



Ι Δ Ρ Υ Μ Α Ο Ι Κ Ο Ν Ο Μ Ι Κ Ω Ν & Β Ι Ο Μ Η Χ Α Ν Ι Κ Ω Ν  
Ε Ρ Ε Υ Ν Ω Ν

FOUNDATION FOR ECONOMIC & INDUSTRIAL RESEARCH

# The Economic Impact of Mining Activity on Milos island

Lefteris Tserkezis, Research Associate IOBE

Aggelos Tsakanikas, Director of Research IOBE

Presented by

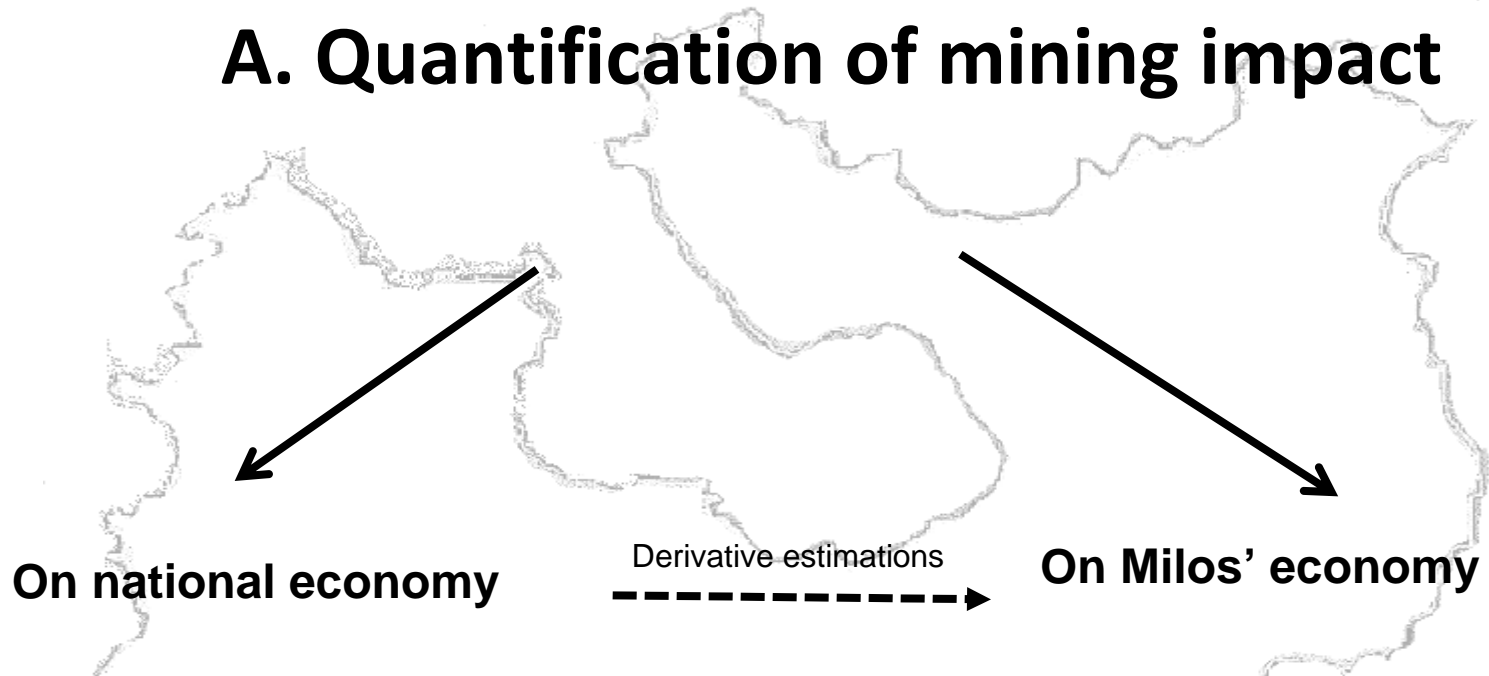
Elias Demian, Research Associate IOBE

# Contents

- Purpose and methodology of the study
- Contribution of Milos' mining sector to the Greek economy
- Contribution of Milos' mining sector to the local economy
- Comparison of Milos' economy with other similar (?) islands
- Conclusions

# Purpose of the study

## A. Quantification of mining impact



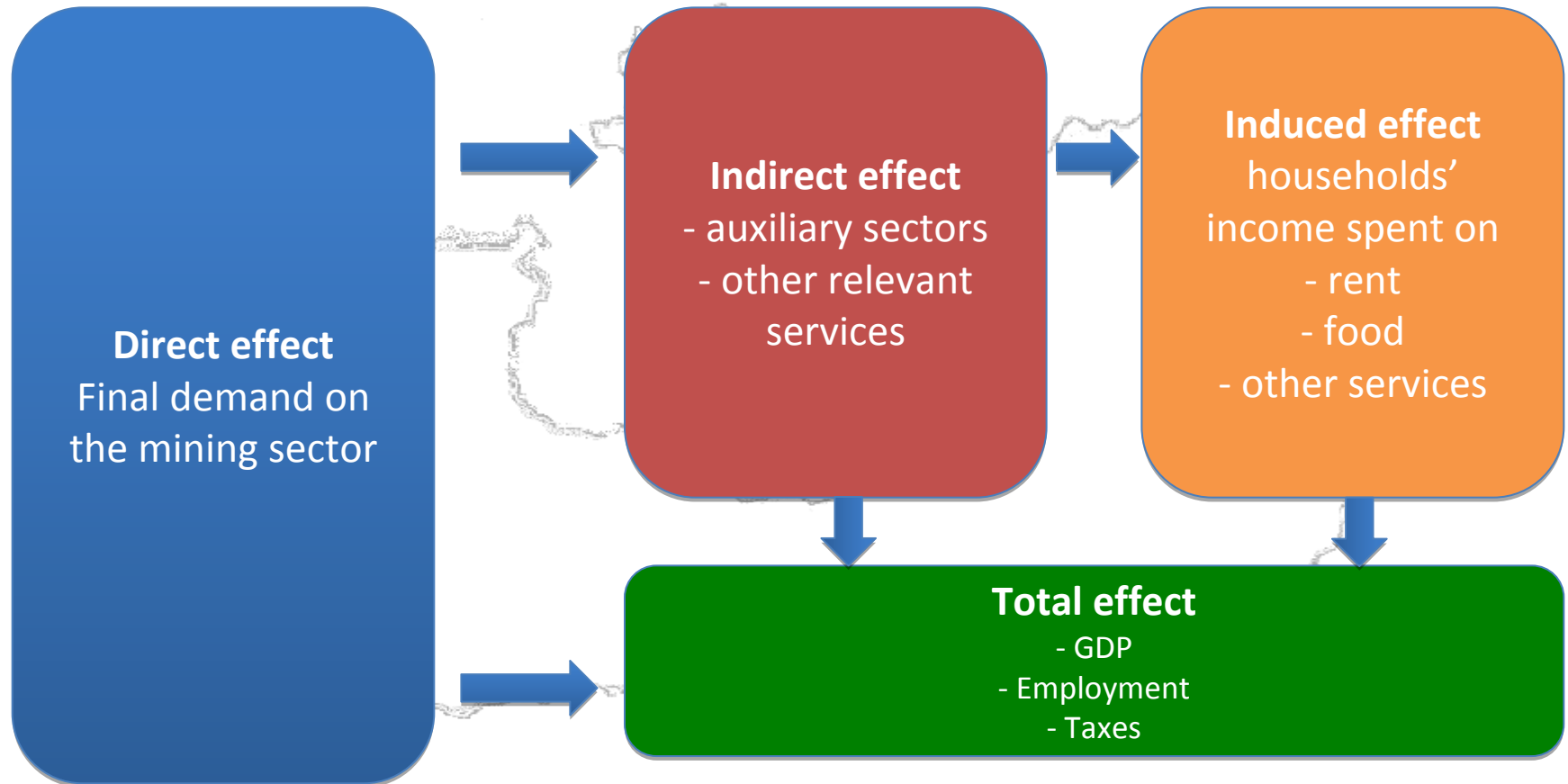
## B. Comparison of Milos economic structure to other similar islands (Paros, Sifnos, Thera)

# Methodology

- Use of the **input output model**
  - Leontief, nobel prize in economic science, 1973
  - Ability to quantify the multipliers of an activity to the total of an economy
  - Direct, indirect and induced impact on GDP, employment and tax revenues
- **Time period of analysis: 2005-2011**
  - Two time periods (2005-2008 and 2009-2011) the trends of the impact and of course the crisis effect
- **Sources:** Eurostat, ELSTAT, S&B annual reports, interviews with local bodies, relevant literature

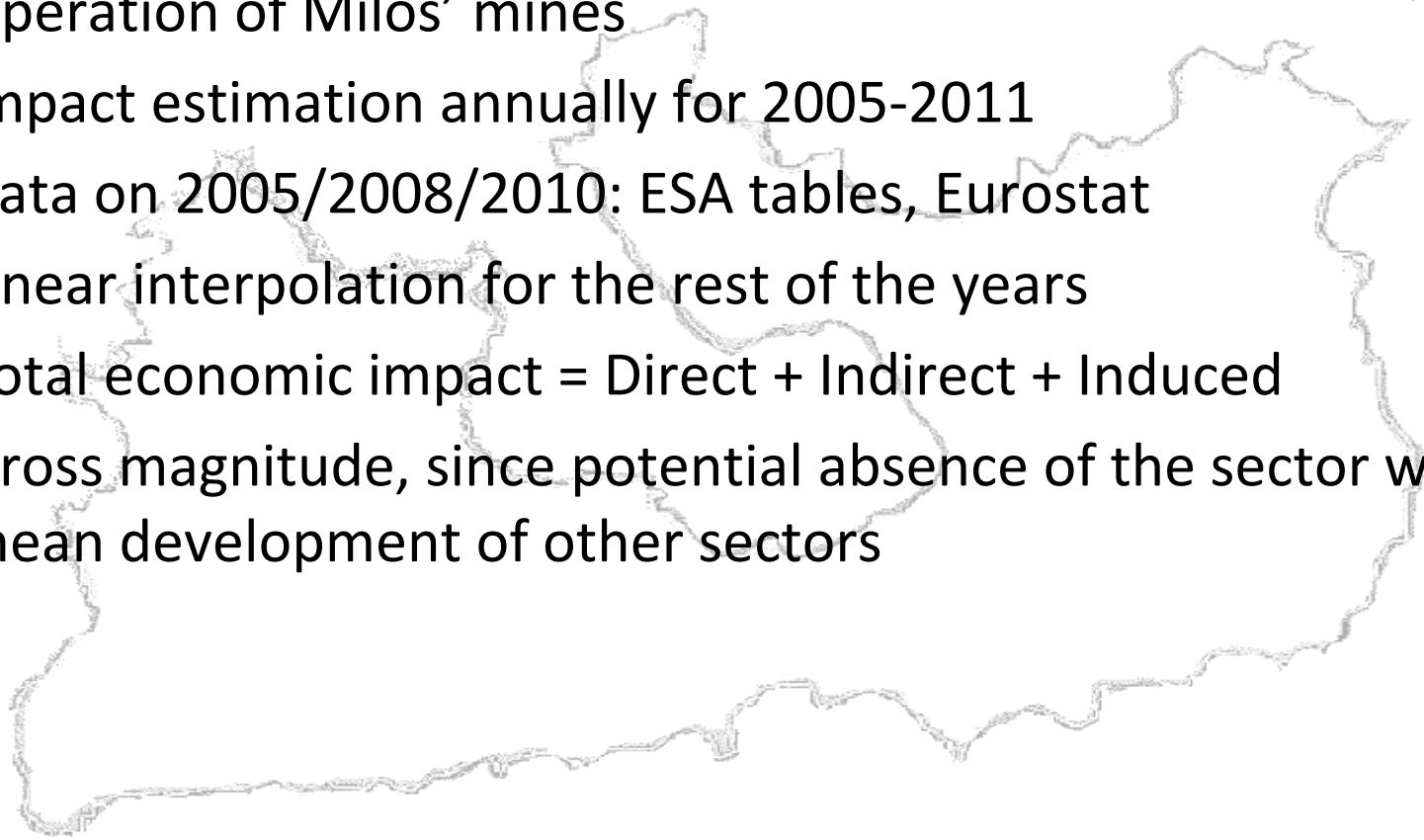
**Important consideration: mining activity is considered as a part of the Greek industry and not a part of the primary**

# The I/O model

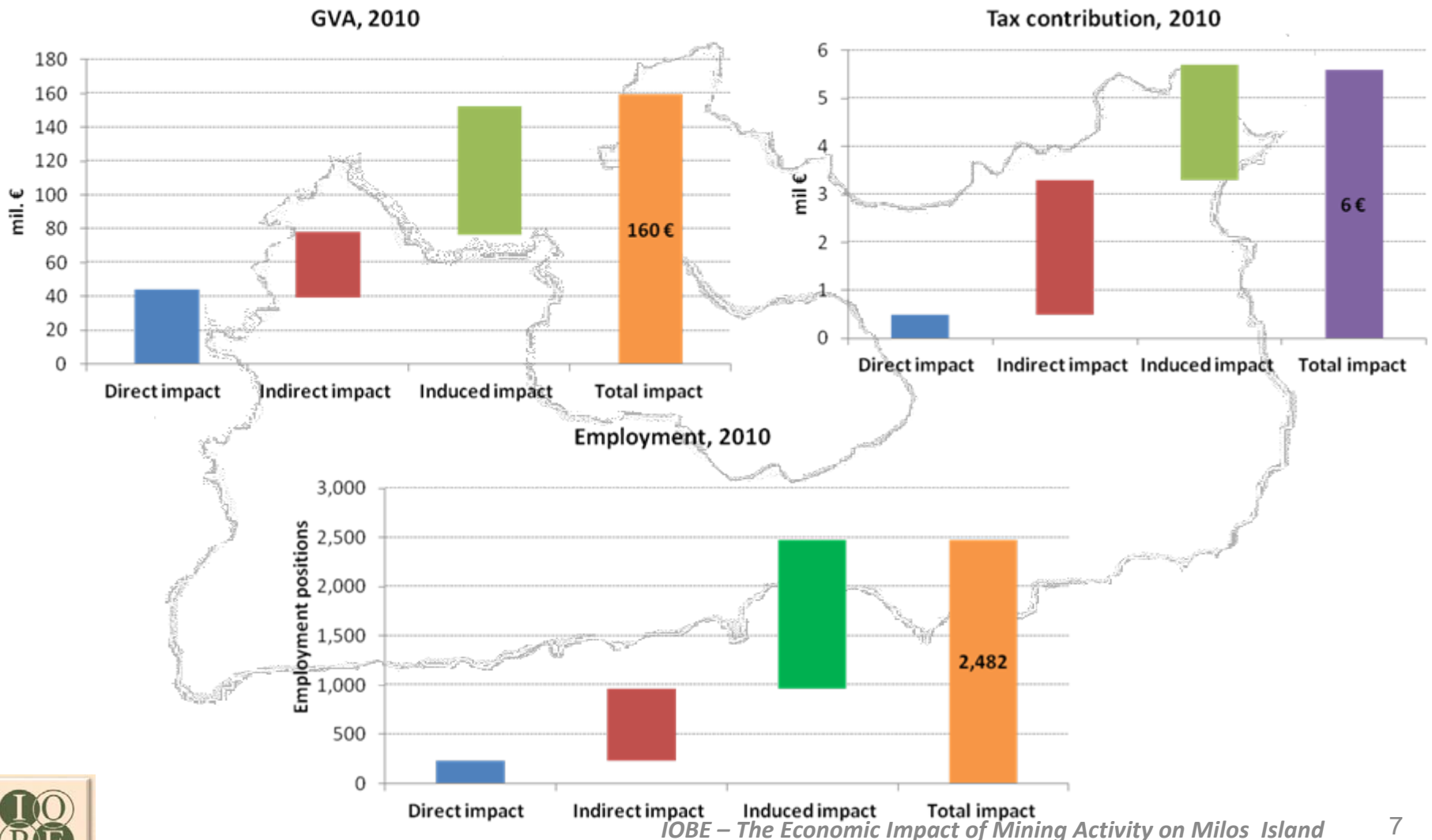


# Economic Impact on National Economy

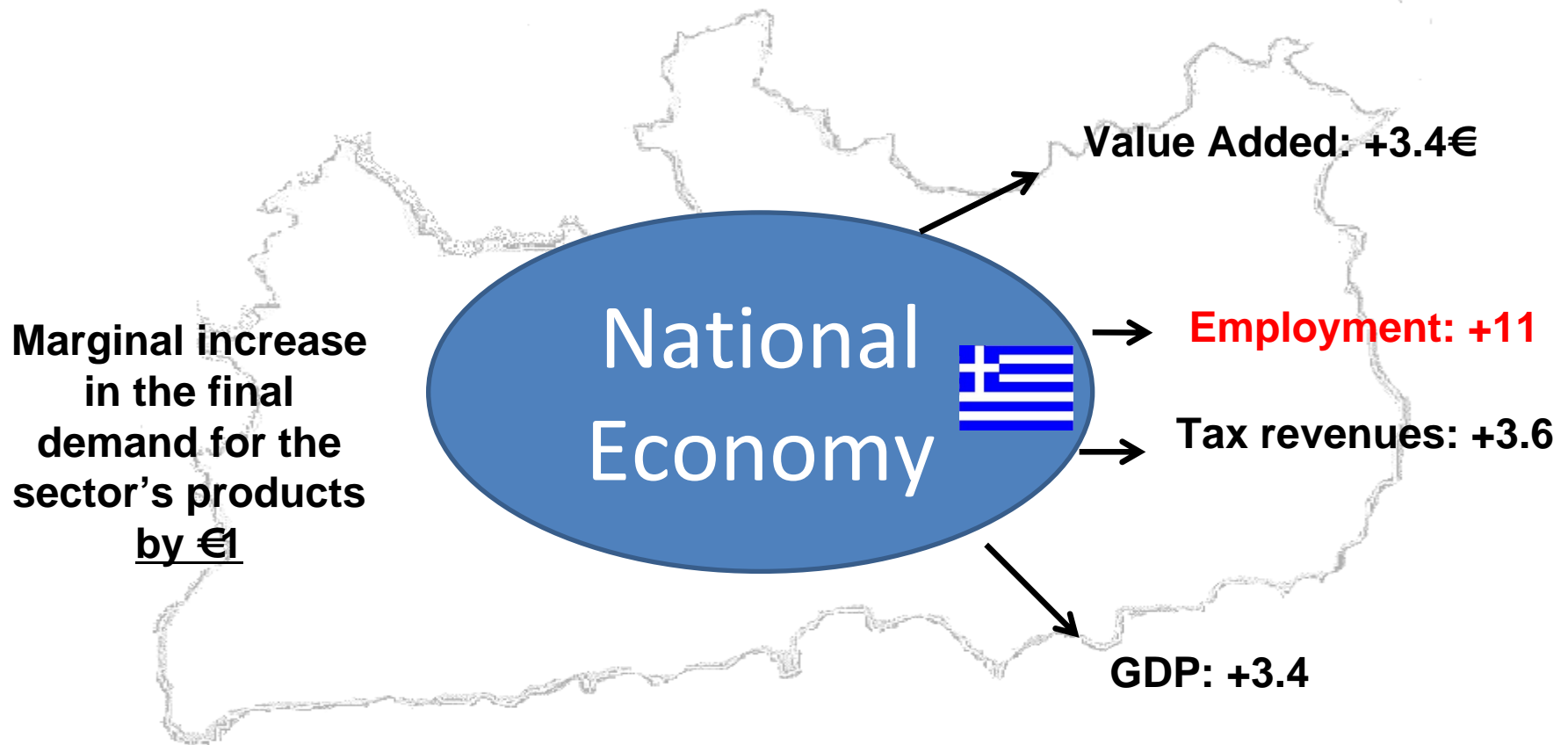
- Operation of Milos' mines
- Impact estimation annually for 2005-2011
- Data on 2005/2008/2010: ESA tables, Eurostat
- Linear interpolation for the rest of the years
- Total economic impact = Direct + Indirect + Induced
- Gross magnitude, since potential absence of the sector would mean development of other sectors



# 2010 data exhibit a rather significant effect on the Greek economy...



# ...while the typical multipliers display high sectoral productivity

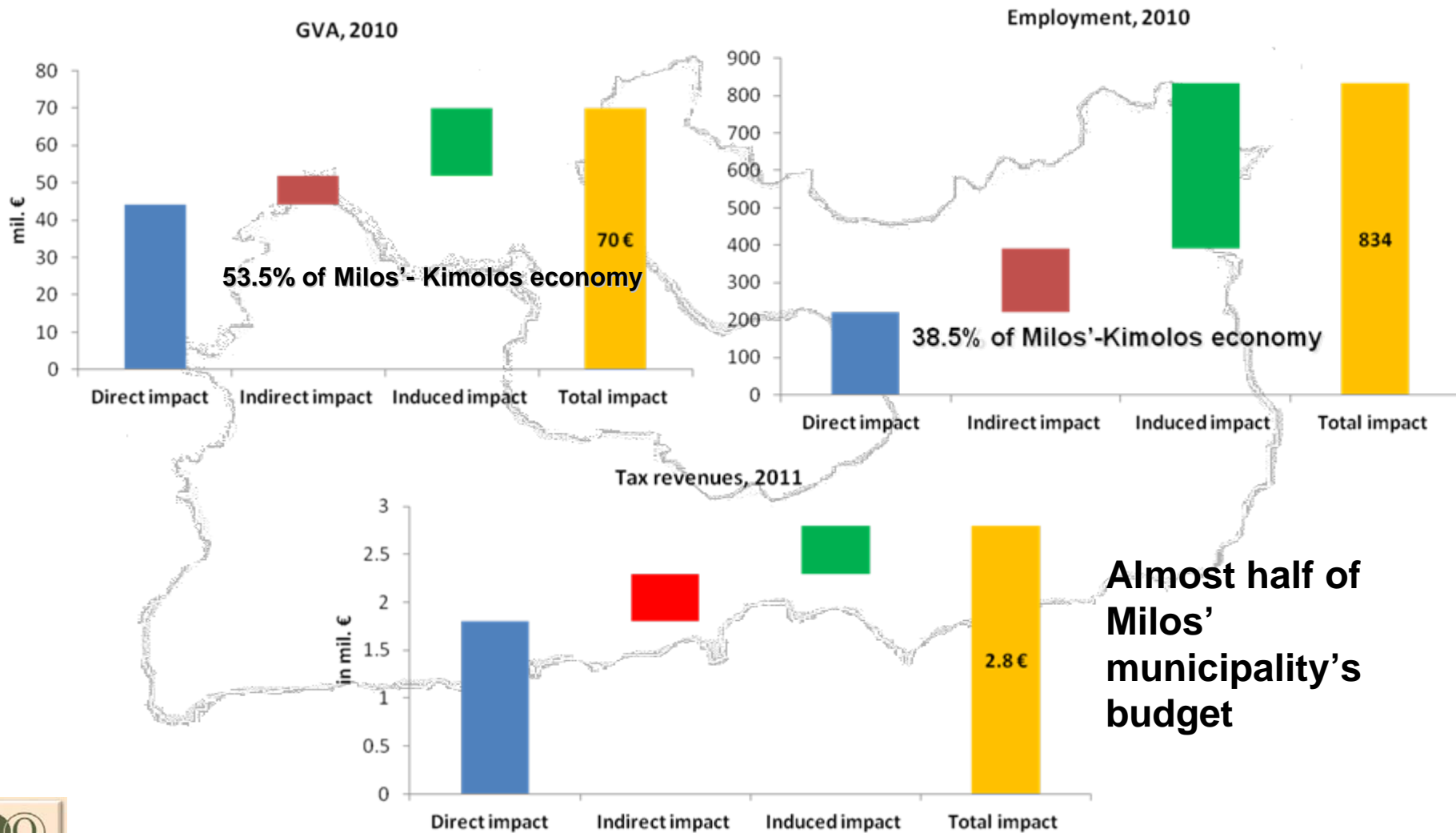




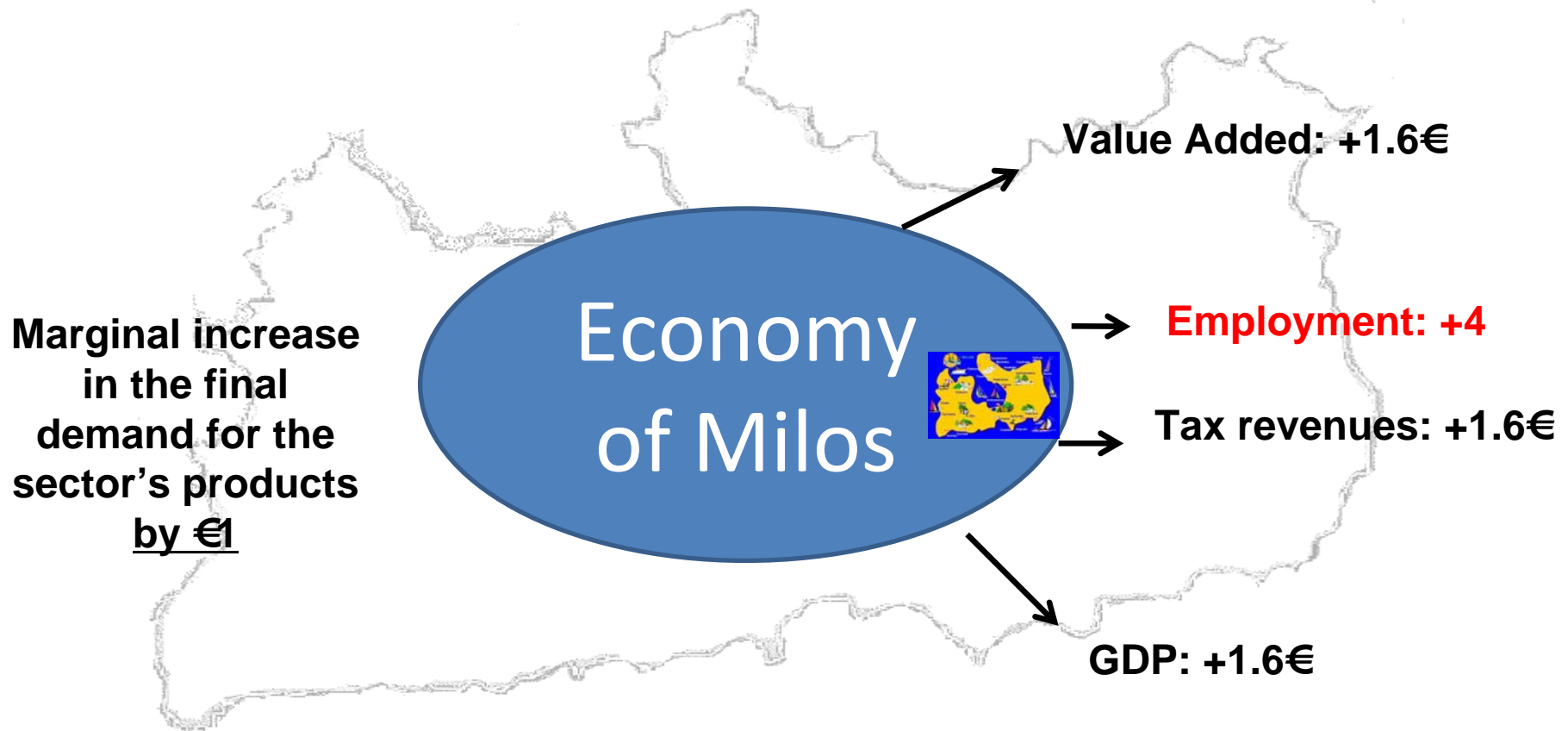
# The impact on Milos-Kimolos' complex...

- Series of rational assumptions based on the previous results
- **Milos and Kimolos** complex is seen as a closed ecosystem, money flows to the rest of Greece are seen as leakages
- Small size of the examined economy:
  - smaller indirect and induced effect
- Possible overestimation of contribution to GVA (earnings to the owners spent outside the local economy)
- Underestimation of the total impact since I/O model does not include:
  - Incomes and expenditures of retired employees
  - Demographic decline avoidance, preservation of local community and other similar benefits for the local economy
  - Other expenses: restoration of old mines, frequent installation of new mines

# ...is quite considerable almost half of the local economy is sustained through mining



# Again, the multipliers are considerably smaller, but yet effective



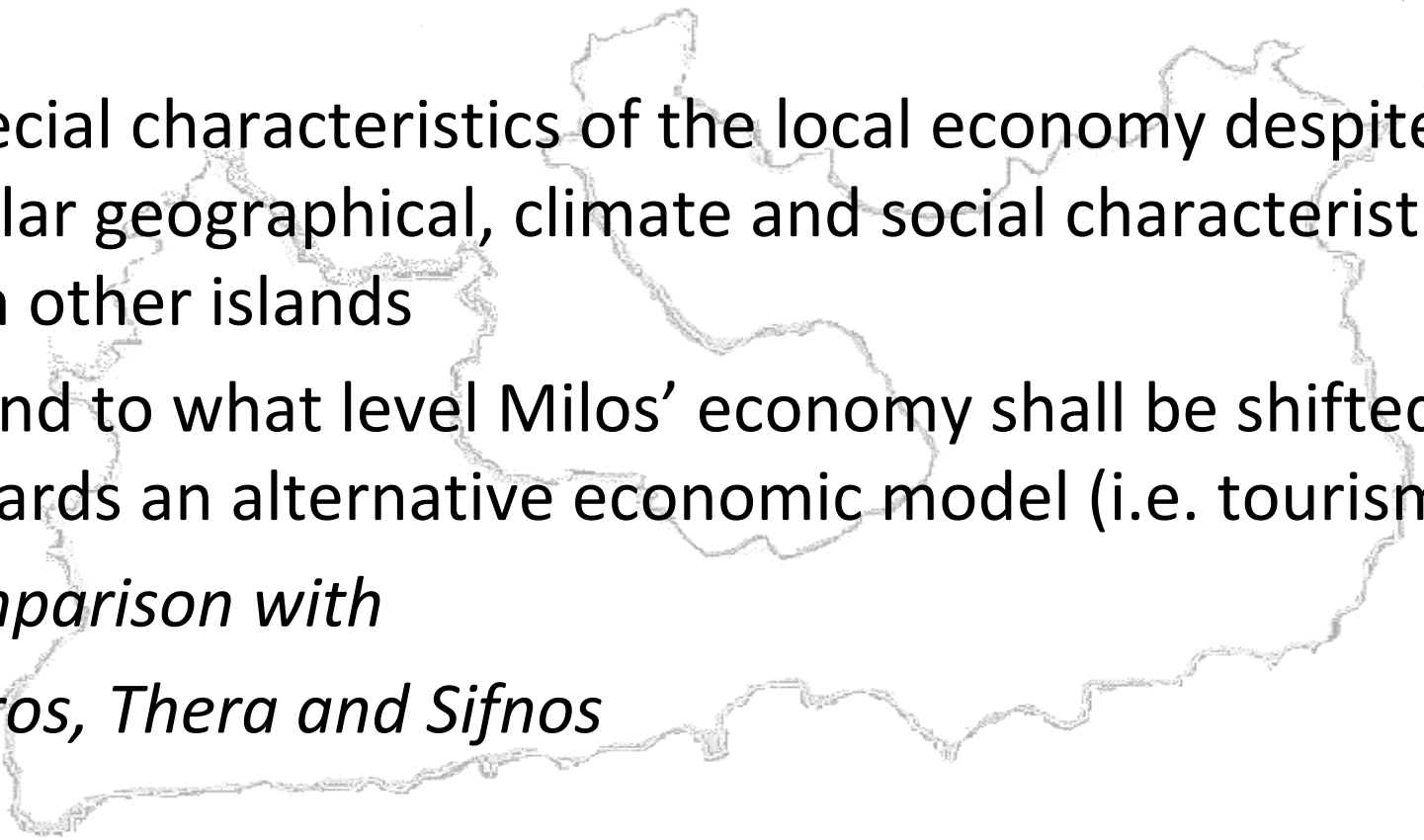
High sectoral productivity is proven again

# Next step: Comparison with other similar economies

- Special characteristics of the local economy despite similar geographical, climate and social characteristics with other islands
- If and to what level Milos' economy shall be shifted towards an alternative economic model (i.e. tourism)

*Comparison with*

- *Paros, Thera and Sifnos*



# Some basic characteristics

## Paros island

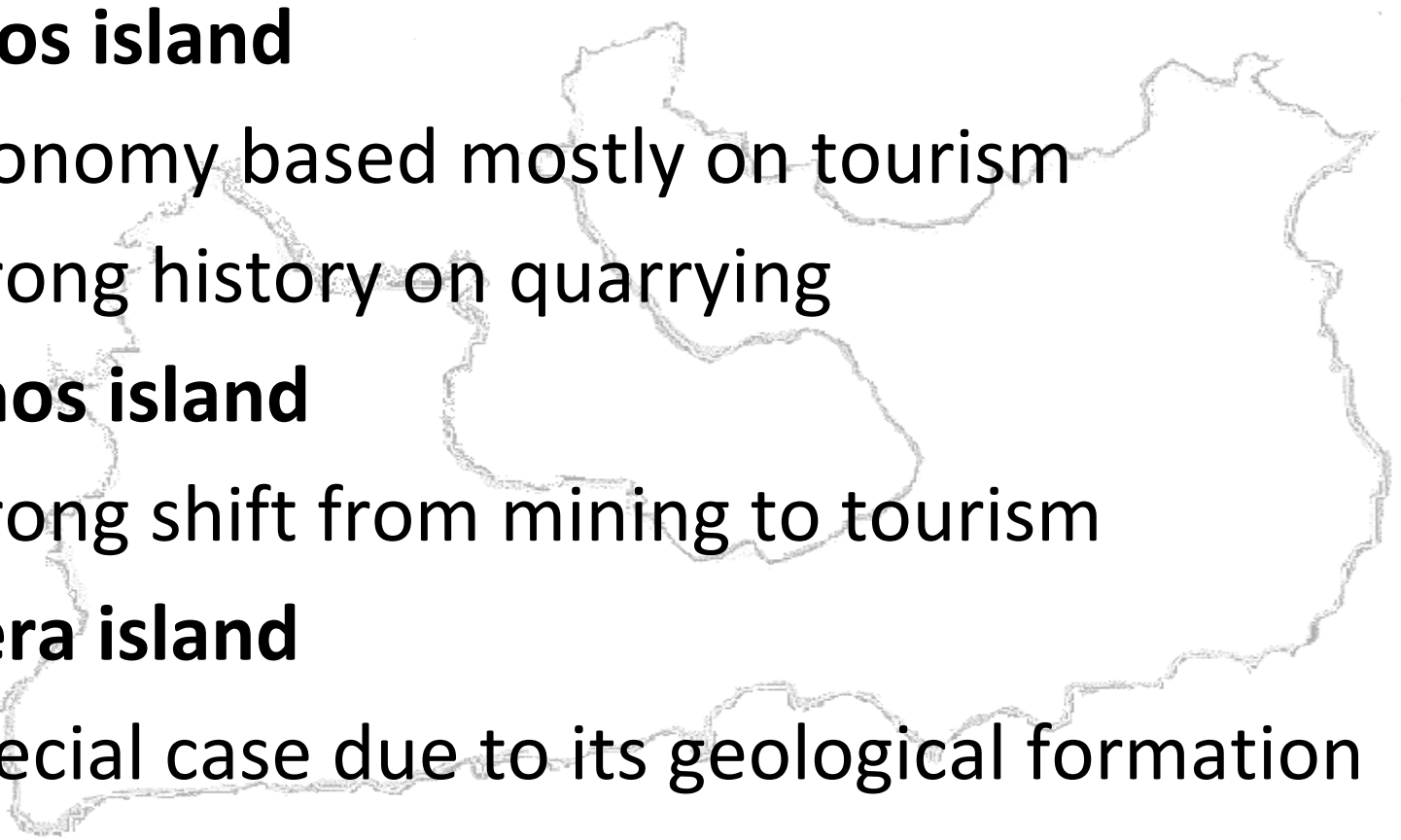
- Economy based mostly on tourism
- Strong history on quarrying

## Sifnos island

- Strong shift from mining to tourism

## Thera island

- Special case due to its geological formation
- Specialization in tourism



# Need for a uniform index

- Location quotients for GVA and Employment
- Island's  $r$  contribution to a variable  $A$ , in a geographical area  $n$ , divided by the economic sector  $l$ , is defined as :

$$LQ = (A_{lr}/A_{ln}) / (A_r/A_n)$$

- Example regarding employment in Milos

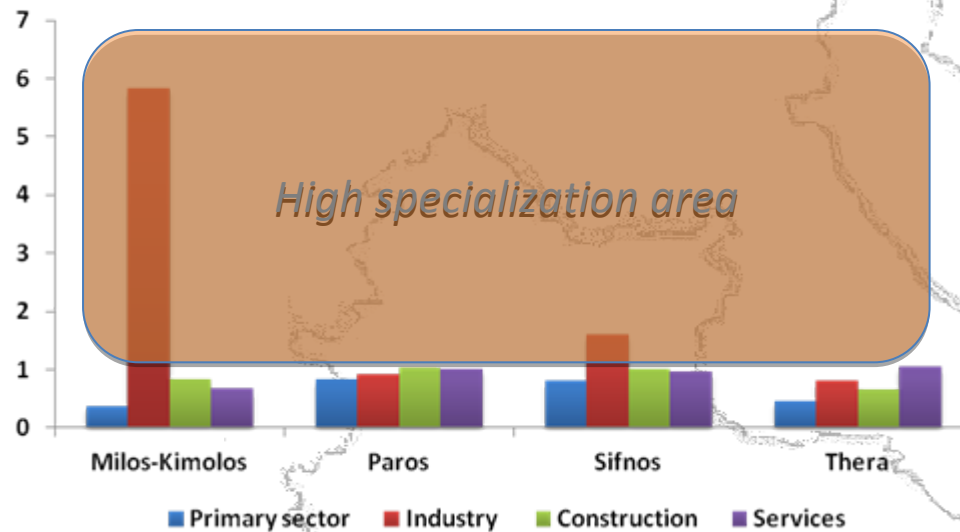
**Employment in Manufacturing in Milos/total employment in  
Manufacturing in Cyclades region**

**Total Employment in Milos/Total Employment in Cyclades**

- If  $LQ > 1$ , high specialization (in terms of employment) in Milos compared to the rest of Cyclades

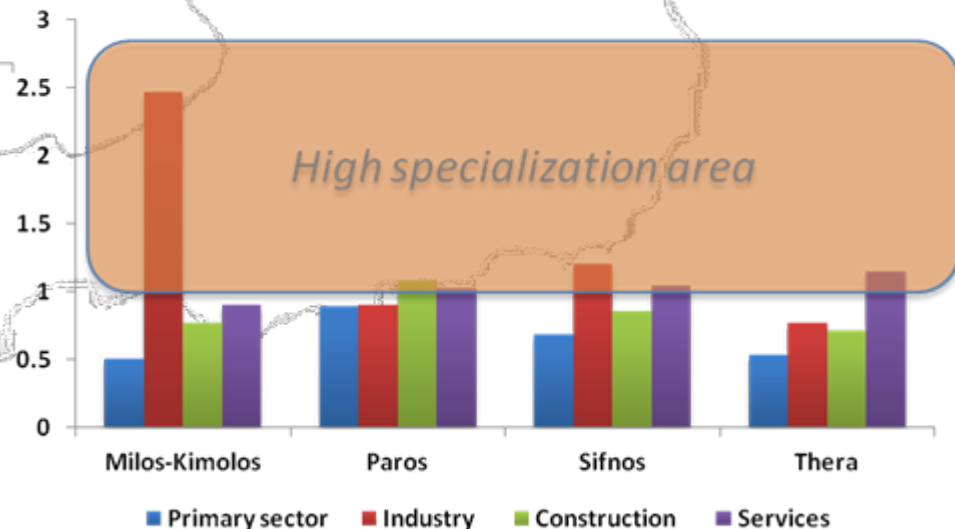
# Unique economic model in Milos-Kimolos, albeit similar economic characteristics with the other islands

Gross value added, 2009



- Different patterns in Milos compared to the rest of the islands, both in GVA and employment terms
- Milos-Kimolos: the only economy with high specialization in manufacturing

Employment, 2009



# Conclusions



- Mining activity remains the backbone of the local economy
- A shift in Milos' economy to tourist activities would require a total restructuring in all levels (education, alternative choices, danger of braindrain)



Thank you for your attention

Elias Demian

Environmental Scientist

[demian@iobe.gr](mailto:demian@iobe.gr)

