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How to undertake and finance ‘Green Transition and Sustainable Development’ in Europe.

Introduction

This paper analyses the possible sources to undertake and finance the ‘Green Transition and Sustainable Development’ by 2050 as suggested by the EU-Commission.

The aim of the paper is to demonstrate that the ‘green transition’ is a real sector challenge: how to undertake the needed real investment in sustainable technologies and plants (private or public). This is a question of devoting and combining real factors of production (labour, real capital and materials and environment) into the green transition sectors within EU. This is the overarching planning question within the individual member countries, but even more important in the EU as a whole. It would be great to make the EU self-sufficient with durable energy via an enlarged production of ‘green electricity’ produced where the sun is shining, wind is blowing and hydro-power is possible. This transition calls for enlarged private and public real investment, which, of course, has to be financed.

The paper consists of two – partly separated sections: 1. Where could the real sector resources come from? This is mainly a question of securing and directing production, represented by development in GDP, towards ‘green real investment: durable energy’ and ‘investment in energy savings: insulation of houses and public transport’.

As Keynes said back in 1942 in quite another context; but anyhow: ‘What we can do, we can afford’ and I want to add it is a matter of 1. available factors of production and 2. directing the private and public demand for these factors into production of ‘green capacity’.

It is a two steps analysis:

Step one, when and how will the needed factors of production be available? The real paradox has to be understood: the deeper the real economic crisis becomes the more factors are available straight on. If full employment did prevail – government has to pull the brake either by taxing the private sector or to reduce other parts of public sector activity.

Step two, the production of green investment has to be paid, while undertaken. is:

The different possible channels of finance are analysed one by one: 1. CO₂-tax, 2. Private bank loans, 3. Tapping private pension funds, 4. public sector budget deficit **and** 5. By reduced import of oil and gas (more than € 400 bill. each year) – these money stay at home.

The real novelty of this paper is the analysis of the financing source and the positive macroeconomic impact of the improved balance of payment caused by the reduced import of fossil energy. Within the model it is clearly demonstrated that the investments in durable energy in form of windmills, solar-cells, biogas etc. could be financed, although with a time lag, by the lasting savings on import of oil, gas and coal from outside the EU.

By 2050 – when the green transition, hopefully, has been successfully established – there will be no more import of fossil energy an improvement of the EU as a whole balance of payments of €4-500 bill each year, which is equivalent 3-4 pct. of GDP. Hold on, this reduced import means that oil- and gaz-exporting countries (Russia, Saudi Arabia, Libya Iraq etc.) have less euro to buy goods and services from the EU, i.e. reduced foreign demand. This is structurally view a good development, because that will release workers and real capacity from producing export good (among other things weapons) into the production of sustainable goods and infra structures. This savings of import of fossil energy come close to a ‘free lunch’!

In the transitory period a European CO2e-tax and import sur-charge is needed. But, and this argument is equally important, this increased CO2-tax will not reduce the living standard of the average European family. If OECD-projection of the future development of GDP/capita can be trusted, Real income will grow due to improved productivity by approximately 1½ pct. p.a. adding up to more the 50 pct. by 2050. The Green transition might cut only 4-5 pct. of this increased (material) living standard and in addition make the environment green and the future sustainable. Especially, if the revenue from the CO2e-tax is earmarked for green investments combined with a social profile between the member-states and within member-states i.e. a progressive CO2-tax (the more you earn, the longer you travel, the higher the tax rate!)

The paper will present macroeconomic consequences for the EU of such a coordinated and fully financed Green Transition, which by 2050 will imply: increased employment, significantly improved balance of payments for all member states, a higher GDP/living standard, in addition to independence of Russian, Saudi Arabian energy supply, and last, but not least an environmentally sustainable Europe!

Where could finance come from?

EU: an open economy, integrated private sectors, but detached public sectors

GDP-identity: Private Income \equiv total expenditures (private, foreign and public)

X – export of goods and services, M – imports of goods and services

$$(1) \quad Y \equiv C + I + G + [X - M];$$

$$(2) \quad Y - \text{Tax} \equiv C + I + [G - \text{Tax}] + [X - M];$$

Private sector income \equiv

private expenditures + public deficit + balance of payments surplus.

Hence,

$$(3) \text{ Private } \mathbf{actual\ excess} \text{ savings: } S_{px} \equiv Y - C - I - \text{Tax} \equiv [G - \text{Tax}] + [X - M] \rightarrow$$

$$(4) \text{ Private } \mathbf{actual\ excess} \text{ savings} \equiv \text{public sector deficit} + \text{balance of payments (surplus)}$$

(5) Public sector budget deficit: $[G - \text{Tax}] \equiv S_{px} - [X - M]$

Hence, Private excess savings + balance of payments deficit → Public sector deficit

How to direct real resources and finance into ‘green investment’

Macroeconomists agree that the private sector is the main driver of economic development. They disagree on the ‘self-adjusting’ assumption. Following Keynes’s arguments there is no such drive within the private sector due to the lack of coordination between real investment decisions and the amount of financial savings by households and business.

The starting point of the policy analysis of how to counter-balance structural private excess savings is to figure out how much *effective demand* is missing to create full employment, see figure 3.

Within a closed economy (just to get the causality right), the choice is between fiscal and monetary policy or a combination. Keynes was, no doubt, in favour of monetary policy with a positive impact on private sector activity *and* at the same time to lower the burden of interest payments on public debt! On the other hand, he was rather doubtful to what extent Bank of England could lower the long term rate of interest in a bear-market.

A much more direct and reliable policy would be to increase the public sector (structural) deficit to match the surplus in the private sector. The weak point of active fiscal policy was ‘how to finance a public sector deficit?’. If the financial markets reacted negatively on a soaring public debt, it could cause the rate of interest to go up and squeeze private investment. At least, this was/is the conventional Treasury-argument. Hence, to counter this argument Abba Lerner (1943 and much

more elaborated in 1944-book) suggested a combination of fiscal and monetary policy, which he dubbed 'Functional Finance'. He simply used Keynes's liquidity preference theory (LPT) saying that the rate of interest is primarily determined by the balance between the stock of money and (government) bonds. If there is a tendency to higher rate of interest, it is according to LPT caused by too little money. Hence, the government should finance its budget deficit by printing money.

It is, of course, difficult to pre-judge, what size the needed active fiscal policy will take in any specific situation. Therefore, fixed fiscal rules like the limit of ½ percent structural public sector deficit codified in the Fiscal Compact is obviously counter-productive and will in many cases destabilize the macroeconomic system – as we have experienced in the euro-zone since 1999. Active fiscal policy should be seen as a counter-weight to macroeconomic behaviour of the private sector actors.

In reality, it might be quite difficult to separate the needed budget deficit between what part is a permanent (structural) private sector surplus and what part is only a temporary surplus. The latter varies, of course, along the business cycle (or Trade Cycle as Keynes called these temporary waves in chapter 22 (the only chapter on short term fluctuations) in the *General Theory*).

But, also in this case the limit of 3 percent of GDP codified in the Stability Pact might be equally counter-productive, when the private sector is hit by a temporary demand shock. This process of automatic stabilizers causing budget deficit should, of course, be allowed to run its course.

Accordingly, the private structural excess savings (at full employment) could therefore equally well be described as an excess demand for external public sector financial asset. In a closed economy, this means that if the government creates more effective demand, output and employment, this public-sector deficit can automatically be financed by either extra money or increased public debt – depending of the portfolio choices of private sector financial institutions and banks without necessarily letting the rate of interest increase.

It is equally trivial within a theoretical model to suggest that an export surplus could substitute the lack of private real investments. This is another way of making excess savings active by increased export. But all countries cannot have an export surplus (by definition). Say, all Europe suffered from an unemployment equilibrium – increased export is a no go (a zero-sum game) which does not increase effective demand within Europe (if considered as a closed economic system).

Similarly, within a (semi)-closed economy like Great Britain in the inter war period or Europe in the present situation the straight forward policy recommendation would be, instead, to let the public sector run a *structural* budget deficit.

If full employment is the goal of economic policy, then public real investment could be the counter-weight to match private excess savings. Real public investment should not be restricted by any predetermined fiscal rules and therefore be excluded from the requirements of the stability pact and the fiscal compact. It might, perhaps, make sense to say that public sector consumption should on average be financed by taxes (only to accept the automatic stabilizers to work in recession (and boom). But, real public investment should be planned by 1. Longer term social needs for a sustainable development and 2. Structural excess private financial savings (in pension funds etc.) by selling public bonds.

Below you will see the charts and figures I will use within my presentation and integrate more directly into the paper; but I have received comments and reflections from colleagues and participant to the IMK-conference – looking forward.

What could EU do?

Tabel 1. EU's enlarged budget, 2021-27:

€ 150 bill. pr. år = 1,1 pct. of EU's GDP (€14.000)

+ EU's 'extra money' €750 bill./7 years = ca. €110 bill./year (but only 30 pct. Has to be 'green')
= ¼ Marshall-aid!

Adding up - € 260 bill/year = 1,7 pct. of GDP = €1.850 mia. over 7 years

- [Think-tank Agora Energiwende](#) og consultancy bureau Climate & Company, have made a number of calculations of the cost of making EU sustainable. Depending on a number of uncertain assumptions they reach a sum of accumulated green investments to be undertaken by the EU Community for the budget period to be €2.400 bill. – anyhow only 2½ pct. of EU's GDP to fulfill the defined CO₂-goals for 2030. But neutrality in 2050 requires larger 'green' investments in the following years, hence a larger budget.

Tentative Conclusion

To establish full employment the government, i.e. the public sector, has to run a budget deficit similar to the private sector structural surplus. The ambition of full employment is, of course, very ambitious. Keynes's conclusion is more modest. High unemployment can be mitigated primarily by increased public spending (taxes were in the interwar period quite low and mainly paid by rich people). Anyhow, the theoretical point was, at least to Keynes, pretty straight forward: increased spending by government on public (domestic) consumption or real investment would have a positive impact on effective demand.

However, the real novelty of *the General Theory* was Keynes's demonstration that a budget deficit is a mirror picture of and response to private sector structural savings surplus, as long as persistent unemployment prevails. Idle private savings is the cause-root of unemployment and is available as a financial source, when deficit spending is undertaken to reduce unemployment. Because, too much private financial savings are in search of secure assets, i.e. demanding public sector bonds.

In addition, there is an important obstacle to the smooth working of the monetary Union, that not all countries can run a balance of payments surplus at the same time. Therefore, within a well-designed monetary union there has to be a financial re-balancing mechanism as an integrated part of the institutional super-structure. Inside the euro-zone any (or at least part of) balance of payments surplus should be paid into a structural fond, which is responsible of re-circulating these balance of payments surplus(es) back to the deficit countries. Then, euro-members could focus on how to rebalance the private sector, reduce unemployment by making it more competitive.

In this perspective of a realistic macroeconomic theory (and model), it becomes obvious, why a strategy of reducing a public sector deficit, when substantial unemployment is the over-arching problem, by recommending austerity policies will be counter-productive, if full employment and prosperity were the aim of the monetary union.

Literature:

Amoroso, B. (1998), *On Globalization: Capitalism in the Twenty-First Century*, London: Palgrave/Macmillan

Godley, W. and M. Lavoie (2007), *Monetary Economics: An Integrated Approach to Credit, Money, Income, Production and Wealth*, London: Palgrave/Macmillan

Jespersen, J. (2009), *Macroeconomic Methodology: a Post-Keynesian Perspective*, Cheltenham: Edward Elgar Publishing

Jespersen, J. (2012), Keynes's *General Theory* after 75 years: time to re-read and reflect, in Jespersen & Madsen (eds.) (2012), pp. 131-150

Jespersen, J. (2016), *The Euro – Why it failed*, London: Palgrave/Macmillan

Jespersen, J. (2018), 'Look after Employment, and the Budget will look after itself' in T. Veggeland (ed.), *Keynesian Policies - A New Deal in the European Narrative: Employment, Equality and Sustainability*, New York: Nova Science Publishers

Jespersen, J. and M.O. Madsen (eds) (2012), *Keynes's General Theory for today: Contemporary Perspectives*. Cheltenham: Edward Elgar Publishing

Keynes, J.M. (1934), *Is the Economic System Self-adjusting?*, The Listener, 21 November 1934

Keynes, J.M. (1936), *The General Theory of Employment, Interest and Money*. London: Macmillan

Lerner, A. (1943), *Functional Finance and the Federal Debt*, Social Research

Lerner, A. (1944), *The Economics of control: Principles of Welfare Economic*, New York: Macmillan

Mankiw, N.G. (2016), *Macroeconomics*, 9th ed. New York: Worth Publishers

European Green New Deal, 2020

"The European Green Deal is our new growth strategy. It will help us cut emissions while creating jobs."

Ursula von der Leyen, President of the European Commission



"We propose a green and inclusive transition to help improve people's well-being and secure a healthy planet for generations to come."

Frans Timmermans, Executive Vice-President of the European Commission



93%
of Europeans see climate change as a serious problem



93%
of Europeans have taken at least one action to tackle climate change



79%
agree that taking action on climate change will lead to innovation

What will we do?

CLIMATE

The EU will be **climate neutral in 2050**.

The Commission will propose a European Climate Law turning the political commitment into a legal obligation and a trigger for investment.

Reaching this target will require action by all sectors of our economy

ENERGY

Decarbonise the energy sector



The production and use of energy account for more than **75%** of the EU's greenhouse gas emissions

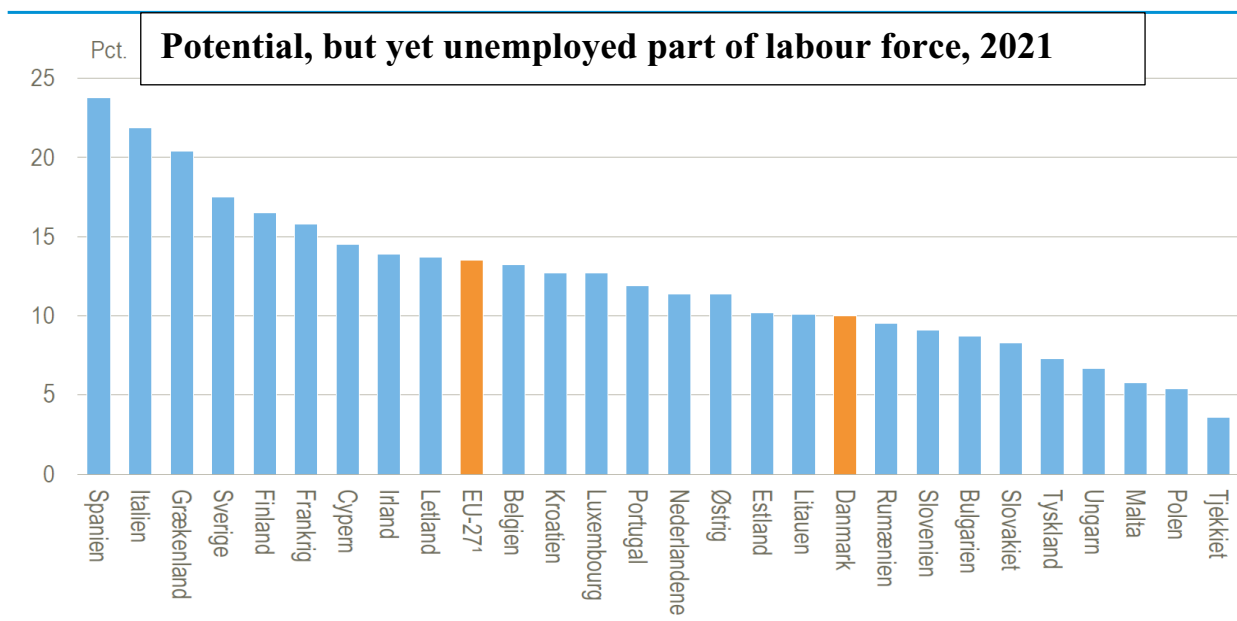
BUILDINGS

Renovate buildings, to help people cut their energy bills and energy use



40% of our energy consumption is by buildings

Arbejdskraftpotentiale i den udvidede arbejdsstyrke i Danmark og EU, 3. kv. 2021, 15-74-årige



¹ EU-27 (uden Storbritannien).

Kilde: Eurostat, [Labour Force Survey](#)

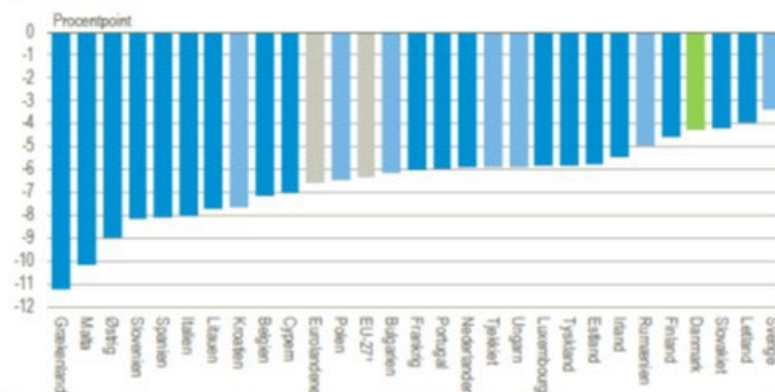
Government surplus/deficit (calendar and seasonally adjusted, as % of GDP)



Ændring i off. Budgetsaldo = finanspolitik, 2020

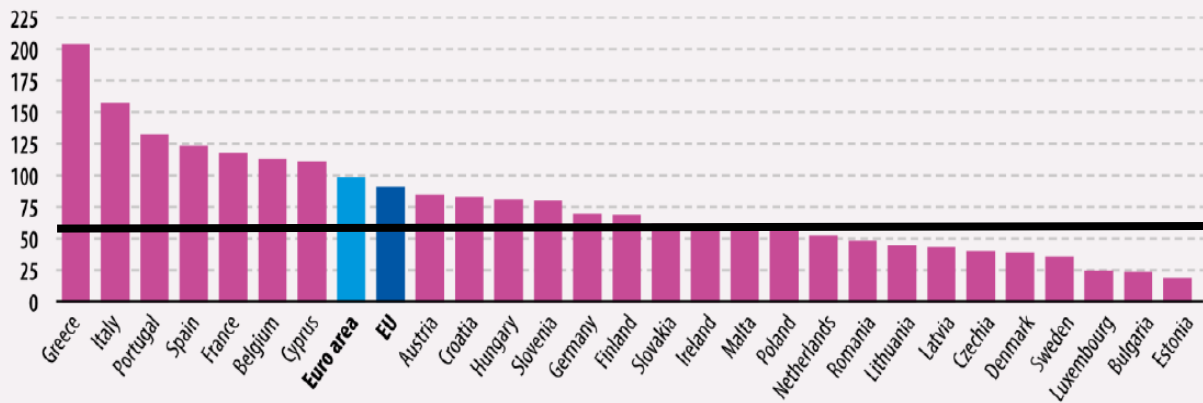
(Rough measure) of expansionary fiscal policy (change of budget balance), 2019→2020

Forskel i offentligt saldo (ØMU-saldo) i pct. af BNP. Fra 2019 til 2020

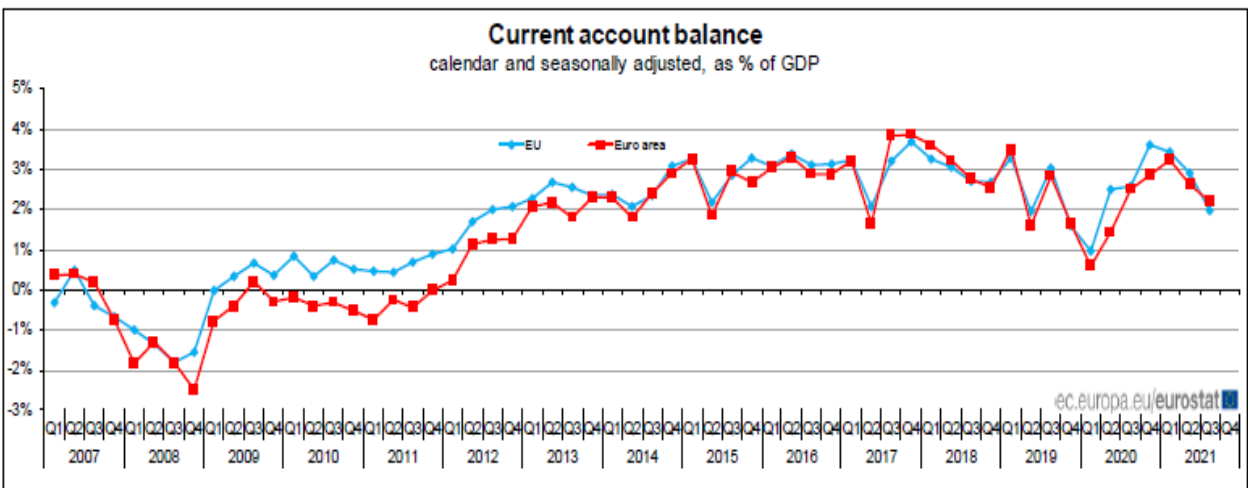
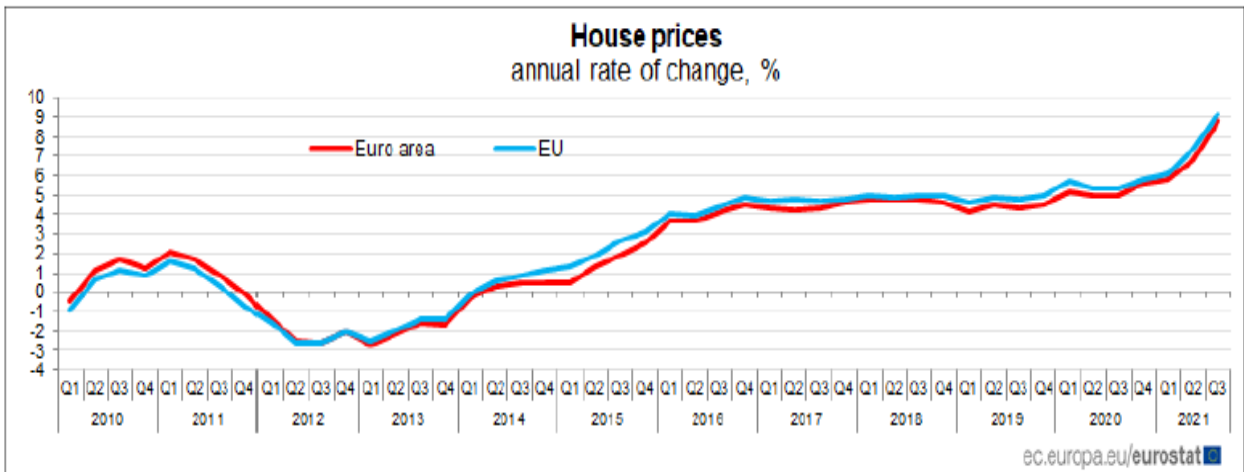
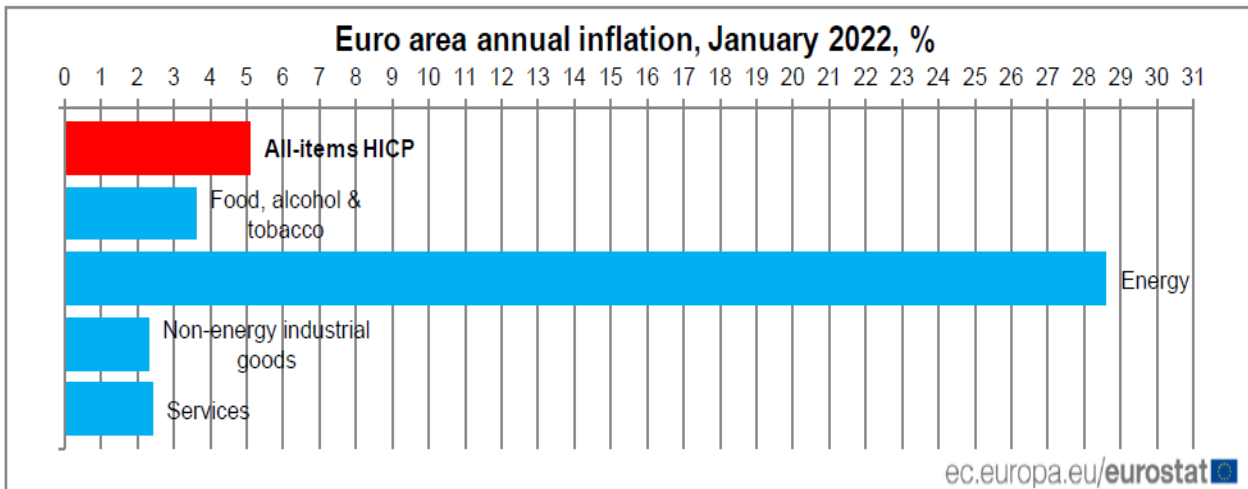


Anm.: De 19 eurolande er markeret med mørkeblå, de resterende EU-lande med lyseblå.

Government debt to GDP ratio, 2021Q3 in percentage



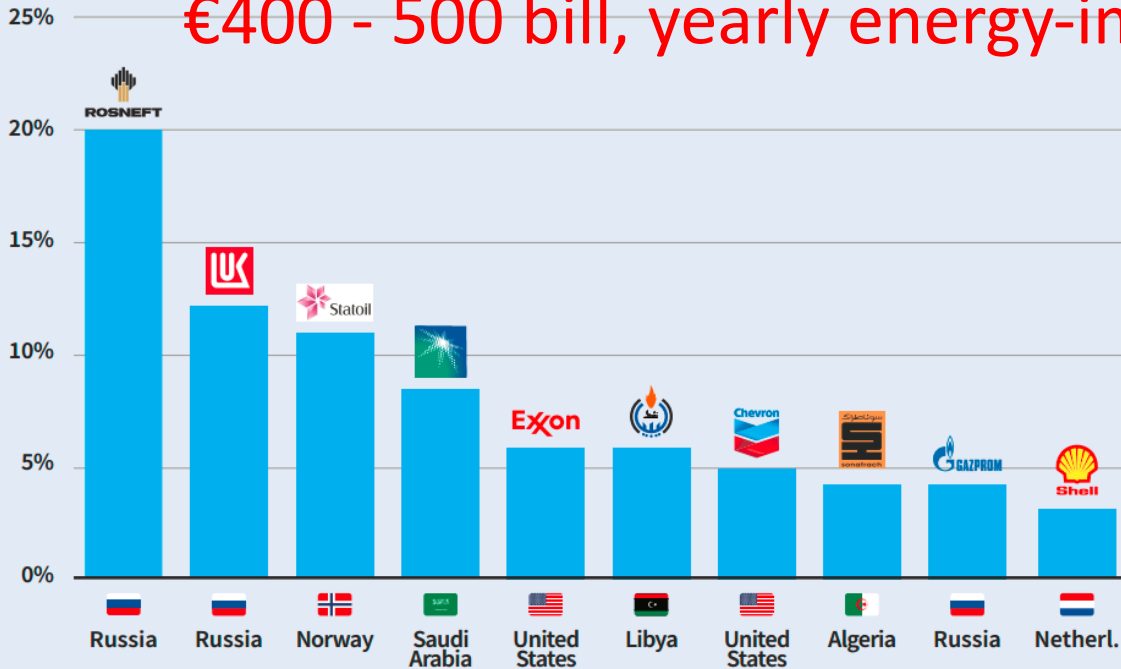
60 pct.



Who supplies Europe's oil?

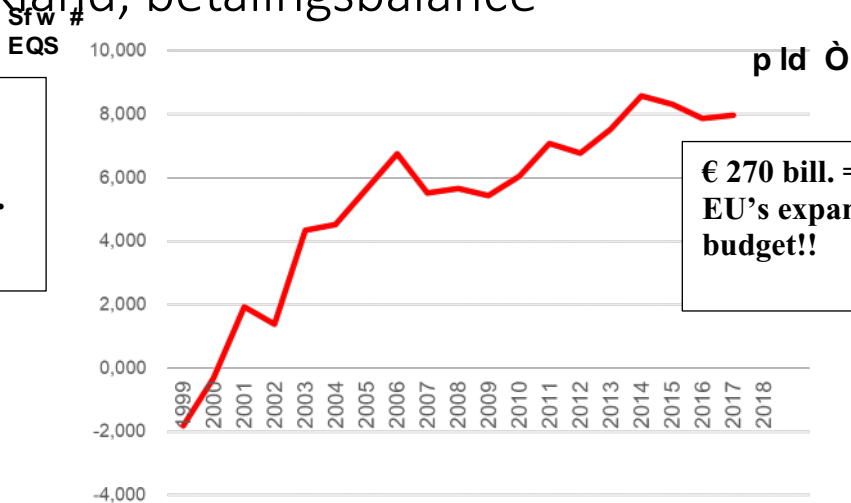
8 of the top 10 oil suppliers are non-European companies

€400 - 500 bill, yearly energy-import



Tyskland, betalingsbalance

Germany's balance of payment, pct. of GDP



€ 270 bill. = EU's expanded budget!!