

New era. New plan.

EUROPE

A FISCAL STRATEGY FOR AN INCLUSIVE,
CIRCULAR ECONOMY

The Ex'tax Project

in cooperation with

**Cambridge Econometrics, Trucost,
Deloitte, EY, KPMG Meijburg and PwC**

Abstract

This study by The Ex'tax Project in cooperation with Deloitte, EY, KPMG Meijburg and PwC examines the impact of a tax shift from labour to consumption and natural resource use. Cambridge Econometrics has modelled the impacts of a tax shift scenario in the period 2016-2020 in 27 Member States of the European Union using the E3ME macro-econometric model.

The GDP and employment results are positive in each of the 27 countries. In 2020, GDP levels are on average 2.0% higher and employment levels are 2.9% higher than business as usual. This means that 6.6 million more people are in employment.

Based on the modelling results, Trucost assessed the integrated impact of the scenario on financial capital, natural capital and social capital. The *Ex'tax Integrated Value Added Statement* includes the financial capital value (economic growth), as well as the external benefits to society in terms of social capital (the health impacts of employment versus unemployment) and natural capital (health impacts of lower carbon emissions, reduced pollution levels because of lower energy resource use and water savings).

These findings suggest that a tax shift from labour to natural resource use and consumption is a viable strategy to align tax systems with the *Europe 2020 Strategy* and the *Sustainable Development Goals*.

Executive Summary

The European Union is facing global challenges

The European Union has entered an era of global and regional turmoil and challenges that include low economic growth, labour market challenges and widespread unemployment, climate change and materials supply risks. International strategies to address these challenges (such as the *Europe 2020 Strategy* and the *Sustainable Development Goals*) focus on the eradication of poverty and unemployment, and on reducing carbon emissions, energy use, air pollution and water consumption. These are issues that nations cannot solve on their own. The cohesion and long-term success of the EU will depend on the Union's capability to make EU-economies more inclusive, fair and resilient.

A central role for fiscal systems

An update of our fiscal systems will be key to match the challenges of the 21st century, as taxes steer the economy, by their direct and indirect influence on consumption and investment decisions. Historically, fiscal systems in Western nations have evolved to lean on labour taxes (all taxes paid by employers and employees that are linked to wages, such as payroll taxes, personal income taxes and social security contributions). In 2012, 51.0% of tax revenues (EU-28 weighted average) were derived from labour. Taxes on natural resources and consumption provide a much smaller fraction of total tax receipts (6% weighted average in 2012). This seems illogic, as high labour taxes incentivize businesses to make people redundant, while low resource taxes facilitate overconsumption.

Fossil fuel subsidies act as a 'negative price on carbon'

At the same time, almost all nations apply direct and indirect *subsidies* for environmentally damaging activities. Tax credits - defined as a subsidy by the WTO - are a key route of support for the fossil fuel industry. Such tax concessions are now generally being referred to as *Environmentally Harmful Subsidies* (EHS).

On a global scale, the IEA estimates that fossil fuel consumption subsidies were € 387 billion in 2014. According to the World Bank, this is "likely to be an underestimate". OECD data suggest that fossil fuel support measures (including tax expenditures and budgetary transfers) in the European Union were over € 24 billion in 2014.

Although there are methodological issues of measuring fossil fuel subsidies, the OECD, the World Bank and the IMF have called for lower fossil fuel subsidies as these support measures act as a 'negative price on carbon'. They hold back investments in cleaner emerging technologies and crowd out scarce fiscal resources.

According to the IEA, global fossil fuel subsidies are "over four-times the value of subsidies to renewable energy".

Updating the tax systems is key to address global challenges

The architecture of modern European tax systems stems from a time when globalisation had not yet materialized and jobs could not be moved around the globe. In the past, computers and robots could not substitute employees, and labour provided a stable and reliable source of income for governments. Natural resources seemed available indefinitely, and linear (take-make-waste) consumption did not yet show its harmful effects.

Times have changed. The environmental and social megatrends underline the need for EU Member States to move towards inclusive, ‘circular’ economies that provide meaningful employment while making clever use of natural resources. In such economies, consumption shifts away from the prevailing, linear system. Natural resources are brought in closed loops, while businesses can add value over and over again by applying principles such as resource efficiency, Cradle-to-Cradle and biomimicry. Such economic system requires labour-intensive business models including repair and maintenance services, remanufacturing, refurbishment, spare parts harvesting and the redesign of products.

A coherent tax strategy is needed to support the transition

Full employment and social cohesion are basic EU objectives. The European Commission has adopted the transition towards a more circular economy as an official goal of the Union as well. Unfortunately, the prevailing tax systems are not yet aligned with these goals.

In the EU, tax policy is a national competence and a topic of much debate. The question remains, though, *how to develop a coherent tax strategy that matches (rather than inhibits) the sustainable and inclusive growth agenda?* Such a strategic approach would allow the EU to become much more effective on the international stage and maximise the economic potential of the EU frontrunners in the sustainability transition.

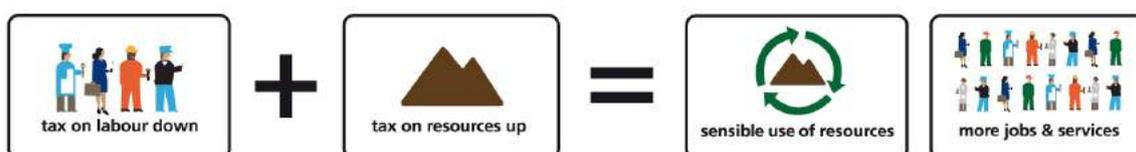
Growing support for a tax shift

According to the European Commission, a tax shift from labour to things like pollution is “a winning strategy”:

“One of the biggest tax policy challenges in Europe is that governments tend to rely too much on labour taxes. But overdependence on labour taxes can be a disadvantage when they make it too expensive to employ people. Passing some of the taxes to other things, such as pollution, could help to accelerate employment and economic growth. Smart taxation is a winning strategy.”¹

The proposal to shift taxes from labour to natural resource use (herein referred to as *Ex’tax*, an abbreviation of *Value Extracted Tax*) has been around for years, and many institutions such as the OECD, the IMF, the World Bank, the European Parliament, the Eurogroup and the ILO have called for such a tax shift. A list of quotes is provided in this study.

The Ex’tax concept



According to the Commission, environment-related taxes are amongst the taxes “least detrimental to growth”. The administrative costs and transaction costs of green taxes are lower than other taxes (notably income taxes) and their efficiency losses are far smaller than for labour taxes. MIT's *Global Change* program has found that higher gas taxes are at least six to fourteen

¹ European Commission (2015), Smart Taxation: a Winning Strategy. Video.

times more cost-effective than stricter fuel-economy standards at reducing gasoline consumption.

The relation between high labour costs and unemployment has been documented extensively.

Based on economic theory, based on economic modelling work and based on empirical evidence so far, there is ample support for the assumption that a shift in taxation can have a positive impact on employment, economic growth and the environment.

Gaining momentum

The concept of a tax shift is gaining momentum for a number of reasons. Firstly, there is an increasing knowledge base on the external costs of economic activities. Secondly, the world has seen a surge in support for climate action and, thirdly, the role of business is changing.

1. Increasing knowledge base on external costs

There is increasing awareness on the external costs of economic activities. The OECD, for example, estimates that by 2060, climate change will curb global GDP by 1.5% on average. Citi GPS estimates the cumulative GDP 'lost' because of climate change at \$ 44 trillion (€ 41 trillion)² by 2060. In Europe, in 2010 alone, air pollution caused over 400,000 premature deaths and €330-940 billion in external costs. Such insights demonstrate the great costs of inaction.

2. A surge in carbon pricing systems

The world has seen a surge in support for climate action, which resulted in the *Paris Climate Agreement* being adopted by more than 190 countries. Carbon pricing systems are being implemented across the globe, which sensitizes governments to the role of taxes in society. In 2015, governments raised about \$ 26 billion (€ 24.4 billion) in revenues through carbon pricing mechanisms, representing a 60% increase from 2014. The total value of such mechanisms is currently estimated at just below \$ 50 billion (€ 46.9 billion).

3. Businesses are applying integrated reporting and shadow pricing

Thirdly, the role of business is changing. Business leaders are now engaging actively in sustainability, embracing the concept of pricing externalities and the circular economy. Currently, 92% of the world's largest 250 corporations report on their sustainability performance. This development is driven in part by investors demanding disclosure of risk information. The proverb 'what gets measured gets managed' certainly applies, as the data are making companies aware of the impact of their activities and enable them to assess the risks across their value-chain. At the same time, the data help to identify opportunities to serve the global marketplace with smarter, cleaner and inclusive business models.

In practice, however, introducing sustainable products and services is often an uphill battle, as business cases of sustainable and inclusive solutions need to compete with options based on 'tax-free' primary resources and subsidized fossil fuels. High labour costs are holding back labour-intensive R&D efforts and activities such as repair and maintenance services, needed for a circular economy. The last few years, more and more business leaders are calling for carbon pricing to fix these failing market mechanisms.

In anticipation of effective pricing of carbon by governments, hundreds of multinationals around the globe are even taking unilateral action. In their accounts, they apply a shadow price on

² Throughout this document, exchange rates are derived from the U.S. Internal Revenue Service website and based on the date of each publication.

carbon, in order to improve long-term investment decision-making. In 2015, 435 companies reported to CDP that they used an internal price on carbon - almost a threefold increase from the previous year. In 2016, 517 companies disclosed their practice of pricing carbon emissions. An additional 732 disclosed plans to implement such price by 2018.

These developments illustrate the changing perspective on the role of taxes and other pricing mechanisms.

The Ex'tax Project and partners contributing to this 'winning strategy'

To contribute to the advanced understanding of the tax shift concept, in 2014, The Ex'tax Project (a Dutch think tank) joined forces with international tax thought leaders Deloitte, EY, KPMG Meijburg and PwC. The group published a study called *New era. New plan. Fiscal reforms for an inclusive, circular economy. Case study the Netherlands*. This study explored the rationale for taxing natural resource use rather than labour, contained a Policy Toolkit and a tax shift scenario for the Netherlands. In 2016, with its partners, The Ex'tax Project has updated and internationalized this research. A tax shift scenario was developed that matches EU aspirations to simplify tax systems and relieve the tax burden on labour in each of the 27 EU Member States under review.

The renowned institute Cambridge Econometrics was assigned to model the macro-economic effects of the scenario across the European Union using the E3ME model. This is a global E3 (energy, environment and economy) econometric model that covers each EU Member State individually. The key advantage of using the E3ME model lies in its strong empirical grounding and non-optimisation properties, meaning that it simulates real-world behaviour. E3ME has previously been applied by national governments and the European Commission to investigate various climate, energy and environment-related policies.

Trucost, the global expert on quantifying and valuing externalities, was asked to build the first 'Integrated Value Added Statement' for this macro-economic study. Based on the Cambridge Econometrics modelling results, this statement includes the external benefits (the added value) of the scenario on social capital and natural capital.

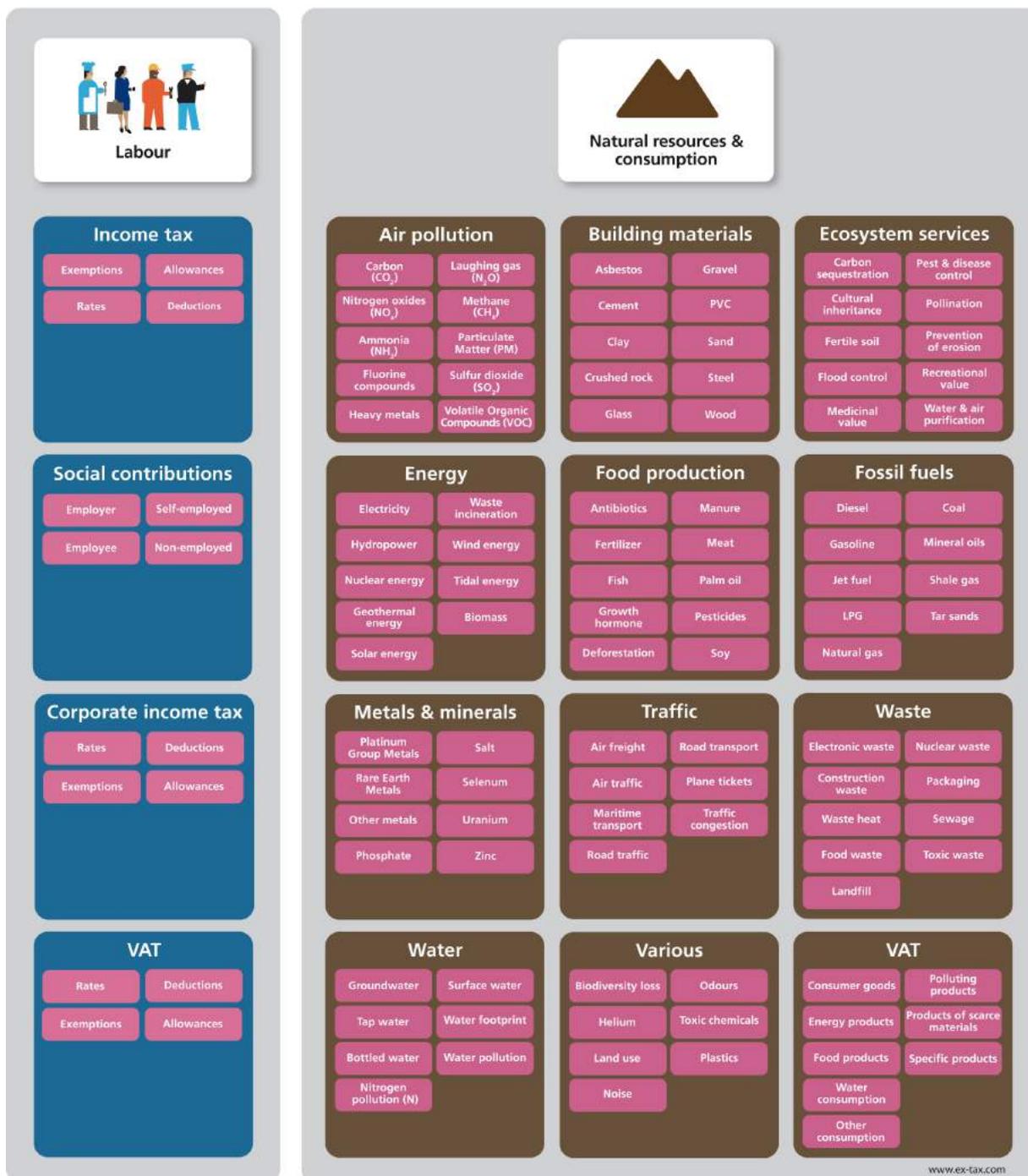
An update of our tax systems requires a long-term vision on the role of taxation in facilitating growth based on human capital, skills and knowledge, rather than the extraction of natural resources. Also, a pragmatic roadmap for implementation is needed. This report contributes to both these purposes.

Constructing a tax shift scenario

The Ex'tax Policy Toolkit below provides an inventory of tax base options for the implementation of Ex'tax principles. These are the 'buttons' governments can 'push' to shift taxation from labour to natural resources. In many studies, the primary focus of researchers is an increase in environmental taxes, while opportunities to lower labour taxes are considered a secondary side effect. This study values both sides of the coin equally; both a major decrease in labour taxes and an increase taxation of natural resources and consumption are necessary for a systems change.

In the Toolkit, on the left (in blue), are the tax base options with regard to labour and on the right (in brown) those with regard to natural resources and consumption.

The Ex'tax Policy Toolkit for shifting the tax base from labour to natural resources & consumption



Based on this inventory, a tax shift scenario was developed. The scenario applies ‘the polluter pays’ principles by introducing additional excise duties on fossil fuels and taxes on carbon, water and electricity (for bulk users rather than households). The scenario also includes measures to raise VAT rates. The combined revenues are used to lower the tax burden on labour. Personal income tax and social contributions paid by employees and employers are reduced (without changing the social protection base). Also, an investment in employment is made through a payroll tax credit for companies that effectively increase employment. An investment is made in jobs in innovative sectors through a payroll tax credit for circular innovation. Finally, a zero percent VAT rate is assumed for labour-intensive services (maintenance and repair).

The scenario is designed to be revenue neutral. This means that there are no direct stimulus or austerity effects in the scenario. In E3ME the measures are introduced in 2016 and are scaled up linearly to full value by 2020. Implementation is not likely to take place as of 2016, however, for modelling purposes this short time frame provides the most valuable impact analysis.

*EU-27 scenario for a tax shift from labour to natural resources & consumption
(2020, difference from baseline)*



(2016) The Ex'tax Project & Cambridge Econometrics

Notes

Reflects the situation in the year 2020 in 2015 prices. In the modelling, the measures are phased in over a five-year period, reaching full force in 2020. Croatia is not included. All tax rates are indexed in line with inflation.

(a) Labour-intensive services (maintenance & repair).

(b) Secondary effect (€ 0.09 billion) due to change in labour costs and economic impacts. There are no direct stimulus or austerity effects in the scenario.

It should be emphasized that the scenario is not a blue print. It is meant to explore a viable pathway to achieve the ambitious common goals in the *Europe 2020* strategy and other goals as targeted by national and international policy. It's a potential common path that enables individual action; much like traveling a road across different landscapes, EU Member States can choose their own path and speed, while still traveling in the same direction. The ultimate 'point on the horizon' being: tax systems that enable circular and inclusive societies.

The impact of the scenario on labour taxes

In its fifth year (2020), on average throughout the EU-27, the scenario:

- **Shifts 13% of labour taxes** onto natural resources and consumption.
- **Reduces personal income tax revenues** by € 367.9 billion* compared to baseline, which represents 16.5% of the projected total EU-27 personal income tax revenues in the baseline in 2020. The results are particularly remarkable in the case of Romania, Bulgaria, Slovakia, Poland and Lithuania, where the revenues from resource taxes in the scenario are more than 100% of personal income tax revenues. In the model, these surpluses are treated as income subsidies.
- **Reduces the average personal income tax rate** (total income tax revenues divided by total wage and salaries) by 5.6 percentage points in 2020. In some countries, personal income tax rates can fall considerably more – up to 20 percentage points difference from baseline.
- **Reduces social security contributions paid by employers** by € 29.2 billion*, which compares to 2.5% of total EU-27 employers' social contributions in the baseline in 2020. The average social contribution *rate* paid by employers goes down from 18.2% to 17.4%.
- **Reduces, in addition, employer's labour costs** through the payroll tax credit for new employment (€ 125.9 billion)* and the payroll tax credit for circular innovation (€ 23.3 billion)*. These credits are modelled separate from the employer's social security rate.

*2015 prices

Over the course of five years (2016-2020) the scenario shifts a cumulative € 1,716 billion of tax revenues from labour to natural resources and consumption (2015 prices).

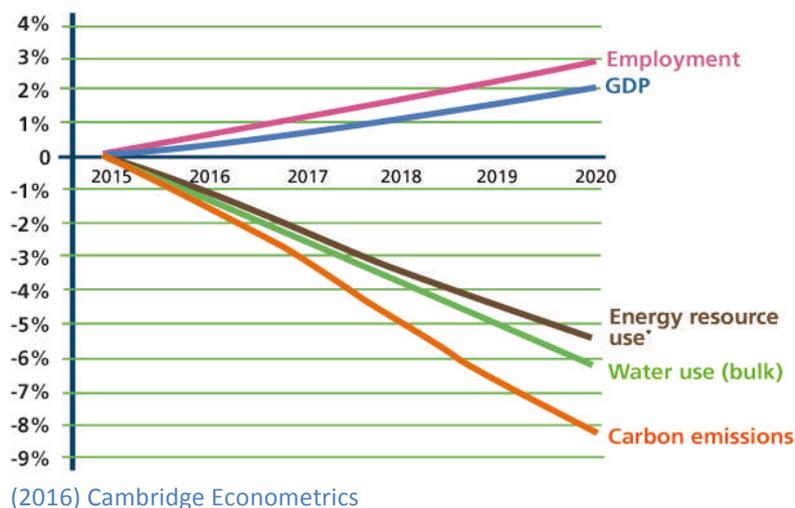
It's important to note that the way social security is financed changes; the social protection base does not change.

Key results of the tax shift scenario

- **GDP and employment levels.** In 2020, EU-27 average employment levels in the scenario are up by around 2.9% and GDP levels by 2.0% compared to baseline, as the positive effects of the reduced labour taxes and the associated increased employment offset any negative effects of the price increases.
- **Number of people in employment.** 6.6 Million more people can be in employment by 2020, contributing to the basic EU objectives of full employment and social cohesion.
- **CO2 emissions.** Another impact observed is a reduction in CO2 emissions by 8.2% in 2020 compared to baseline.
- **Natural resource use.** During the 2016-2020 period, compared to baseline, the scenario saves 1,038.2 million tonnes of carbon, 219 billion cubic meters of water, 194 million tonnes of oil equivalents of energy resources (12 types of energy sources combined); and € 27.7 billion on the EU energy import bill.

Below is a graph with the key results per year, demonstrating the effective decoupling of GDP and resource use. The key message from the results is that it is possible to design policies that reduce resource use and carbon emissions, while at the same time stimulating the economy and creating jobs.

Key modelling results (EU-27, 2015-2020, % difference from baseline)



Notes

* Final energy consumption of twelve energy sources (including gasoline, diesel, aviation fuel, natural gas) by households, businesses and industry. Energy demand by the power generation sector is excluded in order to avoid double counting.

Other results

- **Member States results.** All Member States manage to lower carbon emissions while increasing economic growth and employment. GDP levels increase roughly between 0.5% and 8% (by 2020 compared to baseline) and employment levels rise by 1.7-4.8%. Significant carbon emission reductions (4.9-16.3%) are achieved. Final energy consumption of 12 types of energy sources is reduced by rates between 1.7% and 16.9%.
- **Sectoral output.** Output falls in the energy and utilities sectors but increases in all other sectors. Governments could opt for an additional innovation subsidy for electricity and utilities to help them innovate. Such measures would erode the overall budget to reduce employment costs.
- **Sectoral employment.** Energy and Utilities are the only sectors showing a negative employment growth. This effect is relatively small, though, as these sectors provide just 1.5% of total employment in the EU. The model shows a loss of 25,000 jobs in the Energy and Utilities sectors, while increasing employment by 6.6 million in other sectors.
- **Real incomes.** In all socio-economic groups real income increases, although slightly less in lower income groups than those in higher income groups; the difference between the first the fifth quintile is only 0.12%. Tax reform requires extensive safeguards to avoid regressive effects on vulnerable groups. In practice, undesirable impacts can be alleviated, for example, by targeting labour tax reductions towards specific income groups or by providing means-tested benefits or allowances. There are numerous policy options available to address the differences between socio-economic groups, and a few practical examples from EU Member States are provided.

These findings suggest that a tax shift from labour to natural resource use is a viable strategy to align tax systems with the goals of the Europe 2020 Strategy and the Sustainable Development Goals (SDGs) to increase employment, alleviate poverty, reduce emissions and energy use and stimulate R&D.

Pricing of externalities through raising taxes on natural resource use and pollution particularly serves Sustainable Development Goal 3 (Good health and wellbeing), Goal 6 (Clean water and sanitation), Goal 7 (Affordable and Clean Energy), Goal 11 (Sustainable Cities and Communities), Goal 12 (Responsible Consumption and Production) and Goal 13 (Climate Action). Using the revenues of these taxes to lower labour taxes and social security contributions most strongly supports Goal 1 (No Poverty), Goal 8 (Decent Work and Economic Growth), Goal 9 (Industry, Innovation and Infrastructure) and Goal 10 (Reduced Inequalities).

The first Integrated Value Added Statement (IVA)

With the help of Trucost, the first *Integrated Value Added Statement (IVA)* was created for this international macro-economic study. The IVA Statement presents best estimates of the impact of the scenario on European Union's stock and flows of financial, natural and social capital over the period 2016-2020. While it is not possible to capture the complete effect of the policy shift on all aspects of these three capitals, the IVA Statement is a starting point from which future evaluations of policy can develop and improve. As such, not all possible externalities could be included in the statement. Trucost focused on the externalities that are robustly supported by data and evidence and those likely to have the greatest material impact.

The IVA Statement draws upon two key modelling analyses: macroeconomic modelling of direct and indirect financial flows, energy and water use, and employment by Cambridge Econometrics using the E3ME model; and extension modelling by Trucost of the natural and social capital impacts (or avoided impacts) arising from these changes.

The total value added of the tax shift scenario for the EU-27 is estimated at more than € 1.100 billion over five years (at 2015 prices). In addition to the increase of € 842 billion in GDP across the EU-27 countries (representing an increase in financial capital), € 260 billion in natural capital value will be added over five years. This includes € 49 billion due to avoided air pollution impacts on health, € 113 billion due to avoided greenhouse gas emissions, € 94 billion due to avoided health and ecosystem impacts of land and water pollution, and € 4 billion due to the health and ecosystem benefits of water conservation.

Over € 17 billion in social capital value is added through improvements to health associated with reduced unemployment. In the 2016-2020 period, 19.6 million more 'person years of employment' are created. The full benefits of reduced unemployment are likely to be much larger, including improvements in education and skills, income security, economic equality, poverty risk reduction, social stability and cohesion.

*The Ex'tax Scenario Integrated Value Added Statement
(Cumulative value added 2016-2020 for the EU-27, compared to baseline)*

Impact	Description	Value Added (€ billion)	Share of total (%)
Financial Capital		842.2	75%
- National Income Growth	Net change in GDP	842.2	
Natural Capital		259.5	23%
- Climate Change	Avoided costs to society of future impacts of climate change	112.6	
- Air Pollution	Avoided costs to society due to illness and premature deaths associated with air pollution exposure	49.5	
- Land and Water Pollutants	Avoided costs to society due to human and ecosystem health damage associated with pollution of land and water with toxic chemicals and metals	93.8	
- Water Depletion	Avoided costs to society due to human and ecosystem health damage associated with depletion of freshwater resources	3.6	
- Other value (not yet included)**	Avoided costs to society due to less extraction of metals, land use, eutrophication etcetera	pm	
Social Capital		17.4	2%
- Health Benefits of Employment	Value of healthy years of life gained due to reduced unemployment experienced	17.4	
- Other value (not yet included)**	Value of education/skills, income security, economic equality, social stability and cohesion, productivity, reduced poverty risk, etcetera	pm	
Total Value Added		1,119.2	100%

(2016) The Ex'tax Project (scenario & design), Cambridge Econometrics (macro-economic modelling), Trucost (Integrated Value Added Statement).

Notes

- In € billion 2015. Croatia is not (yet) included.

** This analysis is based on the available literature. As such, not all externalities could be included.

Although limited because of data constraints, the IVA Statement represent an ambitious attempt to value the broader impacts of a fundamental policy change across various forms of capital. Taking these limitations in consideration, the externality benefits presented in the statement are likely to underestimate the true natural and social capital value added by the scenario. Key recommended focus areas for future development are to invest in better understanding of the social value of employment, to collect more scientific data on the health benefits of work, and to build reliable data sets on water use.

Four case studies

For the sake of brevity, four EU countries have been selected as case studies. Germany, Poland, Spain and the Netherlands were chosen on the basis of their economic and fiscal characteristics as well as the available consulting expertise in the analysis. Each of these countries is reviewed in terms of their economic structure, labour market and social issues and natural resource use, and fiscal structure, as well as how the scenario works out in each country. Without fully validating the scenario, from each national perspective, areas are identified that require special attention in implementation.

Clearly, tax systems cannot be static; they will evolve with new circumstances. When the updated system works properly, the tax base can be extended to other categories within the Toolkit, in order to guarantee a stable government income. Rates and tariffs can be raised or lowered too; just like the current system of labour taxes, the future system will also be adapted periodically. Current levels of taxation are not carved in stone and there is no reason why a system based on 'extracted value' should be either.

Recommendations and next steps

Five recommendations and actions for next steps towards updating the tax systems are:

1: Improve knowledge on the metabolism of economies

Action: Extending and standardizing integrated reporting in order to have the appropriate information in place to take effective measures.

2: Improve collaboration between Ministries and DGs; interdisciplinary research

Action: Studying the connections between economic, environmental, health and social concerns, by organising interdisciplinary research programs.

3: Research impact from a business perspective

Action: Develop a methodology to help business leaders and sectors analyse the impact of a tax shift, including business cases to illustrate its effects. Such a tool helps a well-informed discussion between policy makers and businesses.

4: Develop a coherent EU-level sustainable and inclusive tax strategy

Action: Develop a coherent EU-level sustainable and inclusive tax strategy connected with the Europe 2020 growth agenda, to allow the EU to be more effective on the international stage and maximise the economic potential of the EU frontrunners in the sustainability transition. Possibly, through mobilizing a coalition of countries that are willing to advance exploration and implementation of the tax shift.

5: Research macro-economic impact of a tax shift on larger international scale

Action: Analyse the impacts on a broader international scale (for example OECD (plus key partners), Latin-America and/or Asia). Such global scale would enable the analysis of global trade flows, labour market impacts, for instance, as well as specific national and regional characteristics and preferences in tax reform.

In conclusion

We've entered a new era; one that requires an inclusive circular economy, as targeted by national and EU strategies. Tax systems play a fundamental role in this transition.

Updating the tax system is not a simple task. But considering the megatrends that we are facing, doing nothing is no longer an option. 'New era. New plan. Europe.' shows that a tax shift from labour to consumption and the use of natural resources enables the EU-27 economies and employment to grow, while natural resources are saved. This means our society and economies can flourish by saving natural resources and tapping into the abundance of human talents and capacities instead. This transformation requires a long-term vision on the tax system, combined with a pragmatic pathway and a realistic timeframe.

The contributing partners of this research recognize the tension between vision and pragmatism, between long-term and short-term interests. It may be clear that many details and complications

still need to be elaborated on. The question is whether to resolve these issues or allow them to immobilize our current system that was built for the era of the linear economy.

We therefore call upon businesses, governments and NGOs to analyse the opportunities and risks of a tax shift, and to take the necessary steps towards a robust and sustainable tax system that enables current and future generations to develop prosperity based on human capital rather than natural resources. We hope that *New era. New plan. Europe* is a source of inspiration.

The Ex'tax Project, Deloitte, EY, KPMG Meijburg, PwC, Cambridge Econometrics and Trucost invite all interested parties to contribute to any of the recommended steps and help expand knowledge on and/or increase support for this fundamental update of the tax systems.

The world has moved on; tax systems need to do the same.