The Economics of European Regions: Theory, Empirics, and Policy

Dipartimento di Economia e Management

Davide Fiaschi Angela Parenti[1]

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[1] davide.fiaschi@unipi.it and aparenti@ec.unipi.it.

Solow model with structural change

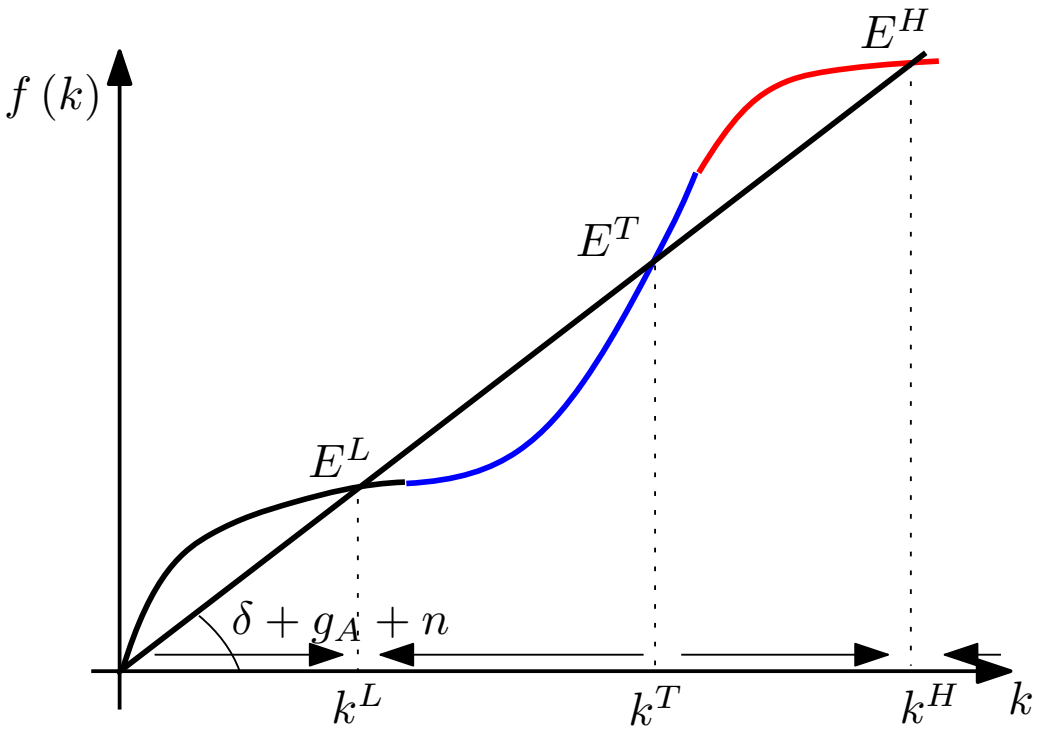

Figura: Aggregate production function with structural change

Some remarks

- E^L is characterized by a high share of output in AGR and a low share in MAN
- E^H is characterized by a low share of output in AGR and a high share in MAN
- k^T represents a threshold in the level of capital

Definition of sector at NACE 2 rev. 1.1

Sector Name	**Sector Code**
Agriculture, hunting and forestry + Fishing	A+B
Mining and quarrying, Electricity, gas and water supply	C+E
Manufacturing	D
Construction	F
Wholesale and retail trade	G
Hotels and restaurants	H
Transport, storage and communications	I
Financial intermediation	J
Other market services	K
(Real estate, renting and business activities)	
Non-market services	L+M+N+O+P
(Public administration and defence; compulsory social security; Education; Health and social work; Other community, social and personal services activities; other activities of private households)	

Agricultural sector

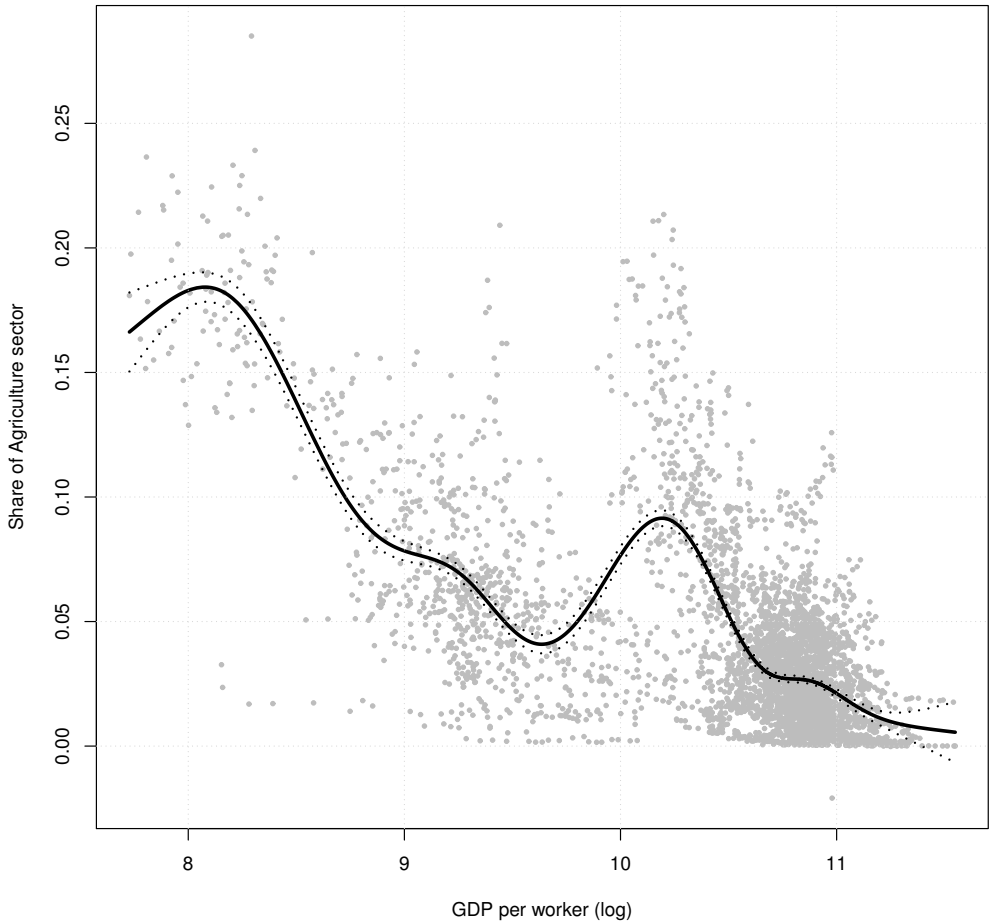

Figura: Share of agricultural on total value added 1991:2008 in European regions

- The relationship between the share of agricultural sector and the level of GDP per worker is generally decreasing
- There exists a strong presence of nonlinearities maybe linked to some unobserved characteristics.

Agricultural sector (cont.d)

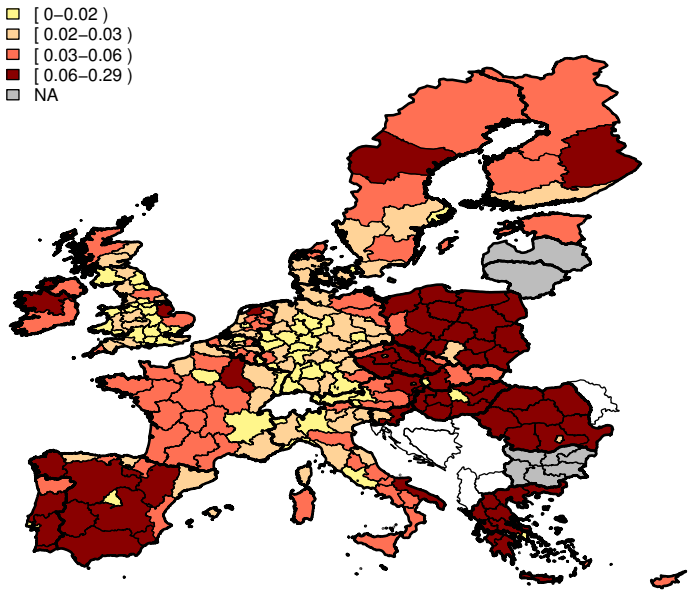

Figura: Share of agriculture on total value added in 1991

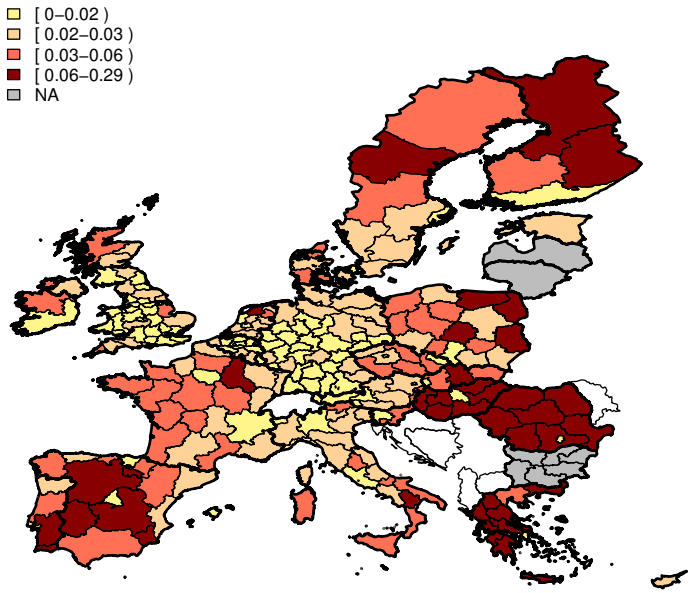

Figura: Share of agriculture on total value added in 2008

Construction sector

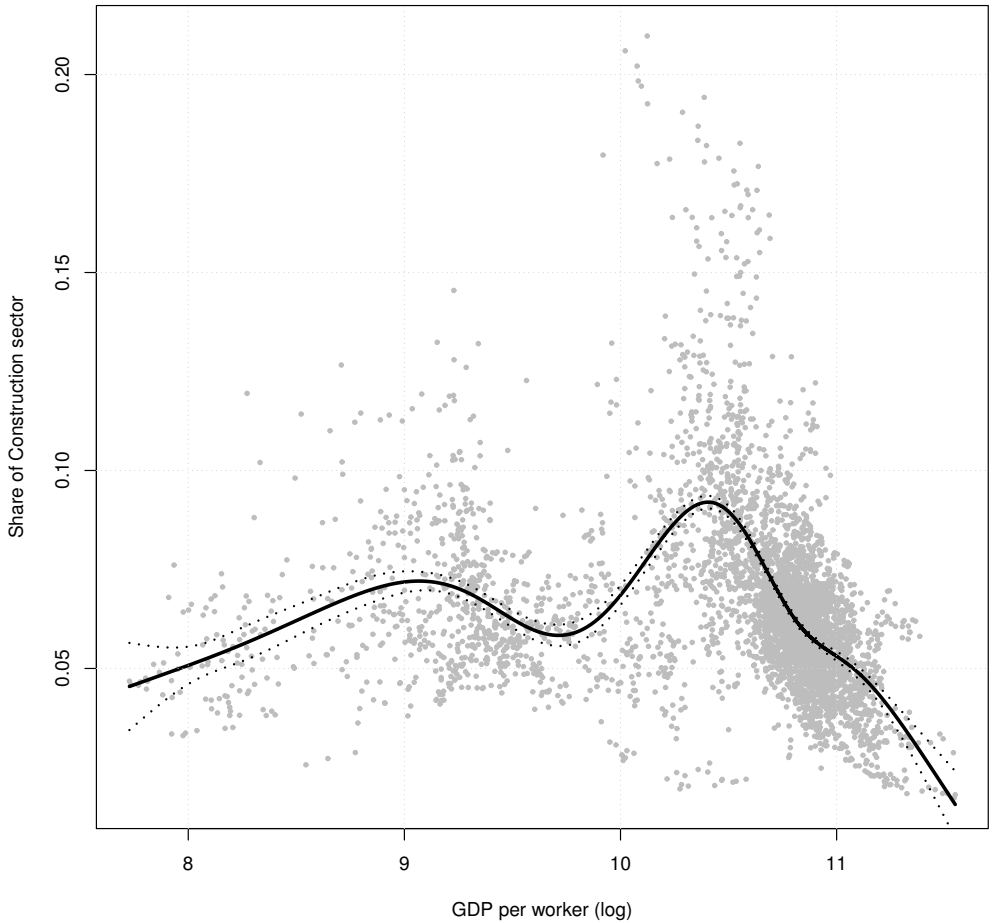

Figura: Share of construction on total value added 1991:2008 in European regions

- The relationship between the share of construction sector and the level of GDP per worker is first increasing and then decreasing
- There exists a strong presence of nonlinearities maybe linked to some unobserved characteristics.

Construction sector (cont.d)

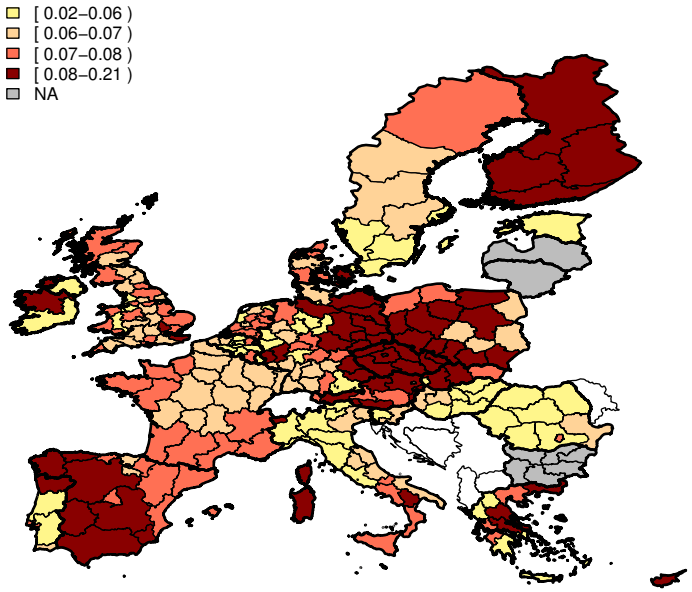

Figura: Share of construction on total value added in 1991

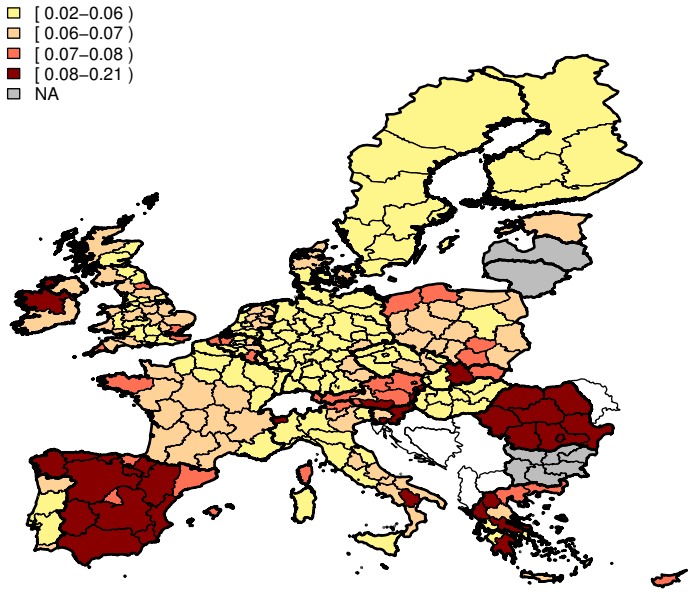

Figura: Share of construction on total value added in 2008

Manufacturing sector

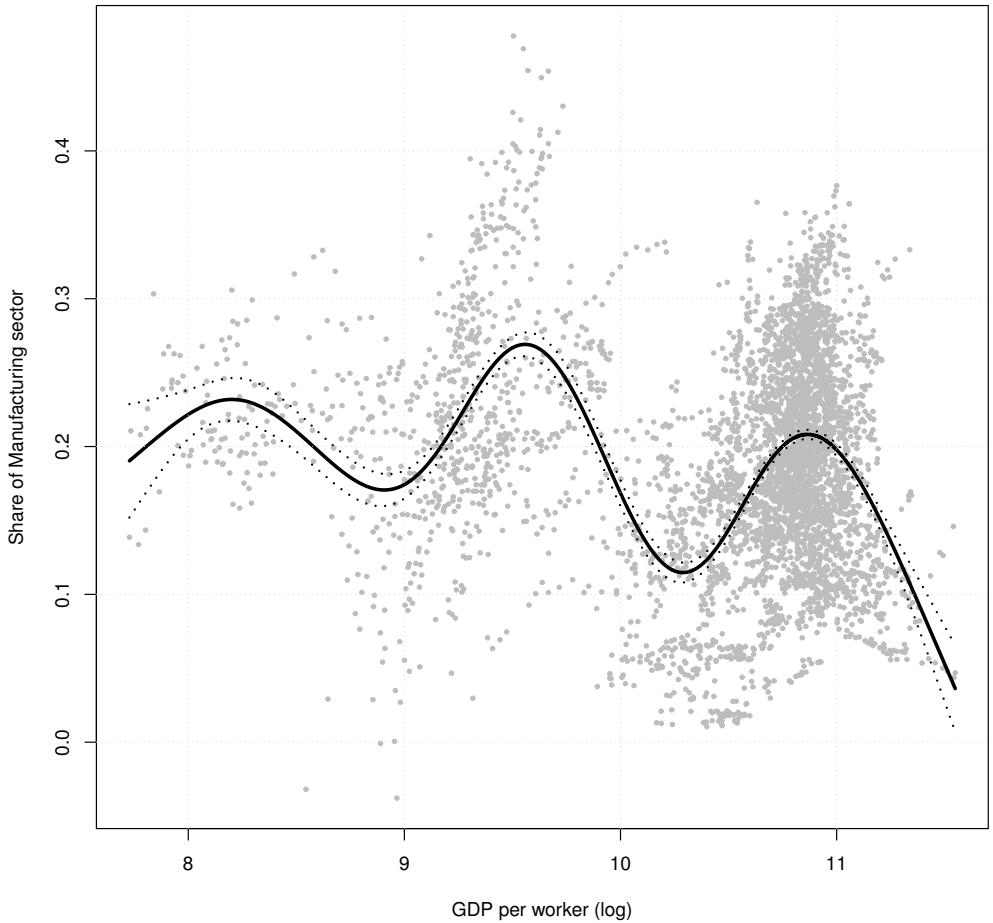

Figura: Share of manufacturing on total value added 1991:2008 in European regions

- The relationship between the share of manufacturing sector and the level of GDP per worker is generally decreasing
- There exists a strong presence of nonlinearities maybe linked to some unobserved characteristics.

Manufacturing sector (cont.d)

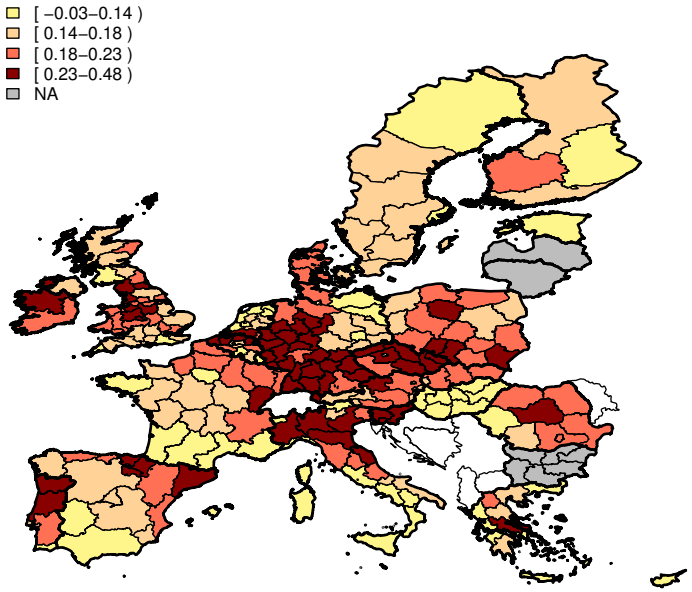

Figura: Share of manufacturing sector on total value added in 1991

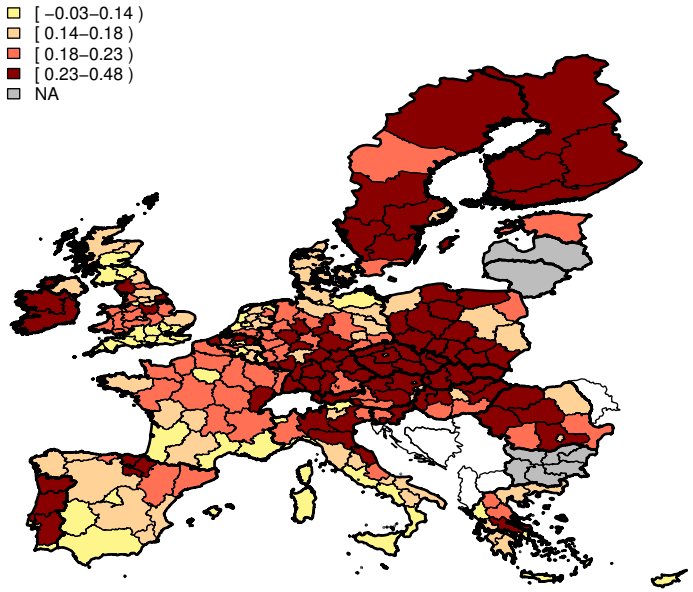

Figura: Share of manufacturing sector on total value added in 2008

Other market services

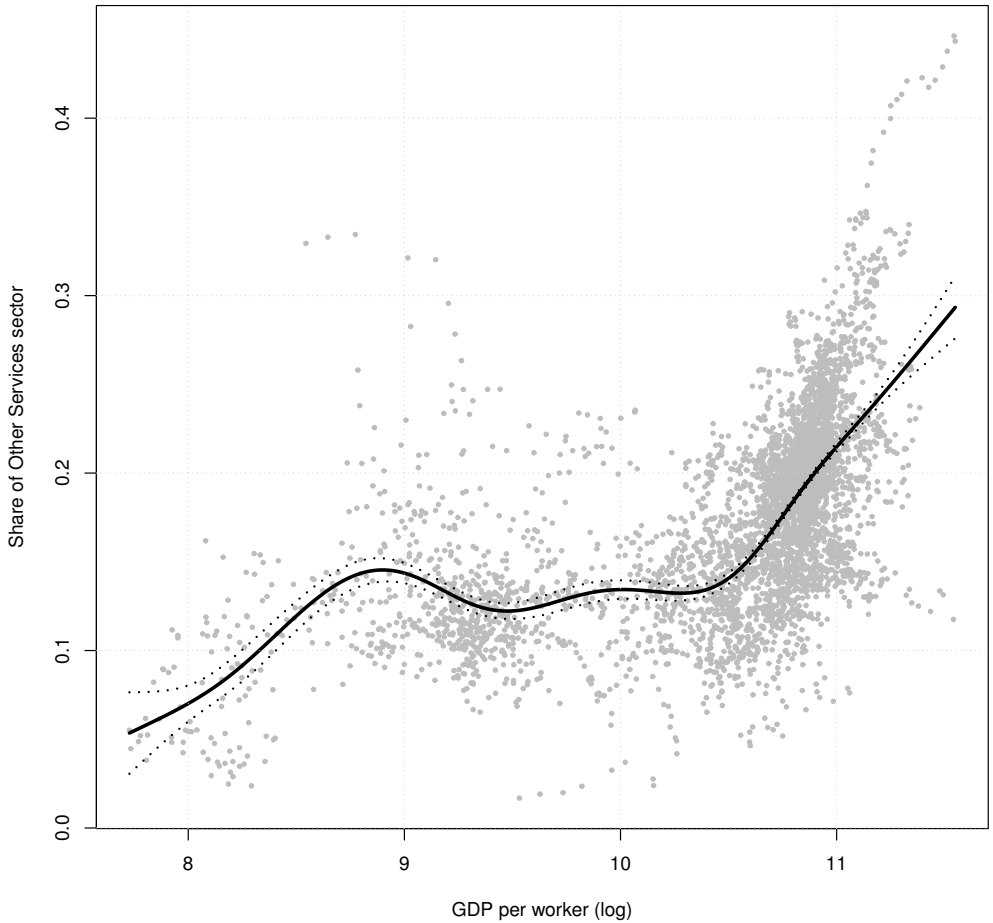

Figura: Share of Other market services on total value added 1991:2008 in European regions

- The relationship between the share of Other market services and the level of GDP per worker is generally increasing
- There exists a moderate presence of nonlinearities.

Other market services (cont.d)

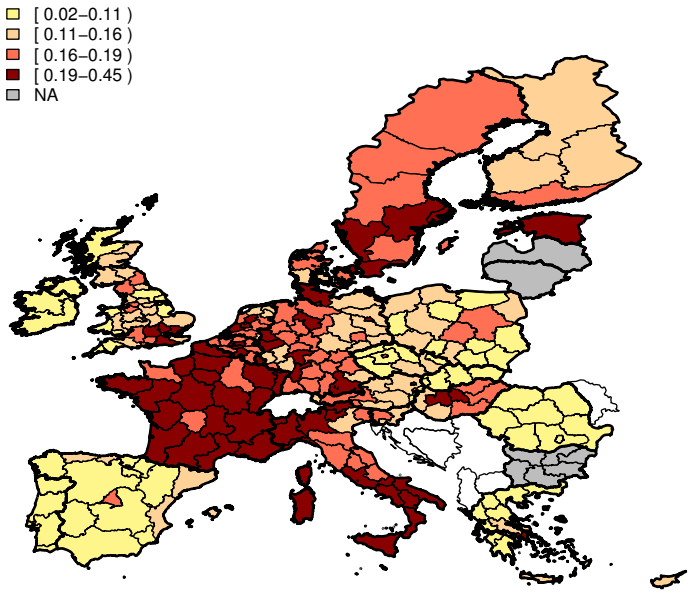

Figura: Share of Other market services on total value added in 1991

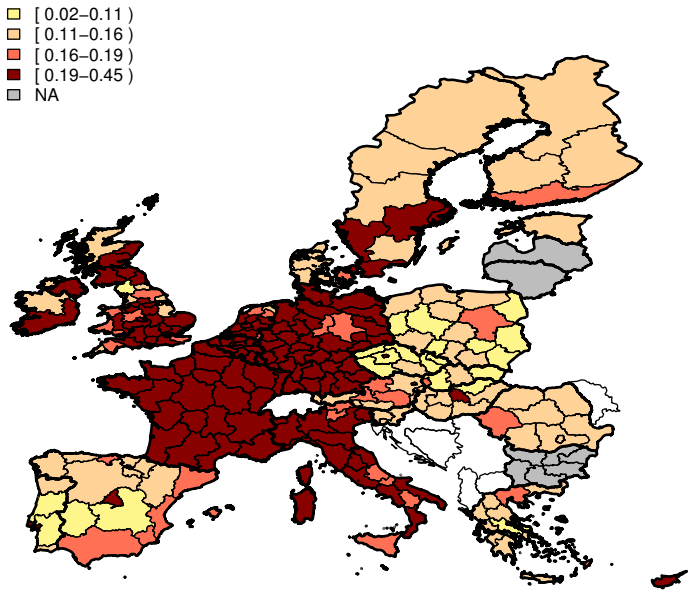

Figura: Share of Other market services on total value added in 2008

Non market services

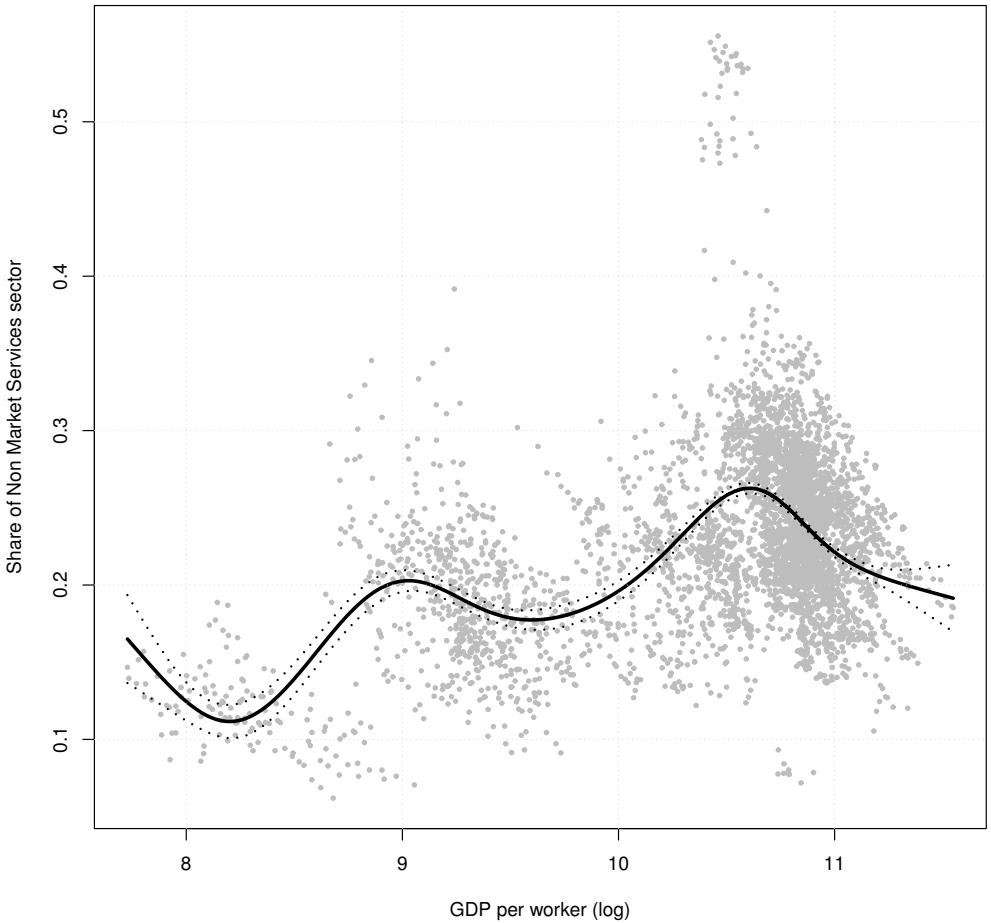

Figura: Share of non market services on total value added 1991:2008 in European regions

- The relationship between the share of non market services and the level of GDP per worker is generally first increasing and then decreasing
- There exists a strong presence of nonlinearities.

Non market services (cont.d)

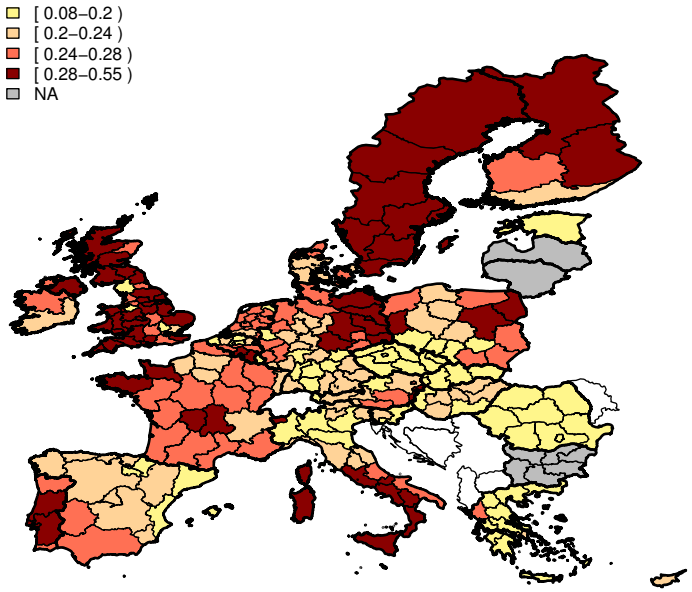

Figura: Share of non market services on total value added in 1991

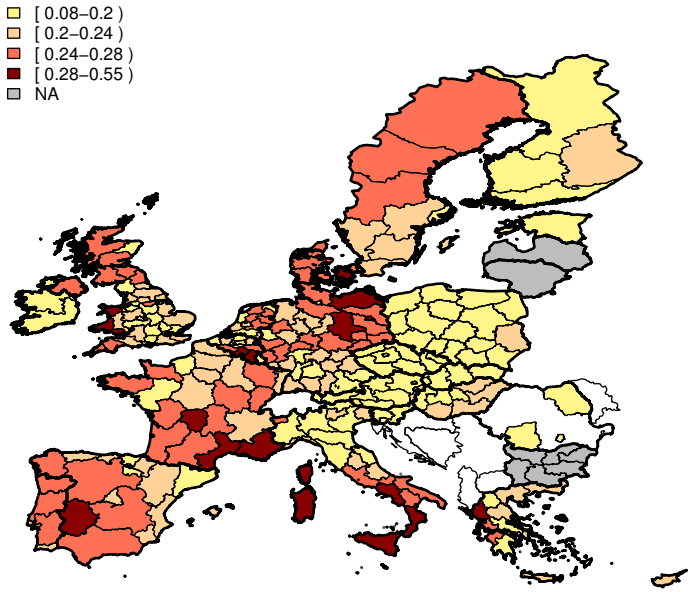

Figura: Share of non market services on total value added in 2008

Agriculture vs OB2 funds

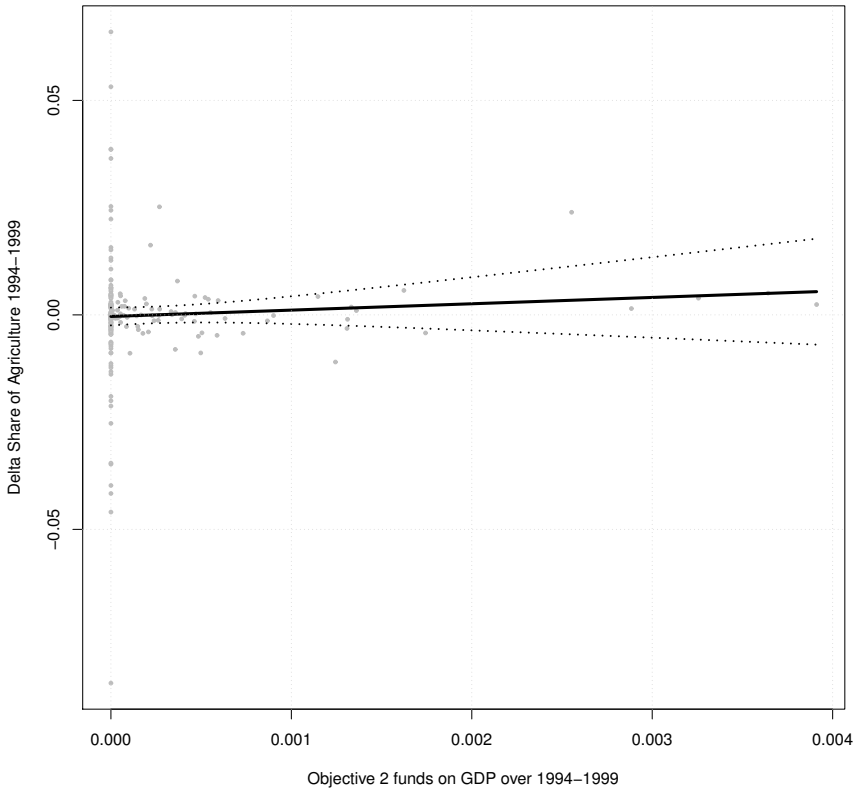

Figura: Relationship between change in share of agriculture versus OB2 1994:1999

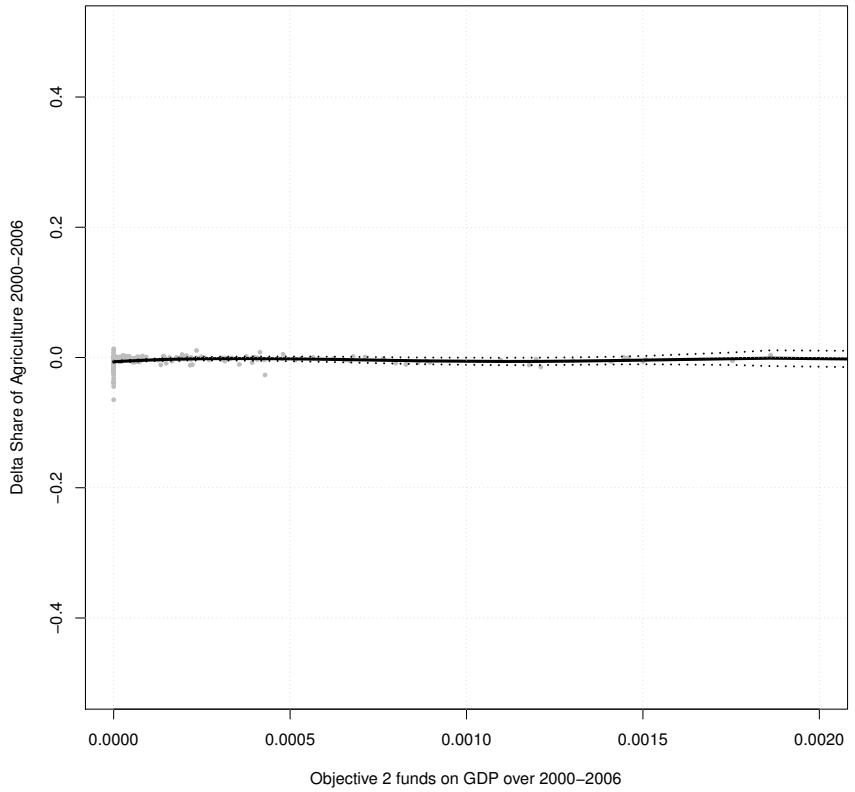

Figura: Relationship between change in share of agriculture versus OB2 funds 2000:2006

Manufacturing vs OB2 funds

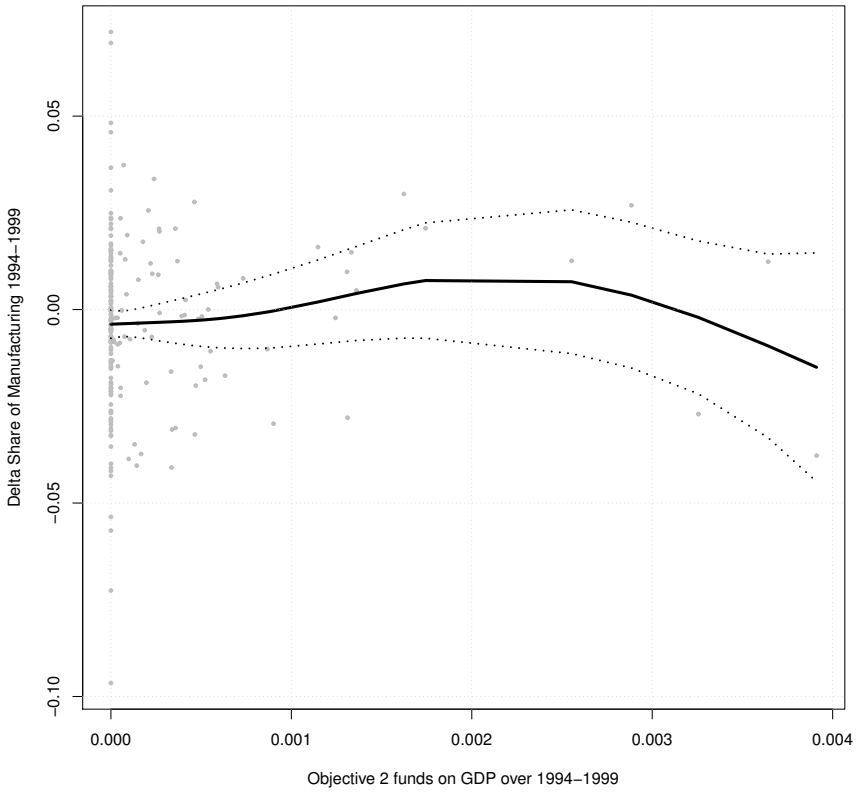

Figura: Relationship between change in share of manufacturing versus OB2 1994:1999

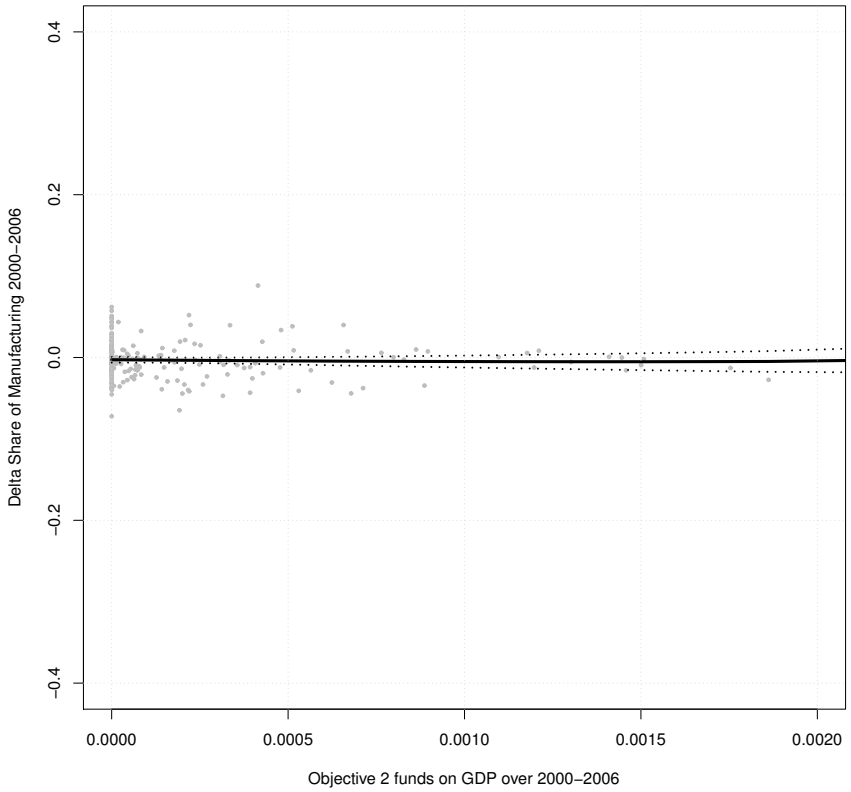

Figura: Relationship between change in share of manufacturing versus OB2 funds 2000:2006

Other market services vs OB2 funds

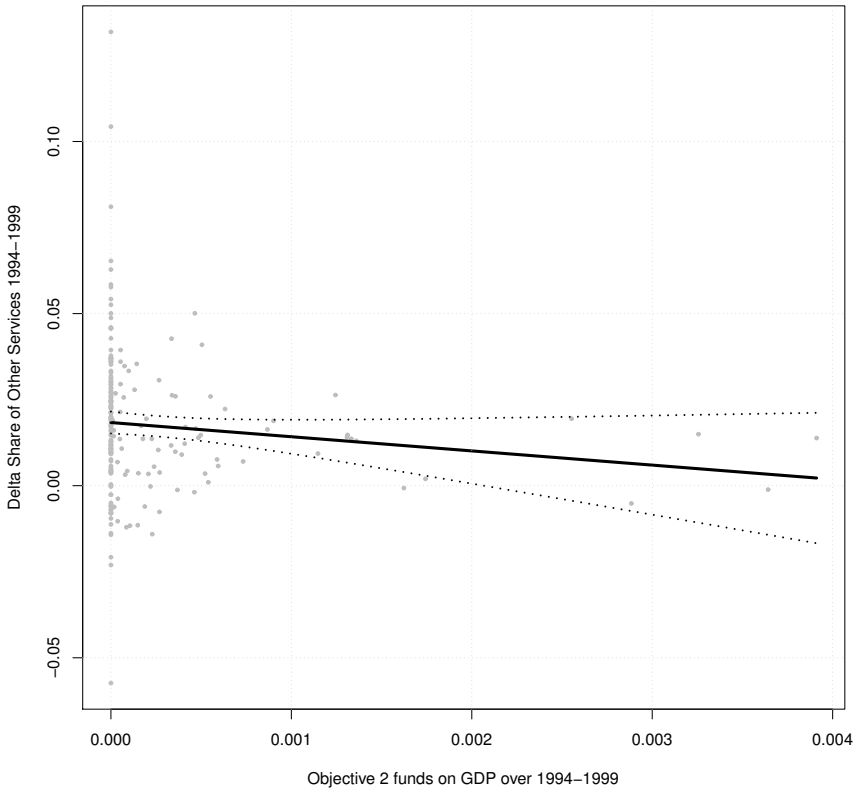

Figura: Relationship between change in share of other market services versus OB2 1994:1999

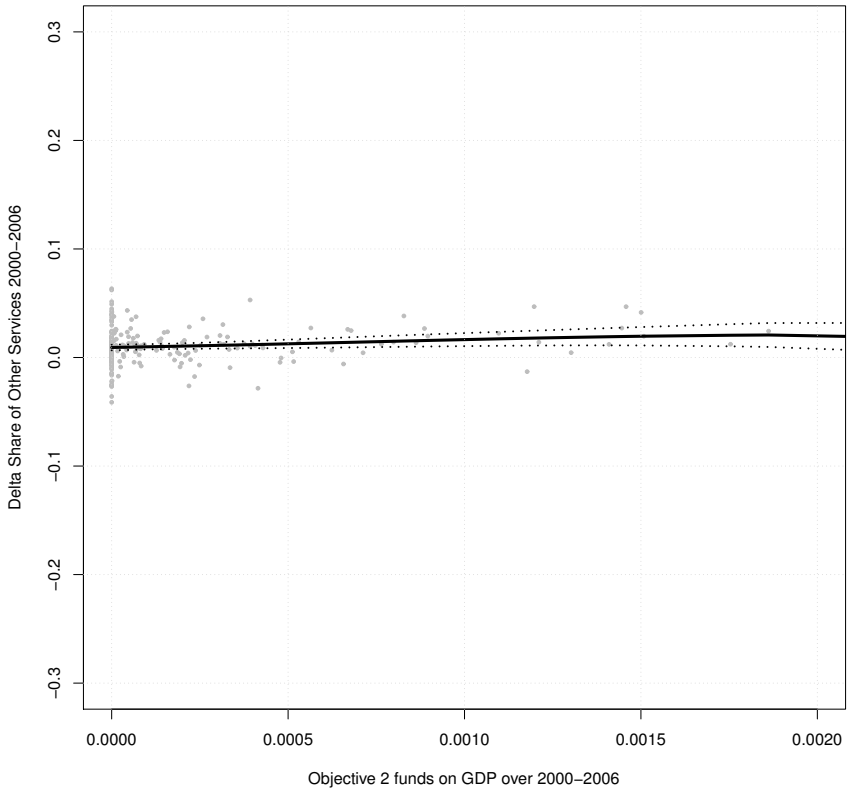

Figura: Relationship between change in share of other market services versus OB2 funds 2000:2006

An example with Cobb-Douglas technology

Assume that the two goods are produced according to the following technology:

$$Y^{AGR} = \left(K^{AGR}\right)^{\alpha} \left(A^{AGR} H^{AGR}\right)^{1-\alpha}, \text{ with } \alpha \in (0,1)$$

$$Y^{MAN} = \left(K^{MAN}\right)^{\beta} \left(A^{AGR} H^{AGR}\right)^{1-\beta}, \text{ with } \beta \in (0,1)$$