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Pension reform options for Russia and Ukraine: A critical analysis of available options and their expected outcomes. With a focus on labour market, industrial restructuring and public finance

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CASE Network Reports

Pension Reform Options for Russia and Ukraine: A Critical Analysis of Available Options And Their Expected Outcomes

With A Focus On Labour Market, Industrial Restructuring And Public Finance

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No. 91/2010

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Abbreviations

CIS	Commonwealth of Independent States
CEE	Central and Eastern Europe
DC	Defined-contribution
DC	Defined-benefit
FSU	Former Soviet Union
GDP	Gross domestic product
ILO	International Labour Organization
NDC	Non-financial (or notional) defined-contribution (so called 'insurance' part of labor pensions in RF has some similar features)
NPF	Non-governmental (private) pension fund
PAYG	Pay-as-you-go pension system
PFR	Pension Fund of Russian Federation
RF	Russian Federation
Rosstat, Goskomstat	Official abbreviated names of Russian state statistical agency
UN	United Nations
UST	Unified Social Tax (payroll tax for social purposes in Russian Federation)
VEB	Vnesheconombank – RF Bank of Development

Abstract

This paper provides the results of analyses of key problems related to pension systems and their reforms in Russia and Ukraine. The pension systems and their reforms in both countries are compared. They are also compared with the general picture observed in the OECD or selected countries belonging to that area. The analysis focuses on long-term trends rather than short-term shocks. The recent economic crisis is not covered since the analysis was mostly completed by 2008. First, we present the general picture which describes the current demographic and economic situations as well as the challenges that are being faced. Then we turn to reform options and actions already taken. We particularly focus on issues that are specific to the countries analyzed.

Introduction

Russia and Ukraine are in the process of many changes stemming from economic transition, restructuring, demographic change and other various ongoing challenges. In terms of the ongoing challenges in each country, there are specific problems related to historical developments, such as large scale heavy industry, but also potential opportunities that rarely occur in other countries such as the significant additional income from the countries' abundant natural resources.

Both countries have good prospects for the future despite the many challenges.[1] Among the challenges is industrial restructuring taking into account the social dimension, which includes adjusting the current arrangements of pension systems. In the best scenario this could mean a pension reform.

The term 'pension reform' can be understood in various ways. In this paper we analyse a wide variety of possible pension system designs. The designs vary by target as well as the various ways to reach those targets. In all cases there may be costs and/or savings problems (as well as liquidity problems, which are not a "cost" from the economic viewpoint as liquidity is accounted as if additional cost were created) and various positive and/or negative economic, financial, and social externalities associated with the pension system designs.

Pension systems face problems all over the world. The demographic transition is a world-wide phenomenon leading to population ageing, which in turn leads to financial problems in pension systems which influence public finance. In reality, public finance is affected not only by population ageing via pension and other social expenditures but also via many other channels. Demographic transition describes the shift from high fertility and high mortality rates until the 18th-19th century, high fertility and low mortality rates until the second half of the 20th century, and low fertility and low mortality rates in the present day and in the near future. This transition has taken place in all OECD countries as well as Russia and Ukraine (and many other countries not analyzed here).

However, different mortality dynamics are observed in Russia and Ukraine. Instead of an increase in life expectancy rates, as is happening in most OECD coun-

[1] The current financial and economic crisis has strongly undermined economic activity in many countries, including Russia and Ukraine. However, in the long run, their effect will probably be absorbed.

tries, there has been a decrease in both countries.[2] This especially applies to male life expectancy. The demographic transition is occurring in a specific way in both countries, which creates an additional factor to be taken into analysis on top of other issues related to restructuring.

In both countries, workers exit labour markets relatively early. This applies to both formal and actual labour market deactivation[3]. In both countries, a large portion of economic activity is performed in the shadow economy.

Factors associated with the former Soviet pension system, ageing, and economic transition (e.g., the sharp drop in real incomes due to inflation and an increase in poverty rates) are the same for both Russia and Ukraine.

The shortcomings of the pension systems in both countries have remained basically unchanged since the Soviet era. They include:

- Extremely high rate of budget financing;
- Paternalism; exclusion of employees from directly contributing to their future pensions;
- Weak link between benefits and former employment records (seniority, wage, contributions);
- Inequalities among different groups of pensioners unrelated to their contributions to the pension system;
- Low level of pension benefits which forces an increase in the incomes of the poorest and leads to low benefit differentiation;
- Actual pension age is even lower than official age, which is still 55 for women and 60 for men.

It seems that up until the current financial crisis, Russia had an advantage over Ukraine: its government was able to consistently keep pension expenditures at relatively low levels (5-6% of GDP). In the early 2000s, the high extra-incomes from natural resources received by the Russian economy helped maintain GDP levels high and pension expenditures relatively low. But the favorable economic conditions that provided the financial resources needed to start reforming the pen-

[2] There are signs of a slight increase in life expectancy in Russia in recent years

[3] In Russia, workers enter the pension system very early compared with Western countries; the average pension age of both sexes is 53. But the retirement age is higher because of the right to both get full pension and work. According to LABORSTA (ILO), in 2007, in Russia 50.7% of 55-59 years old women were employed compared to 80.1% in Sweden, 66.6% in the USA, 55.3% in France and 34.76% in Italy. Among 60-64 year old women, 23.8% worked in Russia, 59.1% in Sweden, 47.9% in the USA, 15.2% in France and 10.8% in Italy. Among 60-64 year old men, 38.5% were employed in Russia, 67.7% in Sweden, 59.2% in the USA, 29.7% in Italy and 17.5% in France.

sion system made it unnecessary to take further unpopular political steps and to radically reform the pension system.

Until recently, Russia was also a step ahead of Ukraine in terms of implementing pension reforms. The course of the reforms was similar in both countries, which should have given Ukraine an advantage in that Ukraine could learn from the problems faced by Russia. There are certain commonalities in the reforms in both countries; both countries started introducing fully funded pillars and private insurance schemes. However, even in Russia, which had a more balanced and less expensive pension system, the reforms did not ensure the long-term sustainability of the pension system. The ongoing reform did not lead to an increase in the effective pension age. Nothing has been done with the reform of the so called 'early retirement schemes' covering people employed in hard/hazardous conditions or in the Far North regions. The fact that the size of a funded pillar is and will be small means that the new pension system will suffer from demographic ageing in the same way as the previous one.

The crisis of 2008 worsened the situation in both countries. During the last two years in Russia, substantial changes occurred in the course of pension reform. The pension benefits were radically increased at the expense of the financial sustainability of the system. It seems that Russia followed Ukraine in its erroneous populist policies in the area under discussion. The crisis was accompanied by a slump in energy prices which depleted the funds that could have been used for the pension reform. It also revealed the weaknesses of the Russian pension system which are not very different from what is observed in Ukraine. On the eve of the new decade of the 21st century, both countries have badly organized and unbalanced pension systems that urgently need to be reformed.

This paper provides the results of analyses of key problems related to pension systems and their reforms in Russia and Ukraine. The pension systems and their reforms in both countries are compared. They are also compared with the general picture observed in the OECD or selected countries belonging to that area. The analysis focuses on long-term trends rather than short-term shocks. The recent economic crisis is not covered since the analysis was mostly completed by 2008.

First, we present the general picture which describes the current demographic and economic situations as well as the challenges that are being faced. Then we turn to reform options and actions already taken. We particularly focus on issues that are specific to the countries analyzed.

1. General Background

The general idea of a pension system is to provide people with a method of income allocation over their life cycle. Pension systems work in various ways. There can be individual allocation or allocation that is not individualized but works for the entire population. The first is usually called "funded", although this term is not well defined. The second is typically called "pay-as-you-go," and its definition is also not very clear. In theory, both approaches should lead to the same or at least a similar outcome. In practice, they lead to different outcomes. This matters especially in times of high pension spending, after the collapse of a financial pyramid using a demographic pyramid. It is much more difficult to reduce the burden on workers in systems that do not individualize participation.

Traditionally, the term "intergenerational solidarity" is used in the area of pensions. This is partially misleading. A pension system is or is not based on solidarity irrespective of whether it is individualized or not. Workers need to share part of their product with the retired. This can be done via taxation (imposing a so-called 'social tax') or via markets. In the latter case, workers buy assets owned by the retired. This has little to do with solidarity. This is only a question of whether or not politicians are involved in the process of deciding on contributions and benefits or not and this role is played by the markets. None of the options has much to do with the concept of solidarity. Eventually only the systems that converge to an intergenerational equilibrium can work in the long-term. The pension system is the most suitable area to think of in terms of the long-term.

Generally, there are three basic designs plus two mixed ones that can be used to organize a pension system:

1. Social tax based systems called Pay-As-You-Go (PAYG)
2. Savings/insurance based systems typically called "funded". They typically use financial markets (called FDC - financial defined contribution systems) but this is not really needed. On the other hand, if only government bonds are bought in financial markets, then a funded system is in fact a kind of NDC
3. A combined system that uses both taxation and markets
4. NDC (non-financial defined contribution system) that is actually different from both traditional types of pension system designs

5. A combination of NDC and FDC

The preferred design of a pension system depends on a number of factors including the social system and the cultural and historical development of the country implementing the system. However, the feasibility and long-term sustainability of the system depends on demographics and the economic development in the country. Here, we analyze current and suggested future pension systems in Russia and Ukraine in conjunction with their economic development to demonstrate their long-term prospects.

A country's pension system affects industrial restructuring through various channels, including:

- Tax wedge creating an influence on public finance;
- Tax wedge creating an influence on labor supply and mobility;
- Availability of benefits creating an influence on incentives for labor supply and mobility;
- Tax wedge creating an influence on labor demand and restructuring.

In addition to the above channels, social policy and political problems add to the overall difficulty faced by ageing societies.

The goal for pension reform can be formulated in various ways. Here, following Góra (2003) and Góra and Palmer (2004), we understand the goal of the pension system reform as reintroducing intergenerational equilibrium. One of dimensions of that is:

$$PV(B) = PV(C)$$

where: B = benefits; C = contributions.

The equation above should be understood at both the macro as well as at the individual level of aggregation. This implies that the welfare of all generations is equally important. On the top of this, pension systems can reach financial stability. The latter affects restructuring indirectly, while the former affects it directly.

2. Demographic and Economic Issues

Demographic and economic developments in Russia and Ukraine during the last two decades created conditions for the long-term instability of pension systems in the two countries. The transition type of recession that started at the beginning of 1990s reduced the productivity of labor and created hidden unemployment. Combined with an aging population, it decreased the workers to pensioners ratio, making the Soviet-type PAYG system unsustainable. At the same time, underdeveloped capital markets, the low income of the population, and distrust in the banking system created constraints to reforming the system.

In this chapter, we discuss current economic and demographic issues in both countries. We look at the common trends and differences in the factors that affect the development of pension systems. This chapter provides the background for further discussion in this paper.

2.1. Transition and economic development

Economic conditions have a significant impact on the long-term stability of pension systems. Here we analyze the development of three of these important factors in Russia and Ukraine.

The first is labor productivity and employment. Both affect total labor income in a country. A reduction in total labor income decreases the amount of money available to redistribute to pensioners and lowers the income available for inter-temporal redistribution.

The second is return on investments. This factor is important for the pension systems that use an inter-temporal transfer of income since the higher return on investment allows current employees to invest a lower portion on labor income in order to receive dissent pension after retirement or take retirement earlier.

The third is financial market development. A solid banking system trusted by the population is an important instrument of the inter-temporal distribution of in-

come through personal savings. A well-developed stock market offers instruments for savings and investment that can be used by individuals and by different types of pension systems to accumulate pension resources.

Below we discuss how these factors progressed in the two countries, and the expected mid and long-term development of these factors that will determine the most robust design for a pension system in each country.

2.1.1. Russia

In Russia economic reforms were launched January 1, 1992, starting with price liberalization. The basic stage of economic reforms was accompanied by an essential economic recession and quite a long period of high inflation (Table 1). In August 1998, the country experienced an extensive financial crisis, ruble devaluation and a default on government bonds. Contrary to the current crisis, the recovery of the national economy from was rather quick. As a result, the decade between the 1998 and 2008 crises was a period of economic growth and fiscal stabilization that made income and employment recovery possible[4].

Favorable dynamics of world oil and gas prices prevented the Russian government from making necessary but difficult structural reforms. Foreign investments in Russia, though rather low, could hardly be absorbed by the limited number of investment projects [Development Center 2007]. These factors make the consequences of the world financial crisis of 2008 deeper in Russia compared to other countries with similar levels of development. Today it is evident that the Russian economy is highly vulnerable to external shocks, which is really important when we talk about substantial pension reform and accumulating pension savings.

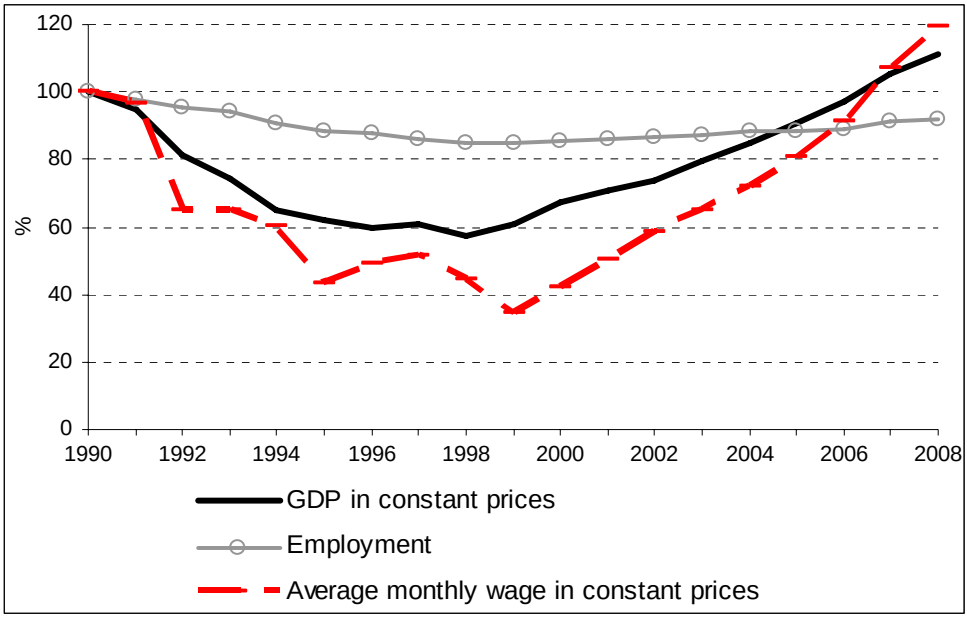
Since current economic growth has not been accompanied by an improvement in the institutional environment and the enforcement of new laws [Kuzminov, Radaev et al. 2005], Russia has a high level of risks related to the definition and protection of property rights, “domination of the law”, taxation administration, level of corruption, and similar parameters describing the quality of institutes [Gurvich, 2005]. These institutional risks are very important for a funded (financial) pension system based on individual accounts.

A particular feature of the Russian labor market is that it responded to the economic recession with a dramatic drop in real wages and an expansion of wage arrears instead of the mass dismissal of workers (Figure 1). Unemployment rates were never as high as in Central Europe (CEE) and never exceeded 14% of the

[4] See more detailed description of trends of Russian economy in [Gora et al, 2008].

economically active population. Registered unemployment (those eligible for benefits) was 2-3 times lower than open unemployment measured by the ILO methodology. The whole period of the development of modern Russia shows that the elasticity of wages to GDP fluctuation was very high, while that of employment was low [Gimpelson, Kapelyushnikov 2007]. According to Earle and Sabirianova [2001], in the end of the 1990s, the Russian economy was in a "bad" equilibrium, assuming a certain amount of arrears; hence the costs of getting out of this equilibrium were higher than the costs of preventing arrears. There is some preliminary evidence that the current crisis did not change the specific model of the Russian labor market [Kapelyushnikov 2009]: wage elasticity is again higher than the elasticity of employment, wage arrears are increasing, although not as rapidly as in the 1990s.

Figure 1. Indices of annual changes in real GDP, real wage and employment in Russia in relation to 1990



Sources: Author's calculations based on the Goskomstat (1997): Social Situation and Living Standard of Population of Russia; Goskomstat (2002): Social Situation and Living Standard of Population of Russia; Goskomstat (2003): Social Situation and Living Standard of Population of Russia; Rosstat (2009): Short-Term Economic Indicators of Russian Federation, July 2009.

The economic transition has radically changed the structure of the Russian economy and labor market. The following three dimensions are of particular inter-

est: privatization, decentralization and deindustrialization. As a consequence of privatization, in 2008, 82.5% of firms were completely private in Russia. Those firms hired 57.1% of total employed workers.

The Soviet economy was based predominantly on large enterprises. Still, in the beginning of the 2000s, nearly 2/3 of total employment was covered by employment at large and medium enterprises [Maleva et al, 2002: 52]. However the number of people employed in small firms increased in recent years, whereas employment at large firms decreased. Decentralization in this sense could be considered a positive sign of the improved adaptation of the Russian labor market to a market economy. Nevertheless, there are still more informal jobs in small firms than in large enterprises. Besides, small firms often use the so-called "simplified" taxation regime and do not pay a unified social tax (UST). As a result, people hired by small firms and individual entrepreneurs are limited in their future pension rights, because of the lower contributions paid by their employers.

The economic transition was accompanied by a rapid growth of employment in the service economy, particularly in trade. In 2008, 17.6% of the employed population worked in trade. This also provokes the process of lowering the quality of jobs given that trade has the largest incidence of informal employment [Gimpelson, Kapelyushnikov, eds., 2006; Sinyavskaya, 2005], which is important for the pension system.

Another peculiarity of Russian economic development important to the design of a pension reform relates to the significantly higher income and wage inequalities in Russia compared to CEE (Table 2). In 2001, on the eve of the pension reform, the Gini coefficient for gross earnings was 52.1% in Russia (as opposed to 45.1% in 2006), while it was only 38.8% in Estonia, 38.6% in Hungary, 32.2% in Latvia, and 27.2% in the Czech Republic[5]. This inequality exists within sectors, between sectors and particularly between different settlements and regions. The national pension system tries to provide average standards of living of the elderly population in all regions and settlements and consequently involves substantial redistribution.

The incidence of poverty increased sharply during the first period of economic transition[6]. In 1992 and 1999 there were 33.5% and 29.9% of people with incomes

[5] Data on Gini coefficient are from Transmonee 2004, Transmonee 2008, downloaded from World Income Inequality Database, UNU WIDER http://www.wider.unu.edu/research/Database/en_GB/wiid/. Russian statistical agency (Rosstat) gives slightly different figures on inequality (see Table 2).

[6] Official measurement of poverty rate is based on the absolute concept of poverty with the subsistence minimum as a poverty line. The methodology of subsistence minimum as-

below the poverty line, respectively. But much of the poverty in Russia is relatively transitory [Office of the U.N. 2002]. The decrease in the incidence of poverty in Russia in recent years was driven largely by economic growth [Ibid.]. In 2008, 13.1% of population was considered poor.

The sharp and deepening social and economic inequality between regions and settlements obviously creates incentives for internal migration, which becomes more closely correlated with the socio-economic development of a region (namely, with regional and settlement income and poverty level, labor market conditions, unemployment rate, costs of living, social situation, etc.)[7]. At the same time, experts have established a slowdown in migration and a reduction of population mobility between different parts of Russia. The reasons for this cutting-down include a lack of necessary information and enormous interregional inequalities, manifested in huge differences in housing prices and costs of living, which make moving very expensive and impossible for the poor. Being a by-product of regional inequalities, low interregional mobility itself is an obstacle for the further development of regional and local labor and housing markets. Finally, keeping or even intensifying this enormous inequality has negative outcomes for the future of the pension system.

2.1.2. Ukraine

Ukraine became an independent country on August 24, 1991, formally diverging from the common development with Russia that it had when both countries were part of the USSR. However, similar to Russia, Ukraine experienced a sharp economic decline at the end of ‘80s and the beginning of the ‘90s. Real GDP in 1998 was 59% less than in , the last year before the independence (see Table 4). The economic crisis was also accompanied by high inflation, which reached 10,256% a year in 1993, and was slowed to less than 20% only in 1996. Hyperinflation significantly decreased real incomes, destroyed the banking system and diminished private savings. People could not generate sufficient wage income, and time-reallocation options (either saving or borrowing) were not available. Inflation was taken under control at the end of 20th century, but remains at two-digit levels on average. However, economists agree that any significant increase in the amount of money transfers to the poorest parts of the population (through SSN) may trig-

sessment changed in 1992 and 2000, leading to the incomparability of official poverty rates.

[7] This paragraph is written based on the information from the following sources: IISP Social Atlas of Russian regions – http://atlas.socpol.ru/index.shtml and the article by N. Mkrtchan [2002] http://demoscope.ru/weekly/2002/079/tema01.php.

ger an increase in inflation to 1996 levels. The two-digit inflation resurfaced in 2004 (with an inflation rate of 12.3%), the first year in which there was a significant increase in social transfers to the population. This trend continued over the next three years, with inflation reaching 16.6% in 2007.

All of these factors contributed to a significant increase in the number of people living on low incomes and relying on the government to combat poverty. Official statistics indicate that during the Soviet period, poverty in Ukraine was only about 6%[8]. When the economic crisis occurred, poverty increased rapidly. First, the crisis sped up job destruction: by the end of 1998, 2.9 million people were unemployed (26% more than in 1997). Second, the crisis temporarily limited the job creation capacities of Ukrainian enterprises and forced them to rationalise the use of labour. As a result, by the end of 1999, the number of employed was reduced to 20 million people (a reduction of almost 13% compared to 1998). Although there was no regular assessment of poverty during the first five years of independence, a World Bank study in 1996 revealed that at the end of the 1992-1996 recession period, about 30% of the population lived below the national poverty level.[9]

2.2. Financial markets

Financial markets play a growing role in economic development all over the world. They are also employed in a growing number of areas, including pension systems. Although financial markets do not provide any direct solution to the financial problems of pension systems, they can contribute to bringing pension systems back to sustainability. They impose, almost by definition, that PV(B)=PV(C). The same can be achieved without financial markets but that is spread over countries to a much smaller extent.[10]

[8] Only about 6% of the population of Ukraine lived below the national poverty level of 75 rubles in 1980.

[9] There is an on-going debate about the adequacy and comparability of the national poverty levels across the time, however we present this measure because it seems more consistent with the pre-transition USSR measures then the World Bank indicators that were calculated for Ukraine only after the independence.

[10] Latvia, Poland, Sweden and to some extent in Italy are among European countries in which non-financial solutions have been implemented (together with the financial ones or not).

Financial markets, if employed within the pension system, can also contribute to additional economic goals (stronger growth) via a number of positive externalities they create (an increase in savings, financial market developments and public education). Using financial markets is a well known method of reforming pension systems. This method has advantages and disadvantages that are widely discussed in economic literature. Nevertheless, financial markets will most likely be used for pension reforms in both Russia and Ukraine. Therefore it is necessary to discuss issues related to financial markets but only to the extent that this discussion contributes to pension reforms and the impact that financial markets can have on labour markets and restructuring in both countries analyzed.

2.2.1. Russia

Russia is a country with emerging financial markets characterized by high and growing profitability but also by high volatility and riskiness. As financial markets were closed for foreign financial organization, many small domestic financial institutions were founded. Even by January 1, 2007, there were 1,345 commercial banks, 918 insurance companies, and 289 private pension funds in Russia.

Private pension funds are non-profit organizations founded exclusively for the purposes of pension savings. They can be either voluntary or mandatory, as they have been in Russia since 2004. Most voluntary pension accounts are opened by employers in favor of their employees; individual pension savings are still uncommon. Private pension funds remain small players on financial markets. By January 1, 2007 their reserves reached 1.5% of Russia's GDP; the number of participants comprised 9.3% of the total employed population, while the number of private pension recipients formed only 2.3% of all pensioners in Russia (Table 6).

The two years before the crisis of 2008 were very successful in terms of the development of financial markets in the country. 2006 became the year in which the banking sector developed most rapidly in the last 8 years. Bank assets have increased by more than 32% in real terms, and capital has increased by 23.7%. As a result, by the end of the year, bank assets reached 53% of GDP and capital reached 5% of the GDP of 2006 [DC 2007]. The stock market has also developed very rapidly and by the end of 2006 its capitalization reached more than 25 trillion rubles (about 94% of GDP) [DC 2007]. All indices demonstrated significant growth: in 2006 the RTS (Russian Trading System) index increased by 71% (83% in 2005), RTS-2 index– by 42% (69% in 2005), MMVB (Moscow Interbank Currency Exchange – MICEX) index – by 92% (63% in 2005) [DC 2007]. Stocks of oil- and gas-companies, power industry companies, banks and communication companies were in the greatest demand.

On the contrary, the volumes of debt markets are rather limited. Even in the highly successful year of 2006, when the currency market was liberalized, the capacity of federal, municipal and corporate debt reached 2 trillion rubles (near 7.5% of GDP) [DC 2007]. But the general trend until the ongoing crisis was a decline in the volumes of public debt markets (from almost 20% of GDP in 1997-1998 to less than 4% in 2006) because of the constant surplus of the federal budget.

Mandatory pension savings can be invested in a very limited number of securities and it is prohibited to invest them abroad. Moreover, most pension reform participants have chosen the most conservative strategy of investing their money – through a public managing company, which was allowed to invest in deposits and state securities only until 2009. As a result, pension funds are placing increasing pressure on the domestic debt market.

This problem cannot be solved immediately because sociological surveys demonstrate the population's substantial distrust of the idea of pension savings. Focus-groups on pension reform conducted in 2006 show a remaining negative effect of the failed voucher privatization[11] and the collapse of financial pyramids in the first half of the 1990s, which led to a lack of trust towards either state or business and reduced trust in financial institutions and long-term savings. Besides, pension reform is not popularised, and there is no information campaign to overcome this distrust at present. Furthermore, due to the high volatility of the securities market, private managing companies sometimes show worse results compared to the state managing company – Vnesheconombank.

2.2.2. Ukraine

Similar to Russia, commercial banking forms the largest part of the financial sector in the country, while other financial institutions play a small role in the sector [GOLODNIUK 2005]. In 2005, insurance companies constituted only about 7% of the financial market, and credit unions were about 0.3% [Golodniuk 2006]. The assets of investment companies in Ukraine were only about 0.25% of GDP in 2005 (including pension funds). At the beginning of 2006, 58 non-government pension funds were registered in Ukraine[12] [MLSP, PFU 2005]. These funds worked with about 88 thousand clients, and their total assets were about 42 mln. UAH (less than 0.01% of GDP in 2005). Over 70% of the pension fund's assets

[11] Many investment companies that dealt with vouchers have either disappeared or gone bankrupt.

[12] 44 of these funds are open funds, 9 are corporate, and 5 are professional (union) funds.

were invested in bank deposits, and only about 17% invested into the stocks and bonds of Ukrainian enterprises (Table 7).

In recent years, the financial market in Ukraine has been growing rapidly. From 2000 to 2005, the growth rate reached 500% [Golodniuk 2006]. However, the growth and effectiveness of pension funds in Ukraine are limited by the development of the stock market. According to the estimates of the State Committee for Stocks and the Stock Exchange, only 4% of stock trade was conducted at the official exchanges in 2004, and the rest was conducted outside the market. By the end of 2005, the Ukrainian stock market consisted of eight stock exchanges and two trade systems. The largest entity was the First Stock Trade System (PFTS), which conducted over 84% of all trades on the market. The stock market in Ukraine continued growing, reaching a capitalization about $77 bln. in the middle of 2007. The number of stock exchanges increased to a dozen, but the market operations centralized further, with about 95% of operations executed at PFTS (see Zelenyuk 2007). However, market capitalization remains low, reaching only $1,650 per capita. The stock market is also suffering from low liquidity and plays a marginal role in the trade of stocks and the determination of the real stock price. Most of the stock and enterprise property rights transfer transactions remain outside the stock market and at prices that do not necessarily reflect the stock price at the stock exchanges.

Experts suggest that there are three major factors preventing the development of a stronger stock market. The first is property rights protection, especially protection of the rights of minority owners. Similar to most CIS countries, capital market legislation in Ukraine was developed with the help of international advisors, primarily from the USA. Although de-jure legal protection of shareholders in the country is close to US standards, de-facto the minority shareholders are almost unprotected [Golodniuk 2005]. As a result, there are significant risks in owning less than a blocking share of an enterprise, which reduces interest in the trade of small shares of enterprises. The second factor is the lack development of market infrastructure and the existence of a number of small exchanges and a depositary. The third factor is the too slow improvement in market regulations, especially the increased coordination between the two existing regulators on the market.

Underdeveloped domestic capital markets are one of the reasons that Ukrainian enterprises borrow outside the country. While State Foreign Debt decreased almost 50% during the period of 2003-2007 (from about 21.6% of GDP to 10.7% of GDP) (see NBU 2007), the gross foreign debt of the country increased from 47% of GDP to 59% of GPD over the same period. According to analysts and government officials, the primary reason for an increase in the foreign debt of Ukraine is the attraction of foreign lending by enterprises to finance investment projects and imports.

For a long time, one of the largest segments of financial markets in Ukraine was government debt. A large consolidated budget deficit at the beginning of the transition forced the government to borrow significant amounts of money, with public debt reaching over 30% of GDP in 2000. Since during that period borrowing large amounts of money on external markets was impossible, most of these amounts were borrowed on internal markets using short-term government obligations. However, when the economy of Ukraine and the government managed to control the budget deficit, the public debt was significantly decreased. It went down from 31% of GDP in 2002 to 23% of GDP in 2004. Large proceedings from privatization and re-privatization, including the Kryvorigstal re-privatization, allowed for a further reduction of the debt to 16% in 2005. In addition, favorable credit ratings allowed the government to restructure the debt and replace short-term internal obligations with longer-term external borrowings. The trend of reducing the public debt continued in 2006. However, increased social spending in 2006-2007, and the expected further increase in budget expenditures in 2008, led to expectations of an increase in the budget deficit in the following years. This increased deficit would lead to a new public debt increase, and, possibly, to a new wave of government debt papers on internal financial markets. Despite the government's intentions to decrease external state debt, in nominal figures the debt increased from 8.5 to 10 bln USD during the period of 2003-2007. At the same time, State Foreign Debt significantly decreased as a percent of GDP due to the significant rate of GDP growth and the weakening of the dollar.

Insufficient development of the financial markets in Ukraine became an obstacle to the introduction of the second and the third tier of the pension system. A potential solution would have been to use the investment instruments that are available on financial markets abroad. However, the current law does not allow investing pension funds abroad.

2.3. Demographic issues

2.3.1. Russia

Until the end of 1980s, Russia experienced positive population growth. But from 1989 to 2002, the population decreased from 147 mln people to 145.2 mln, despite the net-immigration observed in the 1990s. In 2009, there were 141.9 mln people in Russia. There are two reasons for this trend – extremely low life expectancy and a low fertility rate.

It does not look like the situation will reverse in the future. Even according to the very optimistic average scenario of the official population forecast that assumes both fertility and life expectancy will grow at a steady rate for the entire projected period,[13] the Russian population will decrease by 139 mln people by 2031.

Low and decreasing longevity remains the most significant feature of the demographic development of Russia during the last 40 years (Table 9). The situation has slightly changed since 2005 with life expectancy at birth for both sexes increasing from 65.27 in 2004 to 67.88 in 2008. In 2008, life expectancy at birth was 61.83 years for men and 74.16 years for women, which is still much less than in other European countries. As projected by the statistical office, it could reach 68.1 years for men and 78.2 years for women at birth by 2030 [Rosstat 2009][14].

The extremely low and declining level of male life expectancy is mainly caused by the premature deaths of Russian middle-aged men [Shkolnikov et al, 1998]. In 2005, men surviving until the age of 60 could expect to live on average 13.2 years more, and women 19 years more. Early mortality, much higher for the male population, influences the gender structure of people of pension ages. There are more women of retirement age than men: there were only 28% of males among all people of retirement age in 2006. These negative life expectancy trends constitute a barrier to raising pension ages, at least for men. First, it is difficult for politicians to explain the necessity of such increases at a time when male life expectancy at birth almost equals the official pension age. Secondly, low life expectancy correlates with poor health and disability and therefore pension age increases could lead to the expansion of the number of disabled people.

Fertility rates influence both the number and age structure of population. Russia experienced a dramatic decrease in fertility rates in the beginning of 1930s [Vishnevsky, 2006]. Since the mid-1960s until the end of the 1980s, the total fertility rate was around 2 children per woman, but from 1993 until 2006, the total fertility rate did not exceeded 1.3. It increased to 1.4 and 1.5 in 2007 and 2008, respectively, in response to the new pronatalist family policy measures introduced in 2007. According to the official forecast, it will increase in the future but it will be difficult to reach 1980 levels.

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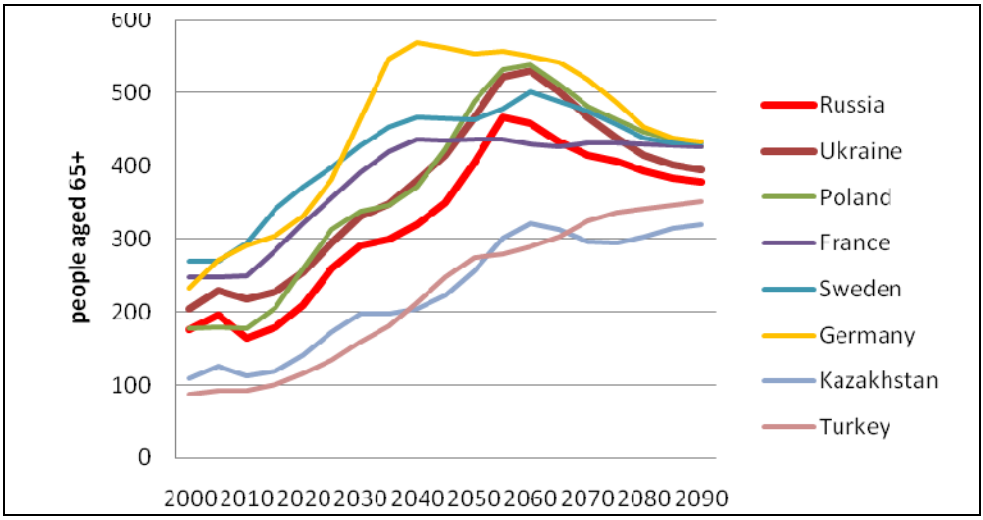
[13] In 2008 in Russia TFR reached the unprecedented level of 1.494 but the average scenario of the official population projection assumes that TFR will be 1.530 in 2009 and 1.704 in 2030. Life expectancy in 2008 was 67.88 for both sexes, and is assumed to be 68.00 in 2009 and 73.3 in 2030.

[14] The recently adopted Program of Long-Term Demographic Development (2008) sets life expectancy at birth of 75 years old for both men and women by 2025, used by Rosstat in its high ("optimistic") scenario of the forecast, but from the current perspective it does not seem realistic.

In the first half of the decade of the 2000s, Russia enjoyed a period of 'demographic dividends' due to the relatively small cohorts of elderly people born in the 1940s and earlier, and the large cohorts born in the 1980s, an echo of the baby-boom caused by the generous Soviet family policies at that time [UNDP, 2009] (Table 10). But long-term demographic forecasts show that Russia will face a rapid ageing in the future (Figure 2). The share of seniors (people who have reached the official pension age), will increase from 346 elderly people per 1000 active people in 2000 up to 623 or 747 per 1000 in 2050 according to different probability forecasting scenarios [Vishnevskiy et al., 2004][15]. Unlike the situation in many other countries, the population of Russia is ageing now exclusively due to declining fertility rates. Population projections show that the speed of ageing in Russia will depend on its success in increasing fertility and longevity. From the ageing perspective, the "best" case scenario includes increasing fertility rates and a stable high and early mortality, while the "worst" case scenario is consistently low fertility rates but improved longevity (Table 11). These demographic trends have put major pressure on the financial viability of the Russian pension system.

Figure 2. Dynamics of demographic old-age dependency ratio (people aged 65 years and more per 1000 people of 15-64 years old) in Russia, Ukraine and some other countries, by mid of the year, 2000-2090



Source: World Bank, Health, Nutrition and Population Summary Profile, Demographic Projections http://devdata.worldbank.org/hnpstats/dp1.asp.

[15] Recent official population studies give high (optimistic), average and low scenario projections. Respectively, they predict that by 2031, per 1000 people who are of active ages (16 – 59 for men and 16 – 54 for women), there will be 527 (high), 520 (average) or 498 (low) people of pension age (60+ for men and 55+ for women) [Rosstat 2009].

2.3.2. Ukraine

Ukraine has experienced massive population decline since independence. Due to an increased death rate, decreased birth rate, and large emigration, the population decreased from 52 million in 1991 to 46.0 million in 2009 (see Table 5).

The downward population dynamics in Ukraine are a result of a twofold problem: falling birth rates and increasing death rates. Both indicators started worsening in the late 1980s, partially due to the deterioration of the quality of health care, and partially due to the aftermath of the Chernobyl disaster. In the 1990s, the number of births decreased substantially: the TFR fell from 1.92 in 1989 to 1.09 in 2001. In the first decade of the 2000s, the situation slightly improved (TFR was 1.21 in 2005 and 1.32 in 2006-2007), but fertility remained far below the level of simple reproduction and even lower than in Russia. During this period, the number of deaths increased by one fifth (758.1 thousand people in 2000 versus 629.6 thousand people in 1990). At the same time, the death rates are more than twice as high as the birth rates in Ukraine. This fact is often partially attributed to the deterioration of the healthcare system in the country which occurred during the economic crisis period at the end of the 20th century.

Similarly to Russia, life expectancy in Ukraine was falling over the same period (Table 9). During 1990-2000, life expectancy at birth decreased from 70.7 years to 67.9 years (by 2.8 years). The decrease in life expectancy was especially significant for the male population. During the 1990s, the expected duration of life diminished by 3.5 years for men, while female life expectancy decreased only by 0.9 years.

According to the data of the All-Ukrainian Population Census in 2001, women constituted 53.7% of the total population. In 2001, there were 1159 women per 1000 men in Ukraine compared to 1163 women per 1000 men in 1989, when the previous census was conducted. The ratio of females to males of reproductive age is improving as well. In 2001 there were 1031 females per 1000 males aged between 20-49 years old. Nevertheless, the shortened life expectancy of men significantly impacted the gender structure of the pension-age population. The majority of the population over 70 years old consists of females.

The population structure by age has also changed. Although the proportion of people of working age (considered to be from 15 to 70 years old) did not change, the proportion of younger people decreased, while the share of elderly people (60+) increased slightly. At the same time, the system support ratio (the ratio of workers to pensioners) has changed more substantially than the demographic support ratio because of two reasons. First, although most pensioners that were able to work had to look for a job to supplement their pension income, the general em-

ployment ratio decreased during the period of transition. At the same time, the proportion of pensioners in the total population grew from 25% in 1991 to 30% of the total population in 2005 not only because of demographic trends but also due to the diminishing actual pension age. As the result, the system support ratio significantly decreased, reaching a record low of 1.38 workers per pensioner in 1999-2000 (Table 5).

A significant contributor to the decrease in the population of Ukraine is migration. According to official data, during 1994-2001, migration[16] led to a 18.6% reduction of the population of Ukraine. Ukrainians used to leave their homeland primarily for CIS countries (mostly Russia), and some other foreign countries (USA, Canada, Israel, etc). Permanent migration is supplemented by temporary labour migration, which significantly contributes to the decreasing support ratio. According to the estimates of the State Migrations' Committee of Ukraine, at least 5 million people (one fifth of the working-age population of Ukraine) are working abroad.[17] Due to the unregulated nature of these migrant workers, they did not provide any contributions to the pension system in Ukraine or other countries, which increases problems in funding the current pension system and raises concerns for the pensions of these people in the future.

The negative trends of population decline and aging are expected to continue into the future. According to the demographic forecasts constructed by the institutes of the National Academy of Science of Ukraine, the population of Ukraine can reach as low as 24 mln people by the year 2050, although the most realistic estimates suggest that this number will be over 30 mln (see Table 12). The primary reason for the continuation of the decrease of the Ukrainian population is the current significant gap between birth and death rates, the decreasing number of people of child-bearing age during the last 10 years and worsening fertility rates. Consequently, the share of the working-age population will decline, and the proportion of people over 65 years old to the working-age (15-64 y.o.) population will increase by about 60% compared to the same ratio in 2005 (Table 12, see also Figure 2).

Provided the inevitability of the depopulation in Ukraine, some experts propose that the Government of Ukraine liberalise its migration policy with respect to the countries of the Asia and Africa regions. More liberal migration policies could help in reviving the upward birth dynamics, fighting the problem of both population ageing and the falling dependency ratio in Ukraine. According to estimates, in this case the total population will stop falling in 2025 after having reached about

[16] Here the cumulative volume of net migrations was compared to the corresponding reduction of population in Ukraine over 1994-2001.
[17] Press release of State Migrations' Committee of Ukraine dated of April 2, 2003.

43 million people. Only within the next 50 years would it be possible to stimulate a considerable inflow of migrants to Ukraine, thanks to which the number of Ukrainians could reach 51.5 million people by 2075.

To sum up, the economic crisis of the 1990s was more profound in Ukraine than in Russia. Economic recovery in the beginning of the 2000s was also more evident in Russia: in 2005 in Russia, the GDP reached 90.6% of pre-reform levels (1990), while in Ukraine it only reached 62.6%. But the nature of this growth was more risky in Russia than in Ukraine. In the former, economic growth was mostly a result of extremely high and growing energy prices, the major source of Russian export. Although Ukraine was also significantly dependant on the large demand for steel, its economic recovery was more diversified and based on production growth.

At the same time, even now, fiscal policy remains better in Russia than in Ukraine. The latter has a larger budget deficit and a more substantial deficit in the pension system, while the former had seven years of budget surplus and rather stable pension expenditures. A dangerous sign is that the difference between the two countries has been vanishing over the last two years when Russia increased its pension expenditures disproportionally to pension incomes in the period of federal budget deficit provoked by the ongoing crisis. But still Russia has lower budget expenditures than Ukraine in relation to GDP.

Financial markets are more developed in Russia than in Ukraine but in both countries they remain risky and volatile and highly dependant on the international market situation. The capacities of the internal securities markets are limited.

The permanent external factor influencing the pension system is population ageing; it does not seem serious today, but will soon begin to accelerate rapidly. Both countries have a very similar population structure and suffer from the same demographic problems of low fertility and early and high mortality. But given that Ukraine has slightly better rates of life expectancy than Russia, it has a greater number of elderly people.

3. Pension System and Reforms in Russia and Ukraine

The previous chapter demonstrated that over the last twenty years, the demographic situation continued to worsen in Russia and Ukraine while economic conditions changed significantly. These changes put constraints on the sustainability and development of pension systems. The Soviet-type pension system and level of pension benefits were unsustainable and both countries implemented significant pension reforms at the beginning of the 21st century. This chapter describes the changes in pension systems and lessons learned during the reform process.

3.1. The common past

Both countries were developed as republics of the USSR and had many things in common, including their social insurance system. Social insurance (pensions, sick leaves, disability insurance) covered only people employed in state firms and organizations or collective farms. The primary goal of the system was to maintain a certain level of family per-capita income by supplementing wages. Due to the uniformity of income, almost the entire working population was eligible for services provided by the system. However, people who where un-employed, self-employed or working at private firms (which became possible in 1987) were excluded from both public social insurance and social assistance. Besides, people working at different state firms received unequal packages of social services. And even at the same organization, those with greater seniority had better access to better quality services.

The pension provision established by 1956 and 1965 laws[18], also covered only people employed at public enterprises or collective farms. The system was characterized by strong paternalism, low costs for employers (4-12% of payroll depending on the sector), a low retirement age (60 years for men and 55 years for

[18] 1956 Law on state pensions for wage- and salary-earners; 1965 Law on state pensions for collective farmers.

women[19]) and special preferences for certain groups of people not directly related to their employment records (seniority and wage).

The public pension system was based on pay-as-you-go (PAYG) and defined-benefit (DB) principles. Females with at least 20 years of seniority and males with at least 25 years of seniority could enter retirement with full old-age benefits once they reached the normal retirement age. These conditions had to provide an old age replacement rate of 55% of the average individual salary for the last one or any best five years of service. Each additional year of work increased the pension by 1% up to 75% of the salary. However, maximum benefit could not be higher than 2.5 minimum pension benefits. Certain groups of employees working in so called "hazardous conditions" could retire 5 to 10 years earlier. There were no additional contributions for these types of pensions, and the government used early retirement options as an instrument of its employment policy aimed at attracting people to certain jobs.

Pensions were administered by social security offices. There were no additional private or occupational pensions. Public pension benefits were low and weakly correlated to previous employment history. The pension benefits of collective farmers were always lower than the pension benefits of workers. Benefits were not indexed at all which caused inequality between "new" and "old" pensioners and high poverty risks among the elderly in the USSR [Baskakov & Baskakova 1998].

Overall, the pension system had a lack of transparency and was not effective; more than half of the pension expenditures were covered by budget revenues. Attempts to reform the system, aimed at strengthening the link between employment records and pension benefits as well as at the elimination of inequalities between "old" and "new", urban and rural pensioners, were made since the early 1980s but were unsuccessful. Finally, in the beginning of 1990s, each of the Soviet republics, including Russia and Ukraine, adopted their own pension legislation.

3.2. Deterioration of post-Soviet arrangements in the 1990s

3.2.1. Russia

In 1991, Russia introduced its own mandatory public pension system, which preserved most of the features of its Soviet predecessor.[20] The new pension system

[19] The pension age was established in the beginning of 1930s for industrial workers and was not changed from that time.

covered the whole population regardless of employment experience and type of employment. It removed discrimination against people employed at private firms and own-account workers, eliminated differences in pension provision for urban and rural workers and supplied social pensions for those who never worked. The system protected against a wide range of risks and offered the following types of labor pensions related to certain employment records and reasons of retirement: old-age pensions, pensions for long seniority (granted for certain groups of workers at lower retirement ages), disability pensions, and survival pensions.

The pension formula did not change significantly except in the extended definition of seniority covering not only periods of paid employment or individual entrepreneurship but also periods of unemployment, vocational education, military service, paid maternity leave, etc. The difference between minimum and maximum benefits was increased up to 3 times. Besides, mechanisms of the pension benefits indexation according to the inflation were introduced.

Employees and employers were obliged to pay contributions into the off-budget Pension Fund of the Russian Federation founded in 1990, from which the pensions were drawn. The enlarged coverage of the pension system together with a federal budget deficit required an increase in contributions. Throughout the 1990s, the contribution rate to the pension system was 29%, including 28% paid by the employer[21] in favor of the employee and 1% paid by the employee him or herself.

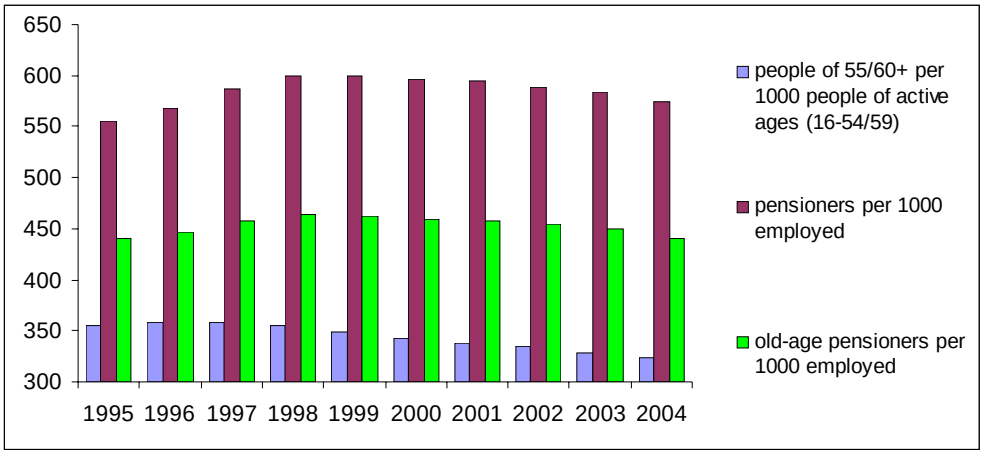
Although a general framework of the pension system remained unchanged until 2002, many regulations became inadequate a year after its adoption when price liberalization and major economic reforms started. The pension system was not flexible enough to respond to new economic challenges and fell into a long period of financial instability. It is important to underline, that contrary to Ukraine, for the whole period of transition until 2009, the Russian government obviously tried to keep pension expenditures at nearly the same and rather low levels – between 5 to 6% of GDP, regardless of the economic situation (Table 1). Nevertheless, even this very inexpensive system was unsustainable during almost the whole period of economic transformation. The Pension Fund was in deficit from 1995 until 1999.

This was caused, on the one hand, by a fall in formal employment and widespread wage, tax and pension contribution arrears resulting in a decline in incomes in the Pension Fund of the Russian Federation (PFR). Contribution and tax compliance were at very low levels: the effective contribution rate was only 18% in the mid-90s [Yaremenko 1998]. On the other hand, the state relaxed the eligibility criteria for early retirement, old-age pensions, and disability even more in order to

[20] Law on "state pensions in the Russian Federation" (Nov.-20, 1990) [further in the text – Law of 1990].
[21] Special professional groups as farmers or self-employed people paid less.

compensate for the negative effects of unemployment[22] and the sharp drop in real wages [Sinyavskaya 2001; for disability see Maleva et al, 1999]. Thus, a system support ratio, reflected in the number of pensioners per one employed person, is much worse compared to the demographic support ratio (Figure 3).

Figure 3. Demographic and system support ratios in Russia



The indexations of pension benefits was irregular and to a lesser degree than inflation. In 1993 in order to reduce poverty among pensioners, compensation benefits were introduced in addition to irregular indexation. The higher the pension benefit, the less compensation was received on this pension. This measure reduced the differentiation of benefits and weakened the links between pensions and wages but required less money than indexation. The replacement ratio[23] was supported at very low levels compared to other countries (Table 13). This indicator grew moderately only in the mid-1990s when pension benefits increased faster than wages. However, from 2003 onwards, it was below 30%.

The expansion of pension arrears was another consequence of the insustainability of the pension system. Since its evolution in 1995, pension arrears achieved 12% of PFR incomes by 1997, sharply increased again after the 1998 crisis, and completely paid up only in 2000. Therefore, in the second half of the 1990s, pen-

[22] In the beginning of 1990s, there was a strong fear of mass unemployment expressed by politicians, experts, and society; to mitigate its anticipated negative consequences several new grounds for early retirement for work in hazardous conditions and pensions for unemployed people of pre-retirement ages were introduced in 1991-1992.

[23] Replacement rate here indicates the ratio of the average pension to the average wage in the economy.

sioners received even less from the PFR than is shown in official statistics of pension benefits and sometimes they received nothing.

In the second half of the 1990s, the government reacted to the evident crisis in the pension system with a rationalization of pension regulation:

- In 1998, a new benefit formula24 was introduced as an attempt to establish closer links between wage, seniority and benefits. According to the new rules, there were no direct limits on benefit size but only insurance periods of the whole length of service were taken into account. The size of benefits was regulated indirectly via limits on the ratio of the individual wage/salary taken into account in the benefit formula. This ratio was equal to 80% of the average-economy wage in 1998 and 120% in 2001. There was no higher form of compensation.
- From 1998 to 2001, an attempt to limit the employment of pensioners was made. Pensioners getting benefits calculated on the new rules were not permitted to work. Thus, the choice was either to receive a smaller amount of pension benefit and continue working or to get a higher amount of pension benefit and leave the formal labor market. The analysis shows that many pensioners preferred to leave formal employment [Sinyavskaya 2006].

As a result, contrary to other post-socialist economies, Russian pensioners suffered more from the reforms. Real pension remained below its pre-reform levels (slightly more than 80% of the level of 1990 in 2008). The average pension was a little higher than a pensioner's subsistence minimum in 1992-8, dropped far below this level in 1999 and was restored again to a subsistence minimum in 2002. However there were pensioners receiving pensions which were below the official subsistence minimum (Table 13). Nevertheless, pensioners have lower risks of being in poverty compared to families with children. According to the official statistics, in 2004 there were only 12.4% of pensioners with incomes below subsistence minimum, while for the whole population, the poverty level was 17.6% [Rosstat 2006] (see also Table 14 for poverty levels of households with or without pensioners based on the NOBUS survey).

The real poverty of pensioners may be higher than official figures for two reasons. First, the official poverty level is based on the subsistence minimum, which is lower for people of pension age (55 for women and 60 for men) because it is assumed that consumption decreases when people reach pension age, when in fact, it happens at least five or more years later. When calculated by the adult subsis-

[24] From 1998 to 2001, two benefit formulas, the old one introduced in 1990, and a new one, introduced in 1998, existed simultaneously.

tence minimum, the poverty level of pensioners could be higher. Second, in order to prevent poverty among pensioners, the latter were allowed to work while receiving pensions. In the 1990s, about 20-30% of pensioners had jobs. Assessments of the poverty of pensioners based on 2003 data demonstrate that if the pensioners' employment was restricted, the poverty level measured by money income would be 18% higher and the poverty level measured by disposable resources would be 7% higher (Table 14).

3.3. Empirical section related to the past/present situation

3.3.1. Factors influencing the probability to work on pension in Russia

Data and Methods

To assess the correlations between pension system and labour supply we addressed the issue of the determinants of pensioners' employment in Russia. The data used come from Wave 1 of the Gender and Generation Survey (GGS) carried out in Russia in 2004 (RusGGS)[25]. The survey, coordinated by the Population Activity Unit of the United Nations Economic Commission for Europe, examines determining factors for individual demographic behaviour with a focus on intergenerational and gender relations. It is a multidisciplinary survey, covering economic, sociological and psychological factors [Vikat *et al.*, 2007]. In addition to its retrospective view of behaviour, the survey includes a prospective approach and for that reason it will comprise three waves.

The questionnaire was designed by an international group of researchers, and each country was supposed to use the standard questionnaire[26]. The GGS questionnaire contains the information about the employment of the respondent and

[25] The Russian GGS was conducted by the Independent Institute of Social Policy (Moscow) with the financial support of the Pension Fund of the Russian Federation and the Max-Planck-Gesellschaft, Germany. The design and standard survey instruments of the GGS were adjusted to the Russian context by the Independent Institute of Social Policy (Moscow) and the Demoscope Independent Research Center (Moscow) in collaboration with the Max Planck Institute for Demographic Research (Rostock, Germany).

[26] The first stage of the Program is national survey based on standard questionnaire, which is unified for all countries and developed by GGS Consortium's working group. Questionnaire text and interviewer's instructions are available on the web site of UNECE: http://www.unece.org/ead/pau/ggp/ggs_quest.htm.

his/her partner, and collects information about the social and economic features of the respondent and his/her partner and household members.

The Russian survey is based on the *multi-stage probability selection of dwelling-units* from which a relevant household was chosen, and finally a respondent was randomly selected from the household. The sampling size was 11,261 respondents aged from 18 to 79 years.

For the purpose of the current research, we selected pensioners for old-age and for long service (like coalminers, teachers, etc.) of 45+ years old. Those who have disability and receive old-age pension are also in the sample. We excluded people employed in the army and police. Models were developed only for pensioners who had a job at the time of applying for pension.

If a person left his or her job after becoming a pensioner at least once, s/he was defined as retired. If someone was retired, his/her job characteristics were the characteristics of the last job held. If someone was not retired at the time of the interview (censored data), then his/her job characteristics were those of the current job.

The descriptive statistics are in Table 16.

We used two types of models. In the first stage we estimated the probability of staying employed by all pensioners who had work at the time of applying for a pension using a probit-model. The dependent variable was the pensioner's employment measured as whether or not the person worked at least one month after becoming a pensioner. Two specifications tested the effect of the early retirement rights on this decision. In the first specification, we only checked the influence of having the right to early retirement on the probability of employment. In the second specification we tested the effects of different early retirement programs.

Those who had left their jobs during the first month of being pensioners were defined as not employed. The event was equal to 1 if a pensioner was employed at least 1 month. Next, we used survival models estimating the duration of employment of pensioners in months. Given that we had no a priori assumptions about the parametric form of the function describing the exit from the labour market, we applied the exponential AFT model. We did the analysis for both sexes and for men and women separately[27].

Results

The results are presented in Table 17 and 19. With regard to demographic variables (sex and age), we observed no significant effect of them on the probability to

[27] We do not provide technical details of the models in the paper. Those who are interested can contact the authors.

work at least one month after becoming a pensioner. But both are significant to the duration of employment. Female pensioners tended to leave the labor market more quickly than males. The older the pensioner, the fewer months he/she worked and this effect was especially large for men. As expected, we observed significant effects of higher levels of education on the probability of having a job after becoming a pensioner, especially for people with a higher education. The strong positive effect of having a higher education was the greatest for women. We also confirmed the negative effect of poor health on a pensioner's employment. As the results for the other control variables (household structure, settlement and regional characteristics) were very standard, they are not discussed here.

The models show that the characteristics of the job where a person worked before s/he became a pensioner were significant predictors of her/his further employment (while on pension). The most important was found to be the sector. Employment in education, health care, science and culture had the most significant positive effect on both the probability to keep a job while on pension and the duration of employment while being a pensioner. On the contrary, those employed in agriculture, compared to health care, education, etc., were the least likely to work while on pension and had the shortest period of employment. This confirms previous evidence suggesting that people in rural areas often retire so that they can work informally on their subsistence plots. People also tend to retire quickly from construction and transport which may reflect the rather difficult working conditions in these sectors.

The effect of a person's occupation was less clear. It was significant when taken alone but when we controlled for the sector, the difference between occupations diminished. Compared to machine operators, those employed as unskilled labour or specialists had a significantly higher probability of keeping their jobs. Men were also more likely keep their jobs if they were professionals. But for women, when controlling for the sector, this was not true. For them, the sector is more important: if a woman was a health care or education professional, she was likely to keep her job, but if she was in the same occupational group in industry then she was less likely to keep her job.

Another important factor that adds to our understanding of the employment of pensioners is their right to early retirement according to the legislation. The effect of this variable confirms our previous suggestion that those who retire earlier do not lose their ability to work and this policy option serves for other goals. Entitlement to early retirement schemes increases both the probability of employment and the period of employment of pensioners. This positive effect is especially important and large for employment in the Far North regions where workers have the right to retire earlier regardless of their real job conditions. The right to retire earlier for teachers and rural health care workers does not affect the probability of

employment but increases the period of employment. To the contrary, people who retired earlier because their previous employment was in difficult conditions (so called list number 2 according to the legislation) are more likely to keep working compared to those who retired in line with the general rules but leave their jobs quicker.

3.3.2. Ukraine

Similar to other FSU countries, the pension program is the largest social security program in Ukraine. It was the most severely hit by the decreasing tax base. Prior to the reform in 2003, the pension system of Ukraine was a "pay-as-you-go" (PAYG) system that provided pensions to retirees from the money collected from current workers. The pension program provided old-age pensions (about 80% of expenditures), disability pensions, survival, social, and service pensions. The general old-age pensions were provided to women over 55 and men over 60, and special pensions were provided to workers of certain professions (miners, for example) at an earlier age depending on the number of years they had worked. The standard replacement rate (the pension as a percentage of wage) guaranteed by the system was 55% of the average wage before retirement, within the minimum and maximum limits.

The social welfare system in Ukraine is suffering from similar problems that other transition countries in the region are facing. The social programs are poorly targeted, and provide large amounts of benefits to people who could stay out of poverty without benefits. Because of the large number of recipients and the limited economic resources, the programs (especially during the years of economic crises) were unable to provide adequate coverage, and the amount of social payments received by each participant was relatively small.

The pension system accumulates and spends 7-14% of GDP in Ukraine. Despite being the largest expenditure item, due to the lack of funding during the crisis period, pensions became only a valuable co-payment for working pensioners, and did not provide sufficient income on their own for people to stay out of poverty [World Bank 2000]. In Ukraine the average pension was only 36% of the living wage in 2003, and this ration steadily increased to almost 47% in 2006. Surprisingly, the elderly population constitutes only 11% of all the poor in the country [World Bank 2000]. One of the reasons for this is that pensioners that are able to work supplement their pension income with part-time jobs, and the pensions and subsidies received by pensioners are sufficient to keep most families with elderly members out of poverty.

Given macroeconomic and population trends, such a generous (in terms of the replacement ratio and amount of various in-kind benefits), the pension program inherited by Ukraine from USSR could not be sustainable in the long run. In 1993 the pension fund ran a deficit of 1% of GDP or about 10% of the pension fund expenditures, and had to be taken under the supervision of the Ministry of Finance that financed the deficit out of the state budget. The previously discussed tendencies of the aging population of Ukraine created additional concerns about the long-term financial sustainability of the solidarity pension system in Ukraine.

Researchers expressed concerns especially because the system dependence ratio (the ratio of beneficiaries to contributors) was gradually increasing. We can see that while there were approximately 2 workers per every pensioner in 1991, there were only 1.6 workers per pensioner in 1996, and the ratio was declining. In fact, researchers showed that the ratio of contributors to beneficiaries dropped further, reaching 1.15 contributors per pensioner [Riboud, Chu 1997]. C. Kane of the World Bank in his research in 1995 [Kane 1996] showed that if the current pension system was not reformed, the constant annual deficit of the system would rise to 3% of GDP (or 30% of expenditures). The researcher recommended that the pension age be increased to 65 for both males and females, and that the replacement ratio should decrease.

Another World Bank study by M. Riboud and H. Chu [1997] revealed that the concerns were correct. The pension system dependence ratio increased, and in order to maintain some balance in the pension fund, the replacement rate was decreased to about 1/3 of the average wage over the years since independence. This was achieved by indexations that lagged behind the inflation rate (decreasing real pensions) and by narrowing the gap between the minimum and maximum old-age pension. The authors showed that the pension system in these conditions could be sustainable only if moderate growth was achieved for the next decade. Any attempt to increase the replacement ratio (increase pensions) would result in the pension fund deficit going from 3% of GDP in 2000 to 7% of GDP in 2010. They also said that pension reform relying on an increase in pension age to 65 years and a reduction of payroll taxes to 23% might create a pension system that would be sustainable in the long run. Finally, the researchers suggested that the introduction of a fully-funded multi-tier (mandatory and voluntary) pension system could reduce the economic cost of the pension system in the long-run.

Thus, factors associated with the former Soviet pension system, ageing, and economic transition (e.g., sharp drop in real incomes due to inflation, increase in poverty rates) are the same for both Russia and Ukraine. The shortcomings of the pension system have almost remained the same since Soviet times until now. They include:

- High rate of budget financing;
- Paternalism; exclusion of employees from directly contributing to their future pensions;
- Weak link between benefits and former employment records (seniority, wage, contributions);
- Inequality between different groups of pensioners not related to their contributions to the pension system;
- Low levels of pension benefits which force an increase in the incomes of the poorest and lead to low benefit differentiation;
- Effective pension age is even lower than the official one, which is still 55 for women and 60 for men.

The difference between Russia and Ukraine is that until the current financial crisis Russian government was able to keep pension expenditures at nearly the same rather low levels – between 5 and 6% of GDP. Russia has never experienced such a dramatic increase in pension benefits as that which occurred in Ukraine in 2005.

3.4. Current situation: Attempts to create a new reality

3.4.1. Russia

Proposals of the reform

Attempts to create a new pension system started in the early 1990s, when the pension system started deteriorating under the new economic conditions. There are two major groups in the debates on the future of the pension system. The first group includes those who suppose that the instability in the pension sphere is no more than a result of economic volatility and the main efforts should be devoted to increasing the benefits of current pensioners. The second group includes supporters of radical changes in pension regulation who believe that the pension system of the 1990s was inadequate to both a market economy and future demographic trends and that the pension reform should be addressed mostly to future generations of pensioners. By 1995, almost all agreed that the present pension system had at least to be rationalized.

The following pension reform proposals reflect the positions of each of the two sides depending on the predominance of its supporters in different periods of economic transformation:

- The most conservative is the concept of the reform of the pension system of 1995 that assumed a rationalization of the current pension system only with an introduction of voluntary pensions (either occupational or individual).
- The most radical is the proposal of the pension reform of 1997 developed by the Ministry of Labor and Social Development (M. Dmitriev). This proposal was inspired by the success of Chilean pension reform and corresponded most closely to the World Bank 1994 concept. After being presented in autumn of 1997, it was not supported by the government.
- A compromise between the conservative and the radical positions was reflected in the program of the pension reform of 1998, which assumed a gradual transition to defined-contribution principles, both funded and unfunded (NDC). This program was adopted in May 1998 but the August 1998 crisis prevented its realization, which was scheduled for 1999.
- In 2001-2002, new pension legislation was developed on the basis of the Program of 1998; the ideas of introducing a certain portion of funded financing and smoothly transitioning to defined-contribution principles in financing PAYG labor pensions were preserved but were significantly modified (ownership rights; contributions of employees; modification of NDC, etc.).
- Finally, a new wave of substantial changes of pension legislation was initiated in 2007-2008. First of all, it included the substantial indexation of pension benefits in 2007-2009 and a re-estimation (so called "valorization") of pension rights acquired before 2002 and particularly before 1991 in 2010. Given that the contributions to the pension system were not increased in the same proportion as benefits, the immediate outcome of these measures was a PFR deficit and its increased dependency on the federal budget transfers. Besides, the budget subsidizes voluntary pension savings paid by employees in addition to mandatory funded contributions on the same accounts.

All the proposals mentioned above offer a so-called "multi-tier" pension system but the content and the importance of the first and second pillars are different and it is rarely the sort of multi-pillar reform as envisioned in the interpretation of the World Bank (Table 15). The last proposal does not change the pension system structure created by the 2002 reform but violates the basic principle of financial sustainability of the system.

The pension reform implemented in January 2002 included the following pillars:

- 1ST PILLAR: a 'basic' part of labor pension for all pensioners plus the so called 'public pension provision', including social pensions for people without seniority;
- 2ND PILLAR: labor pensions, both defined-contributions PAYG (the 'insurance' part) and funded ('funded' part of labor pension); mandatory funded occupational pensions instead of PAYG privileged ones[28;]
- 3RD PILLAR: voluntary occupational and individual private pensions.

Pension reform of 2002 – basic features

The reform of 2002 was officially aimed at strengthening the links between contributions and future pension benefits, the growth of real pensions, and achieving the financial sustainability of the pension system now and in the future. It was assumed that it would result in an increase in the supply of "long money" in the economy, a higher savings rate, and the formalization of the labor market. Finally, experts supposed that the introduction of a pension formula based on defined-contribution principles and individual accounts would increase the transparency of the pension system and its political independence.

The new system distinguished between two major types of mandatory pensions – labor pensions and pensions from 'public pension provision'. In the former, benefits are earned through prior contributions over the entire working life. The latter are given to people who have no right for labor pensions or to some special occupational groups or categories of people (civil servants, disabled veterans, victims of Chernobyl and other man-caused catastrophes, their survivors, etc.) without prior contributions. An individual can claim only one type of pension but sometimes s/he is permitted to receive a pension from the 'public pension provision' in addition to a labor pension (e.g., Great Patriotic War veterans or Chernobyl victims, federal officials, etc.).

The tax reform of 2000 replaced contributions to the off-budget funds, including the Pension Fund, and to the payroll tax called the Unified Social Tax (UST). Hence, according to law, labor pensions were financed through UST paid by employers only. The rates were differentiated by types of employer (e.g., individual entrepreneurs pay very small lump-sum contributions; agricultural firms pay UST at smaller rates) and by the annual wage level (in 2000-2004 there were four tax rates and in 2005-2009 there were three. The higher the wage of the employee, the

[28] The law on mandatory professional pension schemes was to be enacted in 2003 but it has not been adopted yet. This component of reform is therefore postponed by fact.

less was paid by his/her employer). Thus, the effective UST rate was lower than its maximum level, which was 28% of the payroll in 2000-2004 and 20% from 2005[29]. A part of the UST (maximum 14% of payroll before 2005 and 6% of payroll from 2005) was paid to the federal budget, from where the money was transferred to the PFR for basic parts of labor pensions. The other portion was paid directly to individual accounts in the PFR for insurance and the funded portion of labor pensions. Pensions paid under the law of public pension provision (so called "public pensions") are financed through general taxes.

As mentioned above, labor pensions cover three groups – old age, disability, and survival pensions. Pensions for long service were included into old age pensions. The normal pension age remains unchanged. The possibility of retiring is open to all individuals with a contribution period of at least five years at the age of 55 (60). It is assumed that after the new pension system matures, pension behavior will be determined by incentives to work longer so as to get higher benefit, rather than by the legislative pension age[30].

Old age and disability pensions consist of three parts – basic, insurance[31], and funded. Survival pensions include only the two first parts. A basic part of labor pensions is differentiated by age (below and over 80), degree of disability and the number of dependants. An insurance part is to be a quotient of the division of the total amount of contribution to the number of years, which is fixed at 19 years for both sexes[32]. Both basic and insurance parts are to be paid monthly and for life. Still, there is no rule for the calculation of a funded part. It is assumed to be paid regularly and calculated by dividing the total amount of contributions plus investment income to the expected number of years of pension payment. But the denominator remains unclear.

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[29] Since 2005 there have been three tax rates depending on the wage threshold – less than 280,000 RUR per year, from 280,001 to 600,000 and from 600,001 and above – the higher the wage of the employee, the less was paid by his/her employer. These thresholds were not changed from 2005 to 2009. Meanwhile, if in 2005 the average annual gross wage was 102,660 RUR per year then in 2007 it was 163,116 and in 2008 207,480 RUR per year [Rosstat, 2009]. Accordingly, in April 2005, 2.7% of workers in large and medium enterprises earned 300 to 600 thousand RUR per year and 0.6% of workers received more than 600 thousand RUR per year, whereas in April 2007 the shares were 7.3% and 1.8% [Rosstat, 2008a].

[30] But in fact there are no incentives of later pension age because all pensioners have a right to work and recalculate their pension benefits. It increases the retirement age but keeps pension age at the lowest possible level. See more discussion of this topic [Sinyavskaya 2002].

[31] This part can be considered as a proxy of DC PAYG (NDC).

[32] In 2002 the denominator was equal 12 years; it is increasing gradually till 19 years by 2013.

Whereas in the future, it is assumed that insurance and funded parts of pensions will be closely tied to contributions paid, stronger indirect limitations on the differentiation of benefits will be kept for current pensioners. All pension rights acquired in the prior system were recalculated so that a person's salary for several years of work was taken into account only in part, not exceeding 120% of an average national salary, from which the pension contribution was paid[33].

A basic part of labor pension is indexed regularly by inflation or increased by special amendments to the law. The insurance part is also indexed by inflation but also by the growth rate of the contributions paid to the PFR to the insurance part per one pensioner. The same procedure is applied to the indexation of the notional "insurance capital". This means that when the effective rate of the UST is decreased, than the insurance part and notional capital are indexed mainly by inflation. Also, when the number of pensioners increases, the PFR incomes per pensioner decrease and the insurance part and notional capital are indexed again by inflation only.

Participation in the funded component of the pension system is mandatory for employees born in 1967 or later. Initially, the funded pillar also included ales born in 1953-1966 and females born in 1957-1966, who were completely excluded from this part of the pension system in 2005[34]. For those born after 1966, employers paid 3% of their wages to the funded pillar in 2002-2003, 4% in 2004-2007 and 6% from 2008. Respectively, contributions to the "insurance" part of the labor pension are 14% or less depending on the age and wage of a contributor.

Since 2004, there are two types of insurers acting on the mandatory pension savings market – the state Pension Fund of Russia (PFR) and 94 nongovernmental (private) pension funds (NPF) are allowed to work with this type of money. Insurers recruit managing companies selected to work with mandatory pension savings. There are also two types of these managing companies – the state managing company (Russia's Bank of Development – VEB) and 55 private managing companies. Either an insurer or a managing company can be changed once a year only. By default, mandatory pension savings are kept at the PFR and managed by the state managing company, which had the most conservative investment portfolio until 2009. Control and supervision over the companies acting on the market of

[33] Due to tax incompliance, this wage is below the average wage in the economy published by Rosstat. For current pensioners, the size of benefit after recalculation should not be lower than the benefit received before the reform, which means that pensioners previously employed in low-paid jobs are granted more.

[34] Therefore, the first regular payments of the funded parts of pensions will be made only in 2022. It is discussed now what to do with money accumulated by the cohort further excluded from the funded component, either to pay it as a lump-sum or to increase pay-as-you-go insurance part to the respective amount and do not pay funded pension at all.

mandatory pension savings is conducted by the Ministry of Finance, the Federal Service for Financial Markets, the Special Depositary and the Public Council for Investment of the Funded Part of Pensions. There is no special system of guarantees of obligatory pension savings.

An important issue of any pension reform introducing a funded component into a mature pension system with universal coverage is how the transition is financed. Contributions to funded pillars reduce the amount of money to be paid to current pensioners. Surprisingly, in 2002, using external sources of financing to fund the transition to the new pension system was not proposed[35]. Rather, the reform was designed to keep a relatively low differentiation of pension benefits and introduce the funded pillar gradually over a long period of time[36].

Reform implementation and adjustment

Similar to other countries, pension reform implementation in Russia, particularly related to the introduction of a funded component, was met with certain difficulties. The necessary legislative documents were adopted with delays. The private managing companies responsible for managing pension savings from 2004 were selected by May 2003 only. People received the information about their individual accounts from the PFR letters even later. Besides, there were no information campaigns about the funded pension reform explaining people's rights or why and how to select managing companies. As a result, no more than 2% of insured people of the respective ages chose private managing companies in 2003. After six years of the reform, more than 90% of funded pillar participants keep their savings under the management of VEB, which operates with 87% of total mandatory pension savings.

The law on the mandatory occupational pension schemes aimed at the reform of the so called early retirement schemes has not been adopted yet. It was blocked primarily by the large employers with significant numbers of employees working in hazardous conditions or in the Far North regions, as well as by trade unions that did not like the design of the mandatory occupational pension plans proposed by the government. Thus, early retirement is still a part of the state pension system and thus paid by all employers.

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[35] This official position has changed in 2008, when National Wealth Fund was established particularly for the pension reform purposes. The Fund is based on incomes from oil and gas production and export. It can be used to the subsidizing of voluntary additional pension savings transferred on the same individual accounts as mandatory pension savings as well as to the balancing PFR budget. Besides, from 2006 current deficit of the PFR is already covered by the federal budget transfers, i.e. from general taxes.

[36] In 2005 the speed of transition was even further reduced.

Pension legislation in Russia is constantly in the process of changing. In 2004, in the context of the tax reform, the UST rates and thresholds were lowered and therefore the effective rate of the UST decreased. It certainly reduced the tax incomes of the PFR. To compensate for this decline, the government decided to exclude middle aged people (born in 1953(57) – 1966) from the funded pillar. In 2005, there were social protests against the reform of in kind social privileges (e.g., subsidized housing, free transportation, free or subsidized medicines, etc.) and its replacement with cash payments. The protests were spearheaded by pensioners, who constituted the main group of recipients of social privileges. In response to these protests, the government again decided to change the pension legislation. It increased the universal, basic part of labor pension by 36% in March 2005.

As a consequence of the decisions of 2004-2005, the PFR turned out to be in a current account deficit[37]. Until now the amount of this deficit is covered by additional transfers from the federal budget, and formally the PFR budget is balanced. But the share of budget financing of the pension system is increasing. The budget transfer to cover the deficit was 3% of all PFR incomes in 2006, and was planned to be 5% of the PFR incomes in 2008, 14% of incomes in 2009 and 25% in 2010.

The unfavorable development of the funded pillar as well as the financial insustainability of the pension system led to renewed discussion on the new crisis in the pension sphere which emerged in expert circles in 2005 [see, e.g. Maleva & Sinyavskaya 2005; Kolobaev & Kokorev 2006; Gurvich 2007c]. Officials and politicians recognized the crisis by 2007 but preferred to focus on the issues of the low standards of living of pensioners and the declining replacement rate, measured as a ratio of the average pension to the average wage (Table 13). Taking into account the importance of pensioners as a prevailing part of the electorate on the eve of parliamentary (2007) and presidential (2008) elections, the efforts of politicians were concentrated on increasing benefits. As a result, basic parts of pensions were increased by 86.3% in 2007. The insurance parts were indexed by 9.2% in April 2007. This policy was continued in 2008 and 2009, which indicated a shift in the pension reform from the original ideas of 2002.

New shift in the pension reform – 2007-2010

In the beginning of 2008, the Ministry of Health and Social Development and the Ministry of Finance prepared two proposals for further pension reform adjust-

[37] The reduction of payroll taxes did not produce the anticipated effect of increasing the tax base. The legalization of wage incomes was much less than expected, and therefore, the drop in PFR incomes was significant.

ments. The main focus of the Ministry of Health and Social Development's proposal was how to increase pensions for current pensioners, while the proposal of the Ministry of Finance stressed the issue of financial sustainability of the pension system and focused on ways of decreasing the pension system's dependence on the federal budget. The final version of the reform adopted by the Government in October 2008 was mainly inspired by the Ministry of Health and Social Development's proposal. It should be also stressed that most of the adopted changes to pension legislation were developed before the 2008 crisis, although they were later presented as a part of anti-crisis program.

Almost all changes in the pension legislation implemented in 2009-2010 are addressed to the pensioned population and workers who will become pensioners in the next 5-10 years. First, in 2009, basic parts of labor pensions and social pensions were substantially increased to an amount much higher than inflation. As of 2010, regions of the Russian Federation will be obliged to pay unemployed pensioners who earn benefits below the pensioners' subsistence minimum an additional social payment up to the level of the regional subsistence minimum. The main idea is to eliminate the official poverty of pensioners. Second, in 2010, the estimated amount of pension rights acquired up to 2002 will be increased by 10%. In addition to this indexation, the pension rights of people who worked in Soviet times will be increased by 1% for each year of tenure up to 1991. This procedure of the indexation of pension rights formed in the old pension system, called "valorization", will cost about 12% of the expenditures of the pension system on the current pensioners (i.e. PFR expenditures without costs of funded pillar).

The implementation of these two steps substantially increases current and future pension expenditures. Estimations show that in 2009, the share of pension expenditures in GDP increased by 2 percentage points: from 5.6% in 2008 to 7.7% in 2009. In 2010, it is expected to reach 9.9% of GDP.

The idea is to shift these costs onto the federal budget and onto employers by increasing the effective contribution rate. The federal budget will cover increased pension expenditures by general taxation and the National Wealth Fund formed from natural resource revenues. An alternative proposal of the Ministry of Finance to introduce contributions paid by employees and to increase the pension age was not supported. In accordance with this approach, in 2010 the regressive UST rates were replaced by the flat contribution rate paid from wages below the ceiling of 415,000 RUR per year[38]. This contribution rate is to be raised from 20% to 26% of payroll as of 2011. It is going to be equalized for all groups of employers as of 2015.

[38] The average annual nominal wage projected by the Ministry of Economy will be 237,384-239,700 in 2010.

Two minor options have been proposed to young and middle age workers. First is the change in the investment portfolio of the managing government by default. As of autumn 2009, the list of instruments available for investments was expanded to ensure that the default company can provide a middle-risk portfolio. If someone prefers the most conservative portfolio in the same state managing company, s/he may choose that one. But given the bad situation on Russian financial markets, it is unclear whether the state managing company would be able to assure higher returns for its middle-risk portfolio.

The second option of increasing future pensions was proposed by the RF President even in 2007 but can be considered part of other reform adjustments introduced later. The case in point is the system of supplementary pension accumulations open to new participants until the end of October 2013[39]. They are available for any participant of any age for 10 years from the first year of contributing. The annual amount of monthly paid supplementary contributions of an insured person should be no less than 2,000 RUR, which corresponds to 8.3% of the annual amount of the net minimum wage in 2008 and 4.4% of the net minimum wage in 2009[40]. They are subsidized by the state at the proportion 1:1 up to 12,000 RUR per year[41], which is the maximum possible amount of state subsidy. State subsidies come from the National Wealth Fund which is made up of extra-incomes from production and the export of energy resources. People of pension age who postpone their retirement can contribute to voluntary savings accounts and get four times more from the state (the upper limit of the subsidy is 48,000 RUR per year). The subsidy is made once a year. Employers have a right to subsidize employees' savings as well. In addition, an insured person can get a tax reduction for voluntary contributions up to 120,000 RUR per year. All the money goes to the individual's account opened for mandatory pension savings. The administration of the system of supplementary accumulations is the same as that of mandatory accumulations. Because accumulations in the mandatory funded pillar are financed by contributions paid by employers, the ownership of the pension accumulations belongs to the state and not to employees themselves. This is one of the most striking features of the Russian pension reform.

[39] By September, 2009, 1643 thousands of employees have decided to participate in the system of additional pension accumulations. See:
http://www.pfrf.ru/financed_public_pension/n

[40] As of January 1, 2009, the gross monthly minimum wage was raised from 2300 to 4330 RUR per month; the income tax rate is a flat 13%.

[41] Given the projected amount of the average annual nominal wage (see footnote 38), the subsidy will cover nearly 5% of annual average wage.

Assessment of future perspectives of the reform

Despite the fact that the above-mentioned measures introduced by the government will undoubtedly improve current pensioners' well-being and may increase the incomes of future pensioners, there are facts that induce skepticism concerning the perspectives of the ongoing pension reform. There is evidence that the reform has not and will not achieve its purpose.

The most important issue is the ability of the system to be balanced. It is not surprising that the PFR is in deficit now, after six years of reform. Normally, the introduction of a funded pillar causes a current account misbalance of the pension system, as it has to continue supporting the contemporary generation of pensioners. But this deficit in Russia is rising not only because of the funded pillar but mostly as a result of a decreased effective UST rate and substantially raised pension benefits [see, Soloviev et al 2006]. In other words, the Russian government is simultaneously trying to reduce the contribution rate and raise the replacement rate under the conditions of a falling system dependency ratio. Besides, the system could hardly be balanced in the future because when the government increases the basic part of labor pensions, which is universal and does not depend on contributions but is financed from payroll taxes, it goes farther from the so called defined-contribution, or exogenous contribution rate principles. Furthermore, the insurance part of labor pensions has no adaptation to the changes in life expectancy as its denominator is fixed at 19 years for both sexes, and thus cannot be seen as a true NDC. Long-term forecasts, conducted even before the latest pension increases, showed that in order to maintain the replacement rate at the present level (25.8%) under the given effective UST rate, the federal budget should increase its transfers into the pension system up to 4-4.5% of GDP in the period of 2020-2041 [Gurvich 2007c]. The new situation with raised pensions and pension rights acquired before the 2002 reform becomes even worse.

Again, it is not surprising that the benefits of new pensioners are not closely related to their previous employment records and contributions. People who retired in 2003-2012 spent most of their working lives under the previous pension system. A significant fraction of the insurance part of their pensions will be based on recalculated pension rights restricted with 120% of the average wage in the economy. But recent adjustments of pension regulation relax the links between contributions and benefits even more. The total amount of labor pension largely depends on the universal basic part. The first regular payments of the funded pensions shifted to 2022, and the contribution rate to this pillar is rather small. Thus, even according to optimistic forecasts based on a relatively high yield of pension accumulations, the positive effects of the replacement rate and the links between contributions and benefits will only be observed beginning in 2050 [Gurvich 2007c].

However, presently the development of the funded pillar which may be a source of the increasing pension benefits closely related to contributions does not give cause for optimism. The real rates of return on mandatory pension savings achieved by both state and private managing companies for the whole period of the reform are either negative or close to zero. Together with the small contribution rate to funded individual accounts, this means that the share of the funded part of the pension of at least the oldest participants of this component of pension reform will be rather small. The design of the funded pillar, based on the employer's contributions only, infrequent informing of the insured people about the state of their accounts (once a year), and the right to choose nothing do not promote personal responsibility for participation in the pension system. A lack of information about the new pension system instruments aggravates this situation. In 2007, five years after the launch of the pension reform, 24% of people born in 1967 or later did not know anything about it; 25% said they did not participate in a funded pillar; more than 50% said that they heard something about the reform and that they were not sure if their employers contributed something to their individual funded account[42]. Hence, one can hardly suppose that the funded pillar will play a significant role in influencing both the financial stability of the pension system and individual behavior in the labor and pension spheres even in the future.

Besides, an important feature of the Russian funded pillar design is that it does not lead to any sort of privatization, either formally or informally. The state keeps the ownership of the mandatory pension savings and most likely of the funded pensions (annuities) as well. Most pension savings are managed by state managing companies and are invested in government bonds. This situation has two consequences. Firstly, it causes a negative real yield of mandatory pension savings and furthermore deteriorates the population's trust in the pension system. Secondly, this means that in reality the pension system remains public and pay-as-you-go, as the contributions are used to finance state liabilities.

The ongoing pension reform does not improve the system dependency ratio either. The official pension age remains unchanged and the regulation itself does not lead to an increase in the effective pension age. Early retirement rules remain unchanged which, according to sociological surveys, reduces the average actual pension age of men by 6 years and of women by 3 years[43]. Both the fixed denominator

[42] The data comes from two surveys conducted by the Independent Institute for Social Policy in 2007. The first one was done in April-June 2007 and covered 11,111 respondents aged 18-82. The second was conducted in July 2007 and covered 2,011 respondents aged 16 to 90. Both surveys are representative at national level. The results have not been published yet.

[43] The same source of data is used.

and the right to combine pensions with wages without any limitation on total incomes prevents people from postponing their applications for pension. In 2008, 28% of pensioners were employed. High activity rates of elderly people sound good from the labor market perspective, but they create an additional burden on the pension system, producing a system dependency ratio that is much worse than the demographic dependency ratio, which is also deteriorating.

The Russian pension reform did not improve the transparency of the pension system. The legal status of the main actors including the state PFR, the state managing company, is unclear. And the share of federal budget transfers in the pension system is increasing.

Finally, even the multi-pillar nature of the given pension system is in question. The mandatory system is mostly public and based significantly on the redistributive component of universal basic parts of pensions. The voluntary pension provision remains underdeveloped. It is increasing now mainly at the expense of the corporate pension programs[44] used by employers as part of their employment strategy. Therefore, many companies have DB pension plans; others limit pension portability by introducing a period of vesting from 1 to 10 years. The largest employers (Russian Energy Systems, Transneft, etc.) still pay corporate pensions only to those retired from the company [Russia's Pension System… 2007]. Thus, although corporate pension systems increase the well-being of some groups of pensioners, they nevertheless limit labor mobility.

Further reform options under discussion

The latest developments in the pension system have brought the discussion about further possible options of the pension reform in Russia to a new turning point. Four questions are being debated now. The first is how to balance the PFR budget under the conditions of growing pension liabilities. The second is how to reduce the pressure of increasing mandatory pension assets on the state securities market, in other words, how to diversify the investment portfolio when 95% of pension funds are managed by the public management company. The third is how to assure higher returns on mandatory and voluntary pension savings. And the fourth is how to raise awareness and gain people's support for the pension reform and its funded component.

[44] In 2006 no more than 1.5 mln people had individual voluntary pension plans out of the 6.4 mln pension plans opened in NPFs (The figure was cited by the head of NPF Sberbank Galina Morozova at the Round Table on Pension System, held on October 20, 2007 in Moscow). It covers only 2.2% of employed people.

There are attempts to initiate a new wave of discussion among experts, business circles and politicians on the possible options of future reform of the pension reform. Experts close to the Ministry of Finance propose to more actively seek external sources of pension reform financing like incomes from privatization, revenues from oil and gas production and export, VAT, etc. The Ministry of Finance also proposes to increase the pension age of both men and women, although other officials and politicians do not support this idea. Other experts suggest launching a reform of early retirement schemes. But the latter initiative still meets with opposition from employers who not interested in an increase in their payroll tax burden. On the whole, there are signs of attempts by employers to control the pension reform more actively, e.g. by offering the choice of a private pension fund for employees, by having more rights in designing mandatory occupational pension plans in case of early retirement reform, etc. Until now the consensus has only been reached on the necessity of a more active public campaign on the pension reform.

A wide range of options rejected by officials including the following:

1. Increasing the normal retirement age either for both sexes or for women only (equalizing at the age of 60) and the introduction of mandatory contributions from employee incomes - deemed unacceptable for the population as it may cause political protests
2. Restricting the employment of pensioners – deemed to have potential negative outcomes for the labor market and poverty dynamics
3. Changing the property rights of mandatory pension savings (it is explained that RF should have property rights for these assets because they are financed through taxes) - deemed inadequate to contemporary legislation (civil and tax codes)
4. Mandatory private pension fund with no option to make no choice - deemed impossible at the current level of the development of private pension funds and financial competence of population

Thus, although most officials now understand the risks of sharply increased pension liabilities, a consensus on the possible solution to this situation has not yet been achieved.

Table 1. Pension reforms in Russia and possible effects on labor market and restructuring

Options proposed / implemented / to be implemented	Effects on labor market	Effects on restructuring
Implemented – tax reform + 2002 pension reform		
Elimination of contributions – introduction of unified social tax (UST) paid by employers only	Pension-related expenditures are perceived as taxes (incentives to avoid, no interest of employees)	No
UST regression + lowering the max rate (until 2009)	Decreases pension-related costs Long-run: Expected – formalization of labor market, less 'grey' payments; actual effect is moderate Increased labor supply of pensioners because replacement rates decrease	Facilitates restructuring because of lowering costs on business?
Pensioners can work without limitations	Short-run: Labor supply of aged people is increased. Solves problems of structural labor force deficit – Helps sectors not receiving enough young employees to survive	Limits mobility – most pensioners do not change their job. Effect on restructuring is unclear as employers can still fire people when they become pensioners. But as pensioners agree to work for lower wages, ineffective jobs (firms) can be kept.
Benefit formula change – no direct limits on benefit size, relation to sum of contributions instead of wage + seniority	LR: Expected – formalization of labor market, less 'grey' payments, more contribution compliance; actual short-run effect is moderate	In theory – helps to restructure as employees are not as interested in higher wages at the end of their careers as before
Introduction of quasi NDC – no promised replacement rates but denominator not related to life expectancy, equal for men and women	Expected by the government – formalization of labor market and less 'grey' payments in the short-run and delay of retirement in the long-run but the effects are eliminated by deviations from true NDC (denominator and right to work at pension)	Short-run effect – no, long-run – yes, positive
Introduction of funded pillar	Expected by the government – formalization of labor market and less 'grey' payments in the short-run and delay of retirement but first payments from funded pillar will be made in 2022 only. Moderate effect on formalization (in	Portability facilitates mobility – less incentives to work for the same employer; the effect can be partially offset by the development of voluntary corporate pension plans with vesting organized by

Options proposed / implemented / to be implemented	Effects on labor market	Effects on restructuring
	line with tax reform effect) in the short-run	employers
Development of voluntary occupational pension plans	An instrument of competition for workers (part of social package)	Is used by employers as a means of restructuring – to dismiss old workers by pushing them into occupational pensions Limits mobility (and restructuring) – because of either DB or high minimum requirements for tenure to get occupational pension (vesting) Negative - Supports the concentration of employment at large and medium enterprises (those who provide occupational pensions)
Changes of pension legislation – Implemented in 2007-2010		
Introduction of voluntary pension saving scheme subsidized by the state (1,000 rubles from state (up to 12,000) per 1,000 rubles of contributions during 5 years)	No effect	Positive effect as there is no vesting
Motivation of voluntary later retirement: 4,000 rubles from the state (up to 48,000) per 1,000 rubles of contributions of people of pension age delayed receiving pension	No effect because increment in pension is too small compared to the incomes forgone (pensions that could have been received in addition to wage)	No effect?
Introduction of additional payment to the pension up to the level of pensioners' regional subsistence minimum paid to non-working pensioners	Negative effect of formal employment of pensioners	No effect?
Replacement of unified social tax (UST) with pension contributions paid by employers	No effect when the rate is not changed and employees' contributions are not introduced	No

Options proposed / implemented / to be implemented	Effects on labor market	Effects on restructuring
Introduction of the flat rate of pension contribution (as of 2010) and further increase of the rate (as of 2011)	Pension-related labor costs will increase – negative effect on labor demand, possible negative effect on wage growth. In the case of the substantial growth of contribution rates – possible increase of shadow sector of labor market, particularly at small firms	Very moderate negative effect of replacing regressive scale by flat rate of contributions. Stronger negative effect if contribution rates will be increased at a level higher than wage growth
More revenues to the pension system – by attracting extra incomes from energy resources (from 2010) or proceeds from privatization (under discussion)	Allows keeping labor costs at low level	Facilitates restructuring because of keeping low costs on business?
Currently proposed by the government		
Equalize pension contribution rates for different groups of employers	Increase labor costs for certain groups of employers (mainly inefficient – e.g. agriculture) – equal rules for different employers	Long-run: Facilitates restructuring? No more special preferences for ineffective agricultural sector
Early retirement scheme reform by means of implementation of mandatory funded occupational pension plans	Increase in pension-related costs on employers with jobs in hazardous conditions will negatively affect wage level of workers employed in hazardous conditions.	Facilitates restructuring by decreasing the number of jobs with hazardous conditions. Depending on the design of the reform, it can either increase portability of occupational pensions or decrease it if employers get more rights in choosing the NPF and deciding on vesting.
Discussed by the government		
Basic part of labor pensions (and perhaps social pensions) – to be financed through general taxes	Total tax burden on business would probably increase but payroll taxes remain low – no negative effect on labor demand?	No effect?
Increase in retirement age (equalize normal pension age of men and women or increase it for both sexes)	Longer participation on labor market, less pressure on increase of taxes	No effect?

Options proposed / implemented / to be implemented	Effects on labor market	Effects on restructuring
Not discussed now		
Increase of contributions to funded pillar	Depends on the scheme – at the expense of a) current taxes in favor of basic part – pension-related costs on employers (and employees) will not change – no effect, b) individual contributions of employees – pressure on further legalization of wages c) increase of contribution rates – negative effect	If funds will be delivered to national investment projects (not state securities!) – positive
Introduction of individual contributions (by employees)	More individual responsibility + interest to pension reform – stronger pressure on employer (but the result depends on the bargaining abilities of workers and the situation on the labor market)	Long-run: positive
Benefit formula change – return to NDC – establish links with life expectancy	More transparency in accumulating pension rights – longer seniority?	?
Limitation of employment of pensioners	Short-term effect: Outflow of elderly workers from labor market – negative effect Long-term effect on labor supply – could be positive if people would delay retirement	Could be positive & strong
Changes in ownership rights on mandatory pension savings – from the state to the people	More individual responsibility + interest in pension reform – stronger pressure on employer (but the result depends on the bargaining abilities of workers and the situation on the labor market)	? if people move to private funds and investments in private securities would increase – could be positive (through more money in national investment projects) ?

3.4.2. Ukraine

As mentioned earlier, the pension system in Ukraine has played an important role in keeping the elderly population out of poverty. The system provides sizable benefits to over 30% of Ukrainian voters. Therefore the government took the advice of the international community and together with the PADCO/USAID advisory project developed a new multi-tier pension system. The system was introduced by law in 2003, and started operating in January 2004.

Following the example of other CEE countries, Ukraine started its pension reform and introduced a multi-tier (mandatory and voluntary funds) pension system. The reform was carried out at the beginning of this century, and the new pension system was introduced in 2003. However, the country is still in the early stages of the process and the new systems are expected to have an impact in 15-20 years.

The new system introduced three tiers. The first tier is a PAYG system with benefits based on the careful accounting of personal contributions to the system instead of average wage and years worked. The pensions of the beneficiaries of the previous pension system were recalculated to the new system, and most benefits were slightly increased. The second tier is a fully-funded pension investment fund run by the government. The third tier is a system of licensed private pension funds.

The pension system in Ukraine introduced in 2004

The new law "On Mandatory State Pension Insurance" enacted in 2004 introduced a pension system that is significantly different from the Soviet-type pension system that existed in Ukraine prior to the introduction of this law. The new system is based on the three pillars.

First pillar - traditional tax based (PAYG) system

This system is funded by payroll taxes on the employer and taxes on the employee. The system provides old-age pensions, disability pensions, and survival pensions. The law also states that there may be special categories of pensioners who receive pensions from the solidarity fund according to rules different from the general rules outlined in the law. We interpret this as the possibility to receive special service pensions.

Old-age pension is guaranteed to every male over 60 and every female over 55 if they have worked for at least five years. The minimal pension is guaranteed to males that worked at least 25 years, and females that worked at least 20 years. The

minimal pension is required to be higher than the minimal subsistence level in the country determined by the budget law.

The amount of the pension payment from the solidarity system is determined by (1) total duration of employment, (2) amount of payments to the pension fund, (3) individual income coefficient, and (4) average salary in the country in the year prior to the year in which the pension is paid. The amount of old-age pension is increased for every year of delayed pension (not applying for pension after reaching pension age). The maximum increase is over 85% for delaying pension for 10 years.

The pension fund introduced personalised accounting of pension payments for every individual that uses it at the first and second pillars of the pension system. Pensions provided to the persons of pension age before the introduction of this law were re-calculated according to the new system and are provided from the solidarity pillar.

The solidarity system is managed by the Pension Fund of Ukraine. The Pension Fund is a non-profit organization in Ukraine. For the first five years after the introduction of the law, the Pension Fund will have a status similar to the status of a ministry in Ukraine.

Second pillar - State Pension Investment Fund

This system is based on individual accounts for each person participating in the mandatory state pension insurance. The system is funded by a portion of the payroll taxes paid to the Pension Fund. The State Pension Investment Fund invests funds into enterprises in order to generate additional income. The State Investment Fund provides individuals with one of the following types of pensions: fixed-term annuity, life-long annuity, annuity for spouse, and single payment pension.

Payments of the pensions (except the single-payment pension) are administered by insurance companies which are contracted either by individuals or the pension fund. When an individual becomes a pensioner, the State Pension Investment Fund transfers the amount accumulated by the individual at the personal account to the managing insurance company which provides payments to the individual according to the contract between the individual and the insurance company. The oversight of insurance companies is conducted by the State Commission on the Regulation of Financial Service Markets.

A single-payment pension is paid to individuals in some special cases such as change of country of residence or the accumulation of an amount of money which is less than the minimum required for an annuity. In the case of the death of a person prior to becoming a pensioner, the State Pension Investment Fund pays the accumulated balance as inheritance to the beneficiaries of this person.

The State Pension Investment Fund was created by the State Pension Fund as an extra-budgetary fund. It is managed by the Supervisory Board of the State Pension Investment Fund and uses the management infrastructure of the State Pension Fund. The Supervisory Board of the State Pension Investment Fund consists of 14 individuals, half of which are designated by President, and half by the Verkhovna Rada of Ukraine.

The assets of the State Pension Investment Fund are the property of the insured persons; each person has property rights for an amount accumulated on his/her personal account. The assets of the State Pension Investment Fund are managed by designated asset management companies. Designated asset management companies are determined though tender procedure, and are contracted for a term of five years.

The assets of the State Pension Investment Fund can be invested in papers issued or guaranteed by the government of Ukraine, a foreign government, and in papers traded on certain international stock exchanges. By law, the amount invested in papers guaranteed by all levels of the government of Ukraine should not exceed 50% of the total assets of the fund.

The State Pension Investment Fund started functioning with the adoption of the Law on the Transfer of Part of the Revenues of the State Pension Fund to the State Pension Investment Fund. According to the current law, this special law can be adopted only if the economy of the country grows at least 2% a year in real terms for at least two years in a row.

Third pillar - Private Pension System

This system can be implemented through private pension funds, banks providing pension deposit accounts, and insurance companies. The system can provide fixed-term annuities, annuities (pensions), single pension payments, and annuities (pensions) for a spouse. The system is funded on a non-mandatory bases though individual payments. The third pillar of the Pension System can be introduced only eleven years after the introduction of the second pillar.

Funding the system

The current rates of payroll taxes paid by enterprises and individuals to the Pension Fund are determined by the Budget Law. The law also determines the fraction of payments that is directed to the second pillar of the system after the Law on the Transfer of Part of the Revenues of the State Pension Fund is adopted. The law on Mandatory State Pension Insurance also introduces sealing for the mandatory monthly payments to the pension fund at the amount of seven average

salaries in the previous year. However, this part of the law was suspended by budget laws in 2006 and 2007.

Special pensions for people who had rights for increased pensions under the previous law, such as pensions for military personnel and for people working in hazardous conditions, should be paid from special sectoral supplementary pension funds. However, until such funds are created, these increased pensions are being provided by the State Pension Fund. The increased expenditures should be fully covered by additional transfers from the sectors of economy whose employees are eligible for the increased pensions.

The 2004 – 2005 period was a politically charged election period that had a tremendous effect on the development of the Ukrainian social safety net. Ukraine had a presidential election in November 2004, which resulted in the so-called "Orange Revolution" and ended in January 2005. As a result of the revolution, the power to form the government was shifted from the president to parliament. A year after the first post-revolution government was formed, Ukraine had parliamentary elections (March 2006). Both elections were dominated by two political forces that had almost identical numbers of supporters. In order to win extra votes, both political forces began promising increases in social benefits to pensioners and the poor.

Increases in social benefits were implemented de facto in the second half of 2004, and then adopted de jure in 2005. Minimum benefits of most welfare programs increased 3 to 12 times, and average benefits increased 25-70%. Further increases were planned for 2006 [MLSP PFU 2005]. As the result, social welfare expenditures (including pensions) increased from 11.9% of GDP in 2003 to 17.4% in 2005. The government also increased the minimum wage 40% (an increase of approximately 30% increase in real terms) in 2005, which resulted in an increase in wages paid to employees in the public sector and increased budget expenditures on healthcare, education, and government employees.

The political situation also did not allow the government to increase tax rates and even demanded a decrease in some taxes. For example, the personal income tax law provided for a 13% flat tax rate for a period of two years that was to have been replaced by a permanent 15% flat tax rate in 2006. However, due to political pressures the increase was postponed. Another example is the simplified taxation of small businesses. The previous president issued a decree in 2001 establishing "simplified taxation for small businesses". Businesses with a turnover of less than $100,000 a year and up to 10 employees could pay a flat tax (only 200 UAH, or $40 a month in 2004-2005) instead of all taxes on their businesses, including payroll taxes. The decree should have lost effect when the new president was elected in 2004. However, the decree was extended because of the adverse reaction of

small business owners. As a result, most employees of small businesses still do not make sizable contributions to the pension system or other social insurance funds. They are protected by some social insurances, but their contributions to the pension fund will not allow for providing them with anything but minimal pension rates when they retire.

There is no final report yet, but the deficit in the pension fund was about 5-6% of the GDP in 2005, and was financed from the state budget. However, the overall performance of the state budget was not a disaster in 2005. The government managed to attract about $2 billion from the privatization of Krivorizhstal, the largest steel-producing plant in Ukraine. It also managed to increase the revenues from VAT and the enterprise profit tax by eliminating tax exemptions, such as free economic zones, and prosecuting businesses that avoid paying taxes. As a result, because the government viewed privatization as part of budget revenues, the budget deficit in 2005 was kept under 2% of GDP, and the state debt was decreased.

The good performance of the 2005 budget led policymakers to believe that increasing social welfare benefits might be sustained. Extending the offers to the voters, politicians in the parliamentary election campaign not only promised increases in social benefits, but also promised to decrease payroll taxes from 39% to 25%. They expressed the belief that in the short-run the increased social welfare benefits could be financed from other revenues of the state budget, while at the same time reduced payroll taxes would stimulate the expansion of the tax base for the social insurance funds in the long-run.

However, international experts do not share the opinion of Ukrainian politicians that the increased expenditures can be sustained. A recent issue of the Economic Survey of Europe [UNECE 2005] noted, "The political cycle in Ukraine led to a significant relaxation of fiscal policy as the presidential elections drew closer. Although this is a widespread phenomenon, some of the populist pre-election moves (such as the large increases in pensions in September and the planned rise in public sector wages) will have lasting negative fiscal implications as they are equivalent to a general increase in government spending. As a result, the underlying structural fiscal balance is likely to have deteriorated significantly in 2004. As shown by the experience of some east European countries (for example, Hungary) this type of fiscal loosening (involving notable wage increases) can have a lasting and damaging effect on macroeconomic stability. Furthermore, the negative fiscal implications of such moves are very difficult to reverse or offset, especially during a downturn in the growth cycle."

The sustainability of the new pension system was based on the following assumptions: that the relatively low replacement ratio of the PAYG system would be maintained; that the tax base would expand due to decreasing payroll tax rates;

that the second tier would enter into effect as soon as the capital markets legislation allows for the creation of the state investment fund, and that the third tier would be introduced by 2010.

Together with the introduction of the new pension system, the Ukrainian government took steps to ensure the expansion of the tax base. In 2003, it cut the personal income tax to the 13% flat rate (which was supposed to be replaced by a 15% flat rate in 2006); it decreased the payroll taxes from 52 to 37% (paid by employers) plus 2 % paid by employees; and it introduced a cap on the monthly payroll tax for a single employee. These steps were expected to reduce the economic stimulus to hide wage income and increase the tax base for payroll and income taxes.

The results of the pension reform have been moderately positive. The progress of the reform was delayed by factors that were not directly related to the reform. First, a feature of the pension reform in Ukraine was that it implemented new individual accounting for personal contributions, and pensions of current pensioners were recalculated in the new system. The result of the transition, as expected, was a slight increase in the average pension. At the same time, minimum pensions increased almost two-fold, from 47 UAH in 2003 to 92 UAH in 2004. However, the political processes at the end of 2004/beginning of 2005 introduced changes to the pension system and required setting minimum pensions at the level of minimum subsistence. As a result, at the beginning of 2005, the minimum pension was set at 332 UAH, which is 3.6 times higher[45]. The average old-age pension increased 1.74 times during the same period [MPSF PFU 2005]. This resulted in a significant increase in expenditures of the first (solidarity) tier of the pension system.

Second, a significant number of workers are not contributing to the pension system. As mentioned earlier, in order to reduce distortions caused by high taxes, the Ukrainian government reduced the personal income tax rate to a 13% flat rate and payroll taxes to 39% in 2004. The reduced and simplified personal income tax almost eliminated incentives for workers to stay in the shadow economy, which was expected to increase the payroll tax base.

At the same time, in order to reduce the cost of compliance, the government introduced simplified taxation for small enterprises and private entrepreneurs, which allowed for the substitution of different taxes (including payroll taxes) with a low lump-sum tax or a single flat-rate tax [see Alm, Saavedra 2006 for details]. The President's decree in 2001 established that businesses with a turnover of less than $100,000 a year and up to 10 employees may pay a flat tax (only 200 UAH, or $40

[45] However comparing nominal changes in countries with high inflation, like Ukraine, is not correct. In real terms the increase in minimal pension was also over 300% (3 times).

a month in 2004-2005) instead of all taxes on their businesses, including payroll taxes. There are about 1.5 million private and legal entities using simplified taxation in Ukraine today [Alm, Saavedra 2006], and their employees pay very small contributions to the pension fund[46].

The decree would have lost effect when the new president was elected in 2004. However, the life of this decree was extended because of the adverse reaction of small business owners. The Ukrainian government tried to collect payroll taxes from private individuals and enterprises subject to simplified taxation in 2005 in order to provide unemployment and pension insurance for their employees. The Parliament did not support the government's attempt to collect payroll taxes from these entrepreneurs since they represent a large portion of voters and have a strong lobby against such changes. As a result, most employees working in small businesses still do not make sizable contributions to the pension or other social insurance funds. They are protected by some social insurances, but their contributions to the pension fund will not provide them with anything but minimal pensions when they retire. If the government succeeds in changing the simplified tax legislation to collect payroll taxes from these enterprises, the result might be that these enterprises are forced into the shadow economy.

Third, the introduction of the second and the third tier of the pension system are stalled by the insufficient development of the financial markets in Ukraine.

Because of frustration with the delayed introduction of the next stages of pension reform and social pressure to increase the pension amount, the Parliament of Ukraine continues to make changes within the current pension system. Recent changes were directed towards an increase in pension benefits, the guarantee of higher minimum benefits, and the reduction of disproportional large special pensions. Further increases in pensions and some co-payments to pensions have been promised by politicians during recent election campaign. However, these changes do not intend to change the fundamentals of the pension system.

The fundamental reform is considered for the whole social security system, and, therefore, also relates to pensions. Following the recent experience of Russia, the Ukrainian government is discussing the introduction of a single social security tax that will allow people to pay contributions to all social funds in a single payment which is further distributed among social funds. The introduction of the single social security tax is expected to simplify the collection of SSN contributions, especially for tax agents. Because of this simplification, it is expected that simplified tax laws would be changed to exclude social contributions, and social security

[46] Part of the lump-sum tax is directed to the pension fund. However, this amount was only about 2-10 UAH a month in 2006, when under the general system a person with minimum wage would contribute about 61 UAH a month [Libanova 2006].

tax would be paid for every employee independent of the size or type of business. This change is expected to increase the amount of collected social contributions.

Various pension reform options are being discussed in Ukraine now. However the current economic situation together with the pre-presidential election uncertainty do not contribute to making decisions on such a socially and politically sensitive issue as radical pension reform.

Thus, it seems that at least until the crisis Russia was more advanced in the course of pension reform than Ukraine.

Concluding Remarks and Recommendations

Industrial restructuring can be affected by social security schemes and their reforms, especially because pension systems typically form a major part of these schemes. Many reforms throughout Europe have been triggered by demographic changes. In transition countries, the demographic changes are complicated by specific transition phenomena that make the reforms more difficult on the one hand, but also more necessary on the other. New EU member states have already completed the difficult process of transition and many of them have also introduced pension reforms that should help not only their public finances but also the situation of their labour markets. In this paper we analysed the situations in Russia and Ukraine, which are different from the situations in EU countries. We have focused on select economic and social elements in the complex net of relationships related to pension reform.

In this paper, we have addressed issues related to demographic developments. They matter the most – even if economists do not think so. Demography rules in economics. We also presented the situation from the viewpoint of economic developments, in particular financial markets. However, financial markets operate in the short-run and belong to the micro "world", while public pension systems are macro by definition and they operate in the long run (over several decades). Both countries analysed in the paper, namely Russia and Ukraine, have many similarities, in particular their common past, but they also differ in significant ways. This paper focused on both similarities and differences in an attempt to provide the reader with a comprehensive understanding of the current situation and prospects for the future for both countries.

Successful industrial restructuring requires not only flexible labour markets but also a well-designed and well-functioning social security infrastructure. If it does not correspond to the challenges faced by societies then it slows down rather than speeds up industrial restructuring. This means social security reforms are not just on the margin of the policy agenda. They are at the centre of it.

The key finding of this paper is that the combination of delayed economic transition and population ageing is very risky, and can make a country highly vulnerable to adverse economic or social shocks such as the current economic crisis.

When we started working on the project 2-3 years ago, we identified this as a major risk, i.e. a good economic situation (high prices for Russian and Ukrainian products and generally strong growth) turning into a bad one. The good situation has been at least partially salvaged by shifting the social security framework from one that was hampering economic and social development to one that is contributing to stronger development.

Are the governments of Russia and Ukraine pursuing the best possible paths for developing their social security frameworks for industrial restructuring? This is not a question we can answer, however we can say that many challenges still lie ahead.

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Annex. Tables

Table 1. Economic Indicators in Russia

Year	Real GDP (1990=100)	Real GDP growth	CPI, Dec. to Dec.	Consolidated budget as % of GDP*			Pension fund expenditures, % of GDP
				Revenues	Expenditures	Deficit	
1990	100.0	-3.0	n.d.	24.8	23.4	1.3	n.d.
1991	95.0	-5.0	260.4	22.2	24.9	-2.7	n.d.
1992	81.2	-14.5	2608.8	27.9	31.6	-3.7	4.7
1993	74.2	-8.7	939.9	29.0	33.6	-4.7	6.0
1994	64.7	-12.7	315.1	28.2	37.7	-9.5	6.0
1995	62.1	-4.1	231.3	30.6	34.0	-3.4	6.0
1996	59.9	-3.6	121.8	27.8	32.5	-4.7	6.2
1997	60.7	1.4	111.0	30.4	35.8	-5.5	7.4
1998	57.5	-5.3	184.4	26.1	32.0	-5.9	6.4
1999	61.2	6.4	136.5	25.2	26.1	-0.9	5.6
2000	67.3	10.0	120.2	28.7	26.8	1.9	4.7
2001	70.7	5.1	118.6	30.0	27.1	3.0	5.8
2002	74.0	4.7	115.1	32.5	31.6	0.9	7.3
2003	79.4	7.3	112.0	31.3	29.9	1.3	6.1
2004	85.1	7.2	111.7	32.0	27.5	4.5	5.8
2005	90.6	6.4	110.9	39.7	31.6	8.1	6.0

Sources: Rosstat (2006) Social Situation and Living Standards of Russian Population, 2006. M., P. 28, 190; Rosstat (2003) Russian Statistical Yearbook, 2003. M., Pp. 30-31, 547-548, 553, 614.

Table 2. Indicators of inequality in Russia

	Incomes			Wages	
	Fund coefficient*	Decile coefficient	Gini Coefficient	Fund coefficient*	Gini Coefficient
1991	4.5	n.d.	0.260	n.d.	n.d.
1992	8.0	n.d.	0.290	n.d.	n.d.
1993	11.2	n.d.	0.398	n.d.	n.d.
1994	15.1	n.d.	0.409	23.4	0.439
1995	13.5	n.d.	0.381	26.4	0.454
1996	13.0	n.d.	0.375	24.0	0.445
1997	13.2	n.d.	0.381	25.0	0.447
1998	13.8	n.d.	0.398	n.d.	n.d.
1999	14.0	n.d.	0.399	32.1	0.482
2000	13.9	n.d.	0.395	34.0	0.483

	Incomes			Wages	
	Fund coefficient*	Decile coefficient	Gini Coefficient	Fund coefficient*	Gini Coefficient
2001	13.9	6.5	0.397	39.6	0.508
2002	14.0	6.6	0.397	30.5	0.477
2003	14.5	6.7	0.403	30.0	0.481
2004	15.2	7.0	0.409	26.4	0.467
2005	14.8	6.8	0.405	24.9	0.456

Note: * Fund coefficient = average income per capita of top 10% to the bottom 10%.
Sources: Annual Review of Economic Policy in Russia in 2001; Russian Bureau of Economic Analysis (2002, p. 349). Labor and Employment in 1999; Goskomstat (1999, p. 323). Labor and Employment in 2005; Rosstat (2005, p. 475). Social situation and living standard of Russian population in 2006; Rosstat (2006. p.138).

Table 3. Gender dimension of Russian labor market

	Employment rate, 15-72		Employment rate, 16-54/59		Males monthly wage / females monthly wage
	males	females	males	females	
1992	73.6	60.4	82.2	77.5	n.d.
1993	71.1	57.8	79.6	74.7	n.d.
1994	66.8	54.0	76.6	72.0	n.d.
1995	65.2	52.9	74.6	70.2	n.d.
1996	63.9	51.9	73.3	69.0	n.d.
1997	60.9	49.5	70.0	65.7	n.d.
1998	58.5	48.1	68.2	63.5	1.42
1999	62.8	52.2	71.1	66.3	1.54
2000	64.1	53.8	72.7	68.1	1.58
2001	63.6	53.8	72.5	67.6	1.58
2002	63.9	55.4	72.4	68.6	1.50
2003	64.8	55.9	73.1	68.5	1.55
2004	64.9	55.9	72.6	68.1	1.57
2005	66.1	57.5	73.3	69.3	n.d.

Source: Russian Statistical Yearbook, 1999. M., 1999, P. 107. Russian Statistican Yearbook, 2005; M., 2005; p. 139-140. Labor & Employment, 2005. p. 446-447.

Table 4. Economic indicators for Ukraine

Year	Real GDP (1990=100)	Real GDP growth	Consolidated budget as % of GDP*			Pension fund expenditures
			Revenues	Expenditures	Deficit	
1991	91.3	-8.7%				9.5%
1992	82.3	-9.9%	24.4%	38.1%	-13.7%	7.9%
1993	70.6	-14.2%	33.5%	38.6%	-5.1%	8.3%
1994	54.4	-22.9%	43.5%	52.4%	-8.9%	7.4%
1995	47.8	-12.2%	38.0%	44.6%	-6.6%	7.9%
1996	43.0	-10.0%	37.0%	41.9%	-4.9%	9.3%
1997	41.7	-3.0%	30.1%	36.7%	-6.6%	10.2%

Year	Real GDP (1990=100)	Real GDP growth	Consolidated budget as % of GDP*			Pension fund expenditures
			Revenues	Expenditures	Deficit	
1998	40.9	-1.9%	28.2%	30.4%	-2.2%	9.3%
1999	40.8	-0.2%	25.2%	26.7%	-1.5%	9.5%
2000	43.2	5.9%	28.9%	28.3%	0.6%	8.4%
2001	47.2	9.2%	26.9%	27.2%	-0.3%	8.8%
2002	49.7	5.2%	27.4%	26.7%	0.7%	10.1%
2003	54.4	9.6%	28.2%	28.4%	-0.2%	9.1%
2004	61.0	12.1%	26.5%	29.7%	-3.2%	11.4%
2005	62.6	2.6%	31.6%	33.4%	-1.8%	14.6%

* *Note* that the Ukrainian official figures are different from those reported in World Bank databases due to the difference in methodologies.
Source: Committee for Statistics of Ukraine, www.ukrstat.gov.ua, Bulletins of the Pension Fund, www.pension.kiev.ua.

Table 5. Population and social welfare dynamics in Ukraine

	Population, thousands	Working age (15 to 70 year old) (% of total population)	Economically active (% of total population)	Employed (% of total population)	Unemployed ILO definition (% of economically active)	Unemployed registered with unemployment offices (% of economically active population)	Pensioners (% of total population)	Support ratio (Working/ pensioners)
1991	52,056.6	-	-	48.0%	-	0.0%	25.2%	1.91
1992	52,244.1	-	-	45.9%	-	0.3%	26.0%	1.76
1993	52,114.4	-	-	45.9%	-	0.4%	27.2%	1.69
1994	51,728.4	-	-	44.5%	-	0.4%	28.0%	1.59
1995	51,297.1	73.4%	49.8%	47.0%	5.6%	0.5%	28.3%	1.66
1996	50,818.4	74.1%	51.4%	47.5%	7.6%	1.3%	28.5%	1.66
1997	50,370.8	73.1%	51.8%	47.2%	8.9%	2.4%	28.8%	1.64
1998	49,918.1	73.4%	52.0%	46.1%	11.3%	3.9%	29.0%	1.59
1999	49,429.8	73.4%	45.6%	40.4%	11.6%	5.2%	29.3%	1.38
2000	48,923.2	73.9%	46.7%	41.2%	11.6%	5.1%	29.6%	1.39
2001	48,457.1	74.3%	46.3%	41.2%	10.9%	4.5%	29.7%	1.39
2002	48,003.5	74.8%	46.3%	41.9%	9.6%	4.7%	30.0%	1.40
2003	47,622.5	75.3%	46.6%	42.3%	9.1%	4.5%	30.2%	1.40
2004	47,280.8	75.8%	47.0%	42.9%	8.6%	4.4%	30.2%	1.42
2005	46,929.5	76.4%	47.5%	44.1%	7.2%	4.0%	30.0%	1.47

Source: Committee for Statistics of Ukraine, www.ukrstat.gov.ua, International Labour Organization www.ilo.org.

Table 6. Main statistics of private pension funds in Russia

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of private pension funds	254	279	270	270	262	251	287	283	296	290	289
Incl. reported	n.d.	n.d.	n.d.	n.d.	234	250	256	257	270	262	257
Reserves, billion rubles	n.d.	n.d.	n.d.	n.d.	15.6	33.6	51.4	89.6	169.8	277.4	405.2
as % to GDP	n.d.	n.d.	n.d.	n.d.	0.2	0.4	0.5	0.7	1.0	1.3	1.5
Number of participants, thousand people	1676	2032	1816	2383	3375	4200	4370	5202	5547	6059	6421
Number of pensioners, thousand peoples	155.9	187.4	174.1	258.5	281.9	330.5	351.8	428.0	500.6	705.7	865.5
as a % to the number of all pensioners in Russia	0.4	0.5	0.5	0.7	0.7	0.9	0.9	1.1	1.3	1.8	2.3
Pension payments, billion rubles	n.d.	n.d.	n.d.	n.d.	0.6	1.0	2.0	3.3	5.0	7.6	12.4
as a % to the total public pension expenditures	n.d.	n.d.	n.d.	n.d.	0.2	0.2	0.3	0.4	0.5	0.6	0.9

Sources: Social Situation and Living Standards of Russia's Population in 2001: stat.coll. / Goskomstat of Russia. M., 2001. P. 175. Social Situation and Living Standards of Russia's Population in 2004: stat.coll. / Rosstat. M., 2004. P. 236. Social Situation and Living Standards of Russia's Population in 2004: stat.coll. / Rosstat. M., 2004. P. 193. Web-site of the Federal Financial Markets Service http://www.fcsm.ru/catalog.asp?ob_no=3614 Web-site "Laboratory of Pension Reform" http://www.pensionreform.ru/pension/lpr_openinfo.

Table 7. Main statistics of private pension funds in Ukraine

	2005	2006	9 mon. 2007
Number of Non-state pension funds (NSPFs)	54	79	95
Number of pension fund administrators	37	41	47
NSPFs created earlier, currently under restructuring	2	2	1
Increase in number of NSPFs from previous year	61%	32%	17%
Total value of assets of NSPFs (thousands UAH)	46,154.3	137,369.1	226,493.3
Number of persons covered under contracts with NSPFs (thousands)	88.4	193.3	260.3
Number of contracts (thousands), including:	30.6	41.5	49.5
contract with private persons	*21.3*	*28.5*	*35.2*
contracts with private entrepreneurs	*0.0*	*0.0*	*0.0*
contracts with companies	*9.3*	*13.0*	*14.5*
Total amount of contributions to the NSPFs (cumulative, thousands UAH), including	36,351.5	114,397.3	195,532.1
from private individuals	*2,188.1*	*5,262.7*	*10,604.3*
from private entrepreneurs	*8.3*	*19.8*	*35.5*
from companies	*34,155.1*	*109,114.7*	*184,892.2*
Investment income of the NSPFs (cumulative, thousands UAH)	9,709.4	45,291.8	47,750.1
Administrative and other expenditures (cumulative, thousands UAH)	1,268.4	6,084.2	14,201.1
Profitability of NSPF investments		98%	35%

Source: State Commission on Securities and Stock Market.

Table 8. State debt in Ukraine

State debt of Ukraine (thousand USD)	**2003**	**2004**	**2005**	**2006**	**2007**
Total state and state guaranteed debt	**14,548,152.8**	**16,097,021.2**	**15,474,567.9**	**15,950,201.5**	**17,573,216.2**
Total State Debt	12,409,888.5	12,757,252.0	12,504,044.5	13,091,838.9	14,117,678.9
internal debt	*3,855,159.4*	*3,949,430.2*	*3,799,661.6*	*3,288,655.9*	*3,526,017.1*
external debt	*8,554,729.1*	*8,807,821.8*	*8,704,382.9*	*9,803,183. 0*	*10,591,661.8*
Total State Guaranteed Debt	2,138,264.3	3,339,769.2	2,970,523.4	2,858,362.6	3,455,537.3
Internal debt	*181.2*	*182.1*	*191.3*	*191.3*	*198,211.1*
external debt	*2,138,083.1*	*3,339,587.0*	*2,970,332.1*	*2,858,171.3*	*3,257,326.2*

Source: Ministry of Finance of Ukraine (http://www.minfin.gov.ua/file/link/160467/file/Stat_borg.pdf).

Table 9. Life expectancy dynamics in Russia, Ukraine and France

		1960	1965	1970	1980	1990	1995	2000	2005
Life expectancy at birth									
Russia	Males	63.7	64.4	63.1	61.4	63.8	58.1	59.0	58.9
	Females	72.3	73.3	73.4	73.0	74.3	71.6	72.2	72.4
Ukraine	Males	67.4	67.8	66.5	64.6	65.6	61.2	62.1	61.5
	Females	73.8	74.6	74.4	74.1	74.9	72.5	73.5	73.4
France	Males	67.0	67.5	68.4	70.2	72.7	73.9	75.3	76.8
	Females	73.6	74.7	75.8	78.4	81.0	81.9	82.8	83.8
Life expectancy at age of 60									
Russia	Males	16.0	15.4	14.8	14.3	14.7	13.1	13.2	13.2
	Females	20.2	19.7	19.5	19.3	19.5	18.5	18.7	19.0
Ukraine	Males	17.5	16.7	16.0	15.2	15.3	13.8	14.0	13.8
	Females	20.7	20.1	19.8	19.4	19.6	18.5	18.9	19.1
France	Males	15.7	15.7	16.2	17.3	19.0	19.7	20.4	21.5
	Females	19.5	20.1	20.8	22.4	24.2	25.0	25.6	26.4

Source: Human Mortality Database. University of California, Berkeley (USA), and Max Planck Institute for Demographic Research (Germany). Life tables by year of death (period), 1x1, female, male. Available at www.mortality.org or www.humanmortality.de (data downloaded on September 26, 2007).

Table 10. Indicators of Russian population structure (by the date of census; by January 1; per 1000 people)

	1959	1979	1989	2002	2004	2005	2006
Share in total population of certain sex:							
men 60+, women 55+	118	163	185	205	203	203	204
men 60+	62	85	101	137	131	127	124
women 55+	163	230	259	264	266	270	273
OADR for both sexes	202	270	325	335	325	323	322
men and women aged 60+ / men and women aged 20-59	166	245	280	328	308	294	284

Notes: OADR – old-age dependency ratio (men of 60 and over and women of 55 and over per 1000 men aged 16-59 and women aged 16-54)
Sources: Author's calculation based on the Demographic Yearbook of Russia. 2005., M.: Rosstat, 2006. P. 30-31; Sotsialnoe polozhenie i uroven' zhisni naselenia Rossii. 2004. M.: Rosstat, 2004. P. 49; Sotsialnoe polozhenie i uroven' zhisni naselenia Rossii. 2005. M.: Rosstat, 2005. P. 50; Sotsialnoe polozhenie i uroven' zhisni naselenia Rossii. 2006. M.: Rosstat, 2006. P. 51.

Table 11. Ageing in Russia under different population projections

	Constant fertility, constant mortality	Constant fertility, declining mortality	Increasing fertility, constant mortality	Increasing fertility, declining mortality
TFR, number of children per woman				
2000	1.3	1.3	1.3	1.3
2025	1.3	1.3	1.5	1.5
2050	1.3	1.3	2.0	2.0
Life expectancy at birth, years				
Males 2000	59.9	59.9	59.9	59.9
2025	59.9	68.6	59.9	68.6
2050	59.9	77.0	59.9	77.0
Females 2000	72.5	72.5	72.5	72.5
2025	72.5	77.9	72.5	77.9
2050	72.5	83.0	72.5	83.0
Percentage aged 65 or over, %	*26.3*	*24.9*	*23.9*	*29.3*

Source: [Vishnevskiy et al, 2001: 139-140, 145].

Table 12. Probability demographic forecasts for Ukraine

Interval	2005e	2010	2015	2020	2025	2030	2035	2040	2045	2050
Number of people, thousand										
0.025	46924.8	44129.6	41258.2	38451.4	35770.9	33192.6	30917.3	28756.2	26716.6	24503.5
0.2	46924.8	44455.8	42032.0	39649.9	37246.0	35024.1	32976.0	31090.3	29280.6	27444.4
0.4	46924.8	44657.5	42448.1	40258.3	38102.6	36071.6	34184.3	32460.3	30851.8	29195.6
0.6	46924.8	44821.8	42787.9	40764.8	38743.3	36873.0	35268.5	33715.8	32180.6	30576.1
0.8	46924.8	44983.4	43179.1	41355.1	39478.1	37833.3	36315.7	34987.6	33797.6	32520.4
0.975	46924.8	45335.6	43921.1	42518.0	41086.7	39683.1	38443.5	37616.9	36831.6	36095.0
median	***46924.8***	***44743.8***	***42608.7***	***40511.0***	***38431.5***	***36480.8***	***34788.7***	***33113.3***	***31467.2***	***29887.3***
Number of people over 65y.o as percent of people15-64 y.o.										
0.025	0.232	0.211	0.195	0.202	0.215	0.229	0.231	0.243	0.265	0.304
0.2	0.232	0.213	0.200	0.210	0.226	0.242	0.247	0.264	0.290	0.338
0.4	0.232	0.214	0.203	0.214	0.232	0.250	0.257	0.277	0.306	0.359
0.6	0.232	0.215	0.205	0.217	0.237	0.258	0.267	0.290	0.321	0.378
0.8	0.232	0.217	0.208	0.222	0.243	0.267	0.279	0.304	0.340	0.401
0.975	0.232	0.219	0.213	0.230	0.255	0.282	0.299	0.333	0.381	0.460
median	***0.232***	***0.215***	***0.204***	***0.215***	***0.234***	***0.254***	***0.262***	***0.283***	***0.314***	***0.369***

Source: S. Pirogkov, S. Scherbov, P. Shevchuk, " Ukraine 2050: Perspectives of demographic development", State Committee for Statistics of Ukraine, 2006, http://ukrstat.kmu.gov.ua/statistics/wsite/niistat/Noviny/new2006/zmist_novin/demogr/rozv.htm.

Table 13. Russian pension system indicators, %

	Real pension benefits (1990=100%)	Benefit to pensioner's subsistence minimum	Replacement ratio (average pension to average wage)
1989	88.8	n.d.	n.d.
1990	100.0	n.d.	33.7
1991	97.0	n.d.	33.8
1992	50.3	125.2	27.3
1993	65.8	138.0	33.9
1994	63.7	128.6	35.6
1995	51.3	101.0	39.8
1996	55.7	116.0	38.2
1997	52.7	113.2	34.5
1998	50.2	114.7	38.0
1999	30.4	70.2	29.5
2000	38.9	76.4	31.2
2001	47.3	89.5	31.6
2002	55.0	100.0	31.6
2003	57.4	102.0	29.8
2004	60.6	106.3	28.4
2005	66.4	n.d.	27.6

Author's calculation by: Goskomstat (1999): Russian statistical yearbook, 1999. Goskomstat (1997): Social Situation and Standards of Living of Russian Population, 1997. Rosstat (2005): Social Situation and Standards of Living of Russian Population, 2005.

Table 14. Changes in poverty level of Russian pensioners depending on the changes in their pension benefits and restriction of employment, NOBUS data, %

	All households	Households with pensioners		
		all	mixed	"clear" – pensioners only
Poverty level[47] *by household money incomes*				
Raw data, 2003	49.1	43.2	55.6	32.7
Scenarios:				
Pensioners are not allowed working (pensioners' wage=0)	53.5	50.9	64.2	39.7
Real pension is decreased by 10%	52.8	49.7	57.2	43.3
Real pension is increased by 10%	45.7	37.4	53.7	23.7

[47] Poverty level is measured according to the absolute concept. A household is poor if an indicator of its well-being (money incomes or disposable resources) is below the household subsistence minimum. The household subsistence minimum is calculated with regard to the household composition and regional official indicators of the subsistence minimum established for children (below 18), adults and pensioners (people of 55/60 years old and over).

	All households	Households with pensioners		
		all	mixed	"clear" – pensioners only
Poverty level by household maximum disposable resources[48]				
Raw data, 2003	26.0	20.3	33.3	9.4
Scenarios:				
Pensioners are not allowed working (pensioners' wage=0)	26.9	21.8	35.6	10.2
Real pension is decreased by 10%	27.0	22.0	34.6	11.7
Real pension is increased by 10%	25.1	18.7	32.3	7.2

Source: Sinyavskaya [2006].

Table 15. Concepts of Russian pension reform

	1 tier	2 tier	3 tier
1995 Conception	*Basic pensions for all differentiated by the level of disability*	Labor pensions, DB, financed on a PAYG principle with leaving privileged pensions unchanged	Voluntary occupational and individual pensions
1997 Conception	Social means-tested pensions for those without sufficiently funded pension	Mandatory funded DC pensions for all, mandatory occupational pensions for special professional groups	Voluntary occupational and individual pensions
1998 Program	Social means-tested pensions for those without sufficiently funded pension	*Labor pensions financed on two bases – PAYG (NDC) and funded (FDC) Mandatory occupational pensions instead of privileged ones*	Voluntary occupational and individual pensions
2001 Conception and new framework	*Basic pensions for all differentiated by the level of disability* + so called "social security" pensions financed from general taxes	*Labor pensions financed on two bases – PAYG (NDC) and funded (FDC) Mandatory occupational pensions instead of privileged ones*	Voluntary occupational and individual pensions

[49] Disposable resources are calculated as a maximum of household incomes and expenditures.

Table 16. Descriptive statistics

Variable	Name	Obs.	Mean	Std. Dev.	Min	Max
A pensioner worked >=1 month	wkpens	2701	0.57	0.496	0	1
Sex: 0 - male, 1 - female	SEX	3269	0.74	0.440	0	1
R's age	ragey_i	3269	66.11	7.363	45	81
Pension age	PENAGEY	3228	54.71	4.016	33	71
Education:						
Below secondary school	RR_ED_1	3269	0.43	0.496	0	1
Secondary school	RR_ED_2	3269	0.06	0.232	0	1
Primary vocational	RR_ED_3	3269	0.09	0.289	0	1
Secondary vocational	RR_ED_4	3269	0.23	0.418	0	1
Higher	RR_ED_5	3269	0.19	0.393	0	1
Subjective estimation of health:						
good	goodhl	3269	0.06	0.237	0	1
average	averagehl	3269	0.52	0.499	0	1
bad	badhl	3269	0.42	0.493	0	1
Partner in HH	p_hh	3269	0.45	0.497	0	1
Number of adults in HH	ADULHH	3269	0.20	0.536	0	7
Number of children in HH	CH0_17	3269	0.02	0.139	0	2
Occupation:						
CEOs, officials	ocup1	2749	0.01	0.107	0	1
Professionals	ocup2	2749	0.24	0.428	0	1
Specialists	ocup3	2749	0.09	0.284	0	1
Clerks	ocup4	2749	0.12	0.325	0	1
Service workers	ocup5	2749	0.05	0.221	0	1
Agricultural workers	ocup6	2749	0.04	0.207	0	1
Industrial workers	ocup7	2749	0.18	0.388	0	1
Machine operators, drivers	ocup8	2749	0.14	0.346	0	1
Unskilled labor	ocup9	2749	0.12	0.324	0	1
Sector:						
Industry	indust	2749	0.27	0.443	0	1
Construction	constr	2749	0.07	0.255	0	1
Transport & communication	transp	2749	0.07	0.260	0	1
Agriculture	agricult	2749	0.15	0.355	0	1
Education, health care, culture & science	budgs	2749	0.22	0.413	0	1
Other sectors	othsec	2749	0.22	0.416	0	1
Has a right for early retirement	eretri	3248	0.16	0.364	0	1
Type of early retirement:						
List #1 (very hazardous conditions)	_Ieretgr_1	3248	0.05	0.223	0	1
List #2 (difficult conditions)	_Ieretgr_2	3248	0.02	0.147	0	1

Variable	Name	Obs.	Mean	Std. Dev.	Min	Max
Far North regions	_Ieretgr_3	3248	0.02	0.135	0	1
Education, health care	_Ieretgr_4	3248	0.03	0.175	0	1
Other professional reasons	_Ieretgr_5	3248	0.01	0.109	0	1
Other	_Ieretgr_6	3248	0.02	0.140	0	1
Settlement:						
Town	_ISTAT_2	3269	0.28	0.451	0	1
Urban-type settlement	_ISTAT_3	3269	0.06	0.241	0	1
Rural	_ISTAT_4	3269	0.25	0.435	0	1

Note. Sample includes pensioners aged 45 and over receiving old-age and length-of-service pensions, who had a job at the moment of applying for a pension, excluding those in the army or police.
Data: Generations and Gender Survey in Russia, 1st wave, 2004 (N=11,261).

Table 17. Probability of working after becoming a pensioner

	Men and women		Men		Women	
	Specif. 1	**Specif. 2**	**Specif. 1**	**Specif. 2**	**Specif. 1**	**Specif. 2**
Females	-0.027	-0.025	–	–	–	–
Pension age	-0.172	-0.170	-0.205	-0.222	0.258	0.281*
Pension age2	0.001	0.001	0.002	0.002	-0.003*	-0.003**
Education (below secondary school = reference)						
Secondary school	0.247**	0.2478**	0.583*	0.593*	0.230*	0.229*
Primary vocational	0.128	0.128	0.246	0.241	0.093	0.095
Secondary vocational	0.245***	0.243***	0.120	0.131	0.290***	0.290***
Higher	0.496***	0.496***	0.366*	0.366*	0.579***	0.576***
Subjective estimation of health (average = reference)						
Good health	-0.064	-0.064	0.151	0.141	-0.284*	-0.289*
Bad health	-0.256***	-0.247***	-0.272**	-0.250**	-0.268***	-0.265***
Partner in HH	-0.056	-0.057	0.052	0.054	-0.108*	-0.109*
N of adults in HH	-0.065	-0.066	-0.133	-0.137	-0.049	-0.048
N of children below 18 in HH	0.105	0.122	1.053*	1.029	-0.117	0.091
Occupation (machine operators & drivers = reference)						
CEOs, officials	0.186	0.182	0.298	0.326	0.212	0.235
Professionals	0.156	0.167	0.431*	0.474**	0.126	0.157
Specialists	0.232*	0.248**	0.010	0.080	0.299**	0.328**
Clerks	0.183*	0.185*	0.333	0.337	0.206	0.225*
Service workers	0.069	0.070	-0.248	-0.248	0.087	0.102
Agricultural workers	0.074	-0.101	-0.117	-0.086	0.120	0.166
Industrial workers	0.079	0.077	0.131	0.135	0.065	0.077

	Men and women		Men		Women	
	Specif. 1	**Specif. 2**	**Specif. 1**	**Specif. 2**	**Specif. 1**	**Specif. 2**
Unskilled labor	0.287***	0.293***	0.492**	0.506**	0.309**	0.330**
Sector (education, health care, culture & science = reference)						
Industry	-0.380***	-0.397***	-0.448**	-0.502**	-0.381***	-0.409***
Construction	-0.354***	-0.361***	-0.579**	-0.609**	-0.256*	-0.282*
Transport & communication	-0.354***	-0.358***	-0.472*	-0.506**	-0.333**	-0.371**
Agriculture	-0.641***	-0.643***	-0.585**	-0.609**	-0.698***	-0.714***
Other sectors	-0.356***	-0.370***	-0.502**	-0.553**	-0.295***	-0.324***
Permanent labor contract	–	–	–	–	–	–
Early retirement rights (no rights = reference)						
Has a right for early retirement	0.243***	–	0.086	–	0.354***	–
List #1 (very hazardous conditions)	–	0.331***	–	0.241	–	0.484***
List #2 (difficult conditions)	–	0.350**	–	0.170	–	0.597***
Far North regions	–	0.616***	–	0.079	–	0.944***
Education, health care	–	0.150	–	-0.295	–	0.168
Other professional reasons	–	0.022	–	0.071	–	0.200
Other	–	0.091	–	-0.594	–	0.022
Settlement (large cities = reference)						
Towns	-0.061	-0.076	-0.121	-0.115	-0.010	-0.019
Urban-type settlement	-0.118	-0.136	-0.117	-0.112	-0.110	-0.113
Rural	-0.104	-0.117	-0.400	-0.397	-0.021	-0.024
Regions	controlled	controlled	controlled	controlled	controlled	controlled
Const.	5.394*	5.341*	5.576	6.053	-5.331	-5.976
N obs.	*2679*		*727*		*1952*	
Log likelihood	*-1639.00*	*-1635.30*	*-424.95*	*-423.36*	*-1164.20*	*-1160.09*
Pseudo R2	*10.55%*	*10.75%*	*15.57%*	*15.89%*	*12.09%*	*12.40%*

Table 18. Factors affecting duration of employment after becoming a pensioner. Exponential regression - accelerated failure-time form

	Both		Men	Women	
	Specif. 1	**Specif. 2**	**Specif. 2**	**Specif. 1**	**Specif. 2**
Females	-0.176*	-0.185**	–	–	–
Age	-0.321***	-0.327***	-0.619***	-0.285***	-0.292***
Age2	0.002***	0.002***	0.005***	0.002***	0.002***
Education (below secondary school = reference)					
Secondary school	0.166	0.161	0.818**	-0.008	-0.003
Primary vocational	0.165	0.175	0.201	0.173	0.174
Secondary vocational	0.093	0.080	0.236	0.077	0.055
Higher	0.359***	0.352***	0.258	0.300**	0.291*
Subjective estimation of health (average = reference)					
Good health	0.064	0.088	-0.514**	0.637***	0.630***
Bad health	-0.376***	-0.385***	-0.728***	-0.331***	-0.356***
Partner in HH	-0.114	-0.124*	0.486***	-0.209***	-0.228***
N of adults in HH	-0.054	-0.059	0.391**	-0.088	-0.091
N of children below 18 in HH	-0.283	-0.309	-0.401	-0.592	-0.605
Occupation (machine operators & drivers = reference)					
CEOs, officials	-0.435	-0.405	-0.390	-0.631	-0.608
Professionals	-0.367***	-0.392***	0.016	-0.638***	-0.640***
Specialists	-0.099	-0.114	0.255	-0.386*	-0.381*
Clerks	-0.218*	-0.230*	-0.321	-0.415***	-0.416***
Service workers	-0.317	-0.305	-2.081***	-0.600***	-0.556***
Agricultural workers	-0.068	-0.123	0.801*	-0.627**	-0.717**
Industrial workers	-0.248**	-0.234*	-0.170	-0.437***	-0.399**
Unskilled labor	-0.020	-0.025	-0.035	-0.240	-0.222
Sector (education, health care, culture & science = reference)					
Industry	-0.697***	-0.654***	-0.734**	-0.948***	-0.892***
Construction	-0.704***	-0.653***	-1.068***	-0.675***	-0.632***
Transport & communication	-0.446***	-0.394***	-0.915***	-0.242	-0.244
Agriculture	-0.718***	-0.689***	-0.837**	-0.656***	-0.637***
Other sectors	-0.474***	-0.453***	-0.857***	-0.497***	-0.491***
Early retirement rights (no rights = reference)					
Has a right for early retirement	0.261***	–	–	0.375***	–
List #1 (very hazardous conditions)	–	0.328**	-0.201	–	0.424**
List #2 (difficult conditions)	–	-0.391**	-0.523	–	-0.263
Far North regions	–	0.678***	0.225	–	0.644**
Education, health care	–	0.550***	0.176	–	0.586***
Other professional reasons	–	-0.366	0.174	–	-0.720
Other	–	0.420	-0.266	–	0.726**

	Both		**Men**	**Women**	
	Specif. 1	**Specif. 2**	**Specif. 2**	**Specif. 1**	**Specif. 2**
Settlement (large cities = reference)					
Towns	-0.092	-0.213	-0.280	0.044	-0.031
Urban-type settlement	-0.292	-0.436**	-0.350	-0.180	-0.287
Rural	-0.295*	-0.395**	-0.871***	-0.078	-0.167
Regions	controlled	controlled	controlled	controlled	controlled
Const.	15.993***	16.225***	26.724***	14.705***	14.945***
N obs.	*1521*		*378*	*1143*	
Log pseudolikelyhood	*-1805.98*	*-1796.94*	*-458.997*	*-1291.905*	*-1284.794*
Wald	*298.15*	*320.69*	*2429.630*	*293.050*	*303.900*
Prob>ch2	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*