

# **Estimating The Appropriate “Wage-Setting Space” For External Balance And Job Creation Into The Greek Economy**

*Sotiris Theodoropoulos*

Professor - University of Piraeus, Department of Maritime Studies

*Nikos Alabanos*

PhD candidate - Department of Maritime Studies, University of Piraeus

---

## **Abstract**

A flexible labor market framework is a main instrument for the economy's adjustment in EMU, while wage formation process is of crucial importance for external balance and job creation. In this process, the estimation of the appropriate space for wage setting plays a key role for the economy's performance. In this estimation exercise the inclusion of all factors that determine and affect the economy's competitiveness in today's economic environment is crucial. By this paper, we aim to empirically investigate the role of wage setting in the Greek economy's competitiveness erosion before the crisis and the degree to which it has been restored during the current crisis period. On this basis we estimate the appropriate room for wage changes in the private and public sector that can sustain the country's public and external balance, as a crucial precondition for the economy's restarting in the new Euro fiscal pact framework.

---

**Keywords:** EMU, flexible labor market, productivity, competitiveness, wage setting mechanism, room for wage increase

## **Introduction**

Greece continues to suffer by the most severe after-war crisis, with extended negative implications on country's welfare, employment opportunities and macroeconomic stability. This is due to applied policies in the past and also the inefficiency of implemented policies during the current crisis. A crucial factor of decisive importance is to restore country's competitiveness in the European and the international market. Wage-setting policies in the past are responsible for competitiveness erosion and lost market shares. Policies adopted by the program of the European supporting mechanism aim to reform a rigid labor market in order to become more flexible and through wage cuts to enhance profitability and competitiveness.

This paper gives a suitable instrument for wage setting in a flexible labor market framework that would efficiently secure competitiveness, job creation and external balance. This model instrument is an alternative to the Scandinavian model of wage setting and the Europact framework. By using the relative data, it is estimated the room for wage setting, based on factors that secure external balance and explain imbalances in the pre-crisis period. In **Section 2**, it is explained the role of wage setting. In **Section 3** it is presented the model which is going to be used for the estimations. In **Section 4**, according to the model, it is explained the discrepancies among the competitive and sheltered sectors in the economy. In **Section 5** the estimations for the Greek economy are presented, based on the model for the time period 2001–2014, before and during the current crisis. Conclusions are presented in **Section 6** explaining the consequences of implemented policies during the past and also advocate the necessary guidelines of wage setting policies, which may contribute to the competitiveness and the economy's restart.

### **The role of nominal wage setting in EMU**

During the widening and deepening economic integration process in EMU, the nominal wage growth becomes a key factor explaining job creation and external balance in national economic wages accounts for a significant proportion of production costs for most goods and services. They constitute crucial compounds influencing inflation persistence, competitiveness and through this current account imbalances, businesses' or economy's ability to adjust to negative shocks. Wage developments equilibrate demand & supply in the labor market and are also decisive for efficient allocation of labor resources across economic activities. In the EMU environment the overall level of nominal wage adjustment should be consistent with the goal of price (p) stability and on this framework, excessive nominal wage increases trigger inflationary risks, reduce price competitiveness and net export performance (*European Economy 2004*).

On the other hand, wage moderation by reducing domestic production costs and domestic tradable and non-tradable goods prices, achieves competitiveness gains, reduces imports and increases exports, favors employment and restores external balance. The central role of flexible labor market and labor market policies that is assigned by the whole policy framework established in EMU is a common topic (Calmfors L., 1998). It is the only "policy instrument" that remains at national level (*Hallett H. et al 2001*). In this framework the nominal wage developments act as an economic stabilizer. This framework also includes a flexible wage-setting mechanism and wage-bargaining behavior, while the role of appropriate nominal wage-setting becomes decisive and mirrors the degree of the efficient functioning

of the above established flexible labor market framework (Arpaia Al. et al, 2007). On the grounds of this estimation, wage growth room for national sectoral or business level has to rely on appropriate determinants that guarantee an efficient wage setting mechanism.

### **A model-instrument to estimate the room for wage growth**

The wage formation process in the market economies and the settlement of nominal wages both in public and private sector are the outcomes of the bargaining process between employers and employees. An extended literature with a number of studies based on the wage-bargaining model has been developed, aiming to capture the factors which influence the wage formation process (Calmfors Al., 1998, Marg P., 2011, Theodoropoulos S., 2011). Labor productivity - that is real output per hour worked - is the most crucial relevant factor of general acceptance for both nominal and real wage growth. Over the long run improvements in labor productivity are translated into growth of output, wages and income. In a constant unit labor cost, the average rate of increase in nominal wages must be equal to the average increase in productivity for the whole economy. Due to the fact that in every economy, a tradable and non-tradable sector exists and also part of this is exposed to international competition, the average rate of productivity is not the most appropriate tool to determine the nominal wage increase in every sector.

On this point the contribution of the Scandinavian model, by its division of the economy to exposed to international competition and “sheltered” sectors of the economies that accounts to the productivity growth only in the exposed tradable sector industries has more ground (*Edgren G. et al 1969*). The strong interconnection among the nominal wage growth and the productivity growth that the Europact establishes, aims to support the competitiveness effort, almost abolishes the factors affecting real wages level. The Europact creates a new reality for EMU countries labor markets framework. Social partners’ behavior has to be adapted to this reality and undertake their responsibility share in order to protect the national economy’s productivity, as the “key determinant” of the standard of living for the employee population, as well as the distribution of income between labor and capital (*Feldstein M. 2008*). In a flexible wage-setting framework the labor productivity factor has to be used on the distinction basis of the Scandinavian model. The “wage setting space” that supports job creation and external stability, has to be strongly connected with productivity of the competition - exposed sectors (Gc) marketed abroad or in the domestic market. For this reason, using a nation-wide average level of productivity, particularly for sectoral wage-setting framework can give false results,

because productivity changes differ between sectors and sectoral wage-setting has to rely on the these differences.

The output prices changes in the world market (inside and outside EU’s internal market) for the competitive sector ( $P_w$ ) have to be accounted for the determination of the wage increases room. The output prices of the exposed to international competition industries will significantly be determined in the world market. These industries therefore cannot compensate for a cost ( $c$ ) increase through an upward adjustment of prices ( $p$ ). If their costs ( $c$ ) increases due to various reasons – imported inputs, home factors – they must absorb the whole effect in the form of reduced profits ( $\pi$ ) and perhaps reduced production ( $q$ ) (*Aukrust O. 1974*). In such cases the room for wage increases shrinks in order to sustain national economy productivity and competitiveness. In other cases, productivity gains can be reflected in quality improvements at unchanged cost ( $c$ ) and unchanged prices ( $p$ ), resulting to an increase in the demand, while also better goods and services can be reflected on higher prices ( $p$ ), expanding this way the wage setting space.

Furthermore, variations in foreign exchange rate ( $E_r$ ) determine also the room for wage increase, while they affect also the economy’s competitiveness. The total trade volume of goods and services exported to other countries has to be weighted by the relative shares and their respective exchange rate changes (e.g. appreciations of common currency to other currencies affecting prices diminish the room for wage increase and vice-versa, particularly for sectors trading with these markets). The impact of the exchange rate changes diminishes if the main part of exports and imports is marketed in the EU’s internal market.

Other factors included in the conventional inflation analysis and wage indexation practices cannot be used for wage setting in the contemporary EMU environment (Theodoropoulos S., 2011). Furthermore, the unemployment rate ( $U$ ), the labor market institutions and bargaining regimes, the centralized or decentralized collective bargaining process can only affect the wage negotiation process, while their role restricted on how this wage room could be divided among business profits ( $\pi$ ) and wages ( $w$ ). Wage negotiations in a **company, sectoral and economy-wide level**, refer to the division of this wage room, estimated by these abovementioned three (3) outweighed determinants that refer to the competitive sector. These estimations constitute the norm for the wage settlements framework, both on the sheltered sector producing tradable goods and services also for the public sector (statistical function 1):

$W_{re} = G_C \mp P_w \mp E_r$	(1)
--------------------------------	-----

Where:

$W_{re}$  = **Wage change**

$G_c$  = **Productivity gains**

$P_w$  = **Rate of Price changes**

$E_r$  = (%) **exchange rate changes**

### **The division in competitive and sheltered sectors**

The external balance and a viable, that means competitive, job creation of the economy depends on its international competitiveness. In order to sustain, restore or improve the competitiveness of an economy, wage changes in the international competition exposed sectors constitute a crucial precondition. In this framework, the wage changes in the competitive sectors have to be the norm and driver for the economy in total. For this purpose, a fundamental distinction has to be drawn between competitive and sheltered sectors.

Competitive sectors are those that are exposed to strong competition at international markets, either because they export most of their products or they sell their products in the domestic market under strong foreign competition. On the other hand, sheltered sectors are considered those whose products and services are marketed at home under conditions that leave them relatively free of foreign competition.

There are two (2) crucial factors affecting profitability and the wage room for wage changes in the two (2) group sectors. The competitive sector operates as a price-taker because its output prices are largely determined at the world market. A cost (c) increase in this sector cannot be compensated through an upward adjustment of prices (p) without negative implications on profits ( $\pi$ ) and market shares. On the other hand, a sheltered sector of the economy is not threatened by market share loss if it tends to compensate by transferring the cost increase to the output prices. Usually the cost in these sectors is passed on quickly, leaving the shares of profits and factor incomes largely unaffected. Furthermore, between the two (2) different sectors of the economy seems to be different trends for productivity. On the one hand, the competitive sector's productivity rises much more rapidly, mainly due to pressures from the international competitiveness and the international market-oriented strategies and developments. On the other hand the sheltered sector, such pressures or weaker, and at the same time service industries weigh heavily on this sector. A particular part of intensively regulated services belonging to this group or public services, and the whole public sector where a lack of productivity calculations exists.

Any division crude in nature of the economy into two (2) sectors provides a more realistic picture of many of the essential relationships in the economy than the traditional approach. That division with the use of broad

classification criteria into the above mentioned categories is not permanent or final in a continuously changing economic environment. The price ( $p$ ) increases at the competitive sector, which are made possible by price increase in the international market, weighted in market shares in euro and other currencies. Profitability ( $\pi$ ) is the ability of a sector to earn surplus available for distribution as wages ( $w$ ) and profits ( $\pi$ ). How this surplus is distributed between business profits ( $\pi$ ) and wages ( $w$ ) depends on the wage negotiations at sectoral and company level. The wage level, which has established itself within the competitive sector, determines the wage level within the sheltered sector. Market forces tend to keep wages in the two groups in a normal relation to each other. The wage level within the sheltered sector together with the sector's productivity determines the output prices ( $P_q$ ) of these industries. Wage impulses go beyond the competitive sector (as wage leader) to the sheltered economy sectors, as also to the public sector, while public expenses for wages have to be paid by taxes from the profits ( $\pi$ ) of both sectors. Wage increases in the competitive sector as in the sheltered economy sectors (private and public), cannot exceed in the long run the wage room that has been created by productivity and price changes and hence threaten the ability of the economy to compete without negative impacts on the real economy, private (and public) investments and employment.

### **Estimations for the Greek Economy**

According to the above analytical framework and criteria, our estimations have to be based on national accounting material of the **International Standard Industrial Classification System (ISIC)**, the so-called two-digit level divided in 64 groups. A further division to a three-digit level in many cases more interesting necessitates enormous additional reworking and expansion of the price and employment data. Possible errors by two-digit estimations do not upset the basic usefulness and our conclusions. Groups of **NACE code** between 01 to 33 including production of primary and secondary sectors of the economy belong to the competitive sector. To this we have to add 49 and 51 land and air transport, 50 water transport, 61 telecommunications while 55-56 group including accommodation and food and beverage service activities have to be divided in that part exposed to foreign competition like the tourist market and that part oriented mainly to the home market. The competitive sector of the Greek economy constitutes around 28% of total Gross Value added, according to the data for 2001 and diminishes until 2009 (crisis period), while then an upward trend exists due to the implemented MoU policies.

Sheltered sectors include the tradable activities of the sheltered sector as also the public sector. As in our model presented above price changes of the competitive sector are the producer prices of net value added, net of

sector's intermediate consumption and depreciation. Net value added in use is divided in the compensation of the employees and the sector's operating surplus. Productivity changes are estimated by the net value added at constant prices with the employment. The factor of exchange rate is not currently estimated and outweighed due to the fact that 75-80% of exports and imports of the Greek economy take place with other European countries. In Table 1, the appropriate room for wage increase is estimated for the period 2001-2011.

Table 1: Room for wage increase - Greece

Year	Size of Competitive Sector*	Producer Price Changes	Productivity change	Room for wage increase 2001-2009
<b>2001</b>	28,7	-	-	-
<b>2009</b>	22,4	0,2	9	9,2
<b>2011</b>	23,1	0,0	0,1	0,1

Source: ELSTAT

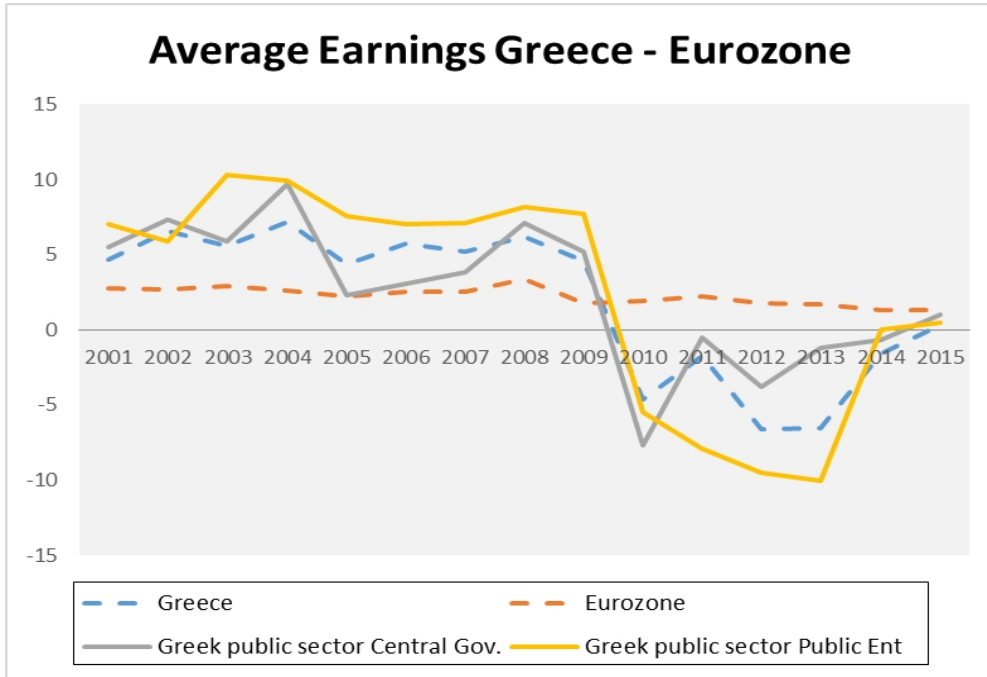
By using the current analytical tools, data presented in the following tables show the dynamic of nominal wage growth in Greece, between 2001 and 2009, the beginning of the economic crisis. A huge deviation in average earning and unit labor cost between Greece and the Eurozone, and also between the public sector acting as the wage leader and the business sector following eroding its competitiveness. High wage changes had severe impacts on the country's business economy and market shares. In the same period, accumulative competitiveness losses, mirrored also by the indicator of real trade-weighted effective exchange rate based on labor cost.

Table 2: Average Earning Greece - Eurozone (Years 2001 – 2015)

	Average earnings				Unit labor cost in total economy	
	Greece	Eurozone	Greek public sector		Greece	Eurozone
			Central Gov.	Public Ent		
2001	4,7	2,8	5,5	7	4,4	1,9
2002	6,6	2,7	7,3	5,9	5,7	2,6
2003	5,6	2,9	5,9	10,3	1,6	2,4
2004	7,2	2,6	9,7	9,9	3,7	0,9
2005	4,4	2,2	2,3	7,6	4,8	1,6
2006	5,7	2,5	3,1	7	1,9	1
2007	5,2	2,5	3,8	7,1	4,5	1,5
2008	6,2	3,4	7,1	8,2	8,9	3,8
2009	4,6	1,8	5,2	7,7	7,8	4,5
2010	-4,6	1,9	-7,7	-5,5	-1,6	-0,6
2011	-1,7	2,2	-0,5	-7,9	0,8	0,5
2012	-6,6	1,8	-3,8	-9,5	-7,9	1,8
2013	-6,5	1,7	-1,2	-10	-7,3	1,3
2014	-1,6	1,3	-0,7	0	-0,3	1
2015	0,3	1,3	1	0,5	-0,1	0,7

Source: Bank of Greece (BoG)

Graph 1: Average Earning Greece - Eurozone (Years 2001 – 2015)



Source: Bank of Greece (BoG)

According to estimations by the Bank of Greece in 2012, 78,1% of lost competitiveness based unit labor cost between 2001-2009 has been restored in relation to 28 countries trade partners and for 2013 estimated and improvement 2,4 %.

### Conclusions

The competitiveness of the Greek economy relies on sector producing exports and import competing goods and services. The profitability of these sectors of the economy is a crucial precondition for external balance, job creation and welfare improvement for the whole economy. To calculate the wage room which is available for wage and profits increase under the assumption that the international competitiveness of the Greek economy is maintained at an unchanged or improvement level is an important task. On this basis, the analytical tool presented in our study can be useful in wage negotiations where the social responsibility of the two partners has to be given. Their basic function of the two parties concerned in wage negotiations is precisely the division of this room for increases.

By the estimations and data presented above about the Greek economy, the violation of these principles and framework had catastrophic implications and is responsible for the deepest after-war crisis of the Greek economy. Current analytical tools connecting productivity and unit labor



costs with the competitiveness of the economy, although very useful and important, fail to focus on the dynamics inside developed in the competitive sector the cornerstone of economy's competitiveness. To estimate at economy-wide, sectoral and company level this room or space based on the above principles as a norm for wage negotiations, has to concentrate the theoretical interest more analytical and empirical research has to be devoted.

### **References:**

- Aukrust (1974). "Inflation in the Open Economy". The central Bureau of Statistics of Norway. In Brookings Institution: "Worldwide Inflation. Theory and Recent Experience".
- Edgren G., Faxen K-O., Odhuer C-E. (1969). "Wages Growth and Distribution of income". Swedish Journal of Economics 1969.
- European Economy (2004). "Labor Markets in EU". Chapter 3.
- Hallett H., Viegi N. (2001). "Labor Market Reform and Monetary Policy in EMU: Do asymmetries matter?". Discussion Paper No. 2979. September 2001. Centre for Economic Policy Research.
- Feldstein M. (2008). "Did wages reflect growth in productivity?". Journal of Policy Modeling. Elsevier 30: 591-594.
- Arpaia Al., Pichelmann K. (2007). "Nominal and real wage flexibility in EMU". MPRA Paper No. 4364.
- Marg P. (2011). "On wage formation, wage flexibility and wage coordination. Focus on the wage impact on productivity in Germany, Greece, Ireland, Portugal, Spain and the United States". European Central Bank. CERP.
- Calmfors L. (1998). "Macroeconomic policy, wage setting and employment. What differences does the EMU make?". Oxford Review of Economic Policy. Vol. 14, No 3.
- Theodoropoulos S. (2011). "A wage policy for external balance and employment in the EMU environment: a theoretical approach". SPOUDAI. Journal of Economics and Business.