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The Influence of Retirement Systems on the Free Movement of Persons in the European Union

Retirement systems within the EU are extremely complex, and regulations concerning age of retirement and qualifications for benefits differ considerably from country to country. The effects of working in another country are not transparent and can even have a negative effect on a migrant's pension. The low migration figures between EU countries are partly a result of this situation. What changes could realistically be made in order to encourage more migration?

There are three major reasons why the countries of the EU require a radical reform of their public retirement systems. First of all, the high level of retirement expenses caused by the ageing of the population creates a huge burden on the national budget. This requires a reform of the public retirement systems in a way which would allow them to fulfil their functions under the new demographic reality. Secondly, current socio-economic changes make traditional retirement systems unable to satisfy individuals' expectations regarding benefits: future retirement benefits need to help individuals spread consumption over time, rather than just help counteract poverty in old age. Thirdly, the globalisation process and gradual deeper integration of EU countries demands a more flexible social security system: the creation of modern retirement systems would facilitate the more profound integration of the countries of the Union and ease the free movement of persons across the borders within the EU. Although it is often overlooked in the debate and planning surrounding the reform of social security systems, it is this third issue which may have a major impact on the future development of the EU.

Imperfection of Retirement Systems Coordination

The European Union with its tough process of the integration of the member countries is trying to create an area as close as possible to an optimum currency area as described by economic theory.[1] In other words, the purpose of the Union is to create the best possible conditions for the development for the member countries, better than those in which a country would find itself functioning on its own. One part of integration is the creation of a common labour market with the free movement of persons, which means that every EU citizen can apply for a job in any member country. From the beginning of its existence, the EU has attempted to support the development of the free movement of persons as one of the four main freedoms laid down in its substantive law. Nevertheless, the law in itself does not automatically cause an increase in migration between countries. The needed factor is a more active politics encouraging the free movement of persons. An increase of emigration has recently been seen from the "new" to the "old" European Union countries. For example, there is emigration from Poland, mostly by young people, to other countries in the EU. In many cases, this is related to the problems of finding a suitable job in Poland and encouraged by the opportunities in the more developed EU countries. This migration from Poland, similar to the migration from Portugal and Spain when they joined the Union in 1986, is a normal part of the transitional period. It will disappear when the level of economic development is equalised, particularly when the salary gap across countries is minimised.[2] This article solely addresses migration between countries of an equal level of economic development, and therefore relates to the EU as seen in the future.

From the beginning of the formation of the EU, it was understood that the existing retirement regulations of the member countries could pose a barrier to the free movement of persons. To encourage people to move across countries, they would need to be ensured that they would not be deprived of benefits from the social security system. To this end, rules for the coordination of national social security systems were created.

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[1] R. Mundell: A Theory of Optimum Currency Areas, in: American Economic Review, Vol. 51, No. 4, 1961, pp. 657-665.

[2] See for example G. Babinski: Współczesna emigracja z Polski na tle trendów swiatowych. Internacjonalizm i jego konsekwencje, in: Migracja zarobkowa z Polski do krajów Unii Europejskiej - wyzwaniem dla panstwa, conference paper , Senat RP, 20.09.2006; P. Rees, J. Stillwell, A. Convey, M. Kupiszewski et al.: Population Migration in the European Union, Chichester 1996, John Wiley and Sons.

There are four basic rules for the coordination of retirement pension benefits for migrating citizens of the EU[3]:

- *The principle of equality of treatment:* the social security legislation of the country in which a person is insured entitles him or her to have the same rights and obligations as nationals of that country. This means, in particular, that a claim for benefits may not be rejected for the sole reason that a person is not a national of that State.
- *The principle of being subject to the legislation of one country*, according to which a person is insured in the country in which he or she exercises his/her occupational activity.
- *The principle of aggregation:* if the period during which a person has been insured in a country is not long enough to qualify for a pension in that country, any periods of insurance which that person completed in other EU countries will be taken into account.
- *The principle of exporting the acquired rights and benefits,* stating that old-age pensions will be paid regardless of the place of residence within the European Union or the European Economic Area without any reduction, modification or suspension.

The most important rule for encouraging the migration of persons is the third one, regarding the aggregation of insurance periods in the case of work in several different member countries. It ensures, in establishing the right to obtain a benefit, that when due to migration a person does not fulfil the period of insurance demanded by the regulations of a certain country, the periods of insurance from other EU countries shall be added as if they had taken place in that country.

The intention in creating those rules was to ensure that people moving between EU countries would not lose their social security benefits. Still, the functioning of these rules is far from perfect. The complication and variety of the regulations imposed in the traditional social security systems hinders migration. Despite the fact that there is a rule stating that the migrating person is to be treated under the same conditions as the citizens of the country in which he or she is, or was, employed, a situation may occur in which he or she will be deprived of part of a benefit. This can be illustrated by the following example.[4]

A hypothetical employee was insured and paid contributions for a period of 10 years in State X, then for 8 years in State Y, and then for 9 years in State Z. Having reached the age of 65, he applied for a pension. The retirement regulations in State X allow a 65 year-old man to apply for a pension after 25 years of insurance. In State Y the pensionable age is 67 after 20 years of insurance. In State Z, the pensionable age is 67 after 35 years of insurance.

According to the coordination regulations, State X will grant a pension to the employee, because he has reached the age of 65, and together with the periods of insurance from States Y and Z he has completed 25 years of insurance. State Y will grant a pension after a two year period, when the hypothetical employee reaches pensionable age in State Y. However, the employee will not receive a pension in State Z, because the total amount of insurance periods is below the required 35 years.

The total retirement benefit E can be calculated from the following:

$$E = \frac{10}{27}\delta_x F_x(e_x, s_x, s) + \frac{8}{27}\delta_y F_y(e_y, s_y, s) + \frac{9}{27}\delta_z F_z(e_z, s_z, s)$$

where:

e_i – salary in State i;

s_i – required period of insurance in State i;

s – total period of insurance of the employee;

$F_i(e_i, s_i, s)$ – benefit estimated on the basis of the regulations in State i (retirement formula);

$\delta_i = 0$ *for* $s < s_i$

$\delta_i = 1$ *for* $s > s_i$

δ_i means that State i calculates the benefit if the conditions regarding the period of work s are fulfilled.

According to the regulations in force, each country in which the person was employed for more than one year shall calculate the theoretical amount of pension benefits. In this calculation, the total period of insurance is to be taken into consideration, as if the employee had been employed only in that country throughout the period. The level of real benefit is calculated on the basis of the estimated theoretical amount of benefit and the ratio between the number of insurance periods completed in the State and the total number of insurance periods acknowledged. This means that the hypothetical employee whould receive 10/27 of the theoretical benefit from State X and 8/27 of the theoretical benefit from State Y (after reaching the age of 67). Still, he whould receive nothing from State Z, as he did not fulfil the conditions regarding

[3] Regulation (EEC) No 1408/71 of the Council of 14 June 1971 on the application of social security schemes to employed persons and their families moving within the Community, consolidated version of 1 June 2004, Office for Official Publications of the European Communities.

[4] Elaborated by the author on the basis of: The Community Provisions of Social Security, European Commission, www.ec.europa.eu.

the period of insurance (only 27 years where 35 are required).

In this case 9 years of employment in State Z do not raise the retirement benefit of the employee, although it did give him the right to apply for a pension in States X and Y. This shows that it would have been more profitable for him to continue with employment either in State X or Y or in a different State where the required period of insurance was shorter than in State Z.

Many situations similar to the one presented in the example above may arise, as the majority of EU member countries grant entitlement to future benefits based on the length of the working period, and the conditions concerning its length and the pensionable age vary considerably within the EU. The above example demonstrates that employees may migrate to a country in which higher salaries are unprofitable[5] due to the barriers caused by the regulations of retirement systems coordination. Furthermore, the rules coordinating the retirement benefits are inadequate, as they do not ensure the granting of benefits in the future. People moving to a different country usually cannot predict how long their migration will be. They are also unable to determine how long they will work and, thus, whether they will fulfil the conditions imposed by the country regarding the pensionable age and the required length of work period.

It should also be noted that in the case of migration people are often ignorant of the rules and regulations of the pension system in the country to which they move, and they rely merely on their knowledge of the pension system in their home state. Cases such as in the example above may occur more often if the migrating person does not take into consideration his or her future pension but only the level of salaries which can be gained in a country. However, as more people begin to realise the need to make provisions for their own retirement, they may choose to stay in the country in which they work rather than migrate, because even with a lower salary it ensures security in old age. Decisions taken regarding migrating or staying in a country need not reflect the real state of finances of a retirement system but, as illustrated here, they may play a role in influencing migration decisions.

Retirement Systems in the EU and Their Reform

Reform of the traditional retirement systems is currently being conducted in response to demographic changes. OECD specialists[6] point out that lack of action may have a tremendous influence on the budget from which the deficit of the public retirement systems is financed. In effect many countries are adopting a wide variety of measures to prevent the breakdown of public finances. However, the effects are not always satisfactory.

The discussion of different solutions among economists has been hindered by the confusion of terminology and the lack of a precise typology of retirement systems. The differentiation made between pay-as-you-go and capital systems was insufficient, as the opponents had completely different systems in mind. To avoid misunderstandings, a double distinction should be introduced. First of all, we must differentiate between non-financial systems (which include pay-as-you-go systems) and financial systems (which include capital systems). Second, another distinction should be made between defined contribution and defined benefit systems.[7] Through a clear and systematic typology it will be possible to understand the advantages and disadvantages of each kind of retirement system, and eventually to choose a better system.

On the basis of this differentiation, four types of retirement systems can be named:

- non-financial systems with a defined benefit (NDB)
- non-financial systems with a defined contribution (NDC)
- financial systems with a defined benefit (FDB)
- financial systems with a defined contribution (FDC).

In both systems with a defined benefit (DB) the level of contributions (taxes) is adjusted in such a way as to ensure the financial balance of the system. The benefit is usually defined on the basis of a retirement formula. Systems with a defined contribution (DC) define the level of the contribution and then pay out the benefits in current value (aggregated) equal to the current value of contributions paid by the individual.[8] An important characteristic of DC systems, from the migrant's point of view, is the introduction of an individual account for every insured person.

[5] According to classical migration theory people move because of the differences in salaries to the place in which the salaries are higher. From the point of view of economics this is a beneficial process because it means that people move to the places in which they reach higher productivity. Cf. G. J. Borjas: Labor Economics, New York 2005, Harvard University.

[6] D. Roseveare, W. Leibfritz, D. Fore, E. Wurzel: Ageing Populations, Pension Systems and Government Budgets: Simulations for 20 OECD Countries, in: OECD Economics Department Working Papers, No. 168, Paris 1996.

[7] R. Holzmann, E. Palmer et al.: Pension Reform, Issues and Prospects for Non-Financial Defined Contribution (NDC) Schemes, The World Bank 2006.

[8] Both DC and DB systems are true in the equation: PV_t (aggregated assets) = PV_t (aggregated benefit payments). However, only DC systems can be described for each participant by the equation: PV_{it} (individual assets) = PV_{it} (individual profits). Cf. M. Góra, E. Palmer: Shifting Perspectives in Pensions, in: IZA (Forschungsinstitut zur Zukunft der Arbeit) Discussion Paper No. 1369, 2004.

At present, the majority of the existing traditional common retirement systems in the EU, traditionally known as pay-as-you-go, are NDB systems. The most common reform idea is to attempt to increase the insurance equivalency of the implemented NDB retirement system, which means a stricter dependence of the level of benefits granted on the length of time in which contributions are paid and on the level of salary. In order to cover the deficit there have been attempts to lower the retirement benefits (by manipulating the retirement formula), raise the retirement age, raise the contributions (most European countries already have high contribution levels, however) or subsidise the system from the budget. The latter requires raising taxes, but is the easiest to perform. Such parametric reforms, though the easiest to conduct, are not sufficient.[9] First of all, they do not ensure the long-term financial stability of the retirement systems, but instead lower the predicted deficit. Secondly, they do not take into consideration the changing role of the retirement system (from a tool for securing against poverty to a tool for transporting income in time). Thirdly, in the case of the member countries of the EU, instead of causing integration of the retirement systems, they cause more profound differences in their regulations. The introduction of parametric changes into the traditional systems leads to an increase in the complexity of each system and deepens the distinctions between the various systems in the EU,[10] which may have a negative impact on migration movements between the EU countries.

The introduction of individual accounts, i.e. the transition from a defined benefit system to a defined contribution system may lead to the financial balance of a retirement system.[11] This is not necessarily the case when parametric changes are made to an NDB system. Still, the change from a DB system to a DC system does not necessarily include a transition from a non-financial system to a financial one. Therefore, a change to a DC system does not always mean a change from pay-as-you-go to capital. Traditional NDBs can be replaced by non-financial systems based on individual accounts, a non-financial system with a defined contribution. In such a system the level of future benefits depends on the level of funds collected by the individual.[12] The essence of this change is the creation of individual accounts in which the obligations of a system are registered for each and every participant. The current contributions, just as in a traditional system with defined benefit, finance the current retirement benefits. Yet every contribution is marked in advance on the individual account of the payer (which is why the system is called non-financial defined contribution). This means that the future retirement benefit is a quotient of the total amount of the contributions raised by the valorisation and average life expectancy at retirement age. From the EU point of view, the implementation of such a system means a serious simplification of the regulations for granting benefits and the rules for the coordination of retirement systems: retirement benefits paid after reaching the pensionable age depend only on the level of funds collected by the person on the accounts of different retirement systems.

Systems which function on the NDC principle already exist in some EU countries, and several others are pondering the possibility of their implementation.[13] System changes based on the above idea were introduced, for example, in Sweden and Poland.[14] The systems implemented in those countries rely on two solutions: a non-financial system with a defined contribution and a financial system with defined contribution. From the point of view of the EU, the introduction of retirement systems with a defined contribution (regardless of whether they are NDC or FDC systems) is beneficial, as it leads to a greater integration of the regulations for retirement security without demanding the creation of a single, general EU retirement system.

Effect of DC Systems on Freedom of Movement

In the example discussed above it was pointed out that there are a variety of traditional NDB systems in the EU countries. Further, even considering the currently used coordination rules, the contributions paid by a migrant do not always increase his or her future benefits. The solution to this problem would be to change the rules of coordination such that they meet social expectations regarding the transfer of income in time. This would require taking all the contributions into consideration when calculating the benefits. This is impossible in the present situation, in which there

[9] Purely parametric reform is not sufficient to balance the current value of the retirement systems' pay-as-you-go in the longer period (beyond the limit of prognosis). This was pointed out by P. C. Rother, M. Catenaro, G. Schwa: Aging and Pensions in the Euro Area – Survey and Projection Results, in: Social Protection Discussion Paper, No. 0307, Washington DC 2003, World Bank.

[10] The reform of the French retirement system can serve as an example. The reform of 2003 ensures the financial balance of the system until 2020, and therefore it is beneficial from the financial point of view, but the implementation of the reform caused the even greater complication of the already complex French public retirement systems. Cf. A. Swierczynska: Crisis in the French Pension System (in Polish), in: Gospodarka Narodowa, No. 7-8, 2003, pp. 64-84.

[11] M. Góra, E. Palmer, op. cit.

[12] In the case of certain people "solidarity" actions are still possible in the system. The raising of the future retirement benefit is linked, however, to the transition of an agreed amount into their accounts.

[13] The discussion on the possibility of a change to an NDC system is being conducted in Austria, Czech Republic, Hungary, Spain, Portugal, Greece and Belgium. Cf. R. Holzmann: Toward a Reformed and Coordinated Pension System in Europe: Rationale and Potential Structure, in: World Bank Social Protection Discussion Paper Series, No. 0407, 2004.

[14] Partly also in Latvia and Italy.

is such a differentiation of the NDB systems in the EU and in which there is an unwillingness to harmonise or unify the rules of retirement security. Still, it would be possible thanks to the introduction of retirement systems with a defined contribution – either non-financial or financial. When calculating benefits, these systems take into consideration all the contributions paid; and moreover, they ensure paying out the total amount of the joint benefits, since regardless of the length of the work period in a certain country, they divide the amount collected on an account by average life expectation. Moreover, the simplicity of their rules enables migrants to estimate the level of their future benefits. Such conditions are satisfied both by non-financial and financial systems, but in the case of EU the simpler solution to implement would be the NDC system.[15]

The integration of NDC systems is simpler and does not require the application of the principle of aggregation of the insurance periods which, as seen in the example, may result in a lower total benefit in the case of traditional systems. The total benefit combined from several NDC systems can be described as follows.

$$E = \frac{K(e_x,g_x)}{G^{65}_{x}} + \frac{K(e_y,g_y)}{G^{66}_{y}} + \frac{K(e_z,g_z)}{G^{67}_{z}} \qquad (2)$$

where:

$K(e_i, g_i)$ is a function of capital collected on the retirement account in State i, depending on the salary e_i and the rate of valorisation of contributions on an account g_i (dependent on the rate of increase of salaries in an economy);

G^{i}_{w} is the average life expectancy in State i at the retirement age w (the difference in the value of w in the equation above is due to the differences in the retirement age of various countries, defined as the lowest age at which the benefit can be granted).

Formula (2) is much simpler than the currently used coordination formula (1). First of all, this is because the partial benefits from different countries are not linked by the length of the work period. For instance, the introduction of NDC systems in all the countries would mean a higher total retirement benefit for the migrant in the example discussed above. This is because in such a case, State Z would pay a partial benefit on the basis of contributions collected on the account in its system.

Unfortunately, the coordination rules existing in the EU are not adjusted to the NDC system. The emphasis is put on achieving the total years of service necessary to be granted pensionability, which means adding the insurance periods from different countries. This is necessary in the case of the traditional systems but it does not comply with the rules of NDC systems. One example that does not comply with the modern definition of the retirement system and the needs of migrants is the EU principle which states that a country in which a person was employed for less than one year is not obliged to pay a corresponding retirement benefit. The time of work is still calculated into the total work period which is taken into consideration in the rest of the countries, but the contribution paid is a loss from the point of view of the migrant. This is an understandable regulation, as in the traditional NDB systems the total years of service are the most important and the cost of calculating and paying a benefit based on, for instance, a two-month contribution may exceed its value. However, from the point of view of the migrant the contributions paid in this country must be treated as a loss. Instead they could be paid, for example, into a bank account to benefit the person financially. Also, from the point of view of a defined contribution retirement system, this rule is out-of-date, because the total years of service are not as important in such a system and because every contribution paid in by a worker increases his or her future benefit. For a migrant a period of work shorter than one year in any country means a considerable loss of future benefit.[16]

The implementation of NDC systems in place of the currently operating traditional systems would mean that the current coordination principles would be redundant as NDC systems can be coordinated "automatically". One might take this statement even further: the introduction of NDC systems ensures not only the coordination of retirement systems inside the EU but also their more profound integration.

The current financial crisis of retirement systems, despite all the problems linked to it, can in fact be seen as an opportunity for tightening the integration between the EU countries. The traditional retirement systems are highly differentiated: when they were formed nobody suspected that a common economic and currency area would be formed nor did they foresee the need for the free movement of persons across the borders of European countries. The crisis situation has caused all countries to make important changes to their retirement systems and perhaps, given the need for all countries to undergo reform, this is an occasion for them to coordinate and implement systems

[15] In the EU countries it is easier to introduce a non-financial system than a financial one. It is much simpler to introduce an NDC system in societies used to an NDB system. The system does not use the financial markets to multiply the contributions but the introduction of individual accounts enables using the advantages formerly seen only in FDC systems. The introduction of an NDC system is also simpler from the government's point of view because it does not demand the disclosure of the indebtedness of the retirement system in the national accounts, which in the EU countries would involve a serious trespassing of the limits imposed by the Maastricht treaty.

[16] For example in the Polish retirement system the total years of service matter only in the case of the minimal retirement benefits.

with similar functional principles. The simplification of the regulations would increase the mobility of people inside the EU.

Conclusion

One of the causes of low migration between the EU countries could be the differentiation and complexitiy of the retirement systems. Although there are regulations which are intended to coordinate them, they do not necessarily meet the needs of potential migrants. The rules do not ensure that migrants will receive the full level of benefits when working in other countries and they do not guarantee that the joint benefits from several retirement systems will be comparable with the benefits received by people working in one country. This suggests that there is a need for changes to enable the free movement of persons.

Changes must be introduced into the European retirement systems for reasons other than migration: current demographic conditions and changes in individuals' perceptions regarding the purpose of retirement systems suggest that radical changes must be introduced. Currently the retirement system is not only a tool for protecting individuals from poverty in old age but it has become a tool enabling the transition of a part of an individual's income in time from the period in which a person works and earns to the period in which a person stops working. This change in the way of thinking about retirement systems has already occurred. Citizens want to retire with money, and they want to enjoy the savings that they have made throughout their working lives. People also expect to live longer. Retirement is no longer seen as a period of infirmity but as a time of enjoying and using the goods gathered throughout the work period. The traditional systems (mainly NDB) are unable to meet these new needs. This suggests that any introduction of amendments to balance their finances is a temporary solution. Further, as the need for reforms concerns almost all retirement systems in the EU, this can be seen as an opportunity to tighten the integration between the various retirement systems. To reform the systems in a way that would introduce into them similar functional principles would result in the greater mobility of people inside the EU.

Non-financial systems with a defined contribution take into consideration the need for participants to spread their income over time, due to the support of individual accounts. They also provide a solution consistent with current demographic changes.[17] The simultaneous introduction of NDC retirement systems across the EU would enable countries to solve their present financial problems, but the simplification of the regulations would also support the development of migration.

For a migrant to feel secure about his/her future retirement, this person requires:

- to be certain that he or she shall receive the total amount of expected benefits;
- to be certain that paying the contributions is beneficial regardless of the length of the work-period in a country;
- to encounter simple regulations, in both the retirement system and the system coordination principles.

The above suggest that there is a need to change the principles of coordination in a way that would suit social expectations regarding the retirement system. This means that retirement systems need to help citizens spread their income over time. In other words, in calculating the benefit on the basis of coordination principles all the contributions paid in must be taken into consideration.

It is also necessary to introduce retirement systems that do not discourage migration. The characteristics of those systems are, firstly, all individual contributions must be taken into consideration; secondly, individuals must have certainty that they will be paid the full benefit; thirdly, the formula for calculating benefits must be simple enough for people to be able to estimate it themselves. Such conditions are satisfied by the systems with a defined contribution, both financial and non-financial. In fact, the simplicity of the defined contribution system would reduce coordination problems among member states. The necessity to define rules for the coordination of the retirement systems would be decreased to a minimum.

In conclusion, an individual account, regardless of whether it is in a financial or non-financial defined contribution system, would allow more job mobility in the EU. This, in turn, would mean that an employee reaching retirement age would receive a pension estimated on the basis of the state of his or her account. The length of each individual work-period or the country in which a person works would not have an impact on his or her pension. Greater freedom in the mobility of persons will have an effect on tightening the relationships between, and integrating, the EU countries, and will support future economic development.

[17] The obligations toward a generation equal the level of the contributions paid in by a particular generation and the current financial obligations toward retired people are still regulated on the basis of contributions paid by the currently working generation. Cf. M. Góra: Ekonomiczne podstawy funkcjonowania nowego systemu emerytalnego w Polsce, in: Gospodarka Narodowa, No. 3, 1999, pp. 9-24.