IMPACT OF AGEING ON LONG TERM CARE DEMAND AND SUPPLY IN SLOVAKIA

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Abstract:
The significance of long-term care related to current ageing process is increasing across EU countries. This country report analyses the current state of LTC provision (employment) and needs (demand of care) in Slovakia and its expected development until 2025. Forecast of employment in LTC sector and its structure is based on utilization approach that is related to increasing number of persons in need. The main driver of this trend presents ageing process that is analysed for two NEMESIS demographic scenarios: friendly and tough. Although only demographic effect on the demand for LTC services is presented in the paper, it was estimated that more than half of the services are currently provided informally by unpaid workers, usually relatives. Therefore significant, both initial and expected additional shortage of LTC workers (nursing and personal care staff) need to be addressed.

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1. Introduction

The health and social care sector is an important employment sector employing approximately 160 thousand workers (almost 7% of total working population). Most of the employees in this field are directly related to provision of health care services. On the other side, ageing of population caused, that the long term care (LTC) become the most significantly growing part of health and social care system and its importance will be even more crucial in the future.

Many changes have been adopted in order to transform the sector to economically more effective system providing services for reasonable costs and relatively good accessibility of health and social care. On the other hand, in case of long term care services there is lack of information about current and expected needs. Increased importance of LTC leads to need of additional information and analysis related to current needs and expected change of employment patterns.

Long-term care (LTC) in Slovakia concerns the provision of complex medical, nursing and custodial services for a long period, in some cases in the context of permanent care. Currently, the act on long term care which covers all related aspects is again under preparation at the Ministry of Health, but similarly as in 2005 when it was proposed for the first time, its future is uncertain.

Due to non-systematic policies and missing LTC insurance in the field majority of care is provided on informal basis. Approximately three quarters of LTC workers are providing care informally and only one third of them are receiving financial compensation for care provided. Although number of facilities providing LTC more than doubled over the past decade, number of institutional workers increased only by roughly 21%. On the other hand number of recipients of institutional care increased by almost 19% that indicates that quality of provided care increased.

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2. Current situation of long term care system

Several legislation acts are currently setting a legal framework for long-term care in Slovakia and complementarity of social and health care is not systematically regulated. Nursing care as part of the health care is considered as part of LTC after 6 months of provision and is legislatively well defined. Social situation resulting in need for care or help is related to state of person in which one is unable to assure care for self, household and to protect their rights and keep in connection with society. Social system has several measures at hand to mitigate the social necessity. Financial support to persons with severe disabilities is sourced from state budget, municipal and city budgets or out of pocket, in some cases others have to finance the care (i.e. court mandated maintenance obligation and others).

2.1. Regulations and conditions influencing the long term care services and the needed employment

Long-term care in Slovakia has curative form and is provided to person in need when his/her socio-health status requires it and person in need applies for it. Systematic primary prevention of dependence and continuity of health and LTC care is currently missing. Similarly to other countries, people in need in Slovakia rely on the two types of care - formal and informal. Predominantly informal care is used in Slovakia. In the survey of Bodnárová et al. (2005) 82% of respondents have stated that they provide the care to their relatives without any financial compensation. Formal care is provided at nursing homes and other institutions (hospitals, senior facilities, etc.) or at home by professional carers. Majority of care provided at home is kept on informal basis. As it is of the highest importance to keep person in need in their home environment for as long as possible current legislation partially financially supports also provision of informal care. There are two types of allowances available to eligible persons: assistance allowance and personal care allowance. In the following text we will refer to personal carers being paid by allowance as informal carer.

Informal personal carers are paid by Central Office of Labour, Social Affairs and Family (UPSVR) and according to their administrative database 55 569 persons were receiving personal care allowance in 2010. Although the recipients of personal care allowance are not restricted only to family members, Repkova (2010) states that only 2.2% of recipients were not close relatives of person in need. This is in close relation to definition of the eligible person that must be either family member or live in the same household with person in need and allowance should be paid to only one authorized person. Person in need is eligible to receive help from personal carer who is directly receiving allowance if following criteria of eligibility are met:

- person in need is receiving care from authorized person;
- person in need is aged over 6;
- person in need relies on personal care, i.e. needs assistance with activities (feeding and drinking, urinating, personal hygiene, bathing, dressing, undressing, positioning, sitting, standing, moving to stairs, moving on the plane, orientation in space, correct medication taking, monitoring) for at least 8 hours a day;
• eligibility was approved by the final decision of UPSVR.

In case person in need is receiving assistance allowance, nursing care for more than 8 hours a month, weekly social care or year-round residential social care then eligibility is violated. Personal carer can be employed and providing care at the same time if his/ her income does not exceed 2 × 194.58 EUR (living wage) and work does not violate the provision and purpose of the personal care.

Another type of cash benefit paid to persons in need is assistance allowance. This kind of payment is provided to eligible person with over 50% of disability level (based on health assessment criteria) and following additional conditions:

• person in need relies on assistance based on result of medical examination;
• person in need is aged 6 – 65, after age of 65 eligibility for this type of allowance is bounded by the receiving of the allowance before turning 65.
• personal assistance is provided to help eligible person with defined activities;
• approved by the final decision of UPSVR.

In some cases even if the person in need satisfies all criteria for receiving the assistance allowance final decision on eligibility by UPSVR does not have to be approved. This should be the case if person in need is receiving personal care or nursing care, assistance is provided by parents of children and also if personal assets of applicant are above the threshold of 39 833 Eur.

Span of the care provided to person in need and covered by the payment of assistance allowance is set on the basis of health status assessment of applicant. Maximum of 7 300 hours per year should be covered by the assistance allowance with payment of 2.71 EUR/ hour. Final amount of the allowance payment is means tested and depends on income and should be reduced with regards to income of person in need.

Health status of receivers for both types of relevant cash benefits is periodically reviewed and in some cases should lead to cancelation of claim. Eligible persons should be receiving the cash benefits until they violate the eligibility criteria.

According to Repková (2008) personal care allowance is dominantly paid to women (82%) and highest share was paid to persons aged 51-64 (47%). In addition to those two facts one more important fact was revealed, more than 40% of personal care allowance receivers were children of the persons in need.

If the conditions do not allow the person in need to stay at home different types of facilities should provide necessary care. There is complex legislation that governs the institutional care and thus it causes complications with regards to applications of persons in need of care. More proactive help from the side of appropriate social institutions to person in need of care need to be introduced in the process of application.
2.2. Long term care coverage and expenditure

To meet the different types of needs from the persons in need of care various types of institutional facilities exist in Slovakia. Currently majority of institutional care receivers are using the services of seniors’ facilities or social service homes for adults. This fact is also reflected in the apparent trend of increasing numbers of these facilities over past decade. Growth in number of social service homes for adults and senior facilities is closely related to growing numbers of elderly and after year 2008 also partially to transformation of seniors’ homes in to those types of facilities as result of legislative changes. Range of the institutions providing social services and in many cases long term care services increased over last 10 years, even though senior homes were dismissed as concept. Introduction of the day centers, specialized facilities, reception centers and half way homes enriched the scope of the social and long term care services provided.

Figure 1: Number of institutional facilities

Source: ŠÚ SR

Coverage of the informal (paid and unpaid) LTC services was discussed in the previous chapter. From the point of view of number of persons in need receiving institutional or informal care (paid or unpaid) we can conclude that majority of LTC is provided on the informal unpaid basis according to our estimations and results of surveys. Only about 14% of care is provided on the formal basis either institutionally or at home. If we consider the share of informal unpaid care as shortage of LTC workers significant policy changes need to be introduced to cover this shortage at least partially.
To calculate accurate expenditures on the LTC is quite complex problem in Slovakia due to the fact that range of different legislative acts and several institutions are governing the issues related to LTC. Main sources of LTC expenditures are Ministry of Health and Ministry of Labour, Social Affairs and Family (MLSAF) and municipalities. According to Repková et al. (2011) in 2008 0.88% of GDP represented the public LTC expenditures without the sources of municipalities spent on LTC.
3. Estimation of needs for long term care

The needs for long term care are generally influenced by health status of population and age structure. The prevalence to diseases and increasing number of ADLs and iADLs in population significantly increases with age. One of the main problems of estimating the number of people in need is relevance between severe ADL (or other) limitations to dependency or reliance to other person. We assumed that not all people with limitations are in need in respect to LTC system. Some impairment (f.e. hearing problems) could decrease the quality of life, but on the other hand, these people are able to care for themselves without significant problems.

3.1. Current situation

Despite the increasing significance of long term care needs, expenses and employment in this sector, the information about total needs for long term care is relatively scarce. Upper estimation of needs is based on self-assessment of health status from SILC; respondent answers positively that he/she had long term illness or health problem (longer than 6 months) and during this period was severely limited in activities of daily living (ADL). According EU-SILC data, there was more than 8% of total population (450 thousand) of people with at least one ADL (Figure 1). Additional 20% of population (1,1mil.) are feeling partially limited in respect to their health status. There is slightly more male population with severe limitations up to 50 years of age. Over 50 years of age number of females with severe limitations becomes more significant, mainly due to their longer life expectancy.

Figure 3 Structure of population limited in at least one ADL, thousands

![Figure 3 Structure of population limited in at least one ADL, thousands](image)

Source: Authors based on EU-SILC

There is strong correlation between probability of being severely limited in ADLs and increasing age. Increasing trend in share of population affected by severe
limitations by age groups can be seen in Figure 3. In age group 55-59, more than 10 % of population is severely limited and this share is significantly increasing up to 40 % in age group over 75. When comparing SILC data since 2005 until 2011, generally stable share of people with limitations by all age groups can be observed. There are some differences in age group over 75, which could be more data sampling problem, than one year difference in need.

Figure 4 Share of population severely limited in ADLs by age group, 2005-2011

The differences in the estimated share of disabled people tend to be more significant in older age groups and could be caused by variations in methodology or sample. In addition, people in LTC facilities are not directly included in SILC survey. The differences between estimation of disability rate in wave 2006 and 2009 can be observed in Table 1.

Table 1 – Disability rates of elderly by age groups, EU - SILC

<table>
<thead>
<tr>
<th></th>
<th>65-69</th>
<th>70-74</th>
<th>75-79</th>
<th>80-84</th>
<th>85+</th>
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<td>EU-SILC 2009</td>
<td>24,1</td>
<td>29,8</td>
<td>43,7</td>
<td>55,8</td>
<td>63</td>
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<tr>
<td>EU-SILC 2006</td>
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<td>34,8</td>
<td>42,6</td>
<td>52,1</td>
<td>56,4</td>
</tr>
</tbody>
</table>

Source: Lipszyc et al. (2012)

Demand side of the long-term care services should be represented by two types of demand: people in need and people receiving care (formally or informally). In Slovakia data availability on the LTC has limited scope and thus also forecasts and analysis of current state are relatively bounded from this point of view. Three main data sources were used in our analysis and creation of the future demand projections model: EU-SILC providing self-perceived limitations in activities of daily living for at least 6 months (2005-2011), EHIS (European Health Interview Survey) 2009 that was a first sample survey based on Eurostat methodology conducted on the population of Slovakia, and finally administrative data from Central Office of Labour, Social Affairs and Family (USPVR).
Ageing causes slight but steady increase in the number of people in need. In administrative data increase in need of care was observed across all age groups. Most rapid increase was observed in age group 70-79, which share on particular age group during the last decade increased from 22 % up to almost 30 %. Despite this, most intensive increase was observed in oldest age group over 80, which rose from less than 40 % up to more than 60 % of total number of people with disabilities (Figure 6).

The overview of estimations of total number of people with severe disabilities is presented in Figure 7. Generally highest estimation over observed period is based on SILC, where slightly decreasing trend can be observed since 2008. On the other hand, administrative data showed steady increase in people with disabilities and total numbers of people with disabilities are close to those from EU-SILC. According to national legislative the number of people with severe disabilities (disability over 50 %...
based on medical assessment and ability to work) is slightly lower, by around 7.5% on average. This is somehow closer to estimations based on EHIS. Unfortunately only one round of EHIS has been done in Slovakia so far, which doesn’t provide conclusive information with respect to this source of data. Despite this, we can assume, that in 2010 in Slovakia there were around 400 thousand people (more than 7%) of population with severe disabilities, from which around half was aged 65 and over. On the other hand, there is strong assumption that not all of them are in need with respect to definition of LTC.

Figure 7 Comparison of disabled persons based on ADL (SILC, EHIS round 2009) and administrative statistics based on medical assessment (UPSVR)

Table 2 Share of disabled persons according to different sources on population 15+

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
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<th>2011</th>
<th>2012</th>
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</tr>
<tr>
<td>SILC</td>
<td>8.0%</td>
<td>8.8%</td>
<td>8.9%</td>
<td>10.2%</td>
<td>10.1%</td>
<td>9.9%</td>
<td>9.8%</td>
<td>9.7%</td>
<td>9.8%</td>
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<tr>
<td>EHIS</td>
<td>7.8%</td>
<td>7.8%</td>
<td>7.9%</td>
<td>7.9%</td>
<td>7.9%</td>
<td>8.0%</td>
<td>8.0%</td>
<td>8.1%</td>
<td>8.1%</td>
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<tr>
<td>UPSVR</td>
<td>6.4%</td>
<td>6.9%</td>
<td>7.3%</td>
<td>7.7%</td>
<td>8.0%</td>
<td>8.4%</td>
<td>8.8%</td>
<td>9.3%</td>
<td>9.4%</td>
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<tr>
<td><strong>Over 65</strong></td>
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</tr>
<tr>
<td>SILC</td>
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<td>4.9%</td>
<td>4.9%</td>
<td>5.7%</td>
<td>5.3%</td>
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<tr>
<td>EHIS</td>
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<tr>
<td>UPSVR</td>
<td>3.4%</td>
<td>3.7%</td>
<td>3.9%</td>
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<td>4.4%</td>
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<td><strong>Over 75</strong></td>
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<tr>
<td>SILC</td>
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<td>2.5%</td>
<td>3.1%</td>
<td>2.8%</td>
<td>2.6%</td>
<td>2.5%</td>
<td>2.5%</td>
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<tr>
<td>EHIS</td>
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<tr>
<td>UPSVR</td>
<td>1.9%</td>
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<td>2.4%</td>
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<td>2.6%</td>
<td>2.8%</td>
<td>3.0%</td>
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Source: Authors based on EU-SILC, EHIS, UPSVR

The overview of shares of disabled persons on total population over 15+ is presented in Table 2. Overall, there are 8-10% of people with some level of disability. Relatively lower share of persons over 65 is observed by EHIS, which is in contradiction to other sources. Therefore, we assume that these indicators are undervalued.

Disability ratio was significantly growing during the past decade. According to authors’ estimations based on national sources, the share of disabled people on total
population over 15 rose from 6.4% in 2004 to almost 10% in 2013. Coverage by any type of LTC has also risen from 3.3% in 2004 to more than 5% in 2013, but since 2010 the observed growth has been rather limited (Table 3).

Table 3 Share of total disabled and people receiving any type of LTC (rely on help), 15+

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</tr>
</thead>
<tbody>
<tr>
<td>Coverage</td>
<td>3.3%</td>
<td>4.3%</td>
<td>4.7%</td>
<td>4.8%</td>
<td>4.7%</td>
<td>4.7%</td>
<td>5.1%</td>
<td>5.1%</td>
<td>5.2%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Disabled</td>
<td>6.4%</td>
<td>6.7%</td>
<td>7.2%</td>
<td>7.6%</td>
<td>8.0%</td>
<td>8.3%</td>
<td>8.7%</td>
<td>9.1%</td>
<td>9.6%</td>
<td>9.7%</td>
</tr>
</tbody>
</table>

Source: Authors’ estimations based on UPSVR and NCZI

On the other hand, when comparing the ratio of disabled people receiving any type of long-term care, decline from about 65% coverage in 2006 to 54% coverage in 2013 can be observed. Around 53% of this share are paid services. Institutional LTC coverage slightly decreased from 10% in 2004 to 8% in 2013. Share of LTC care received at hospitals is about 1% of total recipients. Highest share is maintained by care provided at home throughout observed period. About 20-24% of disabled LTC recipients is covered with paid LTC services (including informal LTC). Based on authors’ estimations it was concluded that another 25-30% of LTC services are provided informally as unpaid services mostly by family members or relatives (Figure 8). Share of care provided to disabled aged over 65 can be seen as black line in Figure 8. This share is rather stable over time and currently is around 51-52%.

Figure 8 Share of LTC recipients by type on disabled and share of recipients over 65

Source: Authors’ estimations based on UPSVR and NCZI

Despite the decreasing ratio of people receiving care on total number of disabled, the total number of care receivers is growing. Estimations of total care recipients are presented in Figure 9, and nowadays it is assumed that almost 240 thousand in need are receiving any form of care. This is by almost 25% more compared with year 2005.
Figure 9 LTC recipients by type of service

Source: Authors’ estimations based on UPSVR and NCZI
4. Employment in long term care sector

In this chapter employment in the sector of long-term care will be discussed. Due to the fact that there are different sources dealing with employment and providing slightly different numbers we decided to reflect this in the structure of this chapter. In the first part employment based on the data of Statistical Office and administrative data will be presented and in the second part employment based on EU LFS data will be assessed.

There is close relation between the number of recipients of LTC services in Slovakia and the employment structure and demand for LTC workers. It needs to be stressed that majority of long-term care is provided in home conditions. This fact is apparent also from the Figure 10 (below) in which development of provision of long-term care is depicted. Over the last decade number of LTC workers almost doubled and majority of this increase should be related to growing number of persons in need of care and receiving care on the basis of informal unpaid care. With no major reform of current state coming in the near future this trend of informal caregiving will remain unchanged and will most presumably start to cause distortions on Slovak labour market. In 2013 more than 110 thousand people were providing LTC care on informal unpaid basis which was 87% more than in 2004. Very similar trend was remarkable during this period in group of informal paid workers (increase by 61%). Together with higher number of elderly also employment in institutional care increased – by almost 19% over the period of 2004-2013.

**Figure 10**: Provision of LTC services in Slovakia, 2004-2013, average number of workers per month

Structure of paid LTC workers who are entitled to receive public finances and thus generate pressures on the public budget is depicted in Figure 11. It is inevitable to see that there was a slight transition towards more informal provision of LTC care. In 2004 almost 40% of paid LTC workers were providing care at institutional level. Currently slightly more than 30% of caregivers are providing formal care. This shift was determined by the change in calculation methodology of allowance for care and thus in March 2004 relatively low number of these allowances were paid that strongly affected the monthly average figure for 2004. Thus we can conclude that composition of paid LTC workers is relatively stable.
From the evidence of past decade we can see that majority (more than 2/3) of paid workers in LTC sector were providing care at home. From this group less than 5% of carers were providing this kind of help on formal basis. As LTC service represents a complex task dealing with the needs of care-recipient well-designed policy to increase the formal knowledge of caregiving to persons providing informal care is strongly recommended.

4.1. LFS Evidence

According to the LFS data approximately 50 thousand employees were formally employed in the sectors providing the long-term care. We can see that during the years 2008 - 2011 numbers of employees in residential nursing care increased more than 5 times. This was complemented by the decrease in the residential activities for elderly and disabled, and social work activities without accommodation. These movements indicates that there was transition between the provision of LTC services at home towards residential nursing care due to increased number of persons in need without sufficient social background to take care of them.
From the occupational point of view in 2010 majority of LTC carers were identified as personal care workers, this holds for both home care and residential care. Second largest group are nurses and health professionals majority of which were working in residential care. As residential care is more demanding on the supporting activities such as cleaning, cooking or accounting, higher share of other staff and other professionals was working in this type of occupations in residential care.

Figure 13: Occupational structure of paid LTC carers in 2010

Authors have concerns in analysis of LTC workers from LFS data from the point of consistency. When data from European LFS, national LFS and national sources were compared, significant discrepancies were identified.

4.2. Impact of demographic change on long term care demand

Demographic development is the crucial factor influencing labour supply as well as demand for all kinds of services. Together with other European countries Slovakia is facing problem of ageing. However, due to specific development during past decades such as baby boom in late seventies and eighties, even more dramatic development than in Western Europe countries is expected in near future. Analysis provided in this study is based on results of demographic forecasts provided by the results of NEUJOBS project aggregated into two binding scenarios – friendly and tough. Possible future development is also illustrated in comparison with demographic forecast based on national sources from Slovak Demographic Research Centre.

4.2.1. Population scenarios up to 2030

NEUJOBS forecast, which was used to estimate further demand for health care services provides two demographic scenarios up to 2030, tough and friendly. Under each scenario differing expected development compared to national forecast can be observed. Scenarios can be viewed as an upper and lower bound for future possible development with being described in Huisman et al. (2013).

Most recent national population forecast was derived from Slovak Demographic Research Centre (VDC), published in December 2012 (Vaňo, 2012 based on updated information on total population of Slovakia in 2012 from preliminary results of Census 2011.)
The ageing trend is clearly presented in Figure 15. Currently there are two waves of baby-boomers. First cohort being born in fifties is currently reaching retirement age and significantly increases the number of pensioners. Second group consists of baby-boomers born during communism era in seventies mainly thanks to strong family policy (observable in line 2025). Those will reach the retirement age in late forties. During the nineties huge decrease in fertility rate was observed caused by change in political regime and high level of social uncertainty. Afterwards in late 2000s slight increase in fertility rate occurred caused by postponed maternities (birth giving age has significantly increased), although these cannot fully compensate for the “lost generation” from previous decade. Increase in number of pensioners aged over 65 from 519 thousand in 2010 by almost half by 2020 can be expected, with further increase up to 856 thousand until 2025. As a consequence of this development, pressure on social and healthcare system will rise significantly, influencing both public finances and demand for services. Expected age structure in 2040 is also illustrated.

Source: Slovak Demographic Research Centre, 2012
The situation is more precisely presented in Table 4. During the period 2010-2025 population in working age (15-64) will decrease by 7 percentage points (p.p.). Nevertheless the economically active population will remain almost the same during this period due to increase in retirement age and participation rates of older workers. Most significant demographic change during 2010-25 lies in increase in old population by more than 60%, which represents more than 400 thousand persons. Another significant shift is expected to occur among very elderly population (80+), where we can see increase by more than 45% until 2025. The largest effect of ageing should be observable during 2025-50. Within this period number of persons over 65 will increase by 50%, with more than twofold rise of very elderly population. During these years, total population will stagnate. The suitable indicators reflecting expected demographic changes by ageing are total dependency ratio and old dependency ratio presented in Table 4. The most significant change will be observed in oldest age group consisting of those 80 years old and over. The share of this group on total population has already grown from 1.8% in 2000 to 2.7%, growing to 147 thousand inhabitants in 2010. This group will further grow until 2025 by 45% (slightly slower than younger pensioners). From 2010 to 2030 their share on population will more than double and until 2040 more than triple.

Table 4 - Demographic indicators (f-friendly scenario, t-tough scenario)

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2010</th>
<th>2025f</th>
<th>2025t</th>
<th>2030f</th>
<th>2030t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children population (0-14) as % of total pop.</td>
<td>19.8%</td>
<td>15.3%</td>
<td>15.3%</td>
<td>14.6%</td>
<td>14.4%</td>
<td>13.3%</td>
</tr>
<tr>
<td>Prime age population (25-54) as % of total pop.</td>
<td>43.1%</td>
<td>45.7%</td>
<td>44.4%</td>
<td>45.0%</td>
<td>42.0%</td>
<td>42.8%</td>
</tr>
<tr>
<td>Working age population (15-64) as % of tot. pop.</td>
<td>68.9%</td>
<td>72.4%</td>
<td>66.7%</td>
<td>67.8%</td>
<td>65.4%</td>
<td>67.1%</td>
</tr>
<tr>
<td>Elderly population (65+) as % of total pop.</td>
<td>11.4%</td>
<td>12.3%</td>
<td>18.1%</td>
<td>17.6%</td>
<td>20.2%</td>
<td>19.6%</td>
</tr>
<tr>
<td>Very elderly population (80+) as % of total pop.</td>
<td>1.8%</td>
<td>2.7%</td>
<td>3.7%</td>
<td>3.2%</td>
<td>4.8%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Population (1000s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Young population (0-14)</td>
<td>1,069.4</td>
<td>831.3</td>
<td>857.4</td>
<td>785.1</td>
<td>823.0</td>
<td>701.0</td>
</tr>
<tr>
<td>Active age population (15-64)</td>
<td>3,722.4</td>
<td>3,929.2</td>
<td>3,746.0</td>
<td>3,632.0</td>
<td>3,730.0</td>
<td>3,524.0</td>
</tr>
<tr>
<td>Old population (65 and over)</td>
<td>614.4</td>
<td>665.5</td>
<td>1,014.9</td>
<td>943.5</td>
<td>1,152.9</td>
<td>1,029.0</td>
</tr>
<tr>
<td>Very elderly population (80 and over)</td>
<td>99.7</td>
<td>147.4</td>
<td>207.3</td>
<td>171.0</td>
<td>274.1</td>
<td>208.2</td>
</tr>
<tr>
<td>Economically active population</td>
<td>2,544.8</td>
<td>2,707.2</td>
<td>2,665.3</td>
<td>2,466.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population total</td>
<td>5,406.2</td>
<td>5,427.0</td>
<td>5,618.4</td>
<td>5,360.5</td>
<td>5,706.0</td>
<td>5,254,0</td>
</tr>
<tr>
<td>Dependencies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total dependency ratio</td>
<td>45.2%</td>
<td>38.1%</td>
<td>50.0%</td>
<td>47.6%</td>
<td>52.9%</td>
<td>49.1%</td>
</tr>
<tr>
<td>Old dependency ratio (65+ on 15-65)</td>
<td>16.5%</td>
<td>17.0%</td>
<td>27.1%</td>
<td>26.0%</td>
<td>30.9%</td>
<td>29.2%</td>
</tr>
</tbody>
</table>

Source: Huisman et al. (2012), Authors

**4.3. Forecast of long term care needs**

Forecast of long term care needs was primarily based on expected demographic development. Projection on SILC and EHIS was based on information about disability rates by age groups. No clear past trend in disability rate under relatively low number of observations was identified. Therefore the average disability rate from SILC and only observation from EHIS was used as expected disability rate in every particular age group. These rates were multiplied by information from demographic projections for both NEUJOBS scenarios. In case of national administrative data about number of
disabled people, surprisingly high growth trend of disability rates was observed also for young age groups. Therefore, one static scenario (last disability rates taken as stable) and one unrestricted scenario (taking into account the previous trend) were estimated. The disability rate of these four variants for whole population in friendly scenario is presented in Figure 16. We expect that most plausible variants are based on SILC and UPSVR data.

Figure 16 Share of disabled people on population, friendly scenario

Estimated number of disabled people in population over 15 can be observed in Figure 17. In friendly scenario we expect the increase in disabled persons according to SILC estimation from 456 thousand in 2010 to around 568 thousand in 2025 and around 634 thousand in 2030. In tough scenario the expectations are slightly lower.

Figure 17 Estimation of number of disabled people, friendly scenario

After adjustment of past development since 2010 we can compare relative increase in number of dependent, respectively people in need of care for all scenarios. We have left unrestricted scenario as improbable and only other three scenarios will be analyzed in more detail. In Figure 18 it can be observed that growth of disabled persons should be
somewhere between 16 to 29% in 2025 and 21 to 44% in 2030. This increased demand needs to be fulfilled by provision of additional LTC services.

Figure 18 Estimated increase in number of dependent people since 2010

Source: Authors projections

Clearer picture of expected changes during next two decades is shown in Table 5. Binding scenario for cross country comparison is based on SILC. Estimated increase in dependent people in 2025 is 20.4% in tough scenario and 28.9% in friendly scenario in comparison to number of persons in need in 2010.

Table 5 Estimated increase in number of dependent people since 2010 = 100 %

<table>
<thead>
<tr>
<th></th>
<th>Friendly</th>
<th></th>
<th></th>
<th></th>
<th>Friendly</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UPSVR</td>
<td>105.0%</td>
<td>113.1%</td>
<td>125.5%</td>
<td>140.8%</td>
<td>104.4%</td>
<td>109.6%</td>
<td>117.3%</td>
<td>126.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EHIS</td>
<td>104.6%</td>
<td>112.5%</td>
<td>121.9%</td>
<td>131.9%</td>
<td>104.1%</td>
<td>109.9%</td>
<td>116.0%</td>
<td>121.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SILC</td>
<td>105.3%</td>
<td>115.6%</td>
<td>128.9%</td>
<td>143.9%</td>
<td>104.7%</td>
<td>111.9%</td>
<td>120.4%</td>
<td>130.1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors projections

Share of dependent people over 65 on all disabled people will significantly increase in following years due to ageing process. Based on SILC estimation, share of people over 65 will increase from 51.3% in 2010 to 59% in tough scenario to 62% in friendly scenario by 2025. This increase can be observed in all estimation variants, and is about 12 p.p. in friendly scenario and 9 p.p. in tough scenario (see Table 6).

Table 6 Share of 65+ on total number of dependent people

<table>
<thead>
<tr>
<th></th>
<th>Friendly</th>
<th></th>
<th></th>
<th></th>
<th>Friendly</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UPSVR</td>
<td>51%</td>
<td>53%</td>
<td>58%</td>
<td>61%</td>
<td>50%</td>
<td>53%</td>
<td>56%</td>
<td>59%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EHIS</td>
<td>41%</td>
<td>46%</td>
<td>50%</td>
<td>53%</td>
<td>41%</td>
<td>45%</td>
<td>49%</td>
<td>52%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SILC</td>
<td>53%</td>
<td>57%</td>
<td>62%</td>
<td>65%</td>
<td>52%</td>
<td>55%</td>
<td>59%</td>
<td>61%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors projections
Significant increase in share of disabled people over 65 can be recognized in Figure 19. Similar development can be expected also in oldest age group and with higher relative increase. On the other hand, the differences between friendly and tough scenario become more significant due to different expectation of average length of life.

**Figure 19 Share of disabled over 65 and over 80 on total disabled, UPSVR**

Source: Authors projections

The estimated number of people receiving LTC by type for both scenarios is depicted in Figure 20. This estimation is closely related to estimation of employment in LTC. When considering pure demographic effects, constant age-specific utilization rates (data on which are limited for Slovakia) related to number of disabled persons have to be taken into account. The number of disabled receiving LTC services for the past is result of information mixture from several sources. Historical structure of LTC services was described in first part of the paper. Last estimated structure of LTC services was taken as given and relatively distributed to the estimation of the future demand. This forecast of structural demand was used as a base for estimation of needs for employment.

**Figure 20 Number of disabled receiving any kind of LTC**

Source: Authors projections
4.4. Needs for employment in LTC

In this report only effects of demographic changes on needs for employment were taken into account. In Figure 20 we have illustrated the structure of disabled receiving care by type. The need for workers is based on need for the type of service and its labour intensity. This is especially high in LTC, in some cases there is even higher formal employment than number of dependent. Most of the LTC services are provided on informal basis (even when they are partially paid or subsidized as informal home care (29% of LTC employment)). Institutional care provides around 12% of total employment in LTC and formal (home nursing care) only additional 1.3%. Informal unpaid services cover around 58% of estimated total LTC employment. In 2010 there were around 81 thousand paid LTC workers and according to model estimations this figure will increase up to 105 thousand by 2025. Additional 143 thousand will serve as unpaid workers usually for the relatives. Estimated structure of LTC employment is presented in Table 7.

Table 7 Estimated need for LTC workers

<table>
<thead>
<tr>
<th>Friendly</th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total institutional care</td>
<td>22921</td>
<td>24609</td>
<td>26512</td>
<td>29403</td>
<td>32999</td>
</tr>
<tr>
<td>LTC workers at institutions other than hospitals</td>
<td>19187</td>
<td>21582</td>
<td>23250</td>
<td>25785</td>
<td>28939</td>
</tr>
<tr>
<td>LTC nurses at hospitals</td>
<td>3734</td>
<td>3028</td>
<td>3262</td>
<td>3618</td>
<td>4060</td>
</tr>
<tr>
<td>LTC workers at home - informal</td>
<td>55933</td>
<td>60334</td>
<td>64999</td>
<td>72086</td>
<td>80902</td>
</tr>
<tr>
<td>LTC workers at home - formal (estimation)</td>
<td>2315</td>
<td>2888</td>
<td>3111</td>
<td>3450</td>
<td>3872</td>
</tr>
<tr>
<td>LTC workers at home - unpaid (estimation)</td>
<td>111866</td>
<td>113781</td>
<td>127684</td>
<td>143027</td>
<td>158722</td>
</tr>
<tr>
<td>Total</td>
<td>193036</td>
<td>208499</td>
<td>224620</td>
<td>249110</td>
<td>279575</td>
</tr>
</tbody>
</table>

For every type of LTC service particular occupational structure is required. Estimation of employment in institutional care by occupation is based on LFS data. Estimated need for employment for both scenarios is illustrated in Figure 21.
Similarly, the estimation of needs for employment in home care is presented in Table 8. Majority of employment is comprised of personal care workers who are paid via allowances for people in need.

Table 8 Estimation of needs of workers at sector 88 – home care

<table>
<thead>
<tr>
<th></th>
<th>Friendly</th>
<th>Tough</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>58248</td>
<td>63221</td>
</tr>
<tr>
<td>Other professionals</td>
<td>1348</td>
<td>1464</td>
</tr>
<tr>
<td>Nurses and health professionals</td>
<td>1802</td>
<td>1955</td>
</tr>
<tr>
<td>Social work professionals</td>
<td>1095</td>
<td>1189</td>
</tr>
<tr>
<td>Personal care workers</td>
<td>52204</td>
<td>56661</td>
</tr>
<tr>
<td>Other staff</td>
<td>1799</td>
<td>1953</td>
</tr>
</tbody>
</table>

Source: Authors projections
5. Discussion on potential LTC imbalances

On the basis of analysis of number of persons in need of care and number of personal carers potential LTC imbalances should be identified. Majority of long-term care in Slovakia is provided on the informal basis. Informal carers are eligible to receive cash benefit for the provision of care. Those who are receiving the financial compensation for the provision of informal care were at least partially covered by the social system and thus were not considered as part of current LTC imbalance.

Having a closer look on the average structure of LTC recipients between 2004 and 2013 it can be seen that almost 85% of them were receiving care at home. Approximately 55% of informal workers were providing care (mostly to their relatives) without the financial compensation. In year 2013 approximately 110,000 caregivers were from the group of informal unpaid workers. This figure can be considered as shortage on the supply side of LTC sector.

Assuming there will be no changes in the legislative framework, estimated number of LTC recipients of home unpaid care will have increased to 133 - 143 thousand by 2025 (tough and friendly NEMESIS scenario). This increase together with demographic development will create additional pressure on the labour supply especially in the group of 51-64 years old women that are currently in most cases providing the long-term care. Thus fast and adequate action is needed to tackle the issues related to the imbalances of LTC.
6. Conclusions

Despite the expectations about increasing the length of healthy living in population, past observations from administrative data has not proved the decrease in disability rates in Slovakia in any age group. Therefore, provided forecast based on current disability rates could be taken as conservative one. On the other hand, the type of assessment is based on ability to work, not the ADLs. This could overestimate the total number of people in need.

In Slovakia it is inevitable to create effective legislative framework covering provision and entitlement of LTC services. Between 2010 and 2025 number of persons in need will inevitably increase by 18-29% due to the expected demographic development. Slovak LTC system is currently adapting to increasing demand for residential type of care, but most of LTC services are performed on basis of informal home care (provided by family members) with significant number of people in need being eligible to get allowance in cash for their carers. Home nursing care is still in developing stage and there is only limited number of services available. LTC insurance is currently not in effect in Slovakia and thus funding of long-term care services is dependent on other financial sources that are not primarily designed to meet the needs of LTC receivers. At the same time it is important to modify the rules for allowances eligibility to mitigate the impact of care provision on the families and persons in need of care. Significant shortage of personal carers was identified thus potential future carers have to be inevitably attracted together with education and social system being adjusted. Keeping the persons in need of care in their home environment has to be prioritized; nevertheless additional institutional capacities have to be secured in order to satisfy needs of growing number of persons over 80.

Although only demographic effect on the demand for LTC services was presented in the paper, it was estimated that more than half of the services are currently provided informally by unpaid workers, usually relatives. Therefore, both initial and expected additional shortage (around 18-29% by 2025) in LTC workers need to be addressed. As a consequence of above mentioned facts and forecasts, it can be expected that importance of LTC services will rise significantly over next decades in Slovakia.

According to authors a partial solution as an initial step in the path of complexly reforming and improving LTC system in Slovakia could be provision of tailored trainings for informal caregivers, which would have positive impact on the quality of provided care. This however, should be further followed by adopting more complex policies which would serve in solving current and forecasted discrepancies in state of LTC system in Slovakia.
Bibliography

Act No. 576/ 2004 Coll. on healthcare, health-related services and on the amendment and supplementing of certain laws.

Act No. 599/ 2003 Coll. on assistance in material need and and on the amendment and supplementing of certain laws.


ABOUT NEUJOBS

“Creating and adapting jobs in Europe in the context of a socio-ecological transition”

NEUJOBS is a research project financed by the European Commission under the 7th Framework Programme. Its objective is to analyse likely future developments in the European labour market(s), in view of four major transitions that will impact employment - particularly certain sectors of the labour force and the economy - and European societies in general. What are these transitions? The first is the socio-ecological transition: a comprehensive change in the patterns of social organisation and culture, production and consumption that will drive humanity beyond the current industrial model towards a more sustainable future. The second is the societal transition, produced by a combination of population ageing, low fertility rates, changing family structures, urbanisation and growing female employment. The third transition concerns new territorial dynamics and the balance between agglomeration and dispersion forces. The fourth is a skills (upgrading) transition and and its likely consequences for employment and (in)equality.

Research Areas

NEUJOBS consists of 23 work packages organised in six groups:

- Group 1 provides a conceptualisation of the socio-ecological transition that constitutes the basis for the other work-packages.
- Group 2 considers in detail the main drivers for change and the resulting relevant policies. Regarding the drivers we analyse the discourse on job quality, educational needs, changes in the organisation of production and in the employment structure. Regarding relevant policies, research in this group assesses the impact of changes in family composition, the effect of labour relations and the issue of financing transition in an era of budget constraints. The regional dimension is taken into account, also in relation to migration flows.
- Group 3 models economic and employment development on the basis of the inputs provided in the previous work packages.
- Group 4 examines possible employment trends in key sectors of the economy in the light of the transition processes: energy, health care and goods/services for the ageing population, care services, housing and transport.
- Group 5 focuses on impact groups, namely those vital for employment growth in the EU: women, the elderly, immigrants and Roma.
- Group 6 is composed of transversal work packages: implications NEUJOBS findings for EU policy-making, dissemination, management and coordination.

For more information, visit: www.neujobs.eu

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