Ruhr Economic Papers

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#88

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Ruhr Economic Papers

Published by

Ruhr-Universität Bochum (RUB), Department of Economics
Universitätsstraße 150, 44801 Bochum, Germany

Technische Universität Dortmund, Department of Economic and Social Sciences
Vogelpothsweg 87, 44227 Dortmund, Germany

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Hohenzollernstrasse 1/3, 45128 Essen, Germany

Ruhr Economic Papers #88

Responsible Editor: Volker Clausen

ISSN 1864-4872 (online) – ISBN 978-3-86788-099-2

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Bibliografische Information der Deutschen Nationalbibliothek
Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über http://dnb.d-nb.de abrufbar.

ISSN 1864-4872 (online)
ISBN 978-3-86788-099-2

Ansgar Belke*

Fiscal Stimulus Packages and Uncertainty in Times of Crisis – The Option of Waiting Can Be Valuable, Though!

Abstract
Policymakers in the EU member states are currently shaping rescue packages to prevent the financial crisis hitting their economies with unmitigated force. Each government is responding to the emerging problems with a country-specific set of measures. Given the global nature of the crisis, would coordinated action at the European level not be a better approach? Was the German government – much-criticized for its initial reluctance to adopt massive fiscal stimulation measures – right after all to exploit the option value of waiting in a situation of high uncertainty? The answer to the second question is a qualified "yes". However, the answer to the first one is more complex and crucially depends on how reasonable it appears to model the impact of the economic crisis as an exogenous demand shock which has hit the euro area countries.

JEL Classification: E62, F42, H62

Keywords: Policy co-ordination, fiscal multiplier, fiscal stimulus package, liquidity constraint, option value of waiting, uncertainty

February 2009

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1. Status quo

It is by now widely accepted that the financial crisis of 2007/08 has become a crisis of the real economy, not only in the US and the UK, but especially so in euro area member countries like Ireland and Germany.[1] Admittedly, the Christmas sales in Germany have developed contrary to all expectations fairly well. Obviously, the consumers wanted to indulge themselves in some goodies just before the bitter end. But the latter will probably come. The decisive questions in this respect are: how serious is the recession in Germany? And even more important for an export-oriented country like Germany: is the world economy even on the brink of a "Great Depression II"? The consensus among the participants at this year's Annual Meeting of the American Economic Association in San Francisco - however, with a strong focus on the US - was clear and the answer was an unqualified yes.[2]

However, since the euro area economies and the German economy significantly differ from the US in several institutional respects, a specific assessment of the respective entities appears to be appropriate. According to conservative estimates, the euro area GDP will shrink in 2009 by 1.3 percent, i.e. as significantly as never before in after-war history with unemployment increasing noticeably, also in Germany. According to the most recent interim report by the EU Commission, GDP growth in the EU is even expected to fall by 1.8 percent in 2009 before recovering moderately to 0.5 percent in 2010. This mirrors the impact on the real economy of the intensified financial crisis, the ensuing global downturn and the severe contraction of world trade and manufacturing output and, in some countries, price corrections in housing markets.[3] Hence, consumers, entrepreneurs, politicians and investors will have to adapt to an extremely fierce year. And at the start of year 2009 it was estimated that the US economy would collapse over the year 2009 even by something like a minus 1.5 percent growth.

However, the US economy has a by far larger chance to recover from the crisis rather quickly, since the US economy still is the most innovative and flexible one. Moreover, it disposes of nearly unlimited access to government financial capital since the necessary funds reach the US in spite of it all and are still invested there in US government bonds. In the medium run, one should expect inflation in the euro area to re-emerge due to the flooding of the markets with liquidity which will be accompanied by lower growth which can be traced back to the massively increased impact of the state.

Policymakers in the EU member states are currently shaping rescue packages to prevent the financial crisis hitting their economies with unmitigated force. Also the German government did its homework. On January 12th, the German coalition late in the

[1] Claessens, S., Kose, M.A., Terrones, M.E. (2008), *What Happens During Recessions, Crunches and Busts?,* IMF Working Paper 08/274, International Monetary Fund, Washington/DC, December.
[2] See the session on the recent financial crisis (January 3, 2009) with statements by Olivier Blanchard, Alan Blinder, Kenneth Rogoff, Robert Shiller and Susan Woodward at http://www.vanderbilt.edu/AEA/Annual_Meeting/index.htm
[3] See European Commission (2009), *Interim Forecast*, DG for Economic and Financial Affairs, January, Brussels.

night agreed on the stimulus, after an evening of heavy-handed negotiations.[4] As some forecasters are already expecting an upturn in the second quarter of 2009, Germany's stimulus is likely to be mostly pro-cyclical. The €50bn, two-year package is constructed as follows. The government creates a €100bn fund for loan guarantees to industrial companies through the government-owned KfW bank. The KfW will guarantee up to 80% of the loan. The heart of the stimulus package itself is a public infrastructure investment programme of €18bn. The lower tax rate is cut from 15% to 14%, and the tax free allowance raised by €340 to €8004. Health care contributions fall by 0.6pp to 14.9%, for both employers and employees. This means that German wage costs are falling. A one-time bonus of €100 per child, more help for employers forced to work reduced hours and a €2500 lump sum for anybody who sells a car at least 9 years old to buy a new one.[5] The tax measures are to take effect on July 1, 2009, in other words a full nine months after the financial crisis started to turn into an economic crisis. As some forecasters are already expecting a Q2 upturn, Germany's stimulus is likely to be mostly pro-cyclical. There is a small "competitiveness" component in the form of reduced health care costs, which means that this part of the stimulus will help German companies at the expense of others.

As the saying goes, the German economy has at the time of writing been on the ropes of a liquidity trap - although Mr. Trichet surprised financial markets with an outlandish interpretation of this trap at the ECB press conference in January 2009. According to this type of trap, the economic agents are fearfully hoarding their cash. Monetary policy, i.e. lower interest rates, is ineffective in this precarious situation. Is the government unable in this situation to do otherwise but enacting counter-cyclical fiscal policy measures? As is well-known, John Maynard Keynes described with the notion of a liquidity trap a scenario in which an increasing money supply is not able to lower bond yields. However, the actual data around the turn-of-year 2008/09 do not correspond with this view. The preceding interest cuts by the ECB have de facto lowered the returns of government bonds awfully well. Accordingly, the current yield of outstanding German government bonds has fallen to historical lows. Hence, there is no a priori argument that fiscal policy is in need at the start of 2009 because monetary policy is helpless.

The remainder of this contribution is organized as follows. Section 2 discusses whether fiscal policy is the generic solution to sustain demand in the current crisis. For this purpose, the effectiveness of different fiscal policy measures and different types of uncertainty are put under scrutiny. Section 3 investigates the role of liquidity constraints in this context. Section 4 checks whether the option value of waiting in times of uncertainty might serve as a suitable guideline for macro-economic policies in times of crisis while section 5 critically discusses the benefits of fiscal policy coordination in a currency union. Finally, section 6 comes up with a proposal of what to do now: fiscal

[4] For details see http://www.eurointelligence.com/article.581+M515193432ba.0.html. In the meantime, the IMF has come out in favor of an increase of direct government expenditure and speak against general tax cuts. See Claessens, S., Kose, M.A., Terrones, M.E., op. cit.

[5] According to Claessens, S., Kose, M.A. Terrones, M.E., op. cit., also the IMF recommends scrapping premia as an important component of fiscal stimulus package.

policy might be a stabilizing tool of economic activity through the work of the built-in "automatic stabilizers".

2. Fiscal policy as the generic solution to sustain demand?

Taking the dire outlook as a starting point, politicians and economists are pondering about what could be done to keep the real economy from collapsing and to stabilize it? The generic answer which is constantly brought forth since the collapse of Lehman Brothers seems to be *to use fiscal policy to sustain demand*, since monetary policy with its main interest rates approaching zero will not be effective any more. Fiscal policy seems particularly appropriate since our macroeconomic models tell us that fiscal policy multipliers increase when more economic agents become liquidity constrained because they are then likely to spend any additional income they receive. But a closer look at what fiscal policy can actually achieve suggests that one should be very cautious in expecting too much from this policy instrument.

This is a foregone conclusion if one accepts that fiscal policy can also be a source of shocks. There are a variety of reasons why fiscal policy could be destabilizing in the context of the current crisis: policy makers do not have full control over the outcome, at times the effect of a certain measure (e.g. a tax reform) is quite different from what is anticipated; or, as in the current situation, the economic forecasts underlying fiscal policy might turn out to be wrong. Finally, the large difference between temporary and permanent fiscal shocks means that for the effectiveness of the fiscal policy measures it is of crucial importance that measures are believed by private agents not to become permanent. However, the latter is not always the case.[6]

The main driver of the current economic weakness is uncertainty that made firms postpone hiring decisions and investment.[7] But economic and financial uncertainty is now falling, according to all indicators of the financial fear factor. Obviously, the global policy response to the financial and economic crisis has calmed stock markets "as the fears of an economic Armageddon have subsided". Also political uncertainty has dropped as many world leaders have clarified the details of their stimulus packages.[8] Hopefully, thus, the economic medicine has not been administered just as the patient is striving to leave the hospital!

Depending on their ideological couleur, fiscal policy proposals by German political parties varied from deficit-financed spending increases, balanced budget spending increases (financed with higher taxes) to deficit financed tax cuts until the turn-of-year 2008/09. However, these proposals did not become more appropriate the more they were contended with increasing frequency and vehemence. Moreover, the stabilizing impacts

[6] European Commission, op. cit.

[7] See Belke, A., Goecke, M. (2005), Real Options Effects on Employment: Does Exchange Rate Uncertainty Matter for Aggregation?, *German Economic Review*, Vol. 6, pp. 185-203, and Bloom, N. (2008), The Impact of Uncertainty Shocks, Stanford, forthcoming in *Econometrica*.

[8] See Bloem, N., Floetotto, M. (2009), *The recession will be over sooner than you think*, VoxEU, January 12, http://www.voxeu.org/index.php?q=node/2785. They report that the key measures of uncertainty have dropped so rapidly that they believe growth will resume by mid-2009.

of fiscal policy in general are often largely overestimated. The often emphasized multiplier effect of additional government spending or of temporary tax cuts is according to pertinent studies often hardly larger than one, especially for Germany.[9] Some studies even come up with numbers lower than one.[10] Notwithstanding these stylized orders of magnitudes, we now have the extreme demand-side view that the so-called "multiplier" effect of government spending on economic output is greater than one. However, in order to avoid a too Germano-centric perspective, the potential benefits of fiscal policy coordination in the euro area should be addressed later on in section 5.

2.1 Efficacy of fiscal policy? Results from vector-autoregression and DSGE modeling exercises

Mountford and Uhlig[11], for instance, have analyzed three types of policy scenarios: a deficit-financed spending increase, a balanced budget spending increase (financed with higher taxes) and a deficit financed tax cut, in which revenues decrease but government spending stays unchanged. They find that a deficit spending scenario stimulates the economy for the first 4 quarters but only weakly compared to that for a deficit financed tax cut. They also found that both types of spending scenario had the effect of crowding out investment.

Although the best fiscal policy for stimulating the economy appears to be deficit-financed tax cuts, they impressively point out that this should not be read as endorsing them. They only highlight that unanticipated deficit-financed tax cuts work as a (short-lived) stimulus to the economy, not that they are sensible. Also international institutions like the IMF speak against general tax cuts and in favor of an increase of the direct government expenditures.[12] Hence, the first main result is that the resulting higher debt burdens may have long-term consequences which are far worse than the short-term increase in GDP, and surprising the economy may not be good policy in any case. The second important result is that the fiscal policy has its largest impact in the case of deficit

[9] According to Roos, M. (2007), Die makroökonomischen Wirkungen diskretionärer Fiskalpolitik in Deutschland - Was wissen wir empirisch?, Perspektiven der Wirtschaftspolitik, Vol. 8(4), pp. 293-308, economists have produced only few empirical studies for Germany so far. While older macroeconometric models in general predict a positive impact of expansionary policies on output in the short term, current SVAR studies disagree on the direction of the expected effects. There is, however, much agreement that the effects are likely to be small.

[10] Robert J. Barro (2009), for instance, calculates a multiplier based on U.S. wartime experiences of 0.8. He even argues that there are reasons to believe that the war-based multiplier of 0.8 substantially overstates the multiplier that applies to peacetime government purchases. On the one hand, people would expect the added wartime outlays to be partly temporary so that consumer demand would not fall a lot. On the other hand, the use of the military draft in wartime has a direct, coercive effect on total employment. Nevertheless, the Team Obama, for instance, is reportedly using an astonishing number around 1.5. See Barro, R.J. (2009), *Government Spending Is No Free Lunch*, Wall Street Journal, January 22, and Mountford, A., Uhlig, H. (2008), *What Are the Effects of Fiscal Policy Shocks?*, NBER Working Paper No. 14551, National Bureau of Economic Research, Cambridge/MA.

[11] Mountford. A., Uhlig, H., op. cit.

[12] Spilimbergo, A., Symansky, S., Blanchard, O.J., Cottarelli, C. (2008), *Fiscal Policy for the Crisis*, IMF, International Monetary Fund, Staff Position Note, SPN/08/01, December 29, Washington/DC.

financed tax cuts. For Germany this would imply that half of the fiscal stimulus package part II is practically ineffective and only costs a pretty penny.

What about the programme's second half, the envisaged tax cuts? The effects of a tax cut for one year which costs about one percent of GDP emerges not earlier than after two to three years - accompanied by a GDP increase of around 0.5 percent. In the German case this would be the case from 2011 on. If the recession lasts long enough, this will still yield some effect. If the deficit shall be compensated for by a tax increase, corresponding costs have to be taken into account. Things behave differently if the expenditures are lowered later on, since the multiplier is lower in this case.

Any normative judgments require theoretical models for which the positive empirical results in Mountford and Uhlig can provide a useful benchmark. However, the study relates to the US and the data cover around fifty years. Since fiscal policy effects have weakened over the 1980s in many places, the figures they come up with merely give a clue. Moreover, the sample comprises more or less „normal" times which are with the potential exception of September 11th not typical of „Keynesian situations". But yet the study by Mountford und Uhlig offers an interesting starting point. In sum, also the expenditure part of the recent German stimulus package is not backed by the Mountford and Uhlig study.

As is always the case, there are other studies available, some of them claiming that fiscal policy is more effective since private consumption is stimulated via a "crowding in" effect.[13] However, even this strand of literature is not largely supportive of significant effects because it tends to find that there is only a fairly small chance that government spending shocks crowd in consumption, mainly because the estimated share of non-Ricardian households is relatively low, but also because of the large negative wealth effect induced by the highly persistent nature of government spending shocks.[14]

Some also doubt that the results gained by Mountford and Uhlig can be transferred one-to-one to exceptional situations like the current crisis, in which many consumers, above all in the US, are credit constrained and just the latter pay little taxes already now. Hence, it is argued that it is plausible to assume that firms and consumers will use tax cuts first of all to clean up their balance sheet. However, in the section on fiscal policy measures and the role of the liquidity constraint it is shown that this kind of argument is applicable only to a few EU countries, namely UK and Spain. Seen on the whole, thus, it appears that Germany's finance minister Mr. Steinbrueck was not too mistaken with his long-lasting reluctance vis-à-vis the calls for extensive deficit spending.

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[13] Monacelli, T., Perotti, R. (2008), *Fiscal Policy, Wealth Effects, and Markups*, NBER Working Paper No. 14584, National Bureau of Economic Research, Cambridge/MA.

[14] For instance, Coenen, G., Straub, R. (2005), *Does Government Spending Crowd In Private Consumption? - Theory and Empirical Evidence for the Euro Area*, IMF Working Paper, WP/05/159, International MonetaryFund, Washington/DC, August, revisit the effects of government spending shocks on private consumption within an estimated New-Keynesian DSGE model of the euro area featuring non-Ricardian households. Employing Bayesian inference methods, they demonstrate that the presence of non-Ricardian households is in general conducive to raising the level of consumption in response to government spending shocks when compared with the benchmark specification without non-Ricardian households. However, as emphasized above, the net effect is not substantial.

2.2 Further considerations - model and forecast uncertainty

Model uncertainty

Issing[15], for instance, distinguishing three broad categories of uncertainty, going from the more common to the more complex and "Knightian" ones, acknowledges that the uncertainty factors faced by those responsible for macroeconomic policy are myriad and interdependent. They are created by, for instance, competition between different theoretical models or structural change. The latter type of model uncertainty has gained a new dimension in the wake of the current crisis. Some analysts fail to appreciate that the macroeconomic models currently do suit neither for the purpose of forecasting nor for evaluating policy measures.

None of the relevant macro models has foreseen and predicted the financial crisis of 2007/08, inter alia because these kinds of models do not at all contain the actually decisive variables like venturesomeness and credit growth. Hence, model based policy consulting by and large cannot answer the question of how to fight the fallout of the crisis, the question that had it stumped. Starting from this background it is either a remarkable irony of history or a clear but probably unintended case in favor of the Lucas critique[16] that those institutions which still forecast a deep enduring international crisis are those which demand fiscal stimulus packages the most pressingly and see them going into effect by now.

Forecast uncertainty

A great bulk of the aforementioned macroeconomic models cannot be applied under the current circumstances and business cycle forecasts are currently afflicted with a rather high degree of uncertainty. This is not at least due to the vagueness of the extent and the effects of the worldwide reactions of economic policy to the crisis. The estimations of German growth are all within the negative spectrum. However, their range has been unusually wide. While some "only" come up with a contraction in the amount of 0.5 percent, some others do not exclude a minus four any more. At present, the only reliable fact is that aggregate demand appears to be still weak in these days.

Nobody is currently able to forecast with the usual certainty how the year 2009 will develop in economic terms and forecasting for 2010 can currently be equivalent to read the tea leaves. It really does not make sense to argue that things have calmed down to a certain extent and we are now back again on a trajectory characterized by lower uncertainty since political and economic actors have by now realized that there is a high degree of uncertainty in the world economy. This is mainly because in the literature on investment under uncertainty has not come up with a final judgment on whether it is anticipated and not unanticipated uncertainty which hampers investment decisions and

[15] Issing, O. (2002), *Monetary Policy in a World of Uncertainty*, Fondation Banque de France Centre d'Etudes Prospectives et d.Informations Internationales CEPII Université Aix-Marseille IDE, Paris, 9 December (http://www.banque-france.fr/gb/fondatio/telechar/issing.pdf).

[16] Lucas, R.E. (1976), Econometric Policy Evaluation: A Critique, in: Brunner, K., Meltzer, A.H. (Eds.), The Phillips Curve and Labour Markets, *Journal of Monetary Economics* (Suppl.), pp. 19–46.

the risk is not exactly quantifiable at the moment. What can economic policy achieve under these circumstances?

3. Fiscal policy measures and the role of the liquidity constraint

The most direct way for governments to increase demand is to buy goods and services from the market. However, most European governments tend to spend very little this way. Most of direct public sector expenditure is on public sector investment. But this represents only 2 to 2.5 percent of GDP and is difficult to increase quickly since the large projects, which make up the bulk of the expenditure, take often a decade or more to realize. Even if governments were able to increase public investment by 20 % in one year this would result in a fiscal impulse of only less than 0.5 % of GDP. In reality fiscal policy must therefore, if it wants to be effective immediately, work through *transfers to the private sector*, either via lower taxes or via higher transfers to households.[17]

3.1 Tax cuts in general

At this year's annual meeting of the American Economic Association in San Francisco numerous economists across different economic schools advised against general tax cuts as called for by an increasing number of German politicians and economists[18]. The latter are too expensive, lead to stray losses and are difficult to scale back later on. Above all, there is the danger that households and firms hoard the additional money instead of spending it. For instance, former supply-sider Martin Feldstein argued that tax cuts do not help along at present. Moreover, many experts were skeptical vis-à-vis temporary cuts of the value-added tax as introduced by the UK government. Olivier J. Blanchard, for instance, argued that he does not believe in a noticeable impact of two percentage points less value added tax. Instead, consumers will ignore that. Moreover, it is unclear whether the retailers will pass the lower taxes on the consumers at all.

3.2 Lower taxes for and/or higher transfers to households

Hence, one might ask how strong the effect of deficit financed expenditure programmes or tax reductions could be under current circumstances. On the one hand, one could argue that the fiscal multipliers become larger if – as in the current scenario – more economic actors are liquidity constrained in their expenditures, since in this case the former spend the additionally received income straight away. On the other hand, the propensity to save has increased as well due to the extreme economic and financial uncertainty on the world level. This has shown up in an „option value of waiting with expenditures". At the moment it is not easy to determine which of these effects dominates the other. However, a closer inspection of the potential returns to a counter-cyclical fiscal policy suggests that one tends to expect too much from this policy instrument.

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[17] See Gros, D. (2009), Convergence and Divergence in Public Finance, *Intereconomics - Review of International Trade and Development*, Vol. 44(1), January/February, pp. 10-12.
[18] American Economic Association (2009), *Proceedings of the Annual AEA Meeting in San Francisco*, http://www.vanderbilt.edu/AEA/Annual_Meeting/index.htm.

How can fiscal increase effectively increase demand? The key problem here is that under the present circumstances of extreme uncertainty it is possible that households just save any increase in their disposable income. How likely is this to happen? A key factor will be the financial position of households themselves: households that depend on credit to finance their consumption will be most affected by the credit crunch and are thus most likely to react to a tax cut by maintaining their consumption. For this type of household, a tax cut (or an increase in expenditure) will thus be an effective tool to prevent an even sharper drop in consumption. However, for households which do not depend on credit the situation is quite different. Households that are saving anyway will probably at present just increase their savings in response to an increase in their disposable income which is likely to be temporary anyway.

Finally, the degree of the liquidity constraint across the EU and, by this, the potential magnitude of the fiscal multipliers proves to be highly different. This finding implies that the effectiveness of fiscal policy will vary greatly across the EU. Table 1 below shows that in only two of the larger member countries households are on average net borrowers. Not surprisingly, this is the case in *Spain* and the *UK*. In these two countries (with the largest housing bubbles) fiscal policy should thus be effective. However, in the three other large member countries households are on average net savers. In these countries, and in particular in Germany where households are net lenders to the tune of about 10 % of their disposable incomes, fiscal policy will not be effective as households can just increase their lending in response to a tax cut.[19]

Table 1 – *Net lending flows of households and corporations in the EU*

Table 1	Net lending of households		Net lending of corporations	
	Billion euro	% of GDP	Billion euro	% of GDP
DE	+ 144	9	+ 46	2.9
ESP	- 27	-5	- 75	-4.7
FR	+ 66	5	- 70	-4.4
IT	+ 63	5	- 58	-3.6
UK	- 97	-8	+ 98	6.1

Source: Gros[20] and Ameco. Net lending (+) or borrowing (-) of the total economy represents the net sources that the total economy makes available to the rest of the world (if it is positive) or receives from the rest of the world (if it is negative).

Hence, it might well be the case that economic stimulus packages take effect in Spain and in the UK but evaporate to a great extent in Germany, because the German households do not finance their consumption via credit.

[19] Gros, D., op. cit.
[20] Gros, D., op. cit.

3.3 Lower taxes for and/or higher transfers to corporates

A similar reasoning applies to the corporate sector: in a credit crunch investment will be strongly affected by the liquidity situation of enterprises. This implies that in countries where the corporate sector is a heavy borrower (Spain, France and Italy) it would be important to improve the liquidity situation of enterprises. One simple way to do this would be to allow all corporations to *postpone payment* of corporate income taxes for one to two years. This would not result in higher deficits as usually measured, but the cash deficit would increase as governments would effectively extend a credit to the corporate sector. Such a measure would thus be very *different from a tax cut* because it would not lead to larger debt levels and thus should not lead to sustainability problems later on[21]. This is exactly the point which lets me feel legitimized to claim that looking at the 'option value of waiting' (for both private agents and the government) under the current circumstances might be a useful focus.

Postponing the payment of corporate income tax would of course help only enterprises that make a profit, but this should be considered an advantage because it would mitigate the impact of the credit crunch for sound enterprises, i.e. those that deserve to be saved. Companies that did not pay corporate income tax because they were not able to generate a profit even during the boom would not benefit, but they are also the most likely ones to be insolvent anyway.

4. The option value of waiting in times of uncertainty - a guideline for "fiscal policy" in times of crisis?

4.1 Even higher debt levels after fiscal package deals: the option value of waiting I

It has often been argued in the recent weeks that - in spite of all above mentioned imponderabilities – enacting large economic stimulus packages is justified since governments should at least try to stabilize the economy; at the very least it could do no damage. However, this way of arguing is not overall consistent. If such kind of measures are enacted today, for instance in the shape of deficit financed tax reductions, future additional programmes become even more expensive because the level of public debt will then be higher, although these programmes might be needed even more pressingly. And in reality, German government debt is heavily increasing these days. Already Germany's new borrowing in 2009 will not be kept below the Maastricht level any more. Even worse, the promise of an all-embracing tax reform after the federal elections will probably not be kept any more.

Each tax cut included in the stimulus package II lowers the leeway for future tax reforms, since tax cuts cannot be planned without an eye on government debt. Thus, the most effective prerequisite of future tax cuts is Germany's strict compliance with the Maastricht criteria. Therefore, the German government should now implement a quick (basic law) statutory anchored debt brake in the federalism reform II. A prototype

[21] Gros, D., op. cit.

example of immense future costs of self-defeating deficit financed fiscal packages is Japan where the different fiscal policy measures in the 1990s have led to a massive increase of public debt which will burden the Japanese citizens still over decades and lets current fiscal policy measures become much too expensive in terms of costs of repayment.[22]

Especially in times of high uncertainty it thus makes sense to wait somewhat with the implementation of expansionary policy measures such as tax cuts and expenditure programmes until the fog of the forecast uncertainty will have lifted and it will have become clear how large the economic crash really is. However, in extreme times like those today business cycle forecasts are not of much help. They represent a good deal of speculation let alone their ability to serve as a sound quantitative basis for the adequate dosage of counter-cyclical fiscal policy packages. In order to avoid becoming an amplifier of the crisis itself, the government should, at least temporarily, follow the Knightian approach to uncertainty and rely more than usually upon qualitative analyses.

Hence, the German government deserves much support for its approach lasting until January 12th, to gain more evidence about the effects of the already initiated steps and of the automatic stabilizers for the time being. However, this wait-and-see attitude has not precluded working on plans of a contingency budget („Eventualhaushalt“) already now with longer term expenditure programmes in the areas of infrastructure, research, education and family issues. This still grants the option to act quickly as the crisis and the awareness thereof was becoming even more intense. However, it had to be laid down how the expectable large budget deficits after overcoming the crisis are to be compensated by additional government savings. Until today, it is not clear how credible this is. Anyway, with an eye on the option value of waiting, the German Grand Coalition was well advised until the end-of-year 2008 to keep dry its bolt for the crisis year 2009. If one believed the pessimists among the forecasters at that time, the German government would have been in need of it.[23] Hence, from the perspective of the option value of waiting under uncertainty, and assuming that uncertainty was still high and the package was not large and effective enough, the German government unfortunately killed its option too early on January 12th, 2009.

4.2 Investment, consumption and uncertainty - the option value of waiting II

Pressure on the European governments to increase spending or to cut taxes is growing as mid-term growth prospects for the euro area worsen. The arguments supporting a further cut in interest rates and a large fiscal stimulus seem compelling: inflation is now clearly below the ceiling set by the ECB itself and demand is so weak that there is no danger of fiscal policy induced pressure on prices emerging in the near future. Moreover, some argue that especially for Germany there is ample room for fiscal manoevre. However, this view is misguided since already 2009 an estimated 3.5 percent budget deficit beyond the Maastricht limit of three percent is not out of the range. Finally, amid the uncertainty

[22] See Kenneth Rogoff at the AEA 2009 Meeting. American Economic Association (2009), Proceedings of the Annual AEA Meeting in San Francisco, http://www.vanderbilt.edu/AEA/Annual_Meeting/index.htm.
[23] Claessens, S., Kose, M.A. Terrones, M.E., op. cit.

over the size of real effects of the financial crisis, the euro area economy is arguably in need of some stabilization. But how large was uncertainty at the turn-of-year 2008/09?

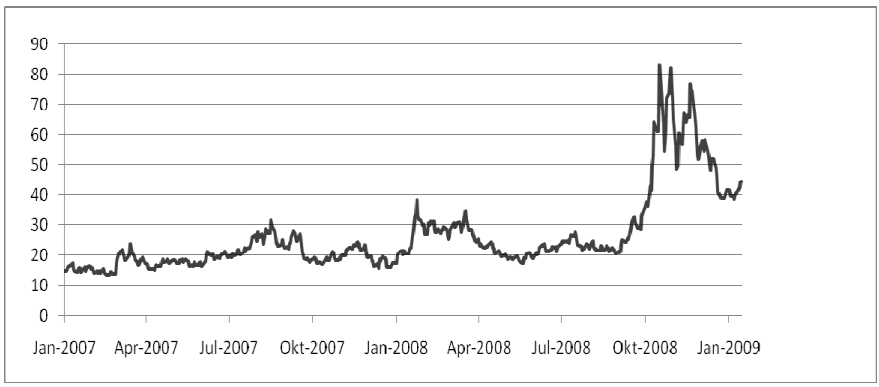
A closer look at the economic effects of uncertainty suggests that efforts of stabilization might have been a poor strategy around the change-of-year 2008/09 - especially because uncertainty in the markets was still extraordinarily high - though on its way down. In the case of Germany, the relevant type of financial and economic uncertainty is traded via the VDAX which delivers the implicit 45 day-ahead volatility of German stock futures (DAX) in percent. Hence, the latter is an index which measures the variation of German stock futures (three months ahead). High empirical realizations point to a still restless and irregular market, low empirical realizations lets one expect a further stock market performance without strong price fluctuations. Hence, the VDAX is frequently called the "barometer of fear".

The actual figures reveal a positive structural break in the data since August 25th, 2008, which still matters up to now (Figure 1). The VDAX jumped over four fold after the dramatic collapse of Lehman's in September 2008. But it has fallen back by 50 percent over the last couple of weeks as both economic and political uncertainty has receded. Alternative measures of uncertainty such as the implied volatility on the S&P 100 which is commonly known as the financial "fear factor" have also fallen[24]. This is even true with respect to the frequency of the use of the expression "uncertain" in the press.[25]

However, in the same way as business cycle forecasts are currently afflicted with a still rather high degree of uncertainty, indicators of financial fears are reliable early business cycle indicators. Hence, it appears definitely too early to argue that (a) Germany has recently shifted to a less pronounced uncertainty regime since all actors have become aware of the potentially huge dimensions of the crisis and (b) one should have agreed only three months ago with analysts like Paul Krugman[26] who are warning that a dire recession is brewing.

[24] See Bloem, N., Floetotto, M. (2009), op. cit., and Blanchard, O.J. (2009), (Nearly) Nothing to Fear but Fear Itself, Economist, January 29.
[25] See Alexopoulos, M., Cohen, J. (2008), *Uncertainty and the Credit Crisis*, VoxEU, December 23, http://www.voxeu.org/index.php?q=node/2732, claim that uncertainty shocks have a swift, strong and durable impact on economic activity. Assessing expectations of average citizens in Main Street through the use of keywords in main newspapers indicates a modest decline of uncertainty since October 2008, suggesting that "the worst may be behind us".
[26] Krugman, P. (2009), *Ideas for Obama*, New York Times, Opinion, January 11.

Figure 1 - *"Barometer of fear": the DAX volatility index (VDAX)*



Source: Thomson Financial Datastream

An important implication of the model of the option value of waiting is that only the current short-term uncertainty has an impact on the decision to wait. Future uncertainty does not enter the decision under risk neutrality. If one takes a fixed period, for instance one year, the likelihood that investment will be postponed to the end of that period depends only on the uncertainty during that period and not on future uncertainty. This implies that *even short spikes* in uncertainty can have a strong impact on investment. This simple model view abstracts from risk aversion. However, Belke and Gros[27] show that the basic conclusion that even a temporary increase in uncertainty can make a postponement of investment optimal is robust to the introduction of risk-adjusted discount factors.

Skeptics to this approach might argue that there are *two effects* working in the opposite direction which are relevant in the current situation. On the one hand, there is a still extraordinarily high economic and financial uncertainty which increases the "play" area of weak reaction of macroeconomic variables to changes in macroeconomic policy. On the other hand it has become increasingly clear in the last weeks that the bad realization becomes more and more probable and the increasing deviation from the fifty-fifty probability assessment diminishes the "play area". This means that the two effects currently run against each other and the net effect is not clear by now. However, we have shed much more light on this issue in Figure 1 by means of a look at current prices at which financial uncertainty is traded these days and stated that it is still tremendous. Hence, I feel legitimized to argue that one disposes of a high uncertainty threshold to trigger on the option argument. Equally, evidence of an "option value of waiting" for

[27] Belke, A., Gros, D. (2001), Real Impacts of Intra-European Exchange Rate Variability: A Case for EMU?, *Open Economies Review*, Vol. 12/3, pp. 231-264.

monetary and fiscal policy should emerge since we still find ourselves in a period of extraordinary uncertainty.

To deal with the influence of uncertainty on economic decisions, economists have developed the concept of the "*option value of waiting under uncertainty*"[28]. This formalizes a common-sense rule: if a decision involves some *sunk costs*, or any other element of *irreversibility*, it makes sense to wait until the uncertainty has been resolved. The temptation to postpone investment decisions is particularly strong when the uncertainty is likely to be resolved in the near future (as, for instance, by fiscal packages!). In other words, it makes little sense to wait for today's uncertainty to be resolved, if more is on its way tomorrow. But if today's uncertainty turns out to be greater than that anticipated for the future, waiting might make sense.[29] This conclusion appears to be independent of the assessment of uncertainty as a stochastic or a Knightian phenomenon. Why talking about "Knightian uncertainty"? Because Keynes is back, at least according to many scholars, and the sense and nonsense of counter-cyclical fiscal packages in times of uncertainty have to be discussed from the Keynesian perspective as well.

While the academic profession, among others Dixit and Pindyck[30], has made tremendous progress in analyzing risk and uncertainty in well-defined stochastic economies, the "Knightian uncertainty" that confronts monetary policy and sometimes markets is of an altogether different dimension. It was US economist Frank Knight (1885 – 1972) who, in his book *Risk, Uncertainty and Profit*, built his analysis on the distinction between risk and uncertainty[31]: "Uncertainty must be taken in a sense radically distinct from the familiar notion of Risk, from which it has never been properly separated. (…) It will appear that a *measurable* uncertainty, or "risk" proper (…) is so far different from an *unmeasurable* one that it is not in effect an uncertainty at all."[32]

Knight speaks of no less than the failure of the concept of probability calculus. In his seminal work "General Theory of Employment, Interest and Money", John Maynard Keynes (1883-1946) takes a very similar stance[33]: "[Most of our decisions] to do something positive (…) can only be taken as a result of animal spirit (…) and not as the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities." In fact, Knight argues that the difficulty of the forecasting process extends far beyond the impossibility of applying mathematical propositions to forecasting the

[28] Dixit, A., Pindyck, R S. (1994). *Investment under Uncertainty*. Princeton, NY.

[29] See Auerbach, A.J., Hassett, K. (2007), Optimal long-run fiscal policy: constraints, preferences and the resolution of uncertainty, *Journal of Economic Dynamics & Control*, Vol. 31, pp. 1451-1472, for a model including risk aversion.

[30] See Dixit, A., Pindyck, R.S., op. cit.

[31] See Knight, F. (1964, 1921), *Risk, Uncertainty and Profit*, New York: Century Press.

[32] Knight's emphasis on uncertainty decoupled him from the predominant economic theory of the time, which emphasized decision-making under conditions of perfect certainty or under the established laws of probability. The distinction between risk and uncertainty that goes back to Knight has been considered anew, for instance, by Schmeidler, D. (1989), Subjective probability and expected utility without additivity, *Econometrica*, Vol. 57, pp. 571–587.

[33] Keynes, J. M. (1936), *The General Theory of Employment, Interest and Money*, New York: Harcourt, Brace.

future. *A priori* reasoning, Knight insisted, cannot eliminate indeterminateness from the future. In the end, he considered reliance on the frequency of past occurrences extremely hazardous.[34] This assessment fits extremely well with the current situation as well and would a fortiori lead to the same assessment of the (non-) usefulness of large macro stimulus packages of a magnitude below a certain threshold in the current crisis according to the concept of option value of waiting under uncertainty.

4.3 The 'option value of waiting' for the government - a first assessment

It is clear that any decision to increase government spending and/or to lower taxes involves some sunk costs, or any other element of irreversibility. First, it takes time to pass the fiscal measures trough the national Parliaments and for the economy to respond.[35] As a result, once decided, the fiscal policy measures can rarely be adjusted to the changing economic circumstances. Second, there are always some political constraints: it tends to be much easier for governments to ease fiscal policy than to tighten it, from the perspective of political economy a reversal is incredible, the package is package-deal specific and once the measure is taken it tends to become irreversible.

A third important aspect is the following. Germany as it stands now, i.e. after having decided on the second fiscal package, will have consolidated its debt not earlier than sometime around 2020. Anyway, consolidation will not be a pleasant enterprise since Germany will have to cope with the economic consequences of demographic change. And the ongoing weakness of the stock markets will almost certainly not quicken Germany's political pace towards a stronger adoption of private pension schemes. Hence, the process of debt accumulation by expenditure programmes is most probably asymmetric and, thus, can be regarded as at least partly irreversible. However, the option value of waiting in times of uncertainty is not limited to the government but also extends to private agents.

4.4 The 'option value of waiting' for private agents

You can imagine *businesses* assessing investment projects that would be slightly profitable under current circumstances, even more profitable if the uncertainty were favorably resolved, and loss making if not. Such a business would lose little (in terms of foregone profits) if it delayed the decision. Once the uncertainty had been resolved, it would still have the option to proceed if that was to its advantage. An analogous argument applies to the *consumers* which might delay their decisions to buy, for instance, a durable consumer good in times of high uncertainty (of being employed at all and/or whether there will be in the near future, meaning that it is worthwhile to postpone consumption and to wait for even lower prices). According to some other simple models,

[34] See Belke, A., Polleit, T. (2009), *Monetary Economics of Global Financial Markets,* Springer, forthcoming.

[35] See Belke, A. (2009), Fiscal Stimulus Packages, Uncertainty and Economic Crisis - Is the Option of Waiting Valuable?, Forum "Preventing Recession in Europe: National vs. European Approaches", *Intereconomics - Review of International Trade and Development*, Vol. 44/1, pp. 15-22, and Buti, M. (2001), The Economic Downturn and Budgetary Policy in Europe, mimeo.

uncertainty which cannot be hedged raises the variability of revenues and induces the investors to apply a higher discount rate on (expected) future revenues.[36]

At the start of the financial (subprime) crisis it was argued that it would not have any appreciable direct consequences for the European economy since Europe having extended its trade with emerging markets significantly has probably de-coupled from the US in terms of the business cycle. However, as time has gone by, it was recognized that the indirect effects could be substantial if the crisis lasted longer than expected, or if it led to a disruption of the banking sector and some branches like the car industry, i.e. to wider regional financial and economic instability. A long and deep recession cannot be excluded a priori. Such an outcome cannot be ruled out. This explains why the financial crisis weighs so heavily on many apparently unrelated decisions. This uncertainty is likely to be completely resolved in the medium run, perhaps not in a matter of months, as some analysts maintain, but certainly in a matter of one or two years. However, while it remains, one would expect demand - especially investment demand - to remain quite weak in the near future.

4.5 The 'Option value of waiting' for the fiscal authority – a deeper analysis

So should a government then not try to stimulate demand with a fiscal shock, as for instance a deficit-financed spending increase, a balanced budget spending increase (financed with higher taxes) and a deficit financed tax cut in times of large financial and economic uncertainty? A first argument against this approach would be that the concept of the "option value of waiting" applies to a government just as much as it applies to everyone else. A deep recession which has the potential to turn into a depression may be averted, or it may be relatively short and have little durable effect on important macroeconomic variables as, e.g., the labor market. Hence, if the government triggers another fiscal policy shock within the next months, it risks having to reverse its decision almost immediately if the crisis turns out to be relatively short-lived or – if financed by inflation - in order to avoid blowing up the next asset price bubble.[37] The government should thus trigger a positive fiscal policy shock only if it is convinced that such a shock will make sense even if the uncertainty about the length and the duration of the crisis is favorably resolved.

In the context of the financial crisis of 2007/08 and the potential 2009 depression, *a fiscal policy shock as an insurance against a bad outcome does not make sense* since (1) fiscal policy shocks are not effective if uncertainty is large, (2) the government itself disposes of an option value of waiting with fiscal policy shocks; if, for instance the government shocks 'today', it kills this option to shock in the future (although this option might be very valuable in times of high uncertainty), and (3) frequent fiscal policy

[36] See Blanchard, O.J., op. cit. For simplicity, discounting issues and risk aversion are ignored here (on this see Belke, A., Gros, D., 2001, op. cit.) so that decisions can be based only on expected values. The same assumption is used also by Dixit, A. (1989), Entry and Exit Decisions under Uncertainty, *Journal of Political Economy*, Vol. 97, pp 620-638.

[37] Belke, A., op. cit. and Belke, A., Orth, W., Setzer, R. (2008), Sowing the Seeds of the Subprime Crisis - Does Global Liquidity Matter for Housing and other Asset Prices?, *International Economics and Economic Policy*, Vol. 5(4), pp. 403-424.

changes by a government induce additional uncertainty which tends to aggravate the current weakness of investment and consumer goods demand.

Seen on the whole, thus, the above analysis has a clear bearing on the current discussion about the crisis management of the world's leading fiscal authorities with respect to the US-driven financial and economic crisis. If, in times of high uncertainty about the risks finally faced by firms, households and the economy as a whole, the government triggers fiscal policy shocks in a stepwise fashion, it does not induce more than a straw fire on the stock markets and the whole economy for some days but does certainly not induce a sustainable move towards more investment and consumption demand which is so urgently needed to prevent a world recession.[38] In contrast, it might even add uncertainty to the prevailing one. Starting with the above mentioned irreversibilities which are specific to fiscal policy large uncertainty also generates an option value of waiting for the fiscal authorities, i.e. the government.

The pleas of the majority of speakers at this year's AEA Conference 2009 in San Francisco in favor of significant increases of government expenditure do not appear to be any contradiction to this assessment because they nearly exclusively refer to the much more flexible US economy. Applying this argument to continental Europe is certainly not admissible. Newspapers worldwide reported in the wake of the AEA Meeting that many US economists interpreted a large but arguably transitory increase of direct government expenditures as the most important insurance against a "second Great Depression" However real options theory teaches us that, at least in Europe, *a cut in taxes or an increase in expenditures as an insurance against a bad outcome does not make sense,* just as little as a cut in central bank interest rates makes is useful for this purpose.

4.6 The band of inaction - uncertainty renders the macro-economy less sensitive to macro policies

The models of decision-making under uncertainty also have a second implication. All decisions involve some transaction costs - whether they are about investment, about hiring and firing or about bureaucratic sclerosis in general. The latter are especially important in continental Europe (although Germany has made some progress in lowering labor market rigidities in the last years due to the Hartz reforms). This implies that businesses facing only a small change in prices may not respond immediately. There is always a band of inaction - a price range within which it does not pay to change course. The size of this band of inaction increases as uncertainty increases. And, given the still prevalent structural rigidities in the euro area economy, uncertainties probably affect decision-making in Europe more than they do in the US. Hence, one should not be tapped in the currently quite popular fallacy that Keynesian demand stimulation will be successful in Europe only because it appears to work in the US. Due to the extraordinarily high degree of uncertainty, real world investment, employment and

[38] For a general discussion of interest rate decisions in an uncertain environment see Begg, D., F. Canova, de Grauwe, P., Fatás, A., Lane, P. (2002): *Surviving the Slowdown*, Monitoring the European Central Bank 4, Centre for Economic Policy Research (CEPR), London.

consumption may appear less sensitive to changes in the fiscal policy stance compared to the prediction of the majority of models of fiscal policy transmission.

However, this paper is not the first analysis of the link between option theory and the effectiveness of macroeconomic policy. For instance, Rose[39] examined the relationship between interest rates and aggregate investment by using a similar formal framework where a firm has a two-period window of opportunity to invest. Rose showed not only that the traditional investment function is shifted downward by the presence of uncertainty and irreversibility (as in our paper), but also that at the aggregate level it has a "hump". The policy implications of Rose's analysis "are perhaps reminiscent of the Keynesian liquidity trap, though rather more perverse. At the very least, … monetary policy is always less effective than Marshallian rules suggest"[40].

At first glance, one might feel inclined to ascribe real impacts of revenue volatility solely to times of excessively high uncertainty ε, that is to crashing events like September 11th or the 2008 collapse of Lehman Brothers. However, it is quite straightforward to interpret ε as an all comprising expression of uncertain revenues due to the disequilibria of the US economy since the turn-of-year 2000/01 (current account, consumer financial position, over-investment). Moreover, the relation (including the 'weak reaction' characteristic) between investment / employment / consumption and all its determinants (not only interest rates but also the personal income and oil prices) is affected by uncertainty. Thus, the impacts implied by sunk costs and uncertainty are manifold. When addressing monetary policy effectiveness, I only referred to interest rate triggers, holding other determinants of investment / employment constant. To summarize, compared to the prediction of the majority of models of monetary and fiscal policy transmission, real world investment / employment / consumption may appear less sensitive to changes in the interest rate / taxes, due to the extraordinarily high degree of uncertainty. However, this also implies that reducing uncertainty by itself is by no means sufficient to boost investment and employment demand.

Already in the times of the Iraq war, in January 2003, it was reasonable to argue that it did not make sense for the ECB to cut interest rates by 25 basis points at that time[41]. Either the ECB should have cut at that date by at least 50 basis points, or it should wait for the worldwide economic and financial uncertainty in to be resolved. So, under present circumstances, further cuts in interest rates in the possible range of, let' say, 50 basis points are unlikely to have any effect on demand. If monetary policy is to be effective in these uncertain times, a much larger cut is needed. In view of the fact that economic and financial uncertainty is by now disproportionally larger than during the Iraq war, it should be clear that there is no range of rate cuts available at all which is compatible with a significant impact on the economy.

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[39] Rose, C. (2000). The I-r Hump: Irreversible Investment under Uncertainty, *Oxford Economic Papers*, Vol. 52, pp. 626-636.

[40] Belke, A., op. cit., and Rose, C., op. cit.

[41] Belke, A., Gros, D. (2003), *If the ECB Cuts Rates It Should Do So Boldly*, Financial Times International, March 2, p. 13.

Instead, for instance the increasingly apparent debt problems and structural weakness especially of the ClubMed countries in the euro area suggest that the government should stay its hand. But if the government is not convinced of this, it should avoid shocking a little today, because that would not be a sensible compromise in times of still high uncertainty; in fact, it would just waste an option without helping the economy. Instead, one could make the case for a stronger fiscal policy response. As the Germans say, "Klotzen nicht Kleckern": if you are going to hit it, hit it hard. That might be correct in principle, but policy makers would need to (re-)act fast. Any additional economic stimulus has to be implemented quickly. Dithering over different directions of policy might actually make things worse by adding uncertainty.[42]

However, common sense would tell us that acting according to the motto "it's now or never for expansionary policy" is not really an option, at least in the case of Germany, simply because it might be too late for such a large stimulus. Now that uncertainty is gradually falling back, growth should start to rebound and a large stimulus will no longer be needed. This is at least the way Olivier J. Blanchard and some fellows have recently been arguing: "So what are policymakers to do? First and foremost, reduce uncertainty".[43] Firms will probably begin to hire and invest again to make up for lost waiting time. However, according to real option theory reducing uncertainty by itself is by no means sufficient to boost investment and employment demand. Instead, its effects are twofold: investment *and dis*investment will increase because the play areas become smaller. Unfortunately, this important aspect which strictly follows from the real option approach is often overlooked in the current debate.

But abstracting from real option theory under uncertainty, one should advise against a large stimulus anyway - mainly with an eye on too high and unsustainable debt levels. Moreover, abstaining from over-expansionary fiscal policies in interplay with monetary policy which inflates the economy in order to push down real debt avoids sowing the seeds of the next asset price bubble and the subsequent crisis.

The government is just painfully caught between the conflicting alternatives "to react quickly" or "to wait with fiscal stimuli". The above analysis has shown that the specific way out should depend on the magnitude of the planned package, on the estimated degree of uncertainty prevailing and on the credibility of later consolidation.

Note again that the main argument is *not* that further interest rate cuts do not take effect as in the past because financial markets are generally under pressure and many banks have to solve their own problems first before they grant further credits. According to this interpretation, the efficacy of traditional monetary policy is generally restrained in these days. Central bank interest rates cannot fall further than to zero. I would like to argue that this view is not correct. Unusual monetary policy measures like quantitative easing might in principle still help the financial system and the business cycle, at least in the more flexible US economy (see, for instance, John B. Taylor and F. Mishkin at the

[42] See Blanchard, O.J., op. cit., and Caballero, R.J. (2008), *Normalcy is Just a Few Bold Policy Steps Away*, December 17, MIT, mimeo, and Belke, A., op. cit.
[43] Blanchard, O.J., op. cit.

AEA[44]). Janet Yellen, President of the Federal Reserve Bank of San Francisco, emphasized in her talk titled "U.S. Monetary Policy Objectives in the Short and Long Run"[45] that the fact that the potential of conventional monetary policy is exhausted does not necessarily imply that the Fed does not have any options any more to stimulate the economy by means of other measures. However, apart from the specifity of this view for the US the stimulating effect of such kind of monetary policy measures should not be overestimated at least in the case of the euro area since the ECB shall skim the excess liquidity in a stepwise fashion in 2010[46].

With respect to fiscal policy one might be tempted to argue analogously that "if the government increases spending and/or cuts taxes it should do so boldly". With an eye on too high and unsustainable debt levels this is, however, certainly not a sensible option.

5. On the benefits of fiscal policy coordination in European Monetary Union - the case of a liquidity trap

Policymakers in the EU member states are currently shaping rescue packages to prevent the financial crisis hitting their economies with unmitigated force. Each government seems to respond to the emerging problems with a country-specific set of measures. Given the global nature of the crisis, would coordinated action at the European level be a better approach? Or can actions by national governments be expected to deal more adequately with the problems facing the national economy than a pan-European set of measures? The Merkel government has even been accused by some of displaying free-rider behavior in the area of fiscal policy since it was more reluctant in pushing forward large fiscal rescue packages in the fight against the crisis than its euro area counterparts with partly higher debt burdens and often higher fiscal deficits and appeared less prone to European coordinated efforts. Is this negative assessment justified?

It is by now widely assumed that a common currency makes it desirable to have also a common fiscal policy (and some go even so far as saying as the euro needs to be backed up by a political union).[47] However, this is not a foregone conclusion if one accepts that fiscal policy can also be a source of shocks. There are a variety of reasons why fiscal policy could be destabilizing in the context of the current crisis: policy makers do not have full control over the outcome, at times the effect of a certain measure (e.g. a tax reform) is quite different from what is anticipated; or, as in the current situation, the economic forecasts underlying fiscal policy might turn out to be wrong. Finally, the large difference between temporary and permanent fiscal shocks means that for the

[44] American Economic Association, op. cit.
[45] Yellen, J. (2009), *U.S. Monetary Policy Objectives in the Short and Long Run*, Presentation to the Andrew Brimmer Policy Forum IBEFA/ASSA Meeting San Francisco, CA, for delivery on January 4th.
[46] Deutsches Institut für Wirtschaftsforschung (2009), *DIW Wochenbericht*, Nr. 1-2/2009, Vol. 76, January 7th, Berlin.
[47] For a survey on the first issue see, for instance, de Grauwe, P. (2005), Economics of Monetary Union, 6th ed. (Oxford University Press, Oxford), and Gandolfo, G. (2001), *International Finance and Open-economy Macroeconomics*, Springer, Berlin-Heidelberg. For an introduction into the second aspect see Gros, D., Thygesen, N. (1998), *European Monetary Integration*, Addison Wesley Longman, New York.

effectiveness of the fiscal policy measures it is of crucial importance that measures are believed by private agents not to become permanent. However, the latter is not always the case.[48]

It is thus assumed that fiscal policy represents a source of shocks. The key question then is whether a higher correlation of these shocks (presumably because of tighter cooperation) is desirable. The simple model used by Belke and Gros (2009)[49] which was designed for "normal" economic times just serves to illustrate a general idea, which should hold up in more sophisticated models as well. Our main result is that in general it might be better to have independent national fiscal policies that are not coordinated (or at least not correlated) under EMU, because this leads to risk diversification: the variance of a sum of shocks is lower the lower the covariance among the individual components.

The argument that independent national fiscal policies are preferable because of risk diversification is not new and was already documented in the risk sharing literature by Sørensen, Yosha, van Wincoop and many others.[50] Our analytical results suggest that the calls for fiscal policy coordination in ordinary times that are often repeated might be misguided. More fiscal policy coordination is also likely to lead to more correlated fiscal policy shocks and this might increase actual output variability. This result even holds if it is backed by a more complicated variant of the model used here developed by Belke and Gros (2008) who formally disentangle the discretionary component from the endogenous components (i.e. income dependent) of fiscal policies in a monetary union.[51]

However, this conclusion is driven by our simple model structure and holds primarily as long no other large shocks emerge. However, in the case of the current economic crisis it is reasonable to assume that an exogenous shock to demand has hit the euro area countries significantly. With interest rates converging to zero, this negative shock has significant external effects which should ideally be internalized by a coordinated effort of national fiscal policies. However, this way of reasoning decisively hinges on the existence and significance of a liquidity trap in the euro area economies. In case of the latter, the spillovers of fiscal policy are of course positive because the interest rate does not react. Hence, in the Nash equilibrium, the fiscal stimulus initiated by the euro area countries is sub-optimally low.

But the existence of a liquidity trap cannot be taken for granted. As the saying goes, for instance the German economy currently is on the ropes of a liquidity trap. Fearfully, the economic agents are hoarding their cash. Monetary policy, i.e. lower interest rates, is ineffective in this precarious situation. Is the government not able to do otherwise by enacting counter-cyclical fiscal policy measures? As is well-known, John Maynard

[48] European Commission (2009), op. cit.
[49] See Belke, A., Gros, D. (2009), On the Benefits of Fiscal Policy Coordination in a Currency Union: A Note, *Empirica*, Vol. 36/1, pp. 45-49.
[50] See, for instance, Asdrubali, P., Sørensen, B.E., Yosha, O. (1996), Channels of Interstate Risk-sharing: US 1963-1990, *Quarterly Journal of Economics*, Vol. 144, pp. 1081-1110, and Sørensen, B. and O. Yosha, 1998, International Risk Sharing and European Monetary Unification, *Journal of International Economics*, Vol. 45, pp. 211-238.
[51] Belke, A., Gros, D. (2008), Is a Unified Macroeconomic Policy Necessarily Better for a Common Currency Area?, forthcoming *European Journal of Political Economy*.

Keynes described with the notion of a liquidity trap a scenario in which an increasing money supply is not able to lower bond yields. However, actual data do not correspond with this view. The recent interest cuts by the ECB have de facto lowered the returns of government bonds awfully well. Accordingly, the current yield of outstanding German government bonds has fallen to historical lows. Hence, there is no a priori argument – at least from the German perspective - that fiscal policy is in need because monetary policy is helpless.

6. How to proceed now? Fiscal policy as a stabilizing tool of economic activity through the work of the built-in "automatic stabilizers"

The effects of fiscal policy can well be neutralized by an offsetting behavior of the private sector - this time a more common application of the Lucas critique. A fiscal expansion can exert upward pressure on long term interest rates and crowd out private investment or it may induce private households to save more if fiscal expansion raises fears of higher taxes in the future. This "Ricardian equivalence" behavior is very common in countries with high levels of government debt and deficits. The case in point is Japan, but the IMF, quite often pointed out that this "non Keynesian effects" are also important in the countries of the euro area.

Similar empirical results for the U.S. economy were found by David and Christina Romer[52], two important Post-Keynesians, who show that monetary policy alone is a sufficiently powerful and flexible tool to end recessions while, in contrast, discretionary fiscal policy does not appear to have had an important role in generating recoveries given that fiscal responses to economic downturns have, generally, not occurred until real activity was approximately at its trough. As a rule, macroeconomic expenditure programmes of the classical type did not work in a sustainable fashion, especially if they were designed in election years. Instead, the long-forgotten political expenditure cycle of the Nordhaus-type appears to be back on stage again.[53] Therefore, it seems quite clear that the best fiscal response to a strong slowdown in the economy is *to let the automatic stabilizers play their role* and to strengthen them and *avoid discretionary policy measures*, which, because of political constraints, tend to be irreversible, leading to ratcheting up public spending.

In the light of the above arguments it appears highly preferable to dispense with a discretionary income support and instead let the automatic stabilizers do their full compensatory work and to strengthen them. For instance, the Bund could take over the social insurance contributions to short-term allowances from the employers, only if a job is in danger and limited in time for a year or so.[54] This appears to be especially appropriate in view of the forecast uncertainty, because this mechanism only takes effect

[52] Romer, C., Romer, D. (1994), *What Ends Recessions?*, NBER Working Paper No. 4765, National Bureau of Economic Research, Cambridge/MA.
[53] Nordhaus, W.D. (1975), The Political Business Cycle, *Review of Economic Studies*, Vol. 42, pp. 169-190.
[54] Deutsches Institut für Wirtschaftsforschung, op. cit.

if it is really required. Finally, in the present economic context of Germany, in contrast to some other member countries of the euro area, the recent success of coping with the requirements of the Stability and Growth Pact (SGP) is going to make possible, for the first time in many years that the automatic stabilizers play their role efficiently in the actual downturn. This success and the role of the EU as the custodian of the Treaties must not be jeopardized.

The view that a wait-and-see-strategy of fiscal policy is beneficial for the German economy appears surprising at first glance and is by far not shared by the majority of economists. Since a few months – after many research institutes immediately followed the IMF in its shockingly negative growth forecast this assessment has surprisingly become clear minority position. Even economists who regard themselves as liberal tend to outdo each other with a bulk of proposals how to cope with the crisis with more government money. In this vein, Martin Feldstein recently observed that not more than two years ago there was a broad consensus among economists that the active usage of fiscal policy does not make much sense. Today - he argued - also those researchers which were rather negatory only some weeks ago are suddenly in favor of the latter.[55] But there are some exceptions from this general observation, among them the German economist Stefan Homburg[56] .

To reject large fiscal stimulus packages may of course not conform to the spirit of the times (Jörg Krämer has recently published an excellent discussion of the phenomenon of the German „zeitgeist“[57]), but the latter tends to change rather quickly. As soon as it will become apparent that the comparison with the Great Depression was a clear misjudgment, the hangover will follow and the public opinion will change sides again.

Those politically responsible will be asked why they have used the tax payer so unresponsively as a host for the rescue of some large enterprises and banks. Since experience clearly speaks against the success of fiscal stimulus packages. For instance, Germany fell flat on its face with its expenditure programmes in the 1970s. Government debt started to grow at unprecedented rates, but unfortunately unemployment increased in parallel. Only recently, also the US has not made satisfying experiences. The US treasury had distributed in early summer 2008 tax bonuses of around 120 billion $. However, the citizens have saved more than 75 percent of this package. The effect on total consumption is nearly deflagrated by now because the consumers have acted in a sensible way. They have run into much too high debts during the time of cheap money.

As compared with the basically more optimistic assessment of monetary policy efficacy in the current crisis, the perspectives of fiscal policy measures to work are rather bleak. Government fiscal stimulus packages designed in order to fight the crisis have to be rejected not only with an eye on the option value of waiting under uncertainty. Contrary to the beliefs under the regime of the current “zeitgeist”, it will turn out to be a

[55] American Economic Association, op. cit.
[56] Homburg, S. (2009), „*Rettungsschirm legt Keim für nächste Krise*“, Im Gespräch, Frankfurter Allgemeine Zeitung, January 11th.
[57] Krämer, J. (2008), *Zeitgeist und Inflation*, Frankfurter Allgemeine Zeitung, July, 7th, 2008.

great fallacy to believe that one could really steer the consumption of millions of people. First and foremost, one sells money down the river which could be spent in more useful directions. "Just as in the 1980s, when extreme supply-side views on tax cuts were unjustified, it is wrong now to think that added government spending is free"[58].

[58] Barro, R.J., op. cit.