



**National Workshop on KYOTO PROTOCOL:  
Challenges and Opportunities for Sustainable  
Development of I.R. Iran**

**Pros and cons associated with KP**

*DOE*

*UNDESA*

*UNDP*

*IFCO*

*and*

*SEEC*

**25-26 October 2003**

**Tehran, Iran**

# Introduction:

- Why some countries (Annex B and non-annex B) ratified the Kyoto Protocol (**KP**)? Are advantages more than disadvantages?
- Why some countries are not going to join? In Annex B countries like US (Oil companies dominant) ? And in non-annex B like some OPEC members (Fossil fuel producers)?
- Who is going to lose by ratifying the KP (Oil companies, DCs, industrialized countries, the globe and human society)?

# Introduction:

- Every country has got it's own concerns? i.e. Iran's concerns are completely different of Saudi Arabia, U.S.A. and the other OPEC members.

## **Iran's characteristics:**

- High growth rate of population
- High growth rate of energy demand
- High growth rate of urbanization
- Low per capita GDP growth, high unemployment, high inflation
- Dependency on oil dollar revenues (sensitive on oil prices, world oil demand and etc).

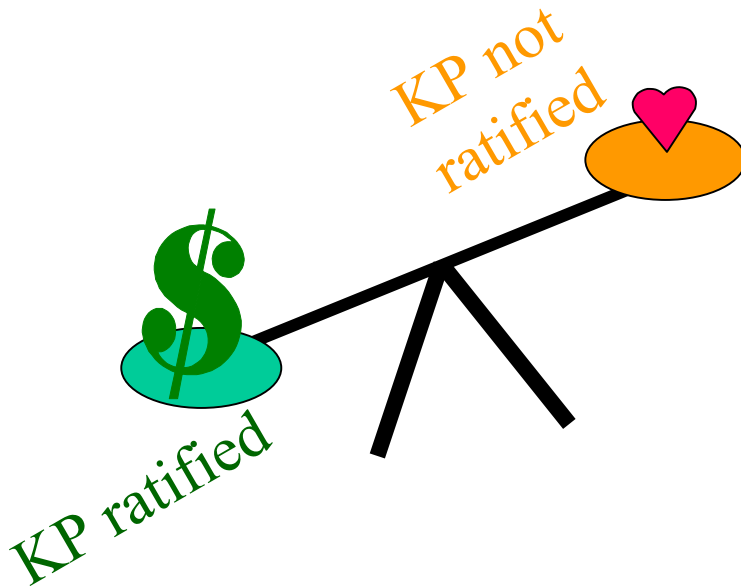
# Introduction:

- Low energy efficiency (increasing energy intensity)
- Changing basket of energy demand to more environment friendly fuels?
- Energy policies are mainly Inline with tendencies drawn in KP?
- windows of opportunity for CDM (Clean Development Mechanism) Projects?
- Political situation? As a Middle East Persian Gulf Country, under international political pressure(i.e. NPT, sanction and etc.)? Seeking for a slot to be more involved in international affairs?

# Introduction:

As a result:

IRAN based on it's own weaknesses and strengths has to think excellence !



# An Oil producer overview :

## OPEC and Computable General Equilibrium Model analysis:

- If KP implemented **\$360 to \$590 billion US dollars** economic damage to OPEC in period 2000-2030
- Full use of **flexibility mechanisms** in KP, specially trading among Annex B Countries and CDM , results in **more efficient choices among oil, gas, and coal use globally**, reduces adverse **impacts on OPEC** and **lowers mitigation costs** for Annex B countries.

# An Oil producer overview :

Adverse affects via: **Spill over** and changes in **Terms of Trade** between annex B and non- annex B countries:

- **Imports** from Annex B countries will **rise in price** due to higher energy costs
- **Energy exports** will fall in **price** because of **decreasing demand**
- **Exports** of **less energy intensive** goods to annex B countries will **fall in price** because of a **drop in demand for all imports** by Annex B countries
- **Exports** of **energy-intensive goods** from all countries will **rise in price**
- Change in **TOT** leads to **wealth transfer among Annex B and Non annex** countries especially from OPEC members to the other nations

# An Oil producer overview :

As a result:

- **Beneficial** for larger , **oil importing non-annex B** countries with infrastructure to expand production of **energy intensive goods** for exports or domestic consumption
- **harmful** for non-annex B oil exporters
- **harmful** for poorer Non-Annex B countries whose lower oil import costs are offset by **higher prices of import** from Annex B countries
- **Beneficial** for Annex B energy importers, benefits from **lower oil prices, higher prices from export** to non-annex B countries

# An Oil producer overview :

Effects of KP and action of Annex B on **OPEC** members:

- **Oil demand** from Annex B will fall due to limits on carbon emissions and a higher tax on oil use
- **world oil prices** will fall due to lower demand
- **Oil production** and exports will be reduced in response to lower prices
- **Exports earning** of oil-exporting non-Annex B countries fall due to export volumes and prices

- The effects of **flexibility mechanism** on non-annex B has been ignored (indirect effects of CDM on employment, GDP growth)
- The **wealth redistribution** is assumed to be oriented to Annex B countries while **technology transfer, redistribution of production**(energy intensive goods) to non-annex B is ignored.
- What about the **oil producer's wealth** in Annex B. doesn't it affect GDP in Annex B countries?
- The model is a **static analysis**, can not includes full dynamic effects.
- **oil price falls, if any**, but **GDP in Non annex B** will increase and in turn will increase demand for oil that may compensate part of decreased demand in Annex B (dynamic analysis)

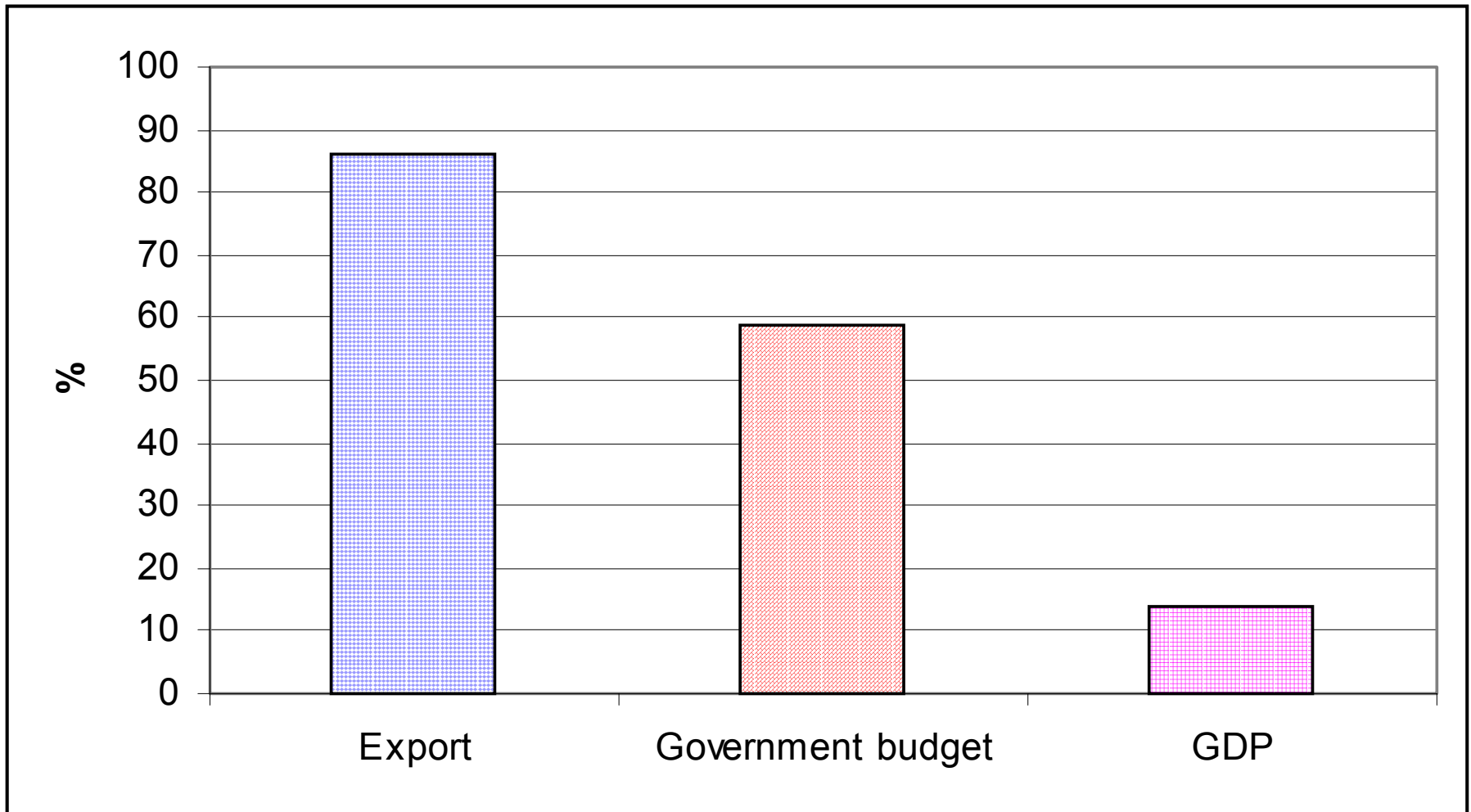
If OPEC members do not ratify KP and the KP is implemented, which measures can maximize their benefits?

- Ratifying the KP and **enjoying the CDM** Projects
- Preparing for **producing goods with higher price** to Export to Annex B countries (employment opportunity)
- Enjoying **technology transfer** from Annex B
- Taking the opportunity to **improve energy policies** in the country (e.g. Removing subsidies, using mandatory efficient facilities etc.)
- benefiting **Political benefits**

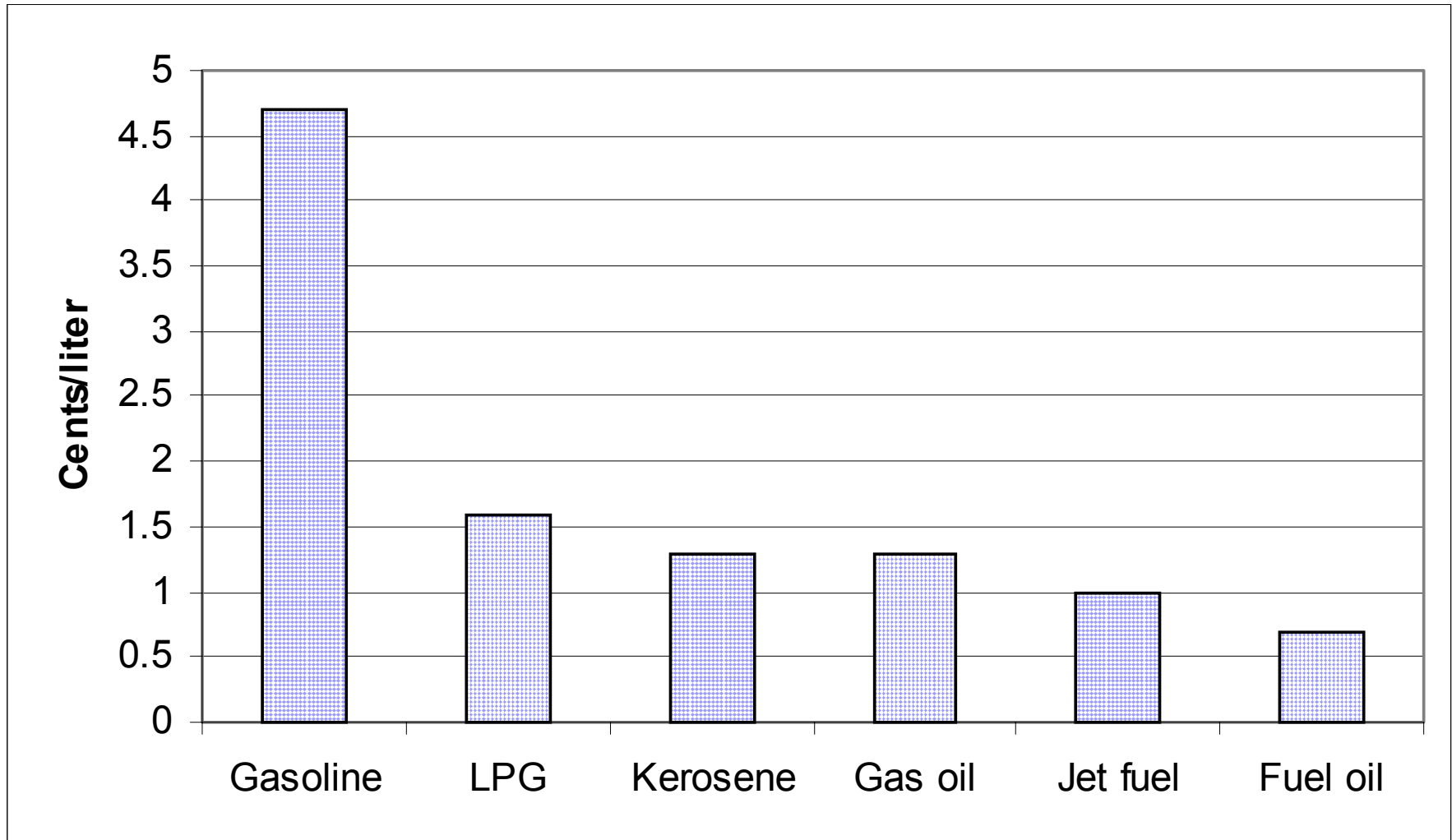


**Case of IRAN**

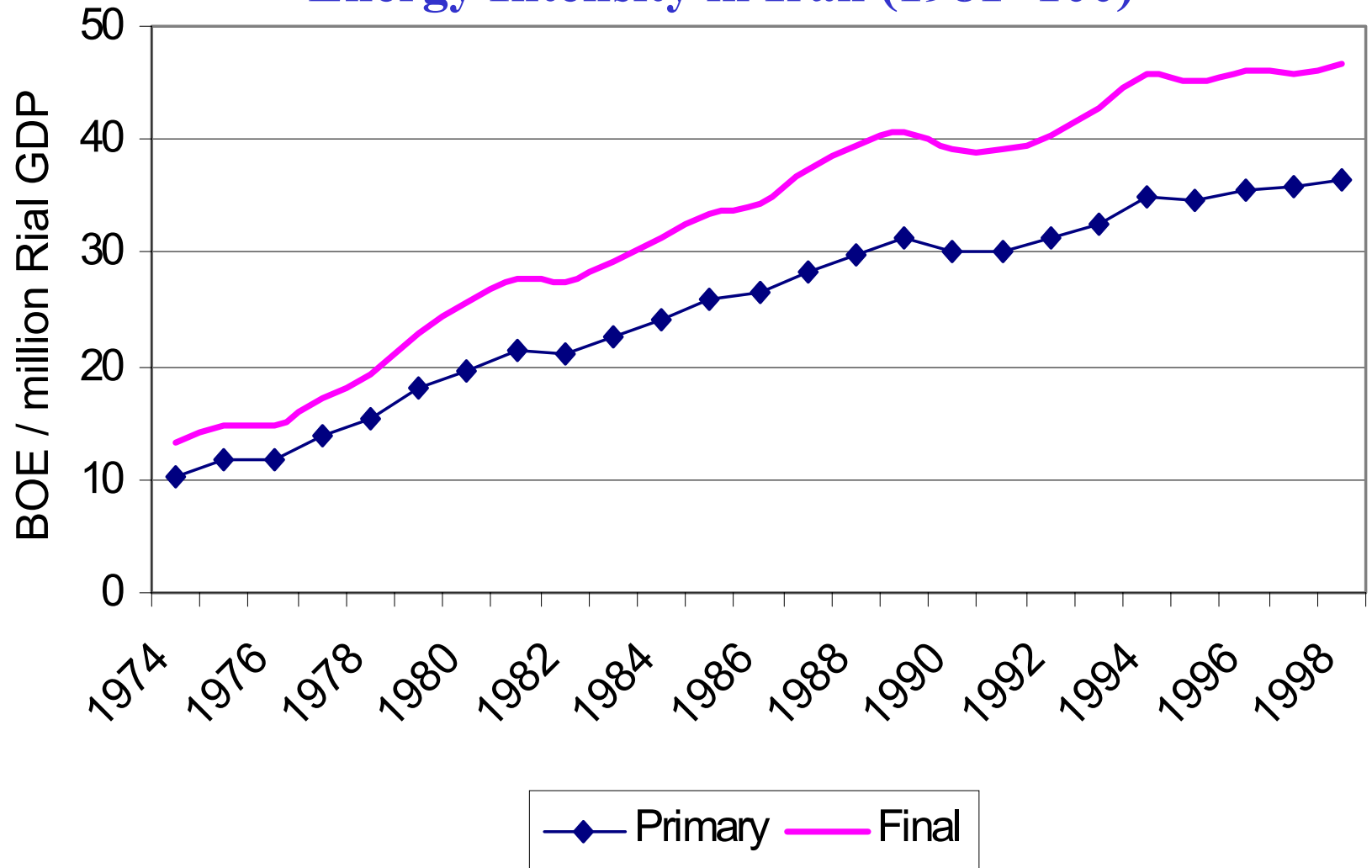
## Importance of Oil in Iran's Economy in 2000



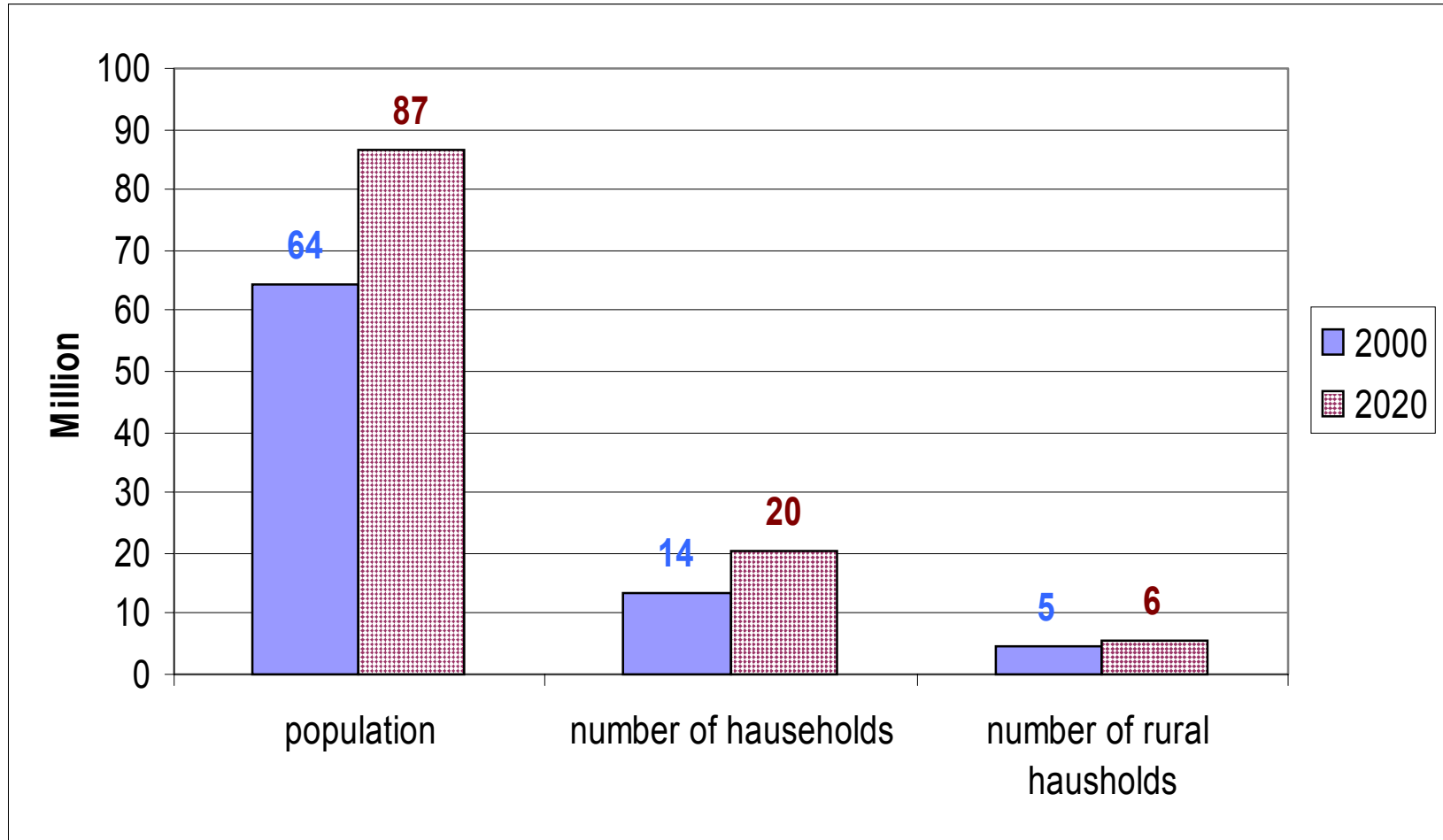
## Price of one litter of Petroleum products in Iran in 2000



## Energy Intensity in Iran (1981=100)



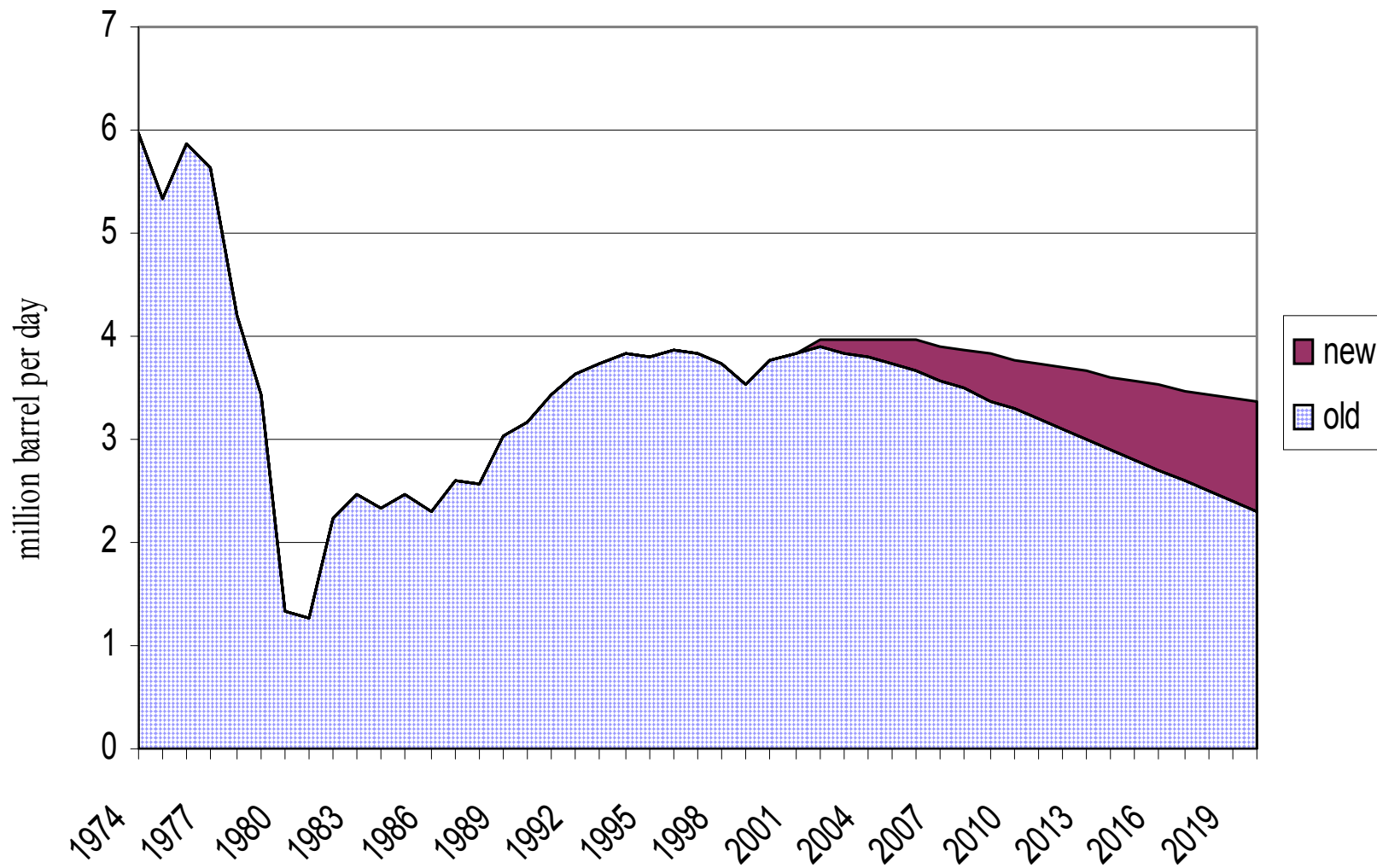
### Population Trend



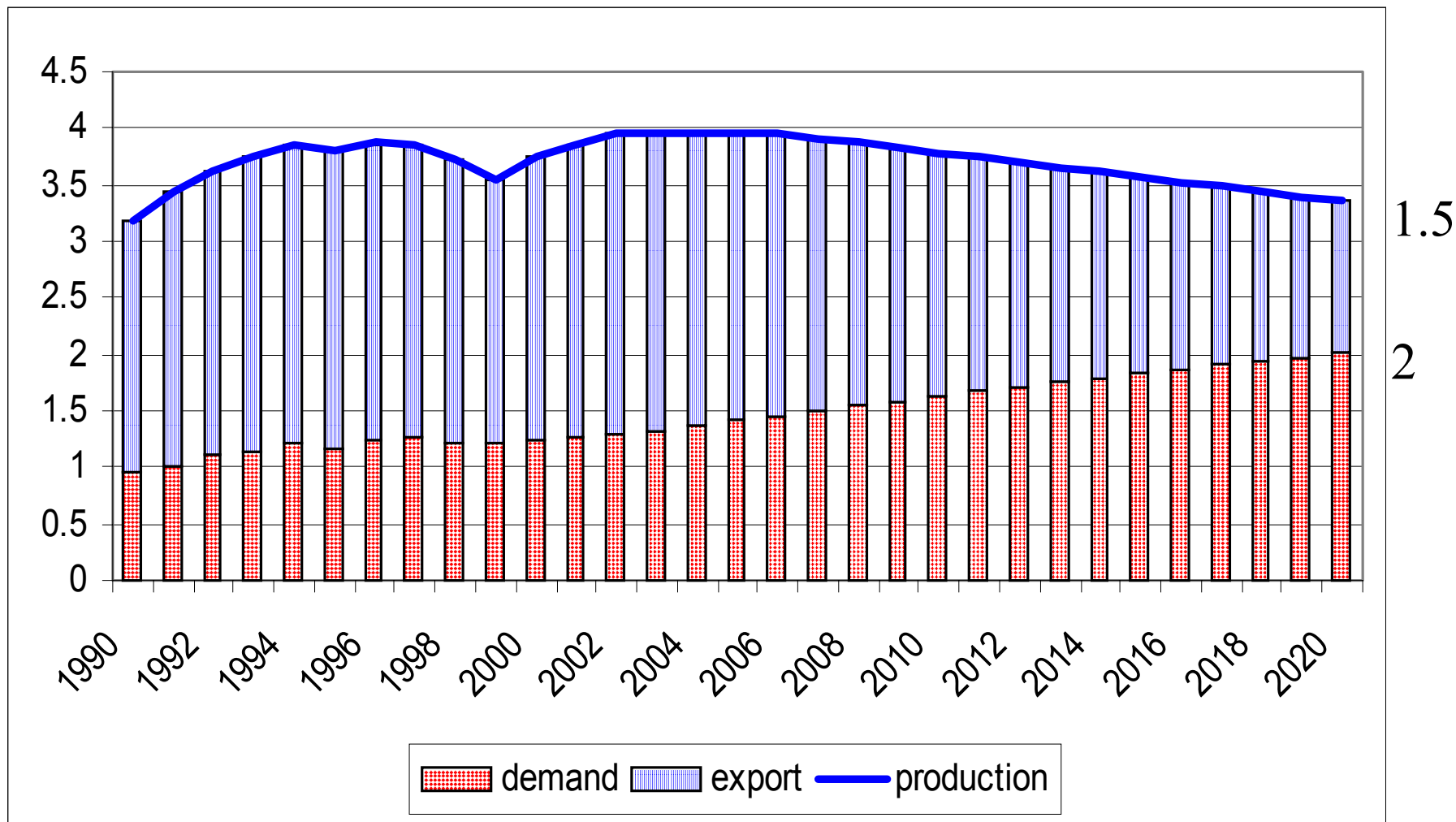
# Energy and Economy Outlook:

Outlook: BAU

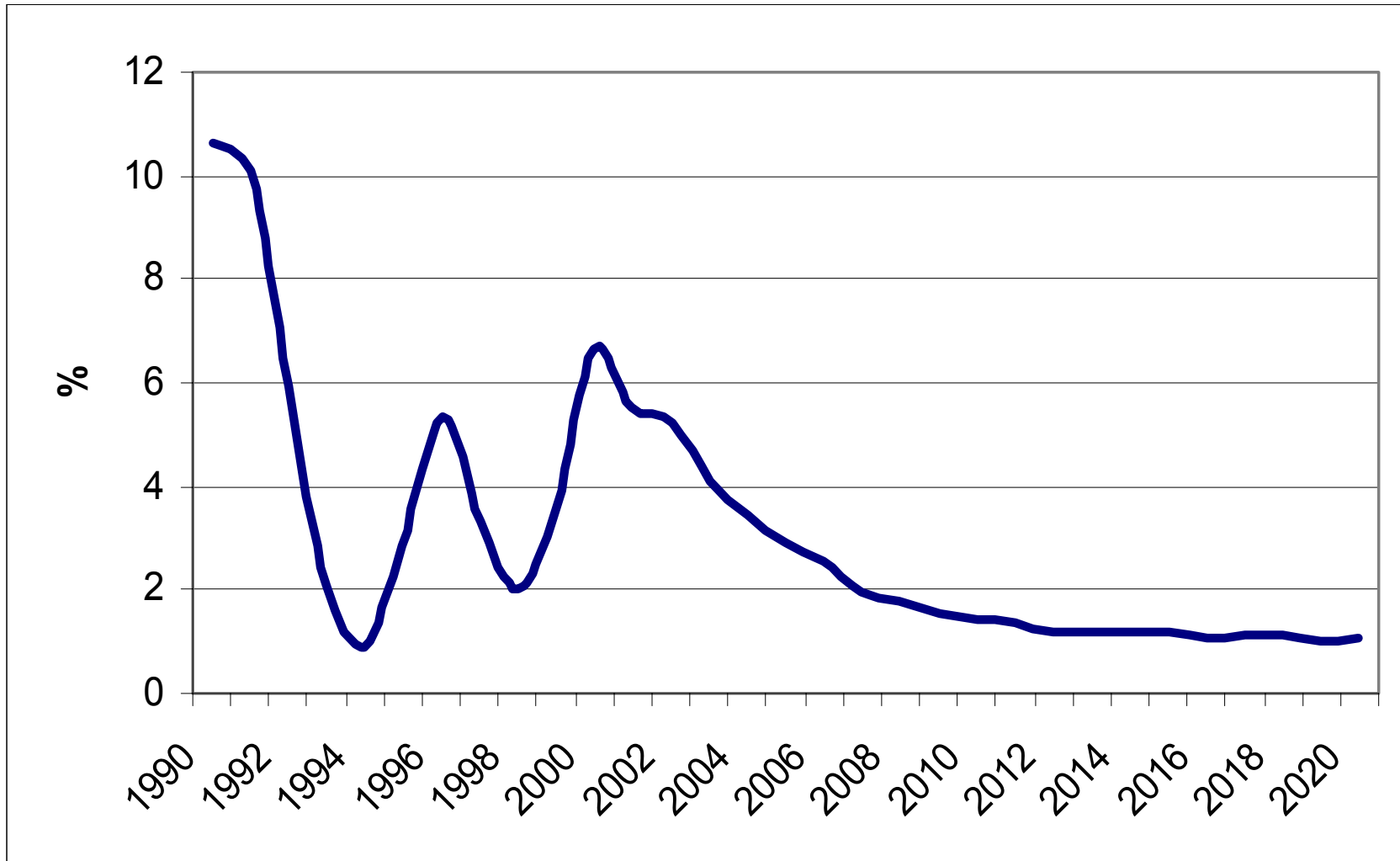
## Trend of oil production/capacity



## Domestic oil demand, Export and production



## Real GDP in Reference case

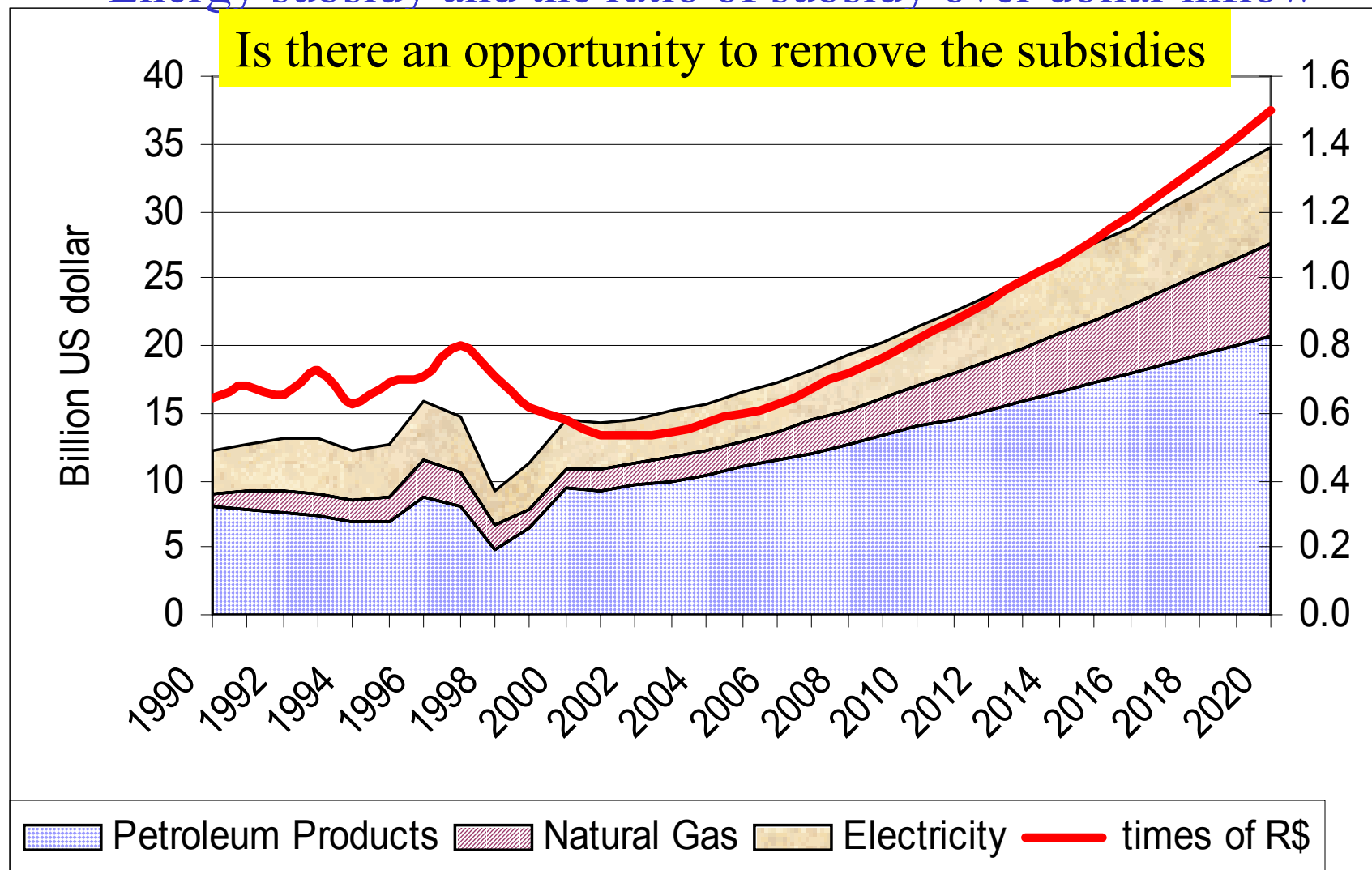


# Energy and Economy Outlook:

Outlook: BAU

Energy subsidy and the ratio of subsidy over dollar inflow

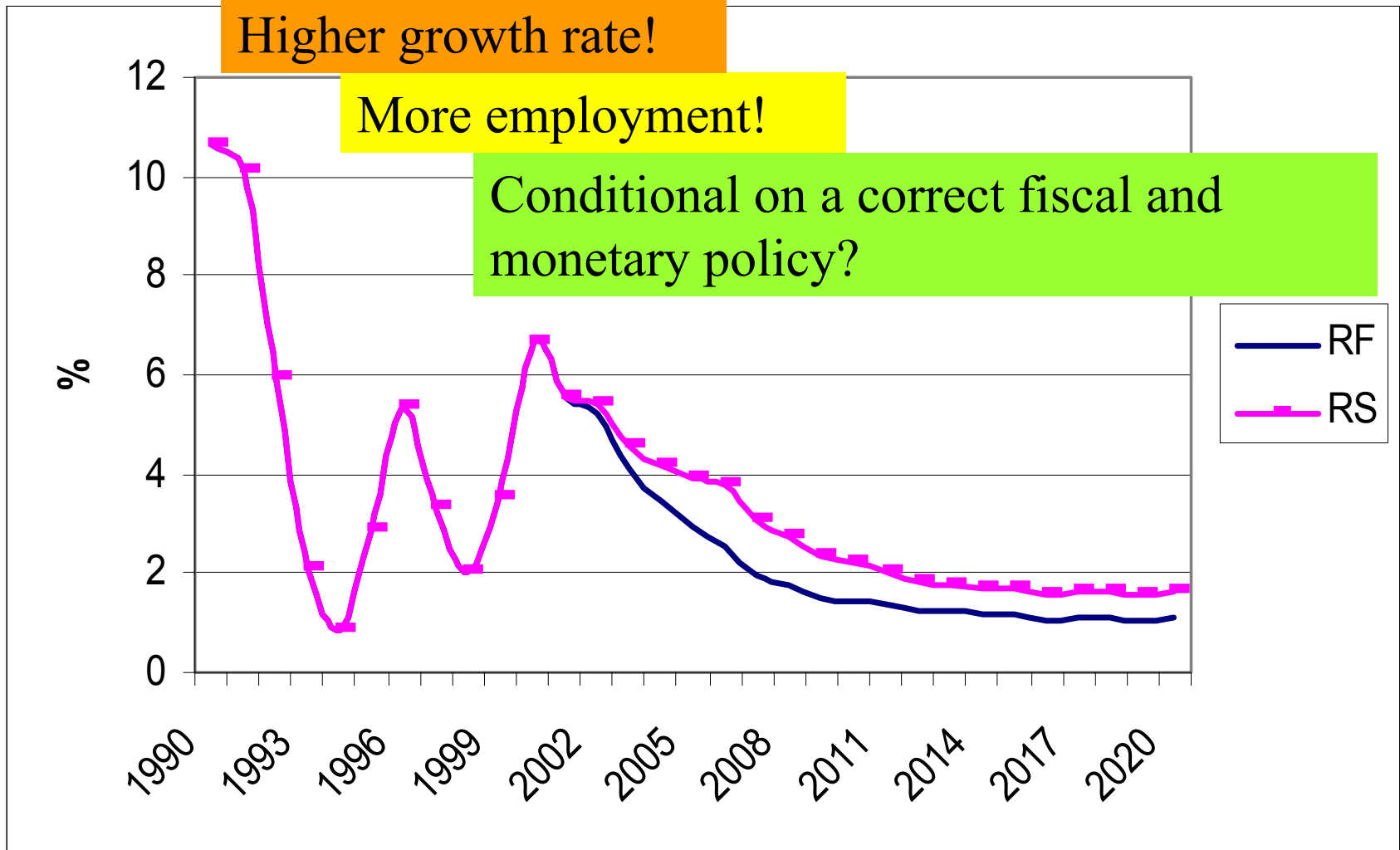
Is there an opportunity to remove the subsidies



# Energy and Economy Outlook:

Outlook: KP

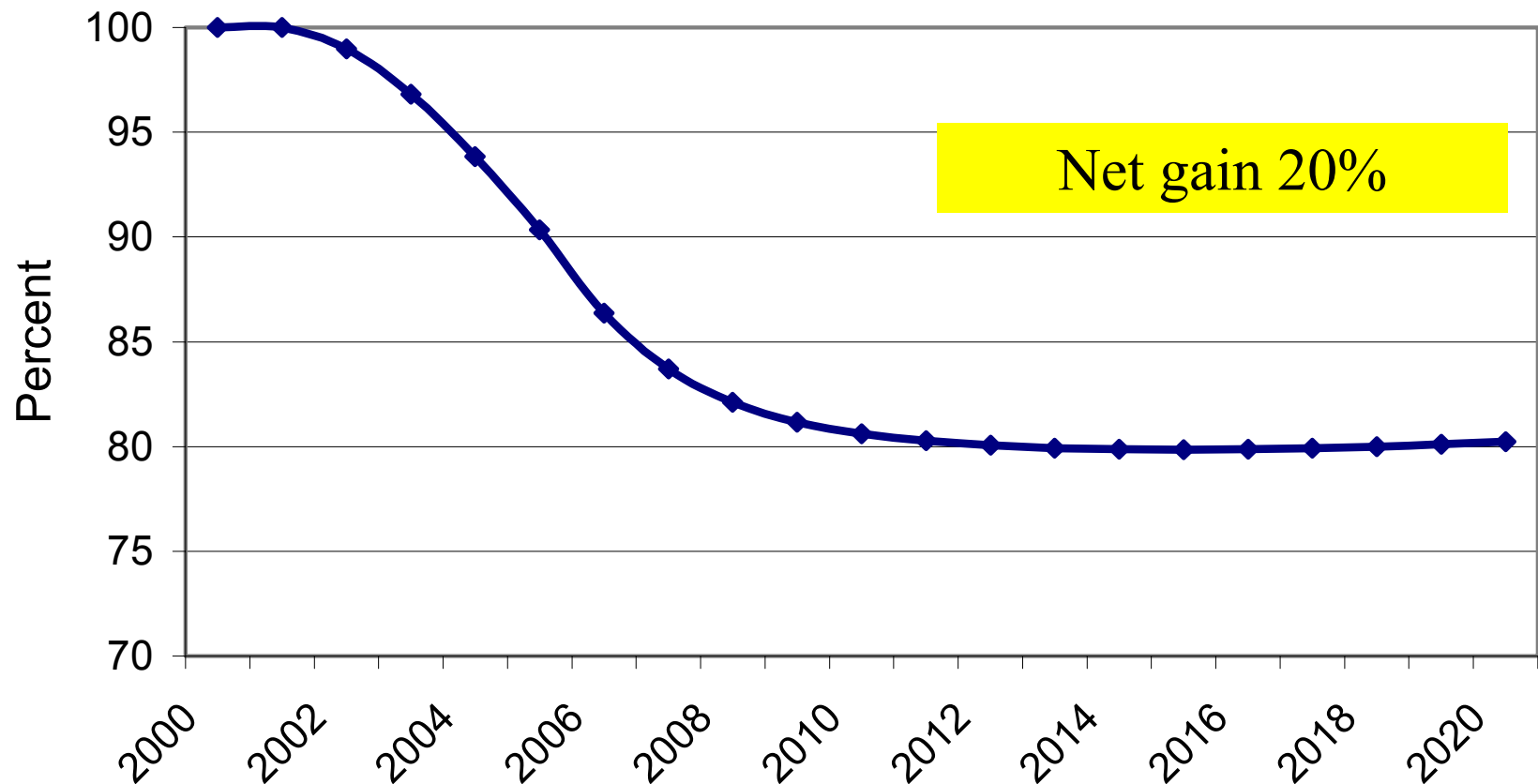
Real GDP growth: KP commitment, Pricing policy



# Energy and Economy Outlook:

Outlook: KP

Ratio of total primary energy demand in **KP commitment**  
over BAU Scenario



**KP commitment** : via non-price policy: Technology changes and etc.

- **Additional 2.33 billion BOE conservation**
- **An additional US\$ 19.36 billion in oil income over the period 2008-2020**

# Energy and Economy Outlook:

Case: KP enforced by UN

oil price decrease:

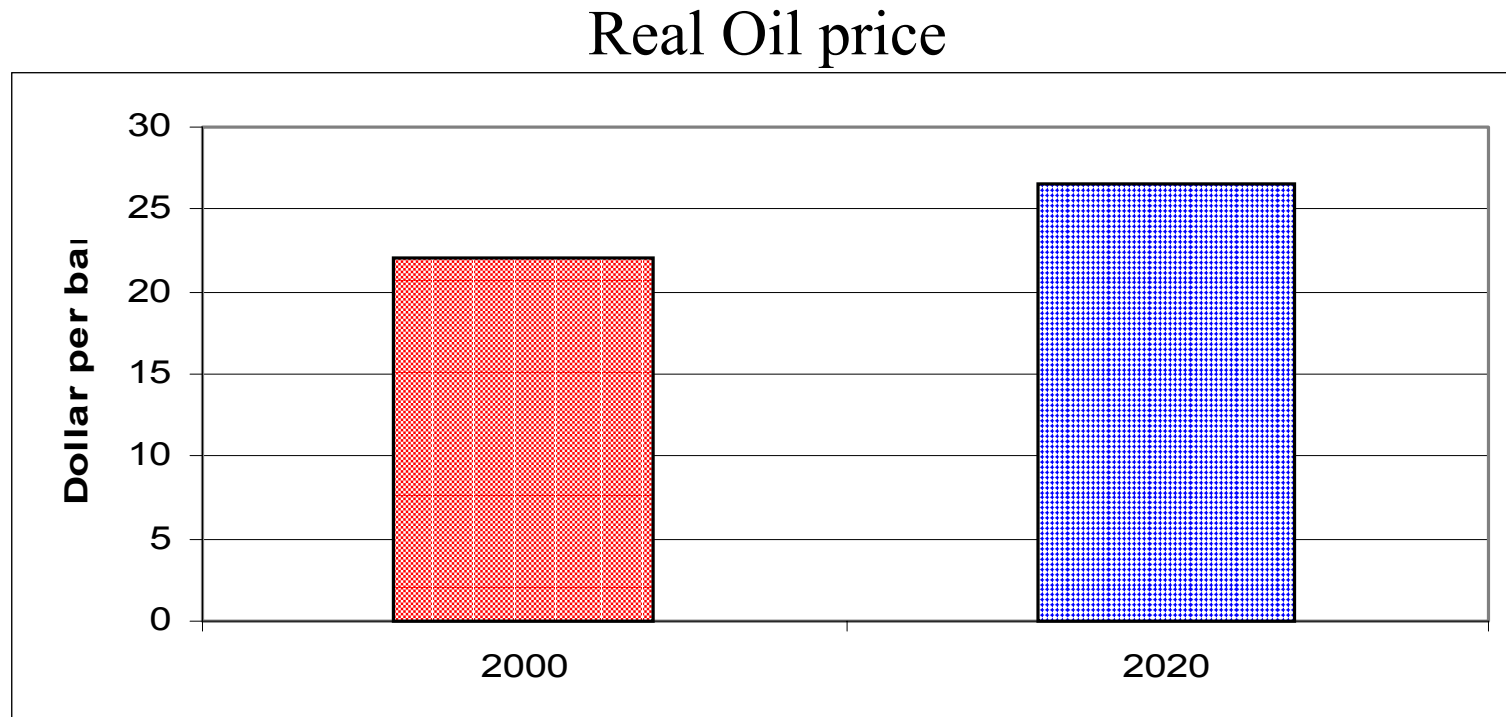
Accepted Assumptions and driven result:

- the world demand for oil comes down
- the real oil price comes down
- the oil revenue for Iran comes down
- $\implies \gg \gg$  Iran loses from KP enforcement even there is no committed reduction for Iran???

Analyzing the effects of OIL price decrease: a partial analysis

# Energy and Economy Outlook:

Case: KP enforced by UN, oil price decrease:

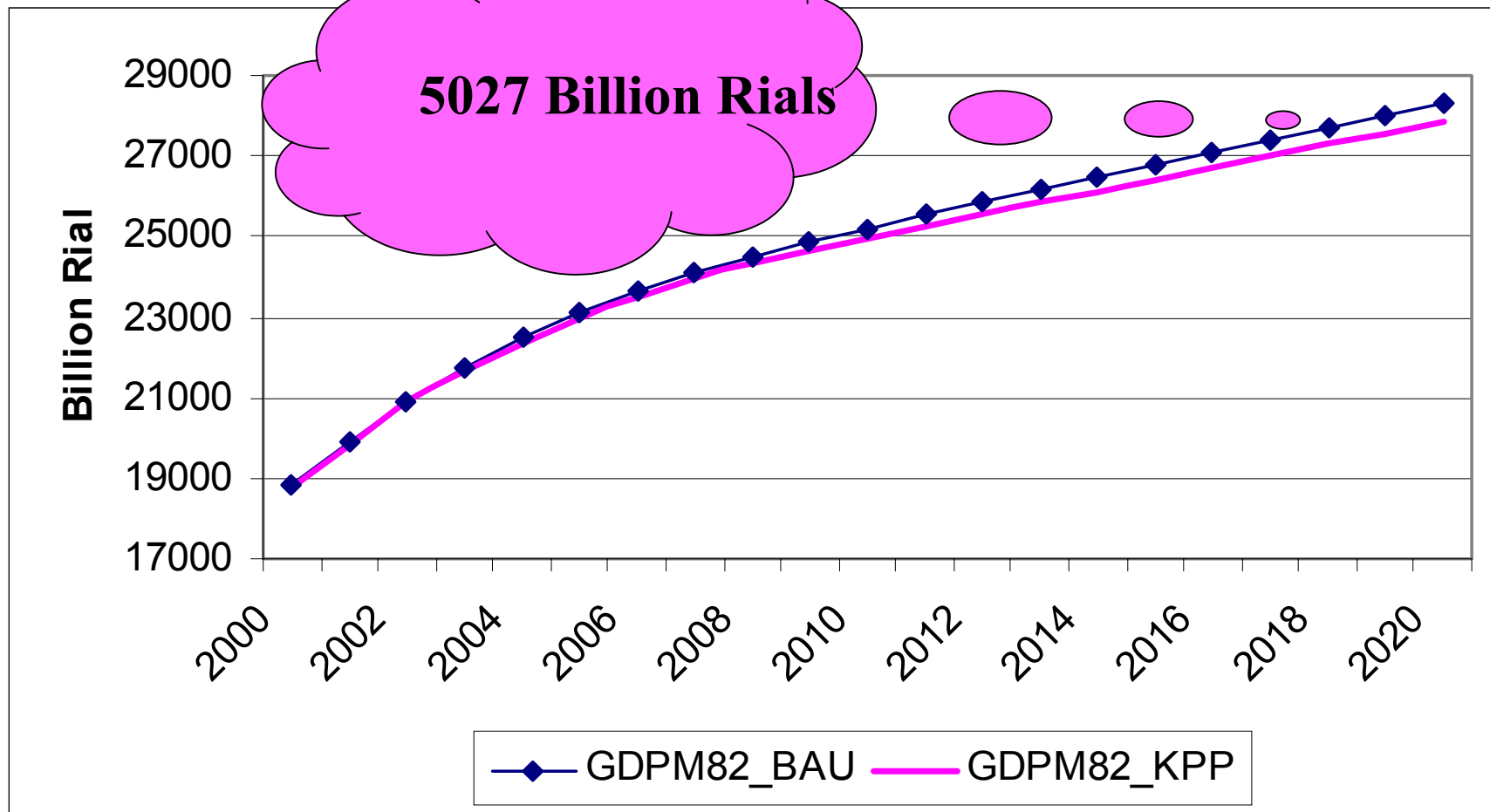


What happens if price becomes 10% lower the baseline in 2020 due to KP implementation

# Energy and Economy Outlook:

Case: KP enforced by UN, oil price decrease:

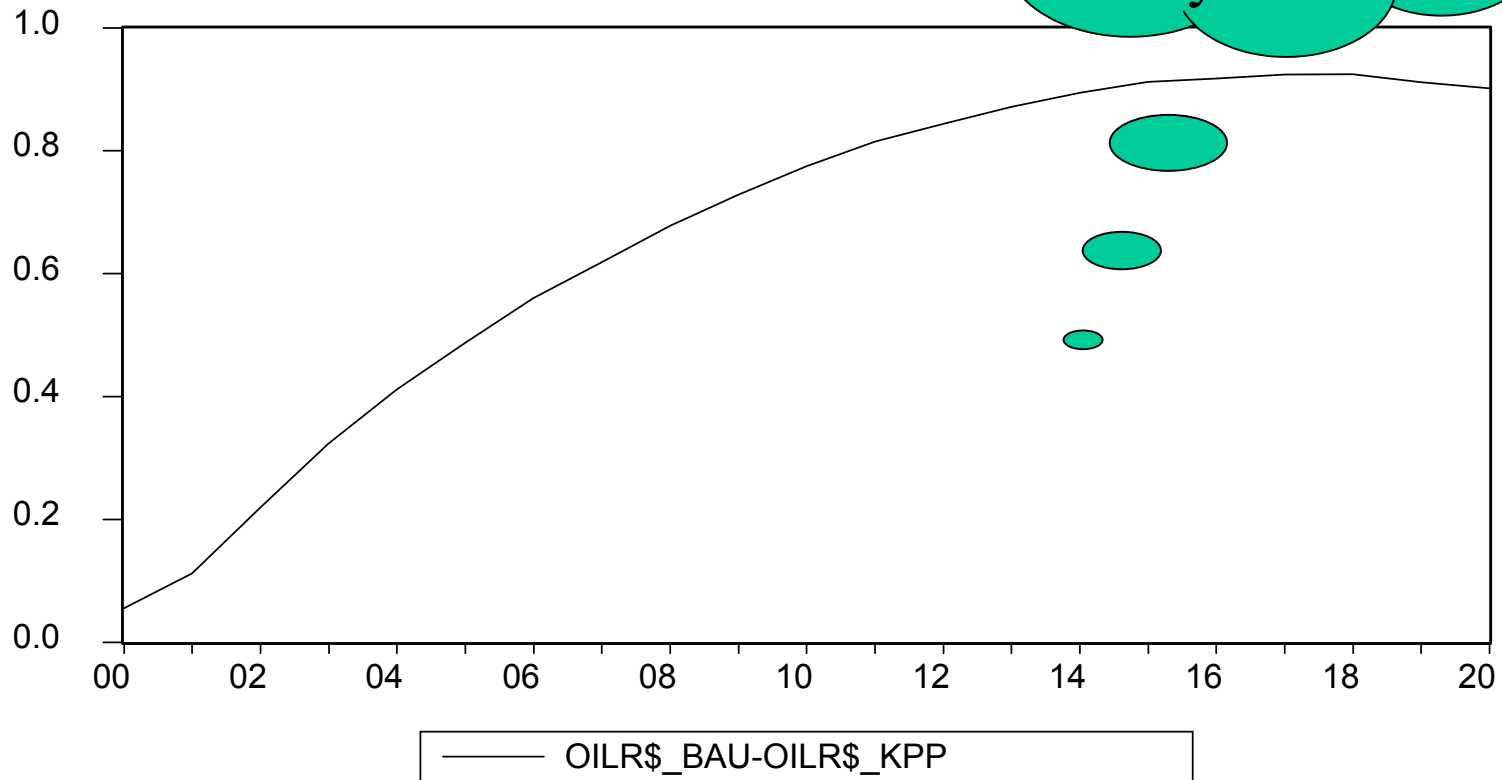
GDP loss: oil price decrease



# Energy and Economy Outlook:

Case: KP enforced by UN, oil price decrease:

Oil dollar loss due to KP



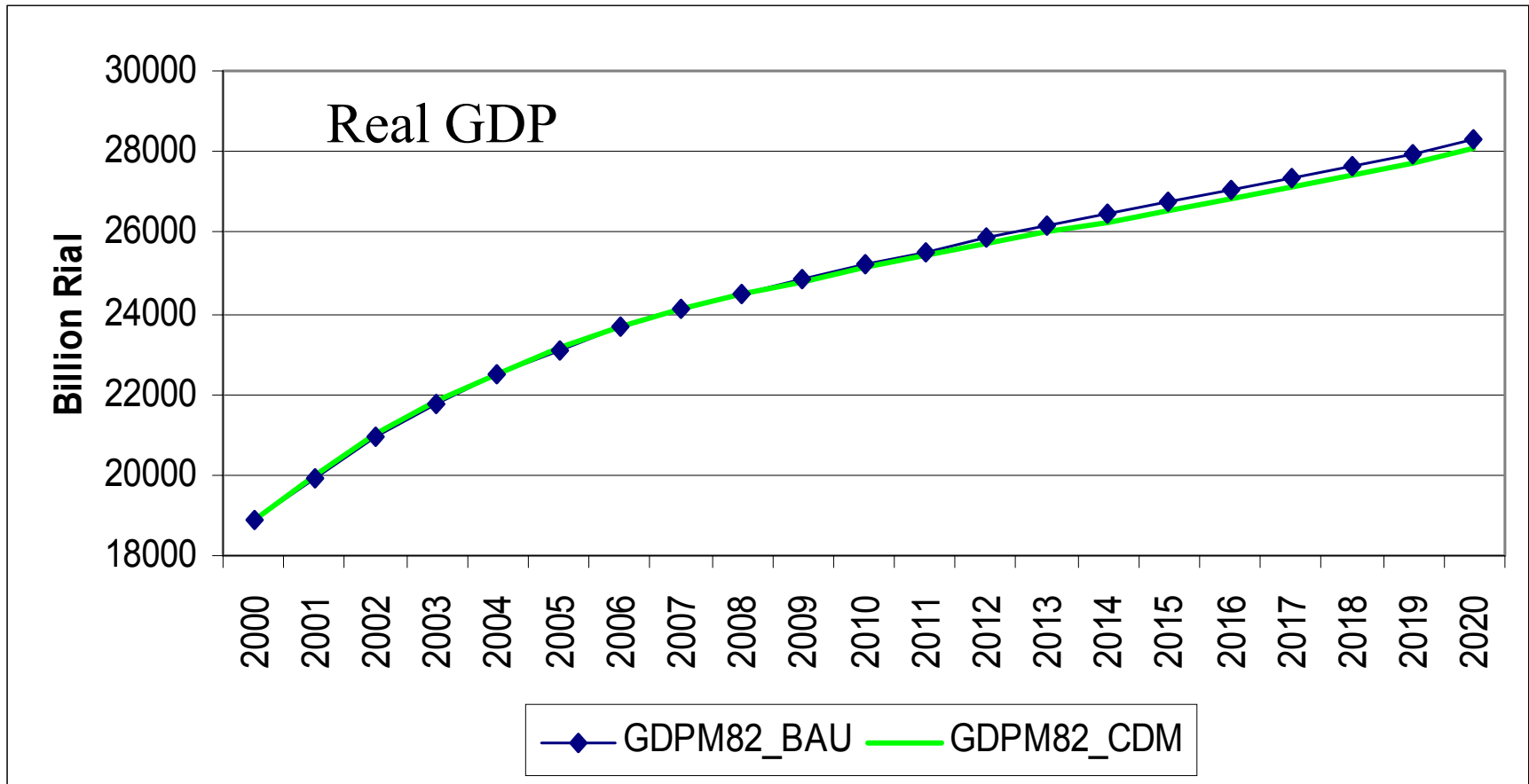
13 Billion US  
dollar within 20  
years

# Energy and Economy Outlook:

Case: KP enforced by UN

oil price decrease

CDM gain 10% (20 years)



# Energy and Economy Outlook:

## The adverse affects can be vanished:

- If Iran is prepared to gain the **CDM projects**
- If Iran plans to improve **domestic energy policy** along with the implementation of KP (Energy price and non price policy)
- If Iran plans to develop production of **relatively energy intensive** goods to enjoy the increase prices of such commodities (enjoying the TOT changes in the world) condition on improvement of energy policy
- If Iran take **no action** and the KP is implemented, Iran is the loser
- Iran should seek a **win-win solution** via taking continuous action to the development in KP and provide the conditions to gain all possible advantages

# Conclusion :

- Results are **preliminary** subject to change
- Assumption especially for oil price should be more investigated
- Other **benefits and gains** due to KP implementation should be considered by model or outside the model
- The **total value of tradable CDM** projects should be scrutinized
- The **portion of Fund** Iran may absorb should be studied through possible CDM projects
- The effects in **macro** and **micro** level should be decomposed
- A **complete matrix** of advantages and disadvantages should be extracted

**Thank you very much**

**for your**

**close attention**

**Questions are welcome**