Milestones of the Greek 2010 pension reform, Time and Macroeconomic shifts. The Example of the IKA – ETAM fund

Marianna Papamichail, March 2013
Greece

Preface: The scope of the paper

Preface: The aim of this study is to

- examine the impact of the vast public pension reform enacted in Greece in 2010 on macroeconomic developments as calculated according to the DG ECFIN AWG assumptions and methodological approach;

- compare the 2008 study to that of 2010 as far as the macro frame is concerned as well as the impact of the reform on IKA-ETAM main pension fund;

- conclude about the consistency of approaches and liaise to some basic macroeconomic theory;

- give some hints about effective changes as for 2011 and 2012 and

- suggest some points of improvement over the short or medium term.

Financial measures of the reform as the altering of the pension formula are not examined so as to focus as independently as possible on macro impacts, as reflected on the labour market and the Output (GDP). However time elapsed between the two studies plays an important role since unemployment; one of the most crucial components determining future developments has risen significantly from 7.7% in 2008 to 12.5% in 2010.

1. HOW PENSION REFORMS AFFECT THE LABOUR MARKET PROJECTIONS ACCORDING TO THE EU, EPC/ AGEING WORKING GROUP METHODOLOGY CALLED

Cohort Simulation Model (CSM).

STEPS on Projecting Employed/ Insured population according to SCM:

A. Demographic projection by age and gender: Pension Reforms are not directly assumed to affect demographic projections. The demographic projection is performed by Eurostat in collaboration with the Member State's national statistical offices. Population however may be indirectly affected by pension reforms due to their impact on the labor market. This leads to behavioral changes as marriage rates, fertility, migration as well as the altering of other factors as mortality of active and inactive population.

B. Labour market participation rates' (PRs) projection according to the following method:

Step1: Calculation of the first projection year (2011) preceding decade's, 2001- 2010, average rate of entry "$Ren_{a,g}$" in the labour market, by monitoring people newly becoming employed from inactive state, and average rate of exit "$Rex_{a,g}$" from the labour market by age a and gender g are calculated[1] for ages 15 to 71. These rates are then kept constant throughout the entire projection period 2011-2060, unless a reform has been performed.

A steady Ren or Rex for a specific age and gender leads to different age and gender specific participation rates between the projection years, since they are percentages calculated on each year's population base. Using the corresponding PRs of the base year "t" (2010 for the case) and average Ren and Rex, PRs for the year t+1 are calculated as follows:

For previously inactive people:

$$PR_{x+1,g}^{t+1} = Ren_{x+1,g} * \left(PRmax - PR_{x,g}^{t}\right) + PR_{x,g}^{t} , PRmax ≈ 1$$

For older workers when PRs are starting to decline:

$$PR_{x+1,g}^{t+1} = \left(1 - Rex_{x+1,g}\right) * PR_{x,g}^{t}$$

This process continues for any adjacent two years until the end of the projection period. The methodology the way it works has the advantage of cohort development of PRs.

---

[1] See Giuseppe Carone 2005: "Long-term labour force projections for the 25 EU Member States" Carone 2005

Step2: General rules for the projection are set:

1) Base Year =2010, Starting Year = 2011
2) Correction of the drop of participation rate of young people 15-24 due to advanced enrolment is "transported" to the drop of Participation Rate of workers of prime age 25-50 not to allow any drop in the overall Participation Rate of cohort 15-24.
3) In case of no reforms calculations of last decade's average Exit probabilities are considered as they are derived from the past decade observed (Step1).
4) Pension Reforms adjust average Exit probabilities from the Labour market for older workers aged 50- 74 as to reflect future retirement decision changes

Step3: Projection of new Exit probabilities from the labour market, in case of a pension reform. Average Exit probabilities of the population between the ages of 50 and 74 are altered for the projection. The magnitude of changes is observed by comparing Participation Rates 2010 after the pension reform to those of 2008 before it.

The new distribution of labour market male and female exit rates is 'shifted' according to estimated effects on pension reforms by the Commission. This estimation, apart from elaborated judgment, takes into account country-specific information for the relationship between retirement behavior and the parameters of the pension system. (statutory effective, earliest retirement age etc.). Also cross-country econometric evidence of the impact of changes in additional government costs, steaming from the policy of increasing the age threshold (implicit tax rate), as well as continuing work and retirement decisions are considered.
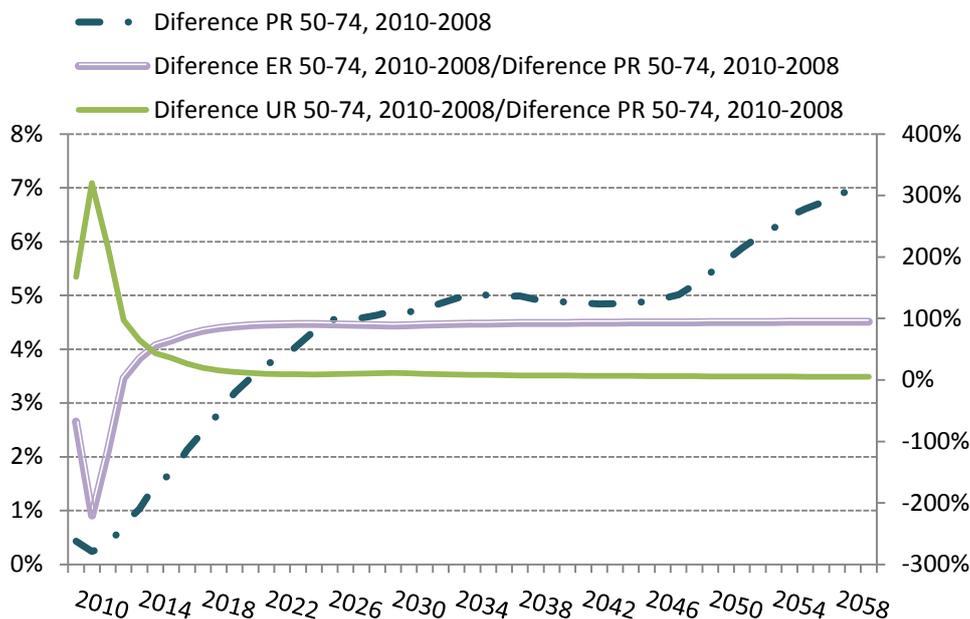
As an example, for a given country the retirement probability historically is concentrated at age 58 which may be the earliest retirement age. When a reform ends early retirement, in order to calculate its impact, the peak of the retirement probability distribution is shifted away from the historical peak of 58 years and moved closer to the statutory retirement age (usually 65 for men and 60 for women).

This approach however implies that the average insured stays in the labour market and prolongs his/her career until the new retirement threshold is reached, assuming more employability for active people in higher ages, which does not apply to the short term due to the financial crisis. The result for the IKA-ETAM fund is prolonged careers which is analysed bellow on Figure 3.

Finally retirement/exit rates reflecting the historical rates (the average over the period 2001-2010) are replaced in the CSM with the new estimated exit rates, according to the phasing-in of the reforms.

Step4: Calculation of Projected Participation Rate by age and gender for all projection years according to Entry and Exit probabilities and calculation of the (new) effective retirement age by the CSM

Graph 1: Impact of the pension reform on PRs for Greece.

Legend:
- – • Diference PR 50-74, 2010-2008
- Diference ER 50-74, 2010-2008/Diference PR 50-74, 2010-2008
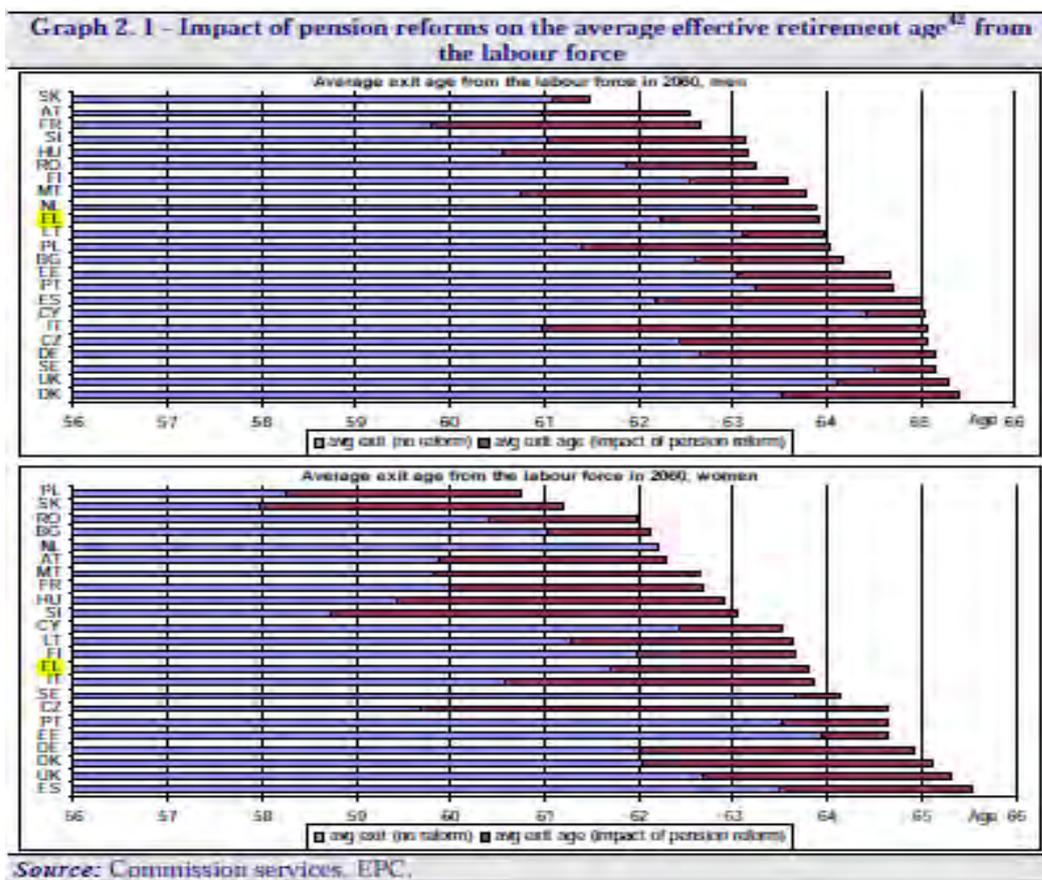- Diference UR 50-74, 2010-2008/Diference PR 50-74, 2010-2008

Graph 1 above depicts the impact of the reform on labour market developments as illustrated in the CSM model for Greece. The difference between the PR of 2010 and of 2008, for advanced ages 50-74, is increasing throughout the projection period. In the short term, until 2015, it is negligible. However the contrary stands, over the short term for the following addends: a. employment rate and b. unemployment rate (calculated on the population base), The unemployment rate increases significantly, in contrast to the employment rate keeping the overall resulted PR close to zero. This development absorbs the short term increase of the unemployment rate and produces a shortfall of employees. The contrary is resulted for the medium and the long term where gains on the PRs are translated to further employment rates gains and unemployment rates losses respectively.

Results from the labour market leading to increased employment affect the pension projection results for IKA ETAM (see Graphs 7 and 10 below), as contributors are increased for the 2010 study, especially over the years 2020 - 2060 when the reform is considered to be fully established.

The impact of newly calculated Rex for Greece as well as for other European countries who enacted reforms is shown in Graph 2 below. The effective retirement age for Greece was estimated to increase by 1 year for males, from 63 to 64 years' old and by 2 years approximately for females, from 61.6 to 63.7 years' old.

Graph 2:

Graph 2. 1 – Impact of pension reforms on the average effective retirement age[42] from the labour force

Source: Commission services, EPC.

C. Labour supply projections: Labour Supply (or Labour Force) population per age and gender is derived by multiplying the participation rate with the relevant population number for every year "t":

$$LS^t_{a,g}=PR^t_{a,g}*Pop^t_{a,g}$$

D. Unemployment projections: They are based upon year 2010 (base year) by age and gender $u^{2010}_{a,g}$, the total u^t_{total} unemployment rate assumed for the projection period, t=2011 to 2060, according to targets of the EU (Lisbon Scenario, Convergence etc.) and the age and gender structure of the Labour Force, $l^t_{a,g}$ according to LS/LF projections as described above.

$$u^t_{a,g} = \frac{u^t_{total}}{\sum_{a,g}\{ u^{2010}_{a,g} * l^t_{a,g}\}} * u^{2010}_{a,g}$$

where $l^t_{a,g} = \frac{LF^t_{a,g}}{LF^t_{total}}$ is the share of the age and gender specific LF$_{a,g}$ over the total LF

$u^t_{a,g}$ is the unemployment rate in age a, gender g, in period t;

u^t_{total} is the total unemployment rate (target) in period t;

The unemployment rate structure observed in year 2010 is thus kept unchanged throughout the projection period. Age/ gender values are adjusted proportionately in order to satisfy the total unemployment rate target.

So significant changes in unemployment between basis years -for the case of Greece between years 2008 and 2010 - result to the altering of the whole unemployment projection, for the next 50 years.

D. Employment projections: The unemployment rate refers to the population of the labour supply, which is the sum of the employed and unemployed population.

So **Employed Population + Unemployed Population = LS = ER*POP+UR*LS** $\Rightarrow$

$\Rightarrow$ **ER*POP = LS *(1-UR)** $\Rightarrow$ **ER =** $\frac{LS*(1-UR)}{POP}$

E. Output projections:

By using a standard specification of the Cobb-Douglas production function framework with constant returns to scale, potential GDP can be expressed formally as total output represented by a combination of factor inputs multiplied with total factor productivity (TFP), which embeds the technological level.

Y = TFP *L$^\beta$ *K $^{1-\beta}$ = (TFP $^{1/\beta}$ *L) $^\beta$ * K $^{1-\beta}$ = (E*L)$^\beta$ *K $^{1-\beta}$

where:

Y is the total output (GDP);

L is the supply of labour (for the last projection expressed as total hours worked);

TFP is the Total Factor Productivity which is the part of productivity derived from technological progress counter linked with L;

K is the capital formation and

β is a number between 0 and 1

We will not concern ourselves further with this equation; it falls beyond the scope of the paper, apart from the point that the Output according to the Cobb Douglas Production Function is an increasing function of L. So as the labour force increases so does the output and vice versa.

We should note that increases in unemployment, according to the equation above, do not necessarily lead a direct decrease of the GDP because the labour supply may remain intact. However, over the medium term, unemployment results to the shrinking of the LS leading to GDP drops. This is derived from "Okun's Law". Moreover, as one may observe from Graph 1 above, positive differences of the PRs between 2010 and 2008 are not immediately translating to increasing employment

2. Basic macroeconomics: Okun's Law and the Phillips Curve. The case of macroeconomic projections 2008 and 2010
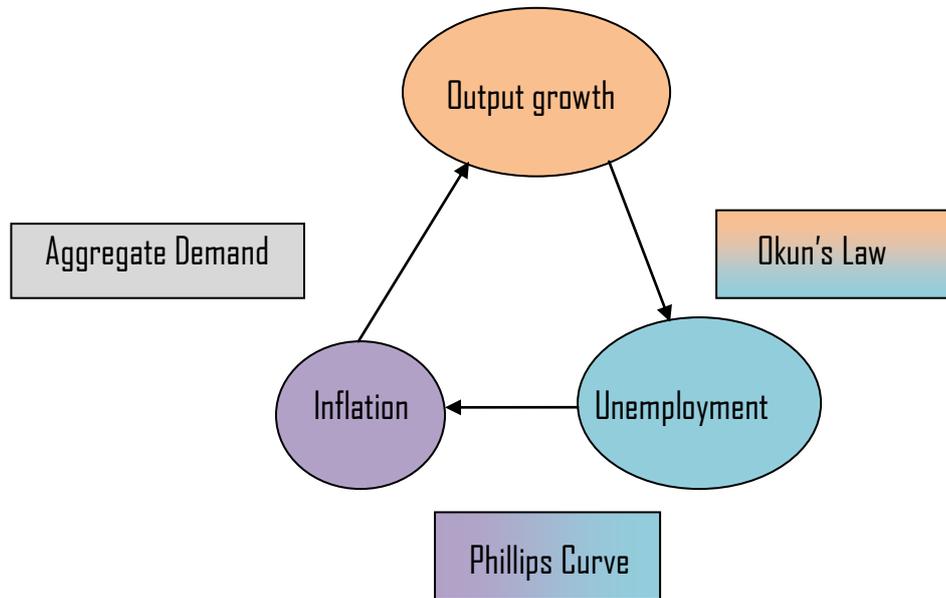
In macroeconomic theory over the medium and the long run every important factor of the economy a. Output (GDP), b. Unemployment and c. Inflation is interrelated. Meaning that whichever of these three components change it will sooner or later result in the altering of the other two. The way they are related to each other is given by three laws. We describe below only the two of them, "Philips Curve" and "Ocun's Law" because we have not dealt with market and demand in this paper.

Phillips Curve: Changes in inflation rate is negatively related to the difference between unemployment rate and the natural rate of unemployment

$$\pi_t - \pi_{t-1} = -\theta * (u_t - u_n) \Rightarrow \text{ when } \pi_t - \pi_{t-1} = 0 \text{ then } u_t = u_n$$

Implying that the natural rate of unemployment is the rate of unemployment required to keep the inflation rate constant as is the case in this macroeconomic projections, where inflation is kept 2% for almost the entire projection period. So the assumption, made by the Commission, of the unemployment converging to its natural rate is originally based on the Philips Curve equation.

Okun's Law: Changes in unemployment rate are negatively related to the difference of real output and a (fixed) percentage which is over the long term the average labour

supply (LS or L or LF) growth plus the average labour productivity growth, i.e. the normal growth of the economy. In other words to maintain a constant unemployment rate, output must be equal to the LS growth + Labour Productivity growth.

$u_t - u_{t-1} = -\alpha \, (g_{yt} - \overline{g}_y)$ where,

$\overline{g}_y$ is the normal growth rate of the economy = LS growth+ LPproductivity growth; g_{yt} denotes the real growth rate of the output (GDP) from year t-1 to t and α is a coefficient reflecting the impact of GDP changes on unemployment, mainly country specific.

So output is negatively related to unemployment.

Graphs 3 and 4 below, describe the 2008 and the 2010 studies respectively from the perspective of the Philips Curve and Ocun's Law.

Graph 3: Percentage change in unemployment rate, y axis, compared to real GDP percentage changes, x axis, in 2008 projection

Output growth (percentage)
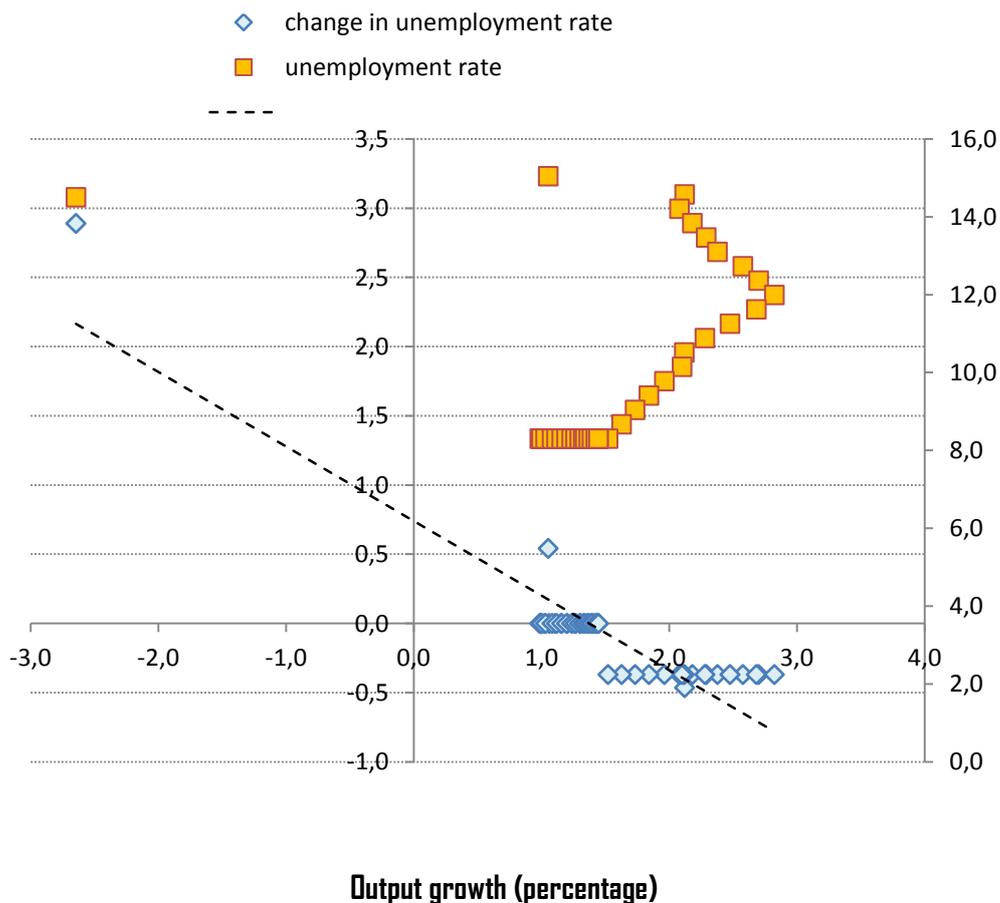
Ocun's Law for 2008 projection: $\mathbf{u_t - u_{t-1} = -0.37 * (g_{yt} - 1.41\%)}$

Graph 4: Percentage change in unemployment rate, y axis, compared to real GDP percentage changes, x axis, in 2010 projection

◇ change in unemployment rate
□ unemployment rate
– – –

Output growth (percentage)
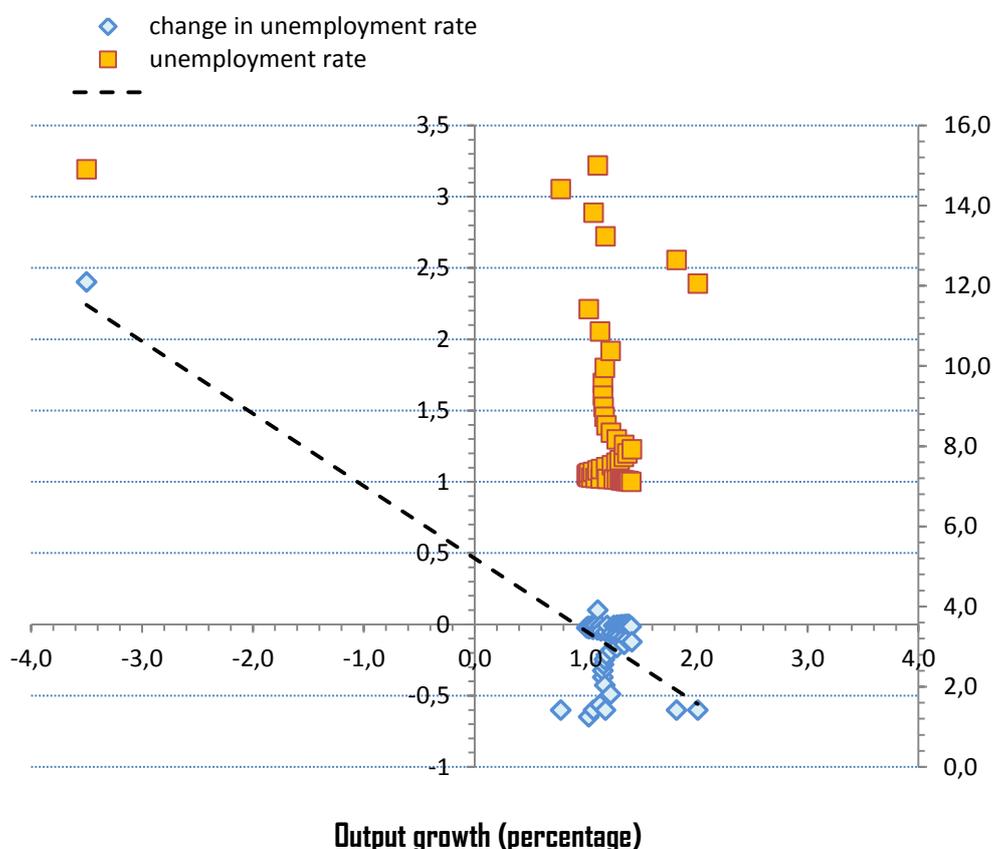
Ocun's Law for 2010 projection: $\mathbf{u_t - u_{t-1} = -0.42 * (g_{yt} - 1.2\%)}$

From the two graphs above the Philips Curve is apparent from the 2030 convergence scenario used by the commission for the unemployment (orange squares), which converges to its natural rate 8% for the status quo scenario and to 7,1% for the reform scenario.

Also Okun's Law is also there implying that

i.   α for Greece for the projections is around -0.4.

ii.   after the convergence the difference of the unemployment rate from year t-1 to t drops to zero.

iii.   In order for the unemployment to fall to its natural value a steady real GDP growth of 1.41% is needed for the 2008 projection period. A better result can be more easily achieved for the 2010 reform projection, where only 1.2% of real GDP growth is needed to achieve a lower natural rate of unemployment.

3. MILESTONES OF THE GREEK 2010 PENSION REFORM AND OTHER CHANGES BETWEEN 2008 AND 2010 STUDIES DUE TO TIME.

In July 2010 the reform on the Greek pension system was introduced by laws 3863/2010 and 3865/2010 on entitlements, contributions, accumulation rules and indexation of pension rights applied to the main pension funds. At the same time, this reform led to a substantial correction in the calculated financial evolution of the social security system expenditure over the next 50 years. The elements of the reform were:

A. Measures bearing macroeconomic impact

i) **Increase of the minimum career length:**

The gradual reduction of unemployment rates particularly for the elderly steaming from the assumed increase of the full contributory period for a pension entitlement from 35 years to 40 years of average service.

ii) **Enacted stricter disability pension awarding criteria:**

A stricter revision of the rules for disability pension awards also shifted the working horizon of a majority of disability pensioners to that of the old age pensioners and enhanced employment rates in pre-retirement ages.

iii) **Increase of the statutory retirement age:**

The reform increases the statutory retirement age generally from 60 to 65. The minimum age for retirement was set at 60. As from 2021 and onwards, the minimum and statutory retirement ages will be adjusted in line with changes in life expectancy every three years.

Table 1a below shows the evolution of the statutory retirement age, earliest retirement age and penalties for early retirement over the projection period 2010-60 due to the reform.

TABLE 1a: IKA Statutory retirement age, earliest retirement age and penalties for early retirement		2010	2020	2030	2040	2050	2060
Men - with 15 contribution years	statutory retirement age	65	65	65+	65+	65+	65+
	earliest retirement age	60	60	60+	60+	60+	60+
	monthly penalty in case of retirement before statutory age	1/200	1/200	1/200	1/200	1/200	1/200
Men - with 40 contribution years	statutory retirement age	58-60*	60	60+	60+	60+	60+
	earliest retirement age	-	-	-	-	-	-
	penalty in case of earliest retirement age	-	-	-	-	-	-
Women - with 15 contribution years	statutory retirement age	60*	65	65+	65+	65+	65+
	earliest retirement age	55*	60	60+	60+	60+	60+
	monthly penalty in case of retirement before statutory age	1/200	1/200	1/200	1/200	1/200	1/200
Women - with 40 contribution years	statutory retirement age	58-60*	60	60+	60+	60+	60+
	earliest retirement age	-	-	-	-	-	-
	penalty in case of earliest retirement age	-	-	-	-	-	-

iv) Postponement of the retirement age according to life expectancy extensions:

If the estimations regarding the change in life expectancy of the elderly population, according to the population projection "Europop 2012" were to be materialized and there had been no additional reform in 2012, then the table 1 would become table 1b.

TABLE 1b: IKA Statutory retirement age, earliest retirement age and penalties for early retirement Estimation		2010	2020	2030	2040	2050	2060
Men - with 15 contribution years	statutory retirement age	65	65	66.8	67.6	68.4	69.4
	earliest retirement age	60	60	61.8	62.6	63.4	64.4
	monthly penalty in case of retirement before statutory age	1/200	1/200	1/200	1/200	1/200	1/200
Men - with 40 contribution years	statutory retirement age	58-60*	60	61.8	62.6	63.4	64.4
	earliest retirement age	-	-	-	-	-	-
	penalty in case of earliest retirement age	-	-	-	-	-	-
Women - with 15 contribution years	statutory retirement age	60*	65	66.8	67.6	68.4	69.4
	earliest retirement age	55*	60	61.8	62.6	63.4	64.4
	monthly penalty in case of retirement before statutory age	1/200	1/200	1/200	1/200	1/200	1/200
Women - with 40 contribution years	statutory retirement age	58-60*	60	61.8	62.6	63.4	64.4
	earliest retirement age	-	-	-	-	-	-
	penalty in case of earliest retirement age	-	-	-	-	-	-

However after the most recent reform in 2012 table 1a would be revised to table 1c as follows

TABLE 1c: Statutory retirement age, earliest retirement age and penalties for early retirement after 2012 reform		2010	2020	2030	2040	2050	2060
Men - with 15 contribution years	statutory retirement age	67	67	67	67+	67+	67+
	earliest retirement age	62	62	62	62+	62+	62+
	monthly penalty in case of retirement before statutory age	1/200	1/200	1/200	1/200	1/200	1/200
Men - with 40 contribution years	statutory retirement age	58-62*	62	62	62+	62+	62+
	earliest retirement age	-	-	-	-	-	-
	monthly penalty in case of retirement before statutory age	-	-	-	-	-	-
Women - with 15 contribution years	statutory retirement age	62*	67	67	67+	67+	67+
	earliest retirement age	55*	62	62	62+	62+	62+
	monthly penalty in case of retirement before statutory age	1/200	1/200	1/200	1/200	1/200	1/200
Women - with 40 contribution years	statutory retirement age	58-62*	62	62	62+	62+	62+
	earliest retirement age	-	-	-	-	-	-
	monthly penalty in case of retirement before statutory age	-	-	-	-	-	-

** Life expectancy estimations are based to the "Europop 2012" life expectancy projections

B. Measures of Financial Impact (not calculated at this study)

v) Implementation of the full career average pensionable salary:

The career length, for the calculation of pensionable salary is gradually increased, reaching the full career length, starting in 2015. Before the last reform only the last five years to the utmost were being taken into consideration for the pensionable salary calculation. The law thus equalized the rules of the average pensionable salary calculation between main pension funds.

vi) Rule for pension indexation:

According to the reform law, pension increases over time are fully linked to a uniform adjustment index which cannot exceed CPI. Before the reform pension indexation was just decided independently according to every year's socioeconomic policy.

vii) Gradual implementation of a unified pension formula:

The increase in retirement age and in years of service for the system's current insureds is effective 1/1/2011. Starting on 1.1.2011, the current insureds will be getting a pension which will comprise of two parts:

The first part will be based on arrangements before the reform for as many years as he/she worked before 1.1.2011.

The second group will be based on reformed arrangements for as many years as he/she worked after 1.1.2011.

C. Other components:

Apart from the legislative reforms also the two years' time elapsing between the basis years 2008 and 2010 of the projections played an important role. As unemployment increased, according to macroeconomic laws, it shifted the GDP downwards. Unemployment finally is proving to be the key component of the economy. Graph 5 depicts those developments.

## Graph 5: Unemployment and GDP projections 2008 and 2010
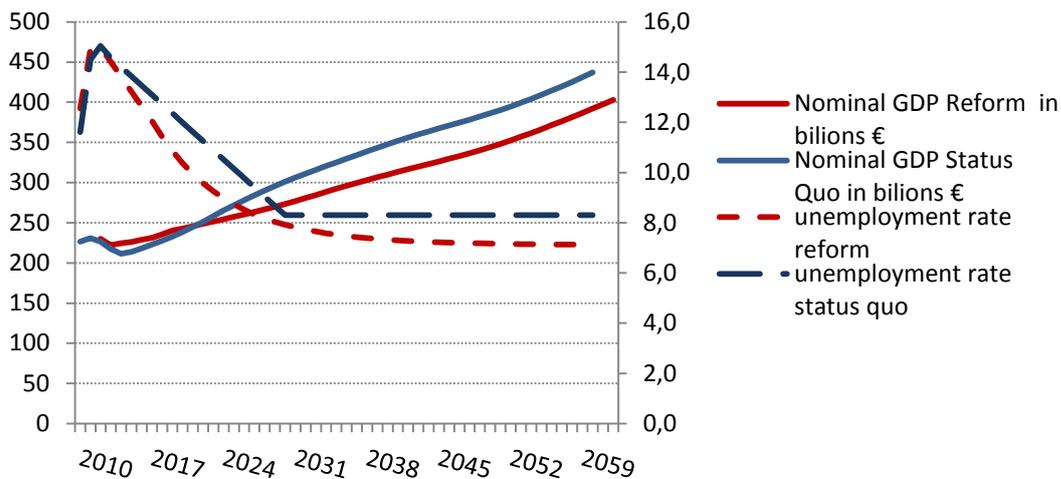
The base year 2008 is not included in Graph 5. The values of the GDP and the unemployment rate for 2010 (blue line) are projections based on 2008. The reform values for 2010 are real because they refer to the base year 2010. So the increased unemployment of 2010, base year, even though it is projected to drop faster than the rate of 2008 is enough for generating an irreversible GDP downshift. This result is called crisis. Another equation stands every year for the real GDP change:

GDP growth rate = LS growth rate + LProductivity growth rate + TFP growth rate. Crisis on its turn with decreasing the GDP growth rate it directly affects the salary indexation, as a major component of the real GDP change is the labour productivity (GDP/number of employed) which is directly linked to salary increases as depicted in Graph 6 below as well as Graph 11 representing financial impact on IKA ETAM.

## Graph 6: Labour Productivity and GDP projections 2008 and 2010
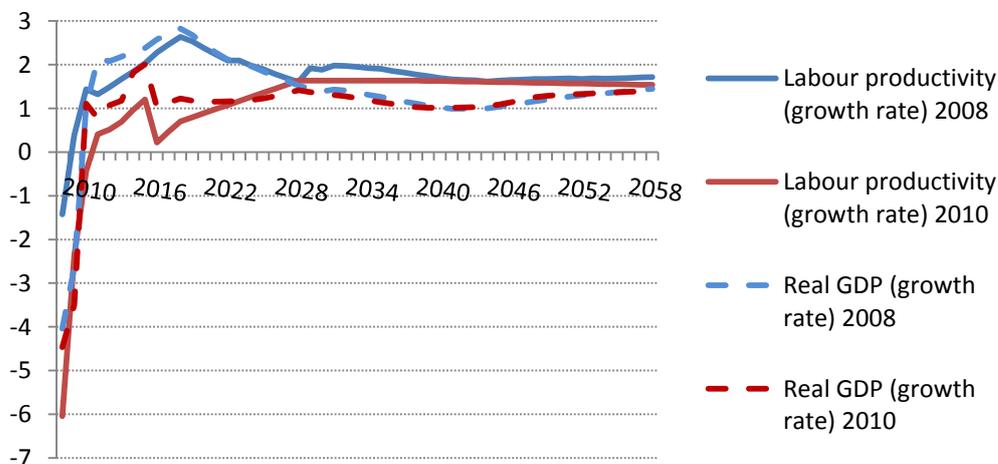
4. DESCRIPTION OF THE IKA-ETAM FUND -COVERAGE

The Greek pension system comprises:

- Main pension provision – includes 10 social insurance schemes, which cover, on a mandatory basis, salaried employees and self-employed persons grouped in certain professions/occupations;
- Auxiliary pension provision – included a number of social insurance schemes, each of which corresponded to a main social security scheme and runs in parallel with it; and
- Social solidarity grant provision (EKAS), a means-tested scheme, which covers residents of Greece who get no or low income.
- In Greece, almost 99% of the total pension expenditure falls on the above three public provision arrangements.

It is noted that the main pension schemes covering employees of DEH (Electricity Public Corporation), OTE (Greek Telecommunication Company) and Banks are managed by IKA, effective 1.1.2011. Figure 1 below depicts the asymmetric evolution of the IKA coverage on pensioners and contributors. The former stay almost unchanged while the later increases significantly due to the number of closed funds which have joined IKA in the 2002 reform. So pensioners are accumulating without being replaced by new contributors.

Figure 1: IKA ETAM coverage on total pensioners and contributors of Greece:
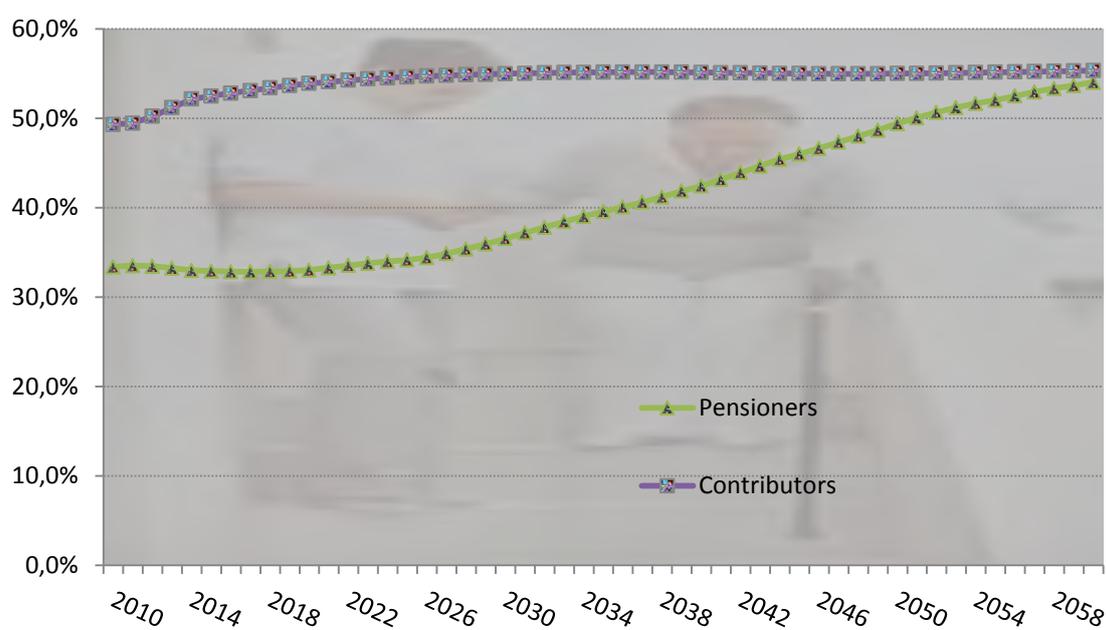
The financial importance of IKA concerning contributions in relation to total public pension system is significant. It is increasing by a faster rate than that of pensions in the medium term 2010-2017. After 2017 the trend is inversed due to newly hired public sector employees, from 1.1.2011 who are joining the fund. See Figure 2 below.

Figure 2: IKA ETAM relative financial magnitude from the 2010 study:
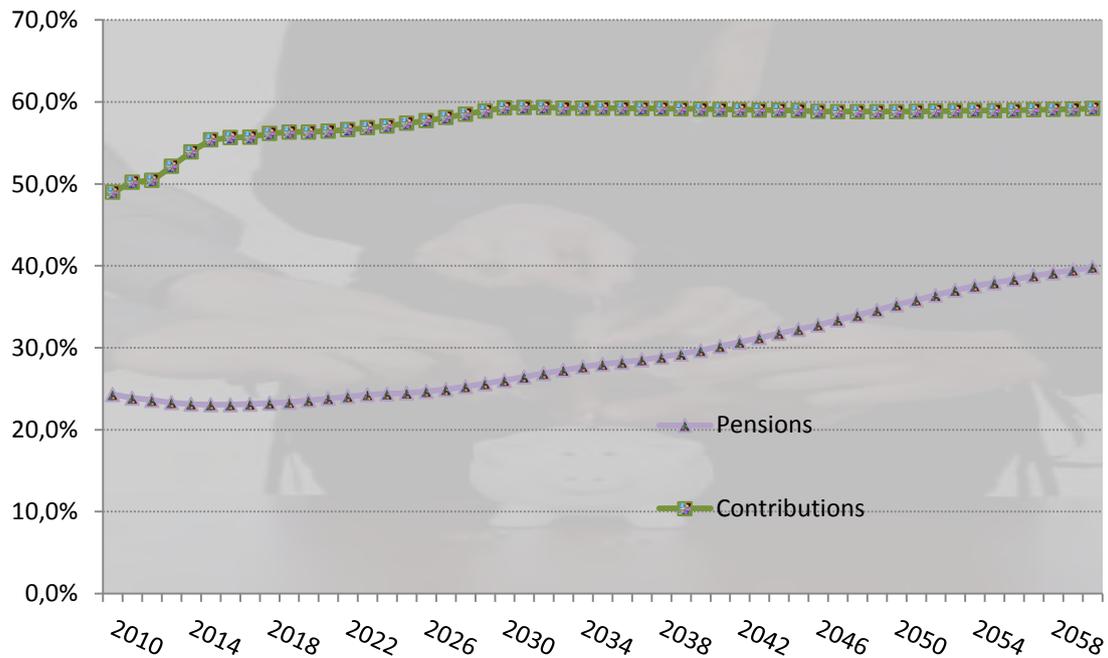
Financing:

Table below shows the financing breakdown arrangements between employee and employer following the 2010 reform measures for IKA-ETAM and merged main pension schemes.

Table 2: Financing breakdown of main pension schemes

Scheme	Group	Financing party	Contribution rate
IKA	General	Employees	6.7% (in 2010) - 7.6% (in 2015)
		Employers	13.3% (in 2010- 15.4% (in 2015)
	Arduous/Construction	Employees	8.9% (in 2010) - 9.9% (in 2015)
		Employers	14.7% (in 2010) - 16.7% (in 2015)
OTE		Employees	6.67%
		Employers	13.3%
DEH	General	Employees	6.67%
		Employers	13.3%
	Arduous	Employees	8.87%
		Employers	14.7%
	Hazardous	Employees	9.17%
		Employers	18.33%
BANKS		Employees	6.67%
		Employers	13.3%
		State	14%

## 5. IMPACT OF THE REFORM ON IKA-ETAM: COMPARISON REFORM (2010) AND STATUS QUO (2008)

Impact of measures i) and ii) on leveraging the average career length for IKA insureds

For IKA-ETAM the increase of the average contributory period due to the new eligibility requirements and the improvement of macroeconomic assumptions led to a significant average career shift upwards. As previously mentioned the shift of the retirement age was transformed to labour market improvements. It is worth also to point out that the new entrants of Public sector, Banks, OTE, and DEH enter IKA-ETAM from 1.1.2011. Moreover, according to the macroeconomic assumptions, the recovery of 2020 assumes that people will accumulate faster years of credits bearing much higher densities in the fund. So less insureds of IKA ETAM are supposed to take up pension awards and stay longer in the labour market, also invalidity pensioners are obliged by stricter rules to prolong their working lives until they are eligible for an old age pension. Figure 3 below underpins these results

Figure 3: IKA ETAM average career length of new pensioners
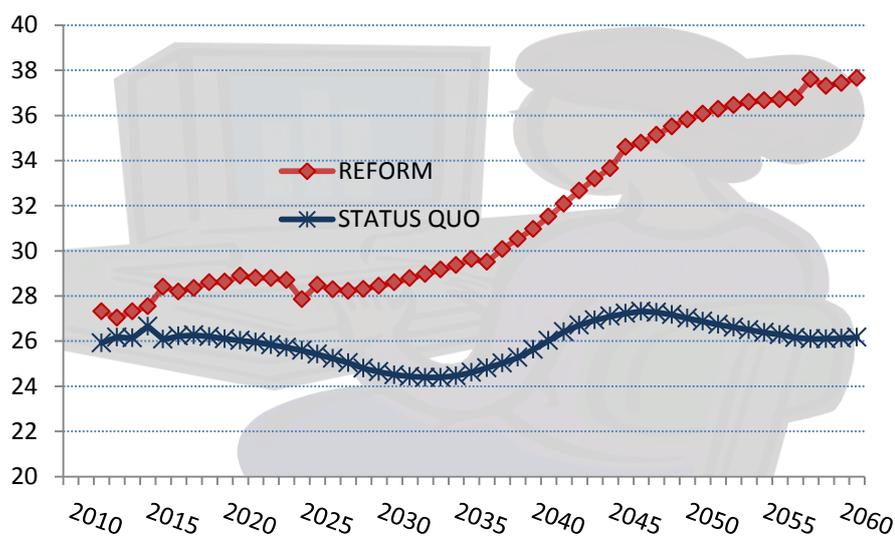
Exactly why careers are shifted upwards is depicted by Graph 8 below. Firstly the coverage (population of IKA-ETAM pensioners/ total population) of people over 55 is significantly dropping between the two valuations, shifting people instead of acquiring an early or disability pension to be employed. Secondly even the coverage of people over 65 is also dropping after the establishment of the reform during the years beyond 2035. See Graph 7 below.

Graph 7: Dropping of coverage 2008, 2010 at IKA_ETAM
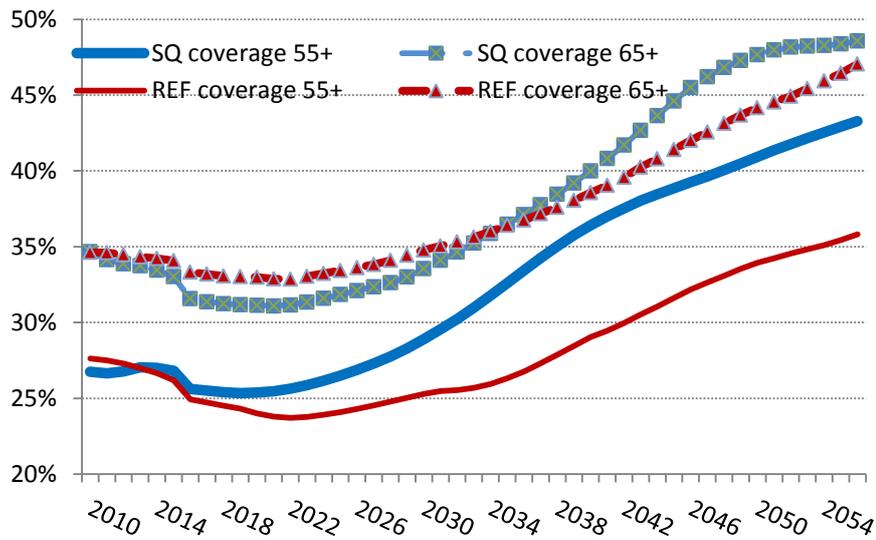

Impact of measures iii) and iv) on increasing the average retirement age for IKA insureds

In the meantime postponement of the age threshold for acquiring old age pension, under the circumstances, also contributes to prolonged careers. The pace new pensioners are exiting from the IKA-ETAM active lives slows up. A considerable restrain is the increase of the age threshold after 2021 in line with the life expectancy of a person aged 65. This restrain is apparent in Graph 8 and its result is shown in Graph 9. Also the coverage ratio = IKA-ETAM Pensioners/Pop65+ is shifted downwards due to increase of the retirement threshold. Correspondingly contributors of the IKA-ETAM fund are increased as shown in Graph 10.

Graph 8: IKA _ETAM impact of the postponement of the retirement age to new pension awards
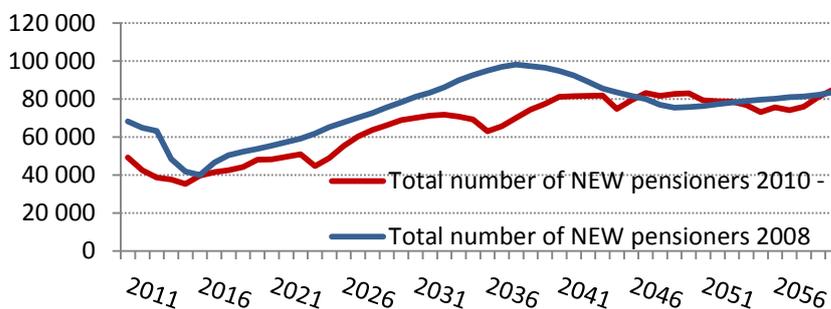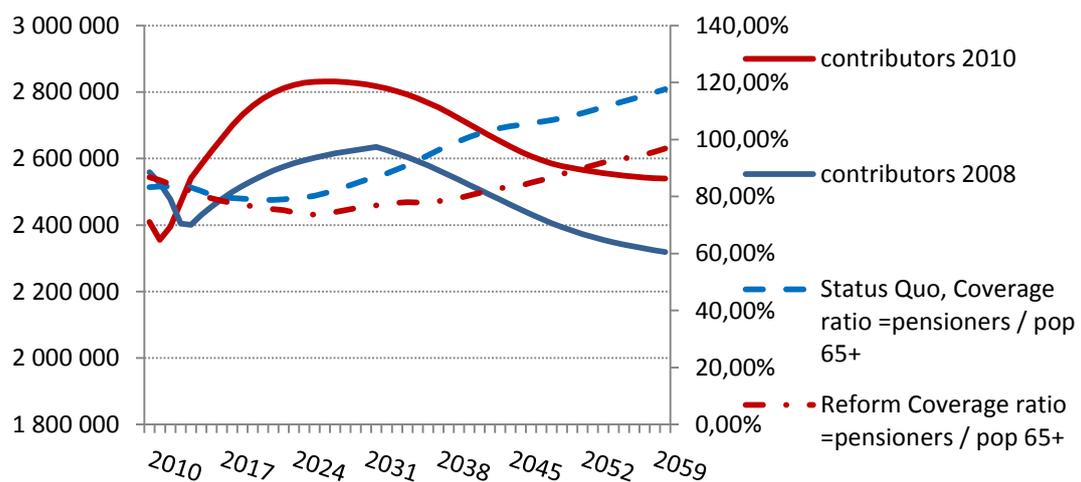
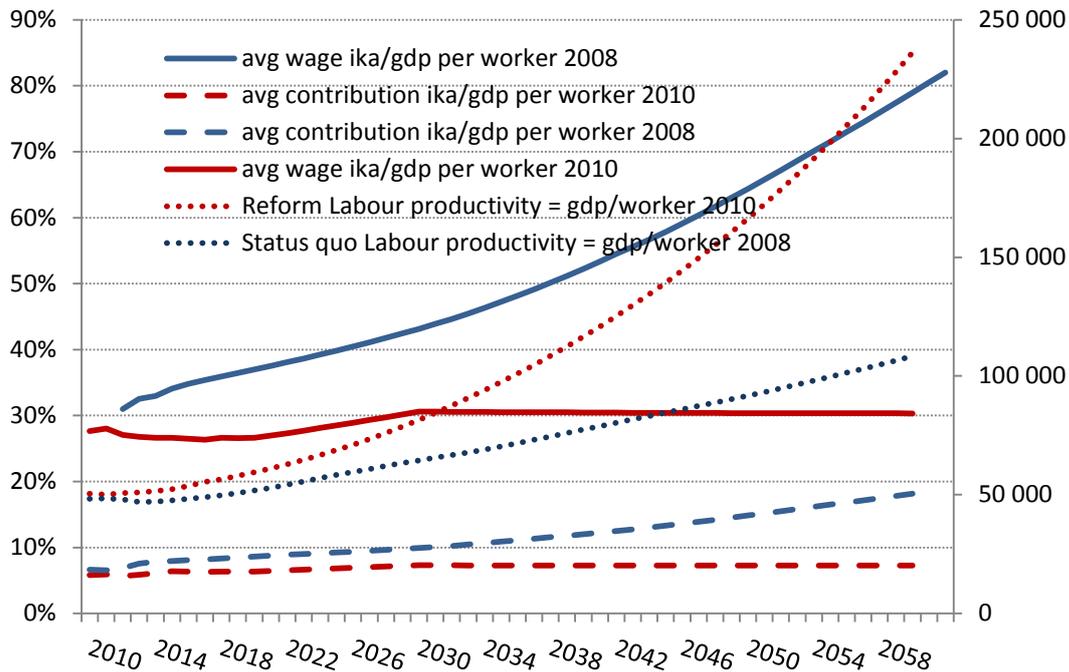## Graph 9: IKA _ETAM average retirement age of new pensioners
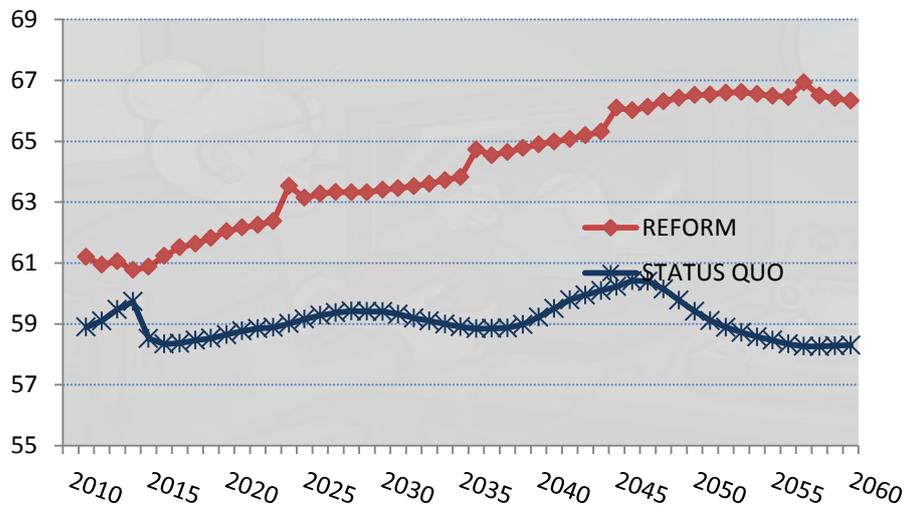
Impact of other components as unemployment and the shift of GDP curve (see C. page 16 above)

Also from the GDP shift downwards some fiscal effects concerning pensionable salary indexation and as a consequence contributions are observed as mentioned in paragraph 2. These effects are clearly presented at the Graph 11 below.

Graph 10: IKA-ETAM inverse relation of contributors and coverage between 2008 and 2010 studies.

Graph 11: IKA-ETAM salary and contribution effects from the GDP shift.

Legend:
- avg wage ika/gdp per worker 2008
- avg contribution ika/gdp per worker 2010
- avg contribution ika/gdp per worker 2008
- avg wage ika/gdp per worker 2010
- Reform Labour productivity = gdp/worker 2010
- Status quo Labour productivity = gdp/worker 2008

From Graph 11 it is observed that relative wage and contributions drops to the average GDP of the employed (Labour Productivity) is inversely linked to the labor productivity gains because the latter is a denominator of both former indices. As Labour Productivity increases salaries and contributions increase and their relative magnitude on productivity decrease. It seems that the macroeconomic frame of 2010 more consistently access the relation of wages with productivity.

Graph 12: IKA-ETAM reform versus status quo results on benefits and deficit as a GDP percentage
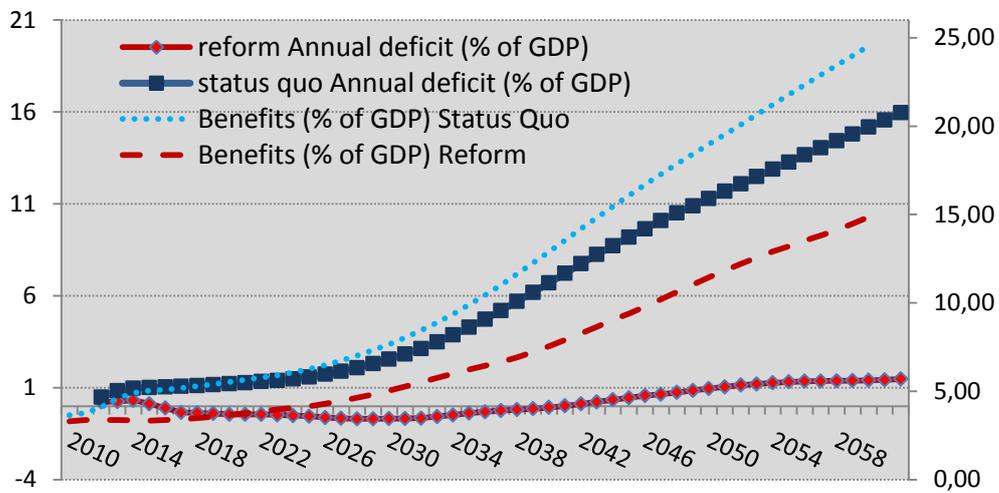
Although no measures of financial impact are calculated in the reform scenario (new pension formula incorporating the whole career salary average, reduced accumulation rates etc.), benefits and resulting deficit are projected to decline between the two valuations. The difference is the starting point base for salaries and contributions. The base of contributions in 2010 is much reduced, 12.3%, in comparison to that of 2008, the trend however remains intact.

6. IKA -ETAM Effective outcome 2011-2012 -ETAM

YEAR	2011	2012
TOTAL ACTIVES	2.211.064	2.056.000
TOTAL PENSIONERS	1.204.947	1.212.591
TOTAL CONTRIBUTIONS	6.105.205.867	5.694.185.600
TOTAL PENSION EXPENDITURE	10.219.279.586	10.400.029.901
Economic Dependency ratio = Pensioners/Contributors	54,50%	58,98%

On the pessimistic side of projections, real results indicate further worsening of the dependency ratio of IKA-ETAM. Also active population has declined by 7% due to increased unemployment. On the contrary pensioners have been increased by 0.63% due to the wave of early pension awards which followed the reform.

As far as Greek economy is concerned unemployment has increased since 2013 to 26% and the GDP continues to drop at the paste of 4% - 5% yearly.

7. CONCLUSION

On the long run macroeconomic developments appear consistent to what logically could have been expected from a pension reform. Indicators relating to the pension system are improved. The trend shows that those changes may have been in the right direction for streamlining demographic changes with the labour market as well as giving a chance for more adequate pensions.

In the short term it is essential that inverse trends are captured and mitigated on time before a crisis is reached. This may not originally be the scope of the EU pension studies. However if short and medium term trends are better assessed and crisis are predicted countries would be able to undergo longer and milder transition periods for fiscal consolidation.

A reform moreover in order to achieve its goals, it is essential that the labour market is targeted to support those expectations. EU countries should focus in enlarging the labour market and adopt appropriate working places for the "silver workers", they should also adopt policies targeting in creating jobs suitable for them. Meanwhile young people should not be negatively affected by those strategies.

REFERENCES

i. Olivier Blanchard "MACROECONOMICS"

ii. Giuseppe Carone 2005: "Long-term labour force projections for the 25 EU Member States"
http://ec.europa.eu/economy_finance/publications/publication576_en.pdf

iii. The 2012 Ageing Report: Underlying Assumptions and Projection Methodologies
http://ec.europa.eu/economy_finance/publications/european_economy/2011/pdf/ee-2011-4_en.pdf

iv. Greek Pension System Fiche 2012
http://www.eaa.gr/LinkClick.aspx?fileticket=cGnwVw7zUkk%3D&tabid=92&mid=422&language=el-GR

v. National Statistical Service of Greece http://www.statistics.gr/portal/page/portal/ESYE

~.~