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Carbon and energy taxation: the potential to reduce Europe's fiscal deficits

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Carbon prices and energy taxes can play a greater role in Europe's tax systems

They can make a significant contribution to budget consolidation

need for new fiscal strategy is driven by fiscal imbalance and the cost of borrowing

— Treaty on Stability Coordination and Governance 2012 reduced room for fiscal stimulus/manoeuvre

energy taxes and carbon prices

— could raise significant revenue as a fraction of GDP, about ~1%

— impose economic costs which are no higher than and may be lower than other forms of taxation (such as income and value added tax) and offer additional environmental benefits

— create adverse effects on poor households and energy-intensive trade-exposed firms which are politically acutely difficult but can be largely mitigated

— and bring about significant reductions in CO2 emissions – in our proposals, modelling suggests 2.5% per annum by 2020 in Spain, 1.3% in Poland and 1.7% in Hungary

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The innovative element of this study is the comparison between alternative taxes

We evaluate carbon energy taxes compared with direct or indirect (VAT) taxes

CETRiE study modelled tax proposals in Hungary, Poland and Spain, then compared them with direct and indirect taxes that would raise the same revenue

study looked in detail at energy taxation in 9 European countries

— France, Germany, UK, Italy, Spain, Portugal, Poland, Hungary, Greece

we found large variations **between** countries

— highest rate in Portugal (87 €/tCO_2 at PPP exchange rates)

— lowest rate in Poland and France (both 58 €/tCO_2 at PPP exchange rates)

— at market exchange rates, Italy highest (78 €/tCO_2), Poland lowest (35 €/tCO_2), and France in midfield (66 €/tCO_2)

we also found large variations **within** countries

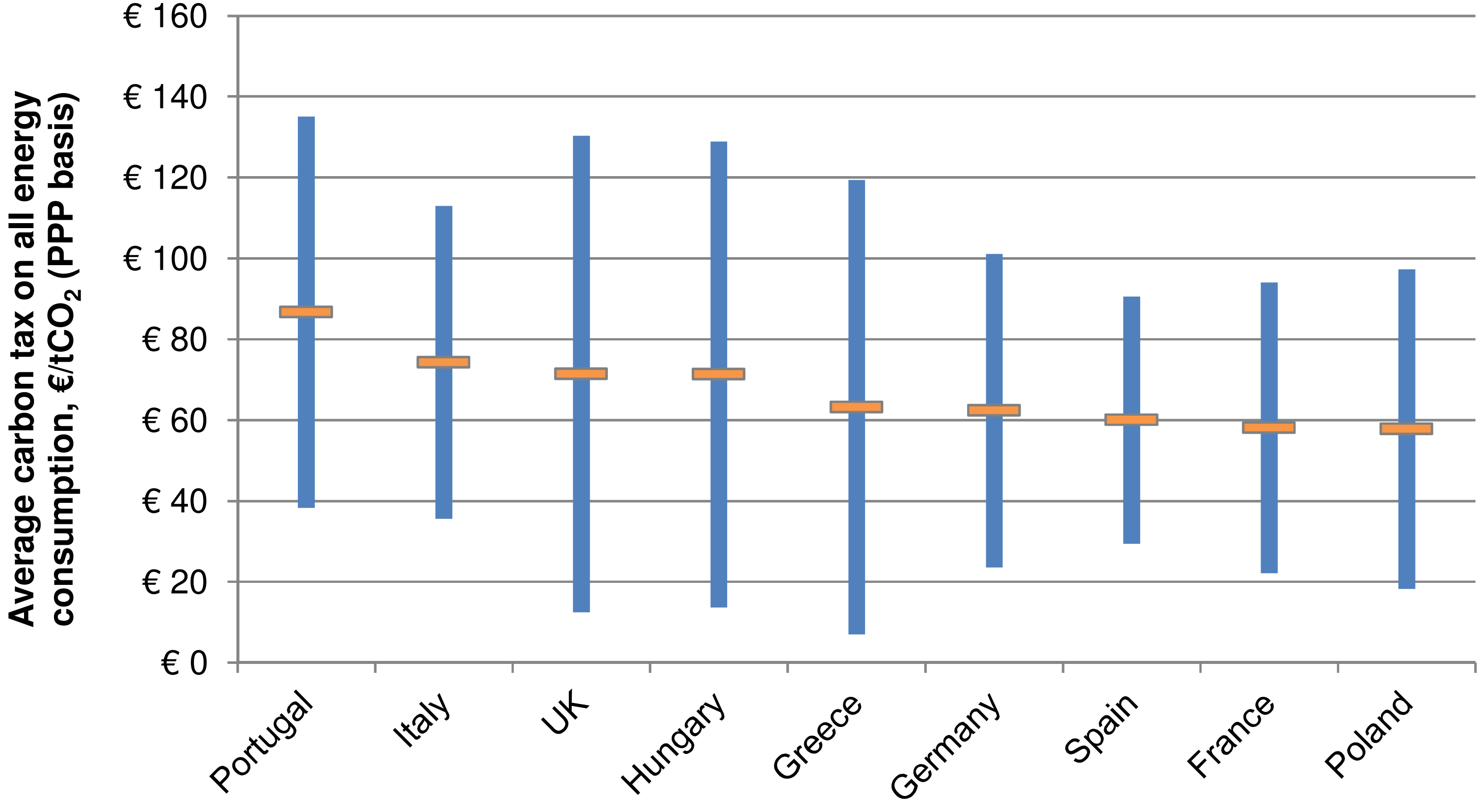
— within Germany, some energy use is only taxes through the EU ETS (e.g. most heavy industry), while others is taxed at 27 €/tCO_2 (residential use of natural gas), €58/tCO_2 (residential electricity) or 280 €/tCO_2 (petrol)

— we plot this variation as energy tax curves

Differences within countries are larger than differences across countries

Portugal, the UK, Hungary and Greece have particularly dispersed energy tax systems

Figure 1. **Our analysis shows large variations both within and across countries**



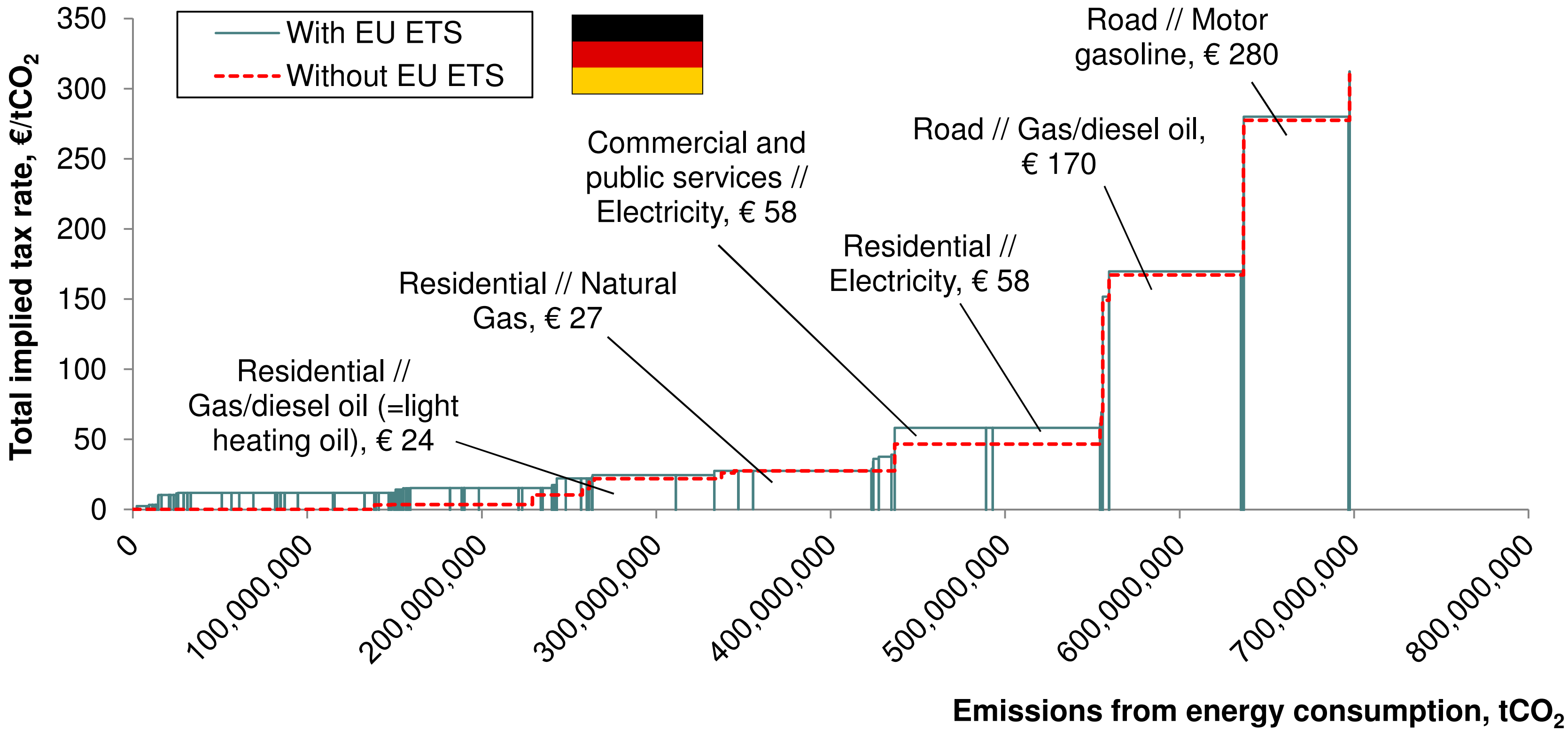
Source: Vivid Economics

Note: Blue bars show the size of one standard deviation, ***not*** *highest and lowest tax rates*

For each country, the analysis yielded energy tax curves which show the total tax burden on each fuel used in each sector

Significant discrepancies are evident across the economy

Figure 2. **In Germany, the gap between diesel and petrol (gasoline) taxation is more than €100/tCO_2**



Source: Vivid Economics

Second, we explored and compared the macroeconomic impacts of rationalising energy taxes

The comparison was with direct and indirect tax packages that raise the same revenues

improved energy taxes have significant revenue-raising potential

- energy tax reform to harmonise rates and reflect externalities might increase total tax revenues in Spain, Hungary and Poland by around **1.0-1.3 per cent of GDP** by 2020

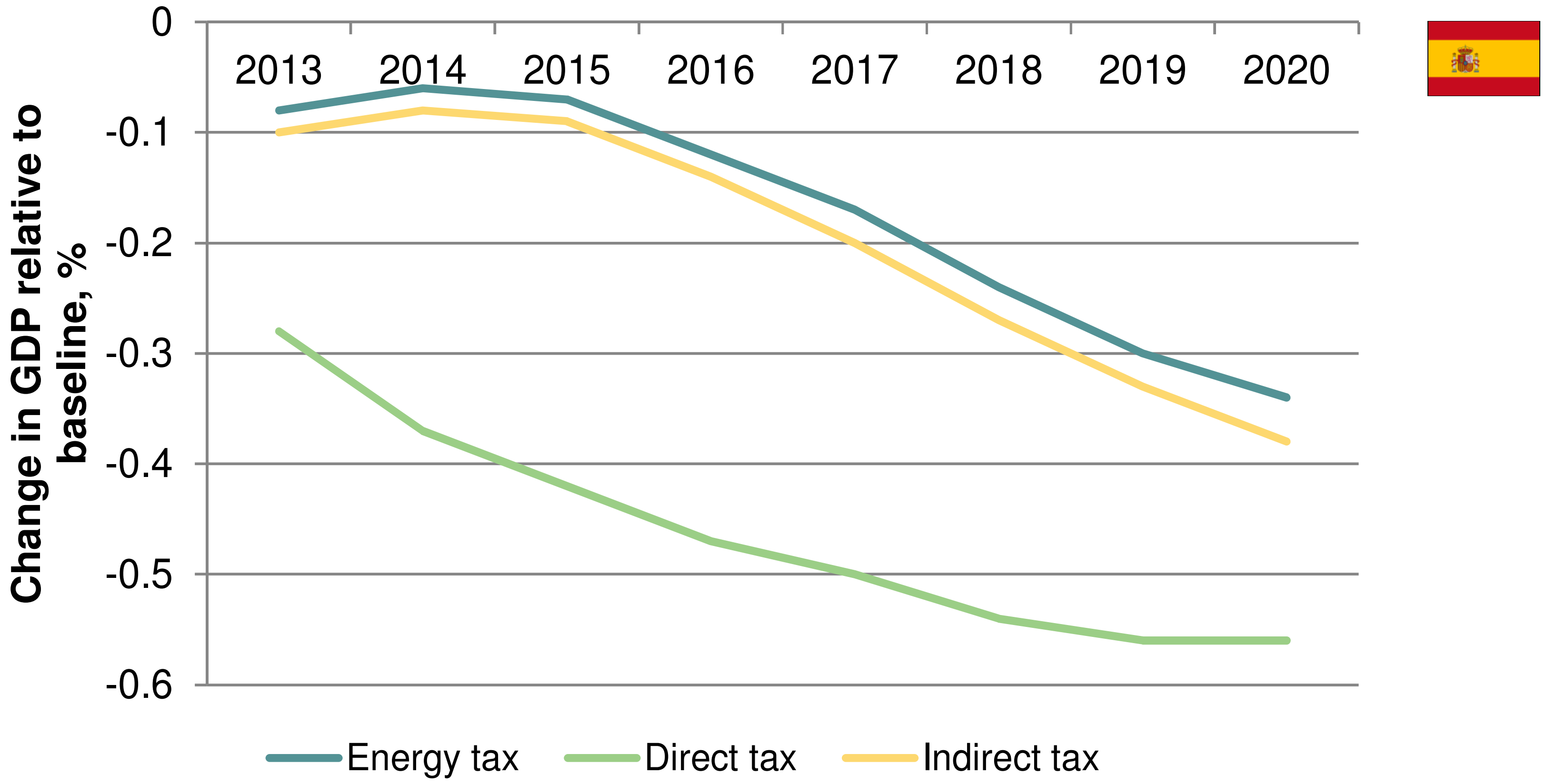
three main reasons why energy taxes perform better than direct and indirect (VAT) taxes

- energy taxes are expected to have a smaller economic impact on GDP growth and employment than direct taxes
  - different impacts in the labour market
- energy taxes have a similar, but often lower, impact on consumption/GDP, than VAT rises
  - energy taxes reduce economic activity outside Europe
- energy taxes reduce consumption of energy-intensive goods and fuels

Results from Spain show that energy taxes are expected to have a smaller impact on GDP than other taxes

This is partly because energy taxes encourage a reduction in energy imports

Figure 3. **The GDP impact from the Spanish energy tax package is smaller than for the other taxes**



Source: Cambridge Econometrics E3ME model

The study also compares the impact of EU ETS tightening with other taxes raising an equivalent amount of revenue

When treating EU ETS tightening as one of multiple ways to raise revenue, it looks attractive

the European Commission is considering a tightening of the EU's emission target

— it has been note that the recent recession has reduced the costs of attaining a tighter target

our analysis on the EU ETS tightening debate is different and in line with the rest of our report:

— taking the need to raise revenue, is tightening the EU ETS a better or worse alternative for doing so?

Results are similar to energy taxes, showing EU ETS tightening as a more attractive revenue raising option than direct taxes

Unlike energy taxes, EU ETS tightening also significantly outperforms on employment

Figure 4. **Tightening the EU ETS cap has a smaller negative impact on EU GDP than raising the same revenues from direct taxes**

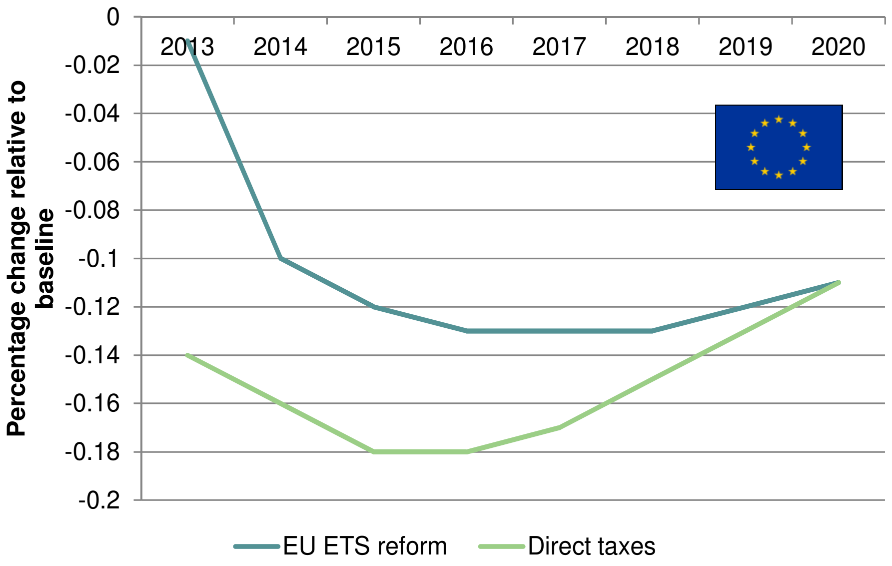
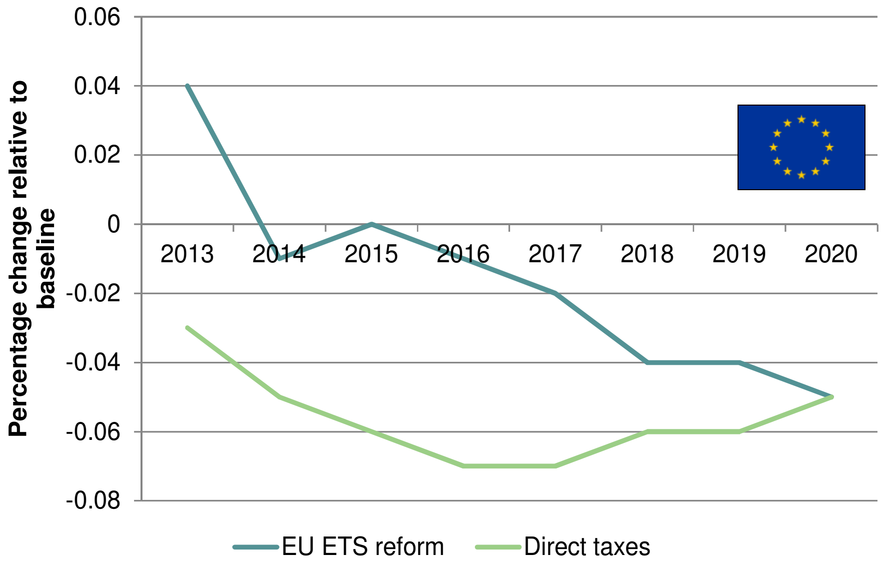


Figure 5. **And a less detrimental impact on employment**

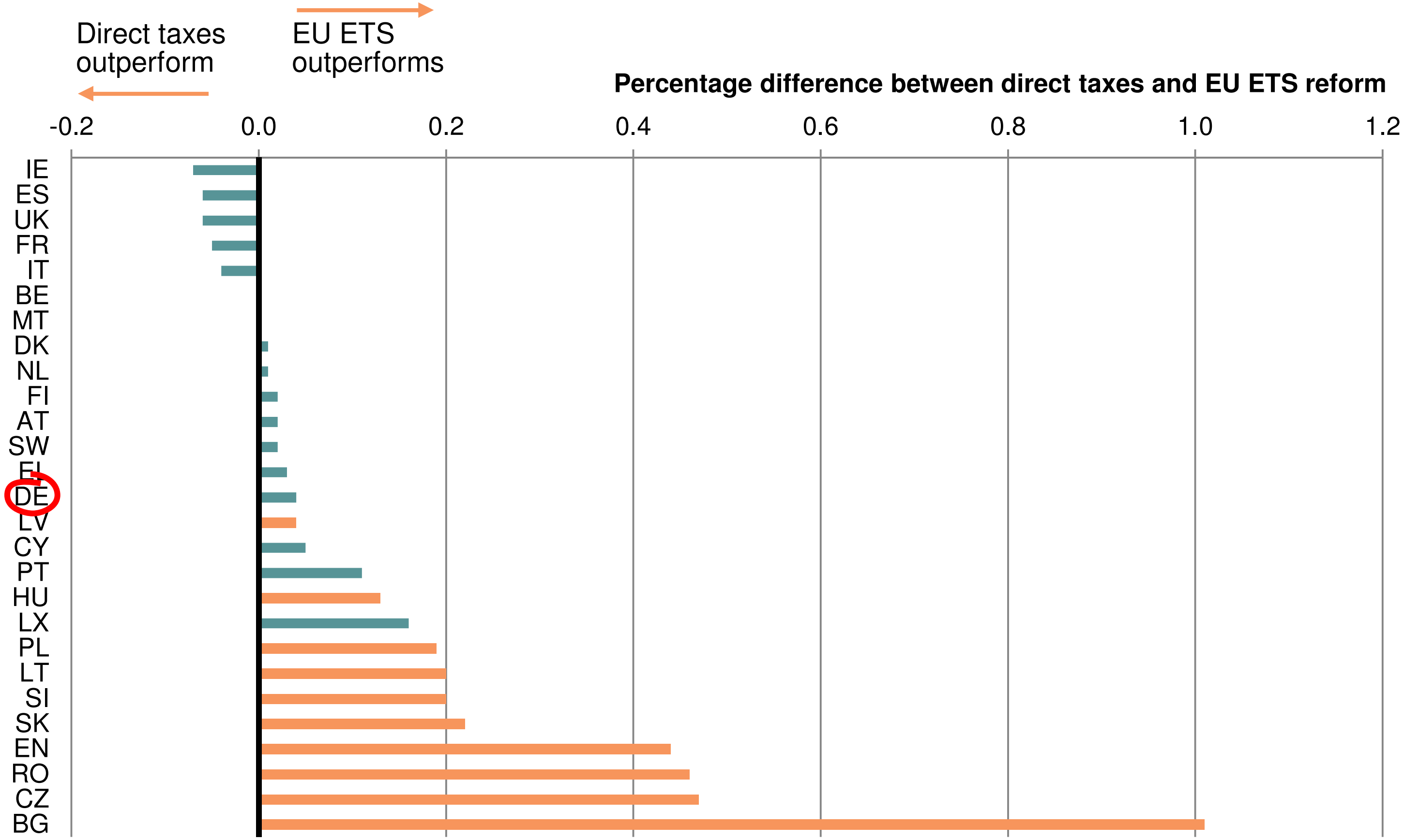


Source: Cambridge Econometrics E3ME model
Note: This scenario assumes that the reduction in certificates comes exclusively from otherwise auctioned certificates; in other words, the number of freely allocated allowances remains unchanged compared to a 20% cap

EU ETS tightening also outperforms direct taxes in most member states individually, especially in new member states

The redistribution of auctioning revenues from old to new member states is noticeable

Figure 6. **In many countries direct taxes reduce GDP by more than 0.2 per cent more than EU ETS reform**



Source: Cambridge Econometrics E3ME model
Note: Results are for the year 2020; new member states are shaded orange

EU ETS tightening performs even stronger under more ambitious auctioning rules

EU ETS impacts remain constant, direct taxes cause more damage when raising more revenue

Figure 7. **When raising more revenue, direct taxes become increasingly harmful**

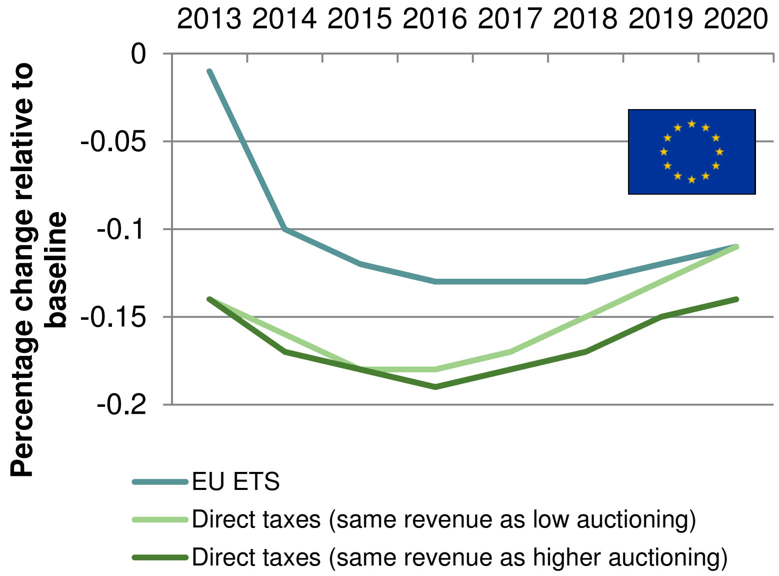
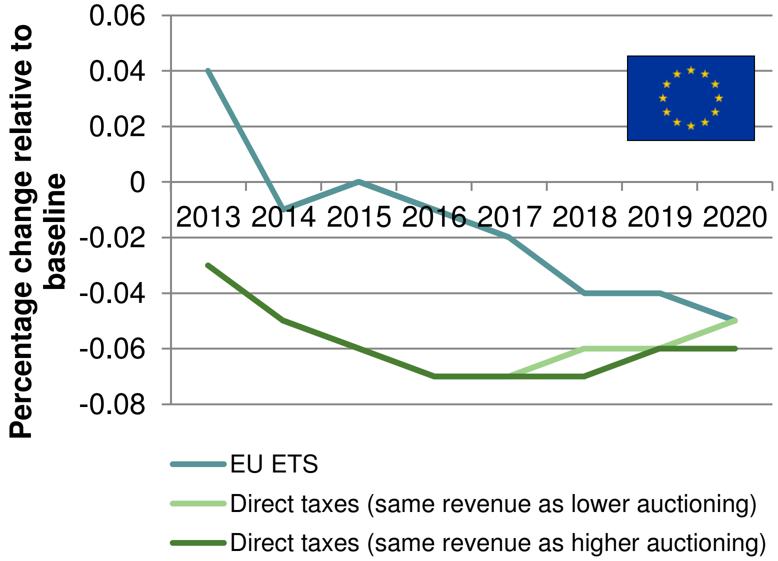


Figure 8. **Similarly with regards to employment impacts**



Source: *Cambridge Econometrics E3ME model*

Note: *EU ETS macroeconomic impacts remain unaffected by auctioning rules; these charts compare the impacts from the respective direct taxes needed to raise the same revenue as in a low/high auctioning scenario*

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Two challenges have historically held back energy taxes

Both challenges are politically powerful as well as based on legitimate concerns

competitiveness

— energy taxes and carbon prices impose costs solely on domestic producers

— competitive disadvantage for domestic producers vis-à-vis other European and non-European producers

distributional concerns

— poor households spend a larger proportion of income on energy

— therefore energy taxes can be particularly harmful on the poor

— it is politically and morally difficult to deprive the poor of basic necessities like heating

Both challenges can be addressed in the most part

Distributional impacts are relatively regressive, BCAs are a long run option

EU ETS and business energy taxes: two options

- free allowances
  - increases profit, does not restore prices or output
- smart BCAs
  - can reflect principle of common but differentiated responsibility
  - adjust BCAs by country action and income group benchmark
  - limit BCAs to basic products where carbon cost is a substantial proportion of GVA

household energy taxes: more complicated, but not impossible to address

- even if regressive, may not have as negative an impact on disadvantaged households as other taxes
- compensation
  - three elements of ideal compensation policy: targeting, low costs, incentive-consistency
  - depending on pre-existing national institutions and data, distributional concerns can be addressed to a reasonable degree
  - in Germany, compensation is achieved through the social benefits system; good coverage, cost efficient, but not incentive-consistent

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There are opportunities at both the national level and on the European level

Framing energy taxes in *comparison* to 'conventional' taxes may help with the politics

national opportunities

— carbon energy tax curves show scope for harmonisation

European tax harmonisation opportunity

— Energy Tax Directive reform: moving to more rational minimum rates
  — a general case for carbon taxation outside the EU ETS
  — a case for more consistent treatment of heating and transport fuels

opportunity for tightening the EU ETS cap

— provides an appropriate price signal, counteracting the surplus allowances carried over from phase two

— increases revenue raised, delivers them at lower macroeconomic costs than direct taxes

There are opportunities at national and European levels

Framing energy taxes in *comparison* to 'conventional' taxes may help with the politics

acceptance

— at the MBI forum, the Commission expressed full support for report's arguments

— no country targeted by the CETRiE project refuted the report's arguments *per se*

national opportunities

— in FR there is definitely scope and potential for carbon-energy taxation, but the devil is in the detail

— in ES, the government favours EU-wide solution which would reduce tax competition between autonomous regions in the country - but is also moving alone

— in GER, resistance to ETD addressed and discussed, 2013 elections opportunity

— in PL, although sceptical of carbon taxation, the government expressed a broader interest in environmental taxation

— in HU there is a need to address regressive impacts and improve household energy efficiency to enhance political acceptability and feasibility of carbon-energy tax

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Company Profile

Vivid Economics is a leading strategic economics consultancy with global reach. We strive to create lasting value for our clients, both in government and the private sector, and for society at large.

We are a premier consultant in the policy-commerce interface and resource and environment-intensive sectors, where we advise on the most critical and complex policy and commercial questions facing clients around the world. The success we bring to our clients reflects a strong partnership culture, solid foundation of skills and analytical assets, and close cooperation with a large network of contacts across key organisations.

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