

Should we still use the concept of potential growth?

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■ 1. Introduction

- The concepts of potential output levels and growth survived the crisis.
- They have been set in stone in the Fiscal Compact, which refers to structural public balances and structural efforts, as evaluated by the European Commission services.
- These estimates are derived directly from potential output estimates, in order to assess and to sanction national fiscal policies, in a rather strange combination of a theoretical concept, an empirical evaluation and a technocratic validation of economic policy strategies.
- Euro area member states (MS) are obliged to cut their structural deficit by at least 0.5 percent of GDP and to bring their structural deficits below 0.5% of GDP, on the basis of the EC evaluation.

- The potential growth concept is also present in current economic policy debates:
- Is potential output really an effective constraint on the economy today?
- Is the euro area condemned to low growth in the future due to a low potential growth?
- Is the priority to support effective growth or to strengthen potential growth?

- However, in the past, the European Commission, the OECD and the IMF have been unable to assess the potential output level in real time.
- The methods used do not explain the potential output loss due to the crisis (except in a tautological way).
- They do not allow to say whether the loss is permanent or not.

- There are no clear definition and measures of potential output, if one considers that the working age population, its participation rate, its skills, the capital stock and labour productivity are not independent of the effective growth path.
- The examples of Spain and Greece show that there is no potential output path independently of the actual output path, of implemented macroeconomic policy, of EU and EMU membership, of the financial crisis.
- There are statistical methods that allow to exhibit so-called potential growth trajectories but there is no explanatory model which would justify a break in potential growth in 2008-09, unless one recognizes that this break comes from the break in growth itself, which on the one hand raises the issue of its reversibility, and on the other hand, does not explain the inability of economic policy to maintain output close its pre-crisis so-called potential level.
- No endogenous and automatic forces bring output back to a potential level defined in a an-historical way.

- Section 2 discusses from a theoretical viewpoint the concepts of potential growth and potential output.
- Section 3 presents and discusses empirical works evaluating potential growth (EC, OECD, IMF, ECB, INSEE, ...). It shows the limits and dangers of the methods used, which lead to justify pro-cyclical policies.
- Section 4 deals with the debate on future potential growth.

2. Potential growth: What is the theoretical basis?

- By definition, potential output is the maximum output level that may be reached and maintained at a given time, without excessive tensions in the economy, in particular with no acceleration of inflation.
- Which tensions/imbances which should be taken into consideration: external deficit, public deficit, public debt?
- The potential output definition refers to a reachable output level. It therefore requires considering a hypothetical policy which would bring output back to its potential level, but in so doing potential output would be modified. This is an ambiguous concept.

Potential growth: What is the theoretical basis?

- These concepts have a double different background.
- For Keynesians, they indicate a growth path close to full-employment. Potential growth is stable. The output gap can be large due to demand deficiency. **A vigorous economic policy may be required.**
- For neo-classical economists, potential growth is a path compatible with supply constraints, taking into account the equilibrium unemployment rate (which may be high) and the effective capital stock. The output gap is usually low. **We must accept the current output level.**

What theoretical basis?

- Potential output is not an observable variable.
- Its assessment relies on many statistical assumptions and theoretical definitions.
- There is *no a priori* potential growth that one could measure. **The concept is a questionable construction:** maximum growth without (judged) excessive imbalances, resulting only from supply constraints as opposed to a demand-driven effective growth.
- The meaning of potential growth becomes unclear if the economy suffers from a capital constraint, from strong inflation (at least, above the objective), from deteriorated competitiveness, from excessive government deficit (at least here also, as compared to the objective), from inadequate income distribution.
- Maximum growth can then be set as part of a certain economic model, with some imbalances taken in account, and a specific economic policy strategy.

What theoretical basis ?

- At time t , when effective production is Y_t
- The potential output level $Y_t^* = f(t, X_t, Z_t, Y_{t-i})$ is evaluated, such as : $\pi_t = \pi_{t-1} + \beta(Y_t - Y_{t-1}^*) + \varepsilon_t$
- X represents exogenous variables (like working age population, but it depends on immigration, hence on production);
- Z represents regulation or structural economic policies parameters that may possibly change (such as the retirement age) according to production developments
- There is no evidence that β in the equation is stable. On the contrary, the **kinked supply curve theory** tells us that β is strong when the output gap is positive or close to zero, but becomes nil when the output gap is negative. In a situation of economic depression, the naive econometrician will find that the output gap does not vary and therefore that potential output follows actual output.

What theoretical basis?

- The link between potential growth and actual growth is problematic.
- From a basic perspective, potential growth is exogenous and relatively regular: it is the sum of exogenous technical progress, trend growth of activity rates and working age population.
- In fact, most empirical studies lead to strongly fluctuating estimates of potential growth, correlated to actual growth.
- Either one admits that growth is hit effectively by exogenous productivity shocks, so actual growth is potential growth.
- Either it is an artifact: the so-called potential growth fluctuations are the reversible outcome of actual growth fluctuations. Stronger demand induces stronger growth which induces larger capital accumulation, increases activity rates, attracts migrant workers, increases apparent labour productivity. An imperfect filtering of these effects induces fluctuations of measured potential growth.

What theoretical basis?

- The issue becomes delicate after a strong shock, such as the output fall in the years 2008-09. How to distinguish permanent and irreversible effects from temporary ones?
- The diagnosis of a permanent effect may be self-fulfilling since it leads to the thesis according to which one should accept the output loss and therefore implement restrictive economic policies in a depression period.

What theoretical basis?

- The standard method for estimating potential growth is the production function method:

$$Y^* = A^* K^{1-\alpha} (U_N T_N H_N L_D)^\alpha$$

- K represents the effective capital stock. A fall in K induced by a fall in investment, itself caused by a fall in demand, will lead unfortunately to a fall in measured potential output. This is questionable as productive investment will recover when demand increases.
- The cases where investment is constrained (for example by financial constraints) should be distinguished from the cases where investment can follow demand.
- The effect of the crisis on the capital cost is problematic: interest rates decreased significantly, but this was probably not true for interest rates adjusted for risk, growth and inflation; the required rate of profit declined, but it was formerly obtained via fictitious financial gains.

What theoretical basis ?

- L_D is the working-age population; in many EU countries (Spain, Ireland, the United Kingdom), there were strong immigration flows in the pre-crisis period, which reversed with the crisis. The concept of available population becomes vague.
- H_N represents the trend of working time. It depends partly on social or economic policy decisions.
- T_N represents the trend of activity rate; it is sensitive to the labour market situation. In a long-term perspective, the activity rate depends both on effective growth and social choices (such as the retirement age or female employment). Will the future European economy choose to allow non-activity for dependant people, women with young children, older workers or will it be a over- full-activity society seeking to offset for the lower growth of working-age population by immigration, retirement age postponement, dependant people work, reduction of holidays, longer working time, etc.

What theoretical basis ?

- U_N represents the equilibrium (or structural) unemployment rate, which is difficult to estimate:

$$\Delta r w c_t = -\beta(U_t - U_t^*)$$

- The unemployment rate is above the equilibrium rate if real wages grow faster than labour productivity. But this is a descriptive method, which does not explain the structural unemployment rate evolutions.
- Labour productivity strongly decelerates in times of crisis. When the unemployment rate is high, its fluctuations have little impact on real wage developments, so according to this method an increase in the unemployment rate is often an increase in structural unemployment.

What theoretical basis ?

- A^* stands for the total factors productivity (TFP) trend, adjusted for the capacity utilisation rate.
- There is a strong correlation between the capacity utilisation rate and TFP developments, and so it is not easy to define the trend.
- A^* decreases sharply in times of economic recession because firms are reluctant to lay-off workers.
- A^* depends on the rate of growth according to the Kaldor-Verdoorn effect. Moreover, in the medium term the TFP trend depends on companies' R&D efforts of, in the long term of countries' efforts in education and research, so that its exogenous nature is problematic.

What theoretical basis ?

- The alternative method is to recognise implicitly that the capital stock is endogenous and to focus on the labour market:

$$Y^* = PT^*(U_N T_N H_N L_D)$$

- Assessing PT^* raises the same issues as for A^* .
- A country in a full employment situation should try to reduce the labour/output ratio; a country in a mass unemployment situation should follow the opposite strategy.
- In times of mass unemployment, governments encourage firms to maintain jobs, in particular by specific cuts in employers' social contributions, and so the apparent labour productivity growth trend is reduced.
- A company with strong growth can more easily introduce innovations reducing the need for labour than a firm with stagnating demand, where these innovations would lead net employment to fall, and so to layoffs, socially difficult to manage.
- So PT^* growth depends on the labour market situation.

After the 2008-09 crisis, the potential growth approach raises three questions and alternatives:

- A - 1) potential output fell with the crisis because some production capacities and some jobs are now obsolete. But can this apply to MS which, unlike Spain, did not suffer from specific sector imbalances? Potential production constraints current production 2) the fall in demand induced a fall in production and in production capacity, which can be reversed when demand recovers. The current depression is the result of inappropriate economic policy.
- B - 1) total factor productivity (TFP) growth has undergone a new downward break in 2009 (but there is no evidence from this, as long as the economy is far from a normal level of capacity utilisation) 2) this TFP break is linked first to labour hoarding and to the weak growth itself.
- C - 1) Euro area output is currently around 8% below its pre-crisis trend level. The euro area may decide in the future, if this is the social choice, to postpone the retirement age, to reduce part-time work, to increase female participation and immigration. There is no labour supply constraint. The challenge is that everyone willing to work has a job. 2) Euro Area growth will hit a labour supply constraint,

After the 2008-09 crisis...

- The financial crisis led to permanent weaker demand; it is no longer possible for the growth regime to be driven by rising debt and financial and real estate bubbles; the fall in equity prices impoverished households and weakened the firms' balance sheets; many households and businesses want to reduce their debts. Public finances deterioration paves the way for a prolonged period of fiscal austerity. The persistent weakness of demand necessarily translates into a persistent weakness of production, so of supply.
- It is a conceptual error to see in this weakness a fall in potential output and growth.

Potential growth and the European Commission

- While the first version of the Stability and Growth Pact was essentially based on 3% of GDP the limit for the nominal public deficit, **successive reforms increased the role of the structural deficit notion (and thus of potential output)**
- Thus, Member States should now have a medium-term target of 0.5% for their structural public deficit; as long as this objective is not achieved, they should improve their structural balance by at least 0.5% per year. The 3% limit remains for nominal deficits; breaching this arbitrary limit initiates the Excessive Deficit Procedure.
- These rules have no economic basis, as was already written many times. These rules are much more rigid than the *golden rule of public finances* (which allows for **a structural deficit, corrected for public debt depreciation induced by inflation, equal to net public investment**), and more rigid than the debt stability constraint (with a nominal growth of 3.5%, a structural deficit of 2.1% allows to keep public debt at 60% of GDP).
- They prevent any discretionary stabilisation fiscal policy, although it is necessary for perfect stabilisation.

Potential growth and the European Commission

- They have no economic rationale they can only be understood for political reasons; their objective is to deprive Member States of any autonomy as concerns fiscal policy; to impose them an automatic fiscal regime, to concentrate all macro-economic policies at the EC level.
- But the EC (and even fiscal union) is unable to implement the differentiated and reactive fiscal policies that would be necessary for each country's economic situation.
- The prevailing ideology in the EC Institutions is that of 'austerity/structural reforms', which claims that MS should reduce public spending and seek growth through deregulation of goods and services markets and reduction of labour laws ; therefore, the EC does not have the objective to implement effective fiscal policies.
- In January 2015, a EC communication recognises that the requested reduction in the structural deficit should depend on the MS economic situation. But the EC persists in refusing discretionary fiscal policies; the fiscal impulse should always be negative; in some extreme cases it could be zero, but never positive. The EC refuses the simple principle according to which: "each country should be able run the fiscal policy required to maintain its production at the potential level".

Potential growth and the European Commission

- Moreover the devil is in the details: a main issue is the way of evaluating potential production.
- The Commission uses the production function method which leads to a fragile evaluation, which is strongly revised and is always close to the current production level.

Potential growth and the European Commission : the French case

- In spring 2008, the output gap for 2007 was estimated to be slightly negative (-0.2%). After the 2001-02 Internet crises, France had experienced a poor growth period (an average annual growth of 1.6% from 2000 to 2005). It had recovered a satisfactory growth in 2006-07; the unemployment rate had fallen down to 8% in 2007.
- After the 2008-09 crisis, the output gap is now estimated to have been strongly positive in 2007 (+3.1%); the French economy would have been overheating from 1999 to 2008; the output fall in 2009 is almost entirely a return to normal. This is very awkward: over the 1999-2007 period, inflation remained close to 2%; the wage share in value added remained stable (55.8% in 1999; 55.3% in 2007). There was no sign of overheating.
- Nevertheless, the revision done by the Commission reduces by 3.3% the potential output level in 2007 and increases by 1.7 percentage point the structural public deficit (-2.4% in the estimate from 2008; -4.1% now).
- According to the current estimates by the Commission, French potential growth was already relatively low before the crisis: 1.7% in 2006-2007 (against 2% for estimates made before the crisis); it fell sharply in 2009 and has been since then of 1% only.

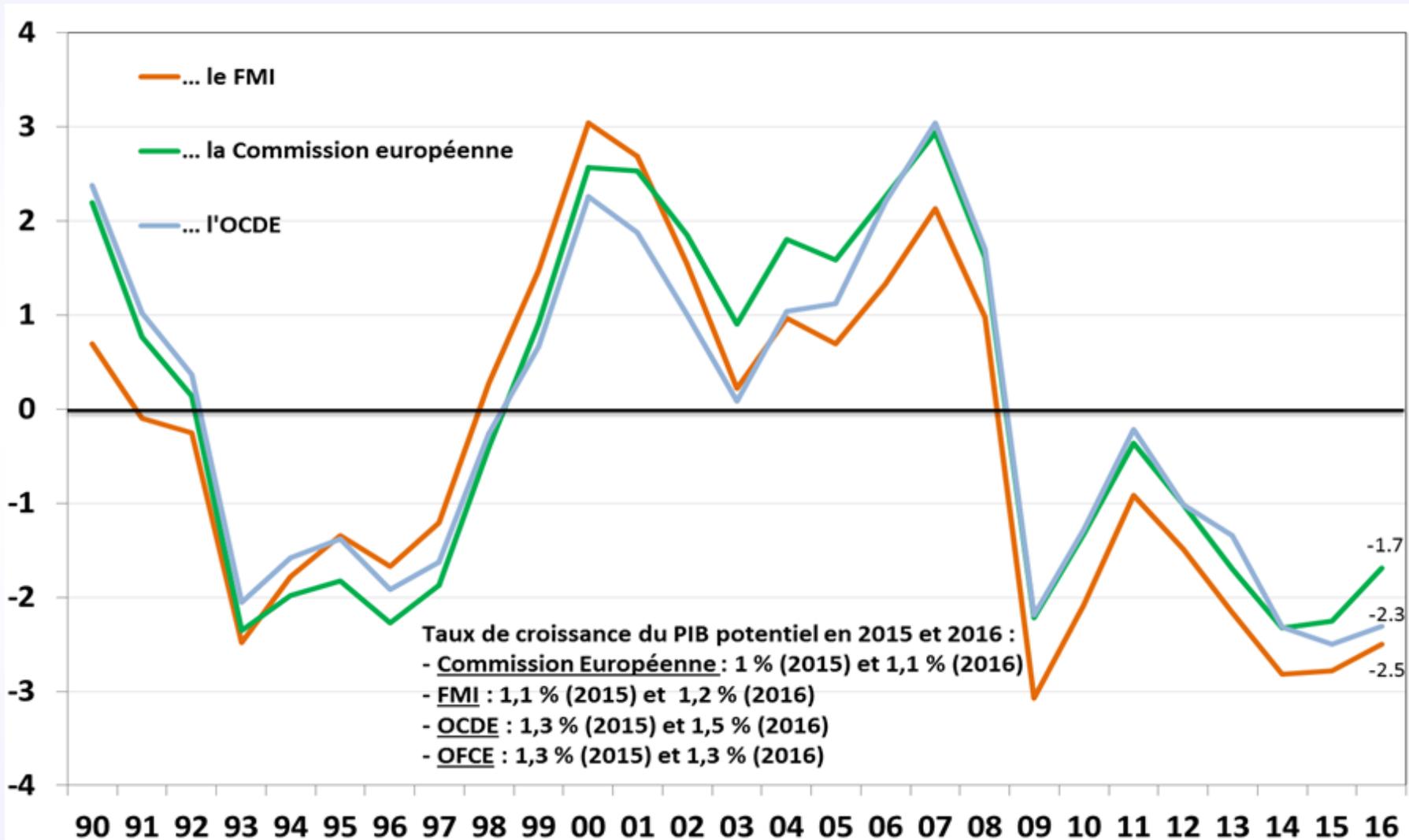
1. French potential growth rate and output gap according to the EC.

	Spring 2008			Spring 2010		Spring 2012		Autumn 2014	
	GDP*	potGDP*	OG	potGDP*	OG	potGDP*	OG	potGDP*	OG
2000	3.9	2.4	2.2	2.1	1.9	2.0	2.9	2.1	2.5
2001	2.0	2.3	1.8	2.0	1.8	1.9	2.9	1.9	2.6
2002	1.1	2.1	0.7	1.8	1.0	1.7	2.0	1.7	2.0
2003	0.8	2.0	-0.2	1.8	0.3	1.8	1.1	1.7	1.1
2004	2.8	2.0	0.3	1.8	0.9	1.9	1.6	1.8	2.1
2005	1.6	2.0	0.0	1.9	1.0	1.9	1.7	1.8	1.8
2006	2.4	1.9	0.1	1.8	1.4	1.9	2.3	1.7	2.5
2007	2.4	2.1	-0.2	1.8	1.9	1.8	2.7	1.7	3.1
2008	0.2	1.9	-0.5	1.6	0.8	1.6	1.1	1.6	1.7
2009	-2.9			1.2	-2.7	1.2	-2.8	0.9	-2.2
2010	2.0			1.3	-2.7	1.2	-2.5	1.1	-1.3
2011	2.1				-2.3	1.3	-2.1	1.1	-0.4
2012	0.3					1.2	-2.8	1.0	-1.0
2013	0.3					1.2	-2.7	1.0	-1.7
2014	0.3							0.9	-2.3

*Growth rate.

Should we still use the concept of potential growth?

Output gap estimates (October 2015)



Potential growth and the European Commission

- The situation is worse for other countries, such as Greece, Spain and Portugal, where potential growth would now be estimated to be negative (table 2).
- Output gap estimates made before 2008 did not warn these countries against an excessive production level. Today, the Commission considers that potential growth became negative for Italy, Spain, Portugal and even more Greece. These evaluations have dramatic consequences in terms of the structural effort the countries concerned are expected to make.
- A potential growth of -1% instead of +2% decreases by approximately 1.5 percent of GDP the estimated size of the structural effort.
- In fact, recently, the EC did not use the estimated OG for Greece to evaluate its fiscal policy.

2. Potential growth rate and output gap according to the EC

	Output gap 2007 (2008 estimation)	Output gap 2007 (2014 estimation)	Potential growth 2007 (2008 estimation)	Potential growth 2007 (2014 estimation)	Potential growth 2013 (2014 estimation)	Output gap 2014 (2014 estimation)
Belgium	0.3	2.7	2.5	1.8	0.7	-1.1
Germany	0.7	1.9	1.4	1.3	1.3	-0.8
Ireland	0.2	4.7	5.2	3.1	0.9	-0.2
Greece	1.5	4.7	3.8	1.9	-3.1	-10.9
Spain	-0.4	3.0	3.7	3.7	-0.7	-6.0
France	-0.2	3.1	2.1	1.7	1.0	-2.3
Italy	-0.3	2.4	1.5	0.8	-0.4	-4.5
Netherlands	0.3	2.5	2.1	1.9	0.2	-3.0
Austria	0.9	2.0	2.2	1.9	0.9	-1.1
Portugal	-1.1	0.9	1.3	1.2	-1.0	-6.0
Slovenia	1.4	7.1	4.9	3.6	-0.2	-2.7
Finland	0.8	4.6	3.4	1.6	-0.1	-3.1
UK	0.4	2.1	2.7	1.9	1.0	-0.8

Potential growth and the European Commission

- The Commission's method is presented in: "*The Production Function Methodology for Calculating Potential Growth Rates and Output Gaps*", European Economy, Economic Papers 535, November 2014.
- Potential production is estimated according to the production function method, with the already reported drawbacks.
- The paper considers potential growth should be equal on average to actual production, but this is questionable in the case of the euro area which has experienced a prolonged depression and strong disinflation.

Potential growth and the European Commission

- The unemployment rate is higher than its structural level if unit wage costs growth is positive. Thus the estimated structural unemployment rate follows roughly the effective unemployment rate fluctuations. It is not explained by structural factors. For Spain, according to 2014 estimation, the structural unemployment rate would have declined from 17% in 1992 to 12% in 2005, before rising to 26% in 2015
- At Year N, potential output must be extrapolated for years N + 1, N + 2, which is done using the Commission projections figures, which necessarily fluctuate largely and are uncertain. Filtering trends in productivity is particularly fragile for the end of the period. **Thus, the more uncertain potential production and structural balance evaluations are those which are central for the assessment given by the European Institutions on national fiscal policies.**
- The EC paper gives no explanation on the revisions induced by the crisis and on the unrealistic results for the 2000-07 period.

Potential growth and the European Commission:

- In a recent paper (*Quarterly report on the Euro Area, October 2015*), the DG Ecfm shows that its method performed better than an HP filter, OECD and IMF methods. The fact is that all four methods have a poor performance.

Three criticisms from our side:

- Assessing the performance of a method by confronting its real time evaluation with the EC current one is more than problematic, as the EC current method is as (more ?) problematic than the real time one.
- We cannot accept the thesis according to which the break in growth in 2008-09 is *structural* , an evidence according to which the output gap was strongly positive in 2007 as the break comes from a financial crisis prolonged by a European-imposed fiscal austerity policy.
- The EC evaluations are self-fulfilling : an evaluation of slow potential growth obliges MS to implement austerity fiscal policy, which induces a slow growth, which the paper uses as an evidence that potential growth was effectively weak.

Potential growth and the European Commission : a CPB view

- Hers and Suyker (CPB, 2014) also criticize the Commission methods to evaluate the structural balance. They show their volatility and divergences between institutions.
- The indicator often gives wrong indications. A MS undertaking a fiscal effort see its potential growth decrease, which may make the effort apparently disappear.
- They suggest to use a more robust and simple method (but is it possible?), to measure the fiscal effort by an *ex ante* evaluation of fiscal consolidation measures (but we must have a 'without measure' alternative scenario, which is arguable).
- The issue would be less important if we agree that a country only has to implement fiscal consolidation if it suffers from visible unbalances (like a too high inflation rate or a too high external deficit).

Potential growth and the European Commission : five conclusions

1. The use of the potential growth concept by the Commission cannot take into account supply constraints faced by a MS. This is obvious from the estimates made for Greece, Spain, and Ireland before the crisis. If there was unbalanced growth in these countries, but imbalances were not reflected in terms of deviation from potential growth.
2. The Commission has no explicit theories explaining why potential growth slowed down in 2008-09 and why it is so low now. It does not disentangle cyclical and structural developments. For instance, the UK potential growth estimate had fallen to an annual 0.9% in 2010, and has risen in the following years back to 2%. The potential output constraint shifts away as observed GDP comes close to it.

Potential growth and the European Commission : five conclusions

3. These drawbacks are one more argument against the notion of potential growth and its use for economic policy. Either potential growth is independent from effective growth and if so it is difficult to understand why the Commission lowered it so much after the crisis. Or potential growth depends on effective growth. But should the conclusion be that potential output is permanently lower and that any strong increase in demand should be avoided in the future, or, in the contrary, that strong growth is needed to increase production capacity, to bring discouraged workers back to the labour market and to avoid a deterioration in their working skills?
4. The EC-DG ECFIN estimates cannot be used to set targets or limit public deficits as they are volatile and unreliable. A more robust method resulting in a more stable potential growth would be necessary. It would either lead to the conclusion that fiscal policies should have been significantly more expansionary in the euro area or it would need to specify the reasons why this would have been irrelevant (such as current account imbalances)

Potential growth and the European Commission

5. It makes no sense to oblige a MS to run a restrictive policy in order to meet an arbitrary public finance target if this is a country with high unemployment and weak and decelerating inflation. The output gap could serve as a guide for economic policy with a rule such as: **a country is allowed to run an expansionary policy if its output gap is negative.** But this is not written in the Fiscal Compact. The issue of the output gap evaluation remains.

Potential growth and international institutions

- The OECD and the IMF use similar methods as those of the Commission, with similar results. Spanish and Greek imbalances are not detected before the crisis; after the crisis, output gaps are strongly revised upwards; potential growth becomes nil or even negative in Spain and in Greece.

Output gaps and potential growth, according to EC, OECD, and IMF

In %

	OG 2007 (2008 estimate)	OG 2007 (2014 estimate)	Potential growth, 2007 (2008 estimate)	Potential growth, 2007 (2014 estimate)	Potential growth, 2013 (2014 estimate)	OG 2014 (2014 estimate)
Greece						
EC	1.5	4.7	3.8	1.9	-3.1	-10.9
OECD	0.7	9.5	3.8	0.7	-1.4	-12.7
IMF	-	10.0	-	0.5	-1.8	-9.4
Spain						
EC	-0.4	3.0	3.7	3.7	-0.7	-6.0
OECD	0.3	4.6	3.4	2.6	0.4	-6.1
IMF	0.3	2.7	3.5	2.8	-0.2	-5.0
France						
CE	-0.2	3.1	2.1	1.7	1.0	-2.3
OECD	0.3	3.0	1.9	1.5	1.3	-2.2
IMF	-0.5	2.1	2.1	1.6	1.2	-2.8

Financial variables ?

- Borio *et al.* (2013, 2014) notice that, over the last three decades, price fluctuations poorly reflect output fluctuations. But financial variables (credit growth rate, housing prices, real interest rate) play an important role in the dynamics of demand and supply: They introduce financial variables in a model explaining the output gap. With ϕ financial variables, the model is written:

$$(3) \quad \Delta y_t^* = \Delta y_{t-1}^* + \varepsilon_t$$

$$y_t - y_t^* = \beta(y_{t-1} - y_{t-1}^*) + \gamma\phi_t + \eta_t$$

- For 2000-2012 period, such a model has the advantage of inducing a positive output gap before the crisis and a negative one since.
- On the other hand, while the model allows to exhibit a potential growth series, it does not explain its determinants. It includes no variable representing the tensions on supply. The model does account for factors driving the economic cycle other than financial variables. It is based on the arguable assumption according to which production equals potential output when financial variables are at their average value.

Financial variables ?

- The model can be generalized by introducing other cyclical variables (ϕ) like the fiscal impulse, the real exchange rate, oil price shocks:

$$y_t - y_t^* = \beta(y_{t-1} - y_{t-1}^*) + \gamma\phi_t + \delta\varphi_t + \eta_t$$

- But this remains a descriptive (and not explanatory) model of potential growth. Above all, the model relies on a non-demonstrated postulate: demand is equal to potential production, when external, financial, and economic policy shocks are nil, which neglects the impact of private demand.

Potential growth: OFCE's points of view

- Insofar as it is difficult to estimate an equilibrium unemployment rate, insofar as there is no reason to include capital stock fluctuations in potential output estimates, some economists at OFCE have kept an empirical practice which consists in estimating that the equilibrium unemployment rate was achieved in the years 2006-07; then to prolong potential production according to trends of the labour force, activity rates, apparent labour productivity rates.
- The working age population (15-65) growth would decelerate from 0.8% per year in 2006 to 0.4% in 2015, but the activity rate would increase by 0.2% per year due to women and older people; labour productivity would continue to grow by 1% per year. In these conditions, the output gap would have been in the order of 6% in 2010; 10% in 2014.
- This large gap is reflected in 2014, both in a high rate of unemployment, a fall in activity rates as compared to their trend, a decline in labour productivity growth (due to labour hoarding and to the Kaldor-Verdoon effect), which could be reversed. According to this point of view, it is difficult to assess potential output (if this concept makes any sense) in times of economic depression, insofar as a strong increase in demand would increase available production factors, also because of the non-linearity of wages and price evolutions in times of strongly excessive supply.

4. French potential growth evaluations

	GDP	Trend		Compromise		Strong Break	
		potGDP	OG	PIB Pot	OG	potGDP	OG
2006	2.4	2.0	0	2.0	0	2.0	0.0
2007	2.4	1.9	0.5	1.9	0.5	1.9	0.5
2008	0.2	1.9	-1.2	1.9	-1.2	1.4	-0.7
2009	-2.9	1.9	-6.0	1.4-3.0	-2.5	1.4-3.0	-2.0
2010	2.0	1.8	-5.8	1.4	-2.1	1.0	-1.0
2011	2.1	1.8	-5.5	1.4	-1.7	1.0	0.1
2012	0.3	1.7	-6.9	1.4	-2.8	1.0	-0.6
2013	0.3	1.7	-8.3	1.4	-3.9	1.0	-1.3
2014	0.3	1.6	-9.6	1.4	-4.4	1.0	-2.0
2015	1.2	1.6	-10.0	1.4	-5.4	1.0	-2.0

Potential growth and the French government

- The French government must include in the documents sent to European Institutions an assessment of potential production and potential growth, a strange operation which combines economic science and political compromises.
- At the end of 2013, the French government accepts the Commission's figure, an output gap for 2012 of -2% ; potential growth for the next 5 years of 1.5%. This -2% is amazing since France has lost 7% of growth compared to the pre-crisis trend (2.5% of unemployment rate, 3.5% of labour productivity, 1% of participation rates).
- With a negative output gap of 7%, France could say that no additional fiscal effort needs to be made (as a structural deficit of 2% of GDP stabilizes the debt-to-GDP ratio at 60% or to meet the true "golden rule of public finances"), **but France did not wish to get into conflict with the Commission**
- At the end of 2014, the estimation is : an output gap of only -2.7% in 2013. Potential growth is 1% in 2013-15, 1.2% in 2016-18. Compared with a potential growth of 1.6 per cent, this requires an additional fiscal effort of 0.3% per year in 2013-2015.
- In the middle of 2015, the Government uses the Macron law to claim that potential growth is now again 1.5 % in 2016-18.

What potential growth in the future?

- At mid-2015, two views can be opposed. For the European Commission, the IMF, the OECD, the issue of potential growth is already crucial today because of populations aging (which reduce labour force growth), slowdown in capital accumulation and slowdown in TFP growth.
- The future TFP growth problematic: it will slow because of environmental constraints, of rising raw materials and energy prices; innovations should speed it up.
- If the annual potential growth in the euro area spontaneously is no more than 1% in the coming years, if the objective of public debt reduction to 60% of GDP is maintained, while social spending (health, pensions) are on a rising trend, the euro area would have no choice but cut strongly public spending.
- So, the priority should be to increase potential growth by structural reforms to deregulate goods and labour markets, by education and research efforts, by firms' incentives for innovation and R&D, by incentives for women and older workers participation in labour market, by fiscal consolidation and drastic cuts in public expenditure.

What potential growth in the future?

- However, recent experience has shown that fiscal consolidation strategy was very costly in terms of growth and not effective in terms of debt-to-GDP ratios.
- The recommended policy would include important transfers in favour of companies and at the expense of households. It would be socially costly; It would result in the short term in falling demand;
- It is hypocritical to claim to safeguard the European social model by strongly reducing social spending.
- The measurement of TFP is problematic (Mokyr, 2014). How to integrate the dematerialization and free access permitted by Internet?
- More fundamentally, developed economies would be sentenced to a perpetual search for growth and innovation, with no reflection on the growth content. No social control of innovation and of growth content would be desirable or even possible.
- Should we encourage the largest number of people to keep market sector jobs as long as they can, when globalization/mechanization/computerization tends to make them disappear ? This search for growth would end, one day, in an ecological catastrophe.

What potential growth in the future?

- Several studies claim to evaluate the gain that a set of structural reforms could bring.
- Their point of view is often to deny all positive aspects of regulation, as well as of public and social expenditure and to consider that any move towards a hypothetical pure market economy would increase growth.
- For instance, the OECD (*France: structural reforms: impact on the growth and options for the future*, October 2014) evaluates the potential gain for France to 3.7% after 10 years. This figure may seem high; it should, however, be compared with the 10% that the financial crisis cost to France.
- The study is considering no reform of the banking and financial system, responsible for the crisis; the poor euro zone governance, the break-up of the French industrial model, or ecological transition are not discussed.
- Reforms are limited to increase competition in the energy sector (but is the lowering of the energy price compatible with energy transition?) and in regulated professions (but does France develop the judiciary professions?); to increase in the share of high-skilled peoples in labour force (?); to induce women and seniors to work ; to reform of the unemployment insurance (but the problem is the lack of jobs, not the reluctance of peoples to work).

What potential growth in the future?

- According to us, the European economy is far from its potential output, as shown by the threat of deflation and the low level of interest rates.
- The lack of demand induced by the financial crisis, by the public debt crisis in Southern countries, by austerity fiscal policies provokes a rise in unemployment, the stagnation (and sometimes the decrease) in activity rates (especially for young people and for women), a decrease in labour productivity growth due to labour hoarding, to the Kaldor-Verdoorn effect, to the low-skilled employment incentive policy. At the firms' level, labour-saving innovations are difficult to introduce in a period of stagnation.

What potential growth in the future?

- Europe suffers from four related problems:
- Trade globalization (which opens the possibility to produce in emerging countries) like financial globalization (which allows to choose between productive and financial investment) increased the profitability required by firms and financial markets. At the same time firms invest less in Europe because of the growth slowdown and of investment in emerging countries. The relative price of capital goods decreases when services sectors develop, where capital requirements are limited.
- A significant part of the population saw its industrial jobs disappear as result of mechanization and competition from emerging countries. Conversely, a very small part of the population benefits from globalization. Large companies and wealthy people can increasingly be exempt from the public expenditure burden. Their share in wealth increases while their savings rate is high. There is a substantial difference between the income distribution resulting from current power relations between capital and labour, and competition between countries and the one which would be required to allow a balanced growth.

What potential growth in the future?

- The resulting demand deficit has been filled in by financial bubbles and households indebtedness, by competitiveness gains, or by public debt. After the burst of the financial bubble, after the public debt crisis in Southern countries, after the Fiscal Compact, Europe suffers from a lack of demand and excessive competitiveness in Northern countries, in particular in Germany.
- The demand deficit requires an expansionary monetary policy. Short-term interest rates have been brought down to zero, but this remains insufficient in light of the weakness of demand and of low-inflation prospects. There is a risk of a fragile recovery relying on financial bubbles or over-indebtedness.

What potential growth in the future?

- According to this point of view, the current issue is not the potential growth level but the capacity to have growth rates sufficient to use all available labour force, taking into account the globalization and financial capitalism constraints.
- The relevant policy should include a decrease in the profitability requested by firms and financial markets, the increase in wage share in companies' value added, in particular in Northern Europe countries; the end of tax competition to attract richest people and large firms; supporting ecological investment, via public spending, but even more by the banking and financial sector, cleared of speculation, an industrial policy aiming at redefining the place of Europe in future labour international division, the development of the European social model. Fiscal policies should renounce to set arbitrary targets in terms of government balance or debt. Monetary policy should maintain low interest rates as long as necessary, but be accompanied by a macro-prudential supervision to avoid speculative bubbles.
- Today, this policy is a utopia, in view of the political situation in Europe.

What potential growth in the future?

- The issue of trends in productivity growth, the measure of which is largely a statistical convention, has little importance.
- It is difficult to evaluate what would the TFP trend be in the euro area nearer full-employment, with stronger demand, where firms would be encouraged to save labour and to save energy and avoid ecological damages.
- Europe may, in the years to come, if it wishes to do so, raise women and older workers participation rates, reduce involuntary part-time jobs, increase the number of immigrant workers.
- There is no evidence today that potential growth will be an effective constraint in a medium term future.
- Maybe, the main issue is whether, accounting for the already achieved GDP level and ecological constraints, EU countries should aim at reaching the highest possible growth and market-sector employment or whether the objective should not be to account for the needed limitation of material production growth and to see how our societies may adapt to it.