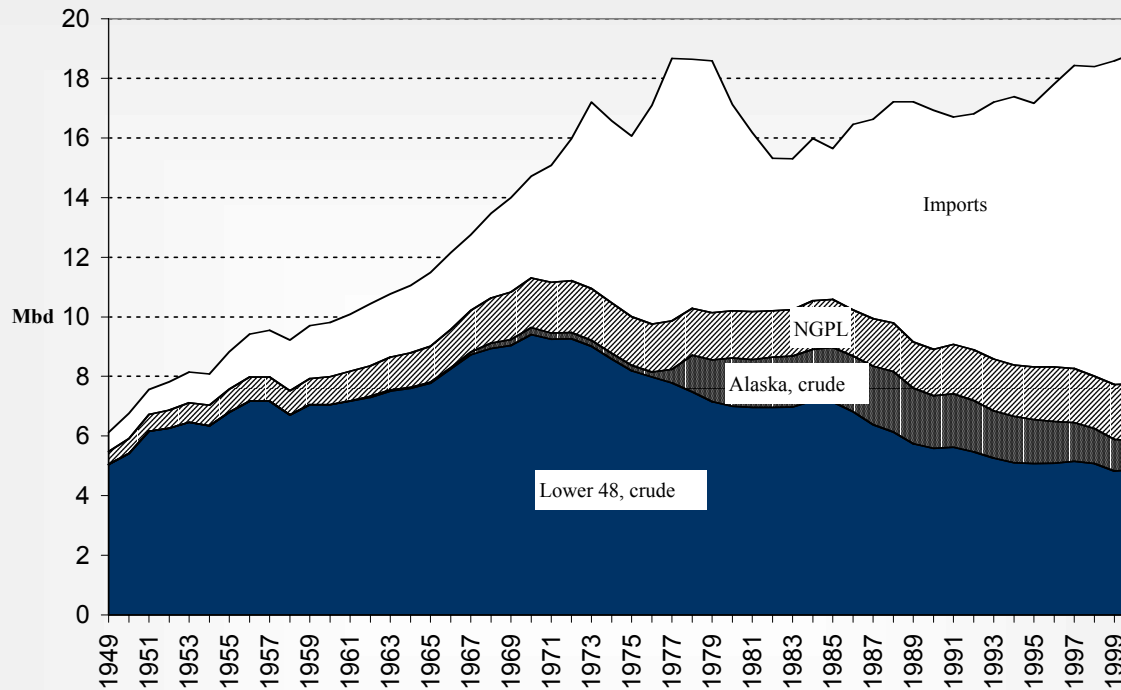
## Energy / Oil Intensity of the US. Economy



### Decline in the petroleum intensity of the US GDP

- 1985-2000 = -1.4% p.a.
- 2000-2020 = -1.2% p.a.

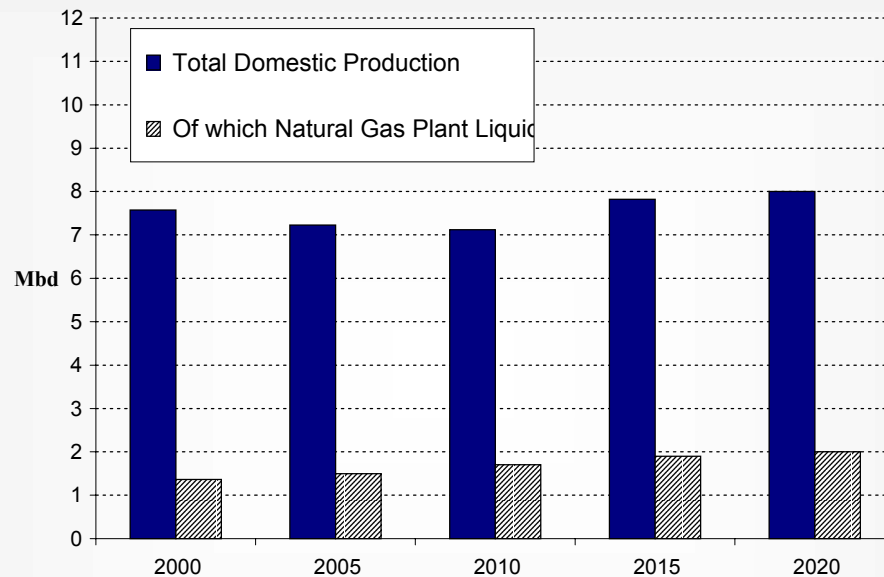
# Domestic production and net imports, 1949-2000



## 1985-2000

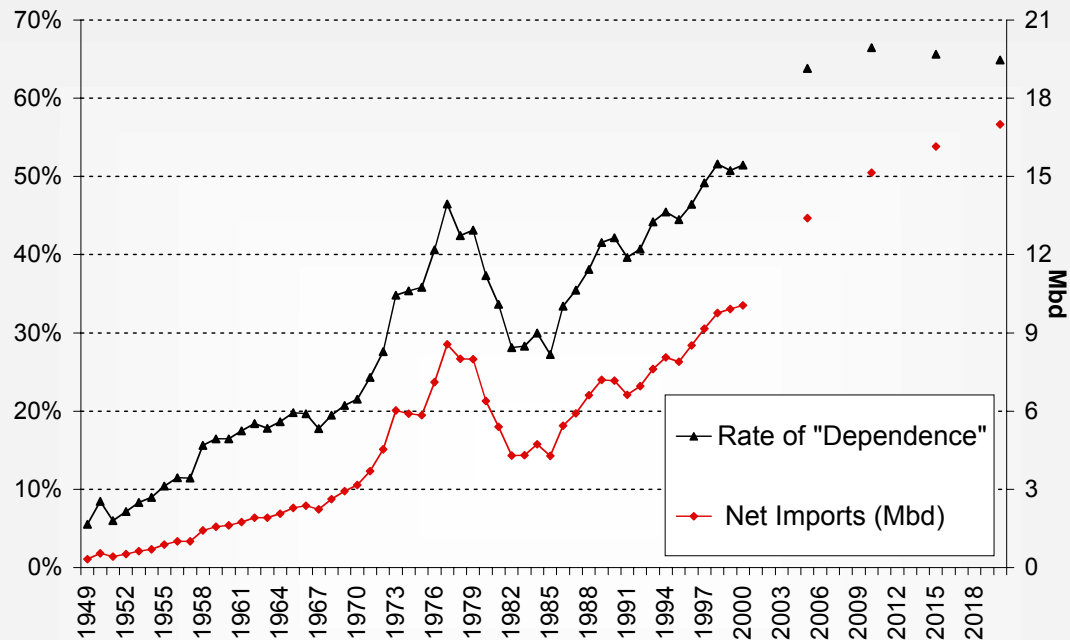
- Demand: +1.5% p.a.
- Domestic prod.: -1.1% p.a. (crude oil: -2% p.a.)
- Net imports: +3% p.a.

## Domestic oil production: no decline through 2020



- Alaska (NPR-A) and offshore Gulf of Mexico rebound after 2010
- NGPL reach 2 mbd in 2020

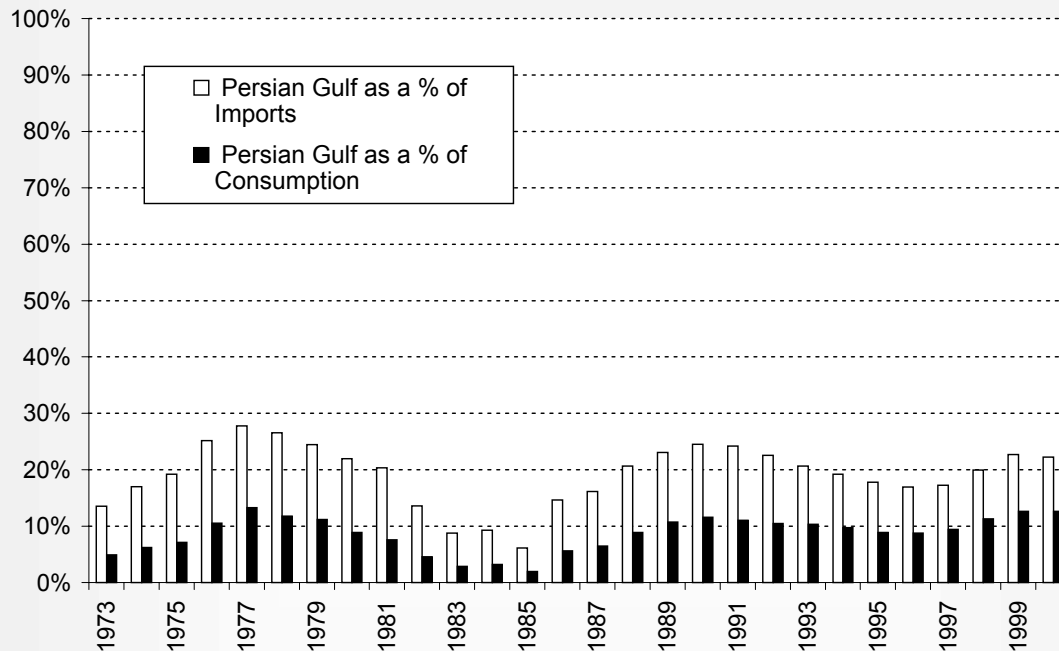
## Net imports and rate of “dependence”, 1949-2020



- Rate of dependence to stabilize below 70% after 2010
- Net imports = 17 Mbd in 2020

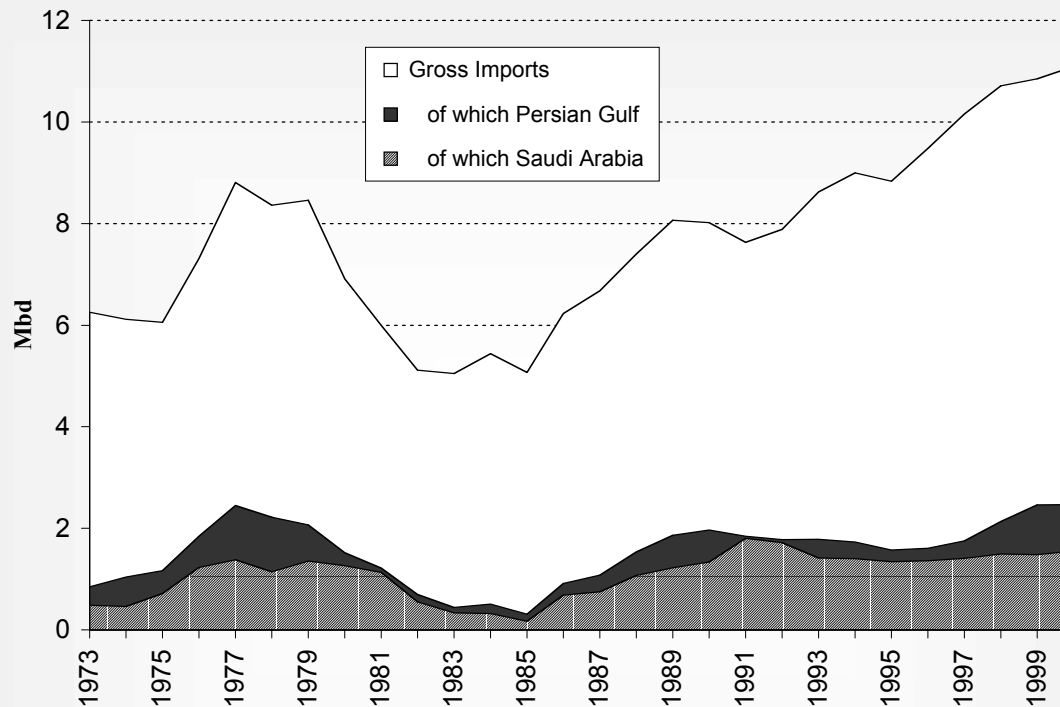
NB: 50% of net imports are refined products in 2020 (against 25% in 2000)

# The Middle East in the US oil supply 1973-2000



20% of imports  
10% of consumption

# The Middle East in the US oil imports 1973-2000

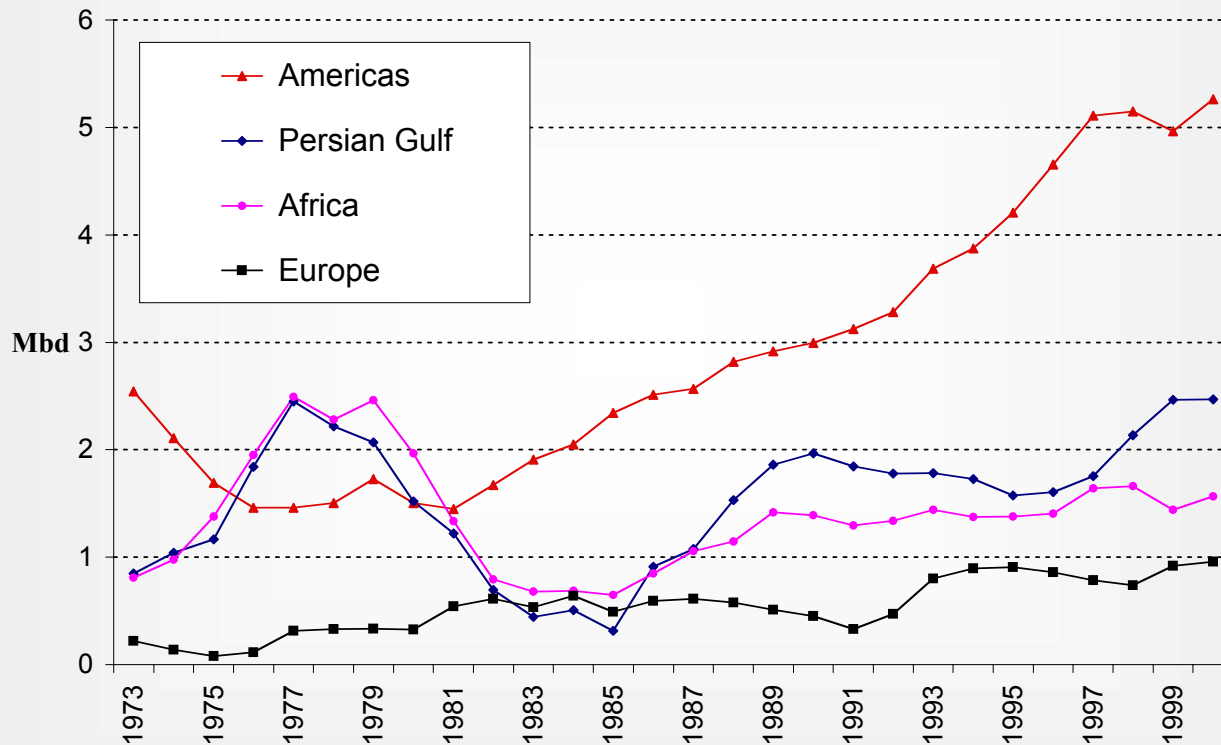


The Middle East is the swing supplier to the US market

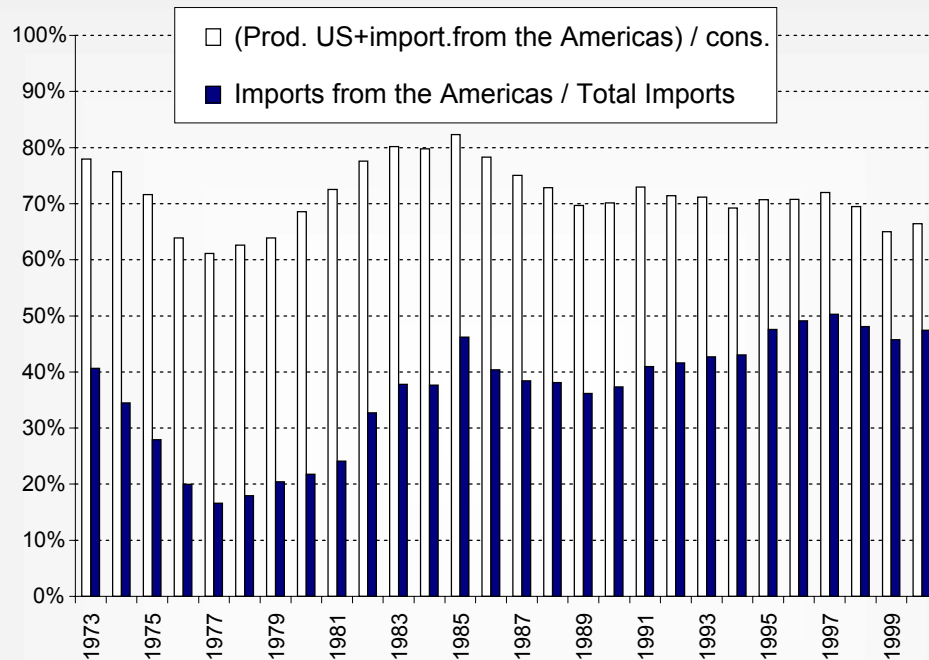
- Its share tends to fluctuate in line with demand
- In the 1990s, the ME did not benefit from rising demand and imports

# Petroleum exports to the U.S. (1973-2000)

## 4 regions



# Regionalization of the US oil supply



- Regionalization of imports compensate for the decline in domestic production
- 70% of the oil consumed in the US is produced in the “Western Hemisphere”

# Toward a growing reliance on the Middle East?

- The share of the ME in US imports should rise as world oil supply get more concentrated on that region
- But Gulf countries have the power to force more of their oil into the world market sooner
- The level of US imports and the share of the ME are sensitive to oil policies by the low-cost exporters (more than they are to US policies)

# US Oil Policy and Energy Security

US oil policy is fairly consistent since the early 1980s

- Liberalization
- Market Building
- Market Securing

# Liberalization

Energy security is better served by well-functioning, self-adjusting markets, than by administrative controls on prices and allocation.

- Complete “decontrol” in 1981: US producers, refiners and consumers fully immersed into the world petroleum market
- Dismantling of the Synfuel Corp.
- Resistance to pressure from domestic producers on oil tariff and import control

The Reagan turn ends 55 years of intervention

# Market Building

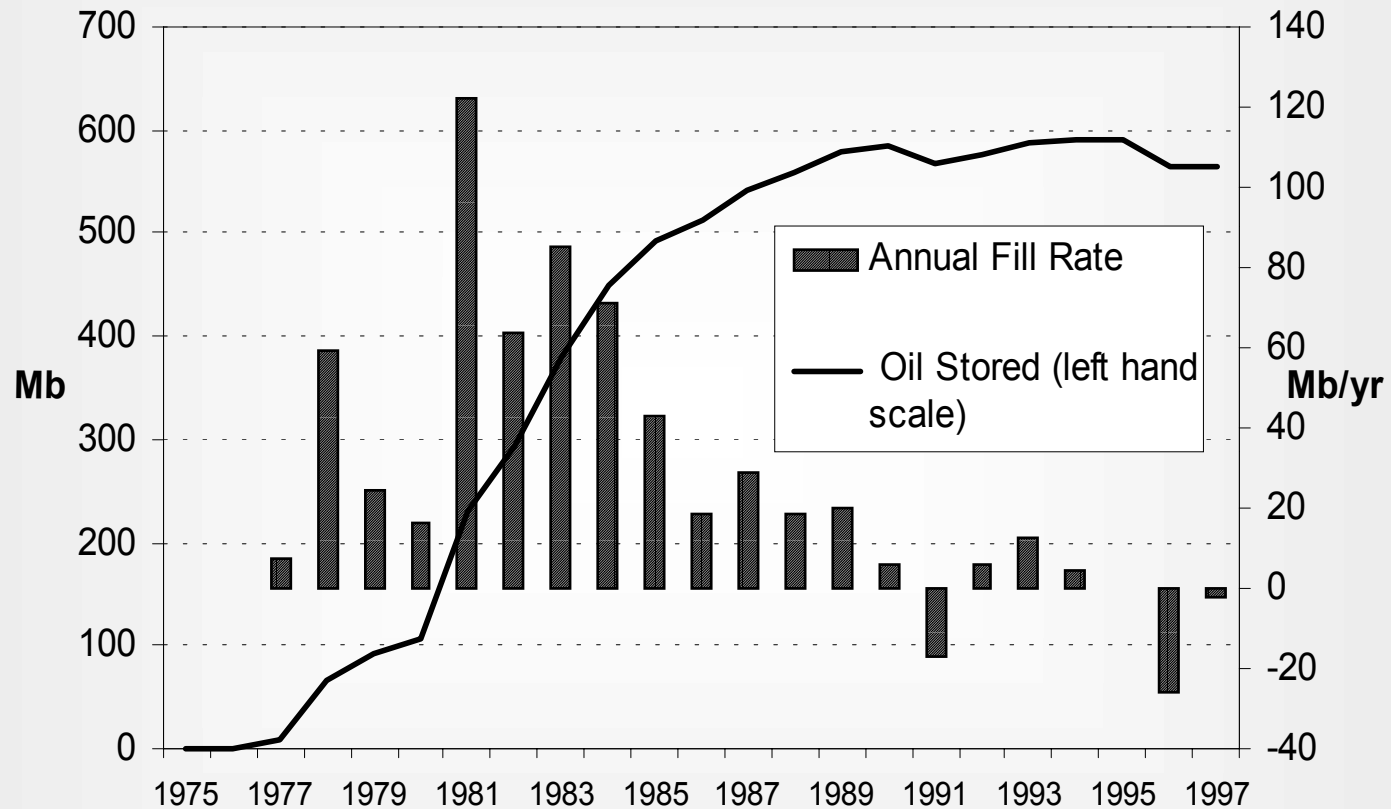
- Restoring and securing the investment climate in the LDCs (Latin America, Africa, Asia, then the FSU)
- International legal policy
- Reorienting the action of the World Bank

Continuing & extending the int'l market-building policy is high on the agenda set by the “Bush-Cheney” report of May 2001.

# Securing the market

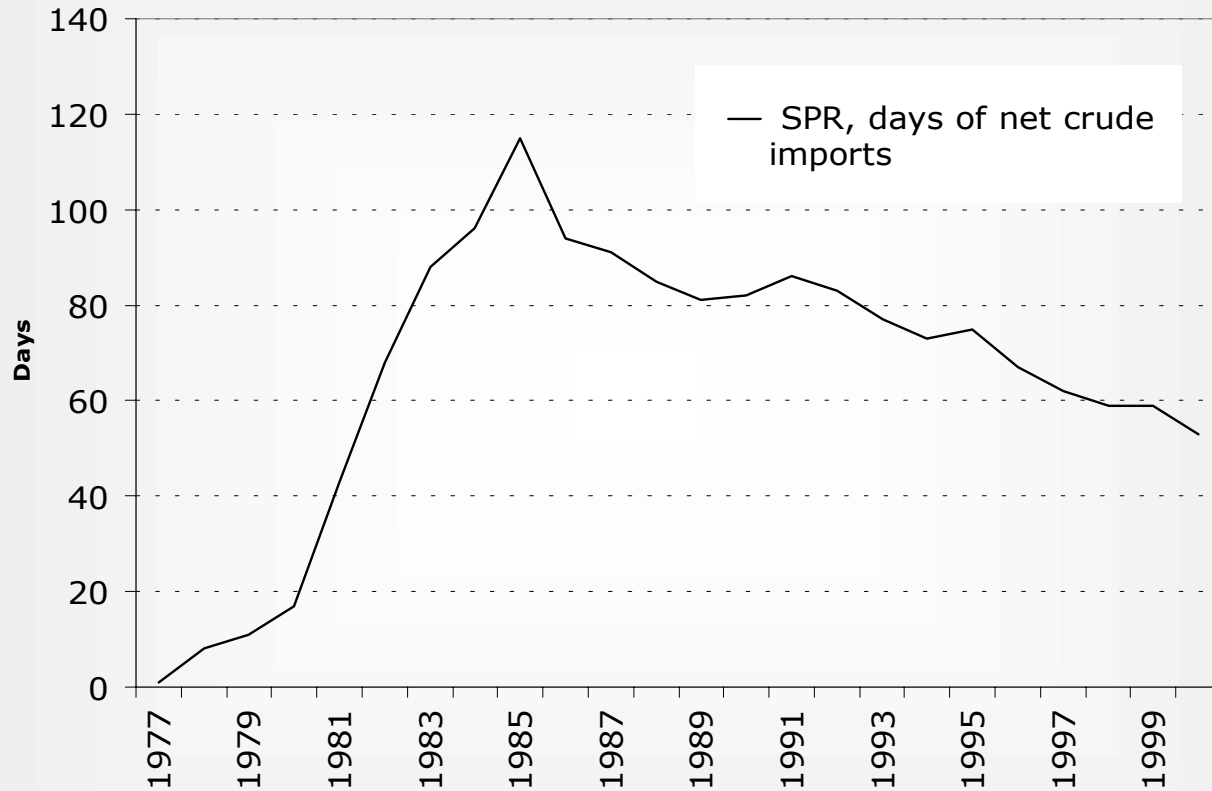
- Filling up and maintaining the Strategic Petroleum Reserve (SPR)
- Maintaining a military “presence” in the Persian Gulf (and now in Central Asia)

# The strategic Petroleum Reserve: 1975-1997



Most of the oil was stored under the Reagan administrations

## The strategic Petroleum Reserve (2)



Relative size of the SPR diminishes with rising imports

The military dimension of the “market securing” policy.  
Not my field of expertise, but...



Hussein for his actions. We will  
**Mobilize** to meet this threat to  
vital interests in the Persian **Gulf**  
until an **AMOCO** ble solution is  
Our best strategy is to **BP** prepared.  
Failing that, we **ARCO** ming  
to kick your ass."

# Conclusions on US oil policy

- The US has made a fundamental choice of *accepting* a growing energy “dependence”
- There is no reasonable alternative
- It reaps (as others do) great benefits by trading oil with more efficient producers
- That is no hands-off policy: risks are mitigated through important public policies, without which the fundamental choice may be unsustainable