REPORT ON THE PUBLICLY FUNDED PENSION SCHEME IN MACEDONIA

Center for Economic Analyses (CEA)

Skopje
September, 2011

CEA
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Executive summary

Aging population and the ambition to sustain the relative living standards of the retired is a test of sustainability for pension system, both private and publicly financed schemes. Therefore, this report should be regarded as an initial study that sets the basis for a more thorough and systematic analysis of functioning of the public pension scheme of Macedonia and its findings should be regarded in that light.

Main source of data used were obtained from the State Statistical Office-SSO, Pension and Disability Insurance Fund of Macedonia-PDIFM, National Bank, and Eurostat.

[1] **The deficit in PDIFM is not due to unfavorable demographic developments, but to more systematic problems.** The process of generating new jobs goes slowly.
[2] **Macedonia is not facing ageing population problem in a scale as it happens with other countries**, and that should not be a justification for increasing the retirement age to help to sustain the PDIFM.
[3] **Macedonia has a problem with unemployment and that affects the work of public pension** system creating negative gap between the revenues from the contributions of the employed and pension costs. This gap is becoming more difficult to maintain because the number of employed people is not growing faster than number of retired.
[4] Under the current arrangement it would be impossible to keep the system sustainable for a long time, taking into account the **limited ability of the government to raise payroll taxes** (followed with policy for its continuously decreasing) and to increase once again the level of pension's contribution.
[5] **At the margin it is expected the pension reform to contribute to financial market development by boosting the demand for a wider range of financial instruments**, motivating the development of new financial instruments, upgrading regulation and supervision, and promoting the development of overall financial market. Most broadly, financial deepening should improve the quality of investment in Macedonia and ultimately accelerate economic growth.
[6] **The fall in the youth dependency** brings to lower public expenditures in education, but these declines possible are not large enough to offset higher spending needs towards the elderly.
[7] It is time for **the government to prepare an evaluation and/or a cost benefit analysis of its policies** to decrease the labor costs by decreasing the pension contribution against the sustainability of the pension system, at least.

All methodological techniques used in this report are explained in greater detail in the papers listed in the references section and will not be explained in detail in this report.

This document will be published on the CEA web site (http://www.cea.org.mk) 10 working days after submission to USAID.

The report has been prepared by Marina Jovcheska (marina.jovcheska@cea.org.mk). Critical review and useful comments and inputs were provided by Marjan Nikolov, President of CEA.

Definitions:

- Pension is a program to provide employees with retirement income after they meet minimum age and service requirements;
- Pension scheme is a system designed to provide employees of an organization with a means of securing on retirement a standard of living reasonably consistent with that which they enjoyed while in service. Here, retirement means cessation of service;
- PAYG pension scheme (pay as you go) is a pension scheme where the outgoings to pay pensions to today's pensioners are paid for by the contributions of today's workers and employers. The PAYG system is based on a philosophy of "intergenerational solidarity" where today's workers support older workers;
- Pension scheme deficit – in a defined benefit scheme this is calculated as the amount of shortfall in the assets of the scheme on a given day compared to the cost of meeting all scheme liabilities on that day;
- Population ageing is the increase in the number and proportion of older people in society;
- Dependency ratio is an age-population ratio of those typically not in the labor force (the dependent part) and those typically in the labor force (the productive part);
- Employment rate is the ratio of the number of people employed over the working age population.
- Compensation of employees is the total gross (pre-tax) wages paid by employers to employees for work done in an accounting period.

1. General review of the Macedonian pension system

1.1. Pay-as-you-go pension system in Macedonia

Since 1993 Macedonia has established an autonomous pension system. Based on a pay-as-you-go principle, contributions paid by the current holders were immediately spent for pension payment of the current retirees. This system has long been facing a crisis. The transitional problems were the major reason for decline of production volume[1], closing of many enterprises and increasing the unemployment rate[2]. All changes in socio-economic development have been reflected on the pension system. Faced with the reduced number of active contributors (from 534,887 in 1991 to 466,280 in 2010[3]) on the one hand, and increased number of pensioners (from 180,749 in 1991 to 273,751 in 2010[4]) on the other hand also, reduced number of employees and increased number of retirees, automatically leads to decline of the support ratio[5] (in 2010, this ratio was 1.7). Few moments of the reform process are important:

- Towards the end of the 1993, the reforms of the pension system started[6]. Restrictive measures were taken to improve the functionality of the pension system: changes in the contribution rate (an increase from 18% to 20%[7]), providing additional fund's assets (a share of 9.18% from the excise taxes of oil derivates[8]), increased retirement age (from 60 and 55 years toward 63 and 60 years for men and women respectively[9]), reduced percentage for determination old age pension benefit (from 85 to 80% of the pension base[10]). Additional restrictive amendments to the Law were made in 1995 and 1996.
- In 2000, the bases of fully funded pension insurance are set up with accordance to the Law on Pension and Disability Insurance. This act regulates the mandatory fully funded pension insurance, the way of establishing and operating of the companies that will manage with the pension funds as a part of pension and disability insurance system. The pension system was reformed in order to assure long-term financial and social stability of the current and future generations of pensioners.

1.2. Current structure of the Macedonian pension system

The current structure of the multi-pillar pension system is based on the three pillars of insurance:

[1] The industrial production had dropped for a half in 1998, compared with the production in 1990. In 2008, the industrial production is 40% lower than the production in 1990.
[2] State statistical office, reports
[3] Pension and Disability Insurance Fund of R. Macedonia, statistical reports
[4] Ibid.
[5] The number of people of working compared with the number of people beyond retirement age
[6] Law of pension and disability insurance, Official Gazette of R. Macedonia, 31.12.1993
[7] PDIF, actuarial report, 2008
[8] Ibid.
[9] Law on pension and disability insurance, article 17, Official Gazette of R. Macedonia, n. 80/93 , 31.12.1993
[10] Law on pension and disability insurance, article 33, Official Gazette of R. Macedonia, n. 80/93 , 31.12.1993

- The pension and disability insurance based on the pay-as-you-go system (first pillar);
- The Mandatory Fully Funded Pension Insurance (second pillar);
- The Voluntary Fully Funded Pension Insurance (third pillar).

The second pillar started 2006. This reform implied introduction of the mandatory fully funded pension funds, in which 35% from the contribution for assets of pension and disability insurance are allocated. The private pension funds are managed by licensed pension companies that received the approval from MAPAS to manage mandatory pension funds.

In 2008 the third pillar, i.e. the voluntary pension funds, started to operate, licensed by MAPAS[11]. The sole activity of the private pension funds is investing assets in accordance with the investment principles regulated with the Law on Mandatory Fully Funded Pension Insurance[12] and the Law on Voluntary Fully Funded Pension Insurance[13], in order to maximize return of the investment, exclusively for the benefit of the pension funds' members.

According to MAPAS, the reform in pension drives long-term advantages for individuals participating in the pension system, for the pension system itself, as well as in oversight effects for the system in general. Expected effects of reformed pension system are presented in a following box.

Expected effects for the individuals	Expected effects for the system
→ Greater security → Risks diversification → Transparency of the operations → Voluntary and additional savings	→ Solvent pension system → Increase in national savings → Increased power of investment → Economic growth → Increased efficiency of the Macedonian labor market.

2. Demographic trends

During the last few decades, both developed and developing countries have experienced major challenges in the structure of their population. The fraction of aged populace in the total population has been in continual ascend. This process of population aging is more advanced in developed world.

[11] Agency for Supervision of fully funded pension insurance
[12] Law on Mandatory Fully Funded Pension Insurance, Official Gazette of R. Macedonia, n 29, 07.05.2002
[13] Law on Voluntary Fully Funded Pension Insurance, Official Gazette of R. Macedonia, n. 7, 15.01.2008

2.1. Aging population in Macedonia

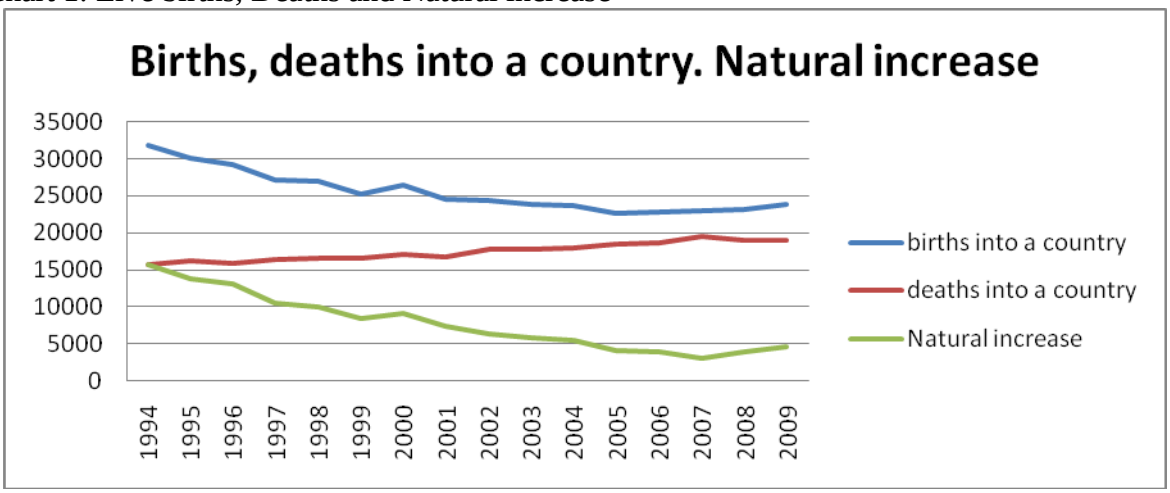
In the recent years, the birth rate in Macedonia is declining and in addition as a result of mortality, in the last 10 years, the rate of natural increase has dropped from 8.1%o in 1994 to 2.3%o in 2009[14]. This in economic terms means decreasing of the potential supply of the labor force.

Mortality decline and the resulting growth of elderly population have influence on the reform in the pension system in R. Macedonia as well.

If we compare the figures with the official data of other countries, it can be concluded that Macedonia has still not been faced with the problem of population aging. For example, in Bulgaria, since 1990, the natural increase is negative (in 2007 it was -5%[15]). Also, Republic of Serbia, has faced negative natural increase since 1992 till now, which in 2009 it was -4.7%[16]. In Slovenia, in the first quarter of 2011, natural increase of population was 1.2 per 1000[17]

These data indicate that Macedonia is in more favorable situation than countries in the neighborhood. Data for Macedonia are presented in the chart bellow.

Chart 1: Live births, Deaths and Natural increase

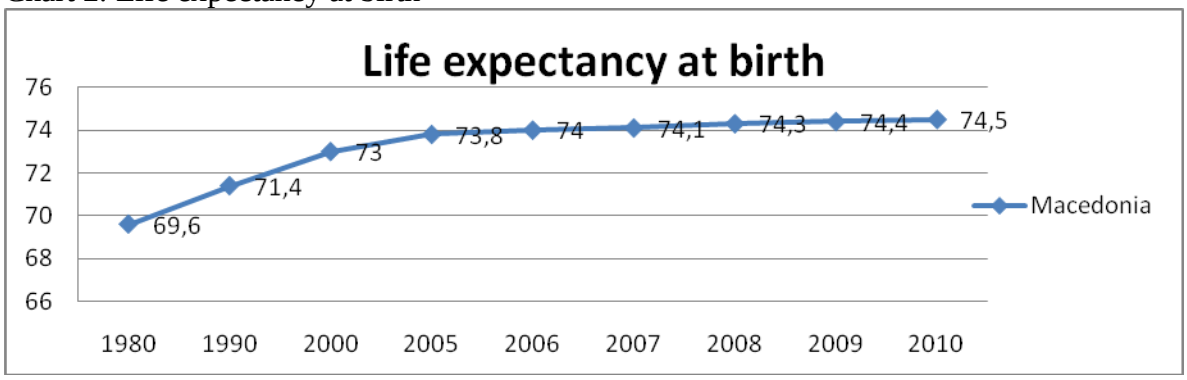


Source: State Statistical Office

Between 1980 and 2005, Macedonian average life expectancy at birth rose from 69.6 to 73. Compared with the numbers for developed and developing countries for the period between 1980 and 2009, Macedonia has lowest average life expectancy at birth (only Bulgaria has shorter life expectancy at birth).

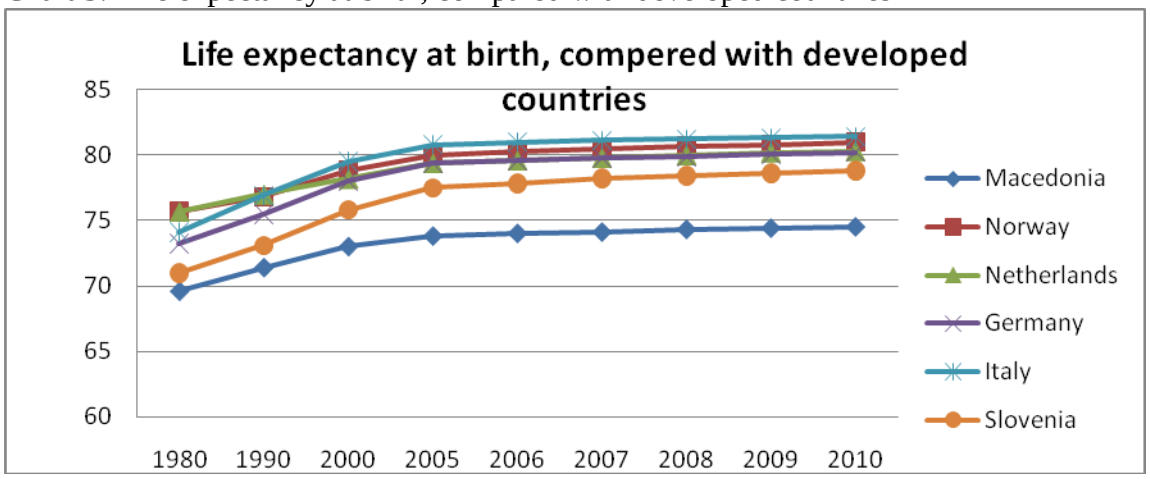
[14] Natural Population Change, State Statistical Office, annual report, 2009
[15] Eurostat, The demographic outlook, National reports on the demographic developments in 2007
[16] Source: SORS – Vital Statistics
[17] Statistical Office of The Republic of Slovenia

Chart 2: Life expectancy at birth



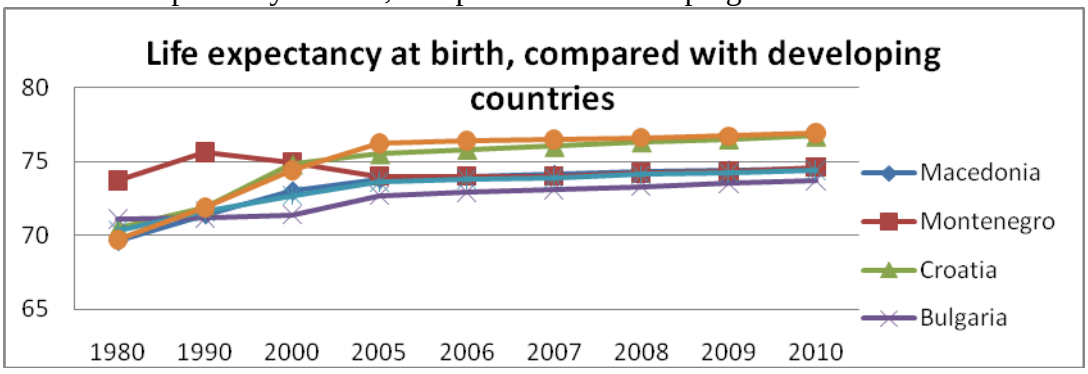
Source: State Statistical Office

Chart 3: Life expectancy at birth, compared with developed countries



Source: State Statistical Office, Source: UN DESA (2009d). " World Population Prospects: The 2008 Revision". New York: Department

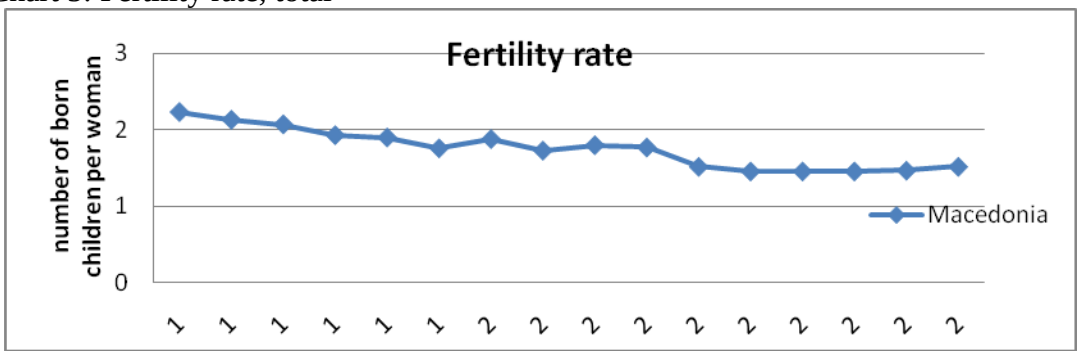
Chart 4: Life expectancy at birth, compared with developing countries



Source: State Statistical Office, *UN DESA (2009d). " World Population Prospects: The 2008 Revision". New York: Department*

In addition, the demographic changes are also due to fertility decline from 4.1 born child per women in 1960 to 1.5 in 2009. Lower fertility would tend to reduce labor supply, even if this is mitigated by endogenous and policy-induced lenghtening of working lives. The intentions of the Government of Macedonian were to influence on increasing the fertility rate through policy changing with offering stimulations and security of those women who would give birth to more than 2 children (recently this article of the Law is repealed), may contribute to fertility rate increasing. This leads to an increase of the current public expenditures. Even if the fertility grows by some points, it is not analyzed/take into account by the Government, if the future contributions will cover the current public expenditures made for this porpose i.e. country needs a long run study on these issues.

Chart 5: Fertility rate, total



Source: State statistical Office of R. Macedonia, Eurostat

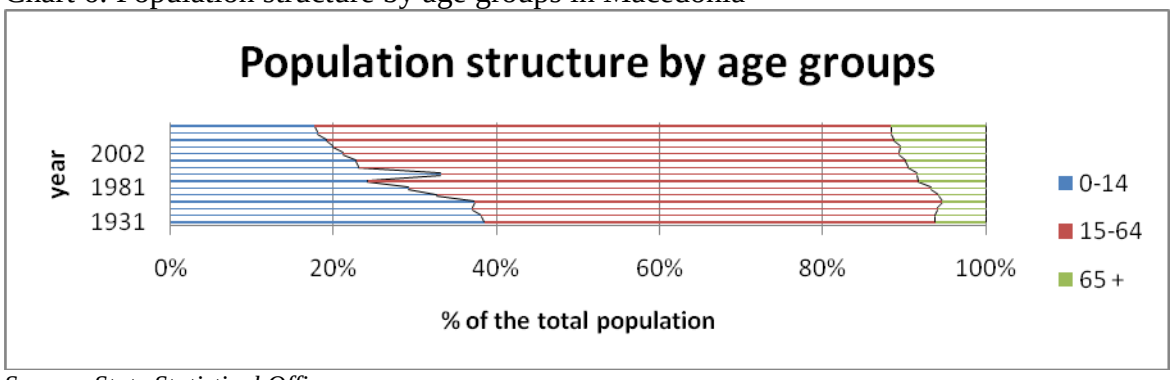
2.2. Population structure by age groups

How serious would the socio economic consequences be if important changes in age composition are happening? The decreases of the working-age population[18] would create an impact on, among others, the economic productivity and the payment of pension allowances. The structure of the population by age groups has been constantly changing in a terms of population aging. In 1931, the share of the young people as a percent of the total population was 38.5%, in 1980 it was 29.2%, and in 2009 it was 17.7%[19], which means that the participation of the young people in the total population has dropped for the period between 1931 -2009.

In 2009, the share of the young people as a percent of the total population was 13.6%, 14.1%, 15.4% and 13.4%[20], in Germany, Italy, Croatia and Bulgaria, respectively. On the other hand, the percent of the old population as a share of the total population is significantly higher in the other countries than in Macedonia. In 2009, this number for Germany, Italy, Croatia and Bulgaria for example, was 20.4%, 20.1%, 17.3% and 18.4%[21] respectively.

[18] population aged 15-64 years
[19] State Statistical Office, Annual reports
[20] Eurostat
[21] Eurostat

Chart 6: Population structure by age groups in Macedonia

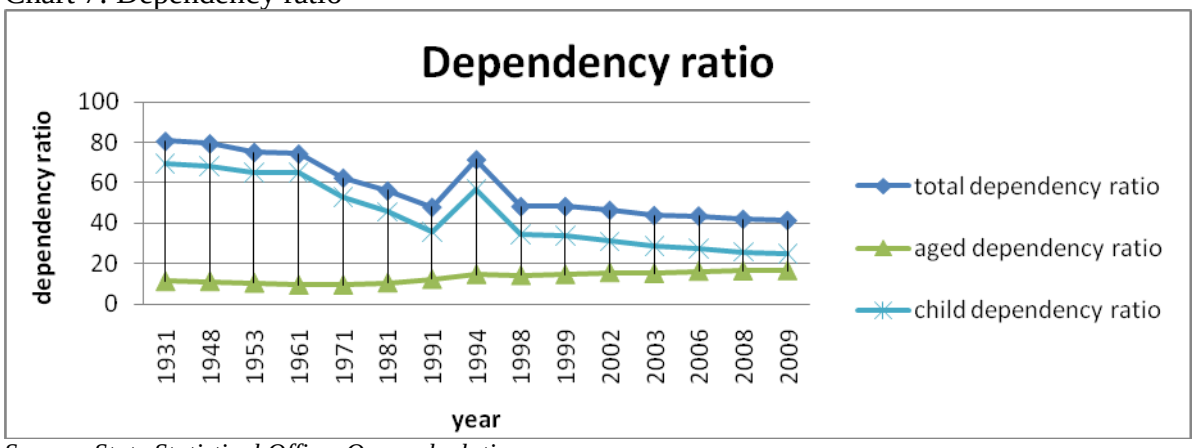


Source: State Statistical Office

2.3. Dependency ratio

Dependency ratio used bellow relates the number of individuals aged less than 15 and of those aged 65 and over to the population aged 15-64. The declining of the child dependency ratio (as a result of declining of fertility rate and number of youth population), have impact on declining of the total dependency ratio. Since 1931 till today, total dependency ratio and child dependency ratio have almost had parallel trend. Taken together into account, these ratios provide information about demographic shifts that have characterized Macedonia in the past. In 1931, the dependency ratio was 11.17 % and 16.41% in 2009, which means that this dependency has very slowly increased. Higher life expectancy and lower fertility rates have led to a rise in the old-age- dependency ratio and in a decline in the youth-dependency ratio over time. The fall in the youth dependency, brings to lower public expenditures in education, but these declines are not large enough to offset higher spending needs towards the elderly.

Chart 7: Dependency ratio



Source :State Statistical Office, Own calculations

2.4. Pensioner to employees

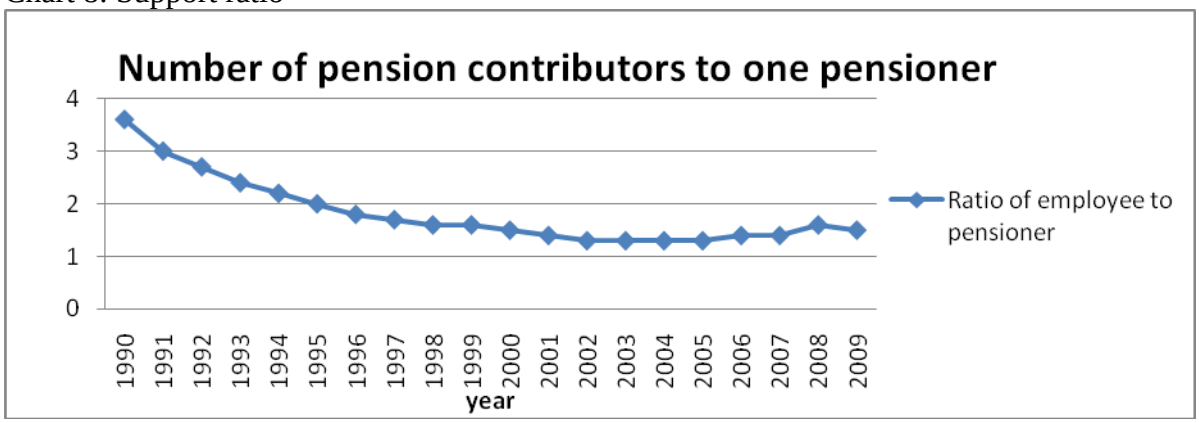
Slow increase of employment rate lead to slow increase also of the number of the pension contributors and as a result of population aging, the number of those who are receiving pensions would increase, on a long run period.

Starting from 1947, only 500[22] retirees were receiving pension from the Yugoslavian pension system. In 1990, this number increased by more than 300 times, or 166,224 in 2000 and 2010 the number of pensioners is 241,221 and 271,860 respectively. Persistently increasing number of pensioners during all period of analyzing was followed by the increased public money spending in order to provide regular pension payment. As a result of the lack of revenues from contribution by the workers, the deficit in the Pension and Disability Insurance of Macedonia has been constantly raised as well as the transfers from the central budget to PDIM.

2.5. Support ratio

Support ratio shows the number of employed people of working age compared with the number of people beyond retirement age. In the case of Macedonia, this ratio has dropped. The number of contributors is decreasing, and on the other hand, the number of people who are receiving pension is increasing. In 1991, the support ratio in Macedonia was 3, which means that 3 workers paid contributions to support 1 pensioner. Compared with 2004, is only 1.3 and in 2010 this ratio even though improved to 1.7 [23] still indicates difficulties in the providing regular payment of the pensions. Therefore, it can be concluded that the deficit in PDIM is accumulated consequence of the continuous increase of number of retirees and more to higher unemployment rate and sluggish job creation (the jobless growth problem of Macedonia).

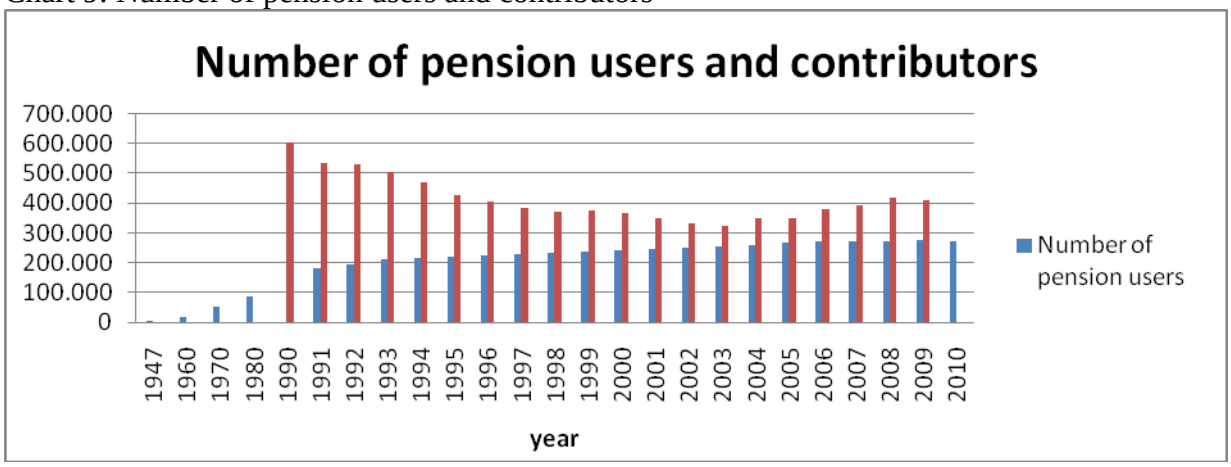
Chart 8: Support ratio



Source: PDIFM

[22] Union of the pensioner associations of R. Macedonia
[23] Source: PDIFM

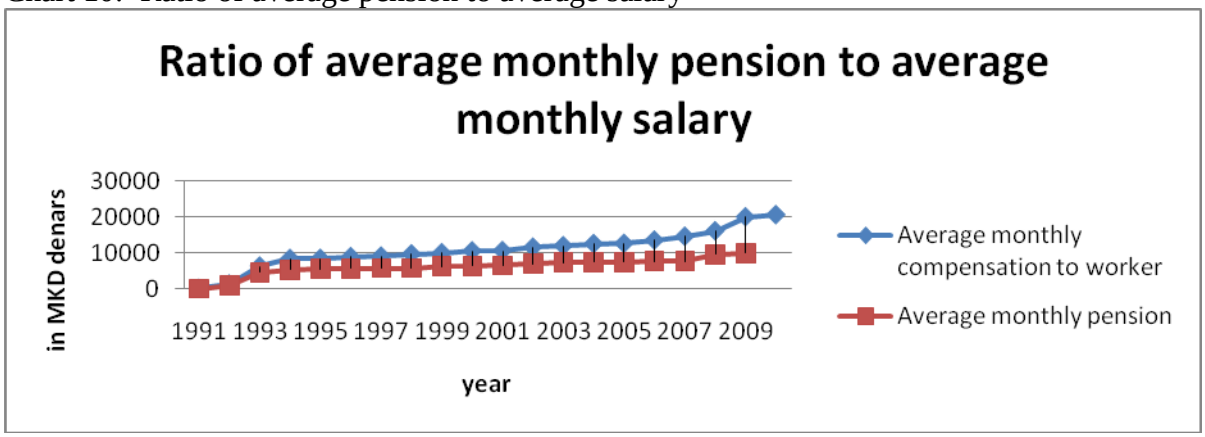
Chart 9: Number of pension users and contributors



Source: Pension and Disability Insurance of R. Macedonia
Note: Data for number of controbutors for the period from 1947-1990 and for 2010 are not available

During the transition period, even pension benefits obtainted by Macedonian pensioners have been increasing significantly in their absolute value, they have decreased relative to the salaries, shown in the chart bellow, Compared to the beginning of the 1990's, ratio of average pension to average salary has declined even during the period when pension showed upward trend. The average pension has declined more than 1.5 times as a percent of average salary.

Chart 10: Ratio of average pension to average salary



Source: State statistical office, PDIFM, own calculations

Macedonian pension system has low replacement ratio[24] of 49.10% in 2009. In 2009, changes in pension contribution rates were made. The contribution rate for the public pension system is 18%[25], out of which 35% goes to the mandatory fully funded system for the members of the second pillar.

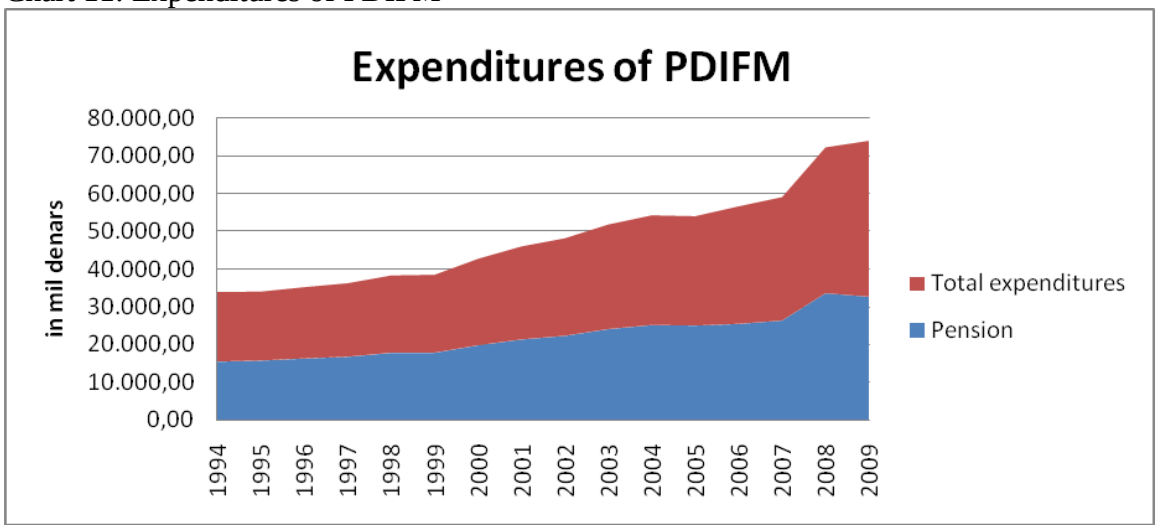
[24] ratio of average pension to average salary
[25] Law on pension and disability insurance, Official Gazette of R. Macedonia (142/08 and 64/09)

3. *Cost of pension system*

Till 2006, Macedonian pension system was publicly financed, based on pay-as-you-go principle. Finance problems with regular pension payment as well as abovementioned demographic factors influenced on the sustainability of the pension system.

Pension costs are likely to rise as a result of increased number of pensioners. Public fund's assets are difficult to maintain sustainable because of the slow increase of the employment. Total expenditures of PDIFM have a worrying upward trend, as also illustrated with the latest supplementing budget early September this year in the Parliament debate.

Chart 11: Expenditures of PDIFM

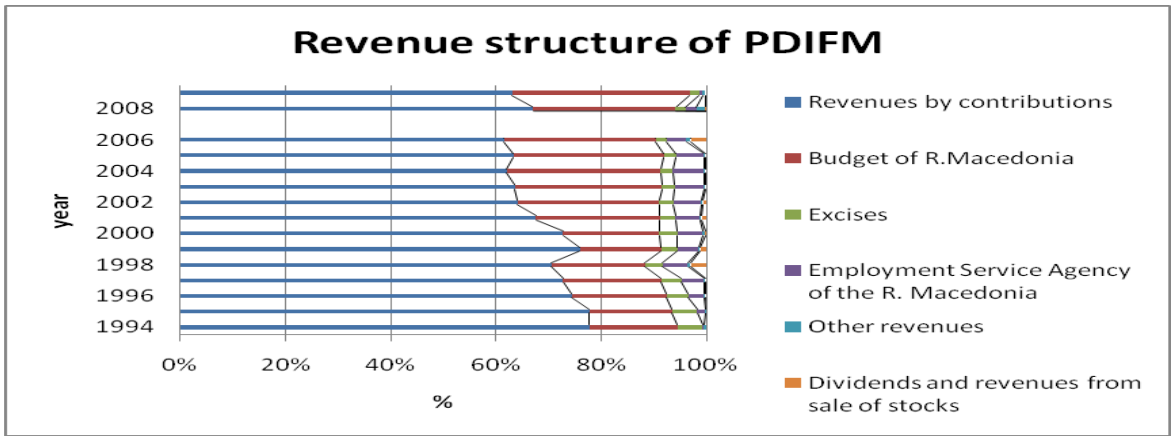


Source: PDIF annual reports

At the starting point in 1994, public pension spending accounted for an average of about 10.48% of GDP. The high level of public spending in terms of GDP percentages reflects the fact that pension provision relies mainly on social security schemes and that the principal scheme is earnings-related. Consequently, pension spending increases by less than implied by the demographic changes in the ovserved period, but at the same time, even increasing the gross domestic products, these expenditures as a share of GDP stayed on almost same level till now. In 2009, gross pension expenditures of the publicly-funded system has a share of 10.12% of GDP.

PDIFM is being faced with permanent inability to provide regular payment of pensions from the sources collected by contributions. This leads to gradually increasing of the deficit and the pensions are being paid from other sources (transfers from the central budget).

Chart 16: Revenue structure of PDIFM



Source: PDIFM

Also, the structure of the revenues of the PDIFM has been changed in unfavourable way. Revenues by contributions include revenues from contributions of salary, beneficiary experience, contributions by private individuals that perform activities and individual farmers. These revenues have been decreasing as a result of slowly reducing the number of contributors. Therefore, the revenues realized from sale of stocks as well from dividends are at the margins of the revenue structure as very unsignificant share.

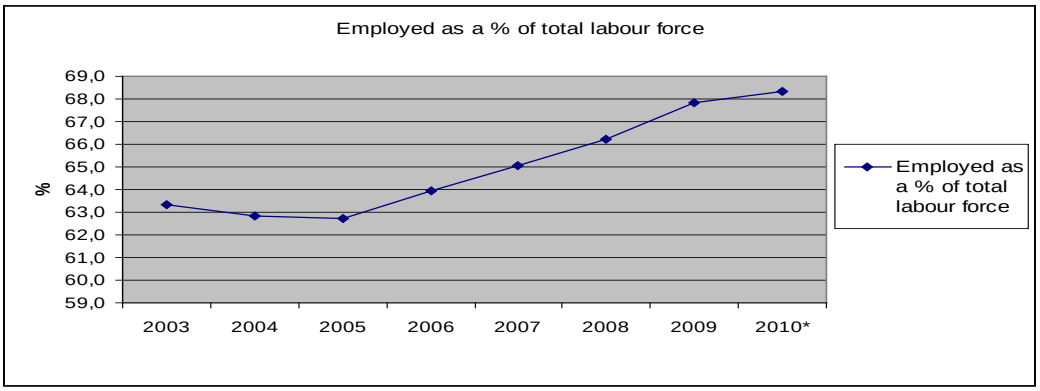
To improve financial sustainability of the pension system and to provide greater security for pensioners, the pension reform is expected to contribute to financial market development by boosting the demand for a wider range of financial instruments, motivating the development of new financial instruments, upgrading regulation and supervision, and promoting the development of general finance market. Most broadly, financial deepening should improve the quality of investment in Macedonia and ultimately accelerate economic growth.

4. Projection of the impact of the number of employees in terms of change in public pension revenues

Ageing population should not be the main motive for reforms in public pension system in Macedonia. Macedonia has a problem with unemployment that affects the work of public pension system creating gap between the revenues from the contributions of the employed and pension costs. This gap is becoming more difficult to maintain because the number of employed people is not increasing faster than number of retired.

The unemployment in Macedonia is a huge problem, having in mind that for decade Macedonian economy is facing an unemployment rate higher than 30%. Enough job creation may improve the functionality of the pension system.

Chart19: Employed as a percent of total labor force



Source: State statistical office, own calculations

Therefore, to see how the movement of the employment rate would impact the financial results of PDIFM (all else equal), we have designed two scenarios for period 2011-2016:

1. Increase the number of employed of 5% in the next five years
2. Increase the number of employed with the same trend as now

The first scenario forecasts trend of increasing of number of employees of 5 % in the next five years. The analysis show that the revenues as a result of increasing number of employees (5 % each next year) it would lead to constantly, slowly increasing of the revenues that PDIFM has being collected as a contribution from the employees by: 29,841 mil MKD, 32,900 mil MKD and 36,272 mil MKD in 2012, 2014 and 2016 respectively.

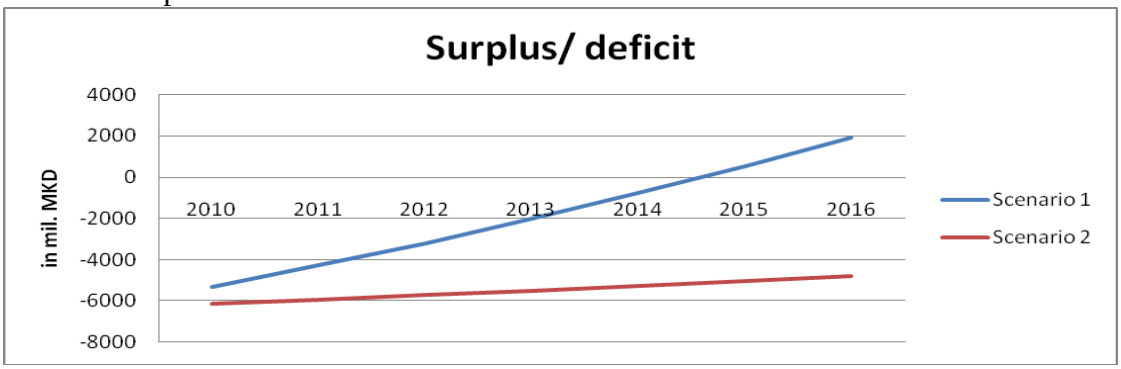
On the other hand, in the next five years, the increasing of number of pensioners is projected to be with the same trend as now. The costs for pension payment are projected to be: 33,027 mil MKD, 33,691 mil MKD and 34, 368 mil MKD in 2012, 2014 and 2016 respectively. That means that costs for pension would not increase with slower dynamic than revenues by contributions, which narrows the negative gap between the revenues and expenditures for payment of pension. Here, the number of contributors is calculated as a percentage of the number of employed.

The first scenario shows, that if the number of employed would increase by 5% each next year, the number of contributors would be increased. If the number of employed would be increased, the number of contributors will follow this trend, and that would recover the existing support ratio. Having in mind that, PAYG systems is based on solidarity principle, the increased support ratio would improve the unfavorable financial situation in PDIFM.

The second scenario assumes increase of the number of employees in the period 2011 - 2016 with the current trend. It will be considered that the revenues by contributions to PDIFM will be increased by: 28,161 mil MKD, 29,298 mil MKD and 30,482 mil MKD in 2012, 2014, 2016 respectively. On the other hand, the expenditures for pension payment are the same as in the first scenario. According to the second scenario, the

expected increase of revenues by contributions if the number of employees stays same as now (2 % growth per year) overall would not improve the ratio between the contributions and costs for pension payment in mid-term.

Chart 20: Surplus/deficit



Source: SSO, PDIFM, own calculation

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