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Since its first edition in 2007, Economic Issues has been dealing with topics that reflect IMAD's comprehensive approach to economic policy analysis or topics that require an economic policy response. This year's publication focuses on wages, wage policy and challenges to further fiscal consolidation.

Contents

I. Wages and wage policy

Boxes

Figures

Tables

II. Challenges for further fiscal consolidation

Figures

Boxes

Tables

I. Wages and wage policy

Summary

In Slovenia, pressures on wage growth are strengthening mainly as a consequence of strong economic growth, demographic trends and uncertain wage policy in the public sector. The unemployment rate is gradually approaching its long-term equilibrium, and firms are finding it increasingly difficult to recruit an appropriately qualified workforce, which is, in addition to high economic activity, also due to demographic factors. In the public sector, most of the austerity measures from the period of fiscal consolidation (2012 and 2013) have been relaxed in the last three years, but several years of wage containment followed by selective wage rises for only a few groups have strengthened the demands for higher wages. This also points to the uncertainty of wage policy and the absence of a systematic approach to its (re)formulation.

Such circumstances emphasise the need to design an effective wage policy. Wage policy must ensure adequate pay and motivation for work. As wage developments also affect macroeconomic balance, it should at the same time also enable flexibility of wages through an appropriate response to changes in the economic environment and ensure the long-term alignment of wages with productivity.

In the public sector, an effective wage policy taking into account the financial capacity of the government is closely related to employment policy, where determining appropriate pay for qualified public sector employees is becoming a greater and greater challenge. The estimates of the wage premium, which is the difference in earnings for comparable occupations in the public and private sectors, indicate that in Slovenia this difference is negative in the public sector in medium- and high-skilled occupational groups. With the decline in public sector wages in 2012 and 2013, the negative wage premium increased further, which is contributing to difficulties in recruiting an appropriately qualified workforce. The wage premium is otherwise also affected by other factors that could not be included in the analysis, such as differences in individuals' skills and productivity, motivation, organisation of work and non-monetary benefits in the public sector (for example higher job security, more days off, etc.). Moreover, the wage system in the public sector allows insufficient autonomy to the management to plan its staff and remuneration policy according to business needs. In adopting wage policy measures for the public sector, the demonstration effect must be considered in addition to financial capacity. More specifically, as wage rises in the public sector to a certain extent spill over into private sector wages, partial and systemically unfounded interventions in public sector wages may have an unsustainable effect on private sector wages from the aspect of maintaining a sustainable macroeconomic environment.

1 Wage policy and factors influencing the movement of wages

Wage policy should ensure macroeconomically sustainable wage growth and provide an environment for determining adequate pay that covers the needs of workers and their families, while motivating the unemployed to seek work. Wages are a direct mechanism through which the benefits of productivity growth are transferred to workers, and are the main source of their material well-being. Wage growth is macroeconomically sustainable when it is consistent with productivity growth over the long term. The gap between the two, which may occur for several reasons (for example, increased international competition, technological development and changes in labour market regulation), can be reduced through an appropriate wage policy which provides an environment conducive to the formulation of appropriate pay for all persons employed. Wage policies in the private and public sectors should aim for a wage level that will provide sufficient incentives and motivation for work. For the good provision of public services, wage policy in the public sector should, taking into account budgetary limitations, together with employment policy ensure that public sector wages are comparable with those paid in the private sector. A significantly more restrictive wage policy in the public than the private sector over a protracted period may gradually lead to difficulties in attracting and retaining the most productive staff, which eventually creates significant pressure on wage growth. Wage policy thus pursues several objectives at the same time, between which a balance has to be struck.

In designing wage policy at the macroeconomic level, it is necessary to take into account the dynamics of employment and the movements of productivity and competitiveness. In the positive phase of the business cycle, higher demand for labour can – amid a gradual decline in available workers[1] – increase upward pressures on wages and prices. Higher wages, in turn, favourably affect private consumption and hence economic growth. At the same time they also increase inflationary pressures. Productivity also plays an important role. Wage growth exceeding productivity growth over a longer period may gradually erode competitiveness, which decelerates the growth of exports and slows economic activity. Wages are significantly affected not just by the business cycle itself, but also by productivity, as their level depends on value added per employee. Through different channels, wage pressures can also be transmitted across individual sectors of the economy. Wage policy must also pay special attention to possible unjustified wage growth in the public sector, as this would not only have direct implications for public finances, but also increase upward pressure on wages in the private sector and thus compromise its competiveness.

Figure 1: Productivity growth, growth in compensation of employees per employee and the share of compensation of employees in GDP

Source: SURS.

1.1 Wages and wage bill management in the public sector

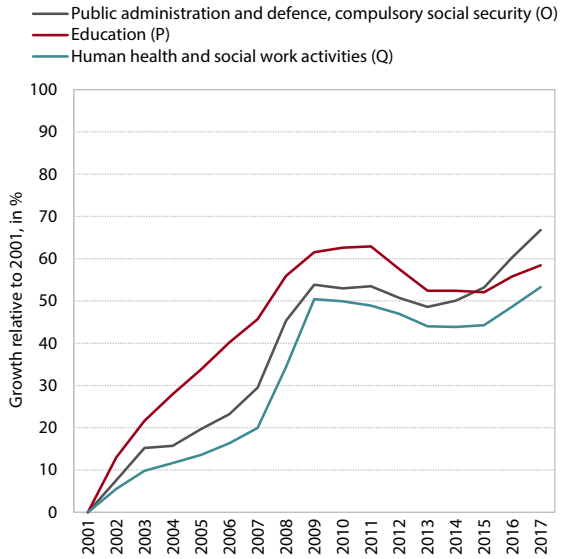
Up until 2008, wage movements in the public sector[2] involved negotiations regarding the introduction of a uniform wage system. The previous wage system lacked transparency, as wages were determined by a number of rules. Wages were set in sectoral collective agreements, but in the absence of coordinated bargaining, wage growth in individual activities largely depended on their trade unions' strength. There were also significant differences in wages for comparable jobs in different activities. In 2002 the Public Sector Salary System Act introduced a uniform and centralised wage-setting system, which was implemented in 2008.[3] In the

[1] The number of inhabitants in the 20–64 age group and thus the potential supply of labour has been falling since 2012. For more on demographic change and its economic and social implications see Economic Issues 2016, IMAD.

[2] The difference between the public and private sectors can be determined in two ways: (i) on the basis of the Standard Classification of Institutional Sectors (SKIS), (ii) on the basis of the Standard Classification of Activities, where we compare private service activities (O–Q: public administration, defence, education, human health and social work) and private sector activities (all other activities: A–N, R and S). According to SKIS, the public sector comprises general government and public corporations. General government consists of all institutional units that are under public control and included in public finances, public institutes, public agencies, public funds and some other units. Public corporations are corporations under control by units of the general government sector, the basic criterion for determining control being majority ownership. The private sector includes all other institutional units that do not belong to the public sector.

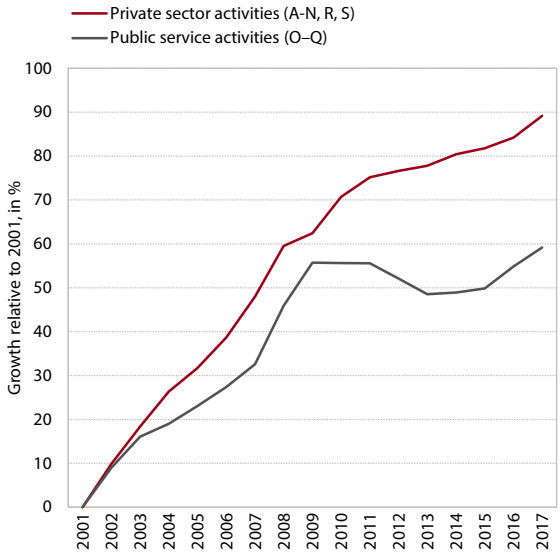
[3] For more on the system for public sector wage formation in Slovenia in comparison with other countries see section 1.1 in the Appendix.

Figure 2: Wage growth in individual public service activities



Source: SURS.

Figure 3: Wage growth in public service and private sector activities



Source: SURS.

period of negotiations regarding the implementation of the new wage system (2002–2008), wage growth eased due to the agreement on only partial annual indexation of wages, which was in part related to the rules on economic policy coordination to fulfil the requirements for adopting the euro.[4] During that time, wage growth in the public sector was also lower than in the private sector.

The introduction of the uniform wage system in the public sector coincided with the onset of the crisis, which not only deepened the general government deficit, but also affected the formulation of wage policy measures during the crisis. After six years of bargaining with the trade unions on appropriate wage relationships between individual public sector occupations, the uniform system for public sector wage formation was implemented in August 2008, when the first quarter of funds for eliminating wage disparities was paid.[5] This caused a significant increase in the average wage in 2008 and 2009, which was also accompanied by growth in public sector employment.[6] Owing to the concurrent beginning of the crisis, this coincided with a sharp decline in general government revenue and deepened the general government deficit.[7] An agreement on postponement of the payment of the remaining two quarters of funds was therefore reached with the trade unions in February 2009 (after the second quarter was paid), but the annual wage growth did not ease before 2010 and 2011. In the middle of 2012, the last two quarters of funds to eliminate wage disparities were paid, but owing to the tightening of fiscal conditions, wages of all general government employees were at the same time cut by 8%. With the renewed deepening of the economic crisis, the government and the trade unions agreed on further progressive wage cuts in 2013, which made it even more difficult for the public sector to recruit appropriately qualified staff.

Since 2013 the austerity measures concerning public sector wages have been gradually relaxed amid the improvement in economic conditions; wage movements were also marked by partial interventions in the wage system. In the period of fiscal consolidation in 2012 and 2013, wages fell across all activities, the most in education and the least in public administration (the dynamics were related to the different elimination of disparities across activities). Since 2014 the government has been concluding agreements based on negotiations with the public sector trade unions each year, through which the austerity measures have been gradually relaxed.[8] Wage growth has since

[4] For more see the Programme for Entering ERMII and Introducing the Euro from 2003 and Economic Issues 2007 (IMAD).

[5] The Collective Agreement for the Public Sector (Article 50) stipulated that the disparities in base wages should be eliminated in 2008–2010 based on the following proportions and dynamics: first quarter on the implementation of the new wage system, but with settlement from 1 May 2008, the second on 1 January 2009, the third on 1 September 2009 and the fourth on 1 March 2010.

[6] Although the government concluded two agreements with the trade unions in 2009, which significantly restrained wage growth in 2010 and 2011, the rapid growth of public sector wages continued in 2009.

[7] With strong wage and employment growth at the beginning of the crisis, the general government wage bill rose by EUR 470 million in 2008. The share of employee compensation in total general government revenue increased significantly in 2009 (see Figure 4).

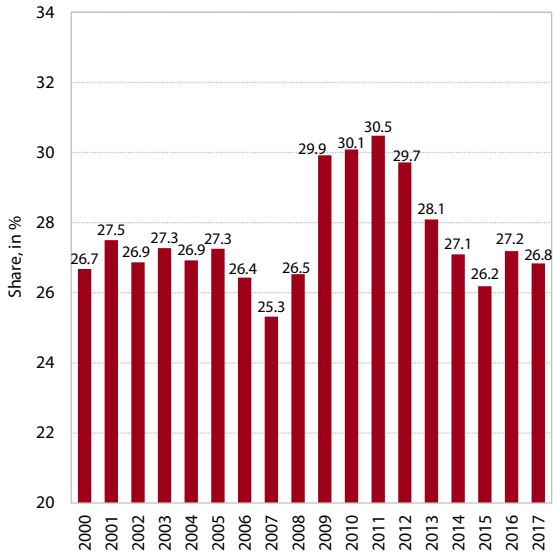
[8] In 2015 the freeze on promotions to a higher job title and pay rank was lifted on the basis of the agreement for 2015. Pursuant to the agreement for 2016, on 1 September 2016 the pay scale was returned

been the lowest in education (around 4%), while in public administration and health, wage growth has been higher (in public administration, more than three times higher). Given that wage rises have been conditional on the available public funds, these disparities reflect the different possibilities of individual activities to adjust to restrictions in hiring and remunerating employees, as well as the employment and retirement structure, and certain other circumstances that affected wage growth only in certain activities or certain occupations (for example, the payment of supplements during the migrant crisis, wage rises in response to police officers' and doctors' strikes). Such an unsystematic approach has however created new disparities, which exert further pressure on wage growth and may lead to new macroeconomic imbalances in the coming year in the absence of appropriate action.

After 2014, wage policy in the public sector was almost totally subordinated to the pursuit of fiscal objectives; it was also limited by the high rigidity of the system. Owing to fiscal consolidation, the government was relaxing austerity measures only gradually even after the rebound in economic growth in 2014. This restrained the growth of wages (which also lagged behind private sector growth) and made it significantly more difficult for the public sector to obtain appropriately qualified staff and maintain the quality of public services. This is in fact primarily attributable to the considerable rigidity of the wage-setting system in Slovenia. The wage system in the public sector does not allow sufficient autonomy for management to plan its staff and remuneration policy according to business needs.[9] The motivational aspect of wage policy for the public sector was thus completely neglected during the period of urgent fiscal consolidation, which already shows in difficulties attracting appropriately qualified employees and ultimately also affects the provision of public services.

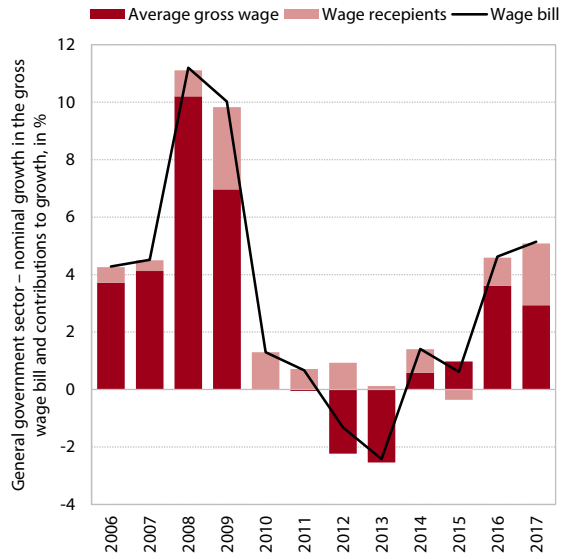
In view of fiscal constraints, the wage policy for the public sector also has to take into account the policy of employment or total wage bill management. In the absence of mechanisms for control over employment in some parts of the general government sector, employment continued to rise even during the crisis, including in the period of implementing fiscal austerity measures concerning wages. In 2008–2013 the growth of public sector employment eased considerably (or came to a halt) only in public administration, while remaining relatively high in education, health and social work. Similar developments also continued after 2013, when the number of those employed rose most in health and social work (which is otherwise expected and necessary, given the demographic pressures), somewhat less in education, while dropping in public administration. The breakdown of the general government wage bill (Figure 5) reveals a lack of control over the adjustment of the number of employees in recent years, given that employment continued to rise not only during the crisis, but even in the period of adopting fiscal consolidation measures.

Figure 4: Compensation of general government employees as a share of general government revenue in 2000–2017, in %



Source: SURS; calculations by IMAD.

Figure 5: Breakdown of wage bill growth in the general government sector

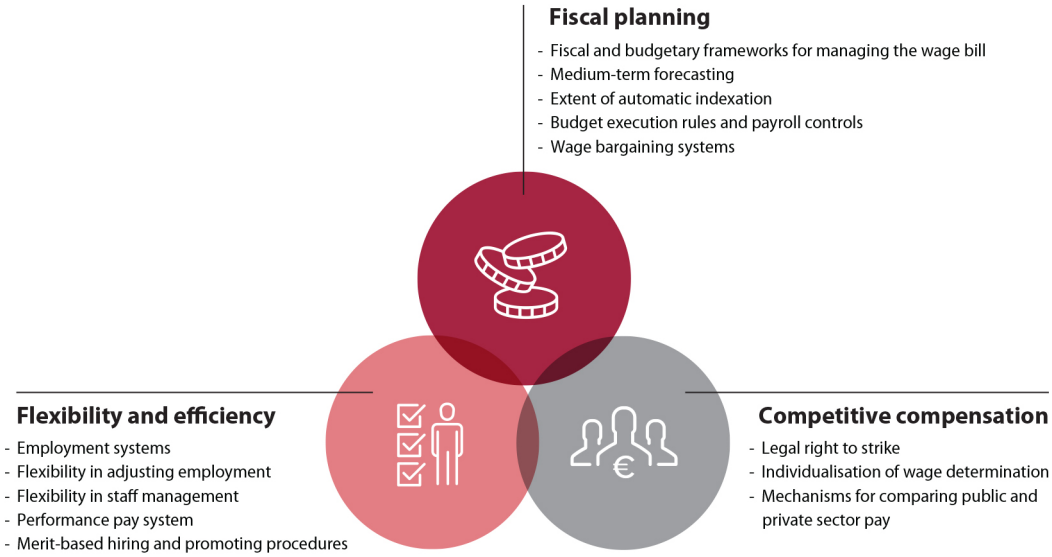


Source: SURS.

to the level enforced by the ZUJF. The measures reducing the payment of holiday allowance and collective supplementary pension insurance premiums had also been loosening gradually until they were fully abolished in 2018.

[9] A similar conclusion was also reached by the OECD in the study The Public Sector Salary System in Slovenia (2012).

Figure 6: Key institutions influencing wage bill management in the public sector



Source: according to the IMF (2016).

Wage bill management in the public sector is influenced by the institutional framework. According to the IMF, the key components of the institutional framework are fiscal planning, competitive compensation and flexibility and efficiency in staff management.[10] In the area of fiscal planning, the following are important for effective wage bill management: (i) timely integration of decision-making on wages and employment into budgetary/fiscal planning; (ii) medium-term forecasting of the wage bill; (iii) no automatic indexation of wages, as it reduces government control over the wage bill; (iv) budget execution rules and payroll controls; (v) the type of wage bargaining system, where the IMF distinguishes between two main types (negotiated and non-negotiated).[11] The second component is competitive compensation, where individualised pay is emphasised as important for motivating and retaining adequately qualified staff. In determining differentiated pay and remuneration for additional work, a systematic comparison between public and private sector wages for similar jobs also plays an important part. The third component is ensuring flexibility and efficiency, where hiring and firing rules are important from the aspect of adjusting employment. As many advanced countries (including Slovenia) have relatively strong protection of employment, the rigidity of legislation tends to be compensated for by greater flexibility in hiring contractual staff and creating new posts. In theory, flexibility in staff management and delegating human resource management to ministries as opposed to control by a central agency can contribute to improved performance and efficiency of the government sector (IMF, 2016).

The institutional framework for wage bill management in Slovenia needs to be adjusted to increase efficiency, particularly in the area of fiscal planning. Despite the existence of an indicative fiscal framework, the wage bill ceiling and the fiscal framework are often exceeded, as owing to time pressures, the absence of negotiations for a longer period and a lack of connection with employment policy, only short-term solutions are being adopted in public sector wage agreements. A comparison with other countries also shows significant rigidity or insufficient individualisation of Slovenia's public wage-setting system,[12] which may lead to difficulties attracting appropriately qualified staff.

1.2 Wages and wage policy in the private sector

In the private sector, wage growth lagged behind productivity growth in 2000–2007. This was to a great extent related to the wage adjustment mechanisms agreed in light of the lowering of inflation before the adoption of the euro in 2007. Instead of adjusting

[10] IMF (2016): Managing government compensation and employment – institutions, policies and reform challenges.

[11] The European Commission (2014) finds that negotiations lead to smaller differences between public and private sector wages.

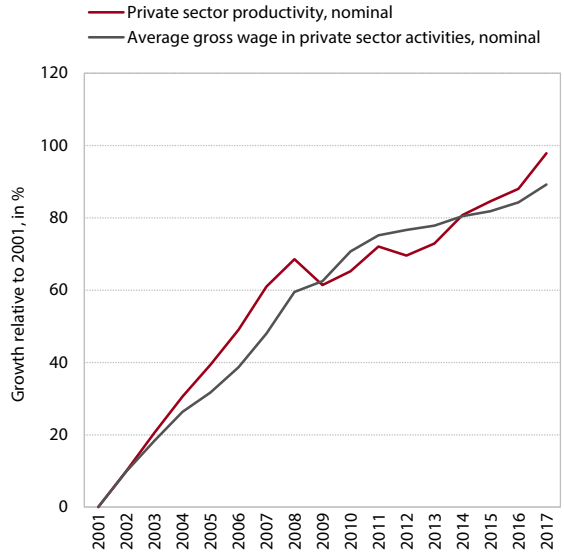
[12] For the description of the wage system in the public sector in Slovenia and some other countries see section 1.1. in the Appendix.

wages to past inflation, indexation to only part of projected inflation was introduced in that period.[13] Wages were mainly determined at the level of activities and in a general collective agreement for the private sector, which ensured strong coordination between negotiations at the level of activities.[14] As a result of this type of adjustment and determination of wages, wage growth lagged behind productivity growth.

The beginning of the crisis revealed the rigidity of private sector wages in Slovenia, as in other countries; in 2009–2012 their growth was slightly higher than productivity growth. After the onset of the crisis, wage growth slowed considerably. Owing to nominal wage rigidity, firms adjusted to the crisis mainly by reducing the number of employees. This was typical for the entire euro area: according to the Wage Dynamics Network survey, only 3.2% of euro area firms surveyed reported wage cuts in 2009. Among the dominant reasons for not cutting wages, firms cited the fear that this could have a negative impact on the motivation and productivity of workers, and a commitment to the existing collective agreements. In Slovenia, in the first years of the crisis the average wage was also influenced by changes in employment structure, as the crisis first affected particularly labour-intensive activities where low-skilled and low-paid jobs predominate, which increased the average wage. According to our estimate, approximately half of the average wage growth in the first years of the crisis resulted from changes in employment structure, which is similar to the estimates of the OECD.[15] Moreover, Slovenian firms did not even offer significantly lower wages to new employees but set them relative to the wages of existing workers (Sila and Jesenko, 2011). In 2010 the average wage growth, particularly in the private sector, was also significantly affected by a major increase in the minimum wage adopted by the government despite the opposition of employers.[16]

After 2014 wage growth in the private sector was moderate compared with productivity growth; it started to strengthen only in 2017, but is still below productivity growth. Since 2013 wage growth has been moderate in Slovenia, as in other countries. The decomposition[17] of nominal wage growth indicates that

Figure 7: Wage and productivity growth in the private sector



Source: SURS.

this has been mainly related to the low growth of prices and productivity. In 2015 and 2016 the impact of inflation on wage growth was slightly negative, consistent with disinflation and deflation movements, while the contribution of productivity was modest, given its weak growth. Unlike in the crisis years, changes in employment structure have been lowering the average wage in the last few years, in view of the relatively stronger hiring in sectors with below-average wages (the structural effect). In 2017 wage growth started to strengthen, largely owing to a rebound in productivity growth, better business performance, a decline in unemployment and hence increased problems in seeking qualified labour.

1.3 Interactions of wage movements in the public and private sectors

In formulating wage policy, the impact of wage growth in one sector on the other sector has to be taken into account. The impact of spillovers of wage pressures between the two sectors is important in small and open economies such as Slovenia because of its implications for employment, export competitiveness of the economy, public finances and the movement of prices. The demonstration effect[18] of rising wages in one sector also has to be taken into account in devising wage policy, as wage rises in one sector affect wages in the other. When wage pressures arise from the public sector and spill over to the private, especially tradable, sector,

[13] For a detailed overview of wage agreements concluded in 1996–2006 see IMAD Economic Issues 2007, pp 105–106.

[14] For more on the method of wage determination in Slovenia see section 1.2 in the Appendix.

[15] OECD Employment Outlook 2014.

[16] For more on the method of minimum wage determination in Slovenia see section 1.3 in the Attachment.

[17] The decomposition is based on the estimate of the wage Phillips curve as used by the ECB (2012, 2015, 2016), OECD (2014) and EC (2015). The dependent variable in the model is the year-on-year growth of the nominal gross wage per employee, while the explanatory variables are the lag of the dependent variable, year-on-year price growth, year-on-year growth in productivity per employee, year-on-year change in the unemployment rate and year-on-year change in employment in manufacturing. The contributions of individual factors are calculated on the basis of long-term coefficients.

[18] Wage rises in one sector affect wages in the other sector.

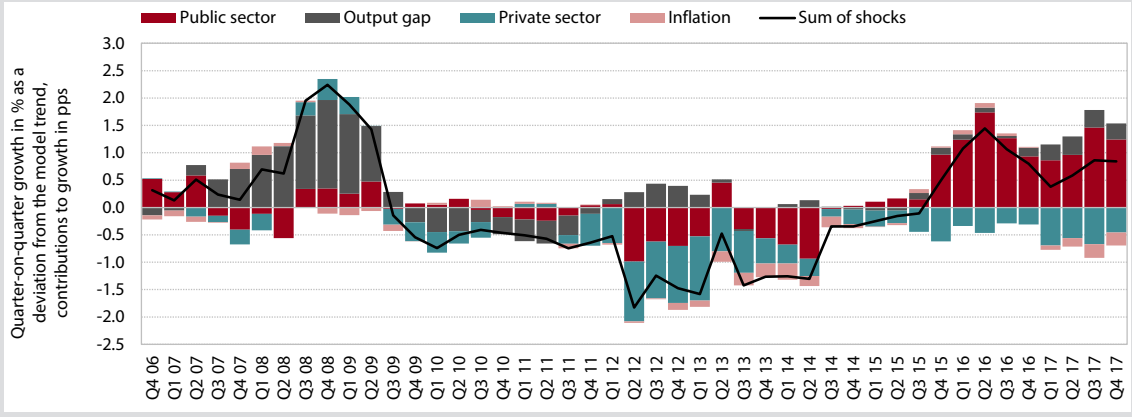
Box 1: Assessment of interdependencies between wage movements in the public and private sectors and their historical composition

The interactions between public and private sector wages are often assessed by models that show how a shock to one variable influences the other variables over time. For the purpose of this analysis we used a structural vector autoregression (SVAR) model as used by the European Commission (2014). SVAR models represent an upgrade of standard VAR models. In standard VAR models, which are appropriate for analysing interdependencies among time series, each variable can be expressed as a function of its own lagged values and the lagged values of other variables. Their main shortcoming is that, owing to frequent cross-correlations between residuals and a lack of economic content, they do not allow for appropriate interpretation of responses of individual variables to shocks. For this reason we used a SVAR model, eliminating this deficiency by a Cholesky decomposition of the variance matrix of residuals, which assumes that the variables are ordered by the degree of exogeneity from the most exogenous to the most endogenous one, which is a standard approach in the empirical literature. We included four variables in the model: the nominal growth of compensation per employee in public service activities, the output gap, the nominal growth of compensation per employee in private sector activities, and inflation. We ordered public sector wages first, meaning that this variable reacts to all other variables only with a lag, which is a standard assumption in the empirical literature (for example, Blanchard and Perotti, 2002; Fatás and Mihov, 2001). In the second place is the output gap; this responds contemporaneously only to wage movements in the public sector and with a lag to other variables. Private sector wages, which respond contemporaneously to wage movements in the public sector and to the output gap, are placed third. Inflation is ordered last, meaning that it responds contemporaneously to all variables in the model. The assessments of the model are based on quarterly data for the 2005–2017 period. We included four lags of variables in the baseline model.

Model-based assessments also enable analysis and interpretation of past wage movements on the basis of individual structural shocks. Using a SVAR model, we conducted a historical decomposition of wage movements in individual sectors, which enabled us to express the past wage movements in each sector by contributions from the sector's own wage movements, inflation, the output gap and wage movements in the other sector.

The decomposition of wage movements for the public sector shows that the pressures seen in the last few years mainly arise from the sector's owns shocks. The strong wage growth in the public sector in the period before the crisis was mainly affected by output gap shocks, which denote economic activity; in 2008 the contribution of the sector's own positive shocks is also visible, reflecting the implementation of wage reform,

Figure 8: Decomposition of public sector wage growth

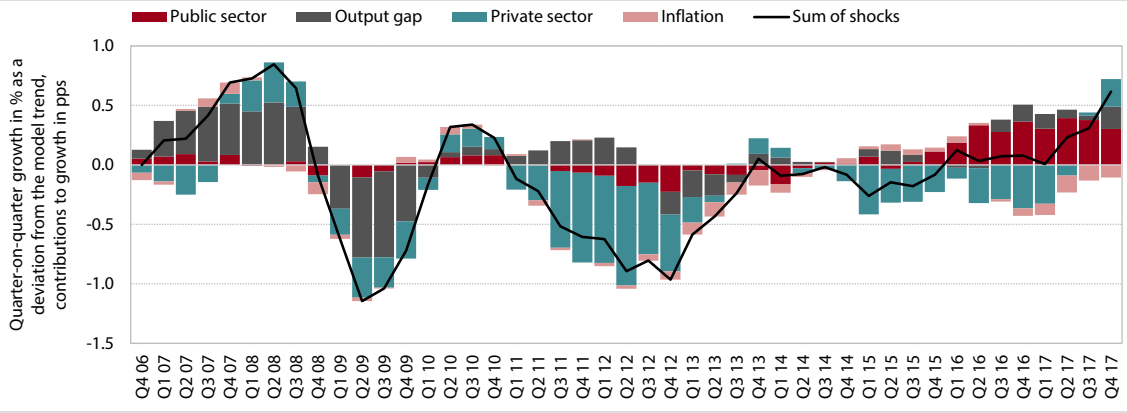


Source: SURS, Eurostat; estimates by IMAD.
Note: 4-quarter moving averages.

which raised the growth of wages. The negative own shocks in the period of the crisis are largely related to austerity measures, which curbed the growth of wages. The negative shocks became more pronounced in 2012, with the adoption of the ZUJF in response to the deteriorated fiscal position. In the last years of the period analysed, a pronounced positive impact of own wage shocks is visible, which can be attributed to the gradual relaxation of austerity measures, but at the same time wage pressures were being indirectly eased by the still moderate wage movements in the private sector.

At the beginning of the crisis, wage adjustment in the private sector was made difficult by the increase in the minimum wage; in the last few years wage growth has been strengthening under the impact of stronger wage growth in the public sector. The private sector first reacted to the crisis by adjusting wages, but these were then raised again just one year later as a consequence of the increase in the minimum wage and changes in employment structure. The subsequent gradual easing of wage movements reflected the mainly negative impacts of all structural shocks identified, which are associated with the contraction of economic activity, the absence of labour market pressures in the circumstances of high unemployment, relatively low inflation and austerity measures in the public sector. In the last two years private sector wage growth arose from positive output gap shocks in light of the further strengthening of economic activity and indirect effects of wage rises in the public sector, while the contribution of own wage shocks remained mainly negative, which may reflect companies' efforts to remain competitive.

Figure 9: Determinants of private sector wage growth



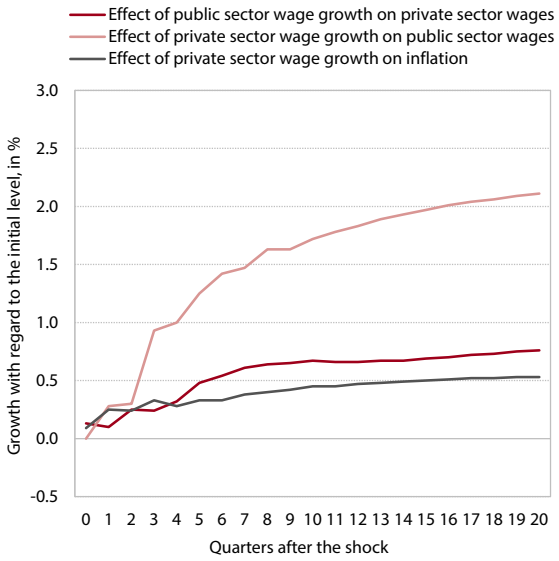
Source: SURS, Eurostat; estimates by IMAD.
Note: 4-quarter moving averages.

there is a risk that wage growth will exceed productivity growth and compromise the export competitiveness of the economy. Moreover, wage movements in the public sector may also exert pressure on private sector wages because of the competition on the labour market.

Our model-based assessments indicate a significant interdependence between wage movements in the public and private sectors. We assumed a one standard deviation increase in each sector's wages as the initial shock (1.11% in the case of the public sector and 0.45% in the case of the private sector) and observed its effect on wages in the other sector.[19] The effect of the increase in one sector's average wage on the other sector is shown in Figure 7. Wages in the private sector respond to the initial wage shock in the public sector by an increase of 0.6% in the medium term, while public sector wages rise by around 2.2% in response to the initial private sector shock.[20] Studies[21] for other countries also generally show that wage growth in the private sector has a greater impact on the public sector than vice versa, emphasising that the stronger effect of spillovers from the private sector may indicate this sector has a greater role in determining total wage movements at the level of the whole economy. This is typical of smaller open economies, which are subject to greater competition from the international environment and are, independently of wage olicy in the public sector, limited in setting the level of wages, and for less centralised wage-setting systems in the private sector. The greater role of the private sector can also be attributed to the indexation of wages to inflation, which was used in Slovenia during almost the entire period analysed.

Wage growth has a significant impact on price movements. The simulation of the impact of wage growth in the private sector (which has a more significant influence on inflation because of its size) shows a 0.5% increase in inflation over the long run, given that private sector wages account for around three quarters of the total economy wage bill and are a key driver of price movements in the economy.

Figure 10: Simulation of the impacts of wage growth in one sector on the other sector and on inflation



Source: SURS, estimates by IMAD.
Note: Assuming a one standard deviation increase as the initial wage shock. Cumulative impulse responses are shown.

[19] For the methodology see Box 1.
[20] The outcomes for Slovenia are similar to those in studies for other countries, for example Friberg (2006), Pérez in Sánchez-Fuentes (2011), Afonso and Gomes (2014), IMF (2016).
[21] For example, Holm-Hadulla et al (2010), Lamo, Pérez and Schuknecht (2012), Lamo, Pérez and Sánchez-Fuentes (2013) and EC (2014).

2 Wage differences between the public and private sectors and the wage premium

Comparability of public and private sector earnings is one of the principles of wage policy. In light of mounting demographic pressures and the shortage of a suitably qualified workforce, it is important to determine appropriate pay for public sector work, which should be comparable with private sector pay and sufficient to attract people with adequate skills, particularly in occupations where such workforce is in short supply. The structure of payment should also allow for rewarding motivation and performance. The OECD (2012) and the IMF (2016)[22] both emphasise that appropriate wage policy can only be designed on the basis of a comparison between public and private sector wages. Inadequate pay may lead to poor provision of public services, increased absenteeism and corruption risks. In the following sections we analyse the differences between the average wages in the public and private sectors (in their demographic and occupational structure) and assess intersectoral differences in earnings for comparable occupations (referred to as the wage premium).

2.1 Factors underlying the differences between public and private sector wages

Slovenia, like other countries, has a higher average wage in the public sector than in the private sector. In 2000–2017 the average public sector wage was around one quarter higher than the average wage in the private sector. The wage ratio has otherwise been gradually falling for some time owing to the somewhat higher average wage growth in the private sector. The years 2008 and 2009 saw a short-lived increase in the ratio as a consequence of strong wage growth in the public sector after the implementation of the uniform wage system. This was followed by a period of decline owing to fiscal austerity measures and a significant rise in the minimum wage, which increased particularly the average private sector wage. The increase in the ratio seen in the last few years has been attributable not only to faster growth in public sector wages due to the loosening of some austerity measures, but also to the containment of wage growth in the private sector to maintain export competitiveness. A comparison with the EU based on internationally comparable data[23] indicates that in 2017

Figure 11: Ratio between average public and private sector wages

Source: SURS.

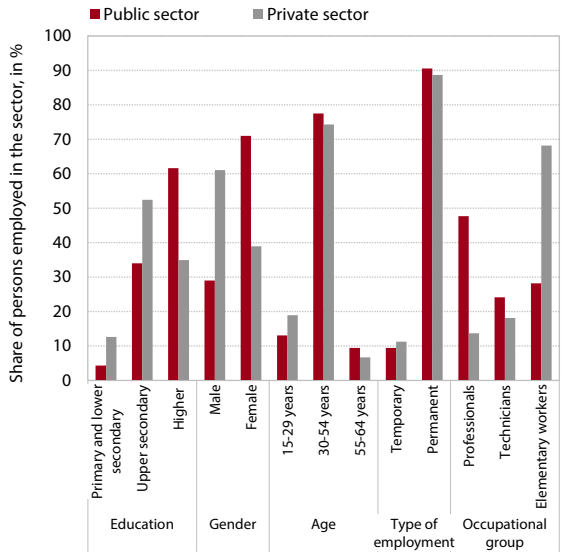
compensation per employee in the EU was on average 6% higher in the public sector than in the private sector, which is similar to Slovenia.

The gap between average wages in the public and private sectors reflects differences in the demographic and occupational structure of the employed. The differences between the two sectors' wages arise from differences in the educational structure, gender, length of service, type of contract, occupation and so on. A comparison according to these characteristics shows that the public sector has a significantly higher percentage of persons with higher education (60% of all persons employed) than the private sector (see Figure 11), and hence – as earnings generally increase with the level of education – a higher average wage. The public sector also has a higher share of women. Owing to the typical sectoral and occupational structure, women in the public sector receive higher wages than their counterparts in the private sector, which contributes to the higher average wage in the public sector. Moreover, the public sector also has a higher share of older employees. It is typical that earnings increase with age, which is related to longer length of service and possible seniority bonuses (bonus for years of service, promotions, which are strongly linked to the length of service, etc.). The higher average age in the public sector is also related to the occupational structure: the private sector has a higher share of occupations that require less specific skills and where work is more frequently carried out by younger and less educated people; also, people working

[22] IMF (2016): Managing government compensation and employment – institutions, policies and reform challenges.

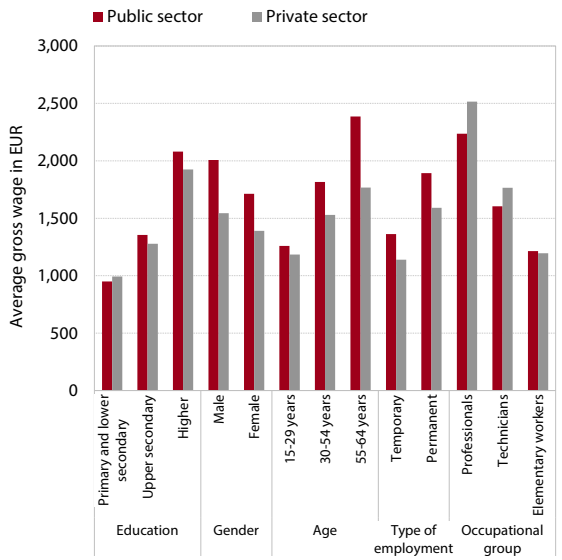
[23] The source of data for Slovenia is the monthly statistical survey Earnings of Persons in Paid Employment Working for Legal Persons; the source of data for the international comparison is the national accounts statistics, which is also available for other countries. In the following text, the term "public sector" refers to O-Q activities and the term "private sector" to all other activities.

Figure 12: Share of persons employed in the public and private sectors, by selected characteristics



Source: IMAD estimates based on SURS microdata (EU-SILC).
Note: Data refer to the 2005–2016 average.

Figure 13: Level of average gross wage in the public and private sectors, by selected characteristics



Source: IMAD estimates based on SURS microdata (EU-SILC).
Note: Data refer to the 2005–2016 average.

in the public sector retire later than those employed in the private sector. One of the main reasons for wage gaps between the two sectors is indeed the structure of occupations, which reflects differences between the activities in the respective sectors. In the public sector almost 50% of occupations require highly specific skills, which is significantly more than in the private sector.[24]

Although the average wage in professional groups is higher in the private sector than in the public sector, a higher share of such occupations in the public sector has a greater effect on the entire sector's average wage than in the private sector.

2.2 Wage premium

In comparing public and private sector wages, it is more appropriate to take into account only wages in comparable occupations and exclude demographic and occupational differences. Specific sectors include occupations that are not always directly comparable, such as certain service occupations, sales workers, and workers in manufacturing and construction, which can be found in the private sector, or occupations such as teachers, which exist mainly in the public sector. To ensure appropriate wage comparability between the two sectors, we compared only occupational groups that can be found in both sectors, such as managers, science, engineering, business or health professionals and technicians, clerical staff, customer services staff, accounting staff, certain service workers and workers in certain elementary occupations. We also excluded occupational and demographic characteristics of individuals that affect wage levels in individual occupations or sectors. Such comparisons are made possible by regression models.[25] The different structure of employment and occupations is also reflected in different wage distributions in the two sectors (see Box 2). Taking the differences in distributions into account is important from the aspect of wage policy, as otherwise tying the average wage growth in one sector to that in the other sector does not ensure wage comparability in the future (Bender, 2003).

The difference between average public and private sector wages that cannot be explained by demographic and employment structure can be interpreted as the wage premium. When there is no wage premium, individuals of the same age and with the same level of education or length of service in comparable occupations receive similar wages in both the public and private sectors. If individuals with comparable characteristics in comparable occupations are paid more in one sector than in the other, this can be interpreted as a wage premium for that sector. Knowing the wage premium is important for formulating appropriate wage policy. A positive premium in the public sector means that the public sector offers higher wages for similar work, which may lead to transitions of workers from the private to the public sector and increase pressure on public finances. On the other hand, if the wage premium for the public sector is negative, the public sector may face difficulties attracting and retaining the most productive staff, which may impair the quality of public services.

[24] Occupations are classified according to the Standard Classification of Occupations (SKP-88) in groups with regard to the complexity of the tasks to be performed in an occupation and the necessary skills.

[25] For more on the methodology for assessing the wage gaps see Box 3.

Box 2: Wage distributions in the public and private sectors

Wage distributions differ between the sectors owing to differences in the structure of employment and occupations. The wage distribution for the private sector is much more concentrated at the lower end owing to a higher share of low-skilled workers (almost three times higher than in the public sector). The wage distribution for the public sector is more uniform (and bimodal). Between 2007 and 2009 it flattens and moves to the right due to the wage reform in 2008, which was intended to eliminate wage disparities between individual public sector occupations and led to strong wage growth in that period. The shift of both sectors' distributions to the right is otherwise characteristic of positive wage movements over time. With wages being distributed unevenly, the average wage in an individual sector is not the wage received by most employees in the sector. According to data from the entire sample, in 2015 approximately 64% of persons working in the private sector were paid less than the sector's average wage (compared with 56% in the public sector).

Among comparable occupations, public and private wage distributions are much more similar. If only comparable occupations are taken into account, the distribution of private sector wages becomes less concentrated at the lower end, as many simpler and lower-paid occupations are no longer included in the sample, while the distribution for the public sector becomes unimodal, as we exclude teachers (see Figure 15).

Figure 14: Public and private sector wage distributions, all occupations

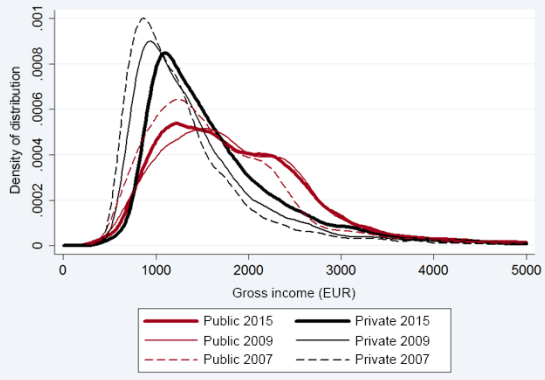
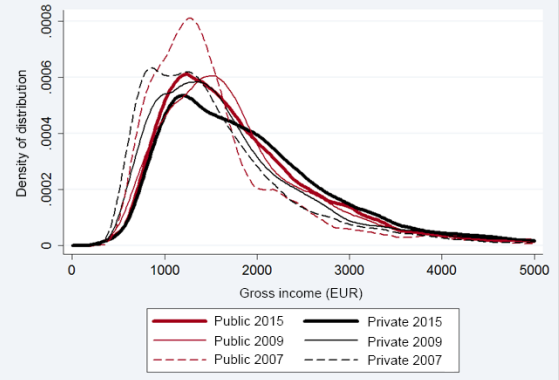


Figure 15: Public and private sector wage distributions, only comparable occupations



Source: IMAD estimates based on SURS microdata (EU-SILC).

The existence of the wage premium can be explained by institutional, political or economic factors. While wage formation in the private sector depends on company profits, it may be politically motivated in the public sector. Moreover, the public sector may be under pressure to set an example as a good employer and is willing to pay higher wages particularly to its lower skilled workers than they would receive in the private sector (Katz and Krueger, 1993, Bender, 2003, Melly, 2005). A negative wage premium in the public sector, on the other hand, may be a consequence of non-monetary benefits in the public sector (such as higher job security, as the public sector is characterised by lower employee turnover due to dismissals than the private sector) and more days off.

The wage premium may however also reflect factors that cannot be included in the analysis. Though the models for assessing the wage gaps include a range of factors that explain most of the aforementioned differences between the average wages in the two sectors, they cannot capture everything that might affect wage differences between individuals, such as an individual's skills, productivity, motivation, organisation of work, etc. In the following paragraphs we estimate the wage premium for the public sector according to occupational groups, wage levels and certain demographic characteristics of persons employed.

The estimates of the wage premium for Slovenia indicate that the public sector premium is negative in medium- and high-skilled occupational groups and positive in elementary occupations. Individuals with comparable characteristics in the public sector are paid relatively less than in the private sector in occupational groups such as professionals, technicians and office clerical staff, while those in elementary occupations are paid relatively more. The negative premium for medium- and high-skilled occupations ranges between 5% and 15%, on average, according to our estimates. The wage premium for less qualified occupations is positive at

Box 3: The methodology for assessing wage differences between the public and private sectors and the wage premium

The differences between public and private sector wages and the wage premium are usually assessed by regression models. In assessing the wage differences in Slovenia by comparable occupational group, we used a logarithm of the average monthly gross cash or near cash income as a dependent variable in the model. The explanatory variables are variables for an individual's gender, education, age, years of service and years of service squared, usual hours worked per week, type of employment contract and a dummy variable denoting whether the individual works in the public or in the private sector. The estimate of the dummy variable indicates the wage premium of the public or the private sector in a respective comparable occupational group. The assessment was carried out on microdata from the Statistics of Income and Living Conditions survey (EU-SILC) using a sample of comparable occupations. The criterion for defining an occupation as a comparable occupation is a sufficient number of observations in the sample for a particular occupation in both sectors. Using a sample of comparable occupations is also reasonable because of similar distributions of wages in the two sectors. We used data for the period 2005–2016, with data on individuals' income referring to the year prior to each survey. In the final sample we included persons working full time. The size of the sample for the whole period is 20,660 observations. In comparison with the whole sample, the sample of comparable occupations captures 63% of observations for persons employed in the public sector, and 50% for those working in the private sector.

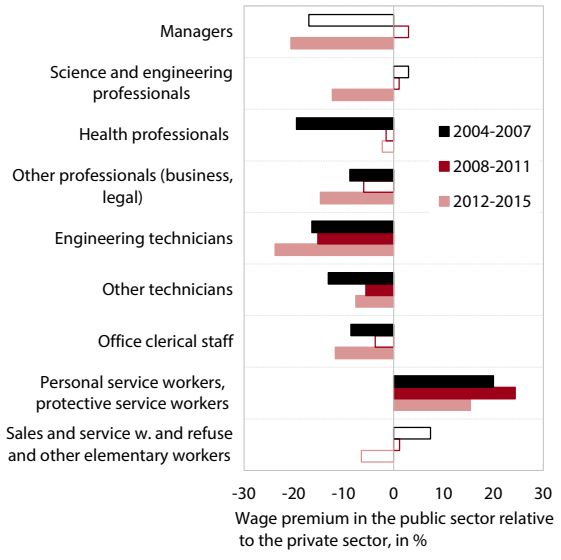
We assessed the wage premium across different parts of wage distribution using quantile regression. In quantile regression the wage distribution is divided into quantiles, i.e. parts with the same number of observations (for example, parts dividing the distribution into ten equal parts are called deciles). Unlike classical regression analysis, by which we can assess only the wage premium for employees with the average wage, quantile regression allows us to calculate the wage premium at different points of wage distribution. The wage premium at the bottom of the distribution can, in fact, be different from that at the top (Mueller, 1998). The outcomes of quantile regression are also more robust against possible outliers. In assessing the wage premium, we used an equal set of explanatory variables and an equal period and sample of comparable occupations to those in the regression analysis by occupational group.

20%. This is similar to wage premium estimates in the study of the BoS (Roter, Lindič and Vodopivec, 2017). Studies for other countries also generally confirm a positive wage premium for less-skilled occupations and a negative premium for high-skilled occupations in the public sector.[26]

Wage premiums have been changing over time. The estimates show that the negative wage premiums of individual medium- or high-skilled occupational groups declined after the introduction of the uniform wage system in the public sector in 2008, which was intended to reduce anomalies between occupations within the sector, while the premium of some simpler occupations increased further. In 2012–2015, a period marked by falling public sector wages as a result of austerity measures (such as the ZUJF), the negative premium rose slightly, while the positive premium remained basically unchanged. This could also be a consequence of a progressive reduction of wages.

The wage premium of the public sector is positive at a lower and negative at a higher level of wages. The assessments of the premium along the entire wage distribution show that the wage premium changes with the level of wages. The positive premium of the

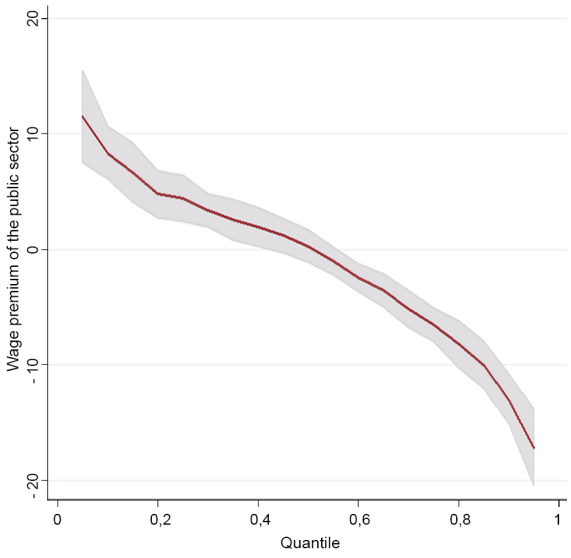
Figure 16: Wage premiums in comparable public sector and private sector occupations, in %



Source: IMAD estimates based on SURS microdata (EU-SILC).
Note: Full bars denote wage premiums that were statistically significant in the regression model (at significance level of 10% or higher); empty bars denote wage premiums that were not statistically significant in the model. Occupational groups are arranged downwards from the most to the least skilled group.

[26] For example EC (2014), IMF (2016).

Figure 17: The coefficient of the wage premium in the public sector relative to the private sector by the level of gross wage in 2005–2016, in %



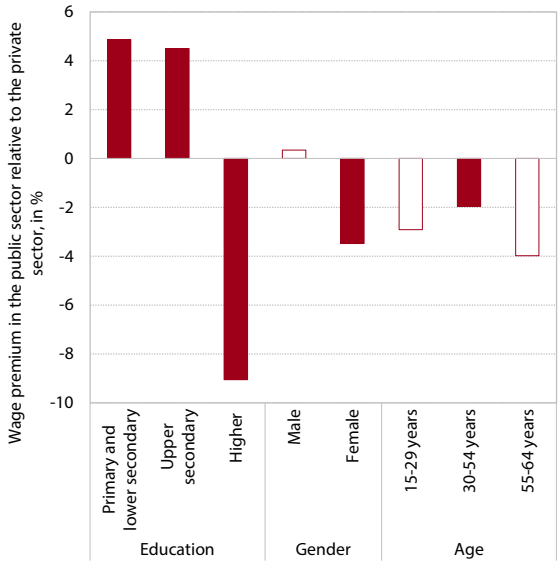
Source: IMAD estimates based on SURS microdata (EU-SILC).
Note: Assessed on a sample of comparable occupations. The grey field around the red curve is a 95-percent confidence interval.

public sector decreases with the increase in wage (and finally becomes negative at the upper end of the wage distribution, i.e. at higher quantiles). In the middle of the distribution, the wage premium cannot be confirmed with certainty with model-based assessments.[27] More detailed assessments for different periods otherwise indicate a turn of the wage premium for lower wage groups from positive into negative in 2012–2015, which indicates a further deterioration of wage comparability with the private sector. The estimates of the premium on a sample of all occupations indicate similar movements of the premium by the level of wage. Studies for other countries confirm a positive premium for the private sector in lower parts of the wage distribution.[28]

The wage premium differs according to certain demographic characteristics of persons employed. The estimates of the wage premium by education, like the estimates by occupational group and the level of wage, show a positive premium for the public sector for primary, lower secondary and upper secondary levels of education, while the premium for higher education is negative.[29] Wages of men working in the public sector are comparable to wages of their counterparts in the private sector. Women in the public sector are paid slightly less than women in the private sector. In

[27] The median of the gross wage, which takes the value of 0.5 on the horizontal axis and amounted to 1,479 euros in 2005–2016, is the middle amount of the gross wage (half of all persons employed earn more and half earn less).
[28] For example, Depalo et al. (2013).
[29] This is often explained by political reasons related to the disapproval and negative perceptions of the public of high earnings of public employees in light of their high job security.

Figure 18: Wage premium by education, gender and age in the public sector relative to the private sector in 2005–2016, in %



Source: IMAD estimates based on SURS microdata (EU-SILC).
Note: Assessed on a sample of comparable occupations. Full bars denote wage premiums that were statistically significant in the regression model (a significance level of 10% or higher); empty bars denote wage premiums that were not statistically significant.

terms of age, a negative premium is characteristic of persons in the most active age group (30–54 years), while the premiums for young and older workers cannot be confirmed with certainty. Neither can we confirm the premiums for individual types of employment (temporary or permanent).

These intersectoral differences between wages of workers with similar characteristics and skills point to the need for motivational, inclusive and flexible wage policy in the public sector. According to the estimates of the wage premium, around 40% of public sector workers receive a positive premium for their work, while a similar share receives a negative premium. A positive premium for less skilled and a negative premium for more qualified workers is consistent with the significantly greater wage compression in the public than in the private sector. This is also manifested in lower wage inequality in the public sector,[30] which can be problematic from the aspect of attracting appropriately qualified staff. Since public services are important for society, their delivery requires motivated and competent employees, who should also be appropriately paid. In the future the need for such staff will rise due to unfavourable demographic trends, increasing competition with the private sector and opportunities for higher earnings abroad.

[30] The Gini coefficient, one of the frequently used indicators for measuring (income/wage) inequality, was lower in the public sector (2.3) than in the private sector (2.6) in 2015.

Appendix

Institutional arrangements for wage formation

The institutional arrangement for wage determination (the wage bargaining system) is one of the factors that affect the movement of wages and labour market conditions. The following aspects are particularly relevant in this context: the degree of wage bargaining centralisation, coordination between the bargaining levels, and the way the minimum wage is set. As in other countries, the way that public sector wages are determined differs from private sector bargaining in Slovenia. In the following sections we present the systems for setting public and private sector wages and the minimum wage in Slovenia in comparison with other countries.

1.1 Public sector

Public sector wages are usually determined on the basis of collective bargaining or by a unilateral decision by the government. In practice, the wage-setting methods frequently overlap. Table 1 summarises the main dimensions of the wage-setting process across the EU, showing that in approximately half of the countries wages are determined mainly by collective bargaining. In some countries wages are set by the government, but only after consultation with workers' representatives (for example, in Austria). In certain countries (such as Luxembourg, Hungary or Malta), the outcomes of collective bargaining have to be confirmed by the parliament. Bargaining also often takes place under budget constraints. Indexation of public sector wages is in place only in Belgium, Luxembourg and Malta.

The European Commission[31] finds that, in terms of the form of wage determination in the public sector, countries can be divided into five groups with certain common characteristics. Slovenia belongs to Central European Countries, together with Austria, Belgium, Germany and Luxembourg. This group of countries is characterised by intermediate levels of trade union density and public employment rates close to the EU average. They have many features of sector-level collective bargaining, but governments can set wages unilaterally in some cases. There are certain elements of decentralisation, but this is not a common practice.[32] The Nordic countries show a strong orientation of collective bargaining in both the public and the private sector. They have strong trade unions and high employment in the public sector. In Southern European countries (France, Greece, Spain and Portugal), wages are mainly determined by the government.[33]

Table 1: Main dimensions of public sector wage-setting in EU countries

	Predominant regime of wage determination: Bargaining (B)/ Decision (D)	Indexation to past inflation	Centralisation of wage updates across government sector
Belgium	B	Yes	No
Bulgaria	D	No	No
Czech R.	D	No	No
Denmark	B	No	No
Germany	B	No	No
Estonia	D	No	No
Ireland	B	No	Yes
Greece	D	No	Yes
Spain	D	No	No
France	D	No	Yes
Italy	B	No	No
Cyprus	B	Suspended	Yes
Latvia	D	No	No
Lithuania	D	No	No
Luxembourg	D	Yes	Yes
Hungary	D	No	Yes
Malta	D	Yes	Yes
Netherlands	B	No	No
Austria	D	No	No
Poland	D	No	No
Portugal	D	No	Yes
Romania	D	No	Yes
Slovenia	B	Suspended	Yes
Slovakia	D	No	No
Finland	B	No	No
Sweden	B	No	No
U. Kingdom	B	No	No

Source: According to the EC (2014): Government wages and labour market outcomes. Brussels: European Commission.

Slovenia is in the group of countries with centralised negotiations about public sector wages. In compliance with the Public Sector Salary System Act, wages are determined by the Collective Agreement for the Public Sector and by collective agreements for activities (exceptionally also by collective agreements for certain occupations). Collective agreements are concluded at the national level. Autonomous bargaining at lower levels or single-employer bargaining is not possible. Eurofound's study (2015) points to the importance of appropriate coordination of wage bargaining for the movement of wages. Since a lack of bargaining coordination can lead to strong wage growth in individual parts of the

[31] European Commision (2014). Government Wages and Labour Market Outcomes. European Economy. Occasional Papers 190.

[32] Collective Bargaining in Public Service in the European Union, Geneva: ILO: Working Paper No. 309.

[33] For more see ibidem in Collective Bargaining in the Public Service in the European Union, Geneva: ILO: Working Paper No. 309.

public sector, it is important to retain a high degree of coordination between individual bargaining levels in the case of decentralisation of the bargaining process. The lack of coordination in negotiating wages for individual sectors or occupations has already proved to be a problem in Slovenia, despite its centralised bargaining system.

In Slovenia, public sector wages are determined by law and collective agreements. The systemic framework of the system is laid down by law, while the actual level of wages for the majority of positions is determined by collective bargaining (except for officials' wages and wages in specific activities such as the armed forces, intelligence services and public agencies). Most wage components (basic wages for indicative positions, the level of supplements and criteria for regular work performance bonuses) are determined in the Collective Agreement for the Public Sector by a uniform methodology for the entire public sector. The basic wages for all other positions are set in collective agreements for individual activities or occupations within the public sector, which also provide for some other specifics (such as criteria for determining management jobs or assessing specific work conditions).

The wage system in the public sector in Slovenia is insufficiently flexible in some elements. Based on the Public Sector Salary System Act, all public servants and officials are divided into eleven pay groups and nine tariff groups that denote the level of education or training required. Each post and title belongs to a pay grade (1–65), which determines the basic wage. The classification of indicative jobs is determined by the collective agreement for the public sector, while the classification of other jobs is stipulated by collective agreements for activities. The placement of a public employee in a pay grade is thus to a great extent determined by law and the collective agreement.

A similar wage system to that in Slovenia is in place in Germany. Wages for all three government levels (federal, state (*Land*) and local) are governed by regulations at the federal level. Similar to Slovenia, each organisational unit is assigned a wage bill. The number of posts according to titles is determined in the staffing plan. For each title a pay grade is set, and this is ranked in the pay scale. Changes to the pay scale are made centrally, at the federal level. There are two forms of payment for work performance: (i) a one-off payment as a reward for good work, which is paid in the amount of up to an individual's basic wage and is not a permanent supplement, and (ii) a continuous performance allowance, which is dependent on a positive performance evaluation. It is time limited (at most 12 months) and paid monthly in the amount of up to 7% of the basic wage.[34]

[34] According to OECD (2005): Performance–related Pay Policies for Government Employees.

The most flexible public sector wage system is in Sweden. Wage determination is individualised – it is the responsibility of heads of units (managers/supervisors), who can determine workers' pay individually rather than according to their position,[35] however, consistent with the institution's goals and within budgetary limitations. Wage rises owing to higher qualifications, additional work requirements, etc. are negotiated with the management or the trade unions at the local level. The system requires that the management develop local pay policies that are transparent and recognised by most employees. Such a policy is focused on the institution's activities and objectives, supports its ability to recruit and retain employees with adequate skills, defines criteria for pay determination, and clarifies how pay determination can motivate and engage employees to improve performance.

The current wage system in Slovenia introduced transparency and comparability of wages within the public sector, but neglected their comparability with the private sector. In the formulation of the current wage system, which started with the drafting of the Public System Salary Act,[36] three basic principles were taken into account: (i) equal pay for a comparable job, (ii) a transparent wage system and (iii) stimulative pay. The main objectives of introducing the uniform wage system were as follows: to (i) establish a uniform wage system for civil servants and officials, (ii) determine appropriate ratios between wages of civil servants and officials, (iii) establish a flexible wage system tying the wage level to efficiency and work performance, and (iv) establish a transparent and fiscally manageable wage system (MJU). This should ensure compliance with the basic principles. The new wage system was thus designed with the view of setting appropriate ratios between wages in the public sector, while the aspect of their comparability with private sector wages was totally neglected. The importance of public and private sector wage comparability is pointed out by a number of economists. Gomez (2012), for example, suggests that wage comparability between the two sectors should be checked every ten years, maintaining that the main guideline in formulating wage policy in the public sector should be the movement of private sector wages.

1.2 Private sector

In Slovenia, private sector wages are, as in many other countries, determined through collective bargaining, in which, as in most EU countries, the government does not participate. Wage formation is a relatively complex process, which takes into account factors such as: productivity, inflation rate and economic growth, unemployment rate, labour supply and labour demand.

[35] The head of the organisational unit can determine an employee's wage individually and offer different wages for two employees with the same type of job.

[36] Adopted in 2002.

Only a few countries have some sort of automatic indexation of wages to price growth. In 2014 wage indexation was set by law only in Belgium,[37] Luxembourg and Malta.

Collective bargaining is governed by the Collective Agreements Act adopted in May 2006. Its main objectives were: (i) comprehensive and systematic regulation of the collective bargaining system and (ii) strict enforcement of the principle of voluntarity. The act regulated the hierarchy of legal documents, allowing the possibility of determining rights and working conditions that are different or less favourable for the worker by a collective agreement at a narrower level. The act also introduced the records of collective agreements, which are kept by the ministry responsible for labour. In the middle of 2018 they contained 48 collective agreements, most of them concluded at the sectoral level and only two at the level of occupations (for medical doctors and dentists and police officers).[38]

In the Slovenian private sector, wages are mainly determined by collective agreements at the sectoral level, but there is also a rising share of firms with firm-level agreements. More than half of Slovenian firms set wages by sectoral collective agreements, although the system has been shifting towards decentralisation in the last ten years. The share of firms using collective agreements at the firm level increased from 22.6% in 2006 to 44.8% in 2013.[39]

In addition to a number of sector-level collective agreements, a collective agreement for the public sector also applied in 1997–2005, which, in our assessment, together with high involvement on the part of employers, contributed to the strong coordination between different bargaining levels and ensured the alignment of wage and productivity growth.

1.3 Setting the minimum wage

The basic purpose of the minimum wage is to protect workers from unduly low pay. The European Pillars of Social Rights emphasise, among other things, the importance of setting an adequate minimum wage that covers the needs of workers and their families, while taking into account national economic and social conditions and safeguarding access to employment and incentives to seek work. If the minimum wage is too high, it may reduce employment prospects for young people and the low-skilled. The minimum wage can also be an incentive for work and help reduce the risk of in-work poverty. In setting the minimum wage, a balance needs to be struck between its impact on poverty reduction and its impact on employment.

The Minimum Wage Act provides that a worker employed full time by an employer in Slovenia has the right to be paid at least the minimum wage. In minimum wage formation the following is taken into account: (i) consumer price growth, (ii) wage movements, (iii) economic conditions (economic growth), and (iv) employment trends. Once a year, the minimum wage is adjusted in line with at least consumer price growth.[40] The amount of the minimum wage is determined by the minister responsible for labour after consultation with the social partners. The minimum wage is set at the national level, as in most other EU countries.

Most EU countries have a statutory minimum wage, which is set by the government after consulting with the social partners. In 2018, as many as 22 EU countries are applying a generally binding statutory minimum wage, while in five the minimum wage is set in collective agreements.[41] Over 100 countries have a statutory minimum wage. At the global level, wage setting systems where the government is advised by an expert body predominate.[42] This expert body generally gives more consideration to macroeconomic conditions than the government.

As is evident from Table 2, Slovenia is in a small group of countries where the minimum wage is set by the government after consulting with the social partners, and where the method for the annual adjustment of the minimum wage (at least for price growth) is determined by law.[43] Empirical studies do not confirm any direct impact of the way the minimum wage is set on labour market conditions, which is often attributed to the fact that it is difficult to include institutional variables in empirical models to compare minimum wage setting mechanisms between countries. Many economists nevertheless believe that in countries where an expert body is involved, labour market and macroeconomic conditions are taken into account to a greater extent, since in countries where the minimum wage is set by the government alone, decisions tend to be made on political rather than economic grounds.

[37] In Belgium, wages are indexed to the "health index", which is the consumer price index excluding prices of tobacco, alcohol and motor fuels. The application of wage indexation is divided into two groups. For the first group (the public sector and around 40% of employees in the private sector), the indexation takes place in fixed steps of 2% each time the index goes over the 2% threshold. For the second group (60% of employees in the private sector), the wage indexation is calculated at fixed time intervals. Wages increase in line with the percentage change in the health index (Eurofound, 2015).

[38] The list of all contracts is available at: http://www.mddsz.gov.si/si/delovna_podrocja/delovna_razmerja_in_pravice_iz_dela/socialno_partnerstvo/evidenca_kolektivnih_pogodb.

[39] Data from the ECB's Wage Dynamics Network survey.

[40] In calculating minimum wage adjustments, the official data from the Statistical Office of the Republic of Slovenia on the annual rise in consumer prices for the previous December-to-December period is used.

[41] The level of the minimum wage depends on economic development. In January 2018 it ranged from EUR 260 in Bulgaria to almost EUR 2,000 in Luxembourg.

[42] According to Dickens, R. (2015), this is the case in 47% of countries.

[43] Article 5 of the Minimum Wage Act stipulates a regular annual adjustment of the minimum wage at least in line with the annual rise in consumer prices (year-on-year price growth in December).

Table 2: Setting the statutory minimum wage in 2017

	Government	Expert committee	Tripartite
Belgium			
France	R + U	I	
Germany	R	V	
Ireland	R	R	
Luxembourg	I + R		
Netherlands	I		
U. Kingdom	R		
Greece	U		
Malta	R	I	
Portugal	R + U		
Slovenia	R + U		
Spain	R		V
Bulgaria	R + U		
Croatia	R		
Czech R.	R + U		
Estonia	R		
Hungary	R		V
Latvia	R		V
Lithuania	R		V
Poland	R + U		
Romania	R + U		
Slovakia	R + U		

	Was not involved at all in this respective year
	Brought the final level into effect
	Was consulted about the level
	Provided a non-binding recommendation
	The involvement of this actor was unusual
I	Applied indexation mechanism to determine minimum wage level
R	Decided the final level taking into account recommendations of other players or mechanisms (e.g. indexation)
U	Decided the level unilaterally
V	Reached consensus on the level of the minimum wage

Source: Eurofound (2018) Statutory Minimum Wages in 2018.

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II. Challenges for further fiscal consolidation

Summary

The general government balance has improved significantly in the last few years; in 2017 it was balanced, due not just to improved economic conditions, but also to fiscal consolidation measures. Since 2013 the general government deficit has been persistently falling, which can be attributed to two sets of factors. The first includes the improvement in macroeconomic conditions following the stabilisation of the banking sector and the recovery of domestic and foreign confidence, which coincided with buoyant economic growth in the international environment. The other is the adoption of measures which, on the revenue side, increased general government revenue and, on the expenditure side, curbed expenditure growth through interventions in wages and employment in the public sector, by lowering certain social benefits, reducing material expenses and containing flexible expenditure.

The measures for reducing the general government deficit have, to a large extent, been of a temporary and non-systemic nature, particularly on the expenditure side, and therefore not sustainable in the long term. At the time of tight economic conditions and great uncertainty, these measures, particularly the austerity package in 2012, were comparable with those adopted in other EU Member States. In circumstances when Slovenia had difficulty accessing finance on foreign markets, the measures successfully stemmed the growth of the deficit and contributed to its gradual decline. Some of the measures were more permanent in nature, particularly on the revenue side, but most were temporary and intervention measures. The weaknesses of this approach and the unsustainability of measures in the long term became evident within just a few years. In our assessment, given the significant role played by temporary measures and the reduction in flexible expenditure in the consolidation process thus far, the reduction in the structural balance, which was balanced in 2017, cannot be sustainable in the long term either.

The structure of tax revenues and expenditures has changed since the onset of the crisis, and the crowding out of flexible expenditure is limiting the room for fiscal manoeuvre should economic conditions deteriorate. In the structure of general government revenues from taxes, in 2016 the shares of taxes on goods and services and social security contributions were higher than ten years before and higher than in other developed countries on average. With the tax changes in 2017, this structure did not change notably. The changes did lower somewhat the burden on income from work, which, according to model-based simulations, has a positive impact not only on economic activity (particularly through lower labour costs and hence higher employment), but also on individuals' decisions regarding further education. In the structure of general government expenditure, particularly the shares of interest payments and pension expenditure increased in the last ten years of the period analysed, while the share of investment expenditure declined – in the first pre-crisis years owing to the policy of reducing flexible expenditure, and in the last two mainly due to the transition to the new financial perspective.

The main reason for the very limited room for countercyclical fiscal policy is the high general government debt. The deficit reduction in favourable economic and borrowing conditions in the last two years has contributed to a contraction of general government debt. This is nevertheless still very high, which is significantly reducing the room for fiscal policy action. In 2017 the general government debt amounted to 74.1% of GDP, which is less than in 2015, when it peaked, but as much as 52.3 pps more than in 2008. This means that

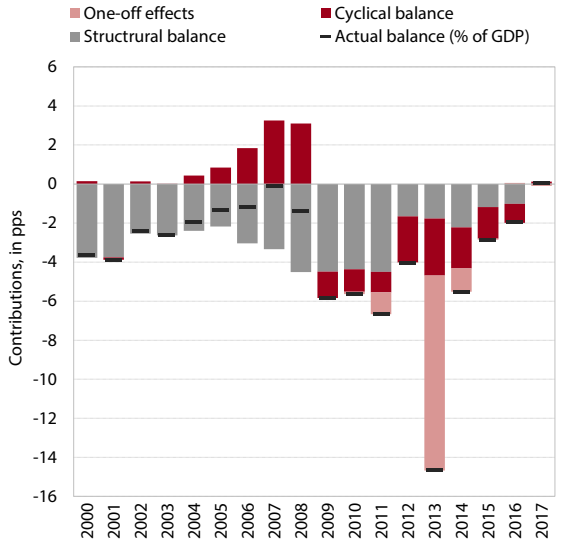
the government has considerably less room for introducing countercyclical measures if economic and public finance conditions deteriorate.

The capacity of the policy approach applied in the last few years to improving the fiscal position has been largely exhausted; maintaining sound public finances and reducing debt over the medium-term period will therefore require systemic measures. The budgetary documents for 2018 and 2019 envisage a significant rise in total expenditure. This could even be higher with the possible adoption of new measures that would further increase the level of expenditure foreseen, if not accompanied by measures that would neutralise their effect. The stability of public finances would thus be even more difficult to maintain. Especially in any deterioration of economic conditions, the fiscal position could worsen rapidly in the absence of systemic measures. The scope for increasing public sources of funding are limited, but, at the same time needs are rising due to demographic change. In the given fiscal policy framework in the euro area, this is additionally limiting the room for expansionary fiscal policy in the medium term. The medium-term fiscal strategy should therefore ensure the efficiency of social protection systems, maintenance of the quality of public services and support for economic activity by restructuring revenue and expenditure. Budgetary planning will also have to be adapted in the coming years, particularly in view of the urgent need to design more sustainable adjustments of social protection systems. In restructuring revenue, the importance of a stable and predictable tax system for business planning and behaviour should be borne in mind.

1 The consolidation path thus far

The general government balance has improved substantially in recent years. The general government deficit has declined steadily since 2013, when it was at its highest, in part under the impact of one-off factors. In 2017 the fiscal position was balanced (0.1% of GDP). This was attributable to (i) the improvement in macroeconomic conditions following the banking sector stabilisation and the recovery of domestic and foreign confidence and (ii) the adoption of measures to increase revenue and restrain spending. Throughout the period since the onset of the economic crisis, the containment of overall expenditure growth was to a great extent achieved by a substantial contraction of flexible expenditure, i.e. investments and subsidies.[1] In the last two years interest expenditure also dropped, with active debt management amid lower required yields.

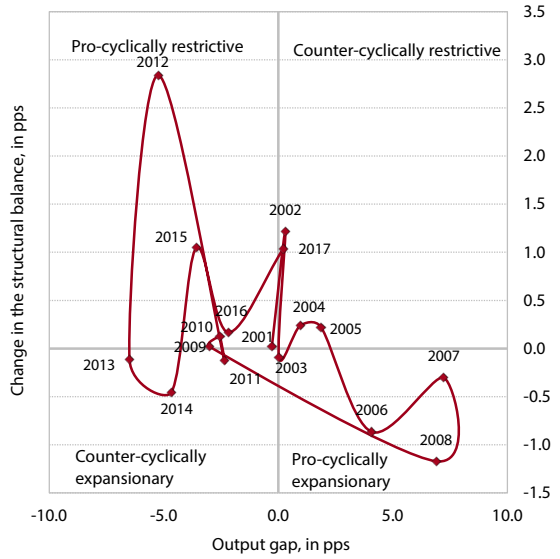
Figure 1: Balance and structural balance of the general government sector, Slovenia



Source: SI-STAT data portal – National Accounts – General Government Accounts - Main aggregates of the general government, 2018; estimate of the structural balance by IMAD.

After several years of pro-cyclically restrictive orientation, in 2017 fiscal policy was relatively neutral in terms of the impact on economic activity. After a severe deterioration of the structural fiscal position already in the years before the crisis, when fiscal policy was strongly pro-cyclically expansionary, the significant shift towards a pro-cyclically restrictive orientation reflected fiscal constraints in 2012 related to Slovenia's commitments under the excessive deficit procedure and very limited access to financing. Fiscal policy also remained pro-cyclically restrictive in 2015 and 2016, yet significantly less so, which – amid the improved economic conditions – was mainly attributable to the gradual removal of measures that had been containing government spending since 2012. According to the latest assessments of the business cycle phase by IMAD, which indicate a closing of the output gap in 2017, fiscal policy was only slightly restrictive that year.

Figure 2: Fiscal policy orientation with regard to changes in the business cycle phase

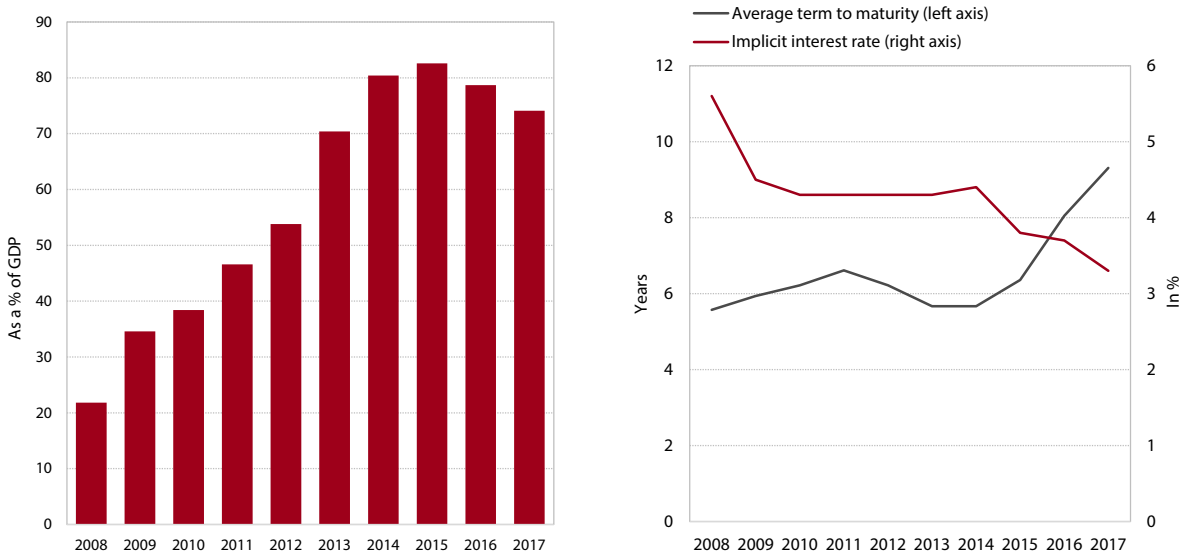


Source: SI-STAT data portal – National Accounts – General Government Accounts - Main aggregates of the general government, 2018. Estimates of the output gap and the structural balance by IMAD.

Fiscal policy has thus far addressed the consolidation challenges largely through temporary and mostly non-systemic measures. Slovenia joined the EU countries that during the crisis took measures to mitigate the rise in the general government deficit and for its gradual reduction with a delay of several years. In 2012 it adopted a package of austerity measures that mainly affected wages and employment in the public sector and social benefits, but in the last few years, fiscal consolidation has also relied on measures limiting flexible expenditure or restraining expenditure growth. The measures, comparable with those implemented in other EU Member States, reduced the general government deficit at a time of great uncertainty, when Slovenia had difficulty accessing finance on foreign markets and – together with bank recapitalisations at the end of 2013 – helped restore investor confidence in financial markets. Most of the measures were temporary and intervention measures. Measures of a permanent nature included those aimed at increasing revenue and,

[1] In 2017 investments and subsidies were EUR 783.5 million lower than in 2008, the rise in the interim period (2013 and 2014) being related to completion of the drawing of EU funds from the previous financial perspective, and the low level in 2016 and 2017 to the transition to the new financial perspective.

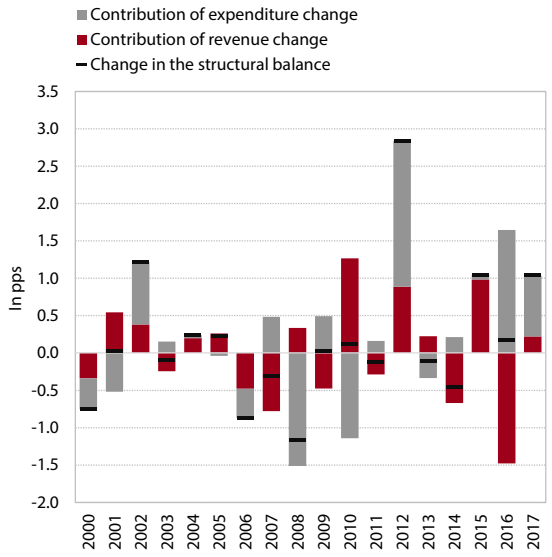
Figure 3: General government debt (left), average term to maturity and implicit interest rate of the state budget debt (right)



Source: SURS, Main general government aggregates, 2018; MF, Report on the Republic of Slovenia's public debt management, 2017.

on the expenditure side, pension reform and reform in social transfers. The weaknesses of intervention measures have become evident with their extension into subsequent years, as they mainly involve temporary solutions that are not sustainable in the long term. Such measures include, for example, the policy of linearly restricting wages and recruitment in the public sector, the linear reduction of expenditure on goods and services, limiting growth in pension expenditure by not indexing pensions, resolving problems related to the over-fragmented local government system by limiting per capita transfers to municipalities, etc. These short-term measures have been gradually removed in the last few years, but have yet to be replaced by systemic measures that would enable greater structural flexibility of general government expenditure.

Figure 4: Change in the general government structural balance broken down into the contributions of revenue and expenditure



Source: SI-STAT data portal – National Accounts – General Government Accounts - Main aggregates of the general government, 2018; estimate of the structural balance by IMAD.
Note: In estimating the effects of revenue and expenditure changes on the structural balance, we used certain coefficients of elasticity. The estimates therefore do not include the impact of one-off factors and specific circumstances.

The structural balance position, estimated on the basis of IMAD's spring and autumn estimates of the output gap, was balanced in 2017. The structural deficit, having totalled around 4.5% of GDP in 2008–2011, which is the most since 2000, was close to the balanced position last year and hence at its lowest level to date. According to the IMAD estimate, the overall improvement in the structural balance in 2011–2017 mainly arose from the adjustment of expenditure;[2] this was greatest in 2012 (due to the adoption of a large package of fiscal consolidation measures) and in 2016 and 2017 (owing to the decline in investment, capital transfers and interest). Still, given the major role played by temporary measures and the lowering of flexible expenditure in the consolidation process, such a reduction in the structural balance cannot be sustainable.

[2] Cyclically adjusted revenues and expenditures are calculated using the OECD's estimates of elasticity (Price et al., 2015).

The narrowing of the deficit and improvement in economic conditions led to a decline in the general government debt as a share of GDP in the last few years. Between 2008 and 2015 the general government debt surged from 21.8% of GDP to 82.6% of GDP, but in the last two years it dropped to reach 74.1% of GDP in 2017. This was attributable to an improvement in the primary balance (surplus). The contribution of economic growth was also favourable. In the last two years it offset the negative impact of interest expenditure on debt accrual, thus eliminating the "snowball effect". The decline in debt payments in the last two years also reflects active debt management in favourable borrowing conditions, which also had the effect of extending debt maturity.

Despite the decline, debt remains high and absent policy changes, in the long term its sustainability will come under pressure due to swelling age-related expenditure; fiscal space therefore remains limited. Fiscal space is an estimate of the extent to which general government debt can increase without jeopardising fiscal sustainability, which indicates the room for implementing expansionary fiscal policy in the future. The latest estimates for Slovenia according to one of the methods[3] indicate the existence of relatively small fiscal space, though it has increased somewhat in recent years with a decline in general government debt, persistence of low borrowing costs and strong economic growth, and is outside the range of significant risk. The scope for stimulating economic growth through expansionary fiscal policy by borrowing nevertheless remains limited, as (i) the government should not use all fiscal space available because of the sensitivity of investors and because it may be faced with new shocks and implicit obligations in the future (assumption of the debt burden of the private sector), and as (ii) in the future fiscal space will be increasingly restricted under the pressure of rising age-related expenditure.

[3] Fiscal space can be assessed by several approaches (see Economic Issues 2017, p. 23). The estimate in this analysis is made using the debt (sustainability) limit, which is based on the estimate of the fiscal reaction function (according to Ghosh et al., 2011).

2 Changes in the structure of general government revenue and expenditure

2.1 Changes in the structure of revenue and expenditure in the last ten years

After an increase during the crisis, revenue and expenditure as a share of GDP are approaching pre-crisis levels, but their structures differ somewhat from those before the crisis. This is a consequence of the structure of GDP changes in the last ten-year period and various measures adopted on both the revenue and expenditure sides during the crisis. The picture is also similar to that one decade ago in comparison with the EU or OECD average: in 2016 and 2017, general government revenue and expenditure as a share of GDP in Slovenia were somewhat lower than in the EU and slightly higher than in the OECD on average, while the difference in their structures increased slightly.

Up until 2016 taxes on goods and services and social security contributions accounted for higher shares in the structure of general government revenues from taxes[4] than ten years earlier and higher than in other developed countries on average. In 2016 each of these two tax categories represented close to 40% of total general government tax revenues; this is significantly more than on average in the OECD (taxes on goods and services around 32% and social contributions 27%) and its members from the EU (32% and 30% respectively). The high and rising shares since 2007 have been, in addition to the abolition of the payroll tax, to a great extent attributable to increases in excise duty and VAT rates[5] and a broadening of contribution bases.[6] The share of revenues from *personal income tax* is low (14%, which is around 10 pps less than on average in the OECD and its members from the EU) amid otherwise relatively high tax rates, but also high tax allowances for children. Because of a reduction in the tax rates, an increase in allowances[7] and cyclical factors, the share of *taxes on corporate profit* (4%) was almost half lower than in 2007 and below the average for the OECD (8%) and its members from the EU (7%). The share of *property taxes* was traditionally modest in 2016 (1.7%, compared with 5.5% in the OECD and 4.6% in its members from the EU). With amendments to tax legislation in 2017, which changed

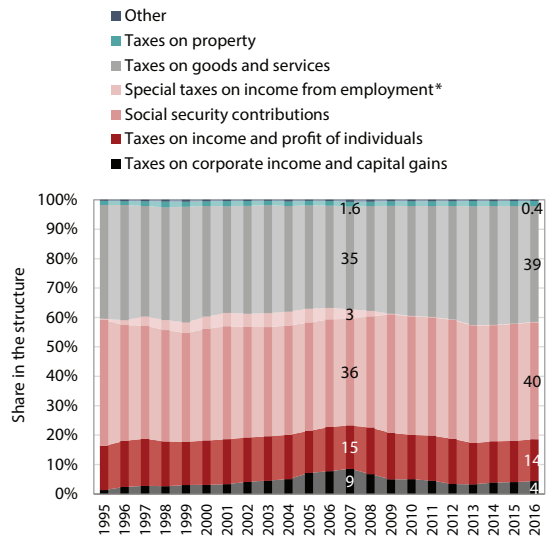
[4] Including social security contributions.
[5] As of 1 July 2013, the VAT rates were raised from 8.5% to 9.5% and from 20% to 22% respectively.
[6] The base for paying social security contributions was broadened to include income from employment on the basis of civil law contracts or referrals issued by student work agencies.
[7] In 2006–2010 the corporate income tax rate was gradually lowered from 25% to 20%. In 2012 and 2013 it was reduced further, to 18% and 17% respectively. As of 2017, it was raised to 19%.

Figure 5: General government revenue and expenditure as a % of GDP

Source: OECD.Stat – Government deficit/surplus, revenue, expenditure and main aggregates, June 2018; calculations by IMAD.
Notes: The OECD average presented in the figure is unweighted; the EU average is weighted (according to Eurostat).

the personal income tax brackets and disburdened part of performance-related pay, while increasing the tax burden on corporate profit (Box 2), the relationships did not change significantly according to our estimate (neither structurally nor in comparison with the average for other countries).

Figure 6: Structure of general government revenue from taxes and social contributions, Slovenia



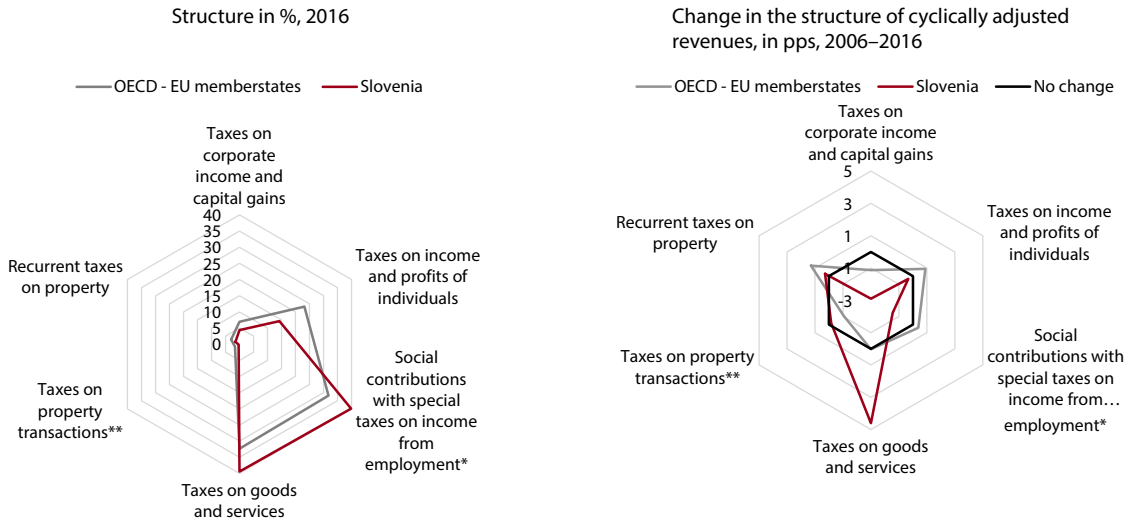
Source: OECD.Stat – Taxation - Revenue Statistics - Comparative tables, June 2018; calculations by IMAD.
Note: * Special taxes on income from employment include payroll tax and the special tax on specific categories of income (from a work contract).

The changes in tax revenue structure in the last ten-year period were relatively friendly to economic growth, according to the prevailing results of empirical studies. If we focus solely on their impact on potential GDP growth (which can show an opposite sign to the impact on other societal goals, such as reducing income inequality or negative environmental and social externalities), the changes in tax revenue structure in 2007–2016 can be considered relatively favourable according to the prevailing results of empirical studies (see Attachment 1, Table 2), as they shifted part of the tax burden from corporate and household incomes to consumption. The share of social security contributions also increased, but amid a concurrent decline in the share of payroll tax (which was completely abolished as of 2009), which burdened income from employment in a similar way.[8] Shifting some of the tax burden to property, which is relatively low in Slovenia, would otherwise have an even more favourable effect on potential economic growth. The changes for the most part derived from economic policy measures[9] (and to a lesser extent from fluctuations in economic activity) and are therefore more permanent in nature. Specifically, changes in the cyclically adjusted tax revenue structure do not deviate

[8] The *share of direct taxes on income* (such as corporate income tax, personal income tax, social contributions, the already abolished payroll tax) in total tax revenues declined by 4.8 pps in 2007–2016, while the *share of indirect taxes*, mostly taxes on consumption, increased by almost as much.

[9] Measures intended to improve tax revenue structure were as follows: (i) increases in excise duty and VAT rates, environmental taxes and concession and some other fees, (ii) introduction of taxes on financial services and lottery tickets, (iii) reduction in the corporate income tax rate and (iv) increase in tax allowances for enterprises and individuals.

Figure 7: Structure (2016) and change in the structure (2006–2016) of general government revenue from taxes and social contributions, Slovenia and OECD countries

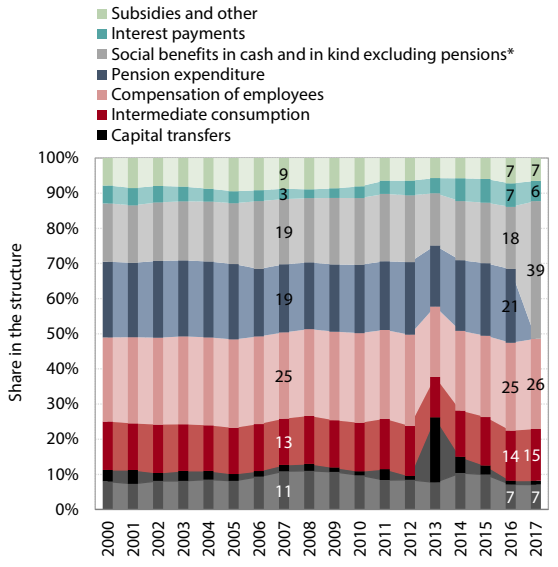


Source: OECD.Stat – Taxation - Revenue Statistics - Comparative tables, June 2018; calculations by IMAD.
Notes: The average for the OECD – EU Member States is the unweighted average for OECD members that are also members of the EU. The OECD classification of taxes at the lowest level is taken into account; the tax categories are grouped into logical units according to the results of analyses of how the tax wedge structure affects economic activity. * Special taxes on income from employment include the payroll tax (such as was already abolished in Slovenia) and other taxes on labour (in Slovenia, the special tax on specific categories of income arising from a work contract). ** Taxes on property (right figure) include recurrent taxes on property and taxes on inheritance and gifts. For the purpose of graphical presentation of changes in the structure of revenues from taxes and social contributions, individual revenue categories are adjusted for the business cycle based on their elasticities with respect to the output gap according to the OECD (Price et al., 2015).

significantly from changes in their original structure. In the OECD and its members from the EU, the tax revenue structure did not change much on average in the period analysed.

In the structure of total general government revenue, non-tax revenues[10] gained importance in the last ten-year period. The share of revenues from market production and own final use[11] and property (particularly dividends) has risen the most since 2017. In 2017 non-tax revenues thus accounted for close to 16% of total general government revenue, which is almost 4 pps more than in 2007. With a more pronounced increase than in developed countries on average, the share of non-tax revenues is higher than in the EU and similar to the average for OECD countries,[12] some of which (for example Norway) have considerable revenues from natural resources. Non-tax revenues tending to be more volatile than revenues from taxes, the stability of financing deteriorated somewhat with this structural change.[13]

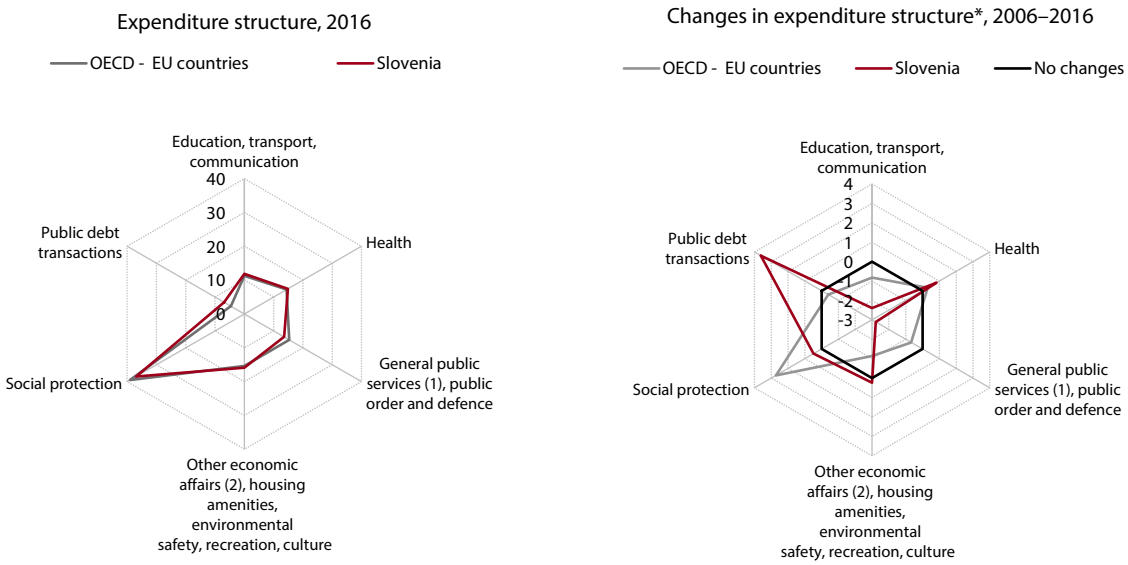
Figure 8: Structure of general government expenditure, Slovenia



Source: SURS, Main Aggregates of the General Government, April 2018, General Government Expenditure by Function, December 2017; calculations by IMAD.
Note: Data on general government expenditure by function are available only until 2016; the figure on pension expenditure for 2017 is therefore presented within total expenditure on social protection.

[10] Revenues other than revenues from taxes or social contributions.
[11] The bulk being revenue from sales of goods and services of public institutes, fees, charges and rents.
[12] In 2016 the average share of non-tax revenues in total general government revenue in the EU (OECD) amounted to 12.5% (14.8%); in Slovenia 15.0%.
[13] See Mourre and Reut (2017).

Figure 9: Structure (2016) and change in structure (2006–2016) of general government expenditure by function, Slovenia and OECD countries



Source: OECD.Stat – Government expenditure by function (COFOG), June 2018; calculations by IMAD.

Notes: The average for the OECD – EU Member States is the unweighted average for OECD members that are also members of the EU.

* For the purpose of determining changes in the structure, the unemployment benefits are cyclically adjusted on the basis of their elasticities with respect to the output gap according to the OECD (Price et al., 2015).

(1) Excluding public debt transactions.

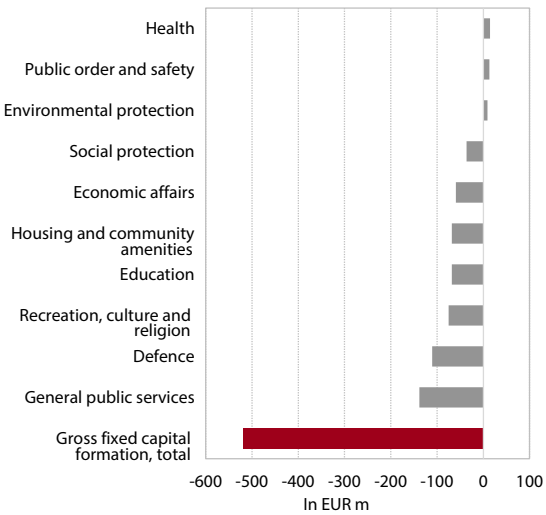
(2) Excluding infrastructure and communication.

In the structure of general government expenditure, in particular expenditures on interest and pensions went up in the last ten-year period, thus crowding out more flexible expenditure categories, particularly investment. In 2017 interest expenditure accounted for 5.8% of total general government expenditure (2.5% of GDP), which is twice as much as ten years earlier, the debt-to-GDP ratio having risen by almost 51 pps in the 2007–2017 period.[14] The expansion of pension expenditure mainly reflected the delay in adopting reform measures at the beginning of the retirement of larger generations, which coincided with the crisis. The rise in these two categories of expenditure gradually crowded out particularly expenditure on investment; the share of subsidies also declined. Owing to the increased shares of both, relatively rigid, categories of general government expenditure, Slovenia's capacity to respond to possible fluctuations in economic activity in the future decreased further.

The share of general government investment in total expenditure has fluctuated significantly in recent years, which is related to the dynamics of EU funds absorption, while its decline during the crisis was mainly due to the policy of reducing flexible expenditure. In 2017 general government investment accounted for a smaller share of total general government expenditure than in 2008, the decline being most pronounced in transport (economic affairs), which is in part also related to the dynamics of the absorption of EU funds. On the expiry of the previous financial

[14] The increase in the general government debt in 2007–2017 was mainly due to the financing of future borrowing requirements; to a great extent it was also a consequence of the bank stabilisation process between 2011 and 2014.

Figure 10: Changes in gross fixed capital formation by function in 2008–2016



Source: SI-STAT Data Portal – National Accounts – General Government Accounts - Main Aggregates of the General Government, 2018.

perspective, investment increased strongly due to the accelerated absorption of EU funds, before falling at the beginning of the new financial perspective, which is otherwise characteristic of all major net beneficiaries of resources from structural funds.

A breakdown by function shows a decline in the shares of expenditure on education and transport and communication infrastructure in total general government expenditure in 2006–2016. The changes in the structure of general government expenditure are further illustrated by the analysis of government expenditure by function (COFOG), which shows that the shares of expenditure on education and transport and communication infrastructure declined in Slovenia in 2006–2016 amid an increase in the share of interest payments. This is not favourable in terms of longer-term economic growth (see Attachment 1, Table 3). The share of expenditure on defence and general public services (excluding interest payments) also decreased. The structural changes in general government expenditure were more noticeable than on average in the OECD and its members from the EU.

2.2 Changes in general government revenue and expenditure and their impact on economic growth

One of the fiscal policy tasks is to stabilise the economy by counter-cyclical measures, which must be balanced by measures to ensure the provision of quality public services and redistribution of income. Through fiscal policy, whose primary role is financing public spending, alongside economic growth and high employment governments also pursue various other societal goals such as limiting income inequalities[15] and negative environmental and social externalities. Fiscal policy thus also has a countercyclical function. In formulating measures, it is therefore also important to consider their growth friendliness, i.e. how changes in general government revenue or expenditure affect economic growth. The measures should however be balanced in a way to ensure the fulfilment of other fiscal policy tasks, particularly in terms of ensuring the quality of public services and redistribution of income.

The actual impact of changes in tax revenue structure on economic growth depends on the state of the economy and the existing tax revenue level and structure. The tax system affects long-term economic growth through its influence on decisions of individuals (regarding labour supply, investment in education and training, spending/saving) and firms (regarding investing and innovating, hiring, scope of production). These decisions affect the long-term productive potential and costs of the economy, its international competitiveness and hence aggregate production and employment. According to the prevailing results of recent empirical studies for developed countries (see Appendix 1, Table 2), property taxes, particularly recurrent taxes on immovable property, are the least detrimental to competitiveness and economic growth over the long term, followed by taxes on consumption, which are levied on a broad base. The impact of taxes on corporate and individual incomes (particularly from employment) and social contributions is less favourable.

The impact of general government spending on economic growth also differs considerably across individual expenditure categories; empirical studies do not provide unambiguous results regarding the optimal composition of public expenditure, but they are generally unanimous about the positive effect of expenditures on education and infrastructure. Countries can work towards their public finance and economic goals by increasing the efficiency of public expenditure through its restructuring, but empirical evidence on the optimal composition of public expenditure is not unanimous. A rise in total public spending alone (regardless of its composition) otherwise increases aggregate demand and positively influences GDP growth in the short term, but over the long term these effects are no longer so clear, the actual effect depending significantly on the level of the country's development, the initial state of the economy and the structure of changes. There is no real consensus on how an increase in individual public spending categories at the expense of others affects long-term economic growth. The greatest consensus exists regarding the positive effect of expenditure on education and infrastructure, particularly transport and communication infrastructure. The positive impact of health expenditure is uncertain, although confirmed by some studies. Similar holds true for expenditure on general public services, defence, and housing and community amenities.

[15] Some tax revenue structures are more progressive than others (Johansson, 2016, p.16). In most countries, a shift in the tax revenue structure towards a higher share of taxes on consumption and/or property and a lower share of revenues from personal income tax would have a favourable impact on potential economic growth, but, at the same time, it would reduce the overall progressivity of the tax system and thus diminish the role tax policy plays in redistributing income and reducing inequality.

Box 1: Assessment of the impact of tax changes in 2017 on economic activity

The latest changes in taxation were primarily aimed at lowering the tax burden on labour income and adopting measures to compensate for the resulting revenue loss. At the beginning of 2017, the personal income tax brackets were changed (an additional bracket with a 34% tax rate was introduced between the previous 2nd and 3rd tax brackets and the personal income tax rate in the 4th bracket was reduced from 41% to 39%), the threshold for entitlement to the highest general allowance was raised (by 300 euros), and part (up to 70% of the average monthly wage in Slovenia[1]) of performance-related pay such as 13th wage and Christmas bonuses was exempted from income tax. To offset part of the revenue loss, the general rate of the corporate income tax was raised from 17% to 19%.

The following paragraphs present assessments of the effects of these tax changes based in a labour market model.[2] The model is composed of households, firms and the public sector. Individuals[3] within households maximise their lifetime utility by choosing on optimal intertemporal allocation of consumption, labour supply (number of hours worked if employed, search intensity if unemployed, participation in the labour market and retirement), investment in education at the beginning of their lifetime and effort invested in lifelong learning. The production side consists of representative firms under the conditions of perfect competition. Production takes place using two production factors, labour and capital, labour being differentiated in terms of age and skills. Firms maximise their value by choosing the optimal number of vacancies, the lay-off rate, the quantity of training offered and the volume of investment. The labour market is modelled using a static search model as in Mortensen (1986) and Boone and Bovenberg (2002). Wage bargaining between firms and workers takes place based on maximisation of the Nash-bargaining product, which combines the target functions of both sides involved. The model also captures the public sector (a detailed description of revenues and expenditures of the budget).

The simulations of the model[4] show small positive effects of the tax reform on economic activity in general. The tax reform contributes to a reduction in the tax burden, which is distributed between employees and firms as part of wage bargaining. The result is lower labour costs and higher net wages, the effect being more pronounced for medium- and high-skilled individuals. Lower labour costs in turn have a positive impact on labour demand, while higher net wages have a positive impact on labour supply; this can be seen in higher participation in the labour market and more hours worked per employee. Owing to increased labour supply, firms find it easier to fill vacancies, which increases employment. As the tax reform also raises the corporate income tax rate, investment is adjusted. In the short and medium term, the increase in investment is smaller than the increase in employment, which leads to a lowering of the capital-labour ratio and hence the productivity of employees; this also explains part of the lowering of labour costs. This effect is all the more pronounced as employment increases more among individuals with higher education than among those with lower education.[5] The simulations further show that the tax reform has a positive effect on the reduction of unemployment, while the relatively greater decline in the tax wedge for highly educated individuals increases the return on education; this leads to a higher share of highly educated people in the economy. Overall, the tax reform has negligible positive effects on key macroeconomic categories: employment, net wages, private consumption and GDP are set to increase (by 0.2%, 0.6%, 0.7% and 0.3% respectively) and unemployment to decline (by 0.06 pps).[6] The results also show a greater positive impact of the tax reform for medium- and high-skilled individuals, which has a favourable effect on their decisions regarding further education. As to the financial implications of the reform, changes in personal income tax would cause a loss of revenue of around EUR 141 million, and changes in corporate income tax an increase in revenue of around EUR 63 million, *ceteris paribus*.

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[1] In 2018, the portion of performance-related pay that is exempt from personal income tax increased to 100% of the average wage in the Republic of Slovenia.

[2] This is a dynamic general equilibrium model with a detailed description of the labour market, which was developed by Berger et al. (2009). The model was calibrated for a number of countries, including Slovenia, and is an upgrade of the Quest model (D'Auria et al., 2009). The calibration for Slovenia took place in cooperation between the European Commission, the Austrian Institute for Economic Research EcoAustria and IMAD.

[3] Individuals are divided with regard to age and education. There are eight age groups, four referring to active years of life, three to the period of retirement, while one (mixed) group includes both employed and retired individuals (their ratio being dependent on endogenous decisions of individuals with regard to the exit to retirement). There are three educational groups – low- (ISCED 0-2), medium- (ISCED 3–4) and high-skilled (ISCED 5+) individuals.

[4] SWe made the simulations with the support of the Austrian Institute for Economic Research EcoAustria when we took over the model for further independent use.

[5] Assuming complementarity between capital and level of education. In the short- and medium-term periods, the shortfall of capital can be partly offset by lower-skilled individuals. As employment in this educational group increases less than among individuals with higher education, the decline in productivity is more pronounced.

[6] Over the long term. The results have to be interpreted as a deviation from the baseline scenario under no policy change.

[7] Similar estimates were also arrived at by the Ministry of Finance at the start of the implementation of tax changes.

Table 1: Results of the effects of tax changes on selected macroeconomic variables

Change in % unless stated otherwise

Variables/Years after the reform	1	2	3	4	5	10	20	SS*
GDP	0.21	0.22	0.23	0.23	0.23	0.24	0.25	0.30
Investment	0.11	0.11	0.10	0.10	0.10	0.10	0.12	0.20
Consumption	0.72	0.73	0.73	0.73	0.73	0.73	0.72	0.69
Trade balance (change as a % of GDP)	-0.09	-0.09	-0.08	-0.08	-0.08	-0.06	-0.02	0.09
Gross wage rate – labour costs per hour	-0.39	-0.35	-0.35	-0.34	-0.34	-0.32	-0.31	-0.29
- low-skilled	-0.05	-0.02	-0.01	-0.01	-0.01	-0.01	0.03	0.09
- medium-skilled	-0.09	-0.06	-0.06	-0.05	-0.05	-0.02	0.02	0.13
- high-skilled	-0.78	-0.75	-0.74	-0.73	-0.72	-0.72	-0.78	-0.89
Net wage rate	0.53	0.56	0.57	0.57	0.58	0.59	0.60	0.62
- low-skilled	0.22	0.25	0.26	0.26	0.26	0.27	0.30	0.36
- medium-skilled	0.32	0.35	0.36	0.36	0.37	0.39	0.44	0.54
- high-skilled	0.83	0.87	0.88	0.88	0.89	0.89	0.83	0.72
Average number of hours worked per worker	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Participation rate – 15-69 years (change in pps)	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.09
- low-skilled	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.06
- medium-skilled	0.05	0.07	0.07	0.08	0.08	0.08	0.08	0.09
- high-skilled	0.11	0.11	0.10	0.10	0.09	0.08	0.09	0.09
Employment rate – number of workers	0.15	0.16	0.17	0.17	0.17	0.17	0.17	0.20
- low-skilled	0.10	0.11	0.12	0.12	0.12	0.11	0.10	0.06
- medium-skilled	0.13	0.14	0.14	0.14	0.14	0.13	0.11	0.10
- high-skilled	0.21	0.22	0.22	0.22	0.23	0.25	0.31	0.43
Unemployment (change in pps)	-0.04	-0.04	-0.04	-0.04	-0.04	-0.05	-0.05	-0.06
- low-skilled	-0.02	-0.03	-0.03	-0.03	-0.03	-0.04	-0.04	-0.04
- medium-skilled	-0.03	-0.04	-0.04	-0.04	-0.04	-0.04	-0.05	-0.06
- high-skilled	-0.04	-0.04	-0.05	-0.05	-0.05	-0.05	-0.04	-0.03
New persons								
- low-skilled	0.00	-0.10	-0.10	-0.11	-0.11	-0.11	-0.11	-0.11
- medium-skilled	0.00	-0.26	-0.24	-0.22	-0.20	-0.15	-0.14	-0.12
- high-skilled	0.00	0.52	0.49	0.46	0.42	0.34	0.31	0.27

Source: Estimates by EcoAustria and IMAD.

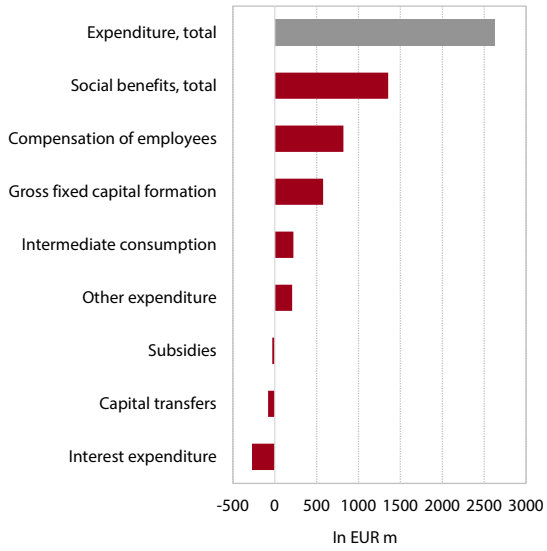
Note: *SS means Steady State.

3 Medium- and long-term trends in public finances

The adopted budgetary documents for 2018 and 2019, which include the abolition of several more temporary austerity measures, envisage a significant rise in expenditure, which sets a great challenge in formulating measures to maintain the stability of public finances. The abolition of measures will be reflected particularly in significant increases in social benefits and transfers and compensation of employees.[16] With possible faster growth in employment, the adoption of additional agreements regarding the elimination of wage anomalies[17] and a possible reinstatement of wage indexation for inflation,[18] these increases could be even stronger in individual years. Even if policies remain unchanged, expenditure on social benefits and transfers will see stronger growth in the coming years due to the elimination of the remaining austerity measures[19] and the expected faster rises in consumer prices and wages than in previous years. Already within this period we also expect faster growth in the number of pensioners than in previous years, as a consequence of the retiring of those who had to defer retirement due to the increase in the retirement age as a result of the pension reform in 2013. All of this already poses a significant risk to the stability of public finances in the next few years.

The capacity of the policy approach to improving the fiscal position applied in the last few years being exhausted, systemic measures will be required for a further sustainable improvement in the general government balance and debt reduction in the medium-term period. The capacity of the main principle of consolidation since 2013, to ensure that expenditure growth lags behind revenue growth by raising taxes and phasing out austerity measures, has thus been exhausted, as has been, to a great extent, the scope to additionally increase the already above-average taxes on consumption. Also, a lasting stability of public finances cannot be achieved solely by containing or reducing some flexible categories of expenditure, such as investment. A further sustainable improvement of the fiscal position in circumstances where Slovenia has transitioned into positive output gap[20] territory according to most estimates of the business cycle phase will therefore require the formulation of systemic measures adapted to the challenges of the next medium- and long-term periods.

Figure 11: Projections of general government expenditure growth in 2017–2021 under no-policy-change scenario



Source: MF, Stability Programme 2018.

That the capacity of the consolidation approach of recent years has been exhausted is also indicated by the projections of this year's Stability Programme made under the assumption of no policy change.[21] The nominal general government surplus would otherwise continue to rise in the next years even if policies remained unchanged, but it would not suffice for maintaining the structural balance achieved in 2017, given the estimates of the position in the business cycle for this period. According to the estimates of the Stability Programme, non-adoption of measures will lead to a 1.2 pps deterioration in the structural fiscal balance already in 2018–2019. We otherwise estimate that owing to favourable economic trends and some

[16] Projections of strong growth in employee compensation reflect the assumed relaxation of the remaining measures in the area of public sector wages. Unless agreed otherwise by the end of 2018, restrictions on the payment of bonuses for regular work performance and increased workload will cease to apply at the beginning of 2019, and the freeze on the payment of pay rises due to promotions will be lifted as of April instead of December.

[17] During the negotiations early this year, the government's latest proposal – which mainly referred to the elimination of anomalies – amounted to around EUR 300 million, but it included a postponement of the relaxation of the remainder of austerity measures from 2019 to 2020 (their effect being estimated at around EUR 150 million at the annual level).

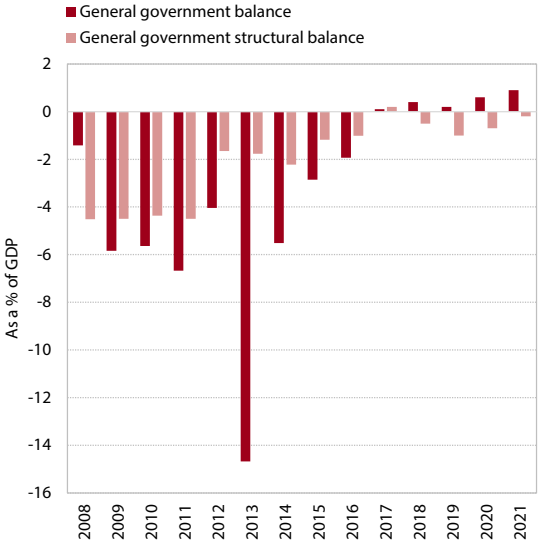
[18] Wage adjustment to consumer price growth was interrupted during the crisis, which was also a period of low inflation or deflation. It is based on Article 5 of the Public Sector Salary System Act, which stipulates that the values of salary grades should be adjusted once a year by the same percentage for both public servants and officials.

[19] The adjustment of transfers to inflation is frozen until the end of 2018. With the fulfilment of conditions (more than 2.5% GDP growth and an increase in the employment rate for the age group of 20–64 years by 1.3 pps in 2017), the restrictions on state scholarships of the 5th income bracket will also be lifted in 2019, as well as restrictions on the payment of maternity, paternity, parental and adoptive parents' compensation and the entitlement to large family allowance.

[20] In accordance with the requirements of the Growth and Stability Pact, this means a reduction in the structural balance by at least 0.6 pps annually, or, if the positive output gap exceeds 1.5% of potential GDP, an improvement in the structural balance by 1 pp.

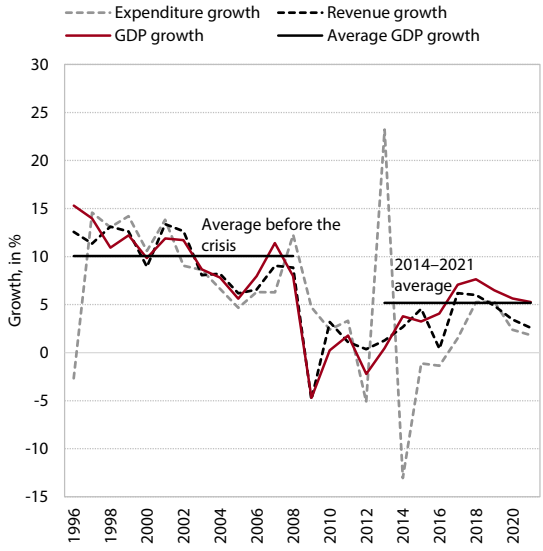
[21] During the period set for the preparation of the Stability Programme 2018 and the Ordinance on the Framework for the Preparation of Government Budgets, the Slovenian Government performed only current operations. Based on these circumstances, the Stability Programme was exceptionally (and in compliance with the Stability and Growth Pact) prepared under the assumption of no policy change.

Figure 12: Deterioration of the general government structural balance in 2018 and 2019 under the no-policy-change scenario, Stability Programme 2018



Source: SURS, Main general government aggregates; MF, Stability Programme 2018.
Note: * Until 2016, IMAD estimate of the structural balance (based on the output gap estimate in the Spring Forecast of Economic Trends 2018), for 2017–2021 the estimate of the Stability Programme 2018.

Figure 13: Nominal growth of GDP and general government revenue and expenditure before and after the crisis



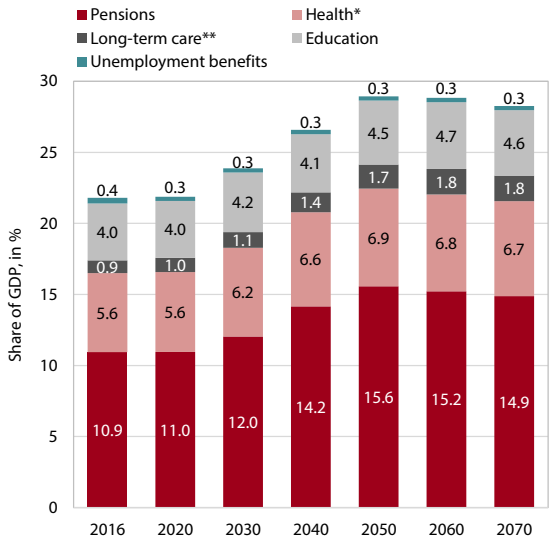
Source: SURS, Main general government aggregates; MF, Stability Programme 2018.

factors that restrain excessive expenditure growth,[22] in 2018 the fiscal balance could be somewhat more favourable than projected in the SP2018, but the risks that the structural position of public finances may deteriorate in the coming years persist even if there is no policy change, let alone if expenditure growth exceeds that arising just from the relaxation of the remaining temporary measures.

The possible deterioration of the fiscal balance in the absence of systemic measures indicates the urgency to set priorities in financing public spending and focus on certain structural challenges. In view of the limited public sources, which reflect the dynamics of economic activity, and the rising needs for public funding due to demographic change, the new medium-term fiscal strategy must set priorities for future development and ensure the efficiency of social protection systems, maintenance of the quality of public services and support for economic activity by restructuring revenue and expenditure.

Already in the medium term, but especially in the long term, the key challenges are related to demographic trends and their impacts on social protection systems; these are not sustainable in the long term according to the projections of the European Commission. The projections of age-related expenditure prepared by the European Commission[23] show that by 2060 age-related expenditure in Slovenia will rise by 6.9 pps of GDP and by 2070 by 6.3 pps. Long-term projections are thus a renewed[24] warning that assuming a no-policy-change

Figure 14: Long-term projections of age-related public expenditure, 2016–2070, as a % of GDP



Source: The 2018 Ageing Report, European Commission.
Note: * Health: excluding expenditure on long-term care (HC.3) and including investment; ** Long-term care: including the health and social components of public expenditure on long-term care.

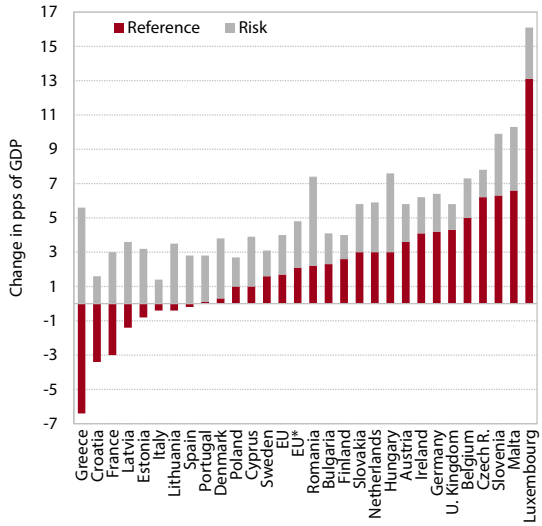
[22] Such as a delay in the absorption of EU funds and in the realisation of some investments financed from the EU budget as well as some of those funded from national sources, and the freeze on the execution of the state budget already in the middle of 2018.

[23] The projections were made in 2018 by the Working Group on Ageing Populations and Sustainability of the Economic Policy Committee at the European Commission, which also includes representatives of countries.

[24] A similar increase was also indicated by the projections from 2015.

scenario, the effect of ageing on general government expenditure will be very strong in Slovenia, significantly stronger than the EU average. The projected increase in pension expenditure is where Slovenia stands out the most, but it also exceeds the EU average in the growth of expenditure on health, education and unemployment. This is the result both of current systems and policies and of Slovenia's overall demography: up until 2050 larger cohorts will retire and, given the increasing life expectancy, they will spend more years in retirement (assuming the current retirement conditions remain unchanged). At the same time, smaller cohorts will enter the labour market, severely worsening the ratio between pensioners and workers.[25] Under a scenario that also takes into account non-demographic factors (risk scenario), the growth of public expenditure on health and long-term care is even higher.

Figure 15: Increase in age-related public expenditure*, in percentage points of GDP under reference and risk scenarios for EU Member States, 2016–2070



Source: The 2018 Ageing Report: Economic and budgetary projections for the EU Member States (2016–2070).
Note: * Public age-related expenditure in AWG projections includes expenditures on pensions, health, long-term care, education and unemployment.

Ensuring long-term sustainability of social protection systems will require development of a package of measures that will complement each other. IMAD's analysis and simulations[26] show the need for a comprehensive approach to design measures in the following three areas: (i) to ensure the long-term sustainability of funding; (ii) to ensure the long-term sustainability of the level of expenditure; and (iii) to encourage people to work longer, while strengthening health promotion and adjusting working conditions to older people.

To create measures for a lasting adjustment of social protection systems, fiscal policy will have to pay more attention to increasing the efficiency of general government expenditure through its restructuring; this will also require adjustments in budgetary planning. The necessary permanent changes in social protection systems, whose benefits may show only over a longer term, may entail certain expenses and a shift from fiscal goals in the short term and should therefore be complemented by measures for streamlining, i.e. restructuring expenditure and increasing its efficiency. Given the cross-country differences in terms of societal preferences and efficiency of public spending, empirical studies do not provide unanimous conclusions or recommendations for optimal restructuring of public spending. In-depth reviews of expenditure according to the programming classification and the efficiency of its use are therefore important from the aspect of its future planning. Such approach also allows for a more substantive debate and helps policy makers in taking decisions on where to direct limited public funds. So far such reviews have been carried out in the areas of social protection and pension systems, culture and civil society, the health system and education.[27] The measures proposed on the basis of these reviews – which should also be conducted in other areas – could support a further structural improvement in the fiscal position. A review of various subsidies that have a harmful impact on the environment has thus identified a significant scope of public funds that could be redirected to other purposes.[28] However, for effective restructuring of expenditure, it will be necessary to adjust budgetary planning towards a programme budget, which will determine clear priorities and ensure coordination of the planned activities within the set fiscal framework.

There are also some opportunities for restructuring revenue, by which we would pursue other goals besides a supportive business environment, such as maintaining financial sustainability of social protection systems and preventing negative environmental externalities:

- The opportunity for restructuring tax sources is signalled by the relatively low share of taxes on corporate income in comparison with the EU average, and a relatively high tax burden on labour

[25] In 1996 the ratio of insured persons to pensioners totalled 1.7. By 2016 it dropped to 1.5. In the next period it is expected to fall even more, to 1.2 in 2026 and 1.0 in 2036.
[26] IMAD (2017), IMAD (2016), IMAD (2015), IMAD (2014).
[27] Final Report on Reviewing Spending Proposals with a Range of Possible Solutions Including Financial Implications for the 2017–2020 Period in the Area of Social Security and Pensions (Government of the RS 2017). Report on the Overview of Expenditure with Proposals for Possible Measures in the Area of Culture and Civil Society (Government of the RS, 2015). Analysis of the health system (WHO, 2016). A review of expenditure on education was made, but it was not adopted by the government.
[28] A review made within the Government's strategic project Green Budget Reform (Environmental and Fiscal Aspects of Incentives in Slovenia, Draft).

income, particularly on above-average wages. A possible lowering of high contribution rates could be financed by unifying contribution rates across different categories of persons insured29 or by broadening the contribution base to incomes that do not arise from work and, to lesser extent, by introducing earmarked taxes or earmarked distribution of existing taxes.[30]

- In terms of revenue structure, Slovenia diverges significantly from other (especially old) EU Member States and OECD countries in its low share of recurrent taxes on property. A certain increase in revenue from these taxes could already be achieved by reforming the system towards broader coverage and taking into account the ongoing valuation of property.
- Competitiveness and efficiency of the tax system could, in combination with other measures, also be improved by eliminating specific features and anomalies in individual categories of public taxes, for example, by abolishing less effective tax allowances (corporate and other). More recently, these have been increasingly replacing subsidies as a form of support to the corporate sector. In those tax instruments that have the nature of state aid, the focus is particularly on tax relief in paying environmental taxes and reducing social contributions.[31]
- After the increases in excise duty and VAT rates and the introduction of new taxes on goods and services in recent years, the scope for restructuring the tax mix towards higher taxes on consumption is very limited, according to our estimate.

The importance of a stable and predictable tax system for business planning and behaviour should also be borne in mind in this context. Frequent changes in the level and composition of taxes are not beneficial and may hamper efforts to create a stable economic environment.

Another challenge to public finances is to ensure the quality of public services, where wage policy and employment in the public sector play a significant role. In addition to the fiscally sustainable level of expenditure on compensation of employees, a qualitative leap in forming wage and employment policies for the public sector will also be necessary in the future. The fiscal consolidation measures taken in the area of wages during the crisis not only reduced wages but also abolished the majority of motivational elements in 2012 and 2013. The need to reward good performance has otherwise led to various circumventions when seeking funding for this purpose, but such policy has gradually resulted in the migration of a section of highly educated staff to the private sector and growing difficulties in attracting appropriately qualified people for the provision of certain pubic services (see Chapter II – Wages in the public sector).

[29] There are significant differences in the contribution rates for the same scope of rights between formally employed and self-employed persons (sole proprietors, craftsmen, farmers, etc.) and those ensured persons whose contributions are paid by the government (pensioners, social categories) or are not paid at all (family members, children).

[30] In France, for example, at least a portion of the following taxes is earmarked for financing health care needs: VAT, taxes on tobacco and alcohol consumption, taxes on complementary health insurance, a global tax for companies with turnover above a certain level, taxes on pharmaceutical companies, a tax on car insurance, a tax on company cars, gaming taxes and a tax on unhealthy food and beverages (EC 2015b, p. 94, 2019)

[31] Development Report 2016 Box 3 and Indicator 1.11.

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Appendix 1:

Table 2: Tax categories according to compatibility with GDP growth

Compatibility with economic growth	Martinez-Vazquez et al. (2011), EC (2006)	Gemmel et al. (2011), Varoudakis et al. (2007, str. 81-85)	Arnold et al. (2011), Johansson et al. (2008)	Xing (2011)	Acosta-Ormaechea in Yoo (2012)	Batini et al. (2014, str. 22)	McNabb (2018)
Higher	Indirect taxes (taxes on transactions and consumption such as VAT, sales tax, excise duties and customs duties)	Non-distortionary taxes (taxes on domestic goods and services)	Recurrent taxes on property	Taxes on property	Taxes on property		Taxes on consumption
			Broad-based taxes on consumption	Taxes on consumption, personal income tax, corporate income taxes (there is no reliable ranking of the latter in terms of the impact on economic growth)	Taxes on consumption (VAT, sales tax and other)	Taxes on consumption	Taxes on property
			Other taxes on property				Corporate income tax
		Distortionary taxes (taxes on income from employment and other income and profits, taxes on property and social contributions)	Personal income tax		Corporate income tax	Personal income tax	Personal income tax
Lower	Direct taxes (corporate income tax, personal income tax) and social contributions		Corporate income tax		Personal income tax Social security contributions	Corporate income tax	Social contributions

Source: Köppl and Schratzenstaller (2015, p. 73), Johansson (2016); completed by IMAD.

Table 3: General government expenditure categories in terms of their impact on long-term GDP growth

Effect on economic growth	Varoudakis et al. (2007, pp. 81-85)	Gemmel et al. (2011)	Afonso in Alegre (2008)	Acosta-Ormaechea in Morozumi (2013)	Barbiero in Cournède (2013)	Gemmel et al. (2014)	Fournier in Johansson (2016)
Stimulative effect	Productive expenditure (education, health, housing and community amenities, transport and communication)	Productive expenditure (transport and communication, education, health, housing and community amenities, general public services, defence)	Education	Education	Health, education, transport and communication, general public services	Transport and communication, education	Investment
			(Public investment)	Defence			Education
			Economic affairs (Subsidies)	Transport and communication –infrastructure	Social protection	Housing and community amenities, health	
					Recreation, culture and religion		
	Non-productive expenditure (social protection, recreation, culture and religion, economic affairs, general public services)	Non-productive expenditure (social protection, recreation, culture and religion, economic affairs – expenditure in support of agriculture and forestry)	(Compensation of employees) Social protection (Social transfers) Health (Intermediate consumption)	Health		Social protection, defence, economic affairs, recreation, culture and religion, general public services	Public expenditure on pensions
Less stimulative effect				Social protection	Housing and community amenities		Subsidies

Notes: Expenditure categories outside the brackets are classified according to the classification by function; those in the brackets according to the economic classification. In most studies, the effects of increases in individual expenditure categories are estimated under the assumption of unchanged total spending, i.e. a restructuring of expenditure. If the increase in an individual category of public expenditure is financed through a deterioration of general government balance or an increase in distortionary taxes, the expected positive (negative) effect is smaller (larger). A methodological weakness of most studies is that they do not take into account the cross-country differences in the efficiency of public spending.

economic issues 2018