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# The economic impact of private primary and secondary education in Greece: a quantitative approach

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# Significant reduction in the number of students in private education in Greece

- ▶ Private schools are the minority of schools in Greece
  - ▶ 7% of all primary schools
  - ▶ 5% of all lower secondary schools
  - ▶ 8% of all upper secondary schools
- ▶ Due to the economic crisis, there is a significant reduction in the number of students in private schools during the last five years
  - ▶ In primary education, the number of students in 2014 is 38.636 (from 46.836 in 2008, reduced by 18%)
  - ▶ In lower secondary education the number of students in 2014 is 15.287 (from 19.073 in 2008, reduced by 20%)
  - ▶ In high schools (upper secondary), the number of students in 2014 is 13.179 (from 16.219 in 2008, dropped by 19%)

From 82000 (2008) to 67000 students (2014)

# Reduction in the teaching staff as well



- ▶ The drop in the number of teaching staff in private schools is also non negligible
  - ▶ In private primary education, the number of teachers is 3.769 in 2014 (from 4.041 in 2008, reduced by 7%)
  - ▶ In lower secondary education, the number of teachers is 2.068 in 2014 (from 2.523 in 2008, reduced by 18%)
  - ▶ In high schools (upper secondary) the number of teachers is 1.727 in 2014 (from 1.927 in 2008, reduced by 10%)

# Education expenditure has also decreased



- ▶ Household expenditure on: a) pre-primary b) primary, c) lower secondary and d) upper secondary education consist approximately 1/5 of all household spending on education
  - ▶ In the last five years, this expenditure has fallen by 30%
- ▶ The average annual expenditure per student of private schools was reduced in all four above categories:
  - ▶ in pre-primary education by 22%
  - ▶ in primary education by 26%
  - ▶ in lower secondary education by 9%
  - ▶ in upper secondary education by 41%
- ▶ For the total secondary private education, the expenditure per pupil in 2014 is estimated around € 5.537
  - ▶ Has fallen by 25% compared with 2008

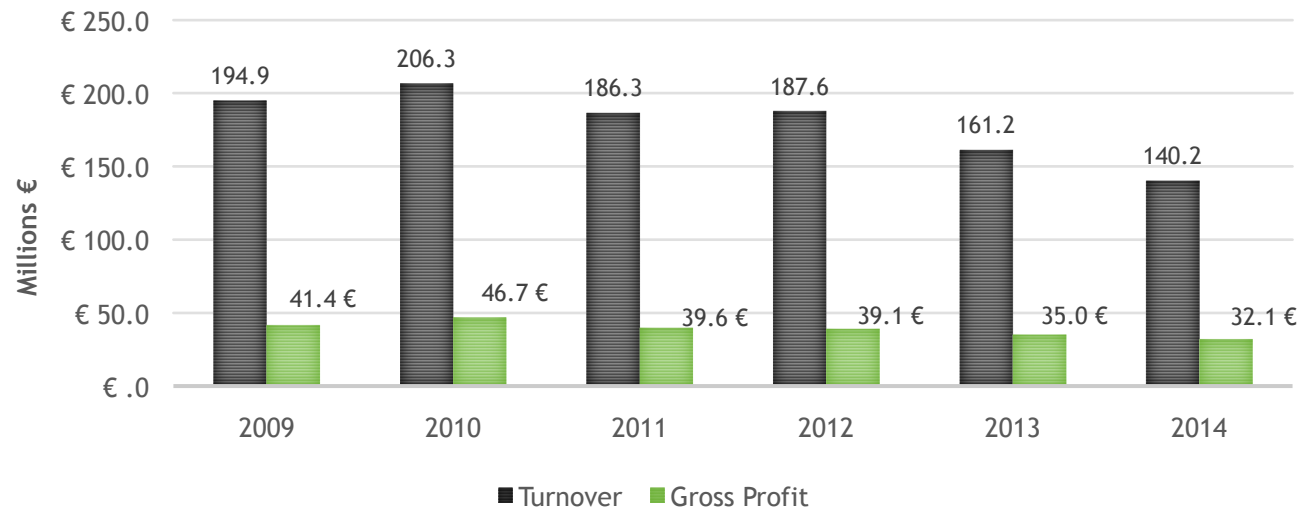
# Financial analysis of Balance sheets



## Data

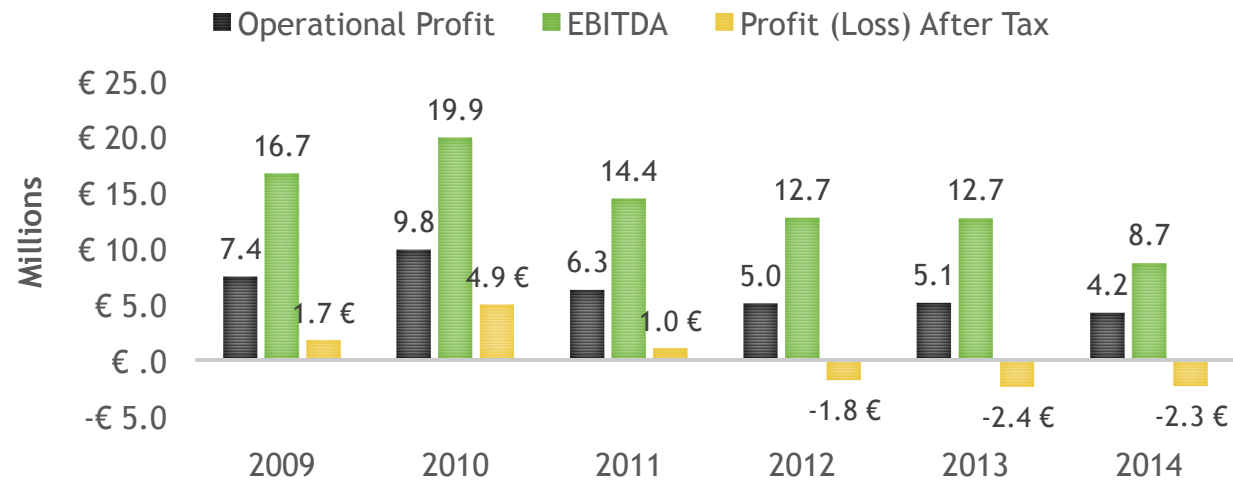
- ▶ Hellastat database
- ▶ 52 private schools that are members of Hellenic Independent Schools Association
  - ▶ 14 Primary Schools
  - ▶ 38 Lower and Upper Secondary Schools
  - ▶ 45 schools from the sample are S.A. (Société Anonyme)
- ▶ Period covered: 2009-2014

# Income Statement



- ▶ Turnover in 2009-2014 dropped by 28,1% (average annual rate of change: -6,4%) and Gross Profit by 22,6% (average annual rate of change: -5,0%).
  - ▶ Due to the economic crisis and the subsequent drop in the number of students
- ▶ Almost the same gross profit margin as expenses were more efficiently controlled

# Income Statement



- ▶ The reduction in Operating Profits and EBITDA was greater than 40%
  - ▶ because the reduction in Administrative Expenses (-18,1%) was lower than the reduction in Turnover (-28,1%).
- ▶ The Loss After Tax gradually reached €2,3 million due to:
  - ▶ the drop in Turnover (-28,1%),
  - ▶ the increased Financial Expenses (+16,0%), and
  - ▶ the increased Extraordinary Expenses and Provisions (+57,7%).
  - ▶ During period 2009-2014, the percentage of schools that have Losses After Tax has increased from 34.1% to 45.2%.

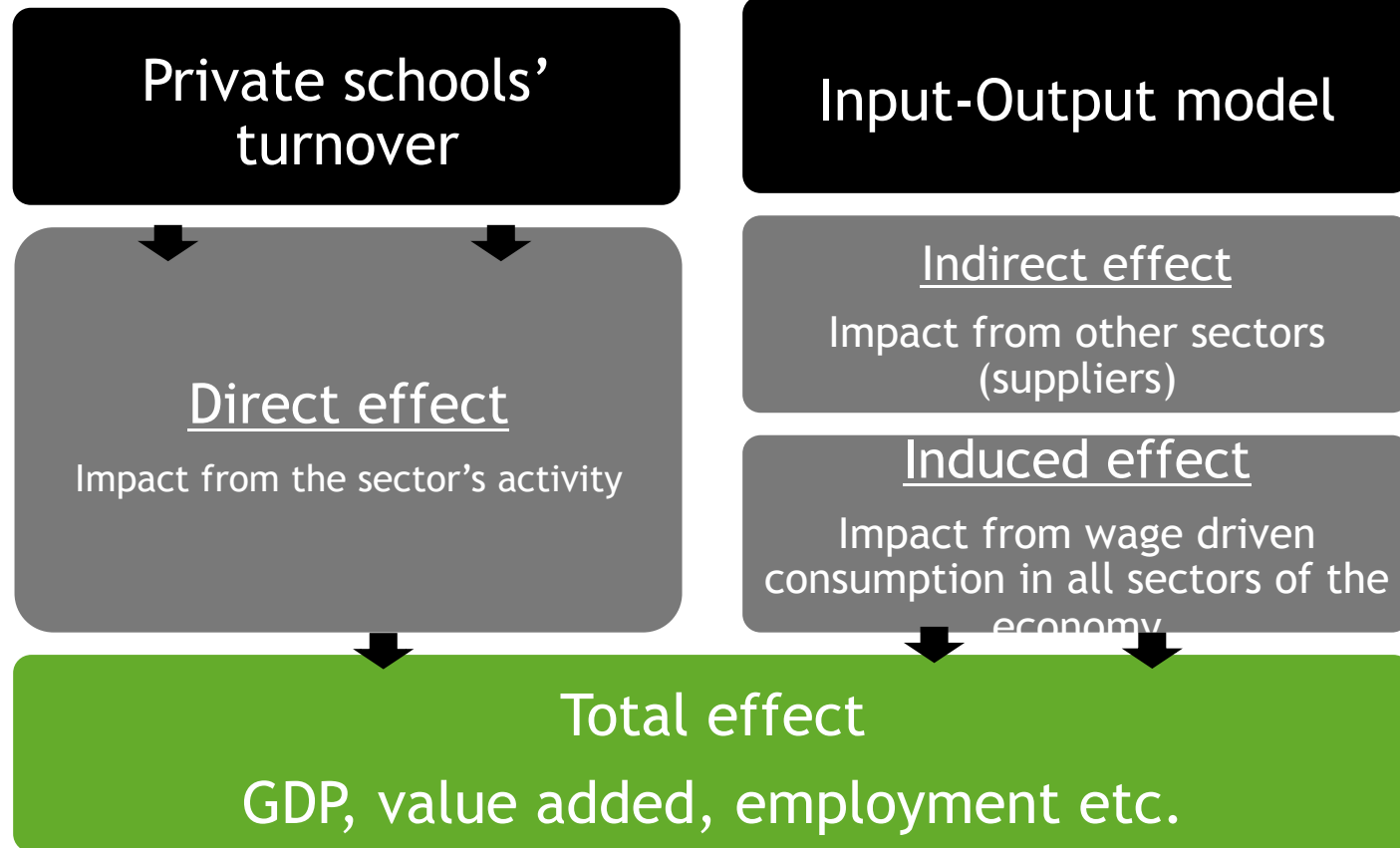


# The economic footprint of private education

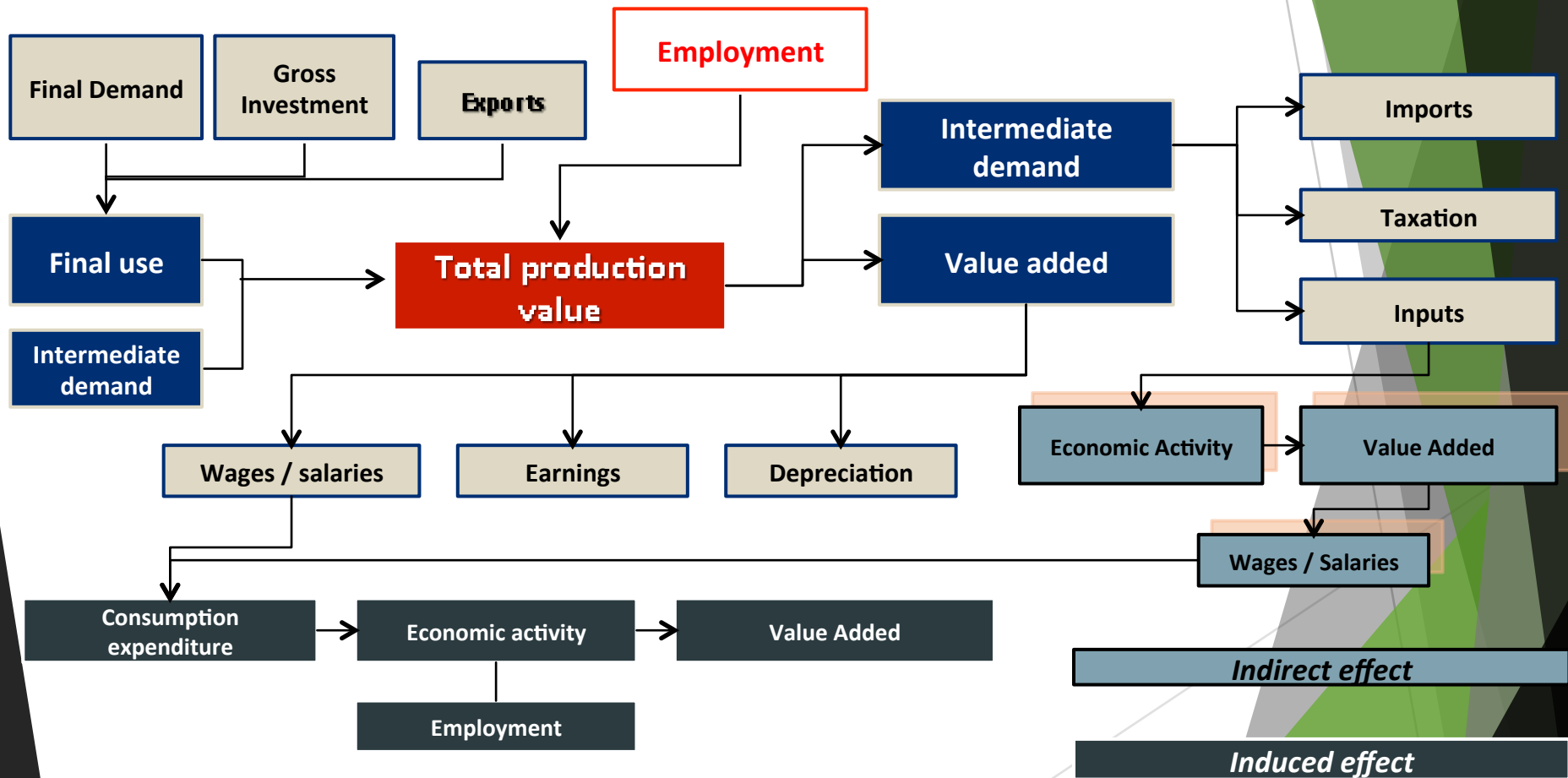




# Input-Output economic impact analysis



# The structure of the input-output model

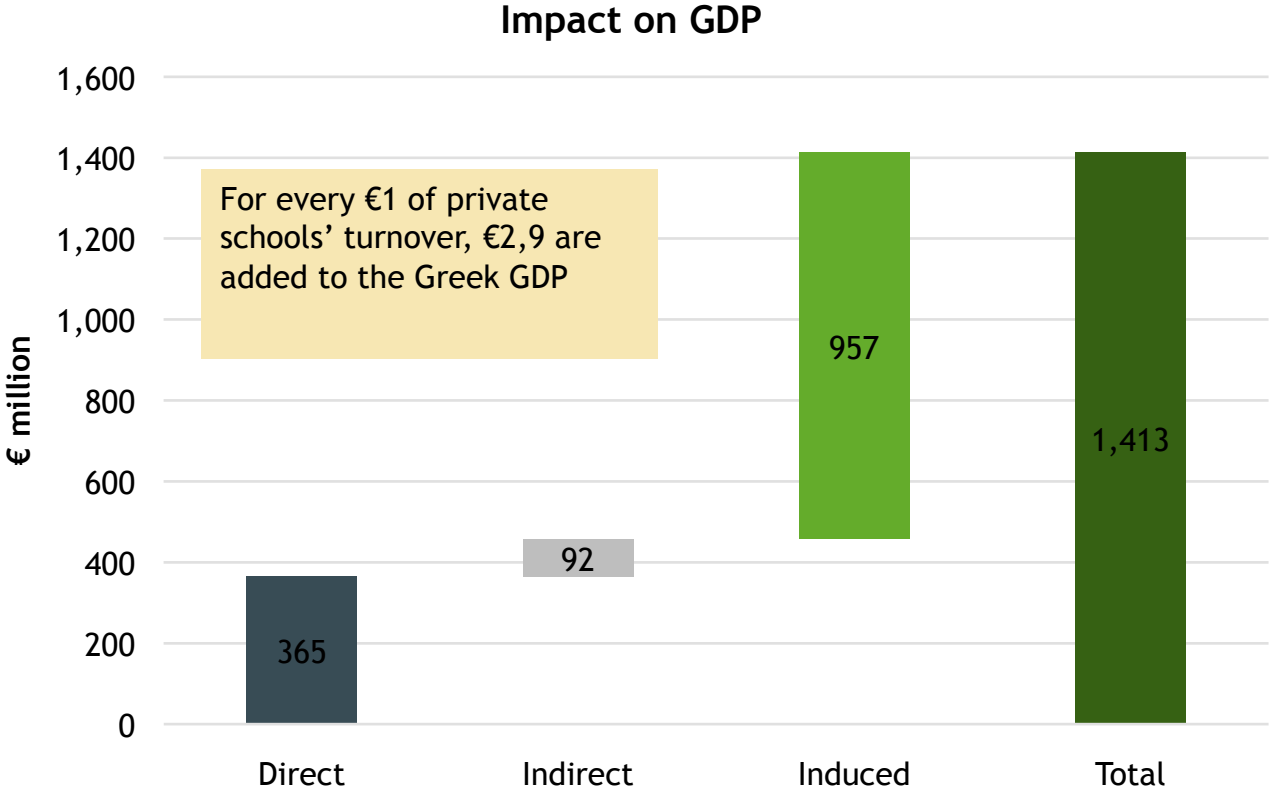


# Data used

- ▶ Eurostat's 2010 Input-Output tables, updated using Eurostat's 2014 National Accounts data
- ▶ ELSTAT's Household Budget Survey
  - ▶ Total turnover of the sector
- ▶ IOBE's survey on the sector's cost structure
  - ▶ 38 private schools

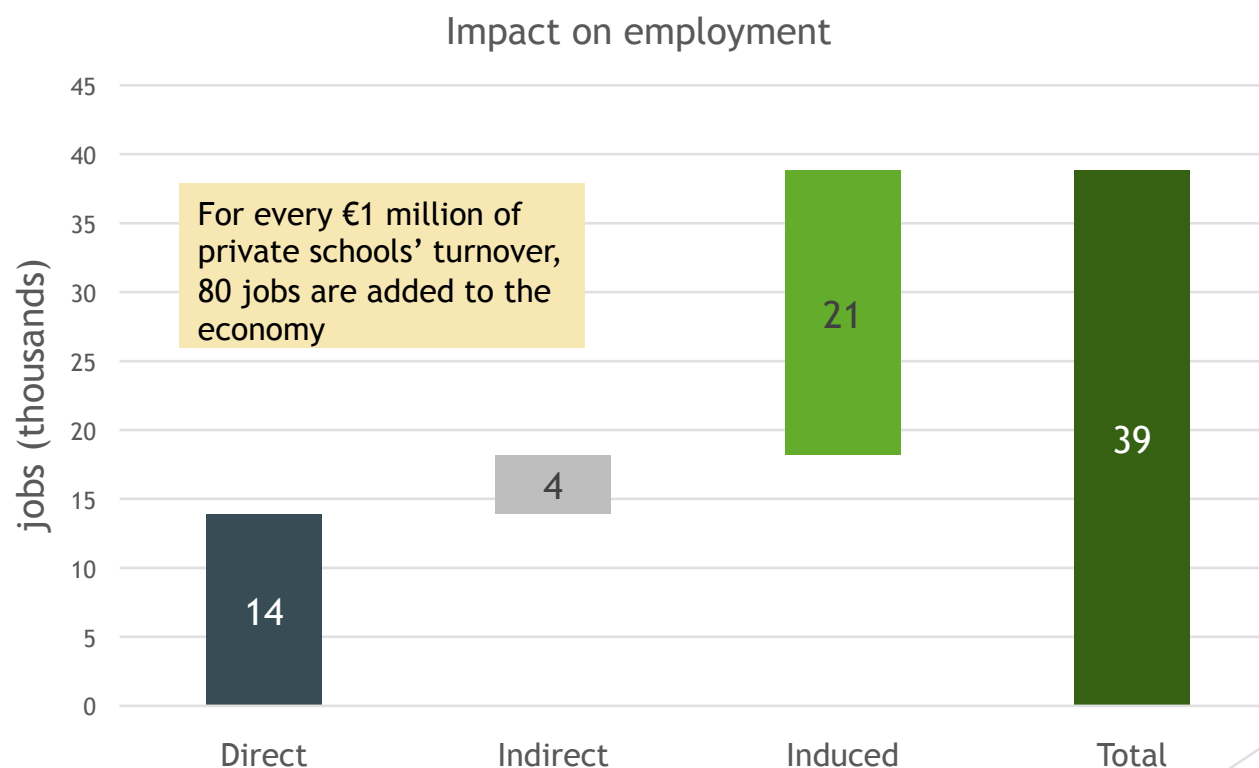


# The total impact on GDP exceeds €1,4 billion (0,8% of GDP)



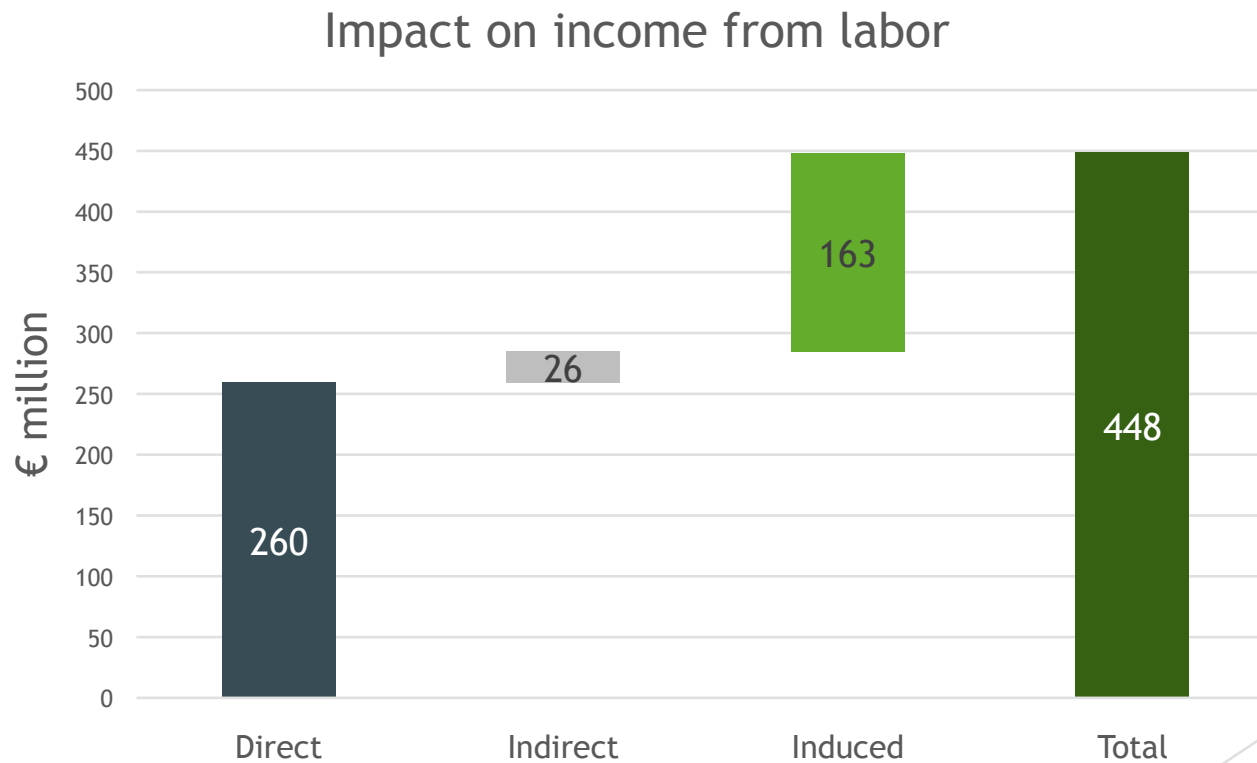
Source: I/O model IOBE

# The total impact on employment is 39.000 jobs (1% of total employment in Greece)



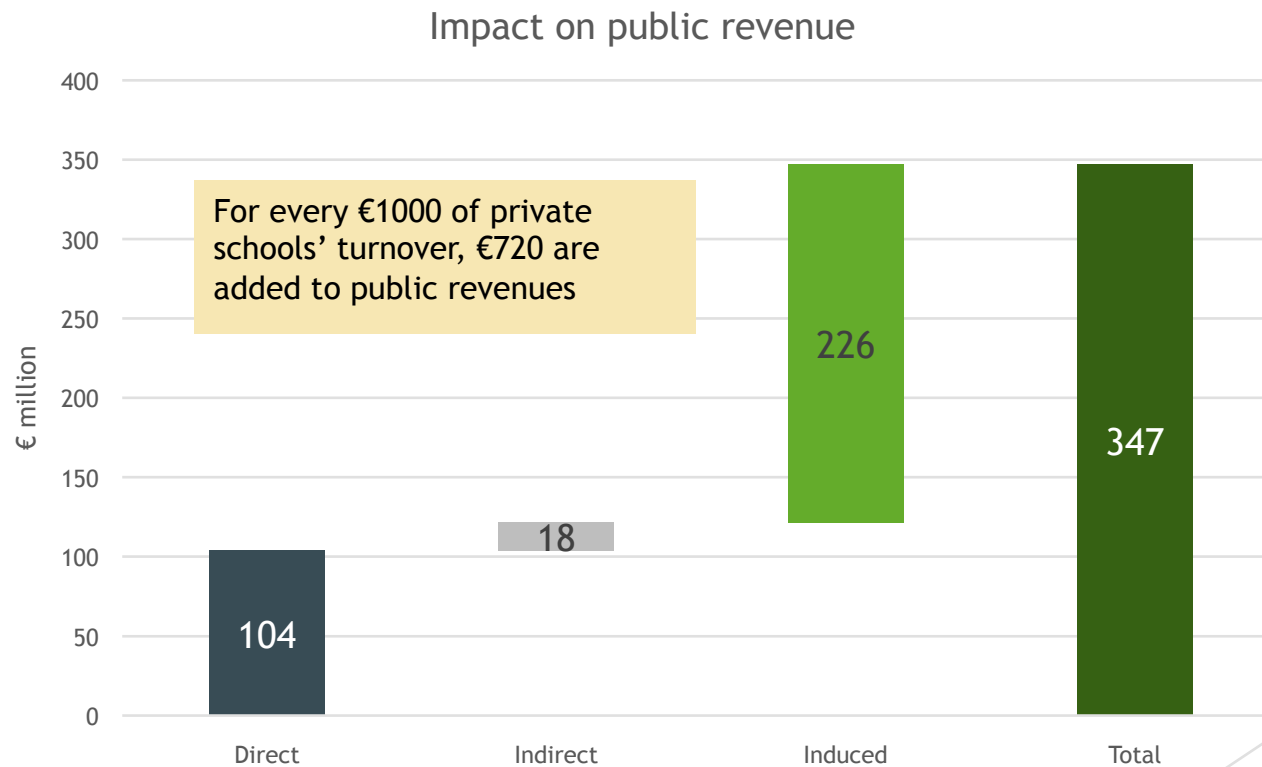
Source: I/O model IOBE

Private schools offer directly  
€260 million in wages (total  
effect: €450 million)





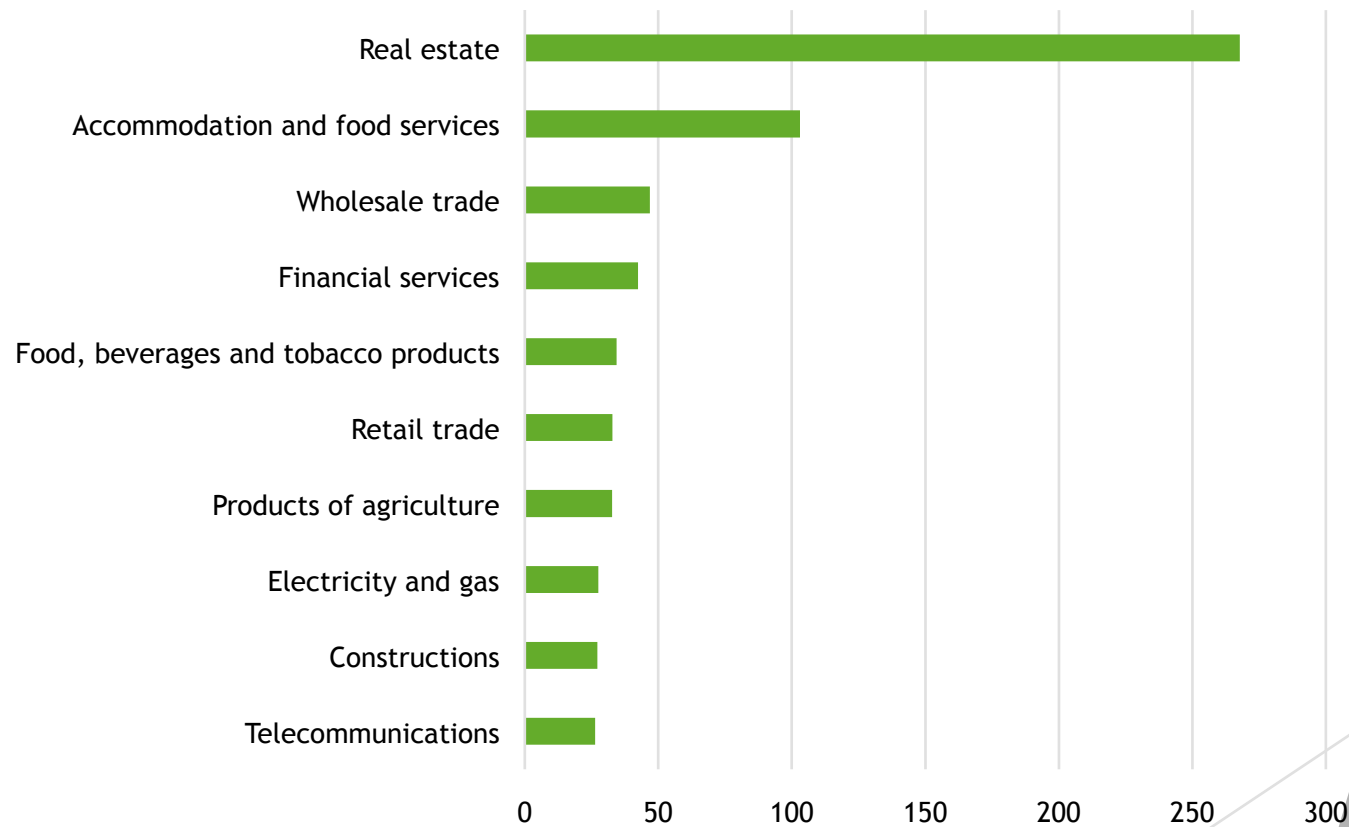
# The total contribution to public revenues is €350 million (€100 million directly)



# Strong effects in real estate, constructions, finance and trade



Total effects on GDP (€ million)





# In terms of multipliers



2014 multipliers	Partial	Total
Value added	0,91	2,59
GDP	0,94	2,92
Employment (per €1 million turnover)	37,5	80,2
Public revenues (Per €1000 turnover)	250	720

- ▶ Partial multipliers
  - ▶ Incorporating only the indirect effects
- ▶ Total multipliers
  - ▶ Incorporating indirect and induced effects
  - ▶ E.g.: for every €1 of private schools' turnover, approx. €3 are added to the Greek GDP in total

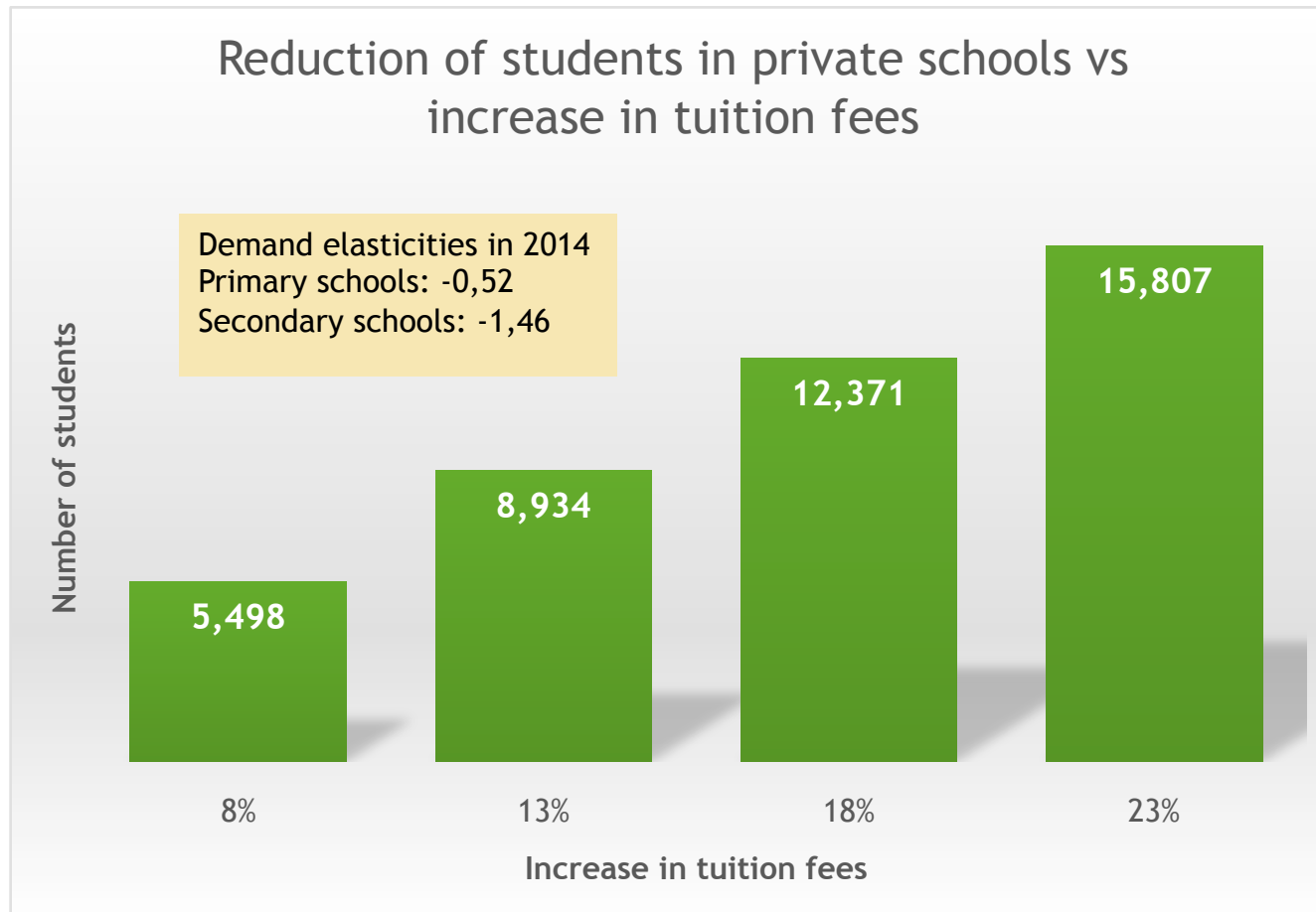


# The effects of VAT on private education

# Demands elasticity of private education services

- ▶ Discrete calculations for primary and secondary education
  - ▶ Using the same methodology
  - ▶ Extrapolations for pre-schools, due to lack of data
- ▶ Linear econometric model
  - ▶  $S_{Pr,t} = a + b * P_{Pr,t} + c * I_t$
  - ▶ The number of students depends on:
    - ▶ level of tuition fees
    - ▶ households' disposable income
  - ▶ Ordinary Least Squares estimation of coefficients
- ▶ ELSTAT data for the period 2004-2014

Should VAT cause a 23% increase in tuition fees, private schools would lose nearly 16.000 students





# To sum up...

- ▶ Private schools have significant contribution to economy, apart from other benefits that refer to the quality of education
- ▶ The total impact of private schools' activity on GDP exceeds €1,4 billion (0,8% of GDP)
- ▶ The sector finances almost 39.000 job positions in various sectors of the economy
- ▶ Private schools activity offers €450 million in wages (total impact)
- ▶ The total contribution to public revenues is €350 million
  - ▶ For every €1000 of private schools' turnover, €720 are added to public revenues from all sectors of the economy
- ▶ Increasing VAT would lead to significant reduction in the number of students attending private schools which will result to reduction of the impact on the economy, but also will add pressure to the public schools



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Thank you for your attention!