

*Public Expenditure
Discussion Paper: The
Composition of Spending,
Income Equality and
Economic Growth*

**Tom McDonnell &
Daragh McCarthy**

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TASC Discussion Paper, December 2010

Preface

The current crisis engulfing Ireland has generated an unprecedented level of interest in the budgetary process and on how we choose as a society to tax and spend. To coincide with the budget and as a response to this increasing interest in public expenditure, TASC will be generating an ongoing series of resources to 'explain' public spending in Ireland. The first outputs in this series are a pair of discussion papers as well as an online tool.

The interactive online tool provides detailed information showing where we as a society are spending our resources. It is not only possible to disaggregate spending by functional type - e.g. education and health - but also to see how much money goes to very specific areas. The tool will be updated regularly, and will show the changes to the various spending areas as a result of the budgetary decisions taken on December 7th and on future dates.

The first discussion paper examines the rationales for, and the constraints on, public spending. The key point that emerges is that the level and type of public spending are ultimately political choices subject to the parameters allowed by prevailing resource constraints. This is particularly resonant in light of the ongoing debates surrounding the EU/IMF 'bailout' of Ireland.

The second discussion paper focuses on the composition of public spending in Ireland. There is a body of evidence that suggests that the composition of spending may be more important for economic growth than the overall level, although there does appear to be evidence that a positive association exists between income equality and levels of public spending. However, the nature of the association is uncertain and will be investigated in a future discussion paper. The composition of public spending remained very consistent between 1995 and 2008. Eight of the ten functional areas of spending remained in consistent proportions throughout the period.

The discussion papers are not meant to be the last word on public spending and are designed to invite suggestions and criticisms from readers. The authors invite all suggestions and criticisms as part of TASC's ongoing mission to improve the quality of publically available information. All suggestions will be responded to and taken into consideration in developing future iterations of the outputs. Future discussion papers, including more technical papers, will be released in 2011.

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Section 1: Introduction

Introduction

1. There is a widespread assumption that a trade-off must exist between economic growth and income equality. This assumption is predicated on the argument that greater income equality requires higher levels of public spending, which in turn requires higher levels of taxation, and that these higher levels of taxation will reduce investment and harm enterprise.
2. The argument runs as follows:
 - a. Greater income equality requires more redistribution,
 - b. more redistribution requires more public spending,
 - c. more public spending requires more taxation,
 - d. more taxation causes greater deadweight losses (inefficiencies) by distorting economic activity,
 - e. these inefficiencies lead to lower levels of long-run economic growth
3. Despite this argument, the findings of the empirical literature on the impact of public spending are highly contradictory, with evidence pointing to both positive and negative impacts and also to no impacts at all. In a survey of the literature Agell, Lindh and Ohlsson (1997) find that the evidence admits no conclusion on whether the relation between public spending and growth is positive, negative or non-existent.
4. However, there is evidence that the composition of spending does matter for growth. The most consistent finding in the empirical literature is that public education spending appears to be associated with higher levels of growth, albeit only in the long term.
5. The focus of this paper is on Ireland. Social protection, health and education are the three largest areas of public spending by functional type in Ireland (80 per cent) and, with the exceptions of spending on health and general public services, the composition of spending remained broadly unchanged between 1995 and 2008.
6. The hypothesis was tested that an association exists between public spending and income equality. Given the inconclusive evidence about the relationship between public spending and growth, if such an association could be shown to exist, it would

make the argument that there is a trade off between output growth and income equality less compelling.

7. Using data on public spending rates in OECD countries and on Gini coefficients¹ in those same OECD countries, it was found that there is indeed a strongly negative and statistically significant correlation² between public spending rates and income 'inequality'. In other words countries with higher levels of public spending tend to be more equal.
8. This finding suggests that it is possible to achieve greater income equality without sacrificing output growth.

Section 2: Public Spending and Economic Growth

Types of Public Expenditure

9. Public expenditure is by no means homogeneous, and different types of spending are likely to have different impacts on economic growth and on inequality. The most common method of classifying government spending is to split it into capital expenditure and current expenditure.
10. Capital goods are real objects which can be used in the production of other goods or commodities. Examples of capital goods include machinery, factories, roads and office buildings. The stock of capital goods in the economy is a major determinant of the economy's productive capacity. Capital goods depreciate in value over time and it is therefore necessary to continuously invest in new capital goods simply to maintain existing capital stock levels. As a result of technological change, the quality of new capital goods is usually superior to that of older capital goods and these improvements in quality will manifest as increased productivity and economic growth.
11. While capital expenditure represents spending that is designed to increase productivity and the levels of consumption in the long term, current expenditure represents consumption in the present time period. Current expenditure can itself

¹ The Gini coefficient measures income distributions and can vary from 0 per cent (complete equality) to 100 per cent (one person has all the income).

² In a negative correlation, as the value of one of the variables increases, the value of the second variable decreases. In this case as public spending increases, income inequality decreases. The presence of a significant correlation does not imply any causative relationship.

be broken down in a variety of different ways, most commonly into consumption goods and personnel expenditure. Current expenditure is often considered to be unproductive spending, and there is a body of economic theory arguing that growth in economic output is negatively correlated with the share of government consumption in GDP (e.g., Aschauer, 1989; Barro, 1990, 1991).

12. The functional use to which the expenditure is put may also impact upon economic output and/or economic inequality. For example, although redistributive spending programmes are likely to reduce inequality they may also generate negative impacts on long run economic growth by creating poverty traps. On the other hand, if there is a social safety net in place then this might encourage entrepreneurship and risk taking, which may in fact lead to higher growth rates in the long run.
13. The example of public spending on primary education highlights that there may be different effects on economic growth depending on the time horizon being considered. In the short term, the impact on growth may be negative as resources are being diverted away from activities that are immediately productive. However, when children reach working age the education spending may bear fruit in terms of improved human capital and increased innovation. Thus, over and above its obvious value as a merit good³, public spending on primary education can be seen as akin to a type of investment spending.
14. Social welfare, health and education take up the vast bulk of spending. The fourth of the large spending areas, namely economic affairs, is primarily concerned with the provision of economic infrastructure and a large proportion of spending on economic affairs comes out of the capital budget, for example transport and communications.

³ Merit goods are commodities, for example basic education, which it is normatively judged that individuals should have on the basis of need, rather than on the individual's ability or willingness to pay.

Public Spending and Economic Growth: Mixed Evidence

15. The causal relationships between public expenditure and economic growth are highly complex in nature, and will vary greatly depending on the composition and amount of the spending. They will also depend on the characteristics of the country and on the international environment.
16. Overall, the empirical evidence regarding these relationships appears to be highly contradictory. Singh and Sahni (1984); Homes and Hutton (1990) and Alfranca and Galindo (2003) all found that public sector expansion has a significant positive effect on growth. On the other hand, Landau (1983 and 1986) and Barth, et al. (1990) found that public sector expansion has a negative effect on growth. Finally, Conte and Darrat (1988), Ram (1986) and Rehman, Iqbal and Siddiqi (2010) have all found no pattern of causality between public expenditure and economic growth.
17. In relation to the composition of expenditure, Devarjan, Swaroop and Zou, (1996) find that changing the composition of expenditure can lead to a higher steady-state growth rate of the economy. Contrary to economic theory (Aschauer, 1989; Barro, 1990, 1991, they find that an increase in the share of current expenditure has positive growth effects and that the relationship between the capital component of public expenditure and per-capita growth is negative. By contrast, Haque and Osborn (2007) find that the share of capital expenditure in GDP is positively and significantly correlated with economic growth, but that the relationship between current expenditure and economic growth is statistically insignificant. Landau (1983), and Barth and Bradley (1987), found negative relations between the growth rate of real GDP per capita and the level of government consumption expenditures as a ratio to GDP.
18. At the disaggregated level, Haque and Osborn (2007) find that government investment in education and total expenditure on education are the only outlays that are significantly associated with growth⁴. Saad and Kalakech (2009) focus on sectoral expenditures, and also find that spending on education has a positive effect on growth in the long run, although there is a negative impact in the short run. Both

⁴ Haque and Osborn identified the relationship once the budget constraint and omitted variables were taken into consideration.

defence and health spending were found to have a negative effect on growth in the long run.

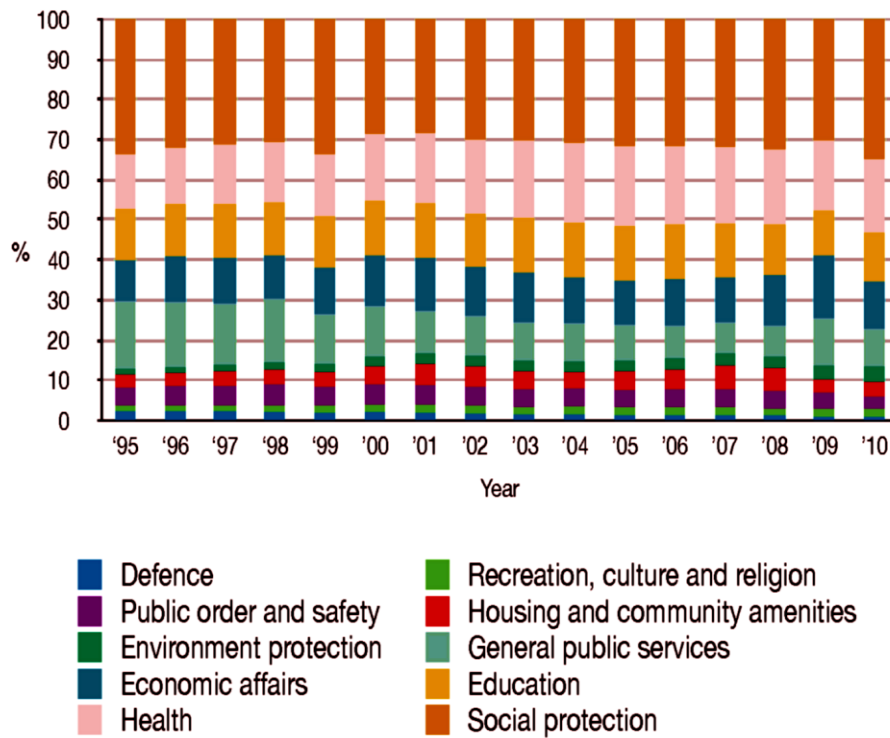
19. Sylwester (2000) also finds that public education expenditures are positively associated with future economic growth, although they do have a negative effect in the short term.

Section 3: Composition of Spending

Composition of Spending in Ireland

20. The current economic crisis has centred attention on the affordability of the current levels of public spending in Ireland. However, much less attention is given to where this public money is actually spent. This is surprising considering the body of evidence pointing at the importance of the composition of spending.
21. To facilitate international comparisons of public spending, the UN has developed the Classification of the Functions of Government (COFOG) typology which categorises public spending into ten distinct areas according to the objective of the spending. For example, health, education and defence are categorised as three distinct areas of spending, and every single individual item of spending is categorised within exactly one of these ten functional areas. Spending on the armed forces falls into the category of defence spending, spending on universities falls into the category of education spending, and so forth.
22. At the macro level, the breakdown of spending in Ireland has remained relatively unchanged since at least the early 1990s. As we have seen, the economic literature points to the long-term value of education spending, yet education spending has remained unchanged as a proportion of GDP since 1995. This prompts the question: should education spending be prioritised to facilitate long term economic growth?
23. Figure 1 shows a time series of the breakdown of public spending in Ireland by functional category. As can be seen, social protection spending (33 per cent) and health spending (19 per cent) are the biggest items of Government expenditure, followed by education spending (13 per cent) and economic affairs (13 per cent). Defence spending and cultural spending were the least costly of the ten categories of expenditure.

Figure 1: Breakdown of Irish Government's Spending by COFOG⁵ Categories, 1995-2010.

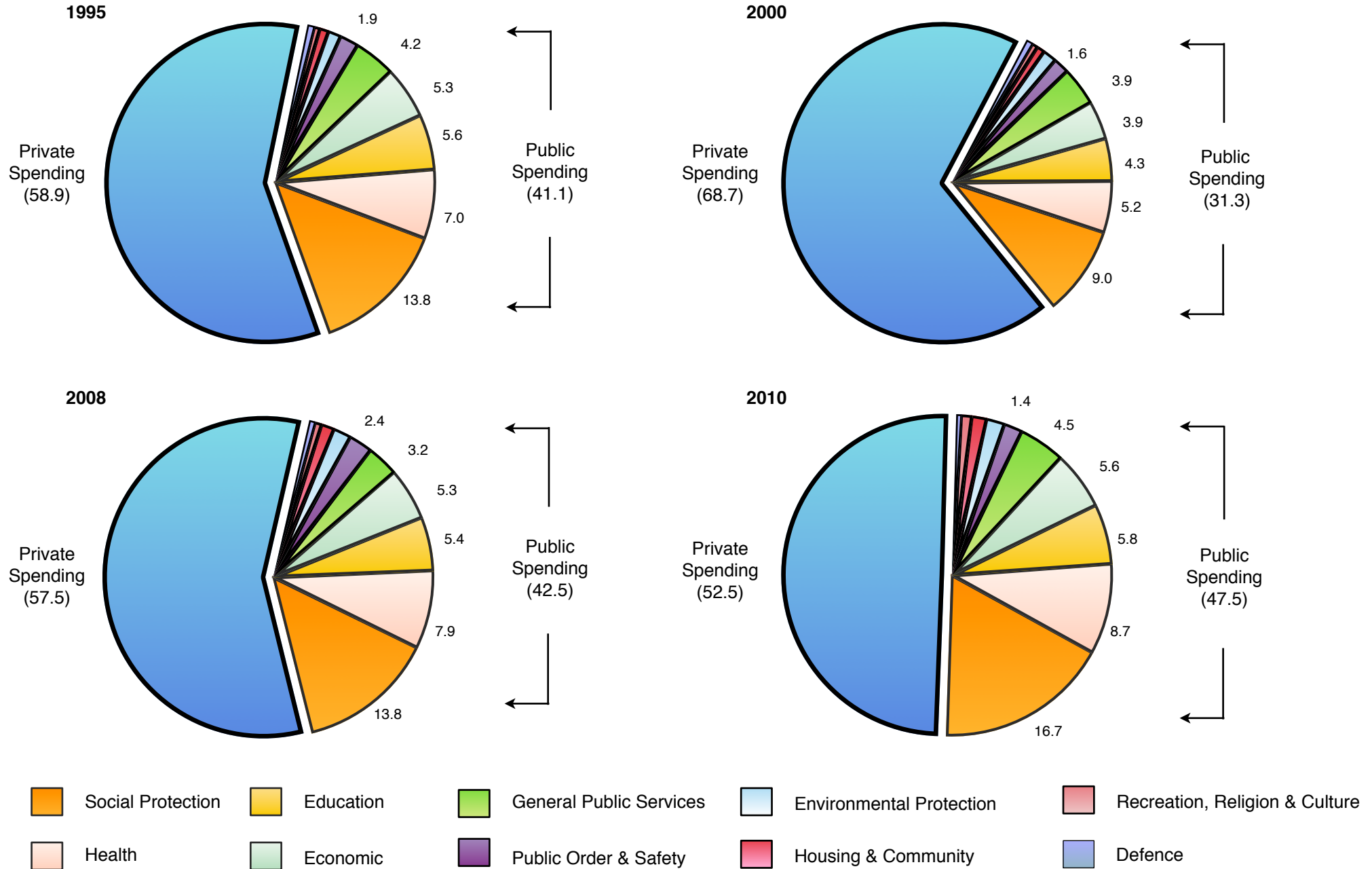


Sources: Eurostat. (2010). Government finance statistics. [Online]. Available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/government_finance_statistics/data/database. (Accessed 23 November 2010).

24. Figure 2 provides a snapshot of the composition of public spending as a percentage of GDP in Ireland at four intervals between 1995 and 2010. It is interesting to note the similarities in the breakdown of spending in 1995 and (13 years later) in 2008. It shows a considerable degree of consistency in the prioritisation given to different areas of spending over time.

⁵ The United Nations (2010) uses a classification system in which the different functions of government (the COFOG categories) are classified into ten separate categories.

Figure 2: Composition of Spending in Ireland as a Percentage of GDP: 1995, 2000, 2008 and 2010

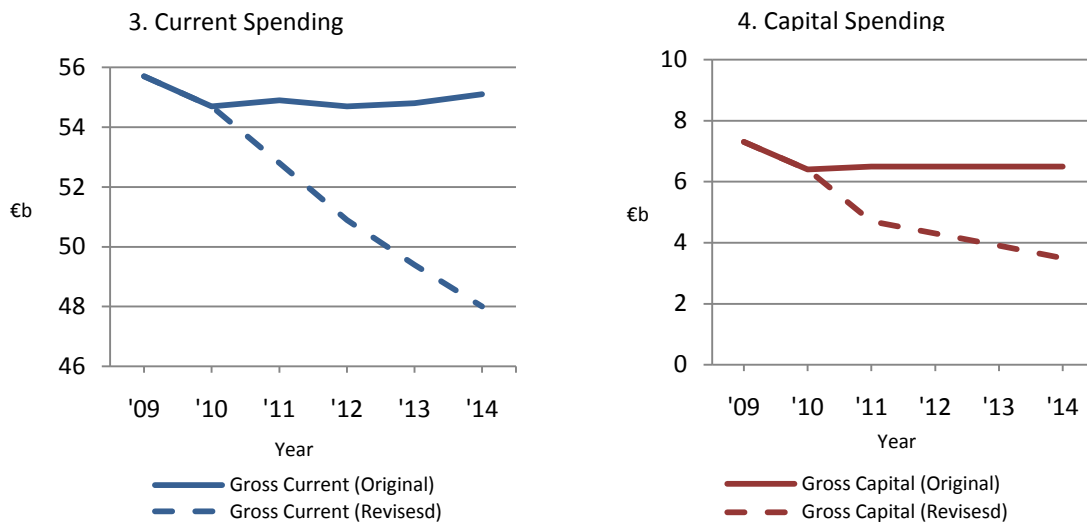


Source: Eurostat (2010) Government Finance Statistics [Online] Available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/government_finance_statistics/data/database (Accessed 26 November 2010).

Figures for 2010 are the Authors' estimate of gross State expenditure.

25. For example, despite an interim period when the public spending ratio was reduced by a quarter, we can see that social protection measures took up almost exactly the same proportion of national output in 2008 (13.8 per cent) as they did in 1995 (13.7 per cent). Education spending was 5.3 per cent of GDP in 1995 and in 2008. 'Public Order & Safety' also remains practically unchanged at 1.9 per cent. . General public services was the only area of public spending to decline by more than 1 per cent of GDP, and as mentioned earlier, this change is merely a reflection of Ireland's reduced debt interest obligations. Health spending, which had been particularly badly affected by the public sector cuts of the late 1980s and early 1990s, was the only area of public services that increased its share of GDP by more than 1 per cent from 1995 to 2008.
26. What all this suggests is that there has not been a fundamental rethink or serious reflection upon about how best to prioritise public spending between the different functional areas of public service. There seems to have been a trend of increasing spending in most departments by x per cent when times are good and reducing spending in most departments by y per cent when times are bad. Yet there is no reason to assume that what suited Ireland in 1995 or 1955 is in any anyway appropriate for 2010.
27. The Government has announced in its Four-Year Plan (National Recovery Plan, 2010) that annual public spending is to be reduced by a total of €10 billion by the end of 2014. Current expenditure will be approximately €7 billion lower by 2014 compared to the projections based on existing policies, and capital expenditure €3 billion lower. Figures 3 and 4 show the path of public spending both before and after the impact of the policy changes announced in the four year plan. Gross current expenditure is projected to fall by 12 per cent and gross capital expenditure is projected to fall by 45 per cent.

Figures 3 & 4: Change in Voted Current and Capital Expenditure Under the Governments Four-Year Plan, 2009-2014.

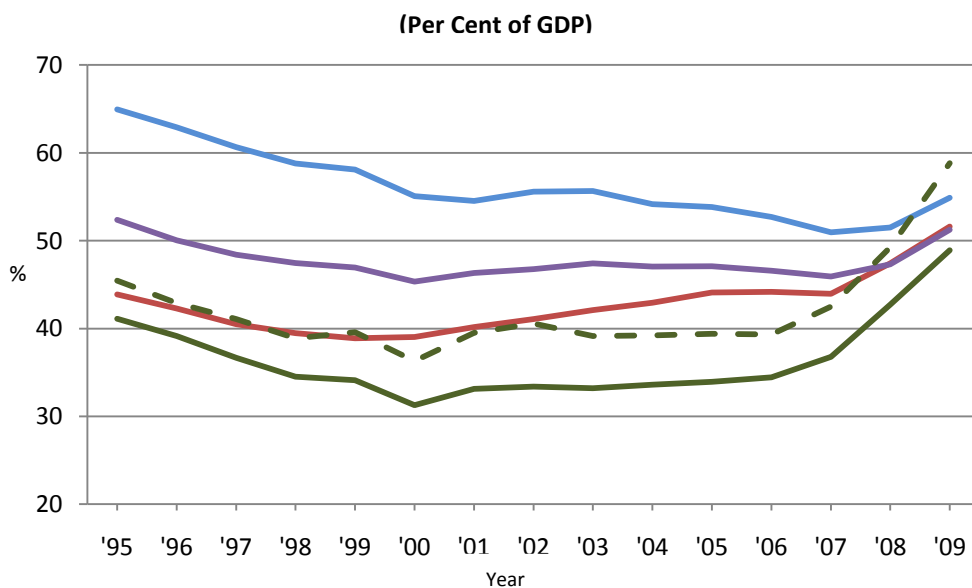


Source: Government of Ireland (2010) National Recovery Plan 2011-2014. Dublin: Government Publications Office

Comparison of Spending with other EU Countries

28. Eurostat data (Figure 5) shows the comparative level of government spending as a proportion of GDP for Ireland and for a selection of other Western European countries. What the data shows is that, before the onset of the economic crisis, public spending was low by Western European standards. Even if we measure public spending as a proportion of GNI, instead of as a proportion of GDP, we find that public spending was still lower in Ireland than it was in the EU 15 overall.

Figure 5: Total General Government Expenditure as Percentage of Economic Output, 1995-2008.

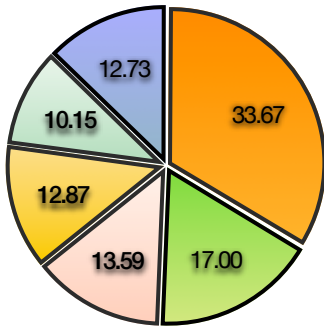


Source: Eurostat. (2010). Government revenue, expenditure and main aggregates [Online]. (Available at: <http://appsso.eurostat.ec.europa.eu/nui/show.do>) [Accessed 23 November 2010].

29. The set of pie charts in Figure 6 shows the breakdown of public spending in a selection of OECD member states for 1995 and for 2008. The big shift in the composition of public spending in Ireland over this period was a movement away from spending on general public services (down from 17 per cent in 1995 to less than 8 per cent in 2008) and towards health spending (from 14 per cent in 1995 to 19 per cent in 2008).

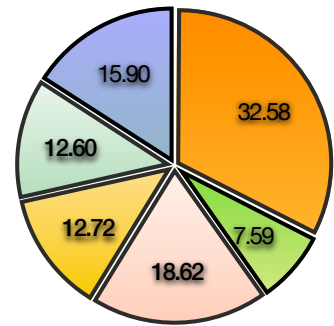
Figure 6: The Composition of Public Spending in a Selection of OECD Countries, 1995 and 2008

**The Irish Government's Expenditure in 1995
(Public Spending = 41.12% of GDP)**



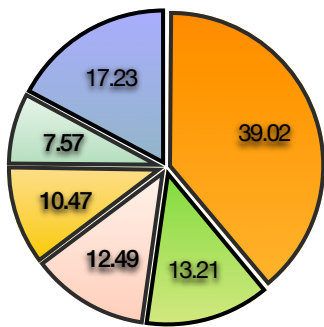
- Social Protection
- General Public Services
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- Economic Affairs
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**The Irish Government's Expenditure in 2008
(Public Spending = 42.82% of GDP)**



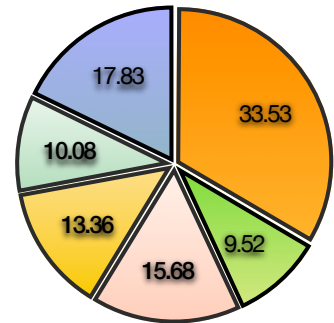
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**The U.K. Government's Expenditure in 1995
(Public Spending = 44.04% of GDP)**



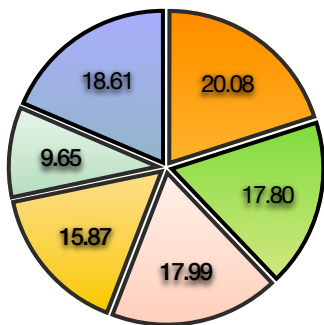
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- Economic Affairs
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**The U.K. Government's Expenditure in 2008
(Public Spending = 47.29% of GDP)**



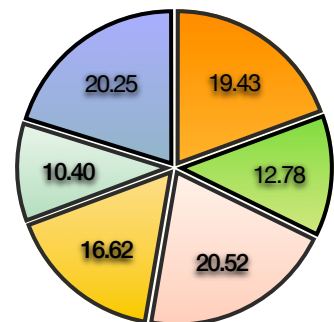
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**The U.S. Government's Expenditure in 1995
(Public Spending = 37.13% of GDP)**



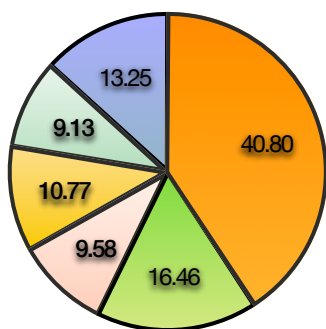
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- Economic Affairs
- Other

**The U.S. Government's Expenditure in 2008
(Public Spending = 41.12% of GDP)**



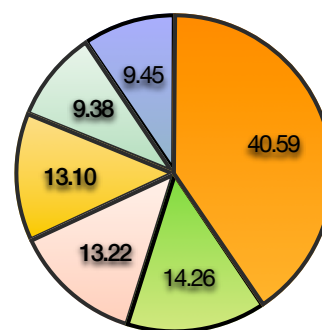
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- Education
- Economic Affairs
- Other

The Swedish Government's Expenditure in 1995
(Public Spending = 65.09% of GDP)



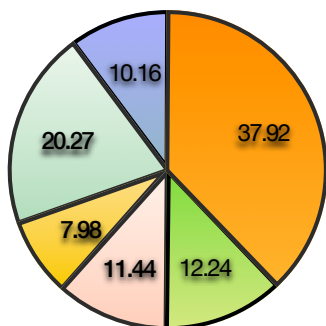
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- Economic Affairs
- Other

The Swedish Government's Expenditure in 2008
(Public Spending = 53.00% of GDP)



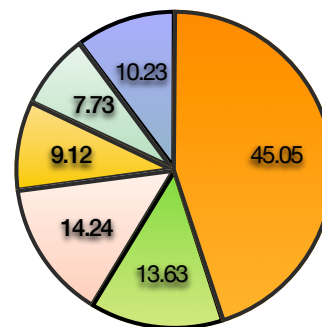
- Social Protection
- General Public Services
- Health
- Education
- Economic Affairs
- Other

The German Government's Expenditure in 1995
(Public Spending = 54.77% of GDP)



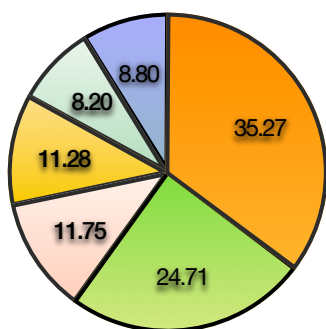
- Social Protection
- General Public Services
- Health
- Education
- Economic Affairs
- Other

The German Government's Expenditure in 2008
(Public Spending = 43.70% of GDP)



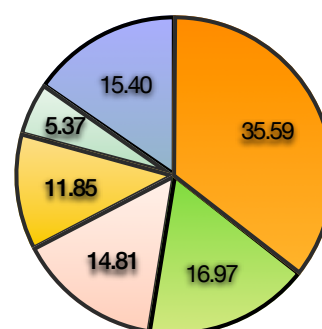
- Social Protection
- General Public Services
- Health
- Education
- Economic Affairs
- Other

The Belgian Government's Expenditure in 1995
(Public Spending = 52.17% of GDP)



- Social Protection
- General Public Services
- Health
- Education
- Economic Affairs
- Other

The Belgian Government's Expenditure in 2008
(Public Spending = 50.03% of GDP)



- Social Protection
- General Public Services
- Health
- Education
- Economic Affairs
- Other

Source: Organisation for Economic Co-operation and Development. 2010. **OECD Stat Extracts**. [Online] Available at: <http://stats.oecd.org/Index.aspx>

(Accessed 22/11/010). 5

30. The reduction in general public service payments in Ireland - from 17 per cent to below 8 per cent - was primarily a result of Ireland's ever-reducing debt interest burden over the course of this 13-year period. The proportions of expenditure allocated to social protection and to education are essentially unchanged, although the unchanged allocation for social protection must be understood in the context of a much lower unemployment rate in 2008. The proportion of public expenditure allocated to health spending jumped by 37 per cent, although it should be noted that health spending had increased as a proportion of total spending for all 6 countries.
31. There is clearly a wide divergence in the overall levels of public spending in these countries. But it is also useful to note the wide divergence by the different countries in the priorities accorded to the various functions of government. This reflects the absence of any universal consensus about the appropriate role of government. The composition of public spending in any individual country, as well as the aggregate amount of spending, can perhaps be seen more as a matter of political choice rather than a matter of agreed technical efficiency.
32. For example, Germany devotes over 45 per cent of public spending to social protection measures, whereas the United States devotes just 19 per cent of public spending to social protection measures. On the other hand, the United States allots the highest proportion of overall public spending to education (16 per cent) and Germany the lowest proportion (9 per cent).
33. Geopolitical considerations can also skew the composition of public spending. For example, for historical reasons both the United Kingdom and the United States treat their military and their defence industry as active tools of state policy, and, consequently, defence spending is given a much higher priority in these countries than it is in Ireland. On the other hand, the relatively high priority accorded by Ireland to economic affairs (13 per cent) is better understood as 'catch up' when we consider Ireland's infrastructural deficit compared to other advanced economies. By comparison, Belgium, with a much more mature infrastructure network than Ireland, devoted only five per cent of its public spending in 2008 to economic affairs. One interpretation of these figures is that the appropriate levels of public spending, and the prioritisation given to certain functions of government, are not independent of

the political, historical and economic contexts in different countries. In this light, it is clear that the general context in Ireland after 2007/2008 is one of economic collapse and rising unemployment. The result of this was that, in 2008, the level of public spending exceeded 40 per cent of GDP for the first time since 1995. The public spending ratio has increased further in the intervening two years, as the economy has continued to deteriorate.

34. Table 1 compares Irish spending to EU 15 spending across the functional categories of Government. Blue boxes show where Ireland spent a smaller proportion of its GDP on a particular functional category and red boxes show where Ireland spent a higher proportion of its GDP on a particular functional category.

Table 1: Ratio of Ireland's Public Spending as a Percentage of GDP Relative to the EU15 Average, 1995-2008.

COFOG/Time	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08
General public services	0.7847	0.7817	0.7574	0.7270	0.7266	0.6910	0.7175	0.7156	0.6999	0.7116	0.7154	0.7353	0.7881	0.8897
Defence	0.8090	0.7373	0.6788	0.6889	0.5751	0.5660	0.5201	0.5037	0.4879	0.5019	0.4728	0.4422	0.4513	0.5023
Public order and safety	0.4820	0.4755	0.4570	0.4241	0.3965	0.3714	0.3987	0.3322	0.3068	0.3181	0.2824	0.2835	0.2946	0.3264
Economic affairs	1.1394	1.1112	1.0815	1.1068	0.9916	0.9567	0.9580	0.8815	0.8493	0.8499	0.8297	0.8821	0.9386	1.0390
Environment protection	0.6579	1.0572	1.1137	1.0134	1.0371	1.3542	1.1490	1.0740	1.0642	1.0022	0.9846	1.0650	1.1150	1.2994
Housing and community amenities	0.7939	0.8154	0.9474	0.9891	0.9940	1.1199	1.2343	1.2001	1.2115	1.1995	1.2237	1.2542	1.4631	1.6459
Health	0.9837	1.2123	1.2954	1.2220	1.2502	1.3696	1.6940	1.8167	1.3497	1.3202	1.4672	1.6290	2.0501	2.3227
Recreation, culture and religion	0.9266	0.8942	0.9134	0.8697	0.8804	0.8488	0.9278	0.9544	0.9720	0.9978	0.9900	0.9719	1.0168	1.1181
Education	0.6210	0.6152	0.5869	0.5894	0.5631	0.5852	0.6525	0.6509	0.5601	0.5816	0.5880	0.6327	0.6873	0.6738
Social protection	1.0220	0.9913	0.9590	0.9002	0.8598	0.8550	0.8776	0.8540	0.8637	0.8768	0.8797	0.9031	0.9600	1.0367
Total	0.7022	0.6367	0.5945	0.5602	0.6140	0.4911	0.5176	0.5428	0.5305	0.5521	0.5698	0.5892	0.6357	0.7390

Blue font indicates that public spending was below the EU15 average.

Red font indicates that public spending was above the EU15 average.

Source: Authors' calculations based on figures taken from Eurostat (2010). Government finance statistics [online]

Available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/government_finance_statistics/data/database (accessed 23 November 2010).

35. 2007 is an informative year because it provides a snapshot of public spending just before the economic crash. The public spending to GDP ratio was just 79 per cent of the ratio for the EU 15, although this figure rises to 93 per cent if we use GNI as the appropriate measure of economic output for Ireland. See Table 2 below:

Table 2: Ratio of Ireland's Public Spending as a Percentage of GNI Relative to the EU15 Average, 1995-2008.

COFOG/Time	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08
General public services	0.8939	0.8081	0.7602	0.7764	0.6677	0.6572	0.6199	0.6120	0.5753	0.5857	0.5489	0.5050	0.5212	0.5791
Defence	0.5327	0.5211	0.5118	0.4780	0.4603	0.4312	0.4752	0.4037	0.3617	0.3712	0.3279	0.3238	0.3403	0.3763
Public order and safety	1.2591	1.2178	1.2112	1.2474	1.1513	1.1107	1.1420	1.0710	1.0013	0.9918	0.9632	1.0073	1.0841	1.1980
Economic affairs	0.7269	1.1587	1.2474	1.1421	1.2040	1.5722	1.3697	1.3049	1.2547	1.1696	1.1431	1.2163	1.2878	1.4982
Environment protection	0.8773	0.8937	1.0611	1.1147	1.1540	1.3002	1.4712	1.4582	1.4284	1.3998	1.4207	1.4323	1.6899	1.8977
Housing and community amenities	1.0870	1.3287	1.4508	1.3772	1.4515	1.5901	2.0193	2.2072	1.5912	1.5406	1.7034	1.8603	2.3678	2.6781
Health	1.0239	0.9800	1.0230	0.9802	1.0221	0.9854	1.1059	1.1596	1.1460	1.1644	1.1493	1.1099	1.1744	1.2891
Recreation, culture and religion	0.6862	0.6742	0.6574	0.6643	0.6537	0.6794	0.7778	0.7909	0.6603	0.6788	0.6826	0.7226	0.7938	0.7768
Education	1.1293	1.0864	1.0741	1.0145	0.9982	0.9927	1.0461	1.0377	1.0183	1.0232	1.0213	1.0313	1.1088	1.1953
Social protection	0.7759	0.6978	0.6659	0.6313	0.7128	0.5701	0.6170	0.6595	0.6254	0.6443	0.6616	0.6729	0.7342	0.8521
Total	0.8671	0.8567	0.8483	0.8194	0.8436	0.8022	0.8553	0.8695	0.8252	0.8305	0.8306	0.8397	0.9103	1.0258

Blue font indicates that public spending was below the EU15 average.

Red font indicates that public spending was above the EU15 average.

Source: Authors' calculations based on figures taken from Eurostat (2010). Government finance statistics [online]

Available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/government_finance_statistics/data/database (accessed 23 November 2010).

36. The very low unemployment rate prior to the crisis had kept public spending on social protection, which is by far the largest area of spending, very low. In GDP terms, social protection spending was just two thirds of the EU 15 average, and low social protection spending was in turn the main driver keeping overall public spending below the EU 15 average. Our relatively low debt burden also helped to public spending at low levels.

Section 4: Public Spending and Economic Equality

Public Spending and Economic Equality

37. Finally, we turn to issues of social equality. One of the most important justifications for public expenditure is that it can be used to promote social justice and to reduce levels of poverty and inequality⁶. The assumption is that, because much of public expenditure is redistributive, a negative relationship exists between the level of public expenditure and the level of economic inequality in advanced economies. In other words, higher public spending is expected to be associated with greater income equality⁷.

38. To test the hypothesis that a negative correlation exists between public expenditure and inequality, we gathered data for the levels of public expenditure in OECD countries (measured as a proportion of GDP), as well as for levels of economic inequality in OECD countries. The data was taken from the OECD's statistical database.

39. Gini coefficients were used as the measure of economic inequality. The Gini coefficient measures income distributions, and can vary from 0 per cent (complete equality) to 100 per cent (one person has all the income). The Gini coefficient is an incomplete measure of inequality as different income

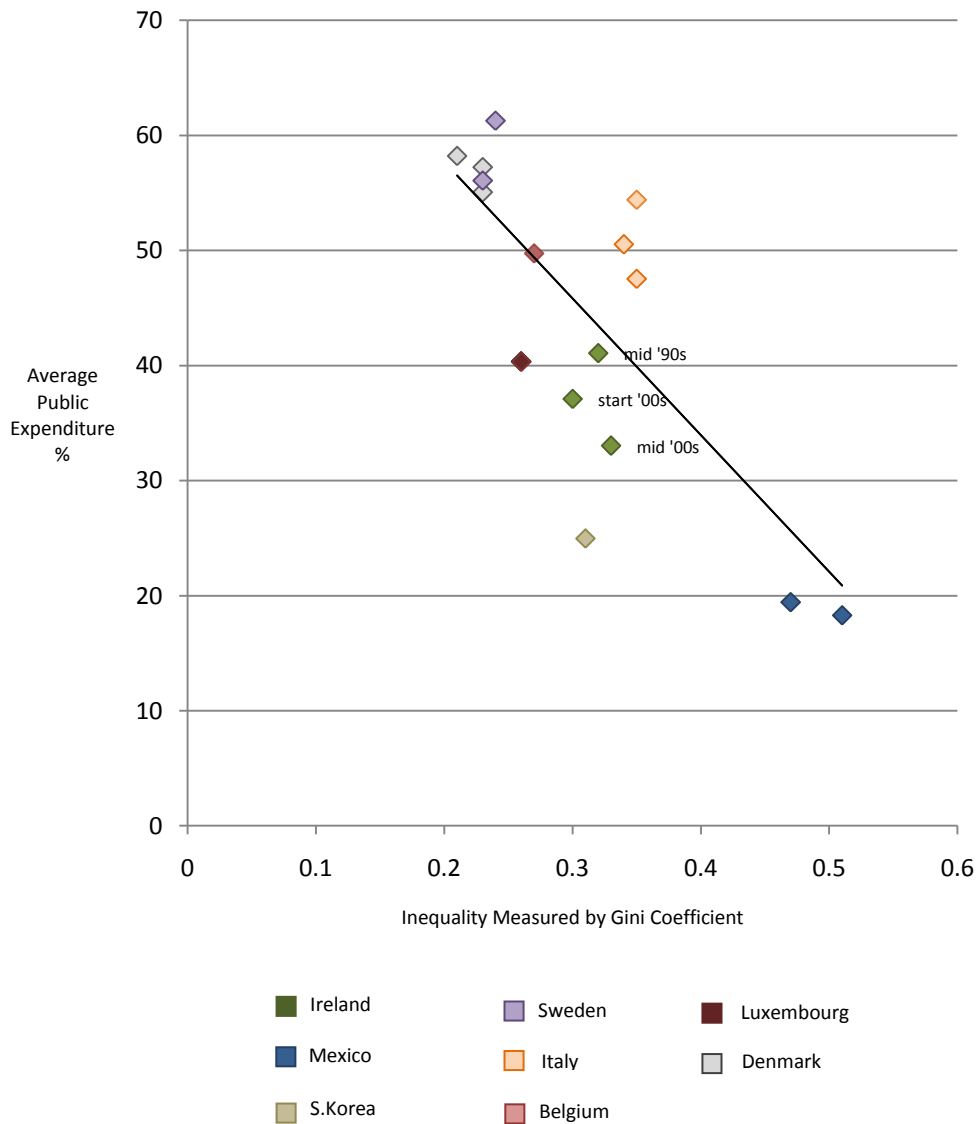
⁶ See TASC discussion paper (December, 2010).

⁷ Technically speaking it is the level of spending on social transfers and merit goods that is expected to be associated with closer equality. A more in depth study of the relationship between public spending and equality will be the subject of a future TASC discussion paper.

distributions can have the same Gini coefficient. Nonetheless, it is a useful indicative benchmark of inequality.

40. International Gini coefficient data was gathered for each OECD country, where data was available, for three separate points in time – described by the OECD as the mid 1990s, 2000 and the mid 2000s. Data for average public expenditure levels was then gathered for each of these countries for the five year periods prior to these points (i.e., 1990-1994 for the mid 1990s, 1995-1999 for 2000 and 2000-2004 for the mid 2000s respectively). The data gathered was for aggregate public spending
41. As the anticipated causal direction is that public expenditure levels impact on levels of inequality, it didn't make sense to compare contemporaneous variables. A lag was expected between the public expenditure ratio and the subsequent effect on inequality.
42. The approach adopted was to compare the Gini coefficient data with the data for 'average level of expenditure as a proportion of GDP' for the prior five year period. The five-year average was chosen to minimise any biasing impacts that may arise from extreme single-year fluctuations in the business cycle. Thus, each of the Gini coefficient data points was paired with the average proportion of public spending for the prior five-year period: for example, the 1995 Gini coefficients were paired with the 1990-1994 average proportion of government spending and so on.
43. The sample size was 55, and the scatter plot (Figure 8) appears to show a strong negative relationship between the two variables. The correlation coefficient was found to be very strong (-0.745) and to be significant at the one per cent level. Thus it would appear that there is some evidence of a negative correlation between the public expenditure ratio and the Gini coefficient. In other words, higher public spending may well lead to greater income equality.
44. Further correlation analyses using the three smaller Gini coefficient samples - i.e. the samples for the mid 1990s, for 2000 and for the mid-2000s - all showed similarly large and statistically significant negative correlations.

Figure 8: Inequality and the Level of Public Expenditure



The trend line is derived from all 55 data points. Only selected countries are included.

45. As is always the case, correlation should never be mistaken for causation, nonetheless the correlation between the two variables is very strong and the negative correlation is in the direction expected. These facts give us a degree of confidence in the result.
46. Importantly, given that the empirical literature concerning the causal impact of public expenditure on economic growth is so contradictory, the argument that a trade off exists between economic efficiency and economic equality becomes less compelling.

47. Table 3 shows the 2009 Gini Coefficient figures for the EU 27. By this measure, Ireland is found to be the 15th most equal society, which is slightly below average.

Table 3: Inequality in the EU 27
(The Higher the Ranking the More Equal the Society)

Rank	Country	Gini Coefficient 2009
1	Slovenia	23.4
2	Slovak Republic	23.7
3	Sweden	24.0
4	Czech Republic	24.7
5	Denmark	25.1
6	Hungary	25.2
7	Austria	26.2
8	Finland	26.4
9	Malta	26.9
10	Belgium	27.5
11	Netherlands	27.6
12	Luxembourg	27.7
13	Cyprus	28.0
14	France	28.1
15	Ireland	29.9
16	Germany	30.2
17	Estonia	30.9
18	Italy	31.0
19	Spain	31.3
20	Poland	32.0
21	Greece	33.4
22=	Lithuania	34.0
22=	United Kingdom	34.0
24	Portugal	35.8
25	Bulgaria	35.9
26	Romania	36.0
27	Latvia	37.7

Source: CSO (2010). Survey on Income and Living Conditions (SILC), November 2010, Table 5.1.

http://www.cso.ie/releasespublications/documents/silc/2009/silc_2009.pdf

Section 5: Conclusions

Conclusion

48. There is a general economic proposition that higher income equality is associated with lower levels of growth because higher economic equality requires higher levels of taxation. This suggests that there is a trade off between economic growth and income equality.
49. However the body of empirical literature concerning the impact of public expenditure on economic growth is highly contradictory, with different studies finding different impacts for overall, capital, current and functional types of spending.
50. Given the contradictory evidence for the impact of public spending on output, depending on the area of public spending, a trade-off between economic output and income equality cannot be claimed.
51. The only consistent trend in the empirical literature is that public education spending is found to have a positive effect on growth in the long term, though it may have a negative effect in the short term. Defence spending is the functional category most generally associated with lower growth patterns.
52. The composition of spending in Ireland is found to have changed very little in 2008 from its position in 1995. Of the ten functional areas, only for two categories (health spending and general public services) has public expenditure allocations changed by more than one percentage point from 1995 to 2008.
53. The widely held assumption that increased public spending reduces income inequality was tested and found to have empirical support. A strong and significant negative correlation between the ratio of public spending to GDP and the Gini coefficient was found.
54. It may be possible to use public spending to engender economic growth by increasing the levels of income equality in society.

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