

# Marks-up in the short and long-run

An investigation with the Italian Inforum Model

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Italy

- Introduction
- Profits and other incomes per unit of output are components of the price per unit of output formation in a cost push approach
- Modelling profits appears relevant for short-medium-run policy simulations
- First, a look at Value added components of Italy, France and Germany for the period 2000-2015

# The three EU countries

## Some statistics

Population: 240 billions

Employment

- Employed

  - Market

  - No-market, public sector employees

- Self-employed

Value added

Labor compensation

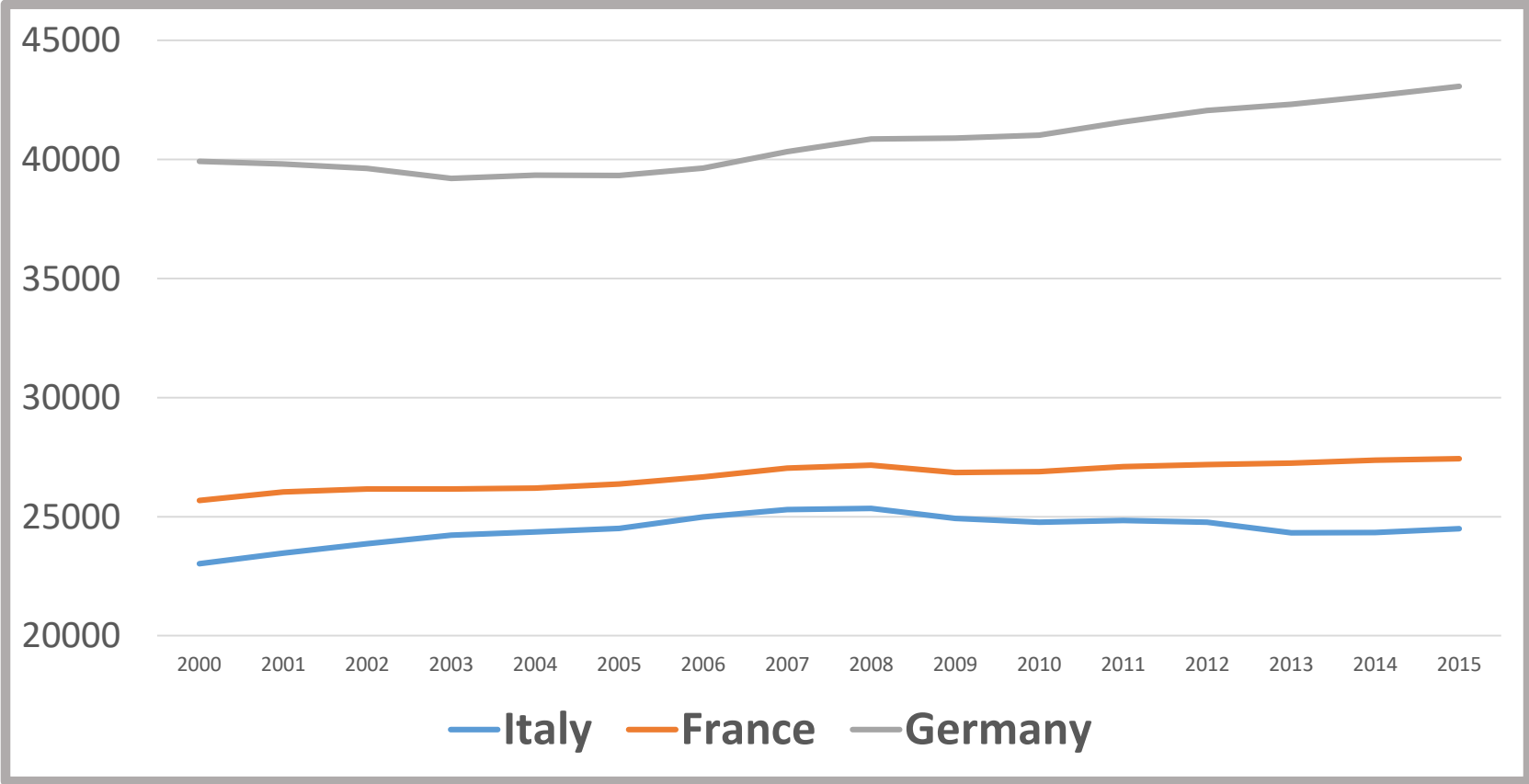
- market

- no-market, public sector employees

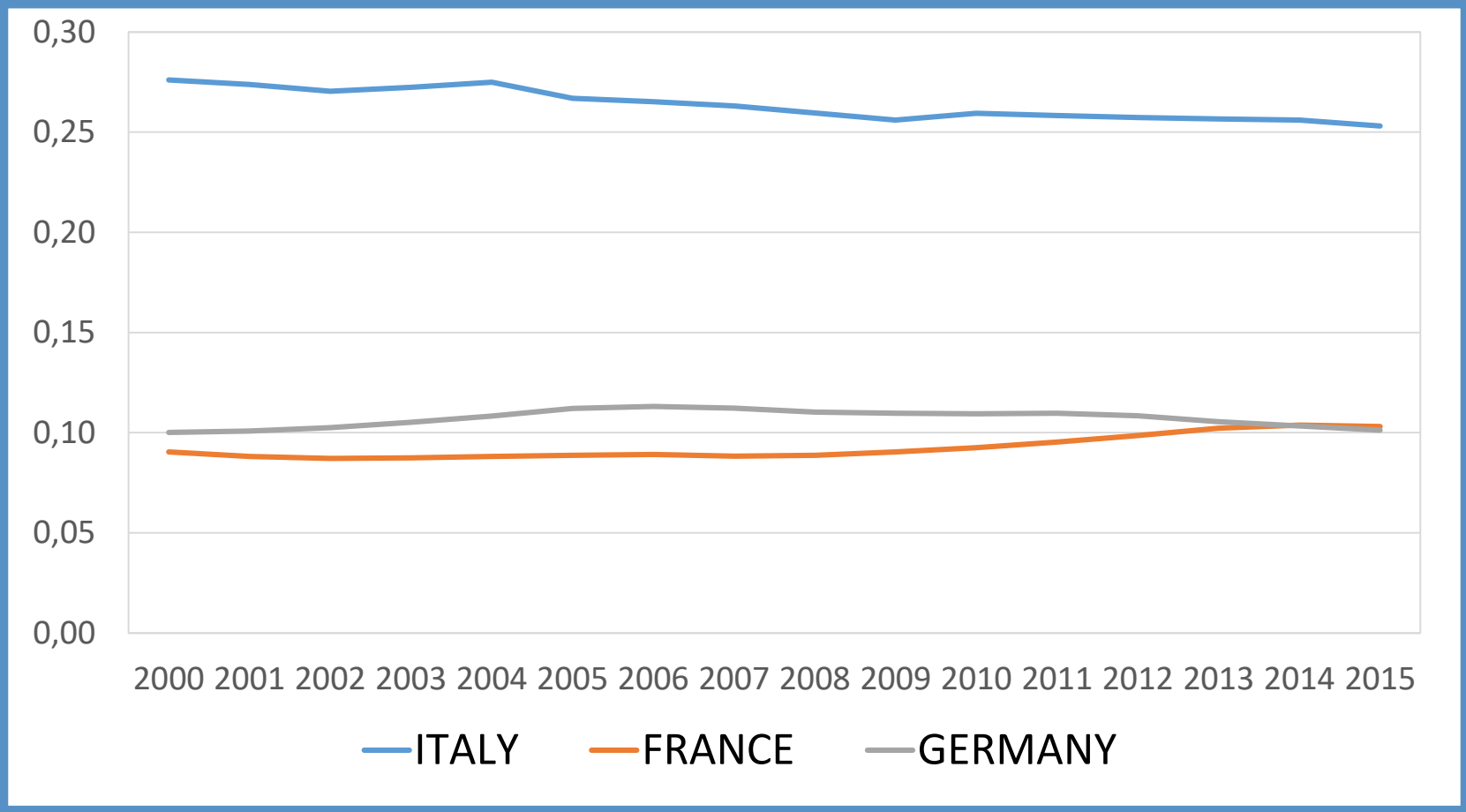
Other incomes

Sources: ISTAT, Eurostat, OECD

Employment. Germany shows a contraction in the first decade of the present century while France and Italy had a smooth growth. After the Great Recession (GR) Germany marks a remarkable increase while France follows a flat trend and Italy faces a clear contraction

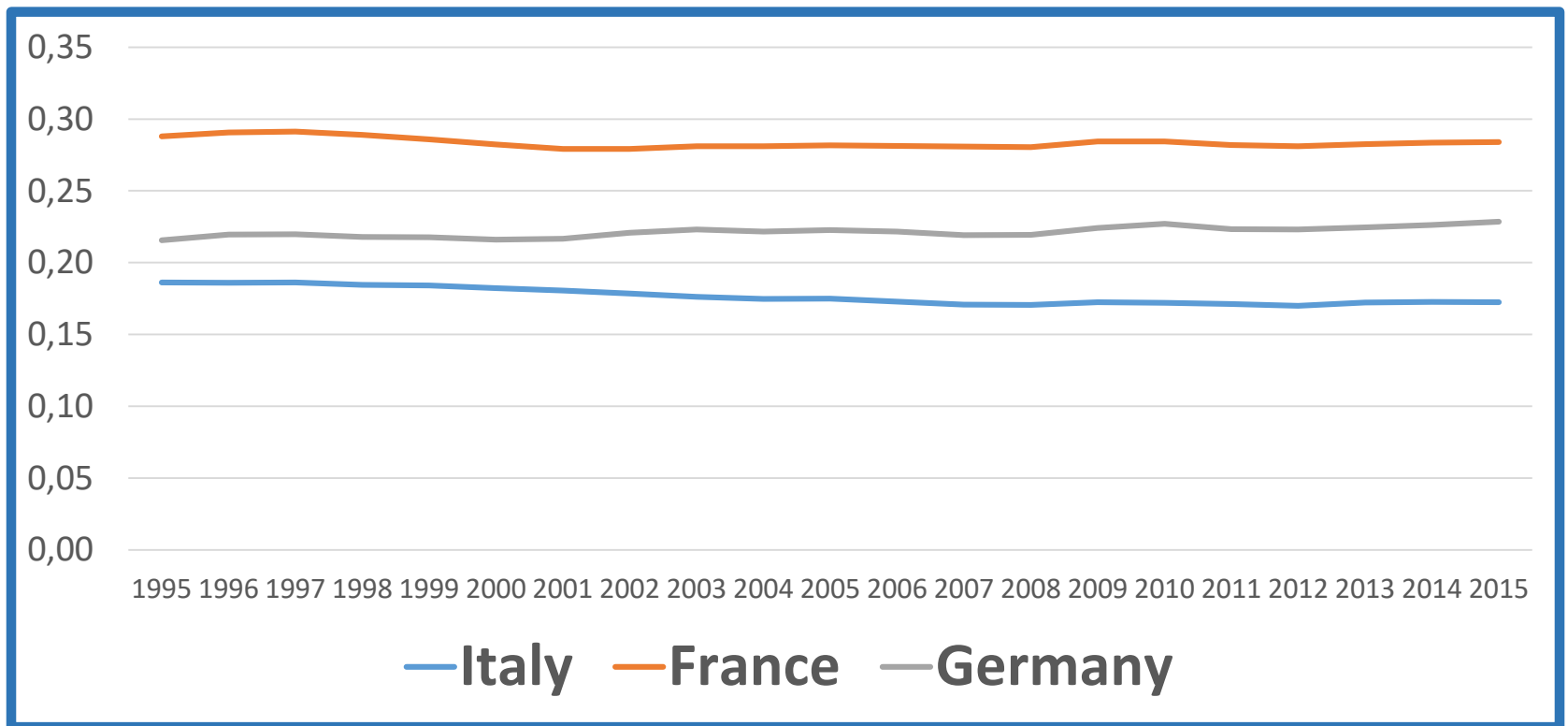


Self-employed shares over total employment. While France and Germany shares of self employed are moving around a percentage of 10%, Italy shows a remarkable share of about 1/5 of the total employment giving evidence of its specific industrial structure



## Public employees shares over total employment.

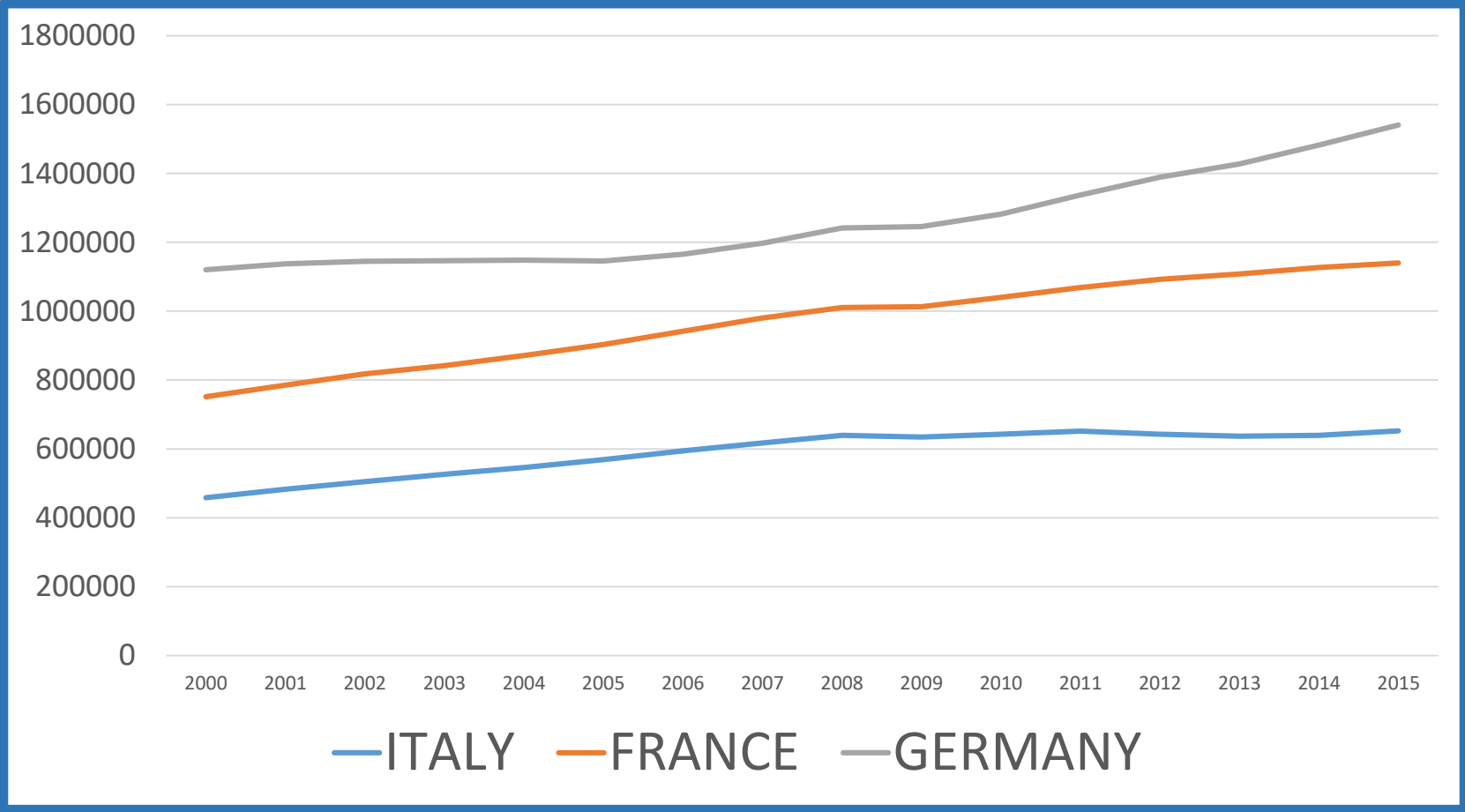
Napoleonic legacy poses France at the top of public administrative weight. Germany maintains its quota around 23%. Italy marks a clear decline of its relative lowest share.



# Two macro value added components

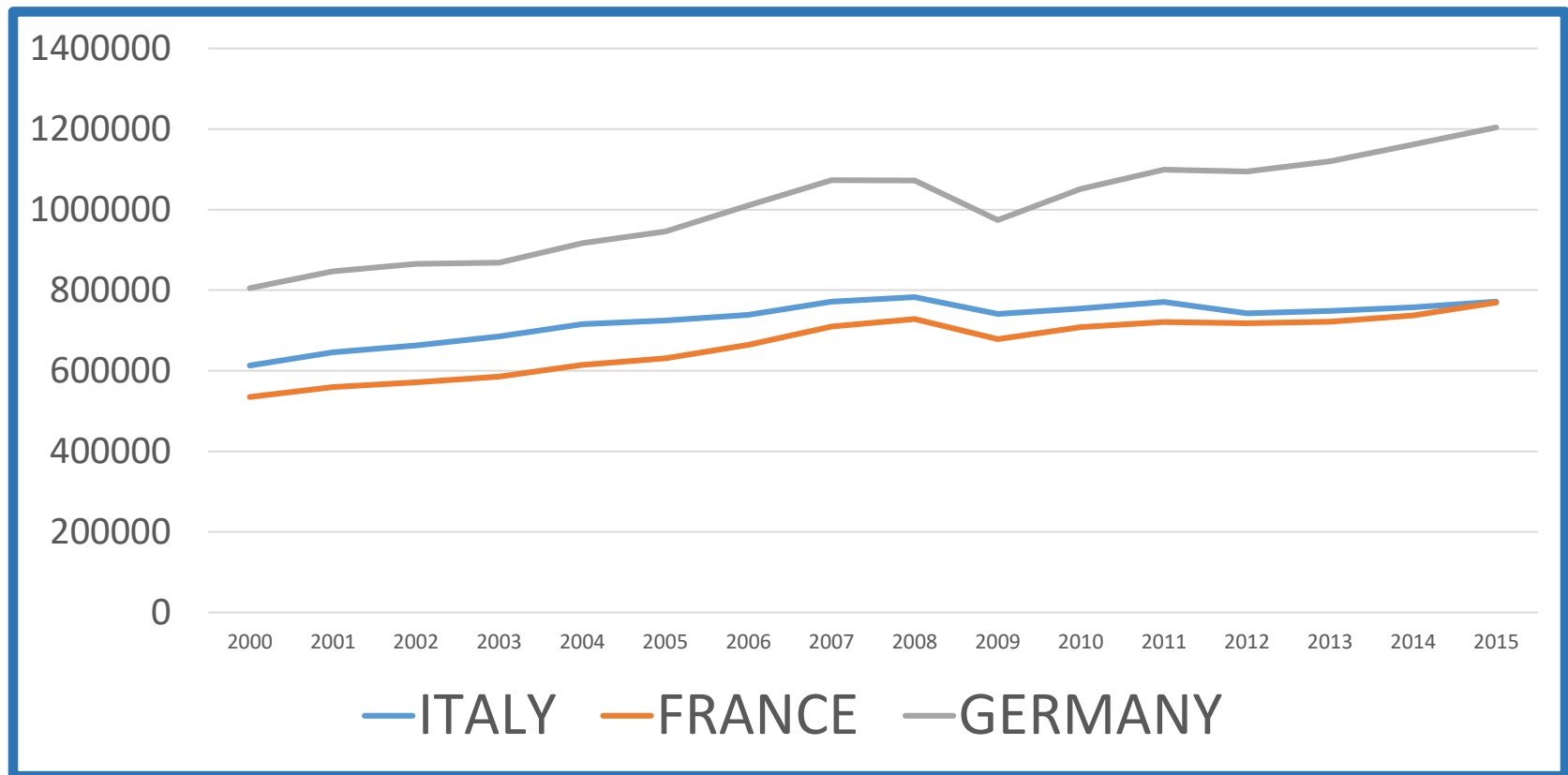
Labor compensation & Other Incomes

Labor compensation(billions). After a decade of a stationary wage bill, Germany increases the labor compensation faster than France, while Italy maintains the wage bill constant since the outbreak of the GR

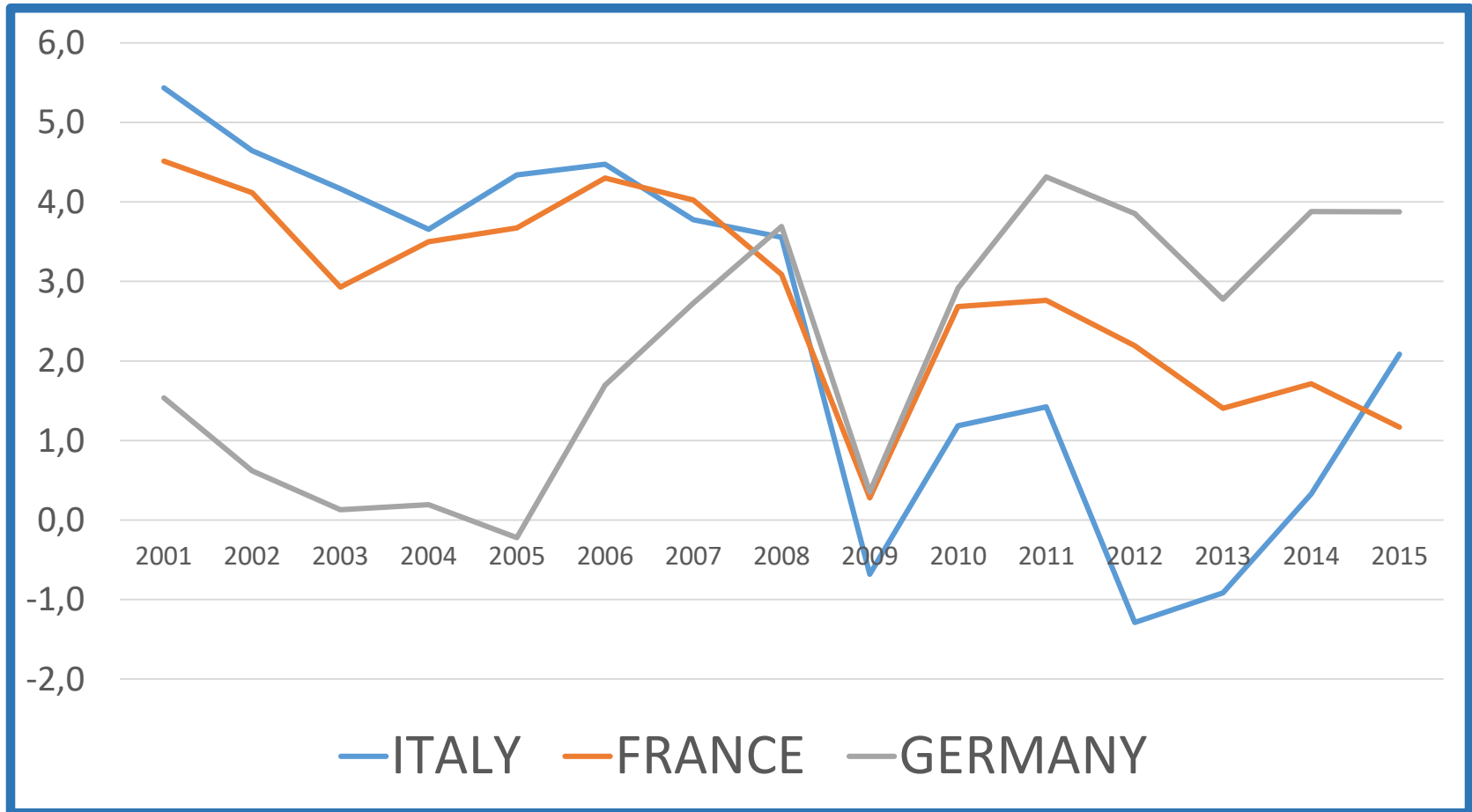




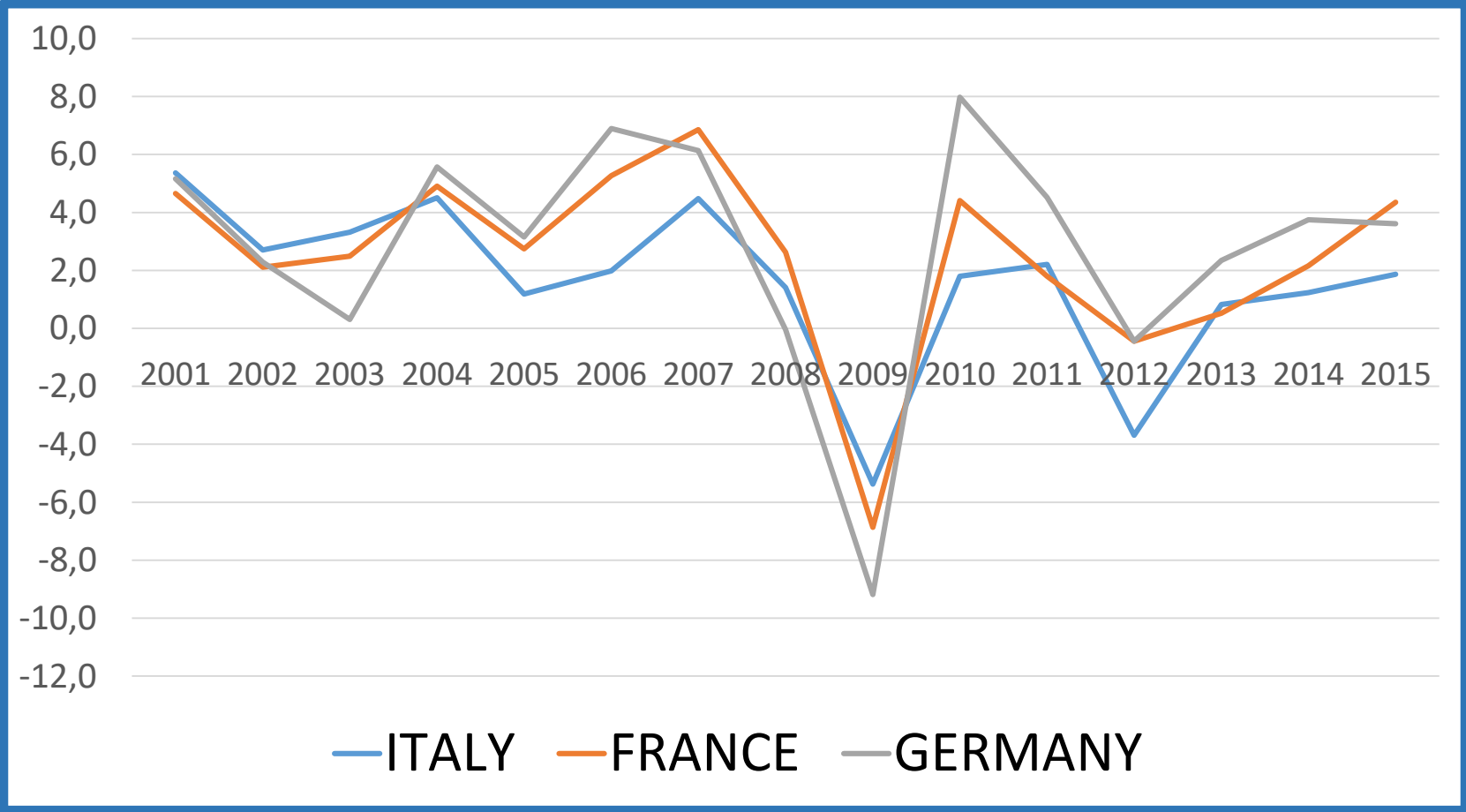
Other Incomes (billions). This component of the total value added does not show a smoothness similar to that of its complement: the labor compensation. These Other Incomes reveal to be sensitive to the economic cycles. This fact poses the problem of modeling Other Incomes in the framework of the nominal side of an Inforum type model.



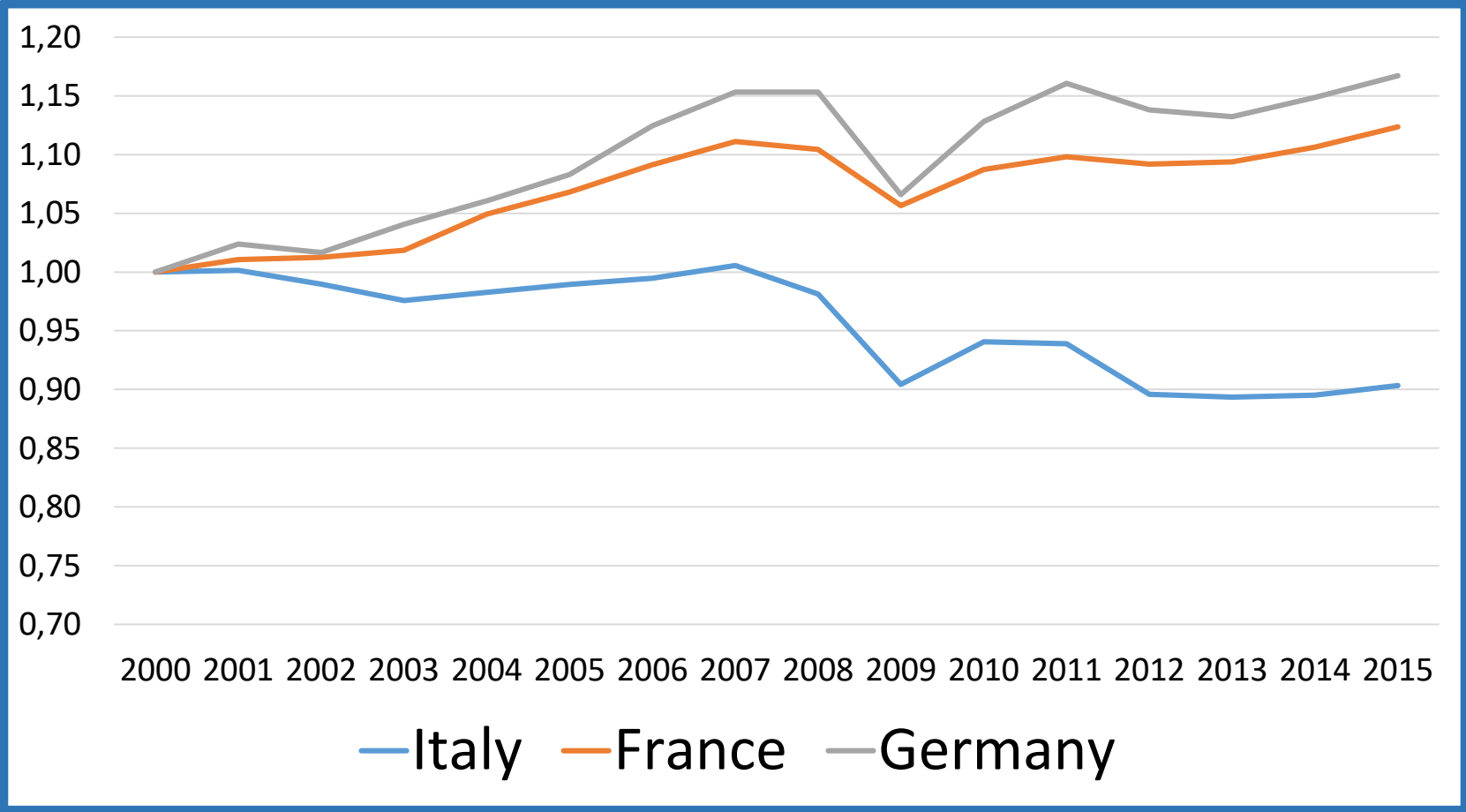
Labor compensation (rates of growth). Comparing these graphs with those of Other Incomes (rates of growth) in the next slide, it is striking the difference concerning the similarity of the relative cycles of these two Value added components.



Other Incomes (rates of growth). Rates of growth of these Value added components are closely related. This means that Other Incomes shares are much more related to the economic cycle shared by the three economies.



Labor productivity (index 2000=1.0). Total employment/output ratios show that Italy suffers a declining productivity while France and Germany productivities steadily grow out of the GR occurrence



# Modelling value added components

## State of arts in the Italian Inforum Model

Behavioural

Wages

Other incomes

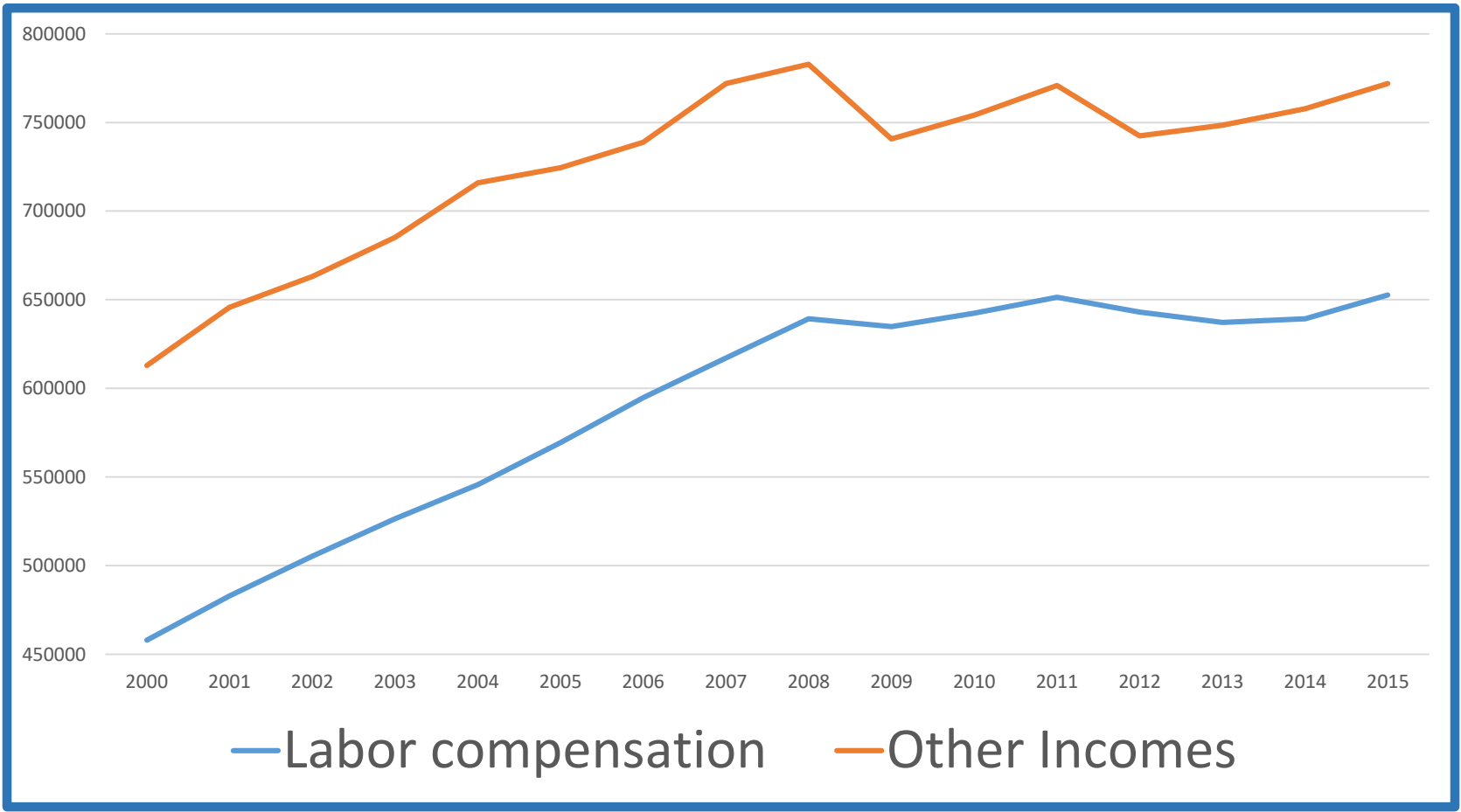
Scenario

Social contributions

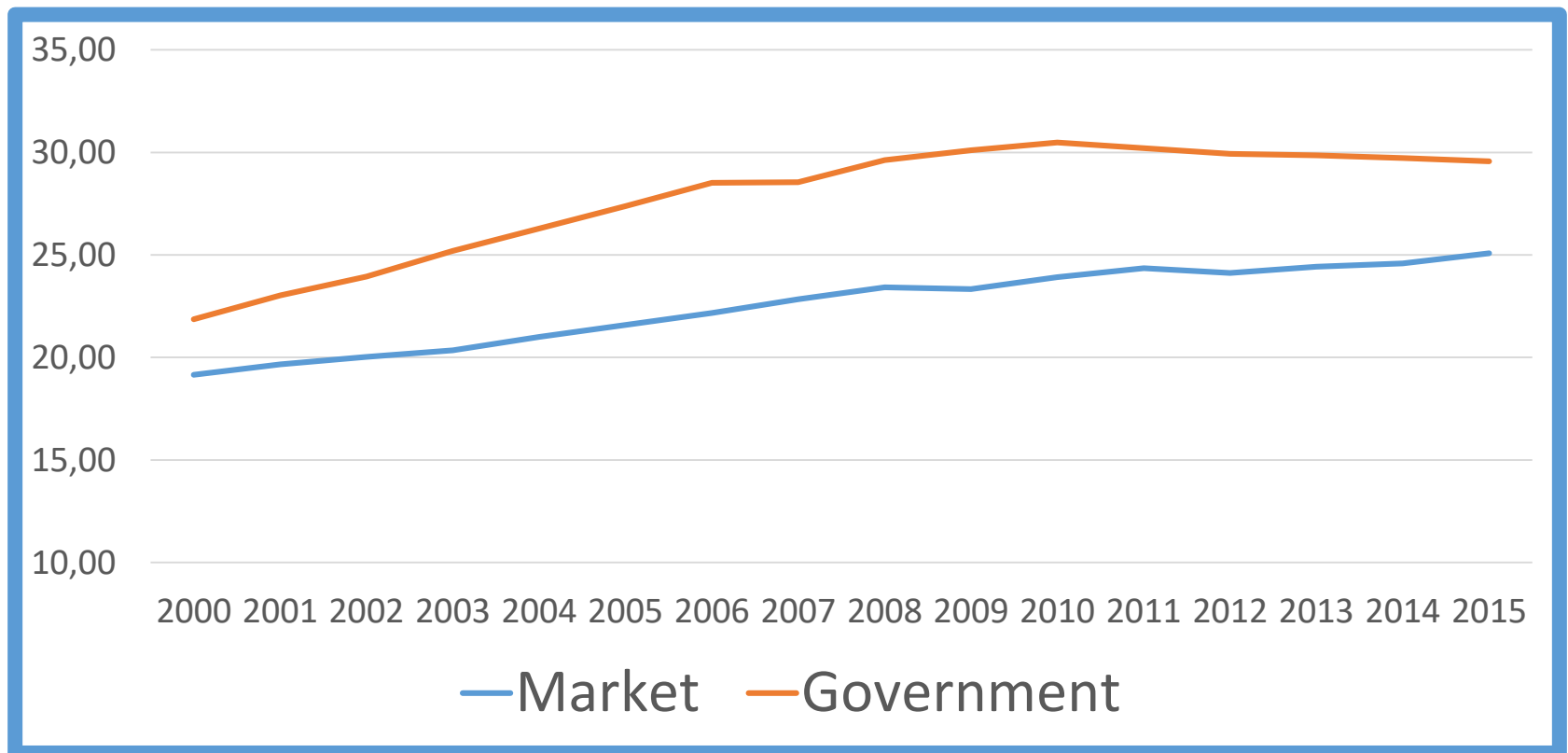
Indirect taxes

Subsidies

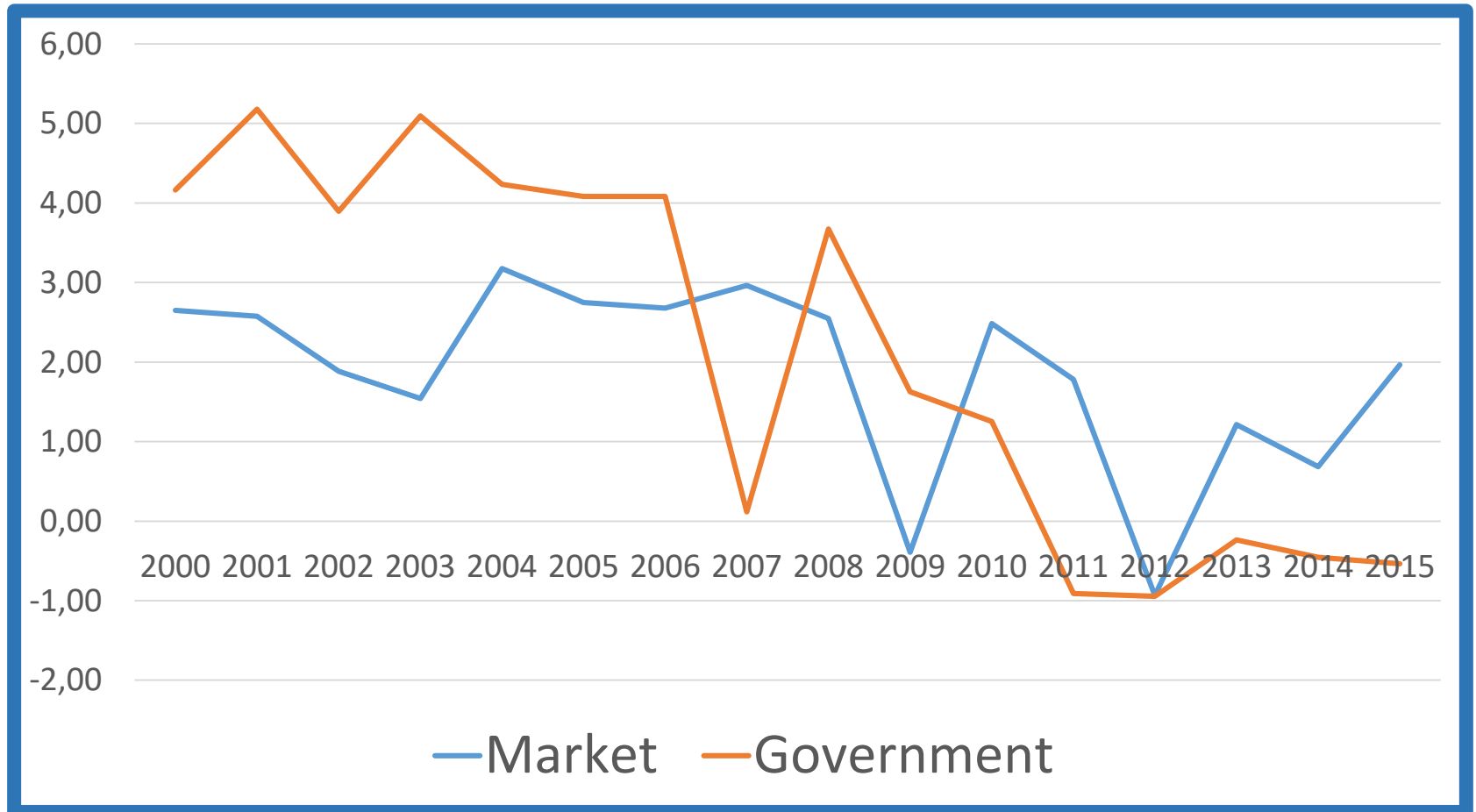
Labor compensation and Other Incomes in Italy. Other Incomes appear more reactive to the cycle (and GR) than the Labor compensation



Wages per employee. Approaching the specification of a wage equation, it is important to investigate the evolution of wages per worker in the private sector and in the public sector. It is clear that in the public sector wages per worker follow a path basically independent of that of the private sector (see next slide).



Market and Government wages per worker (rates of growth). The time series of the wages per employee made clear the independence of the two labor markets.



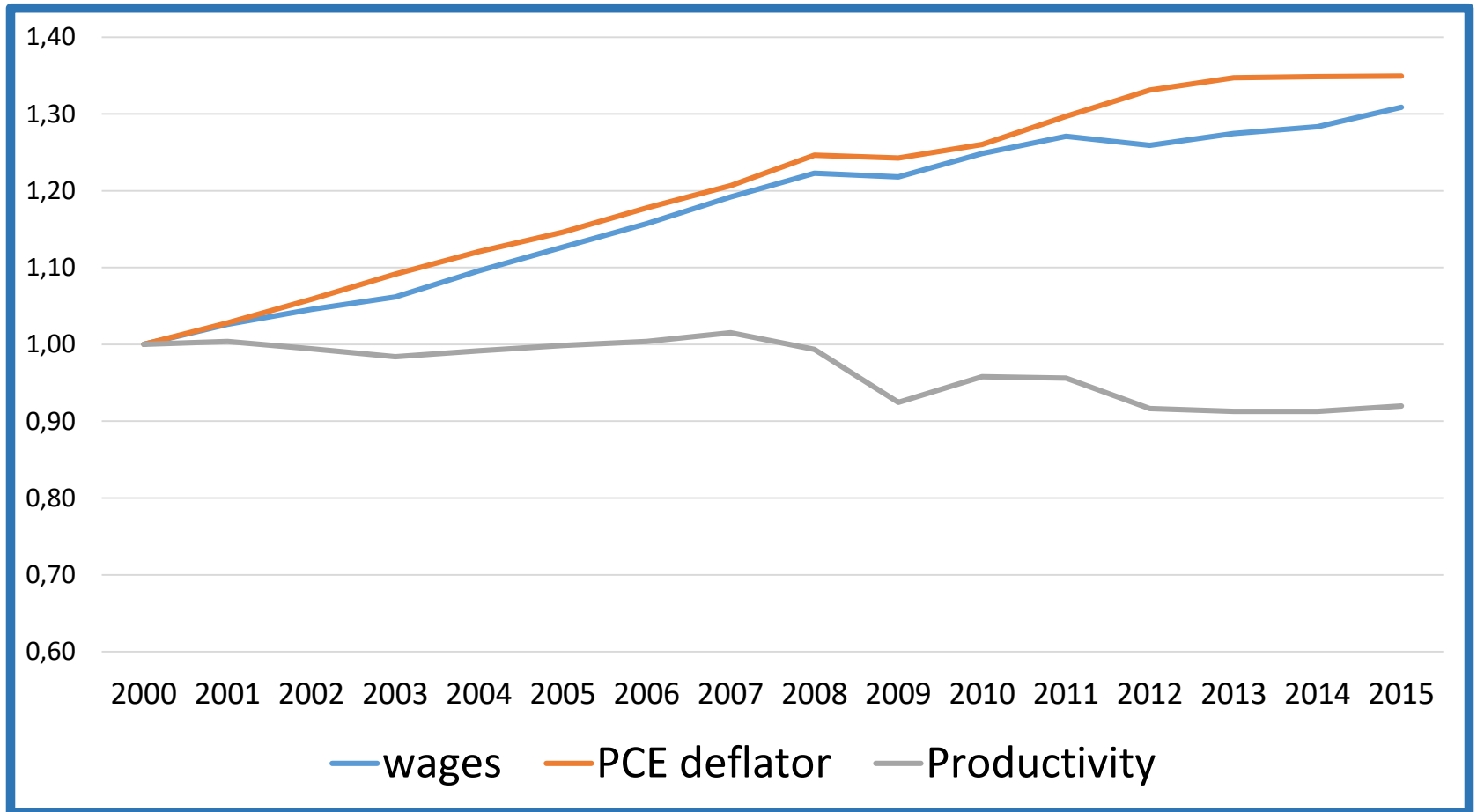


## The equation of wages before the Great Recession

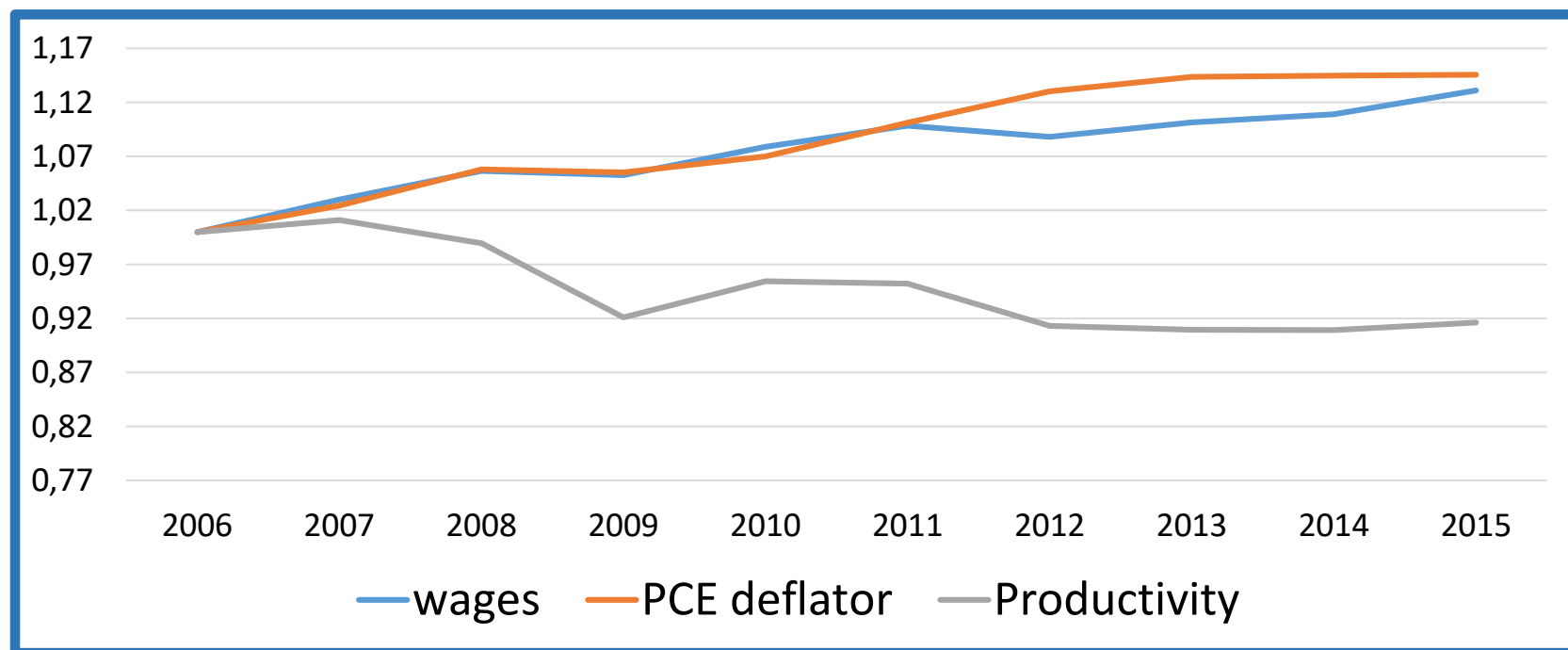
Before the Great Recession, the macro equation of wages was specified as follows:

- Phillips's curve was found not appropriate to explain the wages (inflation) rate of growth; traditionally, trade unions successfully defended workers employed making, at the same time, the working of the labor market independent from the unemployment rate
- Indexation was assumed operating no matter if legal or informal.
- Furthermore, it was assumed that the increase of the labor productivity was going to be shared between workers (wages) and employers (other incomes)

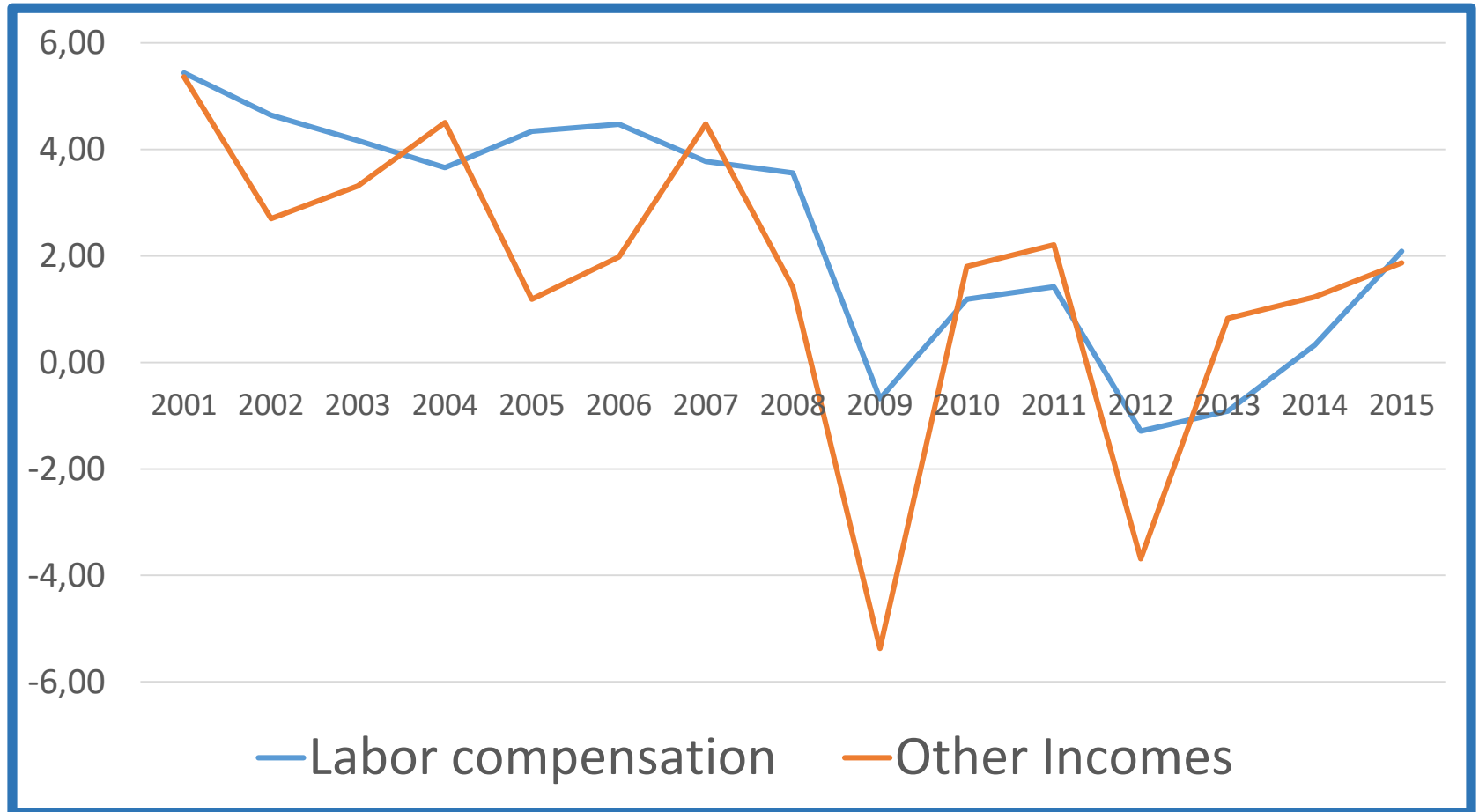
Wages growth & declining productivity. Before and after the Great Recession, a **wage-productivity gap** is a dominant character of the Italian economy



From the (recent) history, the assumption of the value added distribution based on sharing the gain due to productivity increases cannot be recognized from these time series. Honestly, even the hypothesis of wages indexation appears weakened. However, wages and inflation rise together, though not hand in hand



Two (major) components of the value added. (rates of growth)  
The graph shows the difference in amplitude of the rates of growth of the two value added components.



An insight to the Italian labor market is given by (the Conclusions of) the following IMF WP published on March 2018

- Competitiveness and Wage Bargaining Reform in Italy - WP/18/61
- Italy: Quantifying the Benefits of a Comprehensive Reform Package – WP/18/60

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Increases in wages and ULCs have not translated into commensurately higher prices of goods and services, in part owing to pricing-to-market behavior of Italian exporters.

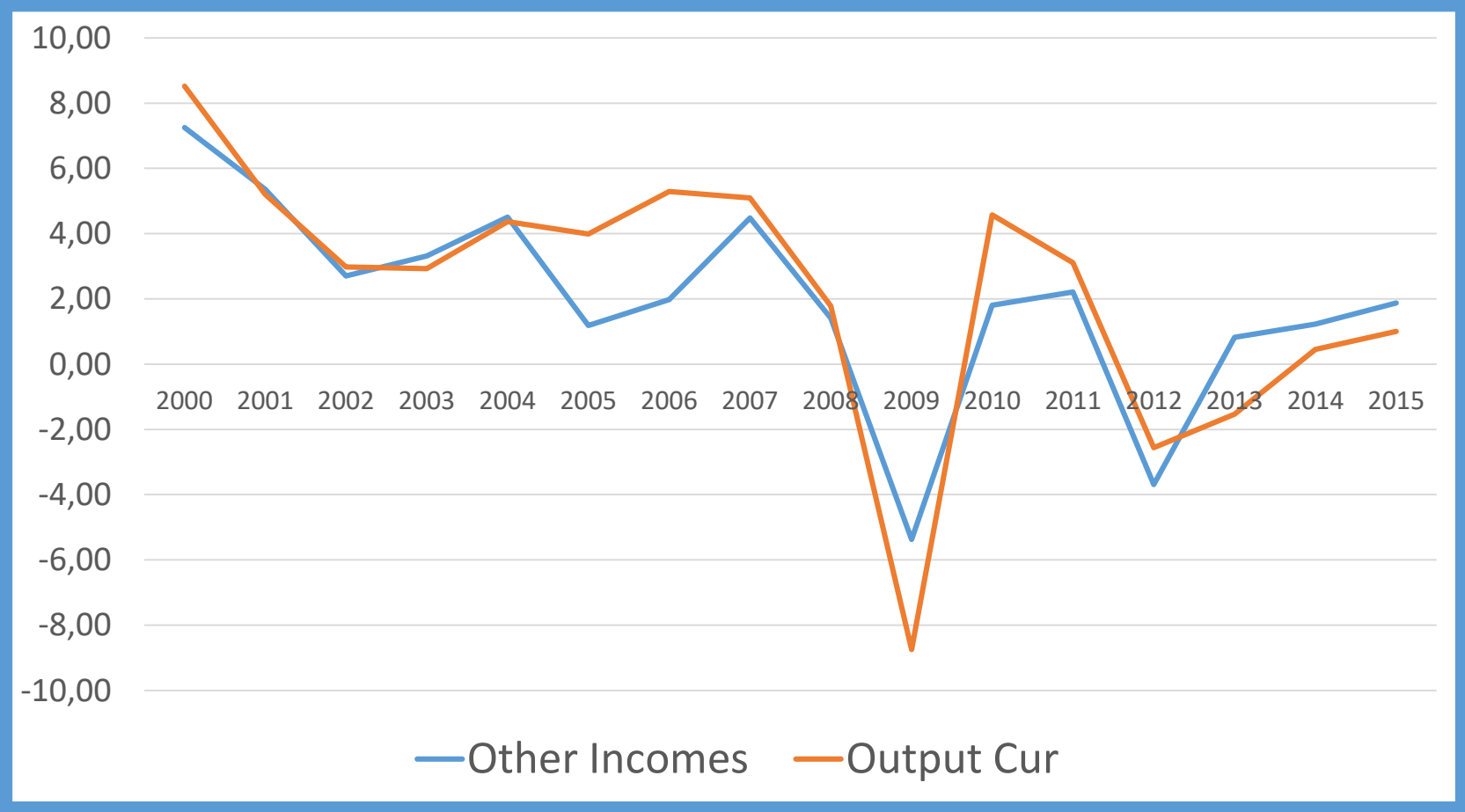
Rather, adjustment has been on profit margins, or employment and investment

Wages are set at the sectoral level and extended nationally.

However, they do not respond well to firm-specific productivity, regional disparities, or skill mismatches.

Nominally rigid wages have also implied adjustment through lower profits and employment.

Other Incomes and Total Output c.p. (rates of growth). The good correlation between Other Income and Output in current prices suggests a rule to model the ratio of Other Income over the other value added components.



The rule. The rule is presented in the shape of the following regression. The dependent variable is the ratio of Other Incomes over all the other value added components: the OI factor; the independent variable is the ratio of the current output in current prices over its lagged value.

SEE = 0.01 RSQ = 0.7912 RHO = -0.54 Obser = 6 from 2010.000  
 SEE+1 = 0.01 RBSQ = 0.7390 DW = 3.08 DoFree = 4 to 2015.000  
 MAPE = 0.64

Variable name	Reg-Coeff	Mexval	Elas	NorRes	Mean	Beta
0 OlovVA	-----				1.10	---
1 intercept	0.50333	92.9	0.46	4.79	1.00	
2 OUT/OUT[1]	0.58877	118.8	0.54	1.00	1.01	0.889



## The Other Incomes in the model

In the model price equation Other Incomes (OI) is a component of the value added per unit of output. First, wages, social securities, subsidies, indirect taxes are computed by means of behavioral equations and from scenarios variables; then, (OI) is computed multiplying the sum of the other value added components by the OI factor. According to the above analyses, this factor can now be endogenised applying the above rule.

## The simulation 1

In the attached file, the impact of modelling the OI factor is shown. The present simulation is based on a .05% reduction of the OI factor for all the sectors of the model; however, it must notice that sectoral scenarios are surely important to tackle the case of industries forced for any reason to compress or freely expand their OI shares. OI factor enters the price equation producing a general reduction of prices that is transferred to all the endogenous nominal macro aggregates. On the real side of the model, imports mark the effect of the gain in price competitiveness. The increase on total output, as well as on GDP, impacts on investments. Household personal consumption has intentionally been fixed.

## The simulation 2

However, household disposable income has been computed and it clearly shows the impact of the OI factor shrinkage. The general reduction of prices is also reflected in the tax revenue decreases that are not compensated by the increases of tax bases as shown by the modest excise taxes growth.