

Ratifying Kyoto Protocol by I.R. Iran

Challenges and Opportunities

National Research Team(NRT)

Coordinated by:

Shaygan Energy and Economy Consultants (SEEC)

Sponsor and collaboration:

IFCO, DOE, UNDESA and UNDP

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Introduction:

- **The NRT and Organizations involved**
- **Terms of Reference,**
- **Objectives,**
- **Methodology,**
- **Model and its assumptions**

Introduction:

The NRT and Organizations involved

Sponsored :

Iran Fuel Consumption Optimization (IFCO)

Steering Committee:

Department of Environment (DOE); Office of Climate Change

United Nation Department of Economic and Social Affair (UNDESA)

United Nation Development Program (UNDP)

Project Conductor:

Shaygan Energy and Economy Consultants (SEEC)

Collaboration (NRT):

Ministries of Petroleum; Energy; Agriculture; Foreign Affairs; and Industry, NIOC, DOE, MPO,

Introduction:

Terms of reference

- The emission inventory and CDM potential in Iran
- Adverse effects of Climate Change on Iran's Social and Economic Conditions
- Iran's policies affecting GHGs Mitigation (Direct and indirect)
- Iran's Political Potency in Forming Multilateral Treaties and international multilateralism
- OPEC Viewpoint and Potentials of CDM Projects
- The Impacts of Kyoto Protocol on Iran's Economy
- The Optimum Time of KP Ratification by Iran
- decision making matrix

Introduction:

Objectives

The latest situation

Incorporating all aspects of the subject (economic, social, climate change, political)

Primarily evaluation of CDM potential in Iran

Effects of KP implementation on Iranian economy

Public awareness

Pros and cons of ratifying or not ratifying KP by Iran

Preparing a platform for decision taking

Introduction:

Methodology

Calculating the GHGs inventory based on IPCC method

Evaluating the KP effects on OPEC based on OWEM and MS-MRT Models

Evaluating the potential of CDM investment based on IRR method at cleared price for CO₂ in the world

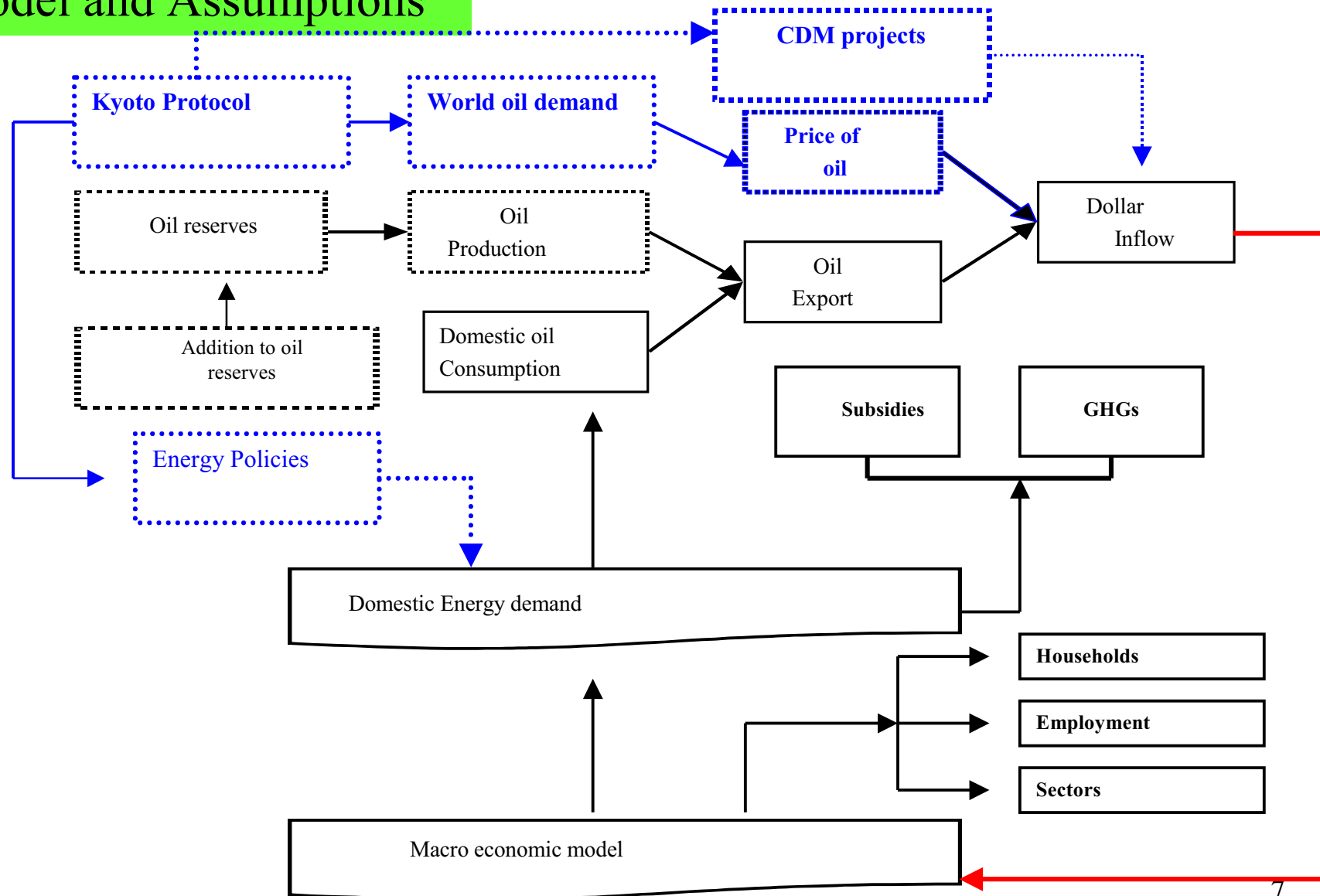
Bottom up approach for Iran, selecting some projects for project appraisal, (additional)

Macro econometric model to evaluate the effects of KP on Iran's economy (auxiliary VAR-type model and household budget analysis)

SWOT analysis

Introduction:

Model and Assumptions



Effects of KP implementation on Iran's Economy

- The VAR analysis
- The Income elasticity of labor demand
- The effects of oil revenue reduction on the economy due to KP implementation- macro model scenario

Effects of KP implementation on Iran's Economy

The VAR Analysis

GDP shocks has got more effects on service sectors than producing and manufacturing sectors

GDP shocks on employment is very low; one SD of GDP has:

- no any effects for the first year
- legible at 0.0004 for the second year
- 1 billion Rial Decrease in GDP leads to only 1000 persons decrease in employment

Effects of KP implementation on Iran's Economy

Employment in economic sectors

- Economical active people: 16.5 million
- Employed :15 million
- Seeking for job: 1.5 million
- Unemployment rate: 9%
- 4% more than natural unemployment rate

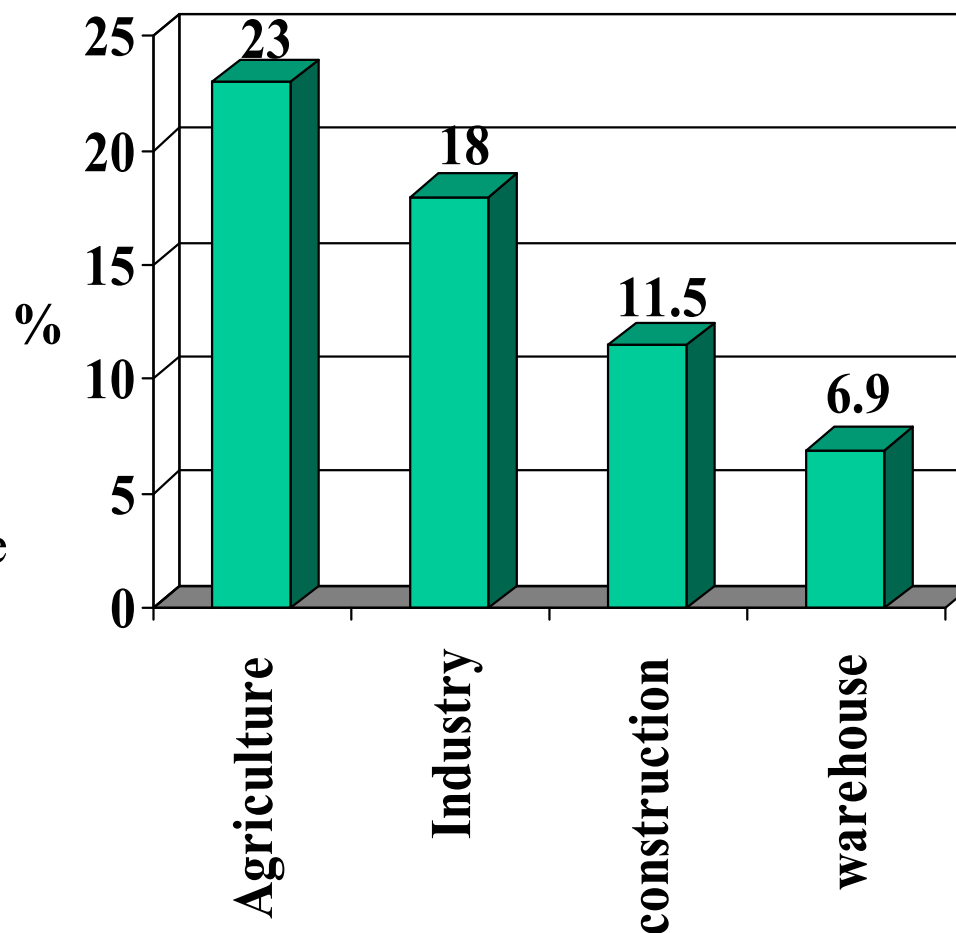


The climate change affects
will more agriculture

Effects of KP implementation on Iran's Economy

Employment in economic sectors; Climate change and KP effects

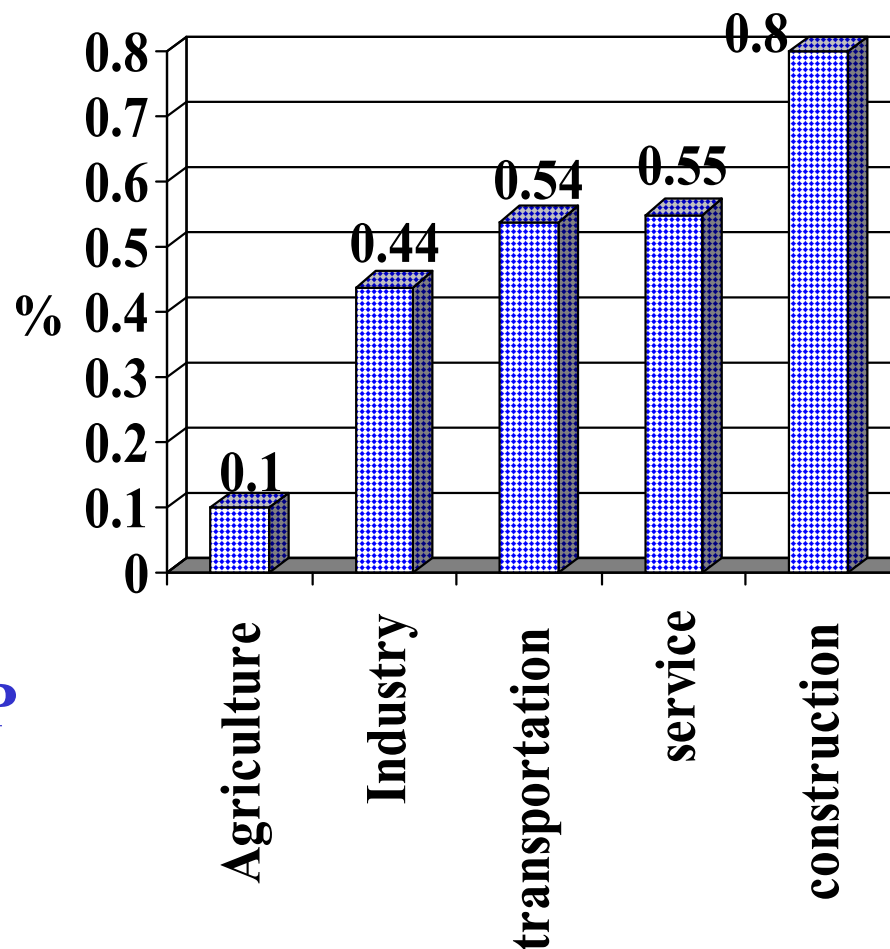
- climate change and non-ratification of KP, Agriculture most affected
- If KP ratified, the agriculture sector with biggest share in employment and least sensitivity Dollar inflow of the country and its endogenous nature will be remain intact.



Effects of KP implementation on Iran's Economy

Income elasticity of Labor demand

- All less than unity
- Agriculture the least
- Agriculture least effects from any GDP shock of KP



Effects of KP implementation on Iran's Economy

Macro econometric model

Scenarios:

1) Reference case

2) KP entry into force, Iran not ratified

3) KP entry into force, Iran ratified

Effects of KP implementation on Iran's Economy

1) Reference case



Reference

Energy prices (10%)

Exchange rate (up to 10000 Rial dollar)


Population

Capital goods import

Liquidity(15%)

World oil price (OWEM base case)

Oil production (decline curve)



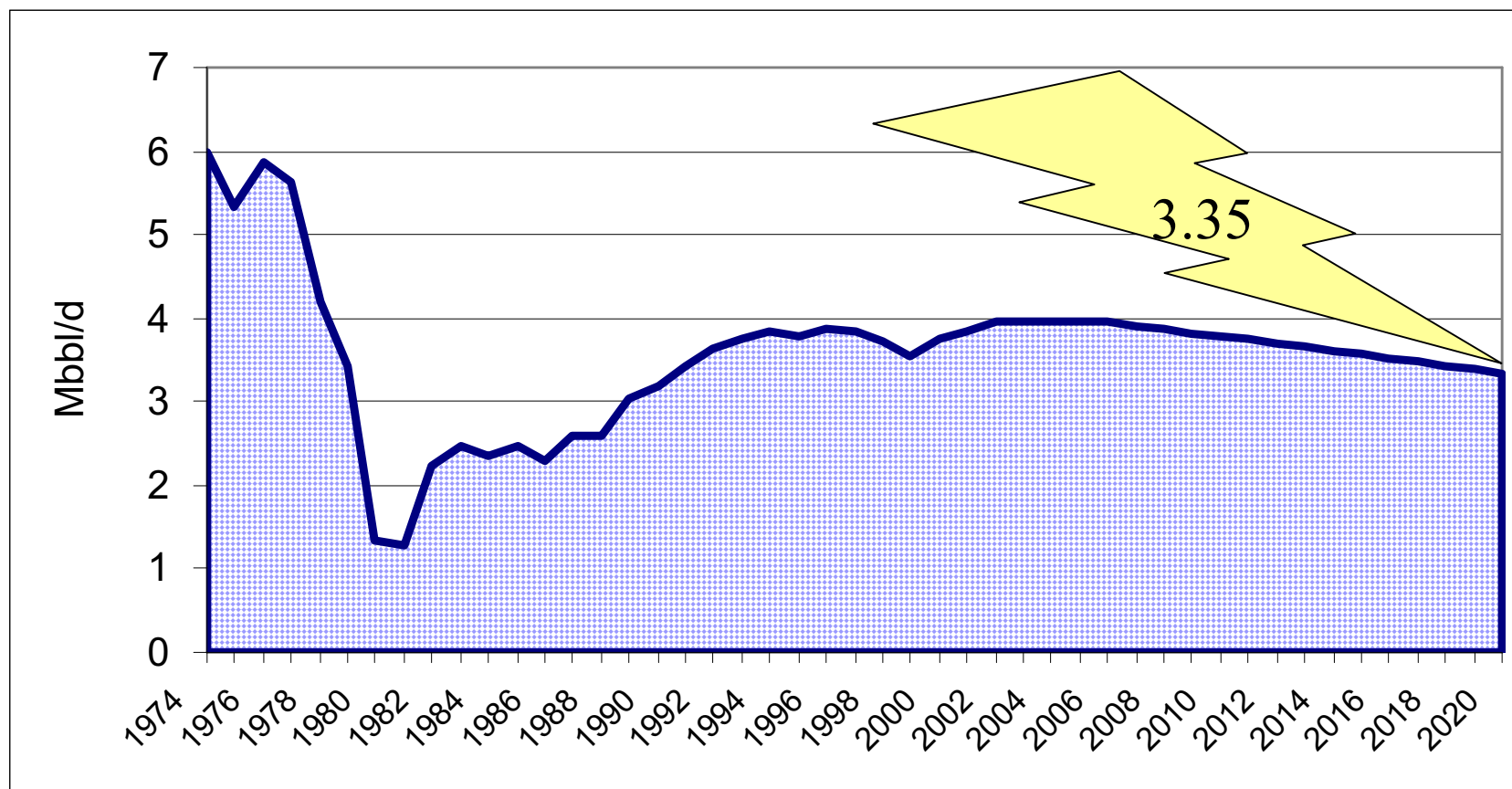
Based on
current trends
and
expectation

Effects of KP implementation on Iran's Economy

1) Reference case

Reference

Possible oil production trend in Iran

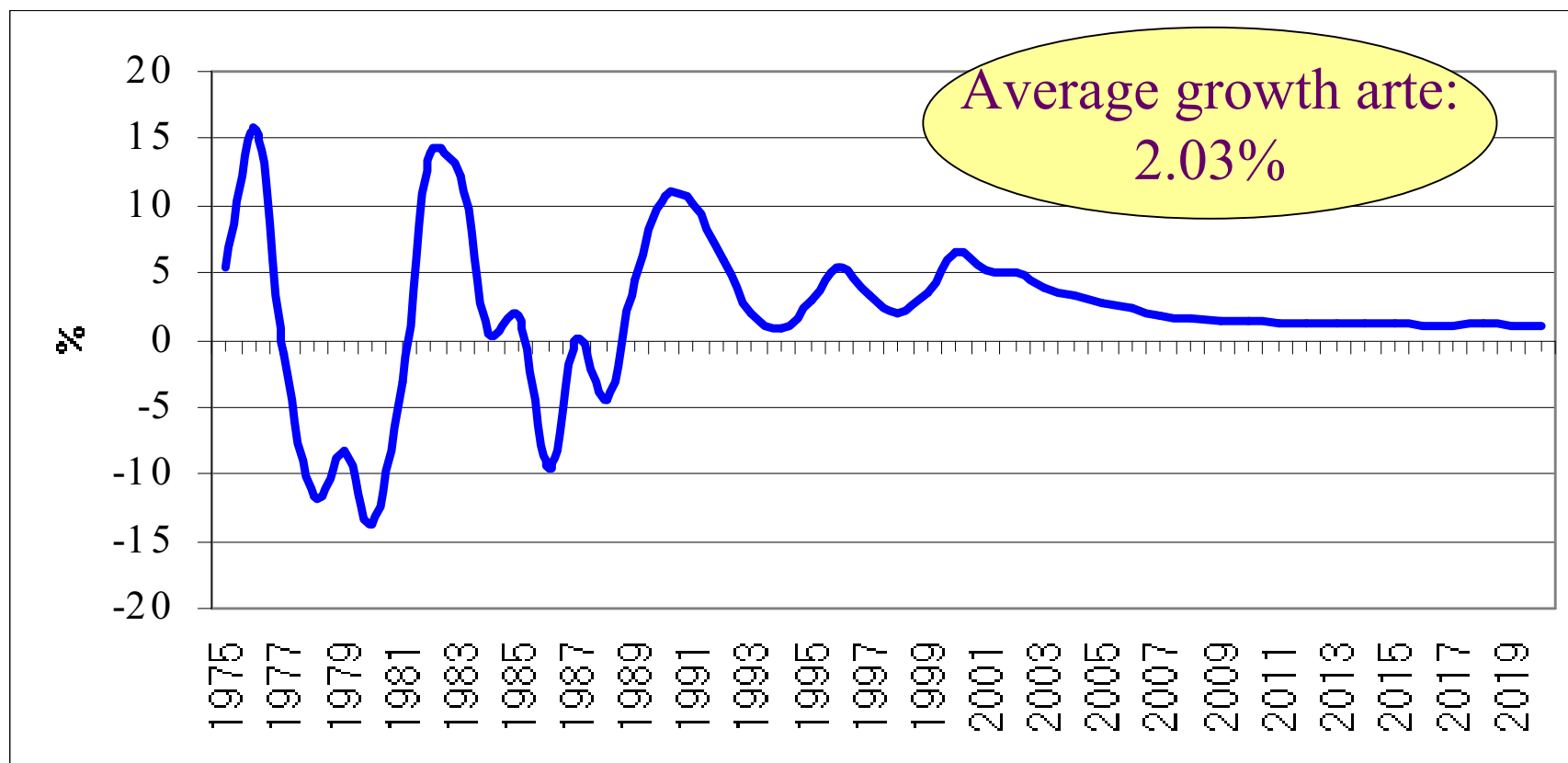


Effects of KP implementation on Iran's Economy

1) Reference case

Reference

Average annual GDP growth rate in reference scenario



Effects of KP implementation on Iran's Economy

2) KP entry into force, Iran not ratified

Assumptions:

Russia ratify KP, KP entry into force

Iran not ratified

No CDM projects are available for Iran

Real price of oil comes down by 10 percent in first commitment period from the reference price, because of lower world oil demand

Full adjustment of oil supply and demand is assumed after 2012.



Effects of KP implementation on Iran's Economy

2) KP entry into force, Iran not ratified



Results:

- Average annual economic growth rate in 2000-2020 will be 2.02%, some 0.01% down the growth rate in the reference scenario.
- Iran will undergo a decline of 3,444 billion Rials in its real GDP affecting social welfare of Iranian families and employment
- Iran oil revenue reduction will be about \$8 billion in real term

Effects of KP implementation on Iran's Economy

3) KP entry into force, Iran ratified

Assumptions:

Russia ratify KP, KP entry into force

Iran ratified KP before entry into force

CDM projects are available for Iran

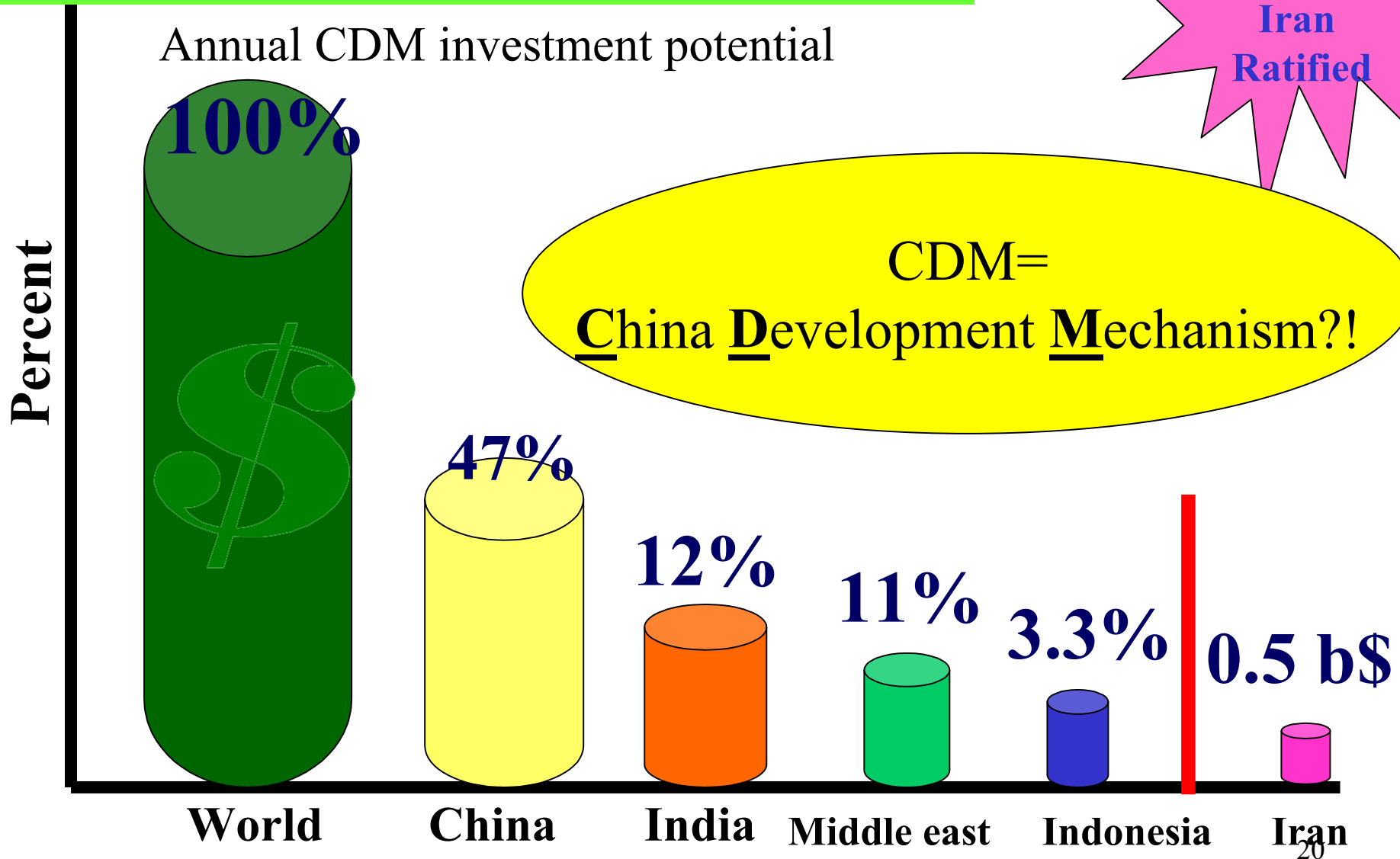
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Effects of KP implementation on Iran's Economy

3) KP entry into force, Iran ratified



Effects of KP implementation on Iran's Economy

3) KP entry into force, Iran ratified

The bottom-up approach for Iran's CDM estimation:

- Needed investment for the Amak recovery of flare gas (RFG) project was 472 million US dollars while the average cost of emission reduction was \$9/ton of carbon given the IRR of 15% and natural gas price of \$0.9 /CM.
- Huge potential for investments in shifting the fuel of vehicles to CNG. An investment of \$700 million is required to convert the fuel of 500,000 vehicles to CNG
- There are 3 million vehicles in Iran apt for conversion.
- The investment needed to convert the fuel of one power plant in Iran to natural gas is some \$8 million.
- Energy conservation projects and renewable energies



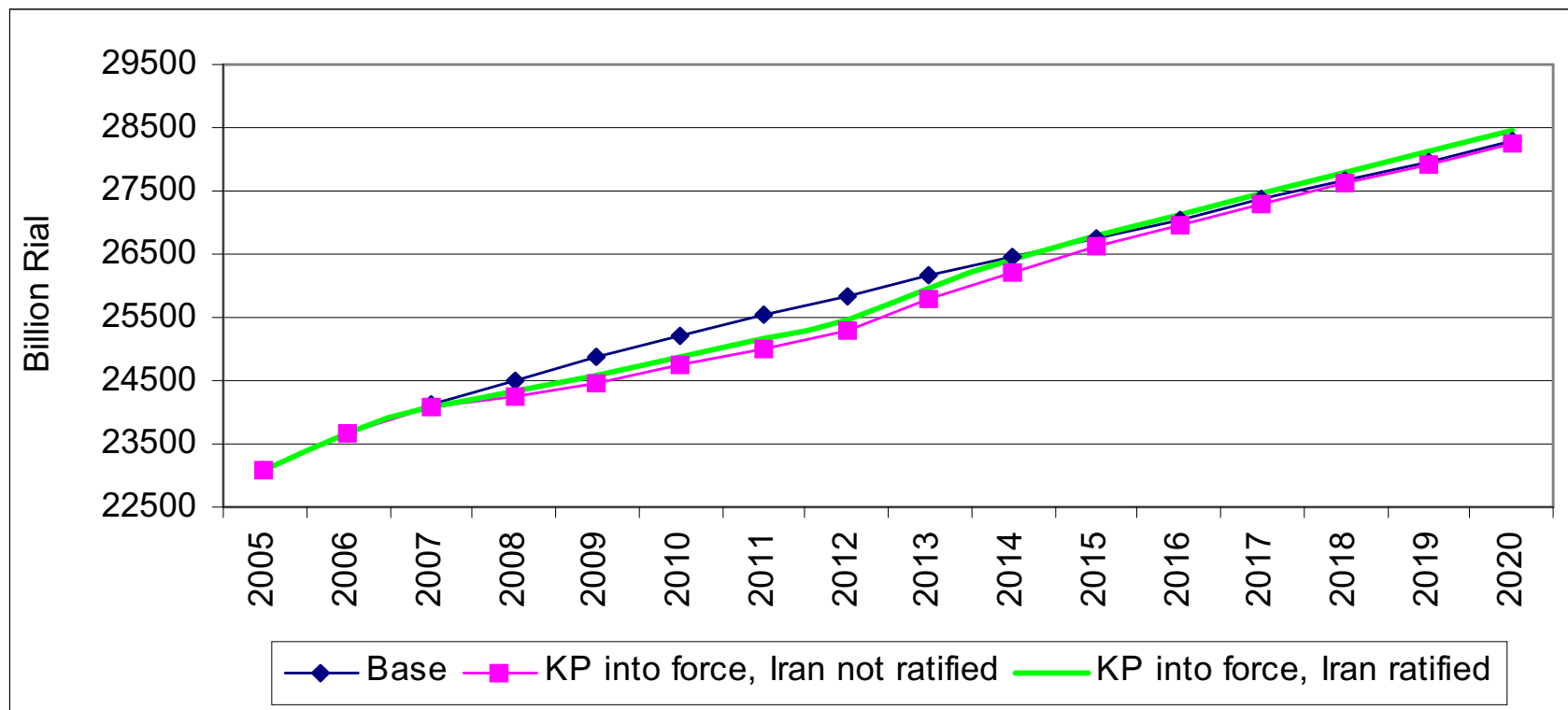
KP
into force,
Iran
Ratified

Effects of KP implementation on Iran's Economy

3) KP entry into force, Iran ratified

Results:

Iran's GDP will exceed the base scenario projections by 1,188 billion Rials because of multiple coefficient

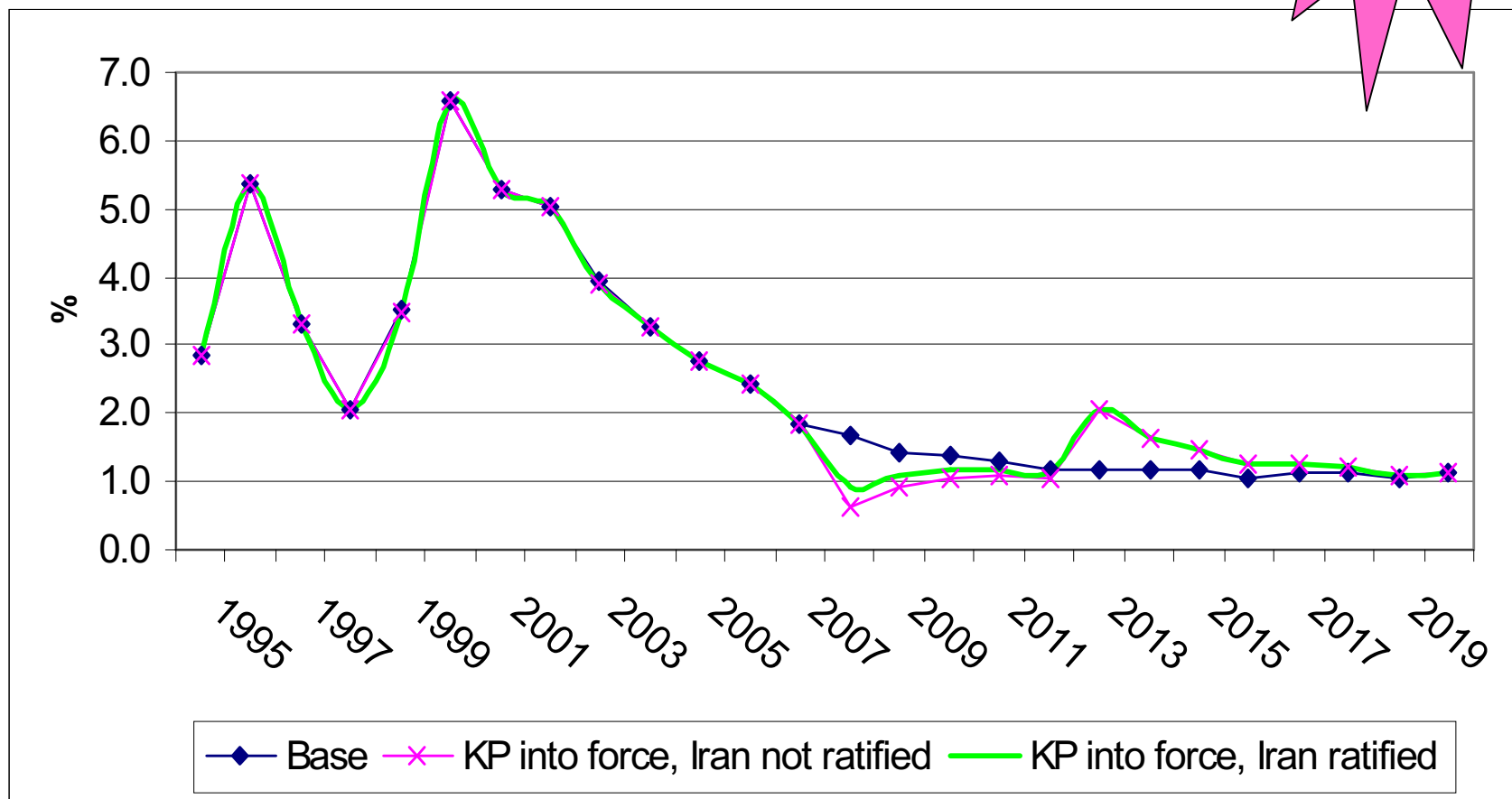


Effects of KP implementation on Iran's Economy

All scenarios

All scenarios

Annual growth rate of real GDP



**Thank you very much
for your kind attention**