

Composition of Public Expenditures in the EU

This briefing provides an overview of the structure of public expenditures across EU Member States, by delving into their composition according to the Classification of the functions of government (provided by Eurostat). The overview aims at identifying similarities and differences among EU Members States in 2017 and spotting possible trends of convergence and divergence since 2008.

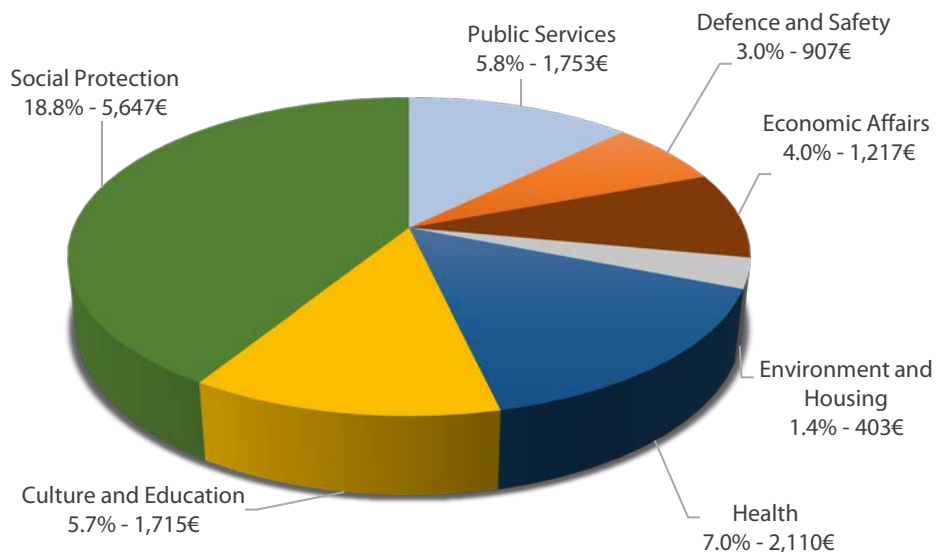
In the Member States of the European Union, public expenditures constitute a very high component of GDP and of domestic demand. Public expenditures characterize the ‘social market economy’, mentioned in the EU Treaty as one of its aims (Art. 3(3) TEU). Together with taxation policies, public expenditures constitute the main field of application of the economic policy of a government. To understand the structure of an economy, as well as its strengths and weaknesses, both the level and the composition of public expenditures are relevant. In the context of the 2019 European semester, the [Council Recommendation on the economic policy of the euro area](#) refers explicitly to the quality and composition of public finances.

In the EU, the share of GDP devoted by Member States governments to the provision of public goods varies greatly, as does its composition. In 2017, **the average public finance expenditures per EU citizen amounted to 13,750€**. For a citizen living in the Euro area, the amount was **15,465€**.

Graph 1 shows the average composition of public expenditures in the EU for key [social and economic-related category in 2017](#) and displays the corresponding amount of expenditure pro-capita. The highest amount was devoted to **Social protection, with 5,647€ per citizen**, followed by **Health, amounting to 2,110€ pro-capita**.

Data on the che composition of public expenditures follows the *Classification of the Functions of Government* (COFOG) and are published by Eurostat. Table 1 (overleaf) provides the list and a short description of the main categories of expenditures that are in turn divided in sub-groups and classes (Annex 1 to this document presents detailed data for 2008 and 2017).

Graph 1: EU average composition of public expenditures as % of GDP and expenditure per capita 2017



Source: [Eurostat](#). For representation purposes, some categories are merged.



Table 1: Description of COFOG¹ categories

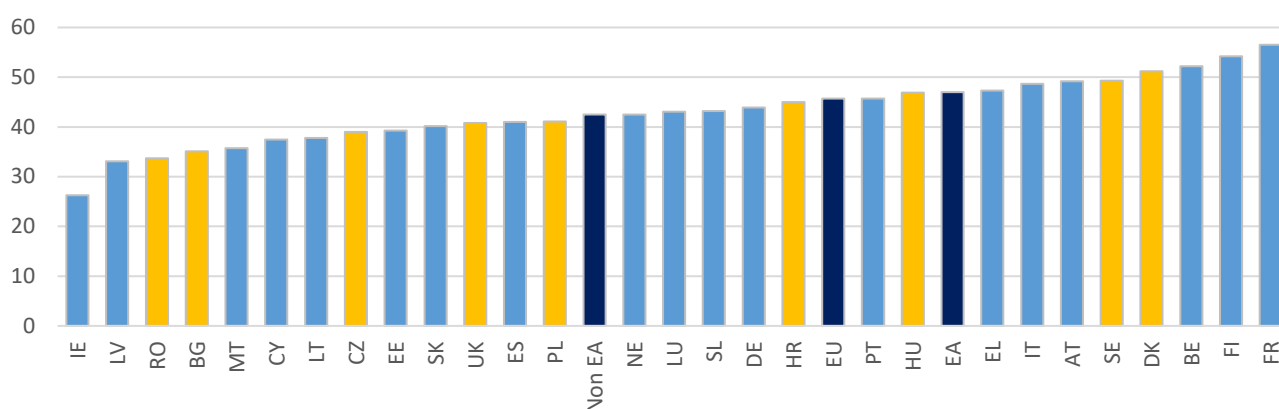
Social Protection	Pensions for old age and survivors, for sickness and disability. Subsidies for family and children. Unemployment subsidies. R&D on social protection.
Health	Public health services; medical products, appliances and equipment; outpatient services; hospital services. R&D related to health.
General Public Services	Executive and legislative organs (i.e. Ministries and Parliament), financial and fiscal affairs, public debt transactions (i.e. interests on debt); external affairs (i.e. embassies), foreign economic aid, general services, basic research. R&D related to general public services
Education	Pre-primary, primary, secondary and tertiary education, post-secondary non-tertiary education, education non definable by level, subsidiary services to education. R&D on education.
Economic Affairs	General economic, commercial and labour affairs; agriculture, forestry; fishing and hunting; fuel and energy; mining, manufacturing and construction; transport; communication. R&D on economic affairs.
Public order and safety	Police services; fire-protection services; law courts, prisons. R&D related to public order and safety.
Defence	Military defence; civil defence; foreign military aid. R&D related to defence
Recreation, culture and religion	Recreational and sporting services; cultural services; broadcasting and publishing services; religious and other community services. R&D related to recreation, culture and religion
Environmental protection	Waste management; water waste management; pollution abatement; protection of biodiversity and landscape. R&D related to environmental protection.
Housing and community services	Housing development; community development; water supply; street lighting. R&D related to housing and community amenities

Expenditures across EU Member States from a composition perspective²

Public expenditures in the EU28 constituted 45.8% of GDP in 2017, 0.4 p.p less than in 2008 (46.2%). In the Euro area, they slightly decreased from 47.5% in 2016 to 47.0% in 2017 (they were 46.6% in 2008).

Graph 2 shows the total expenditures as percentage of the GDP in 2017 across the EU. Ireland³ and Lithuania registered the lowest shares (26.3% and 33.1% respectively), while France and Finland had the highest (56.5% and 54.2% respectively).

Graph 2: General government expenditure as % of GDP in 2017 in EU Member States, the EU and the EA



Source: [Eurostat](#); blue: Euro area Member States; yellow: Non-Euro area Member States; dark blue: Aggregates

¹ Member States are requested to submit data on their annual finance statistics based on the European System of Accounts (ESA2010) transmission programme. National data on 'Expenditure of general government by function' are available twelve months after the period of reference. The main reference year utilised in this briefing is 2017.

² The interesting [ECB paper](#) on "Composition of public finances in the euro area" presents, inter alia, a review of the literature.

³ It should be noted that data for Ireland are affected by its specific "statistical characteristic": due to the elevated presence of multinational activities, GDP somehow overestimates the national income. See this Central Statistical Office [note](#) for details.

Looking at the composition of public expenditure by COFOG categories, it can be noted that:

- ◆ **“Social protection”**, mainly including pensions, unemployment benefits and subsidies for sickness and disability, constituted the major area of expenditures in the EU as a whole in 2017 (18.8% of GDP); the individual figures ranged from 24.9% in Finland (followed by 24.3% in France) to 9.5% in Ireland.
- ◆ The second highest share of government allocations, reaching 7.0% of GDP, is represented by **Health**; at the national level, Denmark stood atop with 8.4%, while Cyprus closed the rank at 2.6%.
- ◆ **“General public services”**, accounted for 5.8% of the total EU: such expenditures refer to government and parliament, fiscal affairs and public debt management, including interests on the debt, as well as foreign affairs, including embassies and development and humanitarian aid. The EU MS with the highest share of its GDP devoted to Public Services was Greece (with 8.3%), while the lowest share was recorded in Bulgaria, with 3.2%.
- ◆ **“Education”** accounted for 4.6% of GDP in the EU: Sweden was the MS with the highest value (6.8%), while Ireland and Romania recorded the lowest 2.8%.
- ◆ Allocations on **Recreation and culture** reached on average 1.1% across the EU. Such allocations ranged from the highest value registered in Hungary, 3.5%, to the lowest values registered in Ireland and United Kingdom, with 0.5% and 0.6% of their GDP, respectively.
- ◆ The **“Economic affairs”** category accounted for 4.0% of GDP in the EU. Allocations related to transports, including spending on roads and railways, account for the major share of this item. Hungary and Ireland are at the extremes of the EU ranking, with the former presenting a share of 7.1% while the latter 2.3%.
- ◆ Public spending on **“Safety”** (including law courts and police) accounted for 1.7% of GDP in the EU. Bulgaria topped the rank with 2.5%, followed by multiple EA countries (Greece, Latvia, Slovakia) and non-EA Member States (Croatia, Hungary and Poland) registering a figure between 2.2% and 2.4%. Denmark and Ireland, on the other hand, displayed a value of 0.9% and 1.0%.
- ◆ Expenditures related to **“Defence”**, despite being relatively low, showed a spread ranging from the highest values of Greece and Estonia (2.5% and 2.0%, respectively), to 0.3% of Ireland.
- ◆ Greece (1.3%) and the Netherlands (1.4%) were the only two countries in the EU showing expenditures over 1.0% in the **“Environment”** category, mainly concerning environmental protection and waste management. The EU average for this function is 0.8%, with Finland settling at the lowest 0.2%.
- ◆ Lastly, 0.6% of public expenditures across the EU in 2017, on average, were directed to the **“Housing”** area.

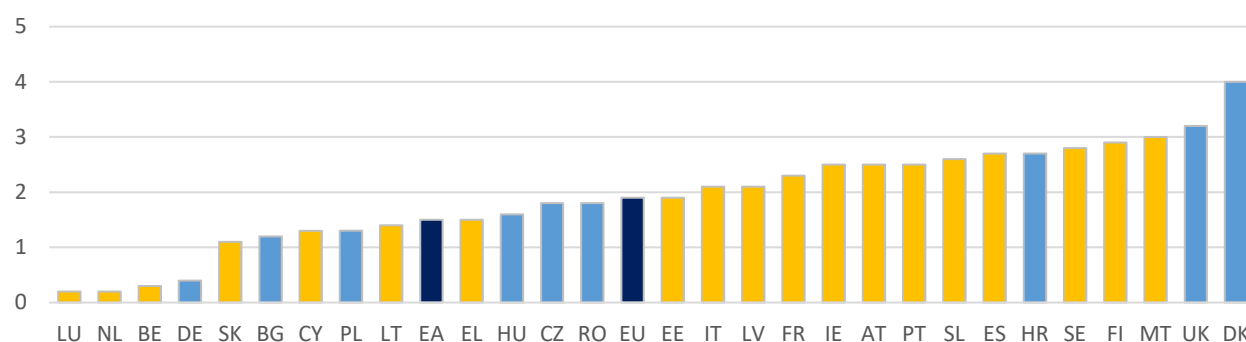
Public expenditures from a production components perspective

Public expenditures can also be broken down according to their specific production components, namely compensation of public employees, investments or property income (interests). Annex 2 presents data for all the EU Member States.

In 2017, [salaries](#) of public employees accounted, on average, for 9.9% of the total public expenditures in terms of GDP in the Member States, ranging from 7.0% and 7.5% in Ireland and Germany, respectively, to 15.3% in Denmark. The COFOG category that in 2017 presented **the highest component in salaries was Education** (on average 2.9% in the EU28 and 3.0% in the E19), with the highest and lowest percentages registered in Belgium (5.0%) and Romania (2.0%) respectively.

Health stood as the second function displaying the largest allocation for public salaries: 1.9% at the EU28 level and 1.5% in the EA19, with percentages ranging from 0.2 and 0.3 in Luxemburg and Belgium to 4.0% registered in Denmark. These discrepancies reflect the deeply different structure of health care systems, as in some countries health services are provided by the private sector (and then possibly reimbursed by the State), while in others, the system is publicly owned. Graph 3 shows how the share of expenditures for compensation of employees in the health category varied among Member States.

Graph 3: Public expenditures: compensation of employees for Health, % of GDP in the EU - 2017



Source: [Eurostat](#). blue: Euro area Member States; yellow: Non-Euro area Member States; dark blue: Aggregates

[Public investments](#) amounted to 2.7% of GDP in the EU28 and 2.6% in the EU19, with the **highest category being Economic Affairs** (0,9%), due to the fact that this category mainly comprises transport and other network infrastructures.

[Interests](#) paid on public debt amounted to 2.0% on average, with the **highest share registered in Italy and Portugal**, both at 3.8%, while the lowest was reported in Estonia and Luxembourg (0,0% and 0.3%).

Differences among Member States and trends over time

Data classified according to COFOG also enable to observe how the structure of public expenditures varies among EU Member States in a given year or over time.

Which are the categories with less variation (in terms of composition) among EU and Euro area Member States? Based on 2017 figures and calculations, **Education** stands as the category of public expenditures being the most homogenous both in the EA and in the EU. **Housing**, on the opposite, is the function showing the greatest divergences both in the EA and in the EU (see Annex 3).

The analysis also shows that the dispersion in the Euro area is lower than in the entire Union, albeit the general pattern is similar. Within both aggregates, **Education, Health and Social protection** appear to be the areas where countries' public spending resulted the most aligned. On the other hand, considering the Euro area, **Housing** and **Defence** stand out as the categories showing the highest divergences.

Is it possible to identify **convergent or divergent trends** among Member States? Annex 4 shows that the majority of the categories present lower dispersion in 2017 than in 2008. In addition, the differences between the highest and the lowest value among the ten functions of expenditures declined, with the exception of Social Protection, Health and Economic Affairs. Against this background, it can be stated that, although to a diverse extent, most functions appear to have followed a convergent path from 2008 to 2017.

For **Social protection**, the EA share of public expenditures increased in 2017, compared to 2008, passing from 18.1% of GDP to 19.8%, but with a greater dispersion in 2017 than eight years earlier (see Annex 4).

Economic affairs is the function exhibiting the largest increase in dispersion from 2008 to 2017. **Public services**, on the other hand, stands as the item experiencing the largest decrease in the average amounts allocated across the Euro Area, which were 7.0% of GDP in 2008 and decreased to 6.1% in 2017. Moreover, the allocations for this category are more homogeneous and similar across the EA than eight years before.

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Annex 1: Breakdown of cross-country expenditures per COFOG, 2008-2017

Function	Public Services		Defence		Safety		Economic Affairs		Environment		Housing		Health		Culture		Education		Social Protection	
	2008	2017	2008	2017	2008	2017	2008	2017	2008	2017	2008	2017	2008	2017	2008	2017	2008	2017	2008	2017
Belgium	8,7	7,2	1,1	0,8	1,8	1,7	6,1	6,3	0,8	0,9	0,4	0,3	7,2	7,7	1,2	1,3	5,7	6,3	17,4	19,6
Germany	6,4	5,6	1,0	1,0	1,5	1,5	3,6	3,1	0,5	0,6	0,7	0,4	6,4	7,1	0,8	1,0	3,9	4,1	18,6	19,4
Estonia	3,2	3,9	1,7	2,0	2,7	1,9	4,9	4,3	1,0	0,7	0,6	0,4	5,1	5,0	2,3	2,1	6,7	5,8	11,5	13,0
Ireland	3,8	3,4	0,4	0,3	1,7	1,0	5,2	2,3	1,1	0,4	1,6	0,5	6,9	5,1	0,8	0,5	4,7	3,3	15,5	9,5
Greece	11,4	8,3	3,0	2,5	1,6	2,1	5,7	3,6	0,9	1,3	0,3	0,2	6,5	5,2	0,7	0,7	3,8	3,9	17,0	19,4
Spain	5,1	5,6	1,0	0,9	2,0	1,8	5,4	3,8	1,0	0,9	1,1	0,4	6,0	6,0	1,6	1,1	4,2	4,0	13,8	16,6
France	7,3	6,0	1,7	1,8	1,5	1,6	4,5	5,9	0,9	0,9	1,2	1,0	7,4	8,0	1,4	1,4	5,4	5,4	21,8	24,3
Italy	8,9	8,2	1,3	1,3	1,8	1,8	4,0	3,6	0,8	0,9	0,7	0,6	7,0	6,8	0,8	0,8	4,4	3,8	18,1	20,9
Cyprus	8,4	7,3	1,6	2,0	1,9	1,7	3,5	2,4	0,3	0,3	2,4	1,6	2,7	2,6	1,2	0,9	6,3	5,7	10,2	13,1
Latvia	3,8	4,1	1,5	1,7	2,2	2,3	6,7	5,5	0,8	0,6	1,2	1,1	4,3	3,5	1,8	1,7	6,3	5,8	9,1	11,7
Lithuania	4,0	3,5	1,4	1,7	1,9	1,5	4,6	2,8	0,8	0,4	0,4	0,4	5,6	5,7	1,1	1,1	6,1	4,9	12,1	11,2
Luxembourg	4,9	4,9	0,3	0,5	0,9	1,1	4,5	5,7	1,1	1,0	0,7	0,6	4,4	4,9	1,2	1,3	4,8	4,7	16,8	18,4
Malta	7,3	5,7	0,6	0,5	1,4	1,1	6,7	4,5	1,5	0,9	0,7	0,2	5,3	5,4	0,6	1,1	5,2	4,9	13,3	11,3
Netherlands	5,7	4,3	1,2	1,1	1,8	1,9	4,3	3,8	1,5	1,4	0,5	0,3	6,6	7,6	1,4	1,2	5,2	5,1	14,7	15,0
Austria	7,2	6,1	0,9	0,6	1,3	1,4	6,3	5,7	0,5	0,4	0,4	0,3	7,5	8,2	1,3	1,2	4,8	4,8	19,6	20,5
Portugal	6,4	7,6	1,3	0,9	1,8	1,7	4,6	5,2	0,6	0,6	0,9	0,5	7,2	6,0	1,1	0,8	6,4	4,9	15,1	17,4
Slovenia	5,2	5,9	1,4	0,9	1,7	1,6	4,7	4,3	0,8	0,5	0,8	0,5	6,1	6,6	1,6	1,4	6,1	5,4	15,5	16,2
Slovakia	4,4	5,6	0,8	1,0	1,9	2,1	4,8	4,1	0,8	0,7	0,6	0,5	6,7	7,1	0,9	0,8	3,5	3,8	12,6	14,5
Finland	7,0	7,9	1,4	1,3	1,2	1,1	4,6	4,3	0,3	0,2	0,4	0,3	7,0	7,1	1,1	1,5	5,8	5,7	19,4	24,9
EA	7,0	6,1	1,3	1,2	1,7	1,7	4,4	4,2	0,8	0,8	0,8	0,6	6,8	7,1	1,1	1,1	4,6	4,5	18,1	19,8
Bulgaria	5,0	3,2	1,2	1,1	2,7	2,5	6,3	4,0	0,7	0,7	1,5	1,6	4,4	4,9	0,8	1,0	4,0	3,6	10,7	12,5
Czechia	4,3	3,9	1,0	0,8	1,9	1,8	6,7	5,7	0,9	0,8	0,9	0,6	6,9	7,5	1,4	1,3	4,7	4,6	11,9	12,0
Denmark	7,1	6,2	1,4	1,2	1,0	0,9	2,8	3,3	0,5	0,4	0,4	0,2	7,9	8,4	1,8	1,7	6,1	6,5	21,6	22,4
Poland	5,3	4,4	1,9	1,7	2,4	2,1	5,6	4,7	0,7	0,4	1,1	0,6	5,0	4,7	1,3	1,2	5,6	4,9	15,5	16,4
Sweden	7,8	6,7	1,5	1,2	1,3	1,3	4,2	4,1	0,3	0,3	0,7	0,8	6,6	6,9	1,1	1,1	6,4	6,8	20,1	20,2
UK	4,3	4,7	2,4	1,9	2,3	1,8	4,9	3,1	0,9	0,7	1,2	0,7	6,9	7,4	0,9	0,6	5,8	4,6	14,9	15,8
Croatia	6,8	7,6	1,5	1,1	2,2	2,2	8,1	5,4	0,6	0,6	1,1	0,9	6,0	6,3	1,0	1,8	4,6	4,7	13,4	14,3
Hungary	9,3	8,0	1,0	1,0	2,0	2,4	5,6	7,1	0,6	0,4	0,9	0,8	4,9	4,8	1,5	3,5	5,3	5,1	17,4	14,0
Romania	4,6	4,2	1,4	1,8	2,1	2,0	7,8	4,4	0,5	0,5	1,3	0,9	3,6	4,3	1,1	1,0	4,3	2,8	11,0	11,7
Non EA	6,1	5,4	1,5	1,3	2,0	1,9	5,8	4,6	0,6	0,5	1,0	0,8	5,8	6,1	1,2	1,5	5,2	4,8	15,2	15,5
EU	6,5	5,8	1,5	1,3	1,8	1,7	4,6	4,0	0,8	0,8	0,9	0,6	6,7	7,0	1,1	1,1	4,9	4,6	17,4	18,8

Annex 2: Breakdown of expenditure by component, percentage of GDP, 2008 and 2017

Year	Compensation of employees		Gross Capital Formation		Intermediate Consumption	
	2008	2017	2008	2017	2008	2017
Belgium	11,8	12,3	2,1	2,2	4,0	4,0
Germany	7,4	7,5	2,1	2,2	4,0	4,8
Estonia	11,1	11,3	6,2	5,4	6,5	6,6
Ireland	11,3	7,0	5,3	1,8	5,3	3,4
Greece	11,6	11,9	5,6	4,4	6,2	5,0
Spain	10,6	10,5	4,6	2,0	5,3	5,0
France	12,4	12,7	3,9	3,4	4,7	4,9
Italy	10,4	9,5	3,0	2,0	5,1	5,5
Cyprus	13,2	12,0	3,2	2,7	4,2	3,6
Latvia	11,4	10,2	5,2	4,4	6,2	5,7
Lithuania	10,6	9,5	5,4	3,2	5,6	4,6
Luxembourg	8,3	9,0	3,7	4,1	3,4	3,7
Malta	13,8	11,3	2,5	2,2	6,4	6,4
Netherlands	8,3	8,3	4,0	3,4	6,3	5,8
Austria	10,6	10,6	3,2	3,1	6,3	6,2
Portugal	13,1	10,9	3,7	1,8	5,5	5,4
Slovenia	10,8	11,2	4,7	3,1	6,0	6,3
Slovakia	7,5	9,2	3,4	3,2	4,8	5,7
Finland	12,9	12,5	3,6	4,1	9,4	10,9
EA	10,1	9,8	3,3	2,6	4,9	5,1
Bulgaria	8,8	9,3	5,6	2,2	6,9	4,9
Czechia	8,3	9,1	5,3	3,4	6,9	5,9
Denmark	15,6	15,3	3,0	3,4	8,6	8,8
Poland	10,8	10,2	4,8	3,8	6,3	5,5
Sweden	12,5	12,7	4,3	4,6	8,1	7,6
UK	10,2	9,0	3,0	2,6	8,8	7,8
Croatia	11,1	11,3	5,9	2,7	7,1	7,8
Hungary	11,3	10,9	3,2	4,5	7,0	7,9
Romania	10,0	9,9	6,5	2,6	6,3	5,1
Non EA	11,0	10,9	4,6	3,3	7,3	6,8
EU	10,3	9,9	3,4	2,7	5,8	5,7

Source: [Eurostat](#)

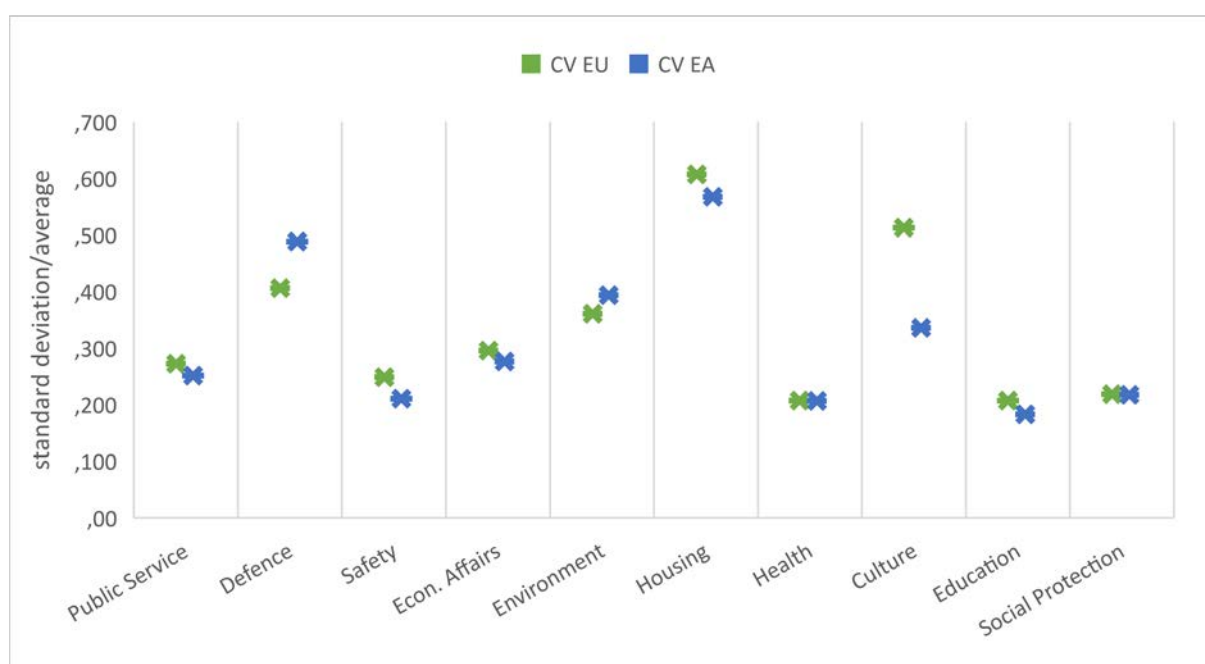
Annex 3: Dispersion of composition of public expenditure among EU and Euro area Member States, 2017

In order to analyse the distribution of public spending among EU MSs, this note makes use of the coefficient of variation (CV)⁴, as it best captures the variation of a distribution, taking into account its average.

Graph 4 depicts the dispersion of each category of public spending in the EU as a whole and in the EA. It shows overall lower dispersion of expenditures in the Euro Area compared to the entire Union. The lower the value of the CV indicator for each category, the more similar is the expenditure allocation among Member States. Therefore, Education stands as the category of public expenditures being the most homogenous (less dispersed) both in the EA and in the EU (0.18 and 0.21 respectively).

Within both aggregates, Health, Education and Social protection appear to be the areas where countries' public spending resulted the most aligned. On the other hand, considering the Euro area, Housing and Defence stand out as the categories showing the highest divergences. This is only partly true for the EU28, as Culture, along with Housing, is the category showing the greatest discrepancies among countries' public expenditures.

Graph 4: Coefficient of variation of public expenditures in EU and EA, 2017



Source: EGOV on [Eurostat](#) data

Housing, on the opposite, is the function showing the greatest divergences both in the EA and in the EU (0.61 and 0.57 respectively).

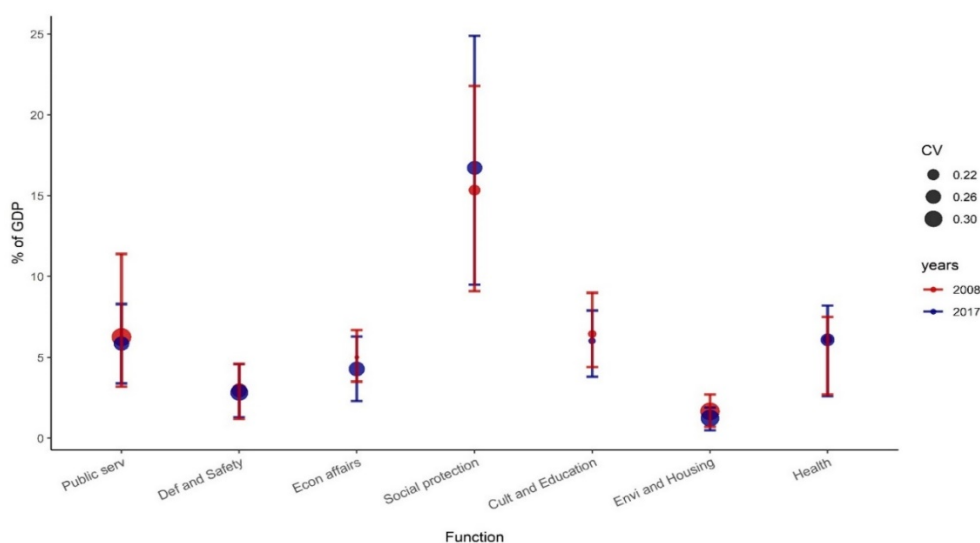
Albeit the general pattern is similar, the graph displays an overall lower dispersion of expenditures in the Euro Area compared to the entire Union. Within both aggregates, Health, Education and Social protection appear to be the areas where countries' public spending resulted the most aligned. On the other hand, considering the Euro area, Housing and Defence stand out as the categories showing the highest divergences. This is only partly true for the EU28, as Culture, along with Housing, is the category showing the greatest discrepancies among countries' public expenditures.

⁴ The coefficient of variation (CV) is a pure number, obtained as the ratio between the standard deviation and the arithmetic mean. Compared to the standard deviation, the CV mitigates possible distortion due to the magnitude of the values in a distribution.

Annex 4: Variation over time. Divergence or convergence across EA Member States?

In order to gather information on possible trends of convergence or divergence among EA Member States regarding the composition of public spending, Graph 5 provides a representation of public expenditures shares in 2008 (red) and in 2017 (blue). For each item, the graph shows the maximum and minimum values registered in the two years and the EA average, wherein the size of the circle is proportional to the value of the coefficient of variation. Furthermore, the position of the blue circle (representing the EA average in 2008) compared to the position of the red circle (2017) embodies the upwards or downwards variation of the average amount spent in Euro Area countries. At first sight, the majority of the categories present lower dispersion in 2017 than in 2008. In addition, the range measuring the differences between the highest and the lowest value among the ten functions of expenditures declined, with the exception of Social Protection, Health and Economic Affairs. Against this background, it can be assumed that, although to a diverse extent, most functions appear to have followed a convergent path from 2008 to 2017. It is noticeable how the only three above-mentioned items which did not experience such trend but show signs of divergence instead, stand among the functions featuring, on average, the largest share of public spending.

Graph 5: Comparison of COFOG categories, average in 2008 and in 2017 in Euro Area Member States



Source: EGOV on Eurostat data; for representation purposes, some categories are merged

For Social protection the graph shows that the EA share of public expenditures increased in 2017, compared to 2008, passing from 18.1% of GDP to 19.8%. As the size of the circles is proportional to the CVs, it is noticeable that in 2008 the share of expenditures devoted to this function in EA MSs was more homogenous in 2008 than in 2017. In addition, in 2017 the difference between the maximum and minimum share among EA MSs was bigger than in 2008. Thus, both indicators points towards a greater dispersion in 2017 than eight years earlier, suggesting a diverging trend among Eurozone countries' allocations on Social protection.

Economic affairs is the function exhibiting the largest increase in dispersion from 2008 to 2017, with the highest expansion of the coefficient of variation over the eight-year span among all the categories, as clearly displayed in Graph 5. Furthermore, against a lower average in 2017 compared to 2008, the range has increased as well.

Public services, on the other hand, stands as the item experiencing the largest decrease in the average amounts allocated across the Euro Area, which were 7.0% of GDP in 2008 and decreased to 6.1% in 2017. Moreover, the gap between the maximum and minimum values registered in the two year dropped significantly from 8.2% in 2008 to 4.9% in 2017, as well as the coefficient of variation. As a result, the allocations for this category are more homogeneous and similar across the EA than eight years before.

Education and culture, as an aggregate, experienced a slight downwards shift of the average in 2017 compared to 2008. Expenditures for these categories show a higher coefficient of variation in 2008 compared to 2017, hinting a minor dispersion of values at the end of the period of reference. Furthermore, the simultaneous declining gap between the maximum and minimum values points at a higher homogeneity of expenditures at the end of the period and to a potential convergence trend.