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Strengthening the resilience of an economy*)

Enlarging the menu of stabilization policy as to prevent another crisis

Abstract

The financial crisis has affected the real economy in stages yet nevertheless at an unexpected rate and with all regions being affected simultaneously. It advanced almost independently of the regions' exposure to the actual initial causes, among them the subprime crisis, innovative financial products, dubious micro-economic incentives, inefficient regulation and macroeconomic imbalances. The following analysis poses the question of how the national economic structures can be made more resilient to a shock (be it a financial crisis or another turbulence) and how economic policy can act in order to stabilise the economy before and after such a shock. This analysis supplements studies on the causes of the financial crisis, on proper macroeconomic responses in the crisis and reforms of the regulation on the national and international level (see *Aiginger*, 2009). It enlarges the menu of the traditional instruments of economic stabilisation policy by combining them with structural policies. Measures in five policy areas are discussed which could be the nucleus of a more far reaching prevention of a further crisis. However, a resilient economy is not in itself a political goal; it is only a necessary condition to a successful growth and employment policy. Furthermore, economic policy to increase resilience against shocks should not contain any protectionist elements since these lead to losses in income and employment levels.

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1. Preliminary Remarks and Limitations

There is an increasing number of analyses about how the current financial crisis came about. They discuss the contribution of the financial sector, its "innovative" products and the inefficiency of existing regulation, the imbalances in the global economy and the role of globalisation. They suggest how to combat the present crisis, and also touch on how the economic system in general could react in the long term, and discuss the role of the state.[1])

In contrast the following article asks a more specific and narrowly defined question: What can or should be done to make national economic structures more resilient? The existing national structures, institutions and strategies displayed little resilience to the shocks originated in other regions and resilience seems to have decreased dramatically over the past decades. There seem to be a consensus that globalisation and internationalisation of the financial markets have increased the speed with which the crisis spread across almost all countries. The question that arises is whether one can and should create structures which are more resilient or whether such structures might in themselves have disadvantages as regards efficiency, growth, and employment.

There are few economic strategies which, isolated at a national level, can make an economy more resilient without carrying negative consequences for the efficiency or competitiveness of that economy. Most of the elements of any strategy need also to be part of an international strategy in order not to reduce the positive effects of globalisation. However, globalisation and internationalisation can and have to be supplemented/supported by policies at the national level or firm-level strategies.

Resilience is of course not the most important political goal. Indeed it would be the sixth goal within the last four years to be of the highest level of priority in Europe. The five preceding ones were: fighting unemployment during the middle of the decade (winter 2006 had the highest levels of unemployment since the fifties), increasing economic growth and competitiveness (*WIFO-White Book*, 2006), fighting inflation (specifically in 2008), combating

[1]) See *Aiginger* (2009), *Hellwig* (2008), *Leijonhufvud* (2009), *Mooslechner* (2008).

global warming (*Stern Report*, 2007) and containing the impact of the financial crisis (through monetary policy at the zero bound, state loan guarantees and fiscal stimulus measures).

The main goal of an economy in the longer term is to promote employment and growth under the constraints of social and ecological objectives as well as economic stability (defined as moderate inflation and cyclicality). As a result of our experience in the current crisis we would add resilience as a new important constraint. Resilience is defined as the ability of an economy to reduce the probability of further deep crises or at least to mitigate the effects of a crisis.

However, whilst resilience is a constraint only, not a final goal, it should not be ignored. Tackling a constraint in an isolated manner leads probably to some loss of employment and growth. Furthermore a national strategy which is not embedded in an international one will carry even higher costs. National solutions which contain even a hint of protectionism or which reduce the openness of the economy should be avoided since the very openness, specifically for the Austrian economy considering its balance of payments surplus, was a factor of its success. The national protectionist policies adopted during the global economic crisis in the thirties actually contributed to a deepening and lengthening of the crisis. The correct approach in order to boost economic resilience consists of proposals for measures which in part have an international and in part have a national dimension and which support the other strategic goals of the country's economic policy. Through the synergy of these measures with growth and employment policies it is possible to cushion or even turn around negative growth effects of the crisis.

2. Defining the Question and Policy Areas

Therefore the precise question to be posed is: How can a national economy – or even better the European Union – protect itself from a future deep crisis without compromising its goals of growth and employment and without reducing its degree of economic openness?

To provide an answer to the question we screen strategies and measures in five policy areas. Insofar as the strategies are supported by policy measures – and not followed by private firms alone – the measures significantly extend the traditional instruments of economic stabilisation policy. We furthermore discuss (i) the ability of economic policy to support strategy lines, (ii) whether the strategies are feasible on the national level alone or only internationally and which side effects on growth (iii) and costs (iv) could exist (see table 1).

Policy Area 1: More Resilient Economic Structures

Strategy 1: Upgrading the industrial structure

Sectors with reduced exposure to price and business cycle volatility, e.g. highly processed products as opposed to raw materials and intermediate products, are less influenced by economic cycles even in the current crisis. However, this time the fluctuations in the machinery and construction sectors have been particularly high. The car sector was always strongly cyclical, this time even more so due to flawed model policies (failing to adapt to increasing fuel costs or to look for alternative drive systems). In general, as well as in the current crisis non-durable consumer goods are less cyclical compared to durable consumer goods. A larger proportion of non durable consumer goods would reduce cyclical fluctuations but could be at the expense of growth since demand e.g. for food and clothes grows more slowly than for other products and Austria is at a competitive disadvantage in this sector. What does make an economy more resilient to a crisis is a larger service sector, although it must be said that fast growing business services are more prone to stronger fluctuations (as compared to personal and public services). High value industrial products with a fast growth rate but also with a service component or product differentiation by quality definitely go some way to insuring against large fluctuations. This is also true of an industry structure which continually and prospectively incorporates the European Energy and Climate packages into any investment plans. This would also reduce fluctuations which occur as a result of the increasing priority of environmental goals.

It is however counterproductive to reduce the share of industry in output as it is the basis of many business-related services. There is also a lack of arguments which would justify the government intervening in a market economy in this way. The role of manufacturing for the growth of an economy is discussed in *Aiginger – Sieber* (2009).

Strategy 2: Regional diversification of exports

A broad spread of exports across all regions is usually an effective insurance against a crisis. The simultaneity of the economic downturn in the current crisis surprised everyone but even now there markets which are still growing faster than the average or which are already growing fast again after the immediate impact from the crisis. Since one can assume that the next crisis will not be as synchronised it is advantageous to diversify exports across all regions whilst paying special attention to growth markets such as the Middle East, China, the emerging EU countries and neighbouring markets (Turkey, Ukraine and Russia; *Wolfmayr*, 2009).

Strategy 3: Build in buffer and avoid Lock – In

Building up inventories instead of just-in-time delivery could be increase resilience. However, larger stocks may have the effect of reducing efficiency and increasing costs. Diversifying suppliers (having more than one), a broader range of potential buyers (more than one dominant buyer) and diversifying the application range of products (chip production for cars, mobile telephones and conveying machinery) can have a stabilising effect. Diversification may also reduce the amount of research provided by a supplier for a fixed buyer. Technical knowhow in the supply industry, which is valuable to multiple purchasers and for diverse purposes, generally increases flexibility in a crisis.

Public or private storage of goods which tend to be cyclical and whose supply is relatively fixed in the short term (difficult to expand) could be considered, e.g. food and energy. This would curb extreme fluctuations in price and lucrative speculation. Buffer stocks should ideally be on a supra-regional (e.g. European) level.

Strategy 4: Strengthening automatic stabilizers

High marginal taxation and high replacement ratios (e.g. for unemployment benefits) can slow down an economic boom or quickly smoothen a recession (without any additional discretionary economic policy intervention). However both instruments have a downside with regards to efficiency (they may reduce workplace motivation and efforts by the unemployed to find a job). We should think about financing social security to a higher degree from tax revenues. New budgetary framework used in many European countries sets spending limits, which, strictly applied, provide a buffer against the state spending too much money during a boom through expenditure ceilings. This prevents the dramatically increasing tax revenues, as seen in 2008, immediately being spent on additional spending programmes which were set up on short notice.

Policy Area 2: Increasing Economic Growth

Strategy 5: Investing into the future

Innovation and education strategies are recommended. They make sense both from a growth and employment point of view and as well as from the efficiency aspect. Research and education create positive external effects, thus economic policy should subsidise these expenditures. More innovative firms with a highly qualified workforce are better placed to produce specialised products and more bespoke solutions for customers and as a rule are less vulnerable to a crisis. Competitiveness based on higher quality instead of lower prices increases resilience as does a top 3 or top 5 position in important market niches such as environmental technologies.

Strategy 6: Directing the public sector towards growth

Economic growth can furthermore be increased by directing tax revenues and government spending towards growth and employment. A tax system which is growth orientated reduces the tax burden on labour. An expenditure strategy which is growth enhancing fosters education and training, innovation and intangible infrastructure.

Strategy 7: Projects with a dual purpose and high employment and growth effects

Policy interventions to stabilise the economy in a crisis are easier and even more seminal if the projects have a dual purpose. In other words in addition to supporting demand they also promote long term goals, increase production capacity and improve competitiveness. Projects in both the environmental and health sectors are an example. The social need for, and probably the actual market potential of, health and environmental solutions are gaining importance. They further contribute to the resilience of an economy because they are not cyclical.

Policy Area 3: Emphasising on Longer Term Goals

Strategy 8: Measure performance over the long term

If financial flows, management salaries and company ratings are more focused towards performance over the longer term, incomes will be stabilised and incentives to undertake procyclical activities reduced. Corporate and economic development will be further stabilised and risks lowered if the importance placed on quarterly earnings, daily and weekly share prices is reduced. A more long term investment horizon reduces the importance of short term projects. Company presentations, reports and ratings should contain longer term corporate goals and longer term interests for stakeholders, as well as covering investment in human capital, and both social and environmental corporate activities. Bonuses should only be paid out in the case of sustained success, and, even then, only with a time lag between the decision to award a bonus and its actual payment.

Strategy 9: Start ups

It is important for the dynamics and maybe also the stability of an economy to support young innovative firms, gazelles, and start-ups in general and even more so in a crisis (e.g. New Self-Employed). Therefore, start-ups should be encouraged particularly in a more difficult economic climate. Specific support for Spinoffs or for forming a company as a way out of unemployment should be considered.

Since Venture Capital (especially capital for the early high risk stage of a start-up) is somewhat tight, it is important that new framework directives are speedily implemented and that a state financed Fund of Funds can stabilise funds available to investors even in a crisis. The Fund of Funds would reduce the risk for private investors by virtue of the state's minimum stake in the venture capital. The Fund could also be tasked to deal with anti cyclical funding.

Strategy 10: Anti cyclical wage policy

Demand can be stabilised by developing a wage policy which is limiting wage increase during a boom but stabilising or increasing the wage share during an economic downturn. Such a policy has more scope if it is also pursued at an international level (or at least EU level). However, such policies mean that the costs for firms with structural problems would become dramatically high in the trough and thus the risk of bankruptcy and job losses increases. A stabilising wage policy could be supplemented by employee profit sharing in good times and guaranteed minimum payments in a recession

In times of economic crisis one could also strive for higher spreads in wage increases. Consumption can be stabilised through relatively high wage increases at low incomes (with a given increase in aggregate wages). Shareholders demand returns even in a recession. However, if there is high profit growth during a boom then in a recession there must be low profits or losses. In any case, if profits fall by 50% that is not actually disastrous, but simply a cyclical reality. It makes no sense, either at macroeconomic or business level, to strive for profit at all costs in a recession (thereby not investing in the future or increasing wages)

Strategy 11: Thinking more long term (European Model)

The Anglo-American model places more emphasis on short term incentives and market clearing, usually through the use of price mechanisms. They are further reinforced through competition policy and are deliberately not tempered using market regulation. The European model is less based on monetary incentives, knows prudence (e.g. in accounting) and regulates using a combination of targets for both price and quantity. Quota regulation and targets can be stabilising but they hide the danger of slow structural change. The trend of moving from quotas or regulatory rules to more price flexibility after decades of deregulation and liberalisation could be over in several areas. The former separation in the US financial sector between commercial and investment banks etc. – called "compartmentalisation" by *Axel Leijonhufvud* (2009) – was definitely not ideal. However, the crisis has shown that lifting these separations and creating new financial products in unregulated institutions, as well as forming new companies (Conduits, Special Purpose Vehicles) had its own dangers. The earlier arbitrary subdivision of the dynamic market in the USA carried the advantage that any crisis was limited to one section of the economy (e.g. the Savings and Loan crisis in the USA in the eighties).

The combination of private pension provisions with minimum payments and returns guaranteed by law can stabilise consumption and be fair from a distributional point of view. The management of private pensions must also incorporate life cycle considerations which imply e.g. reducing investment in shares as retirement approaches and not only pursue the highest return. The combination of foreign currency loans with a repayment model ("repayment vehicle", "Tilgungsträger") which is dependent on share prices is not suitable for low wage earners.

Policy Area 4: Avoiding a Crisis

Strategy 12: Smart regulation

Regulation should at least not contribute to any crisis (which was the case with the regulations in the Basel II agreements, compare *Hahn*, 2003). The goal of regulatory reform should be to introduce anticyclical equity provisions and to take due account of systemic risk in the financial sector (macro-prudential regulation), rather than assessing risk at the level of individual products. The following measures should not be disputed: international cooperation in financial regulation; all financial institutions should fall under the remit of the financial regulator, the financial regulator should make any necessary warnings, as should economic research institutions and central banks if there are extraordinary yields, substantial deviations of Price Earnings Ratios from their historic average, or unsustainable price rallies and speculative waves. These institutionalised warning mechanisms would counter any tendencies in the market to become over optimistic in times of boom. Regulators and analysts must build into any regulatory measures the fact that financial markets tend to have waves of optimism/pessimism. It is the task of analysts and of any monetary policy to at least keep an eye on any "economic bubbles" and not only to clean up the mess afterwards.

Part of any regulatory measures must occur at the international level (cf. Proposals concerning the European Systemic Risk Council). National regulations can and should supplement these. Regulations, which are stricter at the national than at the international level, e.g. higher equity provisions or lower leverage, could not be enforced at a national level and would negatively affect competitiveness. The monitoring and control of high risk activities or poor governance in financial institutions will increasingly involve firms which are active in more than one country. It would therefore be worthwhile involving international analysts and experts, in the work of the national financial regulatory bodies.

Strategy 13: Work against the pro cyclical nature of R&D expenditure

During a crisis firms reduce their investments in projects with long term returns, which include R&D expenditure. This is especially true in large international firms with subsidiaries in several countries. Research incentives and incentives for certain important investments could be made more anticyclical. Although constant framework conditions are naturally important for longer term activities, state research subsidies should be specifically increased during any crisis. Decreasing third party funding for e.g. university research should be compensated for.

Strategy 14: More critical evaluation of mergers and company size

Competition policy has not been sufficiently critical of mergers, monopolies and oligopolies over the past few years. Mergers, and the size of a company, need once more to be regarded with a more critical eye especially in the case of a take-over or merger financed by credit. The disadvantage of large companies is that if they have problems, they generally bring down whole regions, and thus tend to be bailed out with large financial packages. Therefore, companies which are essentially "too big to fail", need to be subject to tighter competition controls and reporting obligations. Company ratings will need to become more frequent because these companies are more active in the bonds market. One possibility would be that once a company reaches a particular size, market share or is active in a particular number of countries, ratings become mandatory and thus complement the reporting obligations on long-term strategies by firms. More competition (entry of new companies, less dominant firms, competition in liberal professional ("Freie Berufe") can make an economy more resilient.

Strategy 15: Tax financial transactions, evaluate financial innovations, reduce speculation

Taxing short term financial transactions makes sense for many reasons, and has been condoned on many occasions (*Schulmeister*, 2008 und *Schulmeister–Schratzenstaller–Picek*, 2008). The size of the financial sector has grown relative to the "real" economy (if such a dichotomy can be measured empirically). The internationalisation of the financial sector has supported the growth of developing countries and the new members of the EU and allowed them both to catch up with the rest of the world/EU[2]). However, not all transactions promote growth, and many transactions do not actually serve towards determining the long term value of an asset but rather exploit chance changes in exchange rates, share prices or other financial products. We have clearly seen the limits of financial models where the provision of funds is separated from its risk (Originate to distribute). Although it must be emphasised that securitisations have been advantageous for both loan providers and borrowers.

Strategy 16: Deleveraging and a more stable shareholder structure

Companies which have a higher equity ratio are more resilient, as are companies which have a stable owner structure. This in turn means that firms able to avoid the need to maximise short term returns through taking on more debt and more risky projects and that

[2]) It also increased the probability of financial crises, however.

firms are able to bear losses in a recession. All company reporting on (high) returns on equity should disclose the leverage factor (by standardised indicators). There is a loss of efficiency if shareholder structures are too stable, and if any mistakes or missed opportunities are not spotted.

A period of "de-leveraging" is a period of low growth. This is why demanding a higher equity ratio affects short to medium term growth. Empirical studies have shown that before the crisis, in the industrial sector there was no general over-indebtedness relative to equity but the opposite was true in the financial sector.

Strategy 17: More regionalization

Those firms and industries which have a higher share of exports are worse hit by any worldwide crisis. Companies with a more regional distribution and which are more regionally integrated are less exposed. Lengthy transportation of products (often merely for an intermediate stage of production) is being criticised from an environmental point of view and does not always seem to be entirely necessary. The only measure which can be used to promote a return to a more regional basis, without having to accept any loss of efficiency, would be to include all the external costs and side-effects of transportation in its actual cost. This would also be an environmentally desirable outcome.

More regionalisation does not automatically mean there is less risk of a crisis but would mean that it might not spread so simultaneously. However, too much regionalisation can bring with it losses in efficiency and growth since you forgo the gains from the international division of labour. This policy also works against a wider and more diverse (regional) market.

Policy Area 5: Crisis Stabilizing Institutions

Strategy 18: Budget surplus before a crisis

The most effective macroeconomic protection against the consequences of any crisis is a budget surplus over the whole of the economic cycle. The minimum to be expected would be a considerable cyclically adjusted ("structural") budget surplus in each peak of the cycle. The surplus can then be used during times of crisis to stabilise demand in the entire economy without having to fear future tax rises or public expenditure cuts.

Limits to taking up new public debt need to be spotted early. If funds are put aside early the necessity to save during or after a crisis is reduced.

Strategy 19: Construction ready projects

During a crisis demands are often made for construction projects which can immediately be set in motion. Particularly in the current crisis it has become clear that the time lag between deciding on a stimulus package and actually setting in motion big construction projects is long. This time span – called "implementation lag" in literature – may even have risen over time. The projects need to already be planned in advance, including all necessary construction permits and with a completed tendering process. Smaller projects on a regional level can be more speedily set in motion than larger ones. They should, however, also be financed by a fund because during any crisis even the tax revenues at a regional level decline rapidly. It should also be noted that establishing a fund does carry certain costs and reduces budgeting transparency when putting together a budget.

Strategy 20: Supporting firms with a viable business model only

Every crisis contributes to structural change. Economic intervention should reduce the negative effects on employment but without preventing this structural change. This means that any governmental support (cheap loans, purchasing incentives, guarantees) should be strictly linked to concepts and restructurings (incl. management and ownership structures) which are looking to the future. Otherwise a crisis actually becomes the building block of further and deeper crises (at least in a section of the economy).

Strategy 21: Innovative solutions to limit unemployment

Reducing working hours in the short term and in a reversible form will reduce unemployment. Models where working hours are calculated over longer periods of time and flexible working time arrangements have such an effect. This free time should be used to get school certificates or late graduation from apprenticeship trainings. There now tends to be a shortage of qualified workers. Unemployment is known to be inversely correlated with education.

It is important not to reduce the workforce in the long term. Reduced working time should be used to catch up on further qualifications (apprenticeship, bachelor studies, courses at politechniques etc.). Any further education should lead to some form of formal recognition as this in turn increases job mobility. Not all employees will be able to be employed in exactly the same companies after a financial crisis.

Active labour market policies foster growth. Broader qualifications and training which is forward looking reduce the effect of fluctuations in output on the labour market. If in a recession there are still sectors and companies which could actually produce more if they found the correctly qualified staff (engineers, skilled workers, carers and child carers), a more flexible workforce would actually reduce economic fluctuations (level of mismatch is reduced).

Strategy 22: Experience Rating

Companies which avoid fluctuations in employment inhibit less cost on unemployment insurance funds and should thus pay less contribution. The bonus could be calculated either in absolute or relative terms to the sector average (c.f. *WIFO-Weißbuch*, 2006). The need to lay off staff or have seasonal contracts is reduced if fluctuations in output are reduced or if employees can be flexibly employed and carry out different tasks during the year.

Strategy 23: Broader company goals, trust and distributional justice

The single goal of short term profit leads to more pronounced cyclical fluctuations. Those companies which pay attention to the development of human capital and capabilities, which take into account environmental and social aspects, and for whom Corporate Social Responsibility is a given, have a more lasting success and contribute to reduced economic fluctuations. They are also more easily reconcilable with the broader goals of economic policy (environment, full employment, distribution).

Broader corporate goals (Corporate Social Responsibility in a wider sense) should also have a place in company assessment by financial analysts. They form a trusted base on which flexible and sustainable strategies can be built. Performance orientation, fairness and flexibility are the important elements of success in the Scandinavian models and in a functioning social partnership. In countries with such structures people are more prepared to see openness and globalisation as advantageous. Micro economic change needs trust and macroeconomic stability and at the same time contributes to economic resilience.

3. Feasibility and side effects

The last section presented 23 strategies in five policy areas. This could be a menu for an enlarged cyclical policy, combining demand management with structural policy. However not all strategies are achievable without negative side-effects and costs. Specifically, not all strategies to foster economic resilience are achievable without negative effects on growth. Some demand a similar policy to be followed in other countries/regions and at an international level. Table 1 reports on the feasibility of economic policy to influence a strategy, the side effects of the strategies on growth and competitiveness and their ability to be implemented on a national level. No strategy should be followed, which leads to less openness and protectionism, since protectionism costs growth and jobs. The negative effects for the dynamic of the economy of some of the strategies need to be compensated for by integrating special growth strategies into the overall strategy. In this way higher growth and employment could ideally be combined with greater stability.

Table 1: Strategy elements to increase resilience: feasibility and side effects

		Controlable by Economic policy	Growth effect	Cost effect	National possible/ only international
Policy Area 1: More Resilient Economic Structures					
Strategy 1:	Upgrading the industrial structure	difficult	positive	-	national
Strategy 2:	Regional Diversification of Exports	somewhat	rather positive	-	national
Strategy 3:	Build in Buffer and avoid Lock – In	partly (stocks)	negative	increasing	rather international
Strategy 4:	Strengthening Automatic Stabilizers	yes	rather negative	-	national
Policy Area 2: Increasing Economic Growth					
Strategy 5:	Investing into the Future	yes	positive	short-term increasing/ long-term decreasing	national
Strategy 6:	Directing the Public Sector towards Growth	yes	positive	short-term increasing	national
Strategy 7:	Projects with a dual purpose, high employment and growth effects	yes	yes	short-term increasing	national
Policy Area 3: Emphasising on Longer Term Goals					
Strategy 8:	Measure performance over the long term	partly	rather positive (?)	increasing?	international
Strategy 9:	Start ups	somewhat	positive	increasing	national
Strategy 10:	Anti Cyclical Wage Policy	partly	?	private increasing	rather international
Strategy 11:	Thinking more long term (European Model)	marginal	rather positive (?)	rather increasing	international
Policy Area 4: Avoiding a Crisis					
Strategy 12:	Smart regulation	yes	positive	-	international
Strategy 13:	Work against the pro cyclical nature of R&D expenditure	yes	positive	public increasing	national
Strategy 14:	More critical evaluation of mergers and company size	yes	?	short-term increasing	international
Strategy 15:	Tax financial transactions, evaluate financial innovations, reduce speculation	yes	rather positive (?)	slightly increasing	only international
Strategy 16:	Deleveraging and a more stable shareholder structure	marginal	rather positive (?)	increasing	rather international
Strategy 17:	More regionalization	somewhat	negative	increasing	national (limited)
Policy Area 5: Crisis Stabilizing Institutions					
Strategy 18:	Budget surplus before a crisis	yes	short term/ long term	?	national
Strategy 19:	Construction ready projects	yes	yes	positive	national
Strategy 20:	Supporting firms with a viable business model only	somewhat	yes	slightly increasing	national
Strategy 21:	Innovative solutions to limit unemployment	rather yes	yes	positive	national
Strategy 22:	Experience Rating	yes	-	decreasing	national
Strategy 23:	Broader company goals, trust and for distribution	difficult	positive?	short-term increasing/ long-term neutral	also national

4. Summary

The theory of business cycles explains how there are short term fluctuations around a medium term growth trend. The medium term trend is taken as a given. It is defined by factors which do not influence economic fluctuations and which cannot be changed by stabilisation policy (i.e. are exogenous). The instruments that can then actually be used to stabilise an economy become somewhat limited: monetary policy, budgetary policy and possibly also redistribution of income for the benefit of lower income earners. The time lag for such policies to take effect is extremely long and often even longer that the economic crisis itself. The structural effects are becoming more problematic as the budget deficit finances construction projects which are not viable in normal times. Economic stabilisation policy has a tendency towards asymmetries: deficits in recessions are not matched by surpluses in boom times. Nevertheless, the advantages of anticyclical as compared to procyclical or neutral budgetary policies are a central and important economic insight.

The current world wide crisis of the real economy is long enough for all monetary and fiscal strategies to be exhausted. The long time lags before policies have had an effect became clearly visible this time. Programmes for additional state spending, which were decided upon in late 2008, will only have an effect in 2009 at best. Programs started in early 2009 will have approximately equal effects on economic growth in 2009 and 2010 (*Saha – Weizäcker*, 2009). Multipliers are in general higher for government expenditure than for tax reduction, but the implementation lag is usually much higher (and often overlooked in economic modelling). Government expenditure on structural issues, such as training and energy saving, remained low. More problematic measures like premia for substituting old cars by new ones (independent of size and fuel efficiency) prove easier to employment.

In such a situation the question arises how shocks can be avoided in the first place (cf. *Aiginger*, 2009; *Cooper*, 2008; *Goldman–Sachs*, 2009; *Hahn*, 2008; *Taylor*, 2009) or how structures can be created which are more resilient. Ideally, we look for economic policies which foster economic stability, but at the same time growth, structural and environmental change.

Resilience should not be an isolated economic goal but should be integrated as an additional important constraint into growth and employment strategies. Micro economic change and fulfilling social goals must complement each other. The contribution of private firms and of an economic policy which is growth and stability orientated, are both indispensable and indeed support each other.

Economic resilience should be achieved through five channels (or policy areas), namely (i) more resilient structures (ii) increasing economic growth (iii) more emphasis on longer term goals (by firms, analysts and economic policy) (iv) avoiding factors which actually cause economic crises (v) institutions and incentive schemes which serve to stabilise the economy

In these five broad policy areas, 23 different strategies have been presented, although this list is not exhaustive. Not all strategies are achievable without negative side-effects and costs. Specifically, not all strategies to foster economic resilience are achievable without negative effects on growth. Some demand a similar policy to be followed in other countries/regions and at an international level.

The European socio-economic model offers a foundation for a more resilient structure, since it is less biased towards short run goals, regulation and governance does not rely on prices only, and financial innovations and speculation does not play a similar role as in the US. Performance would increase if the European countries avoid cementing existing structures in production, regulation and the public sector. It is not less change but rather adapting more proactively to the future and open structures plus providing buffer stocks which bring more security and dynamism in the long run.

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