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A GREEN “NEW DEAL” TO BOOST EUROPE

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To exit the Great Recession and initiate the transition towards a low carbon economy, we propose a public-private investment plan in the energetic transition of about 2 points per year of European GDP. The key concept of this plan is the opportunity to reconsider the criteria for public finances using, as the goal of stability a concept of public debt net of created public assets (in percent of GDP), instead of gross public debt. An impartial body (eg the European Commission) could assess *ex post* and *ex ante* the value of investments, creating the incentives for coherent and effective public expenditure policies.

1. The Great Recession and the great emergency

It is common to multiply the gloomy warnings about climate change and its consequences for the future. The Copenhagen conference failed to impose a mechanism to replace and expand the Kyoto Protocol. The commitment of a large number of countries, including the United States and China, not to let average global temperature to increase by more than 2°C compared to preindustrial levels was not followed by radical action. Yearly emissions of per capita greenhouse gas emissions in developed countries have not been reduced, and no concrete mechanism seems to be able to make this happen. In particular, carbon taxes, and the price per ton of carbon are at very low levels. However, these levels of annual emissions (in Europe, about 12 Gt of CO₂ equivalent per year and per capita, including emissions generated in the manufacture and transportation of goods and services) are well beyond the earth's absorption capacity. Emissions' growth in emerging markets (both because of raising living standard and of

the relocation of global industries) adds to the still high emission level in developed countries and has led to a per capita emission level of more than 40 Gt CO₂ equivalent, whereas climate stability would require yearly emissions of 10 Gt.¹ Repeating a dramatic message ends up emptying it of its meaning, but one would have wished that, confronted with this policy inaction the “very serious persons” that Paul Krugman mocks would take the subject at heart when it became serious, and begun implementing operating solutions. According to the IEA (International Energy Agency, 2011), given the climate emergency, and the depreciation rates of existing machinery or buildings, each year of delay in the adoption of the greenhouse gas emissions reduction path will increase the future cost of adoption since it will force early scrapping of the non “low carbon” equipment.

The 2008 economic and financial crisis, also called the Great Recession, also left us another disaster, namely the state of our economies, particularly in Europe. The sovereign debt crisis has triggered an unprecedented austerity for fear of a sudden stop of public debt financing in Europe. The possibility for financial markets to arbitrate between 18 public debts, all issued in euros, has forced some countries, in greater difficulty than others, to quickly reduce their public deficit. As fiscal multipliers were very high – because of the state of the financial system, of deflation expectations, and of private agents’ deteriorated balance sheets – cutting spending or raising taxes did not reduce debt and deficit as much as it was hoped. The synchronization of restrictive fiscal policy amplified the problem. As a result, public deficits were reduced very little, leaving the original problem (convincing financial markets) even worse than before. The implicit pooling of public debt in the euro zone ended the downward spiral of the euro; but high unemployment persists, together with economies on the verge of deflation. Therefore, the implicit mutualization

1. Between 2000 and the date at which emissions are stabilized at 10 GtCO₂ is stabilized, 2000 GtCO₂ can be emitted. We can therefore continue to emit at current rates (which implies an effort of reduction by developed countries to compensate for the convergence of living standards and emissions of emerging countries) until 2050. Beyond that date we will need to emit around one ton of CO₂ equivalent per capita. (GIEC, 2007, International Energy Agency, 2011).

does not completely rule out the return of a sovereign debt crisis in the eurozone.

On the eve of the European elections of May 2014 and of the Parties climate conference of Paris in November and December 2015, all leverage available to engage on a path of significant greenhouse emissions reduction is an absolute imperative. Finding a way to make the goal of reducing greenhouse gas emissions compatible with exiting the crisis appears to be unavoidable. The purpose of this brief is to try to link these two issues so as to emerge from the pernicious logic that under the false pretext that we need not to leave debt to our children, fails to give them a habitable planet.

2. What the 2008 crisis leaves us

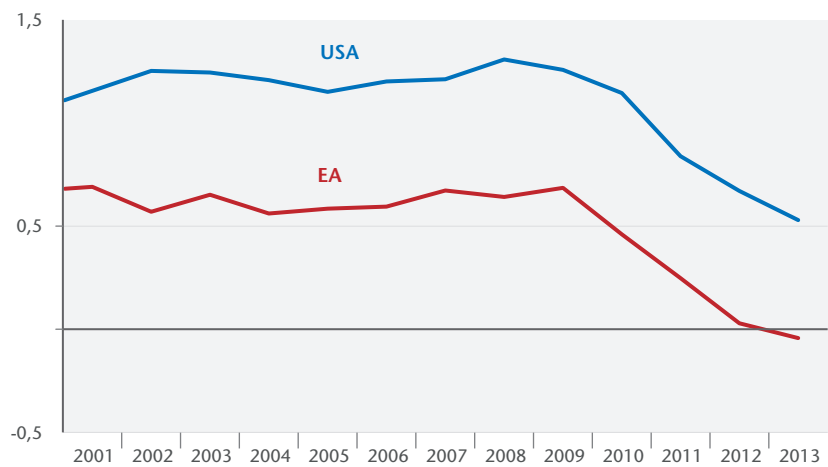
The reduction of economic activity and of public deficits had a considerable impact on public investment and residential investment in developed countries, particularly in the eurozone. Reducing investment does not generally result in the improvement of an agent's balance sheet, since today's foregone expenditure is largely offset by the need of compensating future investment. Cutting investment in physical assets may also result in crossing the "collapse threshold", which will require higher investment in the future than what was currently saved. In the case of education, a cut in the flow of investment is irreversible, as generations who have received little or poor education do not return to school in the future. This is why intelligent budget rules allow a special treatment of investment, or correct the measure of public deficit with the change in value of net assets (public or global). A reduction in the gross deficit resulting in an equal deterioration of net assets, does not improve financial sustainability.

However, in the Great Recession, in many countries, both public investment and housing investment were cut. Figure 1 shows public investment as a percent of potential output as defined by the OECD (in this case the EO93 database of May 2013.² The OECD estimated slowdown in potential growth since

2. http://www.oecd-ilibrary.org/economics/data/oecd-economic-outlook-statistics-and-projections/oecd-economic-outlook-no-93_data-00655-en?isPartOf=/content/datacollection/eo-data-en

2007, justified by the medium-term impact of the crisis, is debatable and largely reduces the effect of cutting public investment. If we had retained and extended the 2007 OECD estimate of potential growth, then the reduction of the ratio appears more severe. Figure 1 shows that public investment was cut from 2010 and the years 2011 to 2013 saw this trend continue.

Figure 1. Public net investment in percentage of potential activity



Source: *Economic Outlook*, 93, May 2013.

Table 1 details the share of public investment reduction in the structural budget consolidation effort made between 2009 and 2013 and identifies the countries that have used the final public investment as a means of adjust their public finances. In most countries, public investment, measured relative to potential GDP, decreased. Part of this decrease results from the revision of potential GDP (in the Eurozone, potential GDP has been revised by 10%, so the investment to GDP ratio is decreased by 0.06% GDP), but, nevertheless, public investment did decrease, in some countries strongly. In the crisis countries the pre-crisis period was characterized by high public investment, but net investment is today clearly negative in crisis, the period before 2007 was very auspicious in terms of public investment but is now negative net investment in these countries. At the euro area level the reduction of public investment is 0.6 percent of GDP compared to 0.7 in the United States. A recovery of public investment is needed to offset

the depreciation that is in progress. This recovery should be colored of green.

Table 1. Share of structural effort imputed to the decline in net public investment

	USA	GBR	EUZ	DEU	FRA	ITA	ESP	NLD	PRT	IRL
% Structural effort given by investment	14	-9	17	6	10	23	46	10	29	9
Public investment,% potential GDP (1990-2007)	1.2	0.6	0.6	-0.1	0.8	0.6	2.0	0.9	1.7	2.6
Public investment,% potential GDP (2013)	0.5	0.9	0.0	-0.2	0.4	-0.2	-0.6	0.6	-0.6	0.5
OECD potential revision 2013-2007, in %	-7	-12	-13	-10	-10	-14	-22	-11	-16	-35

The first line reads as follows: For a budget restriction of 1 percentage point of GDP in the United States, public investment in the United States has been reduced by 0.14 percentage point of GDP compared to the average ratio of public investment to potential GDP in the years 1990-2007.

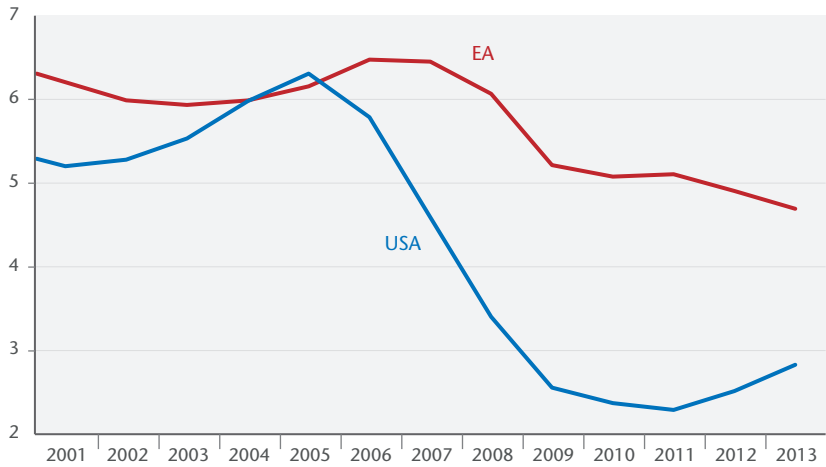
Sources: Economic Outlook, 93, author's calculations.

Housing investment has the same profile, as Figure 2 shows. At the euro zone level, nearly 2 percentage points of GDP of housing investment were lost (almost 2.5 percentage points in the USA). The fall in housing investment is related to the collapse of real estate markets, to real estate bubbles bursts in some countries (notably the United States and Spain) and to reduced bank loans to households. This decline followed a long period of stability (since 1990, gross investment in housing fluctuates at around 6 percentage points of GDP in the Eurozone and 5.5 in the United States; the real estate bubble has led to increased investment of 1 percentage point of GDP in the United States against a less than half a percentage point in the Eurozone). The correction is severe and investment today lags behind the needs implied by demographics and existing capital depreciation.

3. A "Green New Deal"

Supporting growth is a priority today. This must first and foremost rely on a public investment plan, reversing the trend described above, and supporting the also urgent energy transition. A second pillar should be a recovery of private investment in residential housing, needed to ensure sufficient housing, and to make the transition to an energy efficient housing stock. These two

Figure 2. Private residential investment as percentage of potential activity



Source: Economic Outlook, 93, May 2013.

pillars would allow to attain the double objective of exiting the crisis and reducing greenhouse gas emissions.

In the iAGS 2014 report (OFCE, 2013) we detail a public investment plan in energy transition. Table 2 gives an overview. This plan was put together drawing from materials such as white papers or *Roadmaps* published by the European Commission or the European Union. The iAGS 2014 report estimated the required investment surplus compared to a “business as usual” scenario. When investments in energy transition come in substitution of regular investments, there is no accounting of extra investment. The numbers in table 2 refer to extra investment over business as usual investment, and not, as usually, numbers generally presented as gross investment.

Such a package could increase investment in the euro area of an amount between 150 and 200 euro billions, i.e. between 1.4 and 2 percentage points of GDP, if we add to the energy transition a recovery of public investment towards the pre-crisis trends. Combined with fiscal multipliers still high (especially considering that investment would be made more than proportionally in countries in crisis), one would expect this package to boost the European economy for about 2 percentage points of GDP. Although insuffi-

cient to completely overcome the crisis, this stimulus would be a great step forward.

Table 2. Green New Deal

Billions of Euros per year

	Annual investment EA17	Annual investment EU28
“Low carbon” Transeuropean Transport Network (TEN-T)	50.7	80.00
European Integrated Electric networks	6.65	9.39
Renewable energy production	26.83	40.60
Buildings’ thermal renovation	48.43	64.31
Total	132.61 (1.4% of GDP)	194.30 (1.5% of GDP)

Sources: iAGS Report 2014 from (EC, 2007, 2011a, 2011b, 2011c; ENTSO-E, 2012; EREC (European Renewable Energy Council), 2011, ETUC, 2013, “The EU climate and energy package – European Commission”, nd).

4. Financed by public debt

The financing of such a package is the key to its impact on the economy. The proposal here is to primarily finance it through public debt. This idea may seem shocking when, at least at first sight, the sovereign debt crisis in the euro zone was due to excessive public debt. Yet the public investment implied by this package has a positive net worth since it allows preparing for the energy transition. This positive net value is computed on the basis of a widely studied implicit price for the ton of carbon depends. Given today’s low sovereign interest rates, the target price needs not to be very high (less than 50 euros per tCO₂). The built infrastructures should target profitability. Various instruments can be used for this aim. The objective would to make explicit the price, so far implicit, of a ton of carbon, either through emissions rights trading or through a carbon tax. Standards, legal obligations or tax incentives may be other instruments to change incentives and behaviors.

In the case of buildings energy efficiency, financing is not necessarily public. To overcome blockages generally recognized that prevent positive net value investment to be realized, we propose *third party investors* schemes, in which specific agencies carry the debt related to investments and finance it through the realized energy savings. This can be combined with tax incentives. Even in this case, a price per ton of carbon helps to increase the profitability of investment. This debt would not be public, but

in order to reduce its cost (and hence to increase investment profitability), a public guaranteed can be designed, through large and regulated institutions.

5. Conclusion: how to control public investment?

The crisis was accompanied by a slowdown in investment at a moment in which, for a reasonable estimate of the implicit price of carbon reasonable, investment in the energy transition would be most needed and convenient. Low sovereigns rates in the euro area make financing this investment easy, and its sustainability is guaranteed by the accumulation of assets and unchanged net debt. The value of these assets will depend on the implicit price of carbon but explicit price changes may also be required as changes in behavior are likely to require strong price signals.

It remains that the proposal to increase debt may seem at odds with the current trend of public deficit reduction. The paradox is that fiscal rules in the EU focus on an irrelevant criterion, gross debt, instead of taking into account the correct measure, that is debt net of accumulated assets. Measuring the latter, however, requires an assessment of the value of these assets and the assessment can be problematic because it is based on a projection into the future, of the return of the investment, but also of the changes in behavior induced by policies changes. For instance building freight railway transportation infrastructure is easy. But the value of such infrastructures depends on the quality of connection opened, the density of the network and the matching with flows of freight. A well-designed infrastructure will only have value if it is used and if the transport by road turns out to be more expensive than transport by rail. This can be done through an environmental tax, higher tolls, a ban on road transit or subsidies to rail transport. But without at least one of these accompanying policies, the new infrastructure may fail to capture traffic and therefore have no value.

The risk is that to revive our economies, heavy investment is undertaken where it is easy to invest rather than where it is appropriate. A number of schemes to stimulate investment (whether residential or infrastructure) are done with this perspective, and then suffer from low profitability. The European Commission has a potentially important tool to overcome this flaw. Current fiscal

criteria are based on gross debt, and they give governments an incentive to reduce investment. If budget criteria were softened for investments with positive net worth, in an intelligent golden rule, the Commission could have a dialogue with European government on a project by project basis. In assessing *a posteriori*, the effectiveness of investment, both in itself and concerning accompanying policies, the European Commission could control the quality of investments, avoiding the pitfall of grandiose but inadequate constructions. This would be a new instrument of public finance management in Europe and a way out of the absurd public debt hunting, including when it originates in necessary investment.

Some concrete proposals to overcome the crisis and at the same time address the urgency of energy transitions could be:

- Revive European economies through a public and private investment plan of about 2 percentage points of GDP per year, broken down as follows:
 - Public investment in the transition to low carbon economy, of the order of one percentage point of GDP per year;
 - End of under-investment in existing infrastructure (around 0.5 percentage points of GDP);
 - Stimulus by various mechanisms of energy transition in the residential sector (around 0.5 percent of GDP).
- Partially finance the plan with public debt by amending the treaty provisions on stability and growth, so that governments need to target debt net of asset creation instead of gross debt. This goes along with proposals on introducing a golden rule;
- Support the investment plan with any tool that ensures its profitability (tax policies, emission rights, fiscal policies, taxation, subsidies or standards);
- Give a (trusted) third party the *ex ante* and *ex post* assessment of the value of public investment for the calculation of net debt to guarantee the policy coherence and effectiveness of proposed investments.

