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CBT Corporate tax ranking 2012

Katarzyna Bilicka
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June 2012

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The opinions expressed in this report represent the views of the authors. They do not represent the views of the Oxford University Centre for Business Taxation, which has no corporate views.

This report forms part of the output of the Oxford University Centre for Business Taxation, based in the Saïd Business School. The work was financed partly by a grant from the ESRC (grant RES-060-25-0033), and partly from donations from a number of UK companies, members of the Hundred Group. The full list of corporate donors is provided on the Centre's website, at www.sbs.ox.ac.uk/tax.

ISBN number: 978-0-9559350-4-6

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EXECUTIVE SUMMARY

This report assesses the competitiveness of the UK corporation tax regime at the beginning of 2012. One motivation for such an assessment comes from the UK coalition agreement, which stated that:

"Our aim is to create the most competitive corporate tax regime in the G20, while protecting manufacturing industries." [1]

In a 2011 report, we assessed how close the government was to achieving its objective, both on taking office and after its proposed cuts in the corporation tax rate. We assessed competitiveness using two measures of effective tax rates: an effective average tax rate (EATR) and an effective marginal tax rate (EMTR). We concluded that in 2011 the UK ranked 9th in the G20 on the EATR, and only 15th on the EMTR. The relatively poor ranking of the EMTR reflects the low allowances available in the UK for capital investment, particularly in industrial buildings. This is a particular concern given the last part of the government's aim, to protect manufacturing industries.

This 2012 report updates the comparison with other G20 countries to 2012. Perhaps not surprisingly, the UK's rankings have not changed, despite a reduction in the corporation tax rate of 2 percentage points. This is partly because other countries have also reduced their rates, but also because the reduction in the UK rate has not yet been very large.

The G20 may not be the most appropriate group of countries with which to compare the UK. As an alternative, we also compare the UK with countries that are members of the OECD. The results of this comparison show the UK in a less flattering light. The UK ranks 22nd out of 33 OECD countries for the EATR, and 31st out of 33 for the EMTR.

This poor ranking is again mostly due to the lack of generosity of allowances for capital expenditure: amongst the 33 OECD countries, only Chile has less generous allowances. But in addition the UK's tax rate is relatively high when compared to OECD countries. The UK's tax rate of 26% at the beginning of 2012 was only the 17th lowest rate in the OECD.

This report also documents reforms that have been enacted and proposed in G20 and OECD countries in 2011, 2012 and up to 2015. A number of countries have proposed and enacted reforms to corporation tax. The most common reform has been a reduction in the statutory rate, as in the UK. Taking into account such reforms, we also evaluate the position that would occur by 2015 if all projected reforms, but no others, took place.

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[1] H.M. Government (2010), p. 10

Compared to all countries in the G20 and the OECD, in 2015 the UK would have a ranking of 16th out of 41 countries for the EATR, with a rate of 20.3%. It would have a ranking of 32nd out of the 41 countries for the EMTR, with a rate of 18.9%. Even after the implementation of the planned cuts to corporation tax, then, the UK will not be particularly competitive relative to other countries in the G20 and OECD.

Finally, given the large number of recent reforms to corporation tax around the world, we investigate the extent to which the economic and financial crisis may have given renewed impetus to competitive pressures between countries to reduce effective rates of corporation tax. We compare the spate of recent reforms to similar reforms over the last thirty years. Broadly, the number and size of recent reforms is consistent with earlier periods. Rates of corporation tax have been declining for 30 years, and this decline is continuing. However, there is some evidence of a greater response to competitive pressures amongst G7 countries.

1. INTRODUCTION

The coalition agreement of 2010 upon which the current UK government is based contains the following statement:

"Our aim is to create the most competitive corporate tax regime in the G20, while protecting manufacturing industries." [2]

In a 2011 report, we assessed how close the government was to achieving its objective, both on taking office and after its proposed cuts in the corporation tax rate. We assessed competitiveness using two measures of effective tax rates: an effective average tax rate (EATR) and an effective marginal tax rate (EMTR). We define these measures in more detail in the next section.

Broadly, in 2011 we concluded:

- the UK had an EATR of just over 26 percent, which ranked the UK 9th of out the 19 independent G20 countries, and
- the UK had an EMTR of just under 23 percent, which ranked the UK 15th out of the 19 countries.

The weaker position of the EMTR was due to the fact that, although the UK tax rate was relatively low by international standards (in 7th position), the UK had the least generous treatment in the G20 of allowances for capital investment. The EMTR is more sensitive to those allowances than the EATR.

This 2012 report has three main aims.

First, we update our comparison of the effective tax rates in G20 countries to 2012: specifically, we compare taxes as they were in January 2012.

Second, we broaden the set of countries with which to compare the UK, including all OECD countries as well as G20 countries.

Third, we report on corporation tax reforms that have recently been undertaken and proposed in all G20 and OECD countries. Many countries have introduced new reforms, mostly in an effort to reduce effective tax rates and stimulate investment and growth following the financial and economic crisis. We ask whether these reforms can be seen as the beginning of a new wave of corporation tax competition.

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[2] H.M. Government (2010), p. 10.

Our main source of information on tax regimes and reforms for this analysis are the country tax reports of the International Bureau of Fiscal Documentation.

The report is structured as follows: Section 2 presents an update to 2012 of our rankings of the statutory rate and the two effective rates for the G20 countries. Section 3 extends this international comparison for 2012 to OECD countries. Section 4 examines corporation tax reforms in G20 and OECD countries, in 2011 and 2012, and also subsequent reforms that have already been announced. It provides an international comparison and ranking for 2015 based on measures that have already been announced. Section 5 considers whether the scale of these reforms represents a step-up in the rate of competition between countries. Finally, there are two Appendices, which set out the methodology in more detail and provide some more detailed estimates.

2. 2012 RANKINGS FOR G20 COUNTRIES

We begin by presenting estimates of the main rate of corporation tax and of the two effective tax rates for each G20 country in 2012. This updates the rankings from our 2011 report.

Our measure of the main rate of corporation tax is the highest statutory tax rate applied to corporate profit in each country, including average or typical local taxes and surcharge taxes where appropriate.

The measures of effective tax rates consider two different forms of investment decision. The first is a discrete choice, for example, a location choice such as whether a business should expand its activities in the UK or in another country. We assume that the business would choose the location that would generate the higher post-tax profit, in present value terms. The relevant measure of tax for this decision is the proportion of the present value of pre-tax profit that would be taken in tax in either country. This is measured by an effective average tax rate (EATR).

The second measure considers the size of investment, conditional on the location choice. To evaluate this we consider the cost of capital: the rate of return that an investment project must earn if it is to break even, taking into account all receipts and expenditures. We would expect investment to be undertaken up to the point that the marginal gain from an additional investment is equal to the cost of capital. Corporation taxes typically increase the cost of capital. The effective marginal tax rate (EMTR) measures the proportionate increase in the cost of capital due to the tax.

A number of caveats must be acknowledged in using such measures, which were discussed in more detail in our 2011 report. Broadly, we take account only of the tax rate, capital allowances applied to three broad types of asset - plant and machinery, industrial buildings and intangibles – the treatment of inventories and interest deductibility. The measures should be regarded as an average across a number of different types of real investment. More details are provided in Appendix A. We do not take account of any taxes relating to cross-border flows. We therefore neglect the effects of the taxation of foreign source income, withholding taxes on flows of dividends, interest and royalties, as well as CFC regimes and other anti-avoidance restrictions. Nevertheless, the measures that we use have been found in the academic literature to be significant in affecting a number of types of investment decisions (see, for example, the review and meta analysis of De Mooij and Ederveen, 2008).

Table 1 presents each of these measures of taxation for each of the G20 countries in January 2012. Each column is ranked according to that measure.

Column 1 shows the ranking of the statutory corporate tax rates for G20 countries The UK's statutory tax rate was 26 percent, 2 percentage points lower than in January 2011. However, this reduction did not change the UK's ranking, which remained 7th. In fact, there was only one change in the G20 ranking of statutory tax rates between 2011 and 2012, with France and South Africa changing places. Despite this, there were some reforms to both rates and bases, which are discussed in more detail below and in section 4.

Column 2 shows the 2012 ranking of the EATRs for G20 countries. In January 2012, the UK had an EATR of 24.8%, a reduction from 26.3% in January 2011. Again, though, this did not change the UK's ranking, which remained 9th. The UK did move below Mexico, but a significant reduction in the EATR in Italy due to the introduction of a new allowance for corporate equity moved Italy from 11th to 6th in the ranking. The UK would have moved ahead of Canada, but Canada also reduced its EATR between 2011 and 2012 to stay 8th in the ranking. Most of the other rankings for the EATR did not change. Russia remained at the top of the ranking with an EATR of 16.7% and Japan remained at the bottom with an EATR of 36.0%.

Column 3 shows the position for the EMTRs. Once again, the UK's rate was reduced between 2011 and 2012, in this case from 22.8% to 22.3%, but without any effect on the UK's ranking.

The Italian tax reform had a marked effect on its EMTR, putting Italy top of the EMTR ranking. The reason is that its new allowance for corporate equity gives relief for the opportunity cost of equity finance, mirroring the treatment of debt finance. If applied in its pure form to a marginal investment, this would mean that a marginal investment would not be taxed at all, and the EMTR would be zero.[3] However, for technical reasons, we believe that the Italian allowance is actually slightly more generous than this, with the result that the overall EMTR is negative, implying that a marginal investment would be subsidised by the Italian tax.[4]

The lower ranking for the UK in the effective tax rate column than in the statutory rate column reflects the fact that the UK has low rates of capital allowance. Appendix B presents evidence of the generosity of allowances for the three types of capital investment considered here for each of the G20 and OECD countries. The UK is ranked last out of all G20 and OECD countries in its treatment of industrial buildings.[5] In fact the UK was already ranked last in January 2011 when the rate of allowances on industrial buildings was 1%; since then it has fallen to zero. The position for the other assets is not as extreme, but is still poor – for example, the UK still has a ranking of only 28th out of 41 amongst G20 and OECD countries in the generosity of its allowances for investment in plant and machinery.

3 This is a tax reform recently advocated by the IFS Mirrlees Review, Mirrlees et al (2011), among others.

4 This is partly because the base for the allowance depends on retained earnings as measured by accounting procedures, rather than the tax rules. Offsetting this, in our calculations, the rate of relief is lower than the real risk-free rate of return, implying a higher EMTR. A final factor is that the combination of interest deductibility and Italian capital allowances also make the EMTR for debt-financed investment negative.

5 Excluding Estonia, which does not have a conventional corporation tax.

Table 1. Rankings of the G20 countries in January 2012.

Ranking	Country	Statutory tax rate (%)	Ranking	Country	EATR (%)	Ranking	Country	EATR (%)
1	Russia	20.0	1	Russia	16.7	1	Italy	-10.0
2	Saudi Arabia	20.0	2	Turkey	16.9	2	South Korea	7.2
3	Turkey	20.0	3	South Korea	18.0	3	Russia	7.9
4	South Korea	22.0	4	Saudi Arabia	18.1	4	Turkey	8.7
5	China	25.0	5	China	22.4	5	Saudi Arabia	13.4
6	Indonesia	25.0	6	Italy	23.0	6	Canada	15.8
7	**United Kingdom**	**26.0**	7	Indonesia	23.0	7	China	16.2
8	Canada	28.0	8	Canada	24.4	8	Mexico	17.1
9	Australia	30.0	9	**United Kingdom**	**24.8**	9	France	17.9
10	Mexico	30.0	10	Mexico	26.1	10	Germany	18.2
11	Italy	30.3	11	Australia	26.6	11	Indonesia	18.5
12	Germany	30.9	12	Germany	27.0	12	Australia	19.1
13	India	32.4	13	India	28.8	13	South Africa	19.3
14	Brazil	34.0	14	France	29.8	14	India	21.1
15	South Africa	34.6	15	South Africa	29.8	15	**United Kingdom**	**22.3**
16	France	35.0	16	Brazil	30.7	16	United States	23.2
17	Argentina	35.0	17	Argentina	32.3	17	Brazil	23.9
18	United States	40.5	18	United States	34.9	18	Japan	27.0
19	Japan	40.8	19	Japan	36.0	19	Argentina	27.0

3. 2012 RANKINGS FOR OECD COUNTRIES

The choice of G20 as a comparison group is somewhat arbitrary: one can question whether, for example, Turkey and Saudi Arabia are the most appropriate comparators for the UK. To broaden the comparison we now consider the UK in the context of the group of countries that are members of the Organisation for Economic Co-operation and Development (OECD), which are listed in Table 2.

The OECD is an international economic organisation of 34 countries, founded in 1961, to stimulate economic progress and world trade. This provides a much broader group, which includes most European Union countries as well as Switzerland. These countries are arguably a more appropriate comparator group for the UK since they include most of the world's developed economies, with many located in Europe. The inclusion of fast growing Eastern European countries could also be important since these countries may be alternative locations for production. In 2007 OECD countries accounted for 25 of the largest 30 recipients of foreign direct investment.[6]

Many of the G20 countries analysed above are also members of the OECD, but some are not: Saudi Arabia, Russia, Indonesia, China, India, Brazil, South Africa and Argentina are not OECD members. In subsequent sections of the report we analyse the position for all countries that are members of the G20, the OECD or both, a total of 42 countries.

Table 2 provides rankings for statutory tax rate and corporate tax bases in the OECD countries.[7] The measure of the statutory rate is the same as that used in the previous section. The measure of the tax base is the net present value of capital allowances permitted for an investment expressed as a percentage of the initial cost of the asset. For example, if an asset costing £100 was allowed a capital allowance of £25 in each of the four years following the investment, then the measure would be the present value of the four allowances of £25 expressed as a proportion of £100. We take the weighted average of this measure across the different types of capital assets considered in this report.

The first column of Table 2 shows the ranking of the statutory rate. Of the 33 OECD countries analysed, the United Kingdom is ranked 18th. This is a one place improvement over the equivalent 2011 ranking. This ranking appears much less favourable to the UK as a location than the comparison with G20 countries. Amongst OECD countries, the UK is in the bottom half of the ranking, trailing behind countries such as Ireland, all of the Central European countries, Switzerland and the Netherlands. More generally, OECD statutory tax rates range from 12.5% in Ireland to 40.8% in Japan in 2012.

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6 See International Financial Statistics (April 2012), Annual Series.

7 We exclude Estonia, which does not have a conventional corporation tax. Instead, Estonia charges a distribution tax on distributed profits, including transactions that are considered as hidden profit distributions. So the corporation tax rate is zero, and there are no capital allowances.

The second column of Table 2 shows the ranking of the corporate tax base. The UK is ranked 32nd among the OECD countries: only Chile has a broader tax base, with less generous allowances; Chile has no allowances for patents and very small allowances for plant and machinery. This is the only country in either the G20 or the OECD to have smaller allowances than the UK.

Table 3 presents our estimates and rankings for the effective average and effective marginal tax rates for the OECD countries. As is the case for the G20 rankings, the UK is ranked lower for both the EATR and the EMTR than for the statutory tax rate. For the EATR, the UK is ranked 22nd among the 33 OECD countries, an improvement of 3 places from 2011. For the EMTR, the UK is 31st in 2012, the same as 2011. Based on the latter measure especially, the UK is one of the least competitive countries for corporation tax in the OECD.

Table 2. Ranking of statutory tax rates and statutory tax bases, OECD countries, 2012.

Ranking	Country	Statutory tax rate (%)	Country	PV of capital allowances (% of cost)
1	Ireland	12.5	Greece	79.3
2	Slovenia	18.0	Slovak Republic	77.8
3	Poland	19.0	Belgium	75.8
4	Czech Republic	19.0	Switzerland	73.9
5	Slovak Republic	19.0	South Korea	73.8
6	Chile	20.0	Spain	73.1
7	Turkey	20.0	Czech Republic	73.1
8	Greece	20.0	France	73.0
9	Iceland	20.0	Portugal	72.3
10	Hungary	21.0	Israel	72.2
11	Switzerland	21.2	Luxembourg	70.8
12	South Korea	22.0	Sweden	70.0
13	Finland	24.5	Iceland	69.2
14	Austria	25.0	Finland	68.4
15	Israel	25.0	Denmark	67.9
16	Denmark	25.0	Turkey	67.5
17	Netherlands	25.0	Italy	66.5
18	**United Kingdom**	**26.0**	Mexico	65.6
19	Sweden	26.3	Slovenia	65.0
20	Norway	28.0	Australia	65.0
21	New Zealand	28.0	Ireland	64.9
22	Canada	28.0	Canada	64.8
23	Luxembourg	28.8	Austria	62.5
24	Portugal	29.5	United States	62.0
25	Mexico	30.0	Germany	61.1
26	Australia	30.0	Hungary	60.4
27	Italy	30.3	Norway	60.4
28	Germany	30.9	Poland	59.0
29	Belgium	34.0	Netherlands	58.3
30	France	35.0	Japan	56.7
31	Spain	35.3	New Zealand	55.5
32	United States	40.5	**United Kingdom**	**46.5**
33	Japan	40.8	Chile	41.4

Note: We do not include Estonia in rankings of OECD countries as it does not have a conventional corporation tax.

Table 3. Ranking of effective tax rates, OECD countries, 2012.

Ranking	Country	EATR (%)	Country	EMTR (%)
1	Ireland	11.1	Italy	-10.0
2	Slovenia	15.7	Greece	5.2
3	Slovak Republic	15.9	Switzerland	7.1
4	Czech Republic	16.1	South Korea	7.2
5	Greece	16.1	Ireland	7.3
6	Poland	16.7	Slovak Republic	7.4
7	Turkey	16.9	Netherlands	8.1
8	Switzerland	17.4	Czech Republic	8.3
9	Iceland	17.7	Turkey	8.7
10	South Korea	18.0	Slovenia	9.7
11	Hungary	18.6	Poland	10.7
12	Netherlands	19.1	Luxembourg	11.2
13	Chile	20.2	Iceland	12.0
14	Israel	21.3	Israel	12.1
15	Austria	21.6	Hungary	12.5
16	Finland	22.0	Austria	13.1
17	Denmark	22.4	Belgium	13.5
18	Italy	23.0	Portugal	14.9
19	Sweden	23.2	Canada	15.8
20	Luxembourg	23.8	Sweden	16.0
21	Canada	24.4	Finland	16.2
22	**United Kingdom**	**24.8**	Denmark	16.3
23	Portugal	25.2	Mexico	17.1
24	New Zealand	25.8	France	17.9
25	Norway	25.9	Spain	18.2
26	Mexico	26.1	Germany	18.2
27	Australia	26.6	Australia	19.1
28	Germany	27.0	Chile	20.7
29	Belgium	28.1	New Zealand	21.0
30	France	29.8	Norway	21.5
31	Spain	30.0	**United Kingdom**	**22.3**
32	United States	34.9	United States	23.2
33	Japan	36.0	Japan	27.0

4. TAX REFORMS: 2011 AND BEYOND

In this section we discuss corporation tax reforms in G20 and OECD countries. We begin in Section 4.1 with reforms that took place over the last year, which helps compare the 2011 and 2012 rankings. Section 4.2 presents reforms planned for the years 2012-2015. In Section 4.3 we use these reforms to produce rankings of the statutory tax rate and the effective tax rates for 2015, based on existing regimes and already announced reforms, for a combined sample of G20 and OECD countries.

4.1 REFORMS IN 2011 AND 2012

As is well known, the UK has significantly reformed its corporation tax recently, even leaving to one side changes to international aspects of the tax. The main tax rate was cut from 30% to 28% in April 2007. Further cuts brought the rate down to 26% in April 2011, and will gradually reduce the rate to 22% by April 2014. These rate cuts have partly been matched by base broadening. In particular, capital allowances for industrial buildings, which were permitted at 4% before April 2008, were reduced by 1 percentage point each year before finally being abolished in April 2011. Allowances on plant and machinery were also reduced from 25% to 20% in April 2008, and to 18% from April 2012.

But the UK is far from the only country to have undertaken reforms of its corporation tax in the last year. Reforms that took place between January 2011 and January 2012 are summarised briefly in Table 4.

A number of countries have reduced their corporation tax rates.

Canada has been gradually lowering its federal rates of corporation tax. The main federal rate was 21% until 2007. In 2007 Canada began a gradual reduction to 15% by 2012. The cut from 16.5% in 2011 to 15% in 2012 shown in Table 4 is the last stage of this reform. Finland announced a cut to its main corporation tax rate from 26 percent to 24.5 percent in 2012. In 2011 Greece enacted a tax law aimed at “Combatting tax evasion and organization of the tax audit authorities”. This included a cut to the main corporation tax rate from 24 percent to 20 percent in 2012.

New Zealand cut its corporation tax rate from 30% to 28% from 2011/2012, with the aim of making its tax system “fairer, more sustainable and more supporting of economic growth" and to "encourage companies to invest."[8] Slovenia cut its main rate of corporation tax from 20% in 2011 to 18% in 2012. Slovenia also proposed further cuts to 17% in 2013 and 16% in 2014. South Korea cut its main rate of corporation tax from 22% to 20% in 2012. The changes in South Korea were "aimed at facilitating sustainable growth and job creation, promoting fair competition, and improving fiscal conditions".[9]

Table 4. Summary of tax reforms, January 2011 to January 2012.

Country	Reform
Canada	Main (federal) corporation tax rate cut from 16.5% to 15%.
Chile	Abandoned planned reduction of corporation tax rate in 2012; main corporation tax rate increased from 18.5% back up to 20%.
Finland	Main corporation tax rate cut from 26% to 24.5%.
France	The 3.3% tax surcharge on the tax liability was temporarily increased to 5%.
Greece	Main corporation tax rate cut from 24% to 20%.
Iceland	Main corporation tax rate increased back up from 18% to 20%.
India	The 7.5% surcharge on main rate of corporation tax cut to 5%.
Israel	Abandoned planned gradual reduction of personal income tax rates and corporate income tax rates from 2012 to 2016; main corporation tax rate increased from 24% back up to 25%.
Italy	Allowance for Corporate Equity (ACE) and full deductibility of IRAP introduced.
New Zealand	Main corporation tax rate cut from 30% to 28%.
Portugal	2.5% surtax of tax liability increased to 3% (5% for taxable profits exceeding EUR 10 million).
Slovenia	Main corporation tax rate cut from 20% to 18%.
South Korea	Main corporation tax rate cut from 22 % to 20%.
United Kingdom	Main corporation tax rate cut from 28% to 26%; Capital allowances on industrial buildings withdrawn.

However, in other countries, planned cuts to corporation tax rates have been reversed. Under temporary rules provided in 2010 to finance the reconstruction of property losses and damages caused by the earthquake and tsunami of February 2010, Chile increased its tax rate from 17% in 2010 to 20% in 2011. The rate had been set to come down to 18.5% in 2012 and to 17% in 2013. However, in May 2012, the government changed its mind, and held the main tax rate at 20% for 2012.

8 http://www.treasury.govt.nz/budget/2010/speech/b10-spch.pdf

9 IBFD South Korea country news

Also, in Iceland the tax rate was cut from 18% to 15% in 2009/10, before being raised to 18% in 2011 and 20% in 2012. Israel planned a gradual reduction of corporate income tax rates in the years 2012-2016. It started with a reduction of its headline rate from 25% to 24% in 2011. However, the reduction has been abolished and the rate was increased back up to 25% in 2012.

Several countries have recently changed their surcharge taxes. In November 2011, as part of new measures to reduce the public deficit, France proposed a temporary increase in the surcharge on the gross corporation tax liability from 3.3% to 5%. This temporary measure is applicable until 30 December 2013, and applies only to companies with a turnover exceeding EUR 250 million. Portugal and Luxembourg also raised their surcharge taxes. Portugal raised its surtax from 1.5% to 2.5% in 2011 and then further up to 3% in 2012, with 5% for taxable profits exceeding EUR 10 million. Luxembourg raised its surcharge tax from 4% to 5% in 2011.

However, Spain abolished its corporation tax surcharge at the beginning of 2011. From January 2011, this surcharge is only compulsory for the companies that intend to be a member of the Chamber of Commerce. In 2012, India also lowered the surcharge applicable to the main corporation tax rate from 7.5% in 2011 to 5%. This followed a reduction in 2011 from 10%. The government has announced its intention to phase out the surcharge.[10]

Finally, in 2011, the new Italian government introduced an Allowance for Corporate Equity (ACE), along the lines of that proposed in 1991 by the Institute of Fiscal Studies and recently championed by the IFS *Mirrlees Review* (Mirrlees et al. 2011). This measure gives an allowance to equity-financed investment which is broadly equivalent to the deductibility of interest payments available for debt-financed investment. Although this applies only to new investment financed by new equity and retained earnings, it significantly reduces the costs of such new investment, which is reflected in the very low EMTR for Italy in 2012. The revenue cost of this allowance should grow over time. In addition, from 2012 it will be possible to fully deduct from corporate income tax the Italian Regional Income Tax on Productive Activities (IRAP) paid on labour costs.

[10] indiabudget.nic.in/ub2011-12/bs/bs.doc

4.2 2012 AND BEYOND

We now summarise reforms that have already been proposed for years 2012 - 2015. Our main source of information is the IBFD Tax Research Platform that publishes news regarding the announcements of corporate tax reforms around the world. We briefly describe the reforms in Table 5; we include a reform in the USA that has been proposed but not yet legislated.

Out of 42 OECD and G20 countries, 11 have already proposed to reform their corporation taxes between 2012 and 2015. Of course, more reforms are likely to be announced for this period in the future.

Of these 11 counties, 7 have announced reductions in their main corporation tax rates: Chile, Estonia, Japan, Mexico, Slovenia, the UK and the USA.

Chile originally announced plans to cut its corporation tax rate to 17%. However, following its earthquake and the reversal of the cut planned for 2012, this must now be considered to be uncertain. We nevertheless include this reform in our analysis since the government has not yet announced an abandonment of the plans. Japan has announced a cut in its main federal corporation tax rate from 30% to 25.5% in April 2012. However, due to the recent earthquake, Japan has also implemented a temporary surcharge of 10% on the new rate. This will result in a rate of 28.05% for fiscal years between 1 April 2012 and 31 March 2015.

Mexico will reduce its tax rate from 30% to 29% in 2013 and to 28% from 2014. Slovenia has announced a gradual reduction in its corporation tax rate from 20% to 16% by 2014.

The UK will proceed with the reforms as amended in the 2012 March budget, which will gradually reduce the main corporation tax rate to 22% by 2015. The United States has also proposed a reduction in the federal corporation tax rate from 35% to 28%. However, it seems unlikely that such a major reform will be implemented before the 2012 presidential elections. While we include this tax reform in Table 5, we do not include it in the subsequent analysis.

In addition, Sweden has announced it will reduce the corporate tax rate, but details will only be announced in the autumn of 2012. Estonia has announced plans to cut its distribution tax, levied on the gross amount of the profit distribution, from 21% to 20% from 2015.

Table 5. Proposed corporation tax reforms, 2012-2015.

Country	Reform
Canada	50% straight-line accelerated capital cost allowance for investment in manufacturing to be abolished in 2014.
Chile	Main corporation tax rate to be cut from 20% to 17% in 2013.
Estonia	Distribution tax rate to be cut from 21% to 20% in 2015.
France	5% tax surcharge on tax liability to be abolished in 2014.
Japan	Main corporation tax rate to be cut from 30% to 28.05% in 2012, and to 25.5% in 2015.
Mexico	Main corporation tax rate to be cut from 30% to 29% in 2013 and to 28% in 2014.
Slovenia	Main corporation tax rate to be cut from 18% to 17% in 2013 and to 16% in 2014.
South Africa	Secondary tax on companies to be replaced by a withholding tax on dividends in 2012. Main tax rate will become 28%.
Sweden	Main corporation tax rate to be cut, details to be announced.
United Kingdom	Main corporation tax rate cut from 26% to 24% in April 2012, to be cut to 23% in April 2013 and then 22% in April 2014. Capital allowance for machines cut from 20% to 18% in April 2012; patent box with 10% tax rate to be introduced in April 2013.
United States (proposed only)	Federal corporation tax rate to be cut from 35% to 28% in 2013.

Two countries - France and South Africa – have announced plans to abolish surcharges. France will withdraw the temporary surcharge of 5% it imposed in 2012. South Africa will replace the secondary tax on companies (STC) with a withholding tax on dividends, and will only charge companies the headline rate of 28% instead of the maximum combined rate of 34.55% currently charged.

Australia had previously made a commitment to reduce its main headline corporation tax rate from 30% to 29% from July 2013. However, the government announced in May 2012 that this reduction to the corporation tax rate will not now proceed.

In addition to changes in rates, two countries – the UK and Canada - have announced reforms to various aspects of the tax base. As is well known, the UK reduced the allowance rate for plant and machinery to 18 percent from April 2012. It will also introduce a 10 percent rate of tax for income from patents (so called "patent box"). Canada is planning to withdraw the 50% straight-line accelerated capital allowance rate for investment in machinery and equipment that was in place between 2007 and 2012. It will revert back to the old rate of 30% on a declining-balance basis.

4.3 2015 RANKINGS

In our 2011 report we attempted to identify the effects of the UK government's proposed reforms by comparing the UK position after all the UK reforms had been implemented with that of other countries in 2011. In this report, we take a more comprehensive approach, taking into account reforms in all G20 and OECD countries announced as of May 2012. More specifically, we use the information in Section 4.2 to construct rankings for OECD and G20 countries for 2015. Table 6 first summarises the position of the UK in the 2015 rankings. Details for each country are provided for the statutory tax rate in Figure 1, and for the two effective tax rates in Table 7. Of course, these rankings may in practice be affected by reforms announced after May 2012.

Table 6. UK ranking amongst G20 and OECD countries 2012 v 2015.

	2012	2015
Statutory rate	22nd	14th
EATR	25th	16th
EMTR	37th	32nd

In 2015, the statutory tax rates will range from 12.5% in Ireland to 40.5% in United States. Reducing the main UK statutory tax rate from 26% to 22% will raise the UK to 14th (joint with South Korea) amongst the 41 OECD and G20 countries. Within G20 countries, by 2015, the UK will overtake Indonesia and China to climb up from 7th to 4th, level with South Korea. Only the three G20 countries with rates of 20% - Russia, Saudi Arabia and Turkey - will lie above the UK in the G20 rankings. With respect to the OECD countries, reducing the rate to 22% will raise the UK from 18th in 2012 to 12th in 2015. However, many OECD countries have low rates: the UK's rate will remain significantly above the 12.5% in Ireland as well as several potential Eastern European destinations for capital investment.

If the reduction in the federal corporation tax rate in the United States were to take place as proposed, a typical overall tax rate, including state level taxes, would be around 33.5%. This would move the USA away from its position as having the highest rate to the 7th highest.

The EATR for UK will decrease from 24.8% in 2012 to 20.3% in 2015. This will raise the UK to 16th. There is a smaller improvement in the UK's ranking amongst G20 countries, of 3 places from 8th to 5th.

In 2015, the UK's EMTR will be 18.9%, lower than its 2012 level of 22.3%. This would only raise the UK's ranking to 32nd, which is still very low. This reduction would improve the UK's ranking amongst G20 countries by only one place from 15th to 14th. Amongst OECD countries, the UK would move up to 29th – still an extremely low ranking.

If the USA reduced its federal tax rate as proposed this would also significantly affect its effective tax rates. The EATR would be reduced to 28.8 percent and the EMTR to 18.2 percent. This would raise the US rankings to 35th for the EATR and 31st for the EMTR. Provided no tax base reforms occur, this would bring the US EMTR below that of the UK, in spite of the UK's much lower statutory rate.

Figure 1. Ranking of statutory corporation tax rates, 2015; combined OECD and G20 (%).

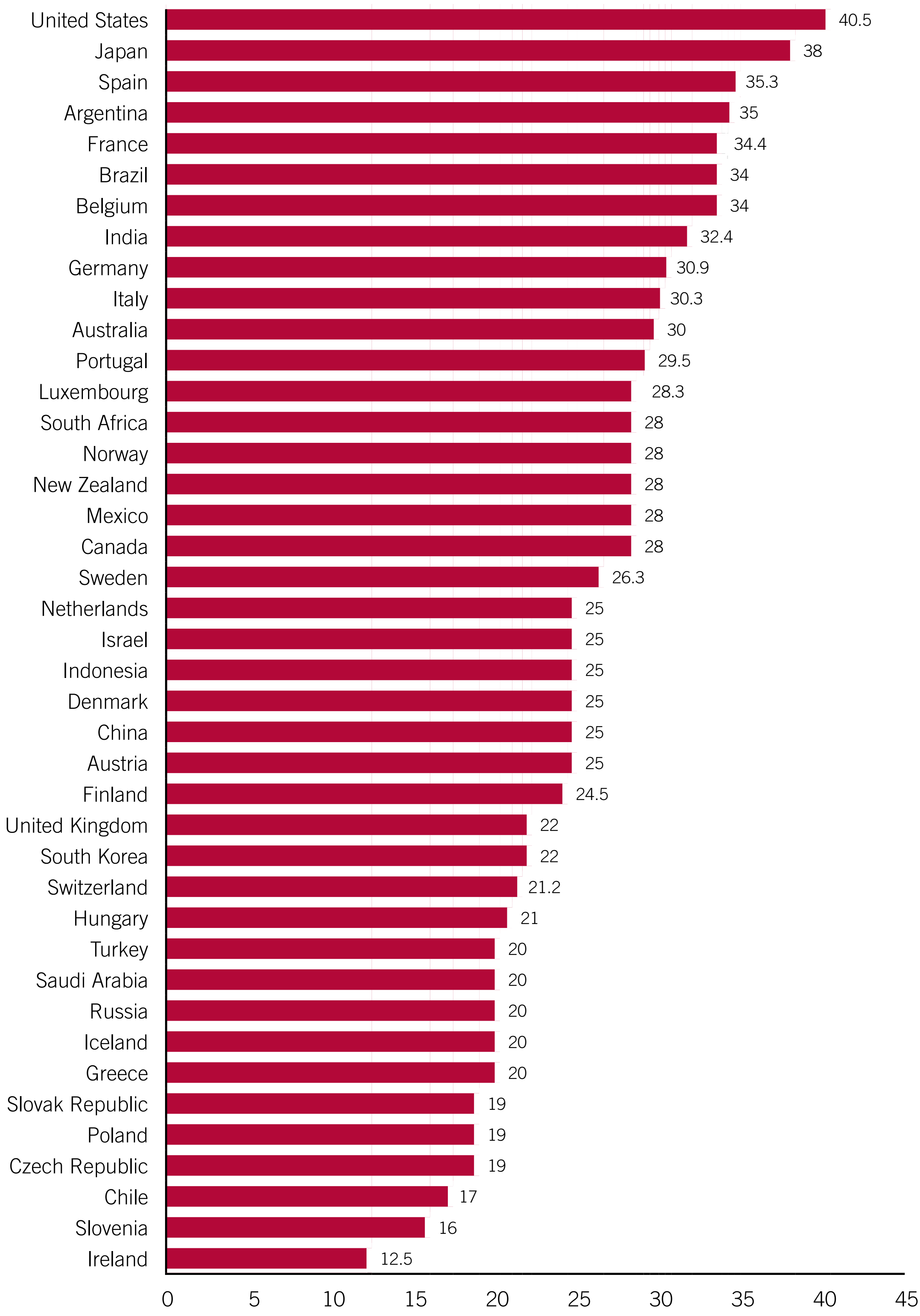


Table 7. Ranking of effective tax rates, OECD and G20 countries, 2015.

Ranking	Country	EATR (%)	Ranking	Country	EMTR (%)
1	Ireland	11.1	1	Italy	-10.0
2	Slovenia	14.0	2	Greece	5.2
3	Slovak Republic	15.9	3	Switzerland	7.1
4	Czech Republic	16.1	4	South Korea	7.2
5	Greece	16.1	5	Ireland	7.3
6	Poland	16.7	6	Slovak Republic	7.4
7	Russia	16.7	7	Russia	7.9
8	Turkey	16.9	8	Netherlands	8.1
9	Chile	17.2	9	Czech Republic	8.3
10	Switzerland	17.4	10	Slovenia	8.5
11	Iceland	17.7	11	Turkey	8.7
12	South Korea	18.0	12	Poland	10.7
13	Saudi Arabia	18.1	13	Luxembourg	11.2
14	Hungary	18.6	14	Iceland	12.0
15	Netherlands	19.1	15	Israel	12.1
16	**United Kingdom**	**20.3**	16	Hungary	12.5
17	Israel	21.3	17	Austria	13.1
18	Austria	21.6	18	Saudi Arabia	13.4
19	Finland	22.0	19	Belgium	13.5
20	China	22.4	20	South Africa	14.8
21	Denmark	22.4	21	Portugal	14.9
22	Italy	23.0	22	Mexico	15.7
23	Indonesia	23.0	23	Sweden	16.0
24	Sweden	23.2	24	Finland	16.2
25	Luxembourg	23.8	25	China	16.2
26	South Africa	24.1	26	Denmark	16.3
27	Mexico	24.4	27	France	17.5
28	Portugal	25.2	28	Chile	17.6
29	Canada	25.4	29	Spain	18.2
30	New Zealand	25.8	30	Germany	18.2
31	Norway	25.9	31	Indonesia	18.5
32	Australia	26.6	32	**United Kingdom**	**18.9**
33	Germany	27.0	33	Australia	19.1
34	Belgium	28.1	34	Canada	19.7
35	India	28.8	35	New Zealand	21.0
36	France	29.3	36	India	21.1
37	Spain	30.0	37	Norway	21.5
38	Brazil	30.7	38	United States	23.2
39	Argentina	32.3	39	Brazil	23.9
40	Japan	33.6	40	Japan	24.7
41	United States	34.9	41	Argentina	27.0

5. A NEW WAVE OF COMPETITION?

The reforms summarised above in Tables 4 and 5 indicate that there is an appetite amongst G20 and OECD governments to consider reforms of their corporation taxes. Most of the reforms have been in the direction of reducing statutory and effective tax rates, consistent with governments attempting to promote investment and growth despite fiscal deficits. Of course, statutory and effective corporation tax rates have been falling for several decades. This is typically interpreted as the outcome of a process of competition between governments to attract inward investment; there is a large theoretical and empirical literature investigating this phenomenon. In the light of the recent reforms, an interesting question that arises is whether the response of governments to the financial and economic crisis will trigger a new wave of tax competition. We now address this question.

We begin in Figure 2 by documenting what has happened to statutory rates in the G20 and OECD over the last thirty years for a subset of 28 countries for which we have data back to 1983. The unbroken line represents an average of these 28 countries.[11] As is well known, rates have fallen substantially over this period – the average has fallen from nearly 50% to below 30%. Moreover the decline in the average rate to 2012 has been fairly continuous.

Figure 2 also shows a measure of the variation in rates across countries. Each dotted line is one standard deviation away from the average; this summarises the distribution across countries in each year. As is clear from the Figure, the standard deviation has also been declining, indicating that rates have been converging as well as falling.

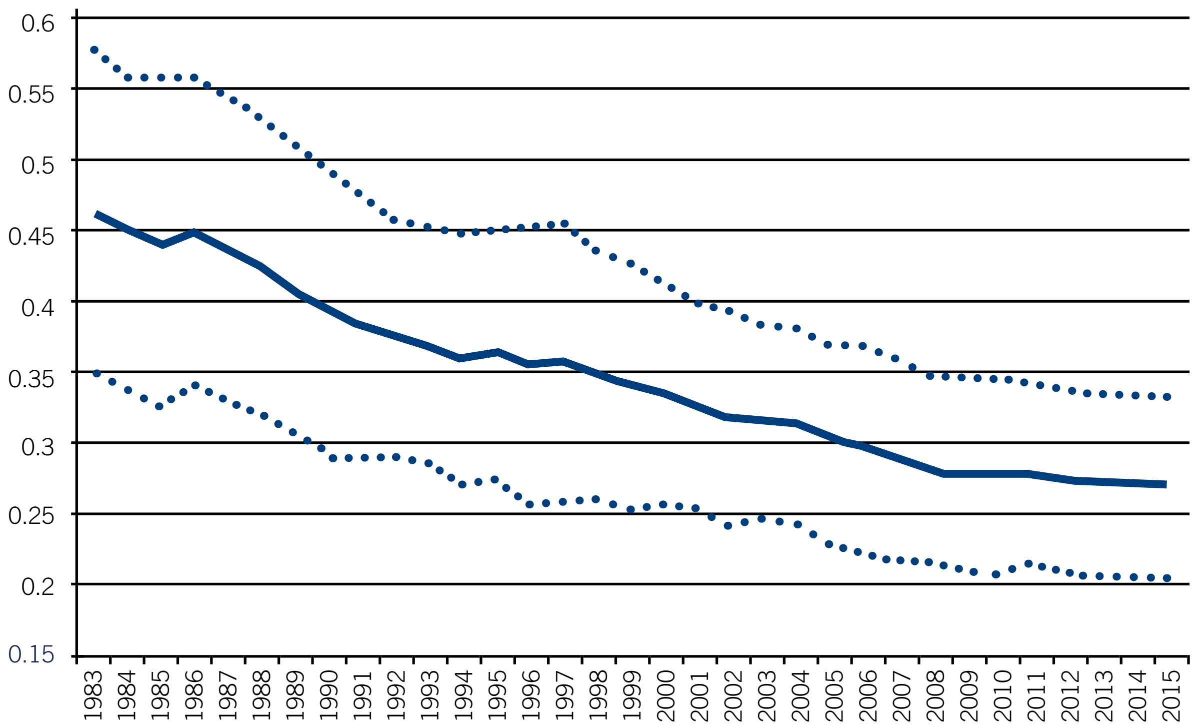
Both the reduction and the convergence of rates are consistent with a sustained process of tax competition over three decades. We would like to address the question of whether this process has intensified following the financial and economic crisis.

We begin in Table 8 by summarising the number of statutory tax rate reductions that have occurred in the past and that have recently been announced. We use 5-year time periods to smooth for random changes between years. We examine the number of rate cuts as well as the number for each particular group – OECD, G20 and G7. The periods with the highest number of rate cuts have been since 2000: there were 50 cuts between 2000 and 2004 and 59 between 2005 and 2009. The total number of tax cuts already announced for 2010 – 2015 is well short of these numbers, at 33, though this already

[11] We have data for the full sample of 42 countries from 1996; the trend looks very similar for the larger group.

matches the second half of the 1990s and exceeds the second half of the 1980s. In any case, this comparison should clearly be interpreted with caution since there is plenty of time for further cuts to be announced before the end of this period.

Figure 2. Corporate tax rates, 28 G20 and OECD countries, 1983 - 2015.



Note: The unbroken line is the mean tax rate over the 28 countries. Each dotted line represents one standard deviation away from the mean.

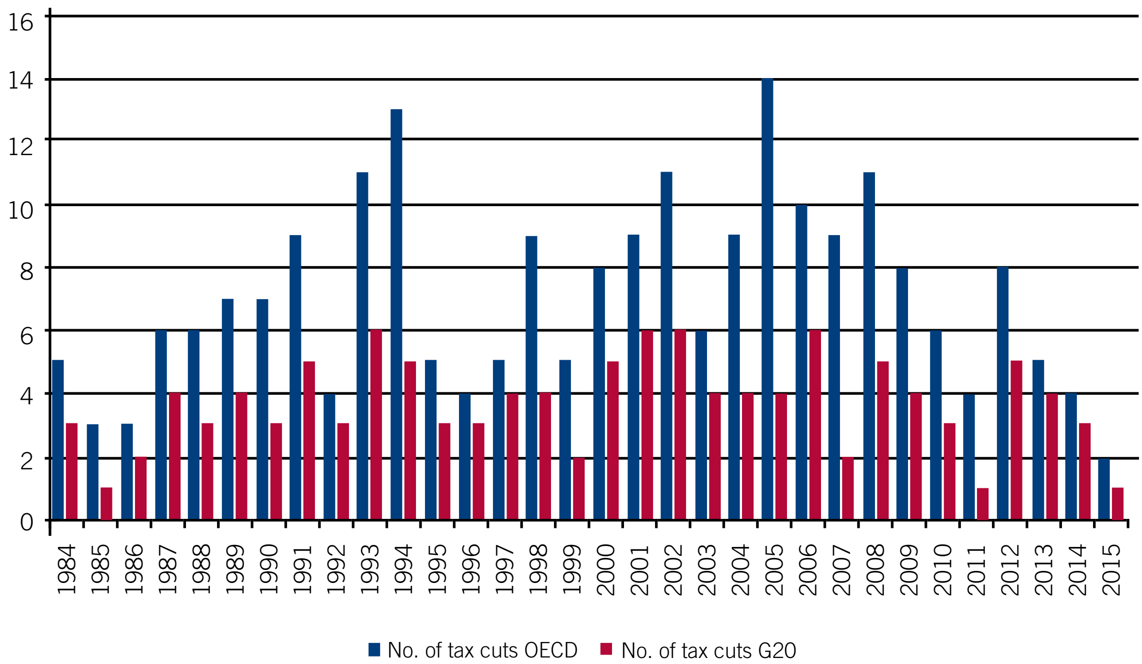
Table 8. Number of tax rate cuts, 5-year periods.

	No. of tax cuts G20+OECD	No. of tax cuts OECD	No. of tax cuts G20	No. of tax cuts G7
1985-1989	26	25	14	11
1990-1994	48	44	22	13
1995-1999	33	28	16	8
2000-2004	50	43	25	13
2005-2009	59	52	21	7
2010-2015	33	29	17	10

The situation varies between groups of countries. For OECD countries, the number of cuts that have occurred and that have been announced between 2010 and 2015 is relatively small relative to recent history. However, the number appears more significant for the G20, and still more so for G7 countries. For G7 countries the number of tax cuts enacted and proposed for 2010 – 2015 is already larger than the number of cuts that occurred in 2005 – 2009.

Figure 3 presents the number of cuts in each year separately, for both OECD countries and G20 countries. There is clearly a great deal of variation between individual years. The number of cuts was high in 2008 for both OECD and G20 countries, but declined as the financial crisis developed. A very low number of rate cuts was recorded in 2011. However, in 2012 the number rebounded with 8 rate cuts in OECD countries and 5 in G20 countries. Relatively high numbers of rate cuts have also already been announced for G20 countries for 2013 and 2014.

Figure 3. Number of corporate tax rate cuts: 1983 - 2015.



To investigate this further, we examine the size of tax cuts. Figure 4 shows the average size of corporation tax cuts in each year, measured in percentage points (i.e. a reduction from, say 25% to 20%, would be a 5 percentage point reduction). Figure 5 presents the cuts in percentage terms (so a cut from 25% to 20% would be a 20 percent reduction). These figures combine OECD and G20 countries.

Figure 4. Size of corporate tax rate cuts 1984 - 2015: percentage points.

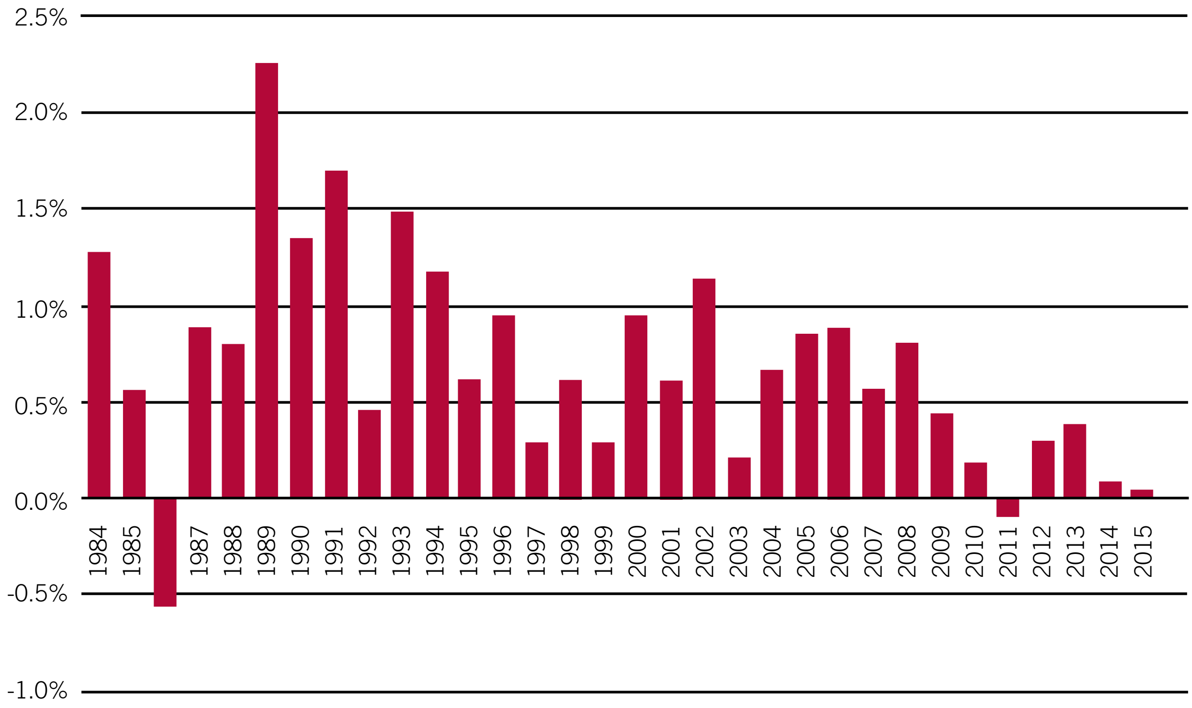
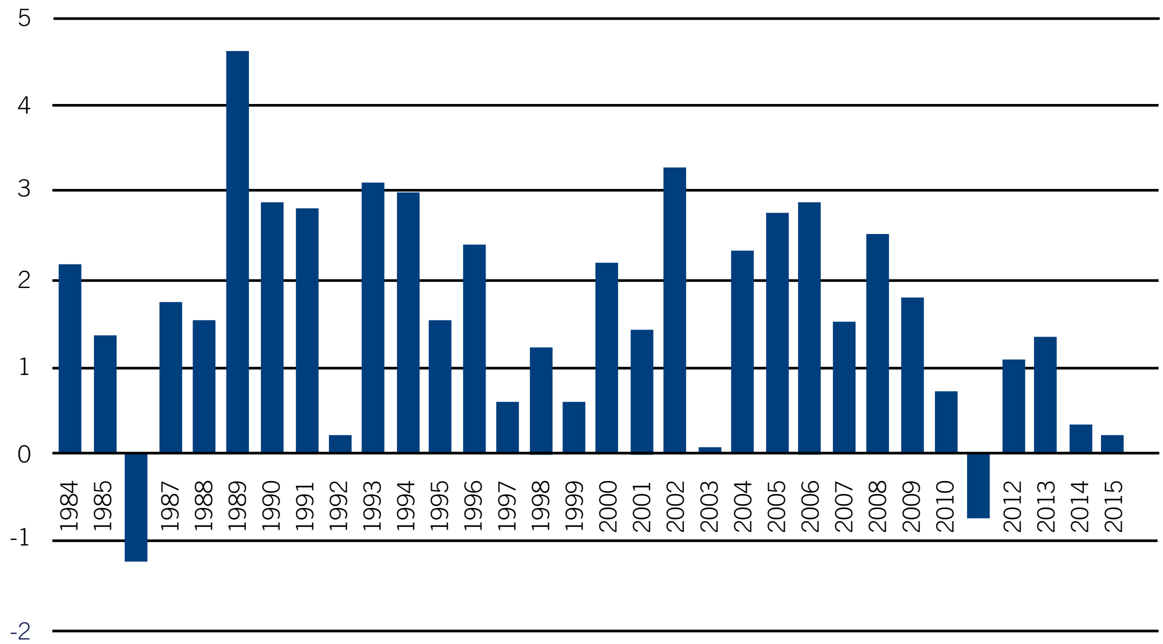


Figure 5. Average size of corporate tax rate cuts: 1984 - 2015: percentages.



The size of tax rate cuts in recent years does not appear to be large by the standards of the previous three decades. Perhaps not surprisingly, the largest cuts in percentage point terms were in the late 1980s and early 1990s, when tax rates tended to be much higher. But Figure 4 does not give any indication of significant cuts for 2011, 2012 and later. The cuts that have been announced for these years appear larger in percentage terms since tax rates are already lower than in earlier years. However, even in Figure 5, there is no indication that there is a new wave of particularly intense competition across all G20 and OECD countries.

In Table 9, we revert to considering 5-year windows, as in Table 8. We define a 5-year tax cut as the difference between tax rate in year t and year t-5. Thus for 2015 the tax cut will be the difference between the rate in 2010 and in 2015. Table 9 presents results from 5 year non-overlapping windows. It also considers separately the different groups of countries, and presents results in both percentage point, and percentage terms.

Clearly, as indicated in Figures 4 and 5, the overall corporation tax rate cuts already announced for 2010-2015 are not very large relative to earlier periods. However, the G7 is an exception, with G7 countries proposing to cut their corporation tax rates much more extensively than other countries. In percentage terms, the proposed cuts in the G7 countries for 2005-10 are quite significant, especially since further cuts could yet be announced.

Most of the countries that proposed to reform their tax systems between now and 2015 have statutory tax rates higher than UK. Japan - the country with the highest statutory tax rate in 2012 - will have the highest rate in 2015 as well, in spite of the proposed reforms. These developments may suggest that, so far at least, it has tended to be the countries with the highest tax rates that have focused on rate cuts.

Table 9. Size of tax rate cuts: percentage points and percentages, 5-year periods.

year	OECD and G20	OECD	G20	G7
percentage points				
1985-1990	5.0	5.0	5.5	6.4
1990-1995	4.4	5.2	0.4	-0.03
1995-2000	3.1	3.1	3.3	5.8
2000-2005	3.5	3.6	3.0	1.9
2005-2010	2.9	2.6	3.6	3.2
2010-2015	0.7	0.7	1.3	1.8
percentages				
1985-1990	9.7	9.2	12.3	12.7
1990-1995	7.7	9.9	-1.2	-0.03
1995-2000	6.9	6.9	6.3	11.1
2000-2005	9.8	10.1	7.9	4.6
2005-2010	9.2	8.2	11.3	8.6
2010-2015	2.3	2.2	4.1	5.9

APPENDIX A: METHODOLOGY

The methodology used in this report is that proposed by Devereux and Griffith (1998). It has been widely used in the academic literature as well as by the European Commission and the OECD.

The approach is to consider the implications for corporate taxation of an increase in the capital stock and inventories of a business financed by a proportionate increase in each source of finance. Thus, each asset is increased in proportion to its existing weight in the capital stock, and the increase is financed by debt in proportion to the existing use of debt.

In this report, we analyse two tangible fixed assets, plant and machinery and buildings, intangible assets and inventories. We use data from the annual reports of just under 300,000 European companies from the ORBIS database to identify appropriate weights for each asset. Details of this procedure are described in Devereux and Loretz (2008). The weights used are based on the average size of each asset in these companies, and the average use of debt. The resulting weights are as follows.

Plant and Machinery	25.6%
Buildings	24.0%
Intangible assets	8.7%
Inventories	41.7%
Proportion financed by debt	35.0%

To calculate the effective average tax rate (EATR), we identify the cash flows associated with a one-period investment in a composite of the four assets, financed by debt and equity[12], where we assume a given rate of return on the composite investment. Applying the tax allowances and rates described below allows us to calculate the pre-tax and post-tax net present value of the investment in each country. Devereux and Griffith (1998) define a measure of the EATR to be the difference between the two scaled by the present value of the income stream. This measure has the property that it is equal to the EMTR (defined below) for an investment that just breaks even, but tends towards the statutory tax rate as the rate of profit increases.

To calculate the effective marginal tax rate (EMTR) we analyse the same investment. However, instead of fixing a rate of profit and calculating the net present value, we instead identify the rate of profit that would be required for the investment to break even in the

12 We do not analyse personal taxes, and so the treatment of retained earnings and new equity issues is the same.

presence and absence of tax - that is the cost of capital. In the absence of taxation, the cost of capital is the sum of the required financial rate of return (or discount rate) and the depreciation rate of the composite asset. The cost of capital is typically raised by introducing tax. We define the EMTR to be the change in the cost of capital arising from introducing the tax, expressed as a proportion of the cost of capital in the absence of tax.

This procedure requires values of several parameters. We fix these to be the same across all countries, so that differences in effective tax rates depend only on differences in tax regimes. The values chosen here are similar to those used elsewhere in the literature, notably by the European Commission;[13] this makes our estimates comparable with those used elsewhere. The values are as follows.

Economic deprecation rate (declining balance rate)

Plant and Machinery	17.5%
Buildings	3.1%
Intangible assets	15.35%
Inflation rate	2.5%
Real discount rate	5%
Pre-tax rate of return (for EATR only)	20%

Information on statutory tax regimes was collected primarily from country tax reports of the International Bureau of Fiscal Documentation. This was supplemented from other sources, in particular Devereux et al (2010) and various issues of the Ernst and Young Worldwide Corporate Tax Guide. As far as possible we identify the tax regime in place on 1st January of each year.

We use data on the main rate of corporation tax at national and sub-national levels, including information on whether one is deductible in calculating the other. We use information on capital allowance rates for the different assets.

To make comparisons as fair as possible between countries, we attempt to identify the tax treatment in each country of three specific assets: an item of plant and machinery deemed to have a useful life of 7 years; an industrial building deemed to have a useful life of 25 years; and the purchase of a patent deemed to have a useful life of 10 years. This is again the same approach as used in studies for the European Commission.[14] Definitions of acceptable allowances vary considerably between countries. In some cases there is a clear acceptable rate – in January 2011, for example, the UK permitted a 20% declining balance rate of plant and machinery, a 1 percent straight line rate of industrial buildings and a 25 percent declining balance rate for the purchase of a patent. However, many

[13] See Devereux et al (2010).

[14] See Devereux et al (2010).

countries offer more elaborate schedules, and some rely on the notion of the useful life of the asset for tax purposes: hence the need to define this for the assets we model.

Finally, we also record the acceptable valuation of inventories in each country. The UK tax system, for example, uses the FIFO method which implies that increases in the price of inventories between periods are subject to tax.

In all cases where there is some choice within the tax regime, we assume that the company would use the most tax advantageous approach.

We do not record the entire dataset of tax rates and allowances here. These data are available on the CBT website at www.sbs.ox.ac.uk/centres/tax/Pages/Reports.asp.

APPENDIX B:

Ranking of capital allowances for investment in each fixed asset, 2012.

Ranking	Country	Capital allowances plant and machinery (%)	Ranking	Country	Capital allowances industrial buildings (%)	Ranking	Country	Capital allowances intangibles (%)
1	Netherlands	96.5	1	Greece	67.9	1	Italy	96.5
2	Canada	96.5	2	Belgium	65.0	2	Switzerland	90.4
3	Greece	92.1	3	Slovak Republic	64.9	3	Belgium	86.8
4	South Korea	92.1	4	India	61.1	4	Slovak Republic	86.8
5	South Africa	91.9	5	Spain	55.1	5	Luxembourg	86.8
6	Portugal	88.7	6	Switzerland	55.1	6	Poland	86.8
7	Turkey	87.8	7	South Africa	54.3	7	France	86.8
8	United States	87.3	8	Indonesia	54.3	8	Hungary	86.8
9	Czech Republic	87.2	9	Mexico	54.3	9	Germany	86.8
10	Luxembourg	87.1	10	China	54.3	10	Sweden	85.8
11	Slovenia	86.8	11	Portugal	54.3	11	Czech Republic	84.0
12	Israel	86.8	12	South Korea	54.3	12	Spain	83.3
13	Slovak Republic	86.8	13	Israel	54.3	13	India	82.5
14	Spain	86.5	14	France	54.3	14	**United Kingdom**	**82.5**
15	Russia	86.2	15	Czech Republic	54.2	15	Denmark	81.1
16	Iceland	85.8	16	Russia	52.7	16	Iceland	80.6
17	Sweden	85.8	17	Finland	51.5	17	Japan	78.4
18	Switzerland	85.8	18	Australia	47.5	18	Israel	78.4
19	France	85.8	19	Turkey	47.5	19	Netherlands	73.5

Ranking	Country	Capital allowances plant and machinery (%)	Ranking	Country	Capital allowances industrial buildings (%)	Ranking	Country	Capital allowances intangibles (%)
20	Australia	85.0	20	Brazil	47.5	20	Finland	73.5
21	Finland	82.5	21	Ireland	47.5	21	Brazil	73.5
22	Denmark	82.5	22	Denmark	47.5	22	Slovenia	73.5
23	Hungary	82.3	23	Sweden	47.5	23	Austria	73.5
24	Belgium	82.2	24	Luxembourg	47.5	24	Ireland	73.5
25	Austria	81.1	25	Iceland	47.4	25	South Korea	73.5
26	Saudi Arabia	79.5	26	Italy	45.8	26	New Zealand	73.5
27	Ireland	78.4	27	Saudi Arabia	41.1	27	China	73.5
28	**United Kingdom**	**77.9**	28	Slovenia	38.7	28	Mexico	73.5
29	Norway	77.9	29	Austria	38.7	29	Portugal	73.5
30	Japan	76.7	30	Germany	38.7	30	Greece	73.5
31	Italy	75.7	31	Norway	37.0	31	Norway	73.5
32	Brazil	73.5	32	Canada	35.7	32	Argentina	73.5
33	Mexico	73.5	33	United States	34.6	33	Russia	73.5
34	China	73.5	34	Chile	33.4	34	Indonesia	66.8
35	Argentina	73.5	35	Netherlands	33.4	35	United States	62.9
36	Poland	73.5	36	Poland	33.4	36	Turkey	62.8
37	Germany	73.5	37	New Zealand	30.4	37	Saudi Arabia	58.9
38	New Zealand	72.9	38	Argentina	27.5	38	South Africa	54.3
39	India	71.4	39	Japan	27.5	39	Australia	54.3
40	Indonesia	66.8	40	Hungary	27.5	40	Canada	51.5
41	Chile	62.8	41	**United Kingdom**	**0.0**	41	Chile	0.0

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