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The Editors

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Austria's Budget Reform: How to Create Consensus for a Decisive Change of Fiscal Rules

by
Gerhard Steger*

In December 2007 and December 2009, Austria's Federal Parliament decided on a far-reaching, comprehensive budget reform package. The introduction of a medium-term expenditure framework with legally binding expenditure ceilings, of accrual budgeting and accounting and of performance budgeting marks a decisive change, not only in steering the budget, but even more so in the Austrian administrative and political culture.

Both legislative decisions were finally taken unanimously. This article describes the respective change management and gives an overview of the main Austrian reform elements.

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Keywords: Austria, budget reform, fiscal rules.

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1. How the Austrian budget reform emerged

Austria's public sector is comparatively large. General government revenues and expenditures as a percentage of gross domestic product (GDP) are well above the OECD average (OECD, 2009). Austria is a federalist country where regions and communities play an important role: The sub-central levels of government employ approximately two-thirds of the public workforce (OECD, 2009). The expenditure of the sub-central levels of government amounts to three-quarters of the federal level (Fleischmann, 2005).

The federal administration is characterised by large, centrally managed ministries, although during the past two decades a considerable number of administration entities were hived off and transformed into state-owned enterprises (Blöndal and Bergvall, 2007).

Up to the mid-1990s, budget formulation in Austria was very traditional, cash-based, highly legalistic and input-oriented. This led to growing dissatisfaction within the federal administration, as the weaknesses of this system became more and more obvious: there was no binding, medium-term perspective for budgeting, which created planning problems both for the Ministry of Finance (MoF) and the line ministries. The focus of budgeting prevailed on inputs and neglected performance results. As a monopoly of classic, cash-based cameralistics characterised public accounting, important financial information was not available for steering the budget adequately. Therefore the budget administration within the MoF started to develop reform ideas to counter those problems. It successfully lobbied for political support and managed to get political approval for the first reform elements.

The most important changes were the introduction of top-down budgeting (in the mid-1990s) and pilot projects to experiment with new forms of budget flexibility and performance information (starting in 2000). "Flexible agencies" (which remained part of the ministry and were not hived off) received a lump-sum appropriation per year, had the flexibility of virements within that lump sum and could carry forward most of the respective money if the financial results were better than planned. The appropriations of those agencies were defined several years in advance, together with performance indicators. The results of these pilot projects were very encouraging: the administrative and budget culture in the respective administrative offices improved considerably and civil servants were much more motivated than before. Although these pilot projects did not cover more than around 20 administrative offices in different line ministries, they became crucial for the Austrian budget reform process. It became obvious that new fiscal rules could generate better fiscal results and better performance at the same time.

Therefore the MoF decided to use this positive experience and merge that with an analysis of international examples of new fiscal rules to create a comprehensive steering model for the Austrian federal budget. As far as international examples were concerned, Austria gathered respective information mainly via the OECD Working Party of Senior Budget Officials. This network had considerable influence on the Austrian reform, as the international experience, both successes and failures, was a crucial source of inspiration for integrating lessons learned

in the Austrian model. Austria asked the OECD secretariat to write a country report on budgeting in Austria[1] and OECD staff was invited by Austrian authorities to present the results of the country report and additional OECD experience on fiscal rules reforms. This helped to persuade the Austrian government to stick to the reform process.

The MoF developed its reform model and discussed it afterwards with different stakeholders. The reason for this approach was obvious: proposals should structure discussion and foster the comprehensive character of the reform.

2. How stakeholders were brought on board

From the start of this broad reform initiative, it was obvious that it would take several years to develop and implement change. Therefore it seemed crucial to ensure that the reform would not depend on the then existing political constellation, but would survive different governments. Thus the reform process had to integrate all political parties represented in Parliament. A general political consensus was needed to keep the reform out of the political day-to-day quarrels, and the reform needed to be labelled as a modernisation project that would be supported by all relevant political forces.

For that purpose, an adequate forum was needed. Therefore, an informal parliamentary reform committee was established in autumn 2004. Experts and all political parties with representation in Parliament were integrated. The committee acted as a platform for discussion between the MoF and party representatives. While the MoF presented its ideas for the reform design, and later on, the detailed drafts for legislative amendments, the representatives of the parties discussed these suggestions and provided feedback to the MoF. In practice, the general reform design presented by the MoF was accepted with only minor changes. The reform process created a win-win-situation for the MoF and the political parties: on the one hand, the MoF could accomplish its reform; on the other, the political parties made sure that issues of particular relevance for them – such as the role and the rights of Parliament in the budget process – were designed according to their needs. This referred especially to budget-reporting requirements of the administration (in most cases for the MoF) to Parliament and the creation of a Budget Office in Parliament that would support the Budget Committee with all aspects of budget decision and execution. Additionally, it was attractive for Parliament that the reform design of the MoF included detailed and regular performance information in the future annual budget bill. Therefore, Parliament's portfolio was substantially enriched. All in all, the informal parliamentary reform committee created a common reform spirit and established a direct line between MoF and Parliament, which was an important factor in backing the reform process.

Another important stakeholder in the reform process was the Court of Auditors (CoA). The MoF viewed itself and the CoA as "friends of the taxpayers" and ensured that the CoA was integrated in the informal parliamentary reform committee from the start and had the opportunity to add its perspective. As in the case of Parliament, the CoA benefited from additional levers and broadened its portfolio: the introduction of performance budgeting requires an institution to evaluate *ex post*, whether, and to what extent, the outcomes and outputs have been fulfilled. This is an important task for the CoA. In addition, the CoA gained the right to receive additional reports from line ministries and the MoF, and must be consulted in diverse budgetary matters. The CoA, which already had a strong influence on public administration and politics, obtained more opportunities to act and express its views. Like the Parliament, the CoA benefited from the budget reform.

Consequently, the CoA expressed its support for the reform in public and to Parliament, which was important in strengthening political acceptance of the reform.

As far as the line ministries were concerned, it was much harder gaining their approval for the reform. Traditionally, budget legislation guarantees the MoF a very strong role towards line ministries and the latter tried – basically without success – to change that in the course of the budget reform. As any draft of new legislation has to achieve unanimity within the Council of Ministers, the MoF had to lobby hard. Three factors finally helped to reach unanimity:

- The reform offered some advantages for the line ministries: more flexibility both in budget preparation and execution (see details below), and the possibility to publicly present their efforts and work, with the introduction of performance budgeting.
- The fundamental decision to carry out the reform had been previously made on a constitutional basis in 2007 (see details below); therefore, there was no way back ("the bridges were burned"). The line ministries realised that at the end of the day their potential for resistance was limited.
- The MoF made a deal with the Chancellery: in return for their approval and promotion of the reform, the Chancellery was given a monitoring role in performance budgeting, and thereby enriched its portfolio.

This new role for the Chancellery implies a monitoring of the outcomes and outputs, which are still defined by the line ministries. Due to the Austrian Constitution, the Chancellor has no guiding role *vis-à-vis* ministers. This has not changed with the Austrian budget reform. Therefore, the Chancellery's role is to monitor and support the methods, processes and results of outcomes and outputs, but it does not give orders to line ministers on their results.

A traditional part of the Chancellery's portfolio is the steering of administrative staff in the federal government: this does not imply recruitment decisions in line ministries, but rather focuses on the legal framework for public employment in the central government. As daily budget life shows, it is very important to ensure that the steering of the budget and the steering of personal resources coincide. Therefore, the MoF and the Chancellery actively discussed making that happen in the future.

Another important stakeholder for budget reform is the public. Consequently, the MoF tried to persuade the public of the merits of the planned reform. The main target groups were scientists, journalists and foreign multipliers. As far as the former were concerned, the MoF informed them (especially professors for public management and accounting) regarding the reform ideas, solicited feedback and integrated tips that fit into the general framework. The aim was clear: the scientific community should contribute to the reform, and at the same time, to a positive public climate towards the reform. The MoF did not hire professors as consultants, but tried to involve them on an informal basis to ensure effective communication between the scientific community and the administration. Some of this communication worked on a bilateral basis, directly between professors and the MoF; and some discussions took place in public at conferences related to budget reform issues, where officials of the MoF were invited to present the reform design.

Budget reform is generally seen as a very technical issue, which is not easy to communicate to the media. This being said, the MoF tried to focus on aspects of the reform that were of potential interest to journalists. These efforts centred on a simple question: How would citizens experience the reform? What would change for them? Consequently,

the merits of good performance information were an important part of that exercise. Another was additional information on the financial situation of the country derived from accrual accounting and budgeting. The MoF organised special discussion meetings for journalists to present the reform ideas and to generate a positive echo in the media. These efforts succeeded to a certain extent. At one point, the reform process was at severe risk of grinding to a halt, and some newss published articles in favour of the reform. This helped put pressure on sceptics within Parliament and the administration.

Foreign multipliers were another important target group. The aim at first was to use their experience for the Austrian budget reform. Secondly, it was hoped that foreign multipliers would create an interest in, and positive comments, on the Austrian reform. The respective feedback was used at home to underline the importance of the planned reform and to show that Austria could attract positive attention by moving towards a best practice example of steering the budget and the administration. As the MoF actively participated in the OECD Working Party of Senior Budget Officials, this was an excellent opportunity to gain access to relevant foreign multipliers. In addition, international congresses and bilateral contacts were used to broaden the basis for respective communication.

All in all, the MoF tried to create positive public awareness of the reform and to capitalise on a favourable climate to pass the reform package as quickly as possible through Parliament.

Last but not least, it was important to bring the civil servants on board. As broadly recognised, administration reforms can only survive if they are respected or – even better – endorsed by those who do the day-to-day work within an administration. Otherwise, even reforms with a strong legal basis can run the risk of being paralyzed once in practice. Therefore the MoF regularly tried to keep civil servants in all ministries informed regarding the reform design, its main elements and key details. The basic assumption was that civil servants could benefit from the reform, especially from performance information: this could contribute to a positive public recognition of the public service as a whole as well as of respective ministries and their staff in particular. Citizens and taxpayers could better understand the merits of public service. This could positively influence the traditionally sceptical attitude towards civil servants in the Austrian public.

For a far-reaching reform to work in practice, a new administrative culture is necessary. It is the administrative staff that has to adapt; therefore, the civil servants had to be the agents of change. As a consequence, the MoF decided to rely on the huge expertise and experience of its administrative staff to design the reform. The basic assumption was that budget people know best how to effectively change fiscal rules. The reform driver was the Directorate-General of Budget and Public Finance. While a small number of young high potentials were hired to support the Director-General in steering the reform process, the whole staff of the Directorate-General helped design and implement the reform. Therefore there was no split of the staff between those who would do the routine budget work and those that would "construct the future". The reform was derived from budgetary practice, from the experience of those, who, in many cases for decades, were used to steering budgets, recognising deficiencies, and knew effective ways to solve them quite well.

It was obvious that this approach motivated civil servants to engage in the reform process and to participate in constructing the new world. This was an important factor in the success of the sometimes very technical design of the reform machine.

Another important aspect with special regard to civil servants was to keep the involvement of consultants to a minimum. During the previous decade, consultants had been used often in the federal administration and the administrative staff was very sceptical. Civil servants had the impression that consultants would take the experience and ideas of the administrative staff and sell that to the government and earn lots of money. Additionally, the hiring of consultants was understood as a clear signal to the administrative staff that they would not be able to cope with the challenges ahead and would need advice from consultants who would teach them what they didn't know. This created a strong defensive attitude among civil servants. Extensive use of consultants would have reduced the acceptance of the reform considerably.

Consultants were – to a very limited extent – used in two sectors: in the development of the accrual accounting and budgeting system and in the information technology (IT) implementation of the reform. But the whole design of the reform model and most of the practical development of the numerous elements of the reform was carried out by Austria's civil servants. This was much cheaper than the extensive use of consultants would have been.

In sum, the Austrian MoF was cognisant that it needed broad support from a wide range of stakeholders to pass the budget reform. Therefore, it developed a communication strategy that targeted the relevant stakeholders, showing them the relevant merits of the reform. Win-win-situations were created for the MoF and the relevant stakeholders. In the case of a stakeholder (typically a line ministry) remaining sceptical of the reform, the attitude was neutralised as much as possible. The strategy paid off: in December 2009 the new budget law was passed unanimously. All the stakeholders benefited and could claim victory in one aspect or another of the reform. This proved to be a key element in creating consensus on the Austrian budget reform: to build broad ownership towards this new steering mechanism for the budget and the administration.

3. How the Austrian budget reform was rendered irreversible

The aim of the Austrian budget reform was to create a comprehensive package that would not only improve budgetary steering, but also serve as an effective steering system for the whole federal administration and for political decision making. Therefore it would not have been sufficient to just change one or two elements of the fiscal rules: Austria needed a complete relaunch of the budget system. The budget of the future, based on a medium-term expenditure framework with legally binding expenditure ceilings as well as accrual accounting and budgeting, should become an integrated steering document, where the financial and personal resources and the outcomes and outputs for every ministry and every administrative unit within the ministry (dependent on a certain degree of decision-making powers) are shown in a transparent way (see details below).

The MoF assumed that such far-reaching changes could not be managed in one step. Consequently, two major stages were envisaged: the first would be implemented in 2009 and the second (that would add the most ambitious parts of the reform) was planned to come into force in 2013. Prior to that, intensive training for civil servants (2010), pilot projects to test the "new world" (2011) and a parallel use of the old and new systems (2012) were foreseen. It was hoped that the far-reaching changes in budgeting would be well prepared and the risk of practical failure would be substantially reduced.

Aware of the common risk in administrations to undercut reform and bring it to a halt, it was crucial to ensure that the reform process was completely implemented without losing momentum. But how do you realise that in a situation where lots of detailed legal

regulations were necessary to make the change really happen? The design and the decision on those regulations would take lots of time and effort. The reform process would absorb an enormous amount of energy within the administration and political decision making. This energy had to be protected against all efforts to bring the reform process to a halt. A huge frustration potential and a considerable stranded investment of taxpayers' money had to be avoided.

The solution was inspired by soccer: a "through ball" and then successful scoring. As the Austrian legal tradition is based on a rather detailed constitution in which even the basic legislation for the budget is enshrined, the MoF planned to change the constitution in a way that would make fundamental change inevitable by defining the core elements of the whole reform in the constitution. If this attempt succeeded, the necessary legal details could be designed and decided later without the danger of producing stranded investments and lots of frustration.

Backed strongly by the minister of finance and after intense discussions with the stakeholders mentioned above, the MoF presented two draft reform bills in 2006: the amendment of the constitution, and a detailed reform bill for the first reform stage (see details below). The drafts passed the Council of Ministers in early 2006, but parliamentary decision was not taken because the legislative period ended and the government could not persuade the opposition to make the necessary changes to the constitution in the wake of national elections.

In 2007, the MoF tried again and was successful. Backed by an evolving spirit of common interest in the informal parliamentary reform committee and after several concessions to the opposition which changed details but not the design of the reform, Parliament passed both reform bills unanimously. This was a decisive victory for reform, because, as it would be proven in the discussions of 2009, the reform process was now irreversible. The unanimous vote in Parliament was a strong signal to the public and the administration that this change was to stay under any political constellation after future elections. Therefore the message for all stakeholders, especially for the administration, was clear: better adapt in time.

The changes to the constitution focused on budgeting principles. The traditional budget principles of being economical, thrifty and useful were transformed into the four principles that would apply by 2013: *i)* outcome orientation; *ii)* efficiency; *iii)* transparency; and *iv)* true and fair view. Those four principles could not be put into practice by sticking to Austria's traditional budget system. For instance: a true and fair view of federal finances was not compatible with cash-based budgeting. Outcome orientation was not in line with the lack of performance budgeting.

This amendment to the constitution therefore marked a decisive change, not only in Austrian fiscal rules, but in steering the central government of Austria. The outcome-orientation principle enshrined in the constitution, in particular, had the potential to act as a catalyst for creating a new culture in politics and administration in favour of orientation on results. As will be shown below, this catalyst has already started to work.

Following the unanimous decision on the first reform package in 2007, the Austrian MoF could focus on working out the details for the second reform step starting in 2013. From 2008 until summer 2009, a complete new budget law was constructed. This was accompanied by numerous discussions on all the reform aspects with line ministries, the

Chancellery, the CoA, the informal parliamentary reform committee and the scientific community. Within the MoF, close co-operation between the Budget Department and the IT Department made sure that the technical design of the reform would be appropriate.

In autumn 2009, the political bargaining on the reform law started. This was especially tough, as some line ministries tried to weaken the position of the MoF in planning and executing the budget. As mentioned above, this resistance was overcome in a political deal that was supported by the fact that an agreement had to be found because a new system had to be implemented according to the timeline in the constitution – the new budget process had to be operational on 1 January 2013. There was no way out. Intensive negotiations between the MoF and the Chancellery in late autumn 2009 resulted in an agreement that safeguarded the reform design and provided the Chancellery with additional responsibilities (mentioned above). As the heads of the political parties in government (one headed the Chancellery, the other the MoF) had an agreement, all the line ministries had to accept it. Thus, the draft budget law passed the Council of Ministers. After short but intensive negotiations between all parties represented in Parliament, a consensus was reached (see details above) and the unanimous decision was taken on 11 December 2009.

4. The first stage of the Austrian budget reform

Based on an amendment of the budget law that was part of the 2007 reform package, the first stage of the Austrian budget reform was implemented in 2009. It consisted of two main elements: the introduction of a medium-term expenditure framework (MTEF); and more flexibility for line ministries.

The MTEF contains legally binding expenditure ceilings four years in advance on a rolling basis. The ceilings apply to groups of chapters (so-called "rubrics"). Each of the five rubrics has its own expenditure ceiling, which add to one ceiling for the federal budget. The five rubrics represent the following budget clusters:

1. Law and security (ministries for justice; interior; defence; foreign affairs; the administration of the MoF; Chancellery).
2. Employment, social services, health and family (self-explanatory).
3. Education, research, art and culture (self-explanatory).
4. Economic affairs, infrastructure and environment (ministries for economy; agriculture, forestry, water and environment; infrastructure; part of MoF).
5. Financial management and interest (part of MoF).

The Austrian system distinguishes between two different expenditure ceilings. One is a nominal fixed ceiling, expressed in euros, which applies to most (75%) of the expenditure. The other is a variable ceiling that oscillates along defined parameters. This ceiling applies to expenditure related to the business cycle, and therefore ensures,that the automatic stabilisers can work accordingly and exerts a countercyclical influence on the economy. Other applications of the variable ceiling are expenditure related to reimbursements from the EU, expenditure directly related to revenue (*e.g.* shares of value-added tax [VAT] for financing hospitals) or expenditure for guarantees. Variable ceilings therefore apply to expenditure which cannot be sufficiently calculated in advance. Most of the variable expenditure is contained in Rubric 2. Rubrics are divided into chapters; each of them is clearly assigned to one specific line ministry.

The draft of the MTEF was presented to Parliament by 30 April 2009, accompanied by a budget strategy report that explained the budget priorities of the government. The debate on the MTEF in Parliament focused on the macro level of the budget, as figures are only provided for big budget clusters (rubrics and chapters) and do not go into the details. It is possible to change the expenditure ceilings only by amending the MTEF legally. In this case, the government has to go to Parliament and explain to the public why it wants to change the planning assumptions for the budget. The Parliament then decides on the requested changes.

In autumn 2009, the annual budget bill, which must respect the boundaries of the MTEF, was presented to Parliament, and contained the details for each chapter.

The MTEF with its legally binding multi-year approach helps the MoF and the line ministries to improve budget planning. While the MoF is interested in enforcing restrictive expenditure ceilings and sticking to them even in difficult times, the line ministries do have their part of the deal: if they save money within the expenditure ceilings, they are allowed to build reserves (and use them in later years – even for different purposes). This is a huge advantage for the line ministries, as up to 2008 only in exceptional cases were they allowed to build reserves and these could only be used for their original purposes. In the reform discussion, the MoF always cited one principle, "Every minister his/her own finance minister." The respective philosophy is clear: each line ministry should develop an interest in saving money. Each minister is in a position to finance special projects, which were not foreseen when the MTEF was decided on, via savings within the ministry's envelope. This new flexibility for line ministries also allows ministries to treat certain (not all) extra revenue that exceeds the amount according to the budget planning, as reserves and use them. Therefore reserves (saved money or some extra revenue) are, by definition, part of the respective expenditure ceiling.

The year 2009 was certainly an excellent year for a stress test for the new Austrian MTEF. The financial crisis and its consequences for budgets around the world created lots of uncertainties and pressure for additional expenditure from lots of lobbies. At the end of the fiscal year 2009, it turned out that the MoF successfully defended the budget discipline. There were only a few redeployments within the budget, but the overall expenditure ceiling was not touched. This is certainly an important success for the Austrian budget reform. Even more, it turned out that line ministries were clearly cautious about spending all their money and built considerable reserves, even in the difficult year of 2009. The MoF, on the other hand, will save interest payments, as the reserves are financed when they are used and not when they are built.

This shows that the incentive "Every minister his/her own finance minister" works; the budget reform is starting to pay off.

5. The second stage of the Austrian budget reform

Based on the constitutional principles mentioned above, the main elements of the second stage of the Austrian budget reform that will come into force in 2013 are:

- Improvement in long-term budget planning processes.
- A new budget structure based on "global budgets".
- Accrual accounting and budgeting.
- Performance budgeting.
- Mechanisms to foster performance and budget discipline.

Inspired by other OECD countries, Austria will introduce regular long-term fiscal projections that will cover at least 30 years in advance. By doing so, Austria adds a long-term perspective to the already existing MTEF. Although this long-term fiscal projection is not legally binding for the design of the MTEF, it will certainly have a strong influence on future MTEFs because a MTEF has to be consistent with a long-term perspective, which will be on the table every three years. Therefore, the projection will improve the budget planning process in Austria.

A new budget structure is seen as the necessary prerequisite for other reform elements since it has to ensure that resources employed can be assigned to organisational units and functional areas according to desired performance objectives. Rubrics and chapters are kept from the first stage of the reform. But below chapters, the budget structure will change dramatically. Until now, more than 1 000 detailed appropriations have been legally binding for the execution of the Austrian federal budget. Transfers of funds between appropriations are allowed only in certain circumstances, defined in the budget law or in the annual budget bill. As recommended by the report of the OECD secretariat on budgeting in Austria (Blöndal and Bergvall, 2007), the reform will modernise and simplify the budget structure. Instead of many appropriations, a few "global budgets" will characterise the budget structure of each ministry. All in all, the number of legally binding entities will be reduced from more than 1 000 appropriations to less than 100 global budgets. Detailed budget information for the Parliament and the public will still be available, but figures at this "detailed budget" level will be indicative instead of legally binding. The results of this simplification of the budget structure will be obvious: more flexibility for the line ministries as they can redeploy funds within a global budget. On the other hand, the public will have a clearer picture of the budget, as the very technical and detailed appropriations will be replaced by global budgets that ring fence a budget cluster, which is easy to communicate to Parliament and the public. For instance, one global budget within the ministry of interior could focus on the police; another in the ministry of work and social affairs could concentrate on the labour market. The effectiveness and efficiency of the line ministries should be improved by creating close links between performance objectives, responsible administrative units and the respective budget structure.

To prepare the second stage of the Austrian budget reform in time, the line ministries have to define their future budget structure until spring 2010 with the consent of the MoF. The latter ensures that the budget structure is transparent and comparable across the federal budget. In the course of defining this future budget structure, it can already be observed that the new philosophy has started to work: discussions have emerged about how a ministry should be organised to fulfil performance goals in order to ensure that those responsible for a certain goal have the means to steer the respective resources. This "magnet field" of reform will exert a high influence on the future administrative organisation of the federal Austrian bureaucracy – far beyond fiscal rules and budget issues as such.

Traditionally Austria's federal budget is planned and executed on the basis of cash accounting. This will change according to the second reform stage. After intensively analysing foreign examples, the MoF successfully proposed to switch not only to accrual accounting, but also to accrual budgeting. The reason for this is simple: accruals should be relevant. This might not be the case if they are not used in budgeting. If accrual accounting is to become a management instrument rather than a mere pool of information, it has to be combined with accrual budgeting.

As to the accounting system, Austria will in most cases be consistent with the International Public Sector Accounting Standards (IPSAS), but will not implement all of them. The MoF advocates a pragmatic approach that looks at the real advantage of any standard and does not hesitate to deviate from IPSAS, if the respective standard does not seem useful in practice or introduces the risk of too much complexity or bureaucracy. An important aspect of the new accounting system is to integrate the already existing cost-accounting system into the budgeting framework. So the cost-accounting system will have harmonised definitions of cost with expenses as such. In addition cost accounting will be harmonised with the budget structure so that the cost-accounting system specifies the operating statement and provides additional information on overhead or calculation of products and services. In this sense, cost accounting is the missing link between financial accounting and budgeting and performance accounting. This conceptual link is supported by strong technical links to ensure a solution at optimised administrative costs. Accounting standards are set by the MoF with the consent of the CoA.

As far as accrual budgeting is concerned, Austria's federal budget will consist of a cash flow statement and an operating statement, both of which will be integrated in the annual budget law. Non-cash expenses, such as depreciation, will be part of the budget so they can be managed at all stages of the budget cycle and are no longer beyond decision making.

The cash statement will be derived from the operating statement. Therefore both perspectives – use of cash and use of resources – will be available for steering the budget properly. A balance sheet will be drawn up by the CoA in the course of the annual accounts.

6. Performance budgeting

As mentioned previously, outcome orientation will be a constitutional principle in Austria as of 2013. The implementation of that element is a crucial part of the budget reform. The budget will develop from input orientation towards a comprehensive steering document of resources *and* performance. When the MoF designed the second stage of the budget reform, it analysed foreign examples of performance budgeting (see OECD, 2007). As a result, it concluded that the new system should be lean (avoid a "performance bureaucracy" and concentrate on the most relevant aspects), sustainable (goals and indicators should remain constant to be able to monitor developments over a longer period of time) and relevant (integrate performance goals and indicators in the annual budget bill).

The Austrian performance model is based on the following elements:

- As far as the MTEF is concerned, the accompanying budget strategy report will refer to outcomes of the line ministries and the strategies to make them happen within the respective four-year period.
- In the annual budget bill, the performance information will be presented as follows:
  On the level of budget chapters, a brief mission statement and a maximum of five outcome objectives have to be defined and are part of the budget decision in Parliament. In the budget, each outcome has to be justified and explained very briefly, answering three questions: Why has this outcome been chosen? How will it be achieved? What is the benchmark for its success?
- On the level of global budgets, a maximum of five outputs has to be defined, which are part of the budget decision as well. Again, the three questions mentioned above are in place. To make sure that every person who deals with the budget is aware of the potential for improvement in the relevant global budget, the CoA may add a very brief

summary of its recommendations for that global budget. The line ministry in turn has the opportunity to comment on that recommendation. Therefore the Parliament and the public find three basic types of information in the budget: resources, outcomes and outputs, recommendations of the CoA. This provides a comprehensive overview of what is going on in each global budget.

- On the level of detailed budgets and their responsible administrative units, a plan or a mandate integrating resources and performance objectives for the relevant administrative unit is obligatory. The plan covers four years in advance and is therefore congruent with the time horizon of the MTEF. Although this plan is an internal document within a line ministry and will not be published, the substance of the plan will be an important element for the budget documents explaining the annual budget bill.

To make sure that line ministries and their administrative units take the issue seriously, several watchdogs are in place. Parliament has to decide on outcomes and outputs, which are, as mentioned previously, systematically integrated in the budget bill. As the current discussions in the informal parliamentary reform committee for the budget reform show, it can be expected that Parliament will watch the performance results very closely. The CoA evaluates the outcomes and outputs *ex post* and publishes the results. In Austria, the reports of the CoA receive a lot of public attention, which will contribute effectively to the relevance of performance budgeting. The Chancellery will monitor line ministries and provide support and advice to cope with this new performance culture. However, it does not have the power to give orders to the line ministries. At the end of the day, they are solely responsible for their outcomes and outputs and will earn either praise or criticism for the results. Therefore, it is obligatory for the line ministries to establish an internal control mechanism for their performance goals.

An important aspect of performance budgeting in Austria concerns gender equality. In the constitutional amendment of 2007, gender budgeting was explicitly named as an obligatory dimension of performance budgeting. The constitution states that the budgets of all levels of government have to strive for the equality of women and men. Therefore the gender dimension has to be represented at all levels of the performance budgeting system: at least one outcome per chapter should deal with gender matters. The same applies for at least one output per global budget.

7. Mechanisms to foster performance and budget discipline

As discussed in the previous section, watchdogs should ensure that performance budgeting is taken seriously and that an obligatory plan is put in place to integrate resources and performance results per administrative unit so as to spread the spirit of performance budgeting in all administrative units of the federal government. But watchdogs and obligatory plans are not the only mechanisms to support a new performance culture. Additional leverage will be created through premiums for civil servants if the obligatory plan is accomplished. One may question whether money really helps to foster performance and budget discipline; premiums are certainly a tricky issue.[2] In Austria, however, the flexible agencies mentioned in the first part of this article have proven that premiums can contribute to the positive motivation of administrative staff if the awarding process is transparent and results are reasonable.

The Austrian budget reform aims at generating an innate interest in line ministries and their administrative units to spend public money carefully and cautiously. Therefore the first stage of the reform implemented the opportunity for line ministries to carry forward unused funds and to build reserves ("Every minister his/her own finance minister"). In the second stage of the reform, this opportunity is extended to the administrative units in the federal governments. This was inspired by the success of the flexible agencies allowed to do this since 2000. It was observed that, on average, around 10% of the resources were saved. Therefore, as of 2013, an administrative unit responsible for a detailed budget can keep the money it saves or – under certain circumstances – earns additionally. On the one hand, this strengthens the position of the administrative unit towards the respective line ministry. On the other hand, the line ministry decides each year which administrative units are eligible for which resources. This ensures that there are checks and balances in the financial relationship of line ministries and their administrative units – and at the end of the day, the line ministry has the stronger lever. In any case, the new philosophy works on the condition that those who decide on resources for others are committed to awarding good financial performance.

Unfortunately, budget mechanisms do not work solely on awarding good behaviour. Experience shows that sanctions are necessary to prevent free-riding on the expense of others. Until now, the federal budget law lacks effective sanctions. This will change as of 2013. One of the most intensely discussed items was the MoF's suggestion to introduce biting sanctions into the budget law. The MoF argued that if the line ministries are granted more flexibility, there has to be a "fire brigade licence" for the MoF should someone break the rules. The line ministries fought this fiercely, but in the end, the MoF succeeded to a large extent. The new budget law includes the following sanctions:

- Violations of the budget law will lead to less financial flexibility for the relevant administrative unit. In this case, the financial limit, where the consent of the MoF for an expense is necessary, is reduced by 50%.
- If money is spent in violation of the budget law, the MoF is obliged to cut the resources for the respective budget chapter accordingly.
- In the case of other violations against budget regulations, the MoF may cut the relevant budget chapter up to 2% (with a maximum amount of EUR 10 million).

8. The Austrian budget reform: Still to do

No reform covers everything and the Austrian budget reform has its deficiencies. The most important one is that the reform only covers the federal level, and not the sub-national levels.[3] In a federalist country, this is a big point on the to-do list for the future. Originally the MoF planned to integrate all levels of government, but the regions were not willing to participate and lobbied successfully against their integration in the reform process. Nevertheless, if the budget reform proves to be successful in practice, it will be very difficult for the regions and communities to not join the reform as public pressure will certainly exert a considerable influence. The only aspect that applies to all levels of government is gender budgeting. This may be seen as a good start for a broadening of the reform process.

A second deficiency refers to the accounting system: hived-off entities still will not be consolidated after the reform. This proved to be too complex to deal with in the course of the current budget reform and will be another item on the to-do list for further reform.

9. Conclusions

Austria has come a long way since its first budget reform steps in the mid-1990s to the parliamentary budget reform decision in 2007 and 2009. A considerable way lies ahead to implement all the budget reform elements and to make the cultural change in the Austrian administration really happen. This highlights that fundamental budget reforms take a lot of time and energy – and are certainly never completely finished.

The Austrian budget reform is a comprehensive approach that not only changes specific elements of budgeting, but transforms the budgeting machine decisively. Furthermore the reform not only relates to fiscal rules: it deals with resources *and* with performance and combines both perspectives. The budget therefore changes its character. It not only steers the allocation of money, but moves towards an integrated steering document for resources and results. This strengthens the character of the budget as the central planning document of a government.

As the Austrian reform integrates performance in the budgeting process, it may not only change the administrative, but also the political, culture in this country. In the future, ministers will have to decide on their priorities and to communicate them in a transparent and binding way. Members of Parliament will have to vote not only on resources, but on defined performance results at the same time. This will curb and structure the political debate about the future of the country and hopefully strengthen the strategic dimension of policy making in Austria.

The Austrian budget reform therefore has implications, not only for the administration, but maybe even more for the political landscape. The hard factor of the reform was completed successfully: the constitution was amended and the new budget law was passed. The success of the reform will now strongly depend on a soft factor: the necessary cultural change in politics and administration. It will be the task of the politicians and public managers to interact with the new system in practice. As the Austrian reform process up to now has managed to grow stronger and stronger, and is still gaining momentum, one may take that as a hopeful indication that this reform will reach its goals.

Notes

1. Published in the *OECD Journal on Budgeting*; see Blöndal and Bergvall, 2007.
2. The experience of the author would suggest that the most important motivation for civil servants is not premiums, but a positive climate at the workplace, the esteem they get from others and the opportunity to make decisions for which they are personally responsible.
3. It should be mentioned, however, that the Austrian constitution states that all levels of government have to align with each other on budget policy. This alignment is implemented in an "Austrian stability pact", which focuses on budget balances of the different levels of government, but not on fiscal rules like a MTEF or on performance results, nor on accrual budgeting.

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Budgeting for Disasters: Focusing on the Good Times

by
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Some ways of budgeting for disasters have the potential to increase welfare by increasing national savings, reducing exposure to risk and promoting mitigation prior to a loss. Those ways can also contribute to aggregate fiscal stability over the long term. The power of budgeting, however, can be misdirected to increase losses and lead to fiscal instability. This paper describes the potential for gain from alternative budgetary treatments of policies aimed at reducing the effects on consumption of random shocks to income and wealth. It identifies a critical difference between alternatives: budgetary recognition of expected costs of relief and recovery before the loss event. We classify those different methods as ex ante *and* ex post *budgeting. We also consider some budgetary mechanisms that can promote effective recognition and constrain opportunistic behaviour by elected officials. Finally, this paper describes related budgetary practices in some OECD countries. Many have instituted policies consistent with* ex ante *budgeting, but we have insufficient information to determine their effectiveness.*

JEL classification: Q540, H680, H690.

Keywords: Budget, disaster, relief, ex ante *budgeting,* ex post *budgeting.*

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Disasters from natural, and other, causes are a recurring element of life. To varying degrees, households and governments anticipate and prepare for sudden adverse shocks to income and wealth. Interactions between public and private responses to the threat of disasters and between budgetary accounting and public decisions have implications for national policy and public budgeting. This paper explores those implications, identifies mechanisms that can affect the success of public and private attempts to reduce losses from disasters and compares the results with some current practices.

Its principal findings are:

- Government policy can increase long-term well-being in the face of disasters. Those gains, however, depend primarily on the effects of policy on public and private decisions before the disaster occurs.
- *Ex ante* budgetary policies can increase net benefits by providing fiscal incentives and legislative opportunities to increase national savings, reduce exposure to risk, and promote mitigation, before the loss event. This finding also implies that *ex post* budgetary policies can have the perverse effect of increasing welfare losses from disasters.
- Effective *ex ante* budgeting for disasters requires trade-offs of current consumption for saving and mitigation, and procedural safeguards against opportunistic efforts to divert disaster savings to other uses.
- Many countries appear to engage in *ex ante* budgeting for disasters, through support of insurance pools and the use of contingency funds. But we have insufficient information to determine the extent to which those practices allocate current resources rather than disclose intended uses of future resources.

This paper is organised as follows: first, we identify the responses of individuals and governments to the prospect of disaster events and interactive effects between public and private action. Those interactions can reduce national savings, risk avoidance and mitigation and thereby increase total losses from disasters. Second, we consider the potential for offsetting increases in social welfare from public budgeting for relief and recovery before a loss. Third, we discuss some obstacles to effective *ex ante* budgeting and outline some procedures for increasing its effectiveness. We close with a review of current international practices, first by presenting results of a survey of OECD countries and then by providing a more detailed examination of the budgeting practices in three countries (Japan, New Zealand and Turkey).

1. Disasters: Costs, private behaviour and public policy

A disaster is a sudden event resulting in extensive damage or destruction. The consequence of a destructive event varies with its location. A large wildfire in a rural area might be viewed as an emergency, while a similar size wildfire in an urban area could be disastrous. The defining feature of a disaster is a loss of productive capacity that is sufficiently large in relation to the income and wealth of the affected country that it reduces consumption and welfare (Barro, 2006; Borensztein, Cavallo, and Valenzuela, 2008).

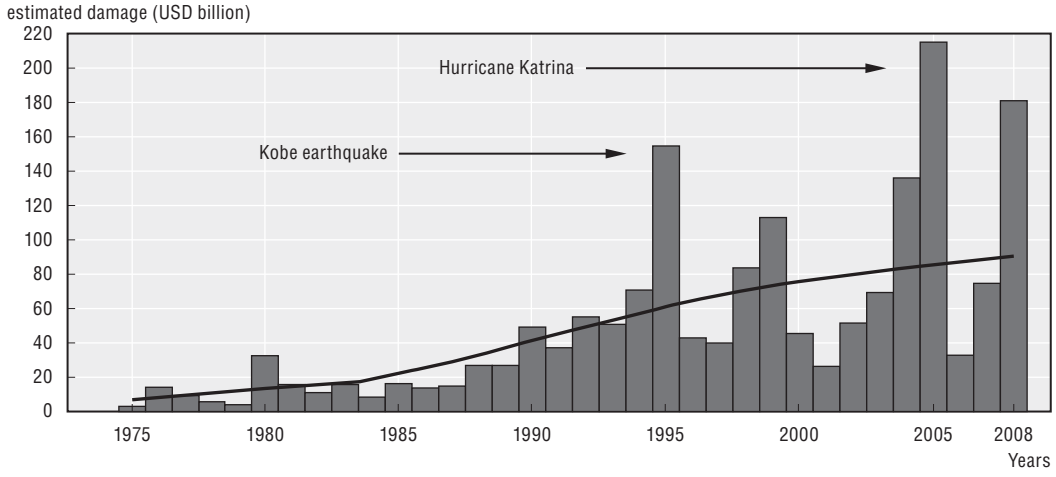
The harm is that people prefer more consumption to less, and temporal stability in consumption to feast or famine. Absent sufficient savings or access to credit, fluctuations in income and wealth translate into volatility in consumption.

A recent international report (United Nations, 2009) found that natural disasters are most destructive of living standards in small, poor countries.[1] Large, high-income countries are also exposed to low-frequency, significant losses of income and capital, but those are more likely to occur from economic disturbances such as the collapse of price bubbles and financial markets. In all countries, the size, timing and location of disasters are uncertain. Nonetheless, individuals and policy makers form expectations of loss events and act on those expectations. Currently, expected losses appear to be rising, especially from the effects of global warming and economic disturbances (Taleb, 2007; Heipertz and Nickel, 2008).

Losses from disasters are difficult to measure and compare across countries and time because the standard source, the International Disaster Database, measures only direct damage to property and infrastructure. This excludes the value of lives lost and the indirect costs of social disruption. It also does not relate the amount of loss to the wealth of the affected area. Estimated property losses for some recent notable disasters are USD 100 billion (in 1995 US dollars) for the Kobe earthquake and USD 105 billion for Hurricane Katrina in 2005. The Indian Ocean earthquake and tsunami in 2004 devastated island and shore communities in that region. Estimated property losses in Indonesia, one of the most heavily affected areas, were USD 4.5 billion. Figure 1 shows the rising trend in global property losses from disasters over the last two decades.

Figure 1. **Estimated damage caused by natural disasters, 1975-2008**

USD billions



Source: EM-DAT (2009), "The OFDA/CRED International Disaster Database", Centre for Research on the Epidemiology of Disasters (CRED), Catholic University of Louvain, Brussels, *www.emdat.be*.

Disasters vary in cause, predictability and consequences. Disasters may be the result of a naturally occurring event or human action – either accidental or intentional. Some disastrous events are easier to predict than others; the approximate paths of hurricanes can be identified more precisely than the location of tornados. Disasters also vary in terms of the ability to mitigate their consequences. Although those variations are important to

the design of disaster policies, they are less relevant for budgeting. This paper does not attempt to assess specific policies for managing the risk of particular disasters. Rather it identifies the benefits of budgeting for relief and recovery policies during the good times, *i.e.* when income is high. While the paper focuses on natural disasters, the budgetary practices described here can be applied to other expenditures whose timing and amount are uncertain.

1.1. Response of households to the threat of disasters

People anticipate adverse future shocks to economic well-being and take steps to avoid and reduce their effects (Morduch, 1995). Individual efforts to maintain living standards through bad times include decisions about the location and structure of housing, choice of occupation, income-sharing arrangements with family or voluntary associations and insurance. Mitigation and risk pooling is cost-effective to the point where the last unit of cost incurred pays for itself in lower expected losses or higher valued consumption opportunities.

Households also save and accumulate reserves to cushion the welfare loss from disasters. Pre-loss saving increases benefits by shifting consumption forward from good times, when the value of one more unit of consumption is relatively low, to bad times when it is higher. Evidence suggests that household saving is higher in countries with greater risk exposure and frequency of disasters (Skidmore, 2001).

Borrowing to be repaid in better times can also shift consumption through time to higher value uses. Many individuals are observed smoothing their consumption over a lifetime through variations in saving rates (Friedman, 1957; Hall, 1978; Modigliani, 1986). They may borrow, or "dissave", to finance consumption early in their lives when their income is low, repay debt and save during their highest income years and draw down savings in their latter years. However, opportunities to borrow following disasters are often severely restricted (Borensztein, Cavallo, and Valenzuela, 2008). The loss of human and non-human capital reduces potential future income and the ability of survivors to obtain credit.

1.2. Public policy toward disasters

Government may be able to reduce the losses from disasters beyond the reductions achieved by private actions, if it is more able than individuals to assess and manage exposure to disaster risk. Specifically, if people tend to under-prepare for disasters (Sawada and Shimizutani, 2005), government can help by increasing national saving and adopting additional measures to reduce risks and losses before the event.

Policy success against disasters, however, requires government to act in advance of loss, rather than waiting until after it has occurred. By waiting, government loses the option to sustain consumption by saving pre-disaster production and income and by reducing losses from the event. After the loss, it can only provide assistance by redistribution from those who did not suffer the loss or by borrowing. In both cases, because of its power to tax, government may have an advantage over private reliance on altruism and private credit.

That potential advantage, however, comes at a cost. Redistribution after the loss requires that a smaller pie be shared than was available before the loss. And, by increasing borrowing, government is likely violating its goal for intergenerational equity – that is, by increasing the share of current costs to be financed by future taxpayers. For a large number

of countries (Anderson and Sheppard, 2009; Auerbach and Gale, 2009), increased borrowing in response to a disaster by governments with unsustainable fiscal policies increases the magnitude and pain of the necessary future policy adjustment.

The biggest disadvantage of *ex post* disaster policy and budgeting, however, is that the expectation by individuals and households of relief and recovery assistance reduces personal incentives to prepare for disasters. It can reduce precautionary saving, increase risky behaviour and reduce the gains from private mitigation. *Ex post* government policy and budgeting therefore can diminish private *ex ante* efforts to reduce the costs of disasters without replacing those efforts with effective public counter measures. This tendency is enhanced by the lack of timely fiscal incentives for the government to adopt costly mitigation before the loss event.

Post-disaster remorse is a rational reaction to the failures to finance the expected cost of relief and recovery during the good times and to adopt more risk-reduction measures. Accordingly, proposals for *ex ante* budgeting for relief and recovery are more likely to be considered in bad times than in good.

2. Potential gains from, and obstacles to, *ex ante* public budgeting

If, for whatever reason, individuals and households save too little, take on too much risk, or invest too little in mitigating expected losses, government could increase the long-term well-being of its constituents. It could do so by increasing taxes and reducing public consumption expenditures before the loss sufficient to finance its costs of relief and recovery. Doing so would increase national saving before the event. In recognising the costs of the loss *ex ante*, the government would also be able to recognise budget savings as an offset to the cost of expenditures for mitigation and other risk-reduction measures. Those savings would increase the fiscal incentives for government to augment under-investment in mitigation by households (Phaup and Torregrosa, 1999). Government would thus improve the allocation of the nation's resources and the well-being of its constituents.

Potential, of course, does not necessarily mean successful realisation. *Ex ante* public policy and budgeting is subject to numerous obstacles that can retard those gains. We identify the major impediments to effective public budgeting for disasters as: political incentives to defer recognition of costs until a disaster event occurs; moral hazard; time inconsistency of preferences of policy makers; and the ostensible impossibility of saving for disasters by government.

To simplify, we make several assumptions:

- Governments can obtain, process, and act on information about the risk of disasters and the benefits of mitigation more efficiently than individual households.
- The goal of government in addressing disasters is to smooth and increase consumption following disasters compared with the result that individuals and households could achieve acting alone and through private agreements.
- Democratic governments cannot refuse to respond to disasters with relief and recovery assistance; repeal of existing authorisation to provide assistance is not credible.
- The budget process controls public resource flows; that is, budgeting is effective.
- The target budget deficit is a binding fiscal constraint that is only relaxed following a disaster for the previously unbudgeted cost of relief and recovery.

2.1. Political incentives to defer recognition of costs

Elected officials face strong incentives to defer recognising the cost of its disaster policies until after the event. The use of scarce public resources for saving or spending on mitigation has a visible opportunity cost in current public consumption. Urgent, unmet needs are ever present. Decisions by elected policy makers to divert resources from those uses to the relief of harm from uncertain future threats can be seen as wasteful. In contrast, once a disaster occurs, officials are rewarded for responding quickly to the relief of victims.

Donahue and Joyce (2001) also point to the common practice of funding disaster relief and recovery through supplemental appropriations which are subject to fewer restrictions and restraints than regular appropriations as a source of fiscal incentive that favours post-event over pre-disaster action. Consistent with that observation, a recent UN report found that while countries are making progress in the use of (relatively low-cost) early warning systems for disasters, much less has been achieved in infrastructure planning (United Nations, 2009). One of the UN recommendations is that policy emphasis be shifted from disaster response to "pre-disaster mechanisms".

2.2. Moral hazard

In the absence of insurance or other indemnification for loss, the incentives are strong for owners of assets to avoid risk and take action to mitigate its effects on value. For example, uninsured, risk-averse owners tend to avoid building on ocean fronts, in flood plains and on geological fault lines. They clear brush as a defence against wildfires. They save as a precaution against future loss. State and local governments avoid exposing roads, bridges, wastewater treatment plants and other infrastructure to natural hazards. They also budget and save for repair and replacement.

The availability of insurance or other forms of financial assistance weakens the incentives of asset owners to avoid loss. A national policy of assisting victims of natural disasters increases building of structures in areas known to be at risk. It diminishes the motive for individuals to save and purchase insurance. In this way government's relief and recovery policies tend to crowd out and displace the efforts of others to reduce the cost of disasters. Government's policies are thus subject to moral hazard, which increases the size of the loss, the cost of relief and recovery assistance, and is an overall offset to the social gain from government intervention. (For a case of an effective government disaster policy that appears to have been uncompromised by moral hazard, see Annex A1.)

Moral hazard is widely observed in various forms of risk pooling and insurance (Wildasin, 2008). It is not an argument against public relief and recovery assistance just as it is not an argument against commercial insurance. Rather, it should be countered by structuring indemnity agreements so that owners continue to have a financial interest in avoiding loss. Private insurance controls moral hazard by assignment of first loss to the insured (deductibles), capping benefits per claim, and levying risk-based premiums. Governments can use those and other techniques to manage moral hazard. They may, for example, specify conditions of eligibility for assistance based on location, type of construction, and owner-provided mitigation measures. A policy of lending for recovery also appears to be less subject to moral hazard than a grants programme (Sawada and Shimizutani, 2005).

Moral hazard need not be a bigger problem for government than for private insurers, except that owing to differences in objectives, addressing moral hazard is rarely a high priority for elected policy makers, especially if its consequences only become apparent after a loss event. As we suggest in the next section, *ex ante* budgeting can create opportunities and motivation for public officials to control moral hazard in a timely manner.

2.3. Time inconsistency

Rational voters may oppose the adoption of *ex ante* budgeting for disasters if they fear that budget policy toward disaster is subject to time inconsistency. That is, voters may believe that policy makers will adopt *ex ante* budgeting, raising taxes now to pay for future losses only to reverse policy subsequently and spend the revenues for other purposes. When disaster does occur, the cost of relief and recovery will have to be financed as if no taxes had already been paid for that purpose. Time inconsistency thus deprives a commitment to budget *ex ante* for disasters of the credibility necessary for public support.

Time inconsistency is one explanation for the widespread view among budget officials and technicians that even if the legislature succeeds in saving current budgetary resources for disasters, those funds will eventually be "raided" for other purposes that taxpayers would not support. This view is consistent with numerous instances where public funds designated for one purpose have been redirected to another.

Time inconsistency argues for mechanisms to restrain opportunistic behaviour by policy makers and to assure that funds for relief and recovery are spent only for that purpose. A number of means of financing disaster relief and recovery in advance of loss have that property. Successful examples include: the Belgium Standing Fund for aid to households, the Caribbean Catastrophic Risk Insurance Fund, the EU Solidarity Fund, the New Zealand Earthquake Commission Fund and the Japanese Earthquake Reinsurance Company. Those institutional arrangements have demonstrated their effectiveness in placing disaster reserves beyond the reach of those who would misuse them. Drafters of enabling legislation for effective *ex ante* budgeting must take care to tie policy makers' hands with appropriately strong knots.

2.4. Impossibility of public saving for a single purpose

In addition to expenditures for relief and recovery, governments obligate themselves, politically if not contractually, to a wide variety of future payments. Those include public employee pensions, social insurance, debt service, and defence, among others. Ideally, each of these obligations in combination with the planned net transfer of resources between current and future taxpayers is used to establish an aggregate annual target for public saving. Given a binding target for net national saving, any attempt to change saving for a single programme will be offset in the budget process by changes elsewhere so the total level of saving is unaffected. Thus efforts to save for disasters independently of the overall saving target are futile.

Few countries give much evidence of having a public saving policy. One telling observation is that, in the cases known to us at least, aggregate net public saving is rarely reported or updated in the budget process. Nor are the key components, total consumption spending or net investment, routinely monitored and reported.

Nonetheless, any country that establishes an effective target for aggregate saving based on estimates of the requirements of intergenerational equity, current investment

spending and the cost of contingencies, including disasters, is budgeting *ex ante* for disasters and for other purposes. Recognition of those planned savings in the budget means that fiscal incentives are in place for the management of contingencies, including mitigation and risk reduction. Additional recognition and saving would be excessive and counterproductive.

Instead of a total net savings target or constraint, most countries measure and target a cash-basis deficit, which ignores the sacrifice of non-monetary assets, the consumption of durable assets and the increase in obligations other than net issuance of sovereign public debt. The budget deficit is also the principal, if soft, bottom line target for most OECD countries.

Given a cash-basis deficit target, budgeting for disasters by recognising current allocations of resources through outlays and the deficit, squeezes spending for other purposes and nudges revenues up. It therefore increases saving at the margin – relative to the baseline – and frees resources for investment in mitigation. With a deficit target, increasing the recognition of future costs *ex ante* can be effective in increasing saving and motivating risk reduction and mitigation.

A related objection to *ex ante* budgeting for disasters is that it would be preferable for a country to adopt a stable, sustainable fiscal policy than to budget for disasters. To be sure, a strong fiscal position gives governments flexibility in maintaining consumption following a disaster – by increasing international borrowing, for example. But *ex ante* budgeting is a complement to, rather than a substitute for, a policy of fiscal stability. It can assist countries in moving from unstable fiscal regimes to stable ones – and in maintaining a sustainable posture once reached.

2.5. Disclosure: An adoptable, but ineffective solution

Budgetary structures exist that are consistent with political incentives to defer allocating resources until after a disaster while giving the appearance of fiscal planning for adversity. Such an accounting system can be built around an on-budget reserve account or fund. The reserve fund is credited with an appropriation for an estimate of the annualised cost of relief and recovery assistance for disasters or other contingencies. Estimates can be developed from actual past spending for disaster relief and recovery (Cummins, Suher and Zanjani, 2007) or actuarial estimates. An advantage of this procedure is that it discloses information to the public and to policy makers about the expected cost of current policy.

However, this budgetary accounting procedure has a fatal disadvantage: it has no cost in terms of current budgetary resources. It does not force any reduction in consumption because the "reserving" does not consume current resources. The crediting of funds to the reserve account is purely an intra-governmental transaction. Outlays from the general fund to the reserve account are offset by the collection of the on-budget account. On consolidation of all budget accounts into the budget totals, net outlays and the deficit are unaffected. It is a budgetary free lunch.

The absence of recognition of current period costs for expected disasters also means that this approach fails to create fiscal incentives to address moral hazard or to adopt measures that reduce future outlays. It also provides political cover for time inconsistency of preferences by policy makers that would occur if, in establishing a reserve account for disasters, lawmakers decide to levy taxes to fund the account. As a consequence, the budget totals will show a new inflow of resources – higher receipts and a lower deficit. This

constitutes an easing of the budget constraint and an opportunity to increase current spending for other purposes. When disaster occurs, the government would have to borrow and levy future taxes to finance the cost of relief and recovery to the same extent as required by *ex post* budgeting.

This disclosure of expected future cost compares unfavourably with *ex post* budgeting because its opaque nature creates the appearance of increased saving to offset the effects of future adverse shocks. It is more likely to mislead constituents and policy makers about the burden of post-disaster assistance.[2]

3. Effective *ex ante* budgeting for disasters

To realise the potential gains from *ex ante* budgeting for disasters, the budget model needs to be modified to recognise and allocate current resources to future spending for relief and recovery. This requires accounting for the use of current resources in outlays and the deficit in order to motivate the indicated changes in spending and revenues. It also requires adopting procedures that restrict opportunistic behaviour by policy makers.

In some political settings, both of these changes can be carried out by simply moving the reserve account outside the budget, so that consolidation of the budget accounts into an aggregate total excludes the offsetting collections of the reserve fund. By this means, the outlay of budgetary resources to the reserve fund effectively recognises the use of current resources, crowds out other spending and makes their redirection to other purposes more visible.

In other cases where the credibility of a policy commitment tends to be low, it may be necessary to create greater separation between policy makers and reserve funds. This may be accomplished through commercial transactions to transfer the risk of the government's disaster losses to others, a government mandate that all property owners purchase private insurance or the creation of an independent government insurance entity. Each of the policies has advantages and disadvantages.

3.1. Commercial transactions

Ex ante budgeting for disasters can be facilitated if governments can use market transactions to recognise the costs of relief and recovery policies. For example, governments can purchase parametric insurance from consortia of private commercial insurers and reinsurers. This form of insurance pays benefits conditional on the occurrence of specified events, such as the landfall of a hurricane or the occurrence of an earthquake of specified strength. It thereby avoids the high transaction costs of settling a large number of individual claims (Hofman and Brukoff, 2006). The World Bank's Caribbean Initiative offers this option to countries in that region.

Government purchases of insurance have several budgetary advantages and at least one major disadvantage. First, payments force recognition of resource outflows prior to the loss event. The transfer of the funds to an insurer puts the moneys beyond the reach of officials who might otherwise divert fund balances. Second, the contractual assumption of risk gives incentives to the insurer to save and prudently invest premiums. Third, the risk assessment performed by government in determining the amount of insurance to be purchased can focus attention on the cost savings that could be realised through investment in mitigation.

A disadvantage of the use of commercial transaction is that it leaves the government, especially for large countries, with counterparty risk. A disaster may be sufficiently widespread that insurers are unable to fully honour their contracts. In those cases, some benefits of increased pre-disaster saving and investment could still be realised, but the value of the insurance would be less than anticipated.[3]

3.2. Mandated purchase of insurance

Governments can address moral hazard and time inconsistency by mandating that property owners purchase insurance coverage from approved private insurers. Mandated individual purchases have higher administrative costs than parametric insurance, however, and that cost will have to be paid by the insured in higher premiums. Further, counterparty risk is shifted initially to property owners and ultimately back to the government, who may be expected to provide assistance to the beneficiaries of failed insurance companies.

One way the government can manage its indirect counterparty risk is to sell reinsurance for high-end losses to the insurance companies. This approach provides reliable coverage for all-size events to property owners and leaves the risk of less insurable, more extreme events with the government. However, the management of the cost of reinsurance by government through risk-adjusted premiums, capital requirements and other forms of regulation presents a substantial analytical challenge to governments.

3.3. Government-provided insurance

Many considerations, including incomplete markets, counterparty risks and difficulties of achieving effective regulation, can persuade government to offer explicit insurance to property owners. In those cases where government is retaining the risk of disasters, care must be taken in the budgetary accounting to achieve budgetary and economic results similar to those of market transactions. For example, the budget should treat the insurance reserve fund as if it were outside the government. One way to do so is to create an independent, governmental authority to perform the insurance function. The New Zealand Earthquake Commission is one model of this approach. Good results have also been obtained with less formal arrangements through the use of contingency funds by state and local governments (Hou and Duncombe, 2008; Rodriquez-Tejedo, 2008) and below-the-line credit financing accounts (Lucas and Phaup, 2008).

A disadvantage of government provision of insurance is that the control of its cost can be severely weakened by political pressure for low premiums, zero deductibles, no caps on coverage and opposition to the use of risk-based pricing. If, for example, insurance rates and terms are set in legislation, government insurance can become so deeply subsidised as to be an *ex post* grant programme in disguise. In that case, nominal insurance could have welfare effects much like those of *ex post* budgeting. Thus if government chooses to provide insurance directly, it should do so through an insurance entity with substantial discretion and incentive to set contract terms to control costs.

3.4. Why governments might choose not to budget for disasters

Even though *ex ante* budgeting for disasters has the potential to increase welfare compared with *ex post* budgeting, policy makers might prefer the latter for a variety of reasons. As noted, incentives for elected officials to push for *ex ante* change are weak, except perhaps in the aftermath of a major disaster event or in countries that are at high

risk. Also, constituents may be suspicious of proposals for higher taxes now to "save" for an uncertain event.

In addition, for developed countries, the losses from natural disasters are small relative to national income, rarely exceeding 2% of gross domestic product (GDP) (Heipertz and Nickel, 2008). They also pale in comparison with the welfare losses from major economic recessions (Hochrainer, 2009). Natural disasters also pose a modest threat to fiscal stability compared with the looming burden of social insurance policies in many countries with ageing populations and rapidly rising healthcare costs. Less-developed countries may also be concerned that budgeting for disasters might diminish the willingness of the international community to provide recovery assistance (Bobba and Powell, 2006; cited in Borensztein, Cavallo and Valenzuela, 2008).

Some countries might also opt for policies that constitute a "middle way" between *ex ante* and *ex post* budgeting. For example, a country might adopt a surtax to become effective immediately with the occurrence of the loss event. Specifically, the estimated cost of relief and recovery assistance could be converted into a specified income tax surcharge or an adjustment of the value-added tax (VAT) rate. By this means, policy makers could plan for post-disaster assistance without the necessity of putting the funding beyond their own reach. Of course such a policy also foregoes the possibility of increased pre-disaster savings and fiscal incentives for mitigation.

For all countries, it is a judgment call as to whether the potential gains from *ex ante* budgeting are worth the potential downside. Thus it is difficult to predict how countries will choose to budget for disasters. Next we examine how some OECD countries actually approach budgeting for those risks.

4. International practices

To determine how national governments actually budget for disasters, we surveyed OECD countries and followed up with a more detailed examination of budgeting practices in three countries that exhibit elements of *ex ante* budgeting. In general, countries appear to practice *ex ante* budgeting, or a close substitute for it, through policies that increase the availability of insurance, and by maintaining contingency funds. They most commonly provide insurance directly or indirectly through reinsurance and guarantees of private insurance commitments.

4.1. *Survey of OECD countries*

An electronic survey was sent to officials of the 30 OECD member countries in late March 2009 and again in early June 2009; 15 countries responded. Respondents were asked about their countries' disaster policies and how the national government budgets for those policies. To understand how policy varies with natural disaster risks, respondents were asked to rate their country's risk for several types of natural disasters. The responses are reported in Table 1. Most countries face multiple hazards. Eleven countries reported medium or high risk for two or more natural hazards. Most commonly, respondents perceive their countries to be at medium or high risk for flood (80%), wildfires (53%) and blizzards (40%). Among the 15 respondent countries, Japan is most at risk for natural hazards; the respondent noted that they were at high risk for six of the seven hazards.

Table 1. **Country self-perception of risk for natural hazards, 2009**

	No risk	Low risk	Medium risk	High risk
Earthquake	3	7	2	3
Hurricane/typhoon	6	4	2	3
Tsunami	7	6	1	1
Volcanic eruption	10	3	1	1
Wildfires	0	7	5	3
Flood	0	3	6	6
Blizzard	3	6	3	3

4.1.1. Post-disaster response

Governments provide relief and recovery assistance. As the *Samaritan's Dilemma* suggests, it is difficult for countries to avoid providing *ex post* relief and recovery services even at the cost of moral hazard (OECD, 2008). The types of services provided vary by country. Grants are more common than loans. According to respondents, 80% of governments provided cash grants to individuals and business, but only 40% provided loans. Likewise, 73% provided grants to lower levels of governments and 27% offered loans. Some 53% reduce taxes for disaster victims. Japan, for example, reduces or exempts victims of disasters from income and residential taxes.

All 15 countries report using supplemental appropriations to fund disaster relief and recovery costs in excess of the amounts budgeted. However, 80% of respondents noted that these relief and recovery costs only appear in the budget after the disaster has occurred. The other 20% recognise costs for disasters in advance of loss, but only in Austria are remaining funds available for later use. In Norway, budgeted relief and recovery funds expire or "revert back" to treasury.

4.1.2. Mitigating disasters

The responding OECD countries take measures to mitigate the effects of disasters. Countries invest in research and development, early warning systems, land conservation policies, regulation enforcement, response communication systems, and training of emergency responders. Depending on the type of activity, 60-93% of respondents report budgeting for these activities in each budget cycle (Table 2). Lower levels of government are responsible for conducting and budgeting for these activities in 27-46% of the countries.

Table 2. **Budgeting for mitigation activities in 15 OECD countries, 2009**

	Each budget cycle	In capital budget	Lower level of government responsible	Activity not in budget
Research and development	12	3	4	0
Early warning systems	10	2	4	1
Regulation enforcement	9	0	6	2
Land conservation	11	3	6	0
Response communications systems	11	2	5	2
Training and exercising	14	1	7	1

4.1.3. Ex ante budgeting through insurance

National governments also reduce the consumption losses from disasters through support of insurance pools. Seven of the 15 countries are involved in the provisions of

property and casualty insurance (Table 3). Five national governments provide insurance directly. Spain provides reinsurance for disasters, Japan provides a state guarantee of private insurance obligations and France provides both. No country mandates the purchase of disaster insurance for all residential structures, but Switzerland mandates it in some cantons, and Turkey mandates purchase for residences within municipal boundaries. Three countries require private insurers to offer disaster coverage. Finally, Hungary and Spain provide subsidies to reduce the price of insurance premiums.

Table 3. **Disaster insurance policies in selected OECD countries, 2009**

	France	Hungary	Japan	Norway	Spain	Switzerland	Turkey
Government mandates private insurers provide coverage for natural disasters	No	Yes	No	Yes	No	Yes	No
Government mandates purchases of insurance	No	No	No	No	No	Yes, in some cantons	Yes, in municipalities
Government provides insurance	Yes	No	No	Yes	Yes	Yes	Yes
Government provides reinsurance or guarantee	Yes	No	Yes	No	Yes	No	No
Government provides subsidies to reduce the price of insurance	No	Yes	No	No	Yes	No	No

OECD countries offering insurance do not appear to aggressively address moral hazard. Adopting mandatory deductibles and capping coverage below 100% of the value of at-risk properties leaves owners with some risk and encourages mitigation. Only Switzerland mandates deductibles; France, Japan and Spain cap the amount of insurance coverage. Finally, only Japan and Turkey have insurance premiums that are adjusted based on the proximity to the hazard, building materials used for construction or the ability to withstand hazards.

4.1.4. Ex ante *budgeting through contingency funds*

Contingency funds can also be used to budget *ex ante* for disasters. Contingencies are a broader category than natural disasters and include all events that impose substantial costs on the government but whose occurrence is difficult to predict (*e.g.* terror events, war, economic crises, epidemics, nuclear accidents). Contingency funds can be especially useful in increasing government savings, but depending on the budgetary accounting may only provide weak incentives for mitigation of specific hazards. Four of the 15 respondents reported budgeting for general contingencies without specifying the nature of the contingency. Spain maintains a contingency fund for terror events.

4.2. *A closer look at* ex ante *budgeting in three countries*

Three countries that appear to engage in some form of *ex ante* budgeting for earthquakes and other natural disasters are Japan, New Zealand and Turkey.

4.2.1. *Budgeting for disasters in Japan*

Japan is at risk for many natural hazards. It also appears to actively promote mitigation and *ex ante* saving for disasters. Japan covers only 0.25% of the Earth's land area, but has a much larger share of earthquakes and active volcanoes. From 1996 to 2005, 20% of the earthquakes reaching a magnitude of 6.0 or higher had an epicentre in Japan. Likewise, 7% of the active volcanoes in the world are located in Japan. Additionally, Japan's topology and weather conditions result in typhoons, heavy snow and torrential rains.

Between 1995 and 2005, natural disasters left 7 665 dead or missing. Although more than 6 400 of those deaths occurred during the 1995 Kobe earthquake, on average 118.3 people were killed or missing each year from 1996-2005 from natural disasters (Director-General for Disaster Management, n.d.). Japan has a two-part disaster policy to address these threats: mitigation and insurance. Both are structured to promote *ex ante* saving, and limit moral hazard.

4.2.1.1. The national government's role in disaster management. Recognising that natural disasters are an inevitable aspect of life in Japan, the national government budgets for activities to mitigate, prepare for, respond to and recover from disasters. On average, from 1995 to 2004, the government's budget included JPY 4.5 trillion (USD 49.9 billion) each year for disaster management. This represents approximately 5% of the general fund in the national budget. The budget for disaster management is divided into four fields: scientific technology research; disaster prevention and preparedness; national land conservation; and disaster recovery and rehabilitation. In most years, the largest amount of funds are spent on land conservation; however, in years with a higher disaster toll, the proportion of spending shifts towards recovery and rehabilitation, showing flexibility in the use of budgeted amounts (Director-General for Disaster Management, n.d.).

National land conservation projects consume an average of 48.7% of the national disaster budget each year. These funds are used for projects such as soil erosion control, river containment, and soil and coastline conservation. The smallest portion (1.3%) is dedicated to science and technology research, such as earthquake early warning systems.

Almost one-quarter of the disaster management budget (23.6%) each year is allocated for prevention and preparedness. Activities such as enhancing communication systems, encouraging information sharing, building disaster management bases to centralise the government's response, preparing evacuation plans and conducting disaster reduction drills and exercises all contribute to reducing the consequences of a disaster (Director-General for Disaster Management, n.d.).

Finally, the remaining quarter of the budget (26.4%) is dedicated to recovery and rehabilitation when disaster strikes. Recovery efforts are aimed at rebuilding the lives of those affected as quickly as possible. In 1998, as a response to the 1995 Kobe earthquake, the Act on Support for Livelihood Recovery for Disaster Victims was enacted. The act allowed up to JPY 1 million (USD 11 097) per household for purchasing household goods and belongings, when a natural disaster causes severe damage to victims' homes and if the victim has difficulty regaining self-sufficiency. In 2004, the act was revised and expanded to allow assistance to stabilise living conditions. For example, the government may provide up to JPY 2 million for tearing down damaged houses. Disaster recovery and rehabilitation efforts also include making loans available to victims and reducing taxes (Director-General for Disaster Management, n.d.).

The contingency reserve fund of the national budget can be used for any purpose, but is used mostly for disaster relief. Normally, the contingency reserve fund is JPY 350 billion, although this varies from year to year. In FY 2004, JPY 33 billion was spent on disaster relief, with JPY 77 billion for other general purposes. However, in FY 2006 nothing was spent on disaster relief and recovery, and JPY 30 billion was spent for other general fund purposes. In both years, the remaining funds were unspent (Tanaka, 2009).

4.2.1.2. Earthquake insurance for households. While some other hazards are insured by private companies, the national government intervened in the earthquake insurance market after the 1964 Niigata earthquake by requiring insurers to offer earthquake coverage and by providing reinsurance. Initiated in 1966, the insurance system has undergone many revisions. As of October 2007, the system allows individuals to purchase earthquake insurance for buildings used as residences, and household property when they purchase fire insurance for their homes. Damages from fire destruction, flooding, or landslips caused directly or indirectly by an earthquake, volcanic eruption, or resulting tsunami are covered. Purchasing insurance is not compulsory, but insurance companies are obligated to offer earthquake insurance. In 2008, 23-27% of households had purchased earthquake insurance in areas at risk for major earthquakes (Non-Life Insurance Rating Organization of Japan, 2008; Japanese Earthquake Reinsurance Company, Ltd., 2008).

Risk-adjusted premiums are set to cover expected costs. Earthquake insurance rates are composed of three parts: a basic rate, a risk discount rate, and a long-term adjustment. The basic rate is based on whether the structure is wooden or non-wooden and the class of the location of the residence with higher rates in more earthquake-prone areas. Discount rates range from 10-30%, depending on the location of the building relative to a seismically isolated area, the degree to which the building is earthquake resistant, and if the building was constructed after 1 June 1981. Finally, the long-term adjustment allows for the reduction of rates when insurance is purchased for periods of two to five years (Non-Life Insurance Rating Organization of Japan, 2008). Longer term insurance contracts encourage owners to invest in mitigation because they enable owners to receive the present value of premium savings (for up to five years) from mitigation at the same time that households are incurring the cost of mitigation (Kunreuther, 2006). These varying rates and discounts allow for insurance premiums to be based on risk and vulnerability.

Earthquake insurance is subject to several legislated ceilings and limits that reduce moral hazard while assuring a basic level of protection to all insured property owners. The Earthquake Insurance Law limits coverage to JPY 50 million for residential buildings and JPY 10 million for household property. Those who build more expensive homes in at-risk areas have to do so without the benefit of government insurance. To reduce the liability of insurance companies and the government, a total payment limit per earthquake has been enacted. As of April 2008, the limit was set at JPY 5.5 trillion. If insured damages of a single earthquake were to exceed this limit, claims are to be reduced and paid proportionally (Non-Life Insurance Rating Organization of Japan, 2008).

4.2.1.3. The Japanese Earthquake Reinsurance Company. In 1952, a proposal to provide households with earthquake insurance failed when the government was unable to provide reinsurance. In 1966, the Japanese Earthquake Reinsurance Company (JER) was established to ensure that in the event of a catastrophic earthquake, insurance claims would be paid. The JER is a privately owned company started with JPY 1 billion contributed by 20 Japanese non-life insurance companies.

The relationship between non-life insurance companies, the JER, and the government is complex. Residential homeowners purchase earthquake insurance from non-life insurance companies, who are responsible for collecting the premiums and passing most on to the JER. The JER also shares a portion of the premiums with the government. When a claim is filed, the policy holder is initially paid by the non-life insurance company, which then claims the full amount in a reinsurance claim to the JER. Depending on the total amount of claims for a

single earthquake, the cost is shared in varying proportions by JER, the non-life insurance companies and the government. On payable claims of up to JPY 110 billion, the JER has 100% of the liability. If the total liability from an earthquake is between JPY 110 billion and JPY 1 018.6 billion, the JER pays the first JPY 110 billion, but then the government and the non-life insurance companies split the remaining costs evenly. If the total of claims reaches JPY 1 730 billion, then the JER contributes an additional JPY 355.7 billion, and the government pays the rest. As claims increase towards the maximum allowed liability for a single earthquake (JPY 5.5 trillion), the responsibility shifts from the JER to the government. The maximum liability for the JER is JPY 560.0 billion, for the non-life insurance companies it is JPY 548.5 billion yen, and government's maximum liability is JPY 4 391.5 billion. In other words, a catastrophic earthquake could result in the national government absorbing up to 80% of the costs (Japanese Earthquake Reinsurance Company, Ltd., 2008).

As of March 2008, the JER's total assets were JPY 955.9 billion. The JER invests these assets in liquid bonds with high credit ratings. Approximately 47% of the securities are government bonds, 25% are foreign securities, and an additional 20% are corporate.

The government saves its portion of the premiums in the Earthquake Reinsurance Special Account. Japan utilises special accounts to operate particular projects and manage specific funds separate from the general fund budget. As of 2008, the Earthquake Reinsurance Special Account held JPY 1.1 trillion (Ministry of Finance, 2008).

In 2007, the JER paid JPY 12 370 million in insurance claims. The largest payment of earthquake insurance claims, since earthquake insurance was established, occurred in 1995 after the Kobe earthquake. At that time, JPY 78 346 million were paid on 65 427 earthquake insurance policies. Although the amount of claims paid would not currently exceed the JPY 110 billion in which the JER maintains 100% liability, the reinsurance scheme in 1995 was different. Under the 1995 reinsurance scheme, the JER paid JPY 40 000 million, the non-life insurance companies paid JPY 32 173 million and the government paid JPY 6 173 million.

4.2.2. Budgeting for disasters in New Zealand

Lying at the southwest end of the Pacific Ring of Fire, New Zealand is particularly susceptible to earthquakes and volcanic eruptions. Each year, 14 000 earthquakes are recorded in the New Zealand region, though only 100-150 are felt by the population. The 1855 Wairarapa earthquake is the most significant earthquake in New Zealand's history, measuring 8.1 on the Richter scale. Between 1855 and 2007, 15 earthquakes of magnitude 7.0 or higher were recorded, including the magnitude 6.8 quake that shook Gisborne on 20 December 2007. Research suggests that there is an 11% chance of a magnitude 7.5 earthquake along the Wellington fault line occurring sometime in the next 50 years. A quake of this size would affect approximately 150 000 people and would result in between NZD 5.9 billion and NZD 8.9 billion in insured losses. Likewise, a string of active volcanoes threatens the islands. In the last 150 years, volcanic activity has resulted in 337 deaths. In 2007, Mount Ruapehu erupted, but an early warning system and structural barriers prevented casualties. New Zealand has also fallen victim to tsunamis, landslides, cyclones, heavy snowfalls, and frequent flooding (Consorcio de Compensacion de Seguros, 2008). New Zealand's approach to disaster planning and budgeting consists primarily of insurance provided under the auspices of the Earthquake Commission.

4.2.2.1. Earthquake Commission. In 1945, the New Zealand government established the Earthquake Commission (EQC), formerly the Earthquake and War Damage Commission, to

provide insurance for earthquake and war damage to purchasers of fire insurance. Over time, coverage for other natural disasters was added, but coverage for war damage was discontinued (Earthquake Commission, 2009a). The EQC is an independent Crown entity; as such it is owned by the government and managed by a board of seven commissioners who report directly to the Ministry of Finance. Crown entities are subject to public sector finance and reporting rules (Earthquake Commission, 2009b; OECD, 2008). The receipts of the EQC are available only to pay insurance claims or other business-related expenses. They are not available to finance government spending for other purposes.[4]

Insurance covers damage to residential dwellings, most personal property, and the land immediately surrounding the dwelling. The coverage insures against damage from earthquakes; tsunami; natural landslip; hydrothermal activity; volcanic eruption; in the case of residential land, flood or storm; or fire caused by any of these natural disasters (Earthquake Commission, 2008a). Beginning in 1997, the Earthquake Commission stopped providing insurance to non-residential property, but most insurance companies operating in New Zealand offer disaster coverage for non-residential properties and their contents (Consorcio de Compensacion de Seguros, 2008).

Residents purchase insurance for natural hazards automatically when they buy coverage for fire. At that time, the fire insurance companies set aside a portion of the premiums for natural disaster coverage, which is passed on to the EQC. Insurance is provided on a replacement value basis, but there is a cap on allowed coverage: residences may be insured for up to NZD 100 000 plus the goods and services tax (GST); and, personal property up to NZD 20 000 plus GST. The EQC will pay either the value of the damaged land at the time of the natural disaster, or the repair costs of such, whichever is less expensive. Property owners may also purchase "top-up" coverage, which insures the residence or property above the EQC's limits, from private insurers (Earthquake Commission, 2008a).

Insurance premiums paid to the EQC are assessed at a flat rate of five cents for every NZD 100 insured. As a result of the cap in coverage, the maximum cost of the insurance is NZD 50 plus GST for coverage on residences, and NZD 10 plus GST for coverage on personal property. The coverage for land is included at no cost to the insured. Although the primary method of obtaining insurance for these natural hazards is through insurance companies, insurance can be purchased directly through the EQC, though there is a surcharge for purchasing insurance in this manner (Earthquake Commission, 2008a). The EQC is obligated by the Earthquake Commission Act of 1993 to accept exposure to risk for natural catastrophes. As a result, the premium level "does not differentiate between risk types, nor is it adjusted in response to the level of claims expected or incurred" (Earthquake Commission, 2008b). In other words, the EQC does not use insurance premiums to provide incentives for mitigation.

Claims are typically handled directly between the insured and the EQC. For claims involving a home and household contents, there is a NZD 200 deductible (or excess) on claims of less than NZD 20 000. On claims of more than this amount, the deductible is an amount equal to 1% of the total claim. For claims involving household contents only, the deductible is NZD 200 regardless of the amount of the claim. Finally, the deductible on land claims is 10% of the total claim with a minimum of NZD 500 and a maximum of NZD 5 000 (Earthquake Commission, 2008a). In FY 2007/08, the EQC incurred 9 459 claims at a cost of NZD 46 363 000; however, these rates are above the five-year average of 3 812 claims totalling NZD 23 300 000 (Earthquake Commission, 2008b).

Premiums are collected and set aside in the "Natural Disaster Fund". As of 30 June 2008, there was NZD 5.5 billion in the fund, with a goal of building and maintaining the fund to NZD 7 billion (Earthquake Commission, 2008b). Prior to 2001, the fund was invested in fixed interest securities, such as government stock. In late 2001, the EQC began investing in international securities to ensure that its assets were held outside of the area affected by the type of natural disaster it insures against. Investment in global equities is limited to 27-33% of the EQC's portfolio. The remaining assets are held in New Zealand government stock and cash (Earthquake Commission, 2009c).

The EQC reduces its risk by purchasing reinsurance from multiple international reinsurers. The reinsurance contract pays off when the costs of a natural disaster exceed NZD 1.5 billion and provides coverage up to NZD 4 billion. If another disaster occurs within the remaining three-year contractual agreement that costs more than NZD 3.5 billion, another reinsurance contract pays up to NZD 1 billion (Consorcio de Compensacion de Seguros, 2008).

Losses from a major urban catastrophe may not be covered by the combination of assets in the Natural Disaster Fund and the reinsurance contracts. To prepare for this type of extreme event, the Earthquake Commission Act 1993 requires the state to provide an unlimited guarantee if the fund and the reinsurance programmes are exhausted. The Minister of Finance may meet the deficiency of funds by providing either a grant or a loan to the EQC. The form of the guarantee is left to the discretion of the government. In exchange for this guarantee, the EQC is required to pay fees to the government as determined by the Minister of Finance. For FY 2008, the underwriting fee totaled NZD 10 million (Earthquake Commission, 2008b; Consorcio de Compensacion de Seguros, 2008).

4.2.3. Budgeting for disasters in Turkey

Two-thirds of the damages from natural disasters in Turkey are due to earthquakes, but the country also suffers from landslides, floods, and avalanches (Consorcio de Compensacion de Seguros, 2008). Some 96% of Turkish territory is susceptible to seismic activity and 98% of the population lives within that area (Consorcio de Compensacion de Seguros, 2008; OECD, 2008). According to the United States Geological Survey, between 1939 and 2004, there were 25 earthquakes in Turkey of magnitude 6.0 or higher on the Richter scale, resulting in more than 72 500 fatalities (US Geological Survey, 2009). On 17 August 1999, Turkey experienced its largest earthquake in the previous fifty years (magnitude 7.6). Just three months later, a magnitude 7.1 aftershock struck the same area. These two quakes cost thousands their lives and placed a large financial burden on Turkey's government and economy (Consorcio de Compensacion de Seguros, 2008; OECD, 2008).

Prior to 27 September 2000, the Turkish government was obligated to extend credit and construct housing for the public in the event of an earthquake and only 5% for residences had earthquake insurance coverage. As a result of the 1999 earthquakes, the Turkish government made earthquake insurance compulsory. Established by the Turkish government in co-operation with the World Bank, the Turkish Catastrophe Insurance Pool (TCIP) administers this insurance (OECD, 2008). Initial capital for TCIP was provided through a contingent loan facility from the World Bank (Consorcio de Compensacion de Seguros, 2008).

TCIP is a legal public entity whose seven-member management board is made up of academics and public and private officials. TCIP minimises costs by contracting out most

of its operations. Leading Turkish reinsurance companies hold the contract for the operational management of TCIP (OECD, 2008). The TCIP is supervised by the Under Secretary of the Treasury, who is also responsible for auditing TCIP's accounts (Yazici, n.d.). TCIP cedes a significant portion of its risk to international reinsurance markets and intends to do so until sufficient resources are accumulated (OECD, 2008).

Although TCIP was originally designed to cover multiple hazards, to date they only provide policies that cover earthquakes and fires, explosions or landslides following earthquakes (Yazici, n.d). Earthquake insurance is compulsory for all residential buildings within municipal boundaries. Owners of residential buildings in small villages that are outside municipal boundaries and industrial and commercial buildings may voluntarily purchase earthquake insurance. Only the residential building itself is covered from losses due to earthquake, but insurance companies may voluntarily offer separate coverage for contents (Yazici, n.d.). To enforce the compulsory insurance scheme, homeowners must show a copy of their insurance policy to the land registry office each time they wish to set up an account for public utility services (OECD, 2008). However, penetration remains low; in 2007, only 20% were insured (Aktas, 2008).

As of February 2007, the maximum compulsory coverage was TRY 110 000. This limit is adjusted annually according to changes in the construction price index. Additional coverage may be purchased from private insurance companies if the value of the residence is above this limit (Consorcio de Compensacion de Seguros, 2008; OECD, 2008).

Policies are purchased through private insurance companies who are then required to pay the entire monthly premium to TCIP. Premium prices vary between 0.04% to 0.55% depending on the amount of seismic risk, the type of construction, and the total area of the building. The minimum premium amount on a TCIP policy is TRY 30. At the time a claim is made, a 2% deductible must be paid by the policy holder (Yazici, n.d). From its establishment in September 2000 through 31 July 2006, TCIP has paid TRY 17 145 643 in earthquake claims (TCIP, n.d.).

TCIP revenues are kept in segregated accounts and are managed by an operational manager who follows the Investment Guidelines of the Board of Directors. The goal is to invest the TCIP funds in diversified instruments (Yazici, n.d.).

5. Summing up

To budget is to prospectively choose a particular allocation of available resources from among various alternatives. *Ex post* budgeting for disasters recognises the liquidation of an obligation after it has been incurred; it is more closely related to financial reporting than budgeting. Some of the costs of disasters must be deferred until after the event, such as adjusting the *ex ante* estimate of cost for the timing and severity of loss. But the obligation of resources occurs in the good times before a particular loss event, when people adjust their behaviour in response to public policy toward disasters.

Ex ante recognition of the allocation decision creates procedural opportunities to save for the expected cost of relief and recovery and to recognise budgetary savings for measures that reduce losses through mitigation and offsets to moral hazard. Budgetary credit cannot be given for reducing an unrecognised cost. But if the expected cost of current policy is recognised in either a cost estimate or, for previously-enacted policies, in the budget baseline, credit can be awarded for actions expected to mitigate losses, such as flood control, or the adoption of building codes or risk-based pricing for insurance.

Recognition of costs and potential cost savings requires budget analysts to estimate those costs and savings, and formalises the process of distinguishing high- and low-value alternatives. This added analytical effort required by *ex ante* recognition of contingent costs is not free. But as government policies become more complex than writing checks for purchases of goods and services and transfer payments, the task of the budget technician necessarily becomes more analytical.

Ex ante budgeting can also be useful in limiting the relief responses to a level consistent with a considered decision. When disasters occur, the impulse is to provide assistance first and consider costs later. In general, public policies for addressing catastrophes are presumed to be more consistent with long-term objectives if they are established in advance of the loss event.

In sum, it is possible for governments to realise the benefits of *ex ante* budgeting for disasters. Many countries appear to do so by directly offering insurance; others by supporting private insurance through reinsurance or guarantees. Still others attempt to increase national savings through general contingency funds. Some 67% (10 of 15) responding OECD countries use one or more of these methods of accumulating resources and encouraging mitigation. However, additional analysis is required to confirm that current resources are effectively allocated to contingency funds and insurance programmes before a disaster event.

Notes

1. A number of studies of natural disasters, especially their effects on developing countries, prepared recently for the Global Facility on Disaster Reduction and Recovery (a World Bank consortium) are available at *www.GFDRR.org*.
2. In a discussion of the budgetary control of long-term commitments for mandatory programmes, Alan Auerbach notes the ongoing increase in "future implicit liabilities with only limited impact on short-term budget measures. As economies evolve, a narrow perspective with respect to liabilities and commitments is an increasingly serious shortcoming" (Auerbach, 2008).
3. Catastrophe, or "cat", bonds can be used to shift the cost of contingent losses to others in exchange for premiums and structured to avoid counterparty risk (Hofman and Brukoff, 2006). However, markets for these securities are still somewhat thin, resulting in pricing that seems unattractive to many governments.
4. The EQC invests much of its assets in New Zealand government securities. However, from the government's perspective, issues of these securities are treated as borrowing from the public and not as a source of government revenue.

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ANNEX A1

An Ancient, Familiar Case of Effective Government Policy for Disaster

The possibility of reduced suffering through public and private action in anticipation of unpredictable shocks to wealth, income, and consumption is highly intuitive. The timeless story of Joseph, the Pharaoh, and the seven-year Egyptian famine illustrates some potential gains and pitfalls of public policy aimed at muting the costs of natural disasters.[1]

The thread of the narrative is that Joseph – son of the patriarch, Jacob – is sold, not without provocation, as a slave by his jealous brothers to a caravan of traders passing through Canaan. In Egypt, Joseph exhibits a divinely inspired ability to interpret dreams. Eventually, the Pharaoh calls on Joseph to interpret his troubling dream in which seven healthy, fattened cows are consumed by seven skinny ones. Joseph reveals that the dream foretells seven years of abundant harvests followed by seven years of famine. The Pharaoh authorises Joseph to collect 20% of the grain crop in the good years and to save it for the bad years. When the seven years of poor harvests arrive, the grain saved during the good years when the consumption value of additional units was low, enables people to enjoy the higher marginal benefits of consumption.

A significant, though perhaps less remembered, detail of the story is that once the famine begins, Joseph does not simply distribute grain to the needy. Instead, he offers it for sale, apparently at market prices to Egyptians and others for cash, herds and, eventually, for land. Thus, the Pharaoh's wealth is increased during the famine with the high price of grain. The favourable reception given to Joseph's interpretation of the dream and his plan of action suggests that the Pharaoh and his advisers understood the potential gain to the governing authority from the anticipated famine.

Even though the Pharaoh benefited from Joseph's interpretation and policy, so did the Egyptian populace. Absent the forced saving conducted by Joseph for the Pharaoh, grain would have been more scarce and its relative price higher. The decline in consumption during the famine would have been greater.[2]

Joseph's policy also avoided the adverse effects of moral hazard. Given the frequency of agricultural famines in ancient times, it is likely that people engaged in precautionary saving, mitigation, and income smoothing in anticipation of such events.[3] Pharaoh's 20% tax reduced disposable income, which likely reduced private saving as well as consumption. But the incentive for households to save and to continue other ameliorating practices would have remained strong, especially because it would have been clear that Pharaoh's stockpiles of grain would be poor substitutes for saving and other preparations

by individual households. In fact, if the Pharaoh's policy was correctly interpreted as a credible 14-year forecast of grain prices, private accumulation of grain stocks would likely have increased. By contrast, if the Pharaoh had announced that grain would be distributed at no charge during the lean years, the incentive to plan and prepare for bad times would have been weakened. Lower national saving prior to a disaster translates into larger declines in national consumption after the shock.

Joseph's plan was self-financing. It consisted of an in-kind, 20% tax on grain harvests. Modern-day budget analysts might have scored it as producing cash-basis equivalent tax revenues and cash outlays. It is likely that there were unrecorded additional costs for transportation and storage. But, given the authority of the Pharaoh, those may also have been self-financing.

The narrative is silent on policies that might have mitigated the harm from the famine, such as increased investment in irrigation. But by taking a long position in grain, the governing authority had little incentive to adopt measures that would have moderated the rise in its price. There is also no suggestion that the onset of famine and suffering caused the Pharaoh to adopt relief measures that were more generous than the original plan.

Notes

1. *Genesis*, Chapters 41-45. A more succinct account is found in the *Koran*. The story has been popularised in the musical comedy by Tim Rice (lyrics) and Andrew Lloyd Webber (score), "Joseph and the Amazing Technicolor Dream Coat".
2. Hamermesh (2002) estimates that the harvest was likely 65% less than its normal yield during the famine years.
3. The literature on the social institutions used to smooth income and consumption in low-income, agricultural economies is extensive. For an accessible summary, see Morduch, 1995.

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The Impact of the Crisis on Budget Policy in Central and Eastern Europe

by
Zsolt Darvas*

This article describes the particular impacts of the financial and economic crisis on Central and Eastern European (CEE) countries; studies pro-cyclicality of fiscal policies; discusses the impact of the crisis on fiscal policy; and takes a look at the policy response of various governments. After drawing some lessons for fiscal policy from previous emerging market crises, the article concludes with some thoughts on the appropriate policy response from a more normative perspective. The key message of the article is that the crisis should be used as an opportunity to introduce reforms to avoid future pro-cyclical fiscal policies, to increase the quality of budgeting and to increase credibility. These reforms should include fiscal responsibility laws comprising medium-term fiscal frameworks, fiscal rules and independent fiscal councils. When fiscal consolidation is accompanied by fiscal reforms that increase credibility, non-Keynesian effects may offset the contraction caused by the consolidation to some extent.

JEL classification: C32, E62, H60

Keywords: Crisis, budget policy, fiscal policy, Central and Eastern Europe, CEE, CESEE

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The global economic and financial crisis is having a significant impact on all countries. However, central, eastern, and south-eastern Europe[1] (CESEE) has been particularly hard hit. The crisis poses a significant challenge to budget policies world wide, and many countries, especially major economies, are relying not just on automatic stabilisers, but are responding to the crisis with discretionary fiscal stimuli and support for the financial sector. Indeed, the current economic environment would seem to call for Keynesian policies to counterbalance both domestic and foreign demand shortages.

CESEE countries face significant budgetary challenges. Most have very limited fiscal policy options. Many of them face significant financing constraints, are small and open, have generally lower quality fiscal institutions than major economies and should respect investors' confidence. Although public debt relative to gross domestic product (GDP) is considerably lower in most CESEE countries than in major economies, market tolerance for public debt in emerging and developing countries is also lower.

The purpose of this article is to discuss the particular characteristics of the crisis in CESEE countries and the crisis' impact on budget policy. We argue that financial linkages and, in particular, large current account deficits financed by external sources, as well as heavy reliance on foreign trade and, in some countries, inflows of remittances, were the major channels through which the crisis hit these countries. However, budgetary policy also played a role: according to our econometric estimates budget policy was pro-cyclical in many CESEE countries, reinforcing the business cycle both during the good years before the crisis and during the current crisis as well. While some bigger countries in the region have some space for discretionary stimulus, most countries do not; instead, many countries should embark on significant fiscal consolidation.

A key message that emerges from this article is that the crisis should be used as an opportunity to accelerate the process of structural reform, including fiscal reforms. With proper fiscal consolidation and reforms, non-Keynesian effects may offset the contraction caused by fiscal consolidation to some extent, and CESEE countries may be better positioned for post-crisis growth than major economies, though it is unlikely that the pre-crisis fast growth rates will return.

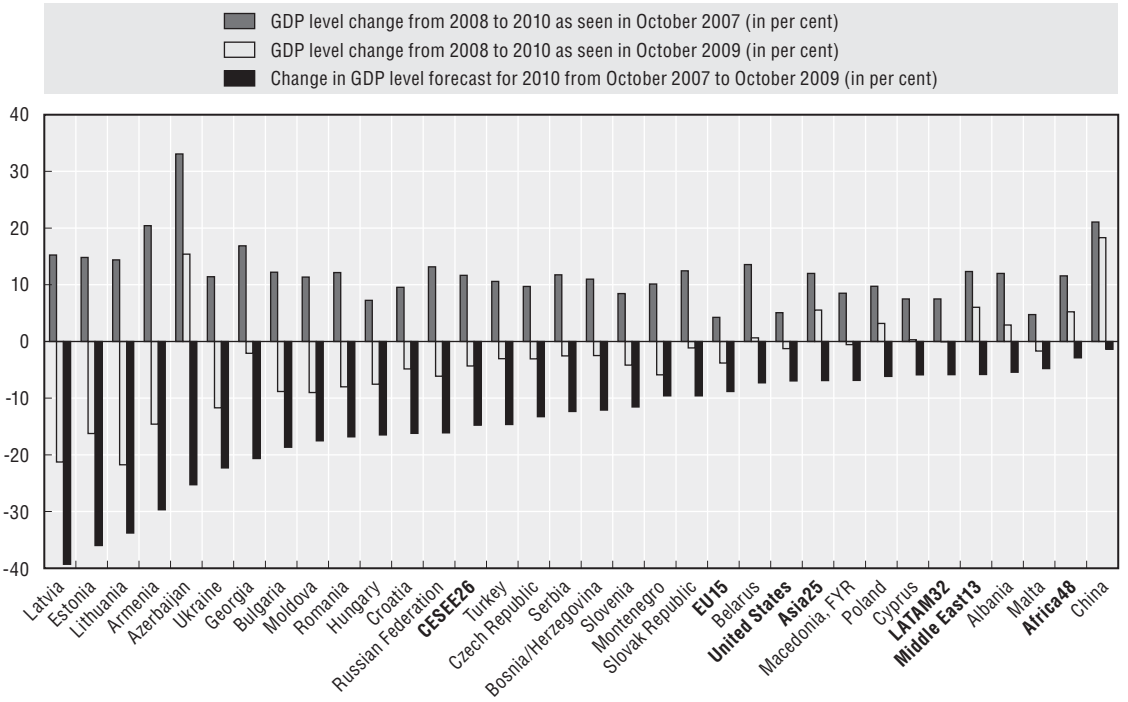
This article is organised as follows. Section 1 discusses the severity of the crisis for CESEE economies and the particular characteristics of these economies that made them vulnerable. Section 2 studies the direct role of budget policy in relation to the severity of the crisis by analysing the pre-crisis pro-cyclicality of budget policy using structural vector-autoregressions. This is followed, in Section 3, by a discussion of the main channels through which the crisis impacts budget policy. Section 4 presents the policy reactions of various governments. Section 5 draws some lessons for budget policy from previous emerging market crises. Finally, Section 6 concludes with some thoughts on the appropriate budget policy from a more normative perspective. Annex A details the budget measures taken in response to the crisis for all 26 CESEE countries.

1. The crisis in CESEE countries

1.1. Severity of the crisis: more serious than in other regions

CESEE countries have been severely hit by the crisis, though there are significant differences within the region. Before the crisis, *i.e.* up to 2007, CESEE countries seemed to be catching up with the EU15 quickly and reasonably smoothly; this was reflected in forecasts made at that time (Figure 1). For example, in October 2007, cumulative GDP growth from 2008 to 2010 was forecast to be 11.4% on average in the region, while, by comparison, the EU15 was predicted to grow by 4.3% during these two years. Some CESEE countries had built up various vulnerabilities, such as huge credit, housing and consumption booms and thus high current account deficits and external debt. It was widely expected that these vulnerabilities would have to be corrected at some point in time. However, the magnitude of the correction, as also reflected by the fall in GDP, was amplified by the global financial and economic crisis.

Figure 1. **Revision of GDP growth forecasts, October 2007 and October 2009**



Notes: Country group values are weighted averages (using GDP weights).
CESEE26: 26 countries from central, eastern, and south-eastern Europe. Asia25: 25 countries from Asia excluding China. LATAM32: 32 countries from Latin America. Middle East13: 13 countries from the Middle East. Africa48: 48 countries from Africa. Country groups and non-CESEE countries are highlighted.
Note that the sum of the first and the third column does not equal the second, partly because the sum of two percentages does not equal the total per cent effect, and partly because the October 2007 forecast level of the 2010 GDP also reflected forecasts for 2007-08, while the October 2009 forecast is based on actual data for 2007-08.

Source: The source for the October 2007 forecast for EU member states was the European Commission Directorate General for Economic and Financial Affairs (DG ECFIN) 2007 autumn forecasts for 2007-09; the 2010 forecast was calculated by the author assuming that GDP growth in 2010 would be equal to the average growth during 2001-09 (including the forecasts for 2007-09). The source for the October 2007 forecast for non-EU countries was the International Monetary Fund (IMF) *World Economic Outlook* (WEO) October 2007 for 2007-09; the 2010 forecast was calculated by the author assuming that GDP growth in 2010 would be equal to the average growth during 2001-09 (including the forecasts for 2007-09). The source for the October 2009 forecast for all countries was the IMF WEO October 2009 for 2009-10.

Figure 1 indicates that there were substantial downward revisions in economic growth forecasts from October 2007 to October 2009 in all countries. The 2010 GDP level of the CESEE country group was forecast in October 2009 to be 14.8% lower than was expected in October 2007.[2] Downward revision in other emerging and developing country groups has been smaller, ranging from 3.3% (average of 48 African countries) to 6.9% (average of 25 Asian countries excluding China[3]). CESEE countries not only had to assume the largest downward revision of their forecast GDP level, but the actual fall in GDP is also expected to be the greatest among emerging and developing country groups. The average GDP change in the 26 CESEE countries from 2008 to 2010 was forecast in October 2009 to be –4.3%. Meanwhile the 25 Latin American countries were expected to maintain their GDP level, and the 25 Asian countries, and the 48 African countries and the 13 Middle East countries were expected to grow by between 5.2% and 6.0% during the same period.

The three Baltic countries were hit the most seriously with GDP projected to fall between 16% and 22% from 2008 to 2010, according to October 2009 forecasts. Forecasts made in 2007 foresaw growth of about 15% during the same period. Furthermore, growth in 2008 was –4.6% in Latvia and –3.6% in Estonia and hence the total output fall experienced by these countries will be even larger than the forecasts for 2009 and 2010 would imply. The downward revision of the 2010 GDP level is between 34% and 39% for the three countries.

1.2. Why were CESEE countries the hardest hit among emerging/developing regions?

The sensitivity of CESEE countries to the crisis is mainly due to three factors:

1. capital flows and financial integration,
2. dependence on foreign trade,
3. migration and remittances.

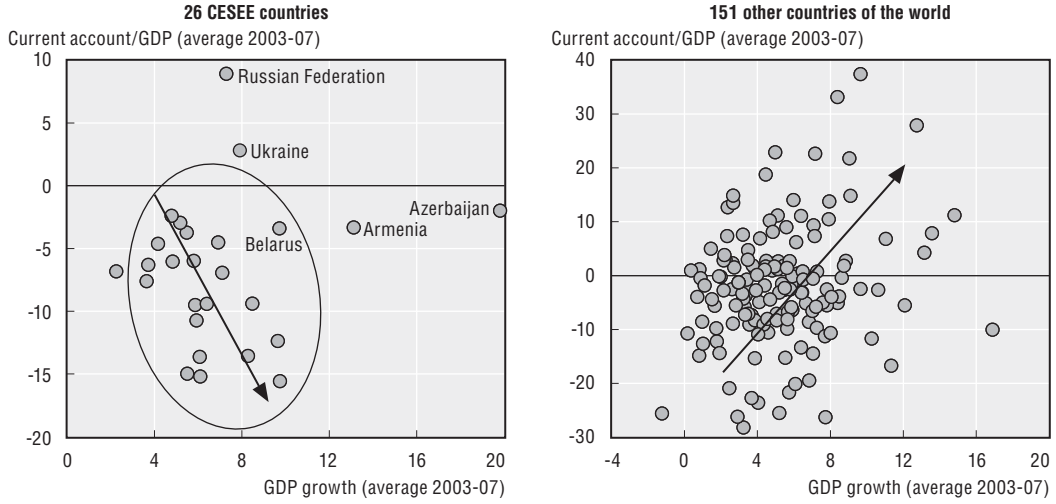
Darvas and Veugelers (2009) demonstrate that foreign trade played a crucial role in the pre-crisis economic growth of CESEE countries, and that their dependence on foreign trade is greater than many other emerging and developing countries. Remittances are also very important for some countries: Moldova (34% of GDP in 2007), Bosnia/Herzegovina (17%), Armenia (14%), Albania (13%), Georgia (7%), Bulgaria and Romania (5%), and between 2% and 4% for eight further CESEE countries. In this section, however, we will focus on issues related to capital flows and financial integration.

In general, CESEE countries entered the crisis more vulnerable than other emerging regions, although there are considerable differences within the region. A key feature of these countries is that their pre-crisis growth was associated with rising current account deficits (with the exception of commodity exporters), that is, the correlation between GDP growth and the current account was negative, as the left-hand panel of Figure 2 indicates. In contrast, correlation was positive in other emerging and developing countries as suggested by the right-hand panel of Figure 2.

Why does the correlation between the current account (CA) and economic growth differ? As discussed by Prasad, Rajan and Subramanian (2006) and Collins (2006), the positive correlation in developing countries could be related to three main mechanisms:

- A demographic shift to reduce the old age dependency ratio increases the labour force, which increases both savings and output, leading to a positive correlation between CA and growth.

Figure 2. **GDP growth and the current account, 2003-07**



Source: Author's calculation, based on IMF data.

- A productivity shock leads to higher income, but financial impediments limit investment and consumption, which again could lead to a positive correlation.
- A policy shift to export promotion, for example the avoidance of exchange rate overvaluation, boosts exports and output leading to a better CA position and higher growth.

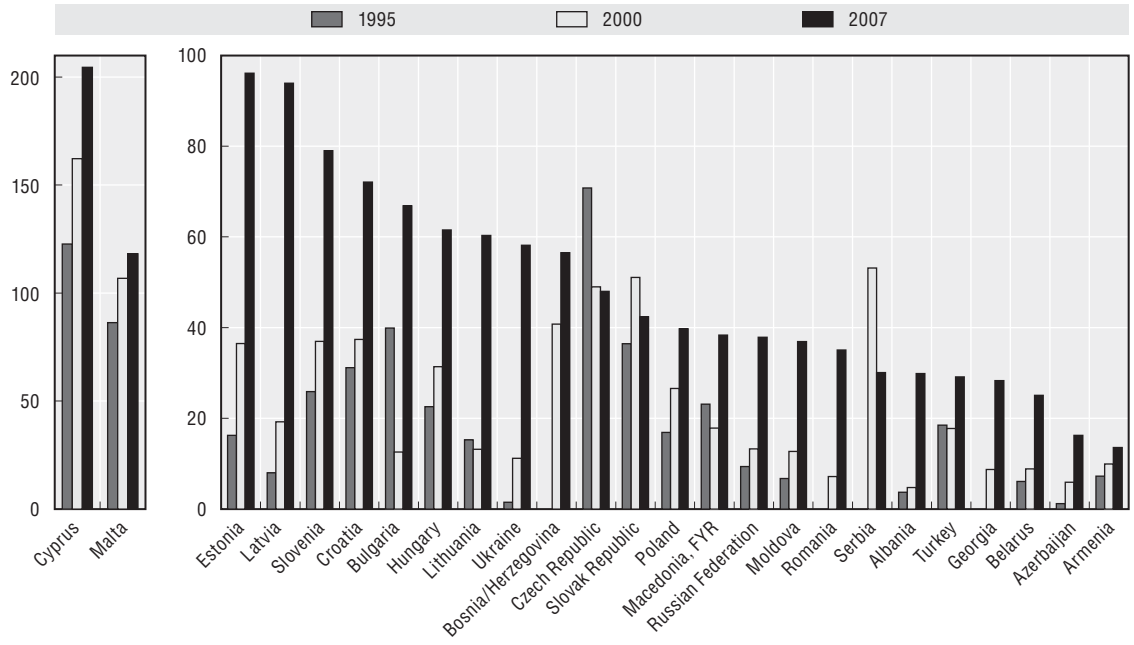
On the other hand, the negative correlation observed for CESEE countries may be related to an institutional change (relaxation of previous constraints in accessing foreign capital) and a productivity shock:

- With the prospective and actual EU integration of ten former communist countries and with the better EU prospects of many other CESEE countries, the previous constraints in accessing foreign capital have relaxed or eased substantially. This has led to capital inflows, which in turn contributed to investment, but also to consumption booms and, eventually, current account deficits.
- At the same time, and also related to capital inflows, productivity increased rapidly in most CESEE countries, leading to higher income expectations. This in turn resulted in borrowing according to the textbook mechanism of intertemporal optimisation.

Indeed, capital inflows and GDP growth were accompanied by a substantial growth in credit (Figure 3). For example, the private sector credit to GDP ratio was 20% in Latvia in 2000, rising to almost 100% of GDP by 2007. In the meantime, GDP also grew by about 10% per year in real terms on average.[4]

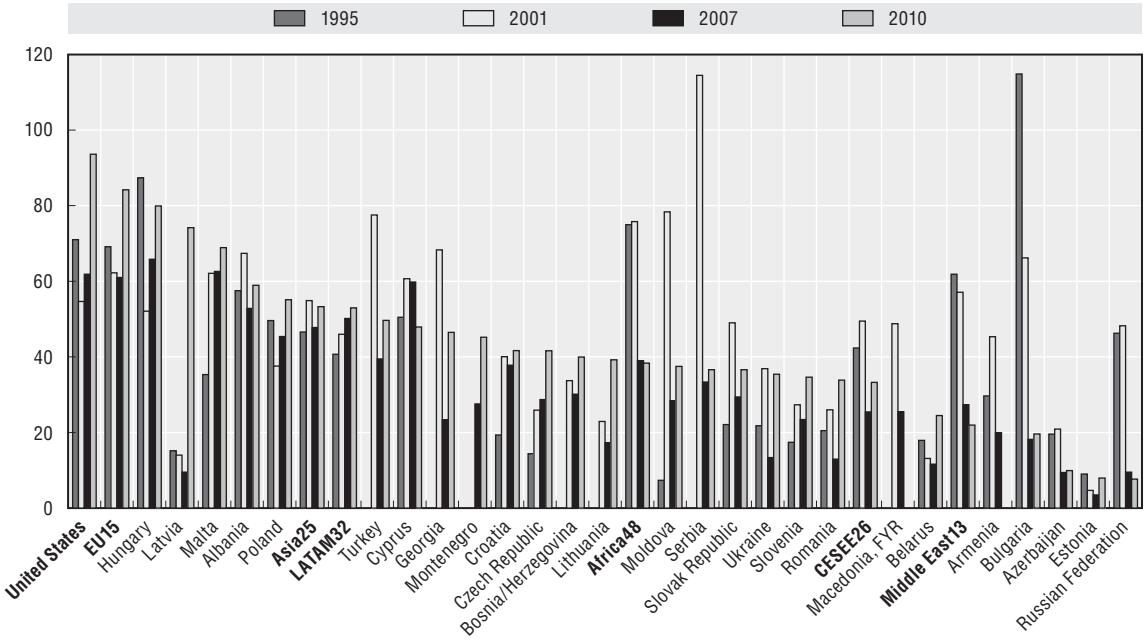
Since the banking system has a crucial role in financing CESEE economies, its stabilisation must be a high priority. The key question is the role played by the budget in the previous credit boom and in the stabilisation of the banking system now. The previous credit boom was mainly related to the private sector and the ratio of government debt to GDP was generally low in the region (Figure 4). Budget deficits varied, fiscal policy was pro-cyclical in many countries (see the next section), but in general the budget was not a serious problem (apart from some outliers like Hungary). Many authors even called for an active use of budget policy due to the large infrastructure investment needs of these countries, rather than for saving for rainy days. With the benefit of hindsight we of course

Figure 3. **Credit to private sector (% of GDP), 1995-2007**



Source: Author's calculation, based on IMF data.

Figure 4. **General government gross debt (% of GDP), 1995-2010**



Notes: Countries are ordered according to their 2010 debt level.
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Source: Eurostat, European Bank for Reconstruction and Development (EBRD), DG ECFIN of the European Commission, IMF. 2010 forecasts are from the IMF (October 2009). The 2010 forecast for Armenia and Macedonia (FYR) is not available.

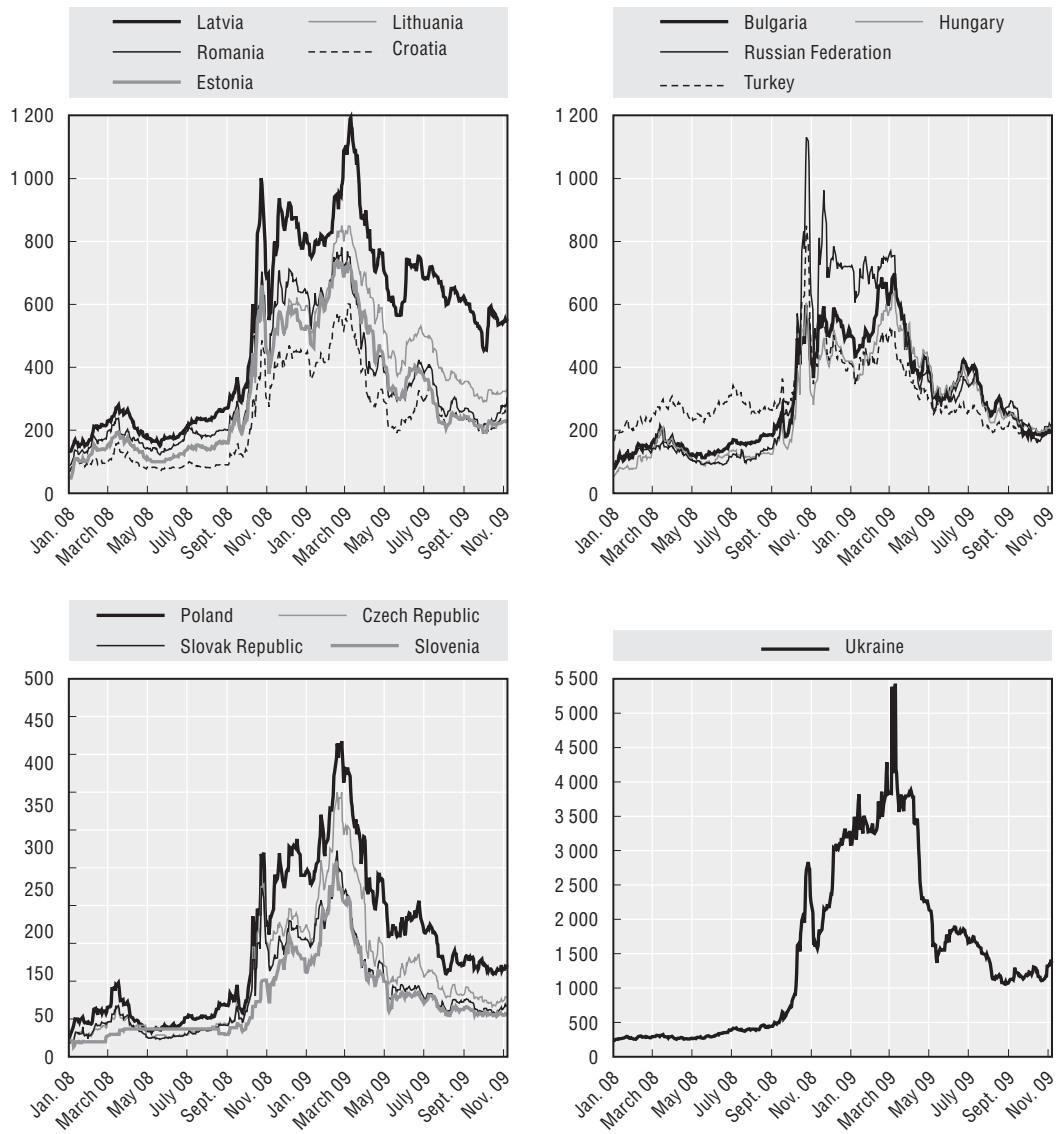
know now that budget policy should have been more conservative during the good times in most countries to create fiscal space for counter-cyclical policy in the downturn.

There is unpleasant asymmetry regarding the banking system: it was the private sector that incurred most of the debt, but the public sector has to adjust substantially and clean up the mess now.[5] This asymmetry is similar to the Stability and Growth Pact's failure (with its narrow focus on budgets) to preserve the euro area's stability.

These factors call for strengthened regulation and supervision, as well as creation of institutions for anti-cyclical budget policies.

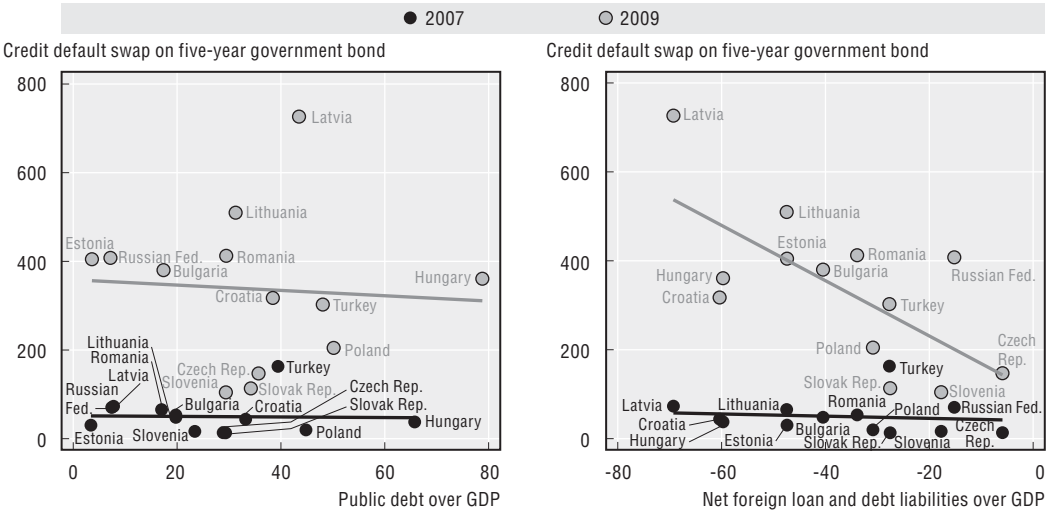
Despite the low level of government debt, credit-default swaps on government bonds (which is a measure of the cost of insurance against government default) have increased substantially (Figure 5). The huge rise in government-default probability on the one hand,

Figure 5. **Credit-default swap on five-year government bonds, 2 January 2008-6 November 2009**



Source: Datastream.

Figure 6. **The relation of credit-default swaps on government bonds to public debt and net foreign loan and debt liabilities**



Note: 2009 credit-default swap (CDS) refers to the average between 2 January and 27 October 2009. Public debt refers to general government gross debt. Net foreign loan and debt liabilities refer to the whole economy. Data on net foreign loan and debt liabilities (NFDL) are available only for 2007 and therefore both the 2007 and 2009 CDS are plotted against the 2007 value of NFDL.

Source: Author's calculation, based on IMF and Datastream data.

and the low level of government debt on the other, are puzzling. Furthermore, credit-default swaps on government bonds do not relate to the general government debt/GDP ratio (left-hand side panel of Figure 6).

The most likely solution to this puzzle could be related to the risk inherent in private sector debt in many countries, which is (in some countries) held mostly in foreign currencies. The magnitude of the eventual bank losses is still highly uncertain, and in countries where foreign banks are prevalent, burden sharing is an issue. Should the economic outlook deteriorate further, and/or the exchange rate collapse (*e.g.* Baltics), or fall further (*e.g.* Hungary, Ukraine), then even deeper economic crises may emerge that could lead to more bankruptcies, unmanageable bank losses and the complete drying up of foreign capital. These factors may end in a government default, despite the low level of government debt.

Indeed, government default risk is now related to external indebtedness defined as net foreign loan and debt liabilities (right-hand side panel of Figure 6). It is noteworthy that before the crisis the cost of insurance against government default was not related to external indebtedness. This suggests that risk pricing was done incorrectly before the crisis.

2. Cyclicality of budget policy in CESEE countries

A growing empirical literature demonstrates that fiscal policy in emerging and developing countries tends to be pro-cyclical, while it is a-cyclical or counter-cyclical in most developed countries. A pro-cyclical budget policy amplifies both the boom and the bust phases of the economic cycle. During the boom period, the amplifying effect contributes to the build-up of vulnerabilities both directly and indirectly. It also has an impact if the faster economic growth that results from the pro-cyclical budget policy induces agents to expect a brighter future and consequently to borrow against their expected future income. During the bust period, the pro-cyclical fiscal policy required by,

e.g. the external financial constraints, amplifies again the effect of the downturn. Kaminsky, Reinhart and Vegh (2004) have coined this phenomenon as "when it rains, it pours". It cannot be optimal from any theoretical perspective to reinforce the business cycle by expanding budget policy in good times and contracting it in bad times (see Ilzetzki and Vegh, 2008, for further discussion).

Consequently, analysing the cyclical nature of budget policy may shed light on whether or not budget policy in CESEE countries also contributed to the severity of the crisis by amplifying the economic cycle during good times. It is instructive to start the analysis with some simple correlation measures that may hint at pro-cyclicality, and then to continue with a structural analysis.

2.1. Correlation of output and government consumption using annual data

Table 1 reports the correlation coefficient between annual real GDP and real government consumption[6] growth in four different time periods. The sample starts either in 1995 or in 2001 and ends either in 2007 or in 2010, where available. Extending the sample to 2010 (with available forecasts) provides an indication of how the current crisis affects the correlation. Starting the sample in 2001 instead of 1995 eliminates the period of the Russian

Table 1. **Correlation of annual real GDP and real government consumption growth**

	1995-2007	1995-2010	2001-07	2001-10
Bulgaria	0.81	0.77	–0.25	0.29
Cyprus	–0.54	–0.35	–0.37	–0.20
Czech Republic	–0.21	–0.08	–0.59	–0.11
Estonia	–0.18	0.14	–0.23	0.54
Hungary	0.81	0.62	0.92	0.62
Latvia	0.30	0.45	0.84	0.91
Lithuania	0.69	0.83	0.13	0.90
Malta	n.a.	n.a.	–0.01	0.24
Poland	0.27	0.56	0.59	0.78
Romania	0.09	0.24	–0.65	0.28
Slovenia	–0.26	0.03	0.04	0.23
Slovak Republic	0.43	0.40	–0.10	0.12
Albania	0.40	n.a.	0.41	n.a.
Croatia	–0.03	0.04	0.67	0.27
Macedonia, FYR	n.a.	n.a.	–0.64	–0.55
Turkey	0.17	0.24	0.56	0.50
Russian Federation	0.24	n.a.	0.57	n.a.
Armenia	0.57	n.a.	0.40	n.a.
Azerbaijan	–0.15	n.a.	–0.29	n.a.
Belarus	0.76	n.a.	–0.29	n.a.
Georgia	–0.04	n.a.	–0.35	n.a.
Moldova	0.76	n.a.	0.71	n.a.
Ukraine	0.78	n.a.	–0.37	n.a.
Euro area 12	0.04	–0.08	–0.06	–0.03
Denmark	0.23	0.20	0.18	–0.08
Sweden	0.05	0.02	0.03	0.07
United Kingdom	–0.09	–0.38	–0.03	–0.46
Switzerland	–0.26	–0.17	–0.55	–0.21
Norway	–0.12	–0.55	–0.21	–0.63
Japan	–0.01	0.24	–0.62	0.13
United States	–0.34	–0.69	–0.70	–0.77

Note: Data for Bosnia and Herzegovina, Montenegro, and Serbia are not available.
Source: Author's calculation.

crisis that affected many other CESEE countries. Some earlier country-specific crises are also eliminated (*e.g.* Bulgaria, Czech Republic, Romania, and Slovak Republic). Furthermore, the transitional recession lasted till the late 1990s in the case of many CIS countries and hence the 2001 sample starting point implies a more homogenous time period.

The general result for developed countries shown in the last eight rows of the table is a close to zero or negative correlation, regardless of the sample period considered. Hence, the simple correlation coefficient confirms the a-cyclical or counter-cyclical budget policy finding that is found as a result of more structural analysis in the literature.

In contrast, the general result for many CESEE countries is a positive correlation suggesting pro-cyclicality, though there are exceptions. Results for some CESEE countries are different for different time periods, which make us cautious when interpreting the results.

Considering the 1995-2007 period, a negative or positive but close to zero correlation was found for the following countries: Cyprus, Czech Republic, Estonia, Romania, Slovenia, Croatia, Azerbaijan, and Georgia. The correlation for Turkey, the Russian Federation, Poland, Latvia, Albania, and the Slovak Republic was positive but not large. Large positive correlations were observed for Bulgaria, Hungary, Lithuania, Armenia, Belarus, Moldova and Ukraine.

If only the "good times" of 2001-07 are considered, the results change for several CESEE countries. Correlation increases substantially compared to the 1995-2007 period in Latvia, Croatia, Poland, Turkey and the Russian Federation. There are also countries in which correlation in 2001-07 is substantially lower than in 1995-2007: Bulgaria, Lithuania, Romania, the Slovak Republic, Belarus and Ukraine. Data for Malta are available for 2001-07 which indicate a zero correlation.

Including the recent crisis in the sample period generally increases the finding of positive correlation for CESEE countries. For example, among the EU member states for which forecasts up to 2010 are available, the correlation coefficient rises substantially in the cases of Lithuania and Estonia, and to a lesser extent for Bulgaria, Malta, Romania and Slovenia, leaving only Cyprus and the Czech Republic with negative correlations, and the Slovak Republic with a small positive correlation.

To sum up, although there are important country-specific differences (*e.g.* Cyprus and the Czech Republic were found to have negative correlations in all sample periods), many CESEE countries indicate a positive correlation between GDP and government consumption growth, in at least one of the sample periods we studied. In contrast, the correlation is close to zero or negative in developed countries, irrespective of the time period studied.

2.2. Structural vector-autoregressions using quarterly data

As highlighted by Ilzetzki and Vegh (2008), a positive correlation between GDP and government consumption does not imply causality. Pro-cyclicality would require a causal effect from GDP growth to government consumption growth. However, a positive correlation between the two variables may be the result of a causal effect from government consumption to GDP, *i.e.* the expansionary effect of government consumption. Following Blanchard and Perotti (2002) and Ilzetzki and Vegh (2008), we employ structural vector-autoregressions (SVAR) to identify the effects of output shocks on government consumption using quarterly data. The model has the following form:

$$\mathbf{A}_0 y_t = \sum_{i=1}^{p} \mathbf{A}_i y_{t-i} + \sum_{j=0}^{q} \mathbf{B}_j x_{t-j} + \varepsilon_t$$

where y_t is the vector of output and government consumption, which are assumed to be endogenous, x_t is the vector of exogenous variables, ε_t is the vector of orthogonal structural shocks, $\mathbf{A}_0$ is the contemporaneous impact matrix, $\mathbf{A}_i$ and $\mathbf{B}_j$ are parameter matrices. Our sample period covers quarterly data between the first quarter of 1995 and the first quarter of 2009, where available (Box 1 details data availabilities).[7] A few key assumptions have to be made for the use of the SVAR:

- Identification of shocks: Following Blanchard and Perotti (2002) and Ilzetzki and Vegh (2008), we assumed that an unexpected shock[8] to GDP does not have a contemporaneous effect on government consumption, but an unexpected shock to government consumption may affect GDP contemporaneously.
- Measurement of variables: In contrast to Ilzetzki and Vegh (2008) who de-trended GDP and government consumption using linear and quadratic trends before making estimates, we included the variables in log-levels. There are various de-trending methods adopted in the literature, and empirical results might depend on the specific filter adopted, as demonstrated in Canova (1998). Estimates for the levels, however, is consistent irrespective of whether or not there is a co-integrating relationship among the variables, though in small samples the estimate may be biased.
- Exogenous variable(s): We include only one exogenous variable, the weighted average of EU15, US, Russian and Japanese GDP. The weights are proportional to trade weights. We did not include all trading partners in the weighted foreign GDP for reasons of endogeneity. For example, the Czech Republic and the Slovak Republic have substantial bilateral trade relations, but, *e.g.* GDP development in the Slovak Republic is likely not exogenous to GDP movements in the Czech Republic. In contrast, GDP developments in EU15, United States, Russian Federation and Japan can be regarded as exogenous with respect to economic developments in CESEE countries. These four main economic regions represent, on average, 67% of total trade of the 26 CESEE countries, and hence the bulk of external demand is captured.
- Lag length: We used Schwarz information criterion to determine the lag length.[9]

Figure 7 shows the response of government consumption to an unanticipated GDP shock for the 20 CESEE countries for which quarterly data are available. The results are broadly consistent with our earlier findings shown in Table 1. With a few exceptions, government consumption reacted positively to unexpected GDP shocks. The most pro-cyclical budget policy was observed in Hungary: a 1% positive GDP shock caused a more than three percentage point rise in government consumption at the two-year horizon, according to the point estimate, though the confidence band is very wide. The positive effect is sizable in many other countries as well. The key exceptions are Croatia (which is found to be a-cyclical), the Czech Republic and Estonia (in which the point estimates of the impulse responses are very close to zero with a wide confidence band), Cyprus (which shows an initial counter-cyclical reaction followed by a delayed pro-cyclicality at about 1.5 years after the shock[10]), and Romania (in which a contemporaneous pro-cyclical impact is followed by a small and insignificant counter-cyclical response).

Box 1. **Data sources and availability for the empirical estimates**

We aimed to collect seasonally and working-day adjusted quarterly GDP and government consumption figures at constant prices for the 1995Q1-2009Q1 period. The table below details our data.

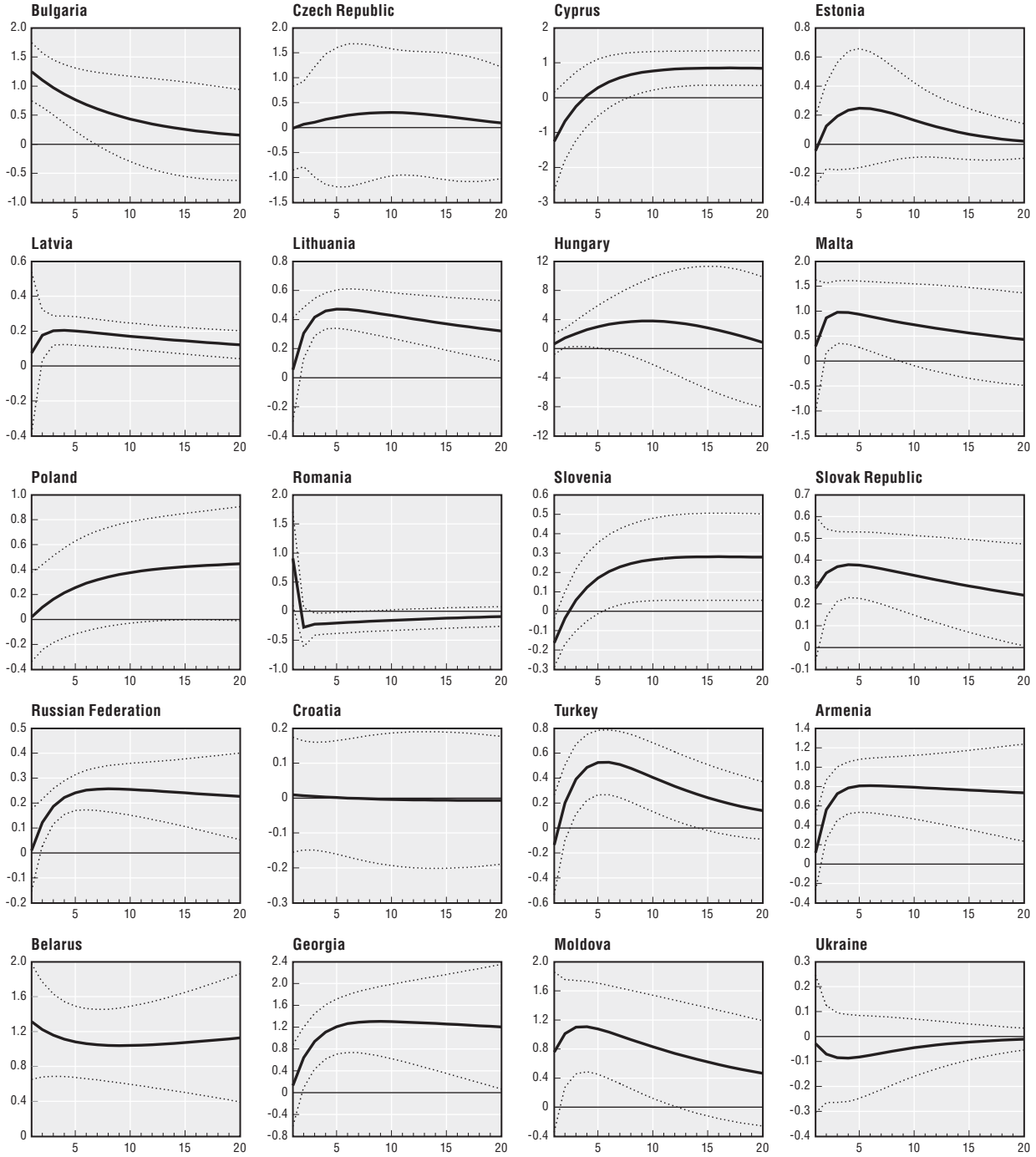
Country	Availability	Source	Note
Bulgaria	1995Q1-2009Q1	Eurostat (only raw data – not seasonally and working-day adjusted – are available)	We calculated the seasonal adjustment by using the Census X12 method.
Cyprus	1995Q1-2009Q1	Eurostat	
Czech Republic	1996Q1-2009Q1	Eurostat	
Estonia	1995Q1-2009Q1	Eurostat	
Hungary	1995Q1-2009Q1	Eurostat	
Latvia	1995Q1-2009Q1	Eurostat	
Lithuania	1995Q1-2009Q1	Eurostat	
Malta	2000Q1-2009Q1	Eurostat	
Poland	1995Q1-2009Q1	Eurostat	
Romania	1998Q1-2009Q1	Eurostat (only raw data – not seasonally and working-day adjusted – are available)	We calculated the seasonal adjustment by using the Census X12 method.
Slovenia	1995Q1-2008Q4	Eurostat	
Slovak Republic	1995Q1-2009Q1	Eurostat	
Croatia	1997Q1-2009Q1	Eurostat (only raw data – not seasonally and working-day adjusted – are available)	Seasonal adjustment by using the Census X12 method.
Turkey	1995Q1-2009Q1	Central Statistical Office of Turkey (only raw data – not seasonally and working-day adjusted – are available at different years' prices: series at 1987 prices is available for 1987-2007; series at 1998 prices is available for 1998-2009)	We first performed seasonal adjustment using the Census X12 method of the times series available at 1987 and 1998 years' prices and then combined them into single time series.
Russian Federation	1995Q1-2009Q1	Federal State Statistics Service of the Russian Federation (only raw data – not seasonally and working-day adjusted – are available at different years' prices)	We combined into single time series the data available at different years' prices and then adjusted seasonally with the Census X12 method.
Armenia	1995Q1-2009Q1	IMF-IFS: unadjusted nominal national accounts figures and CPI	We deflated nominal figures with the CPI and then adjusted seasonally with the Census X12 method.
Belarus	1995Q1-2008Q4	IMF-IFS: unadjusted real GDP, nominal government consumption, and GDP deflator	We deflated government consumption with the GDP deflator and then adjusted seasonally along with the GDP with the Census X12 method.
Georgia	1996Q1-2008Q4	IMF-IFS: unadjusted real GDP, nominal government consumption, and CPI	We deflated government consumption with the CPI and then adjusted seasonally along with the GDP with the Census X12 method.
Moldova	2000Q1-2009Q1	IMF – IFS: unadjusted nominal national accounts figures and CPI	We deflated nominal figures with the CPI and then adjusted seasonally with the Census X12 method.
Ukraine	2001Q1-2009Q1	State Statistics Committee of Ukraine (only raw data – not seasonally and working day adjusted – are available)	We calculated the seasonal adjustment by using the Census X12 method.

Data for the EU15, United States and Japan are from Eurostat and available for 1995Q1-2009Q1.

Why would most CESEE countries, in contrast to developed countries, pursue a pro-cyclical fiscal policy that might exacerbate the business cycle? Based on an extensive literature review concerning fiscal policy in developing countries, Ilzetzki and Vegh (2008) conclude that there are two main explanations:

1. Imperfections in international credit markets prevent developing countries from borrowing in bad times.
2. Political economy explanations typically based on the idea that good times encourage fiscal profligacy and/or rent-seeking activities.

Figure 7. **Response of government consumption to a one percentage point shock in GDP**



Note: The panels show the response of government consumption to a one percentage point shock in GDP as a function of the time (measured in quarters) after the shock. Dashed lines represent +/- two standard deviations confidence band. The sample period for each country is detailed in Box 1. Data for Albania, Azerbaijan, Bosnia and Herzegovina, Macedonia, FYR, Montenegro, and Serbia are not available.

As far as imperfections in international credit markets are concerned, further integration of CESEE countries into the EU could ease this problem. However, as the cases of Greece and Hungary underline, it is euro-area membership that makes a difference. Both

countries are members of the EU, but only Greece is a member of the euro area. While the main fundamentals were worse in Greece than in Hungary, Greece has fared much better than Hungary in the first year of the post-Lehman Brothers period of the current crisis.[11]

On the other hand, many CESEE countries also pursued pro-cyclical policies in good times when credit from foreign sources was abundant. Consequently, political economy factors may be highly relevant in explaining the pro-cyclical budgetary policies of these countries.

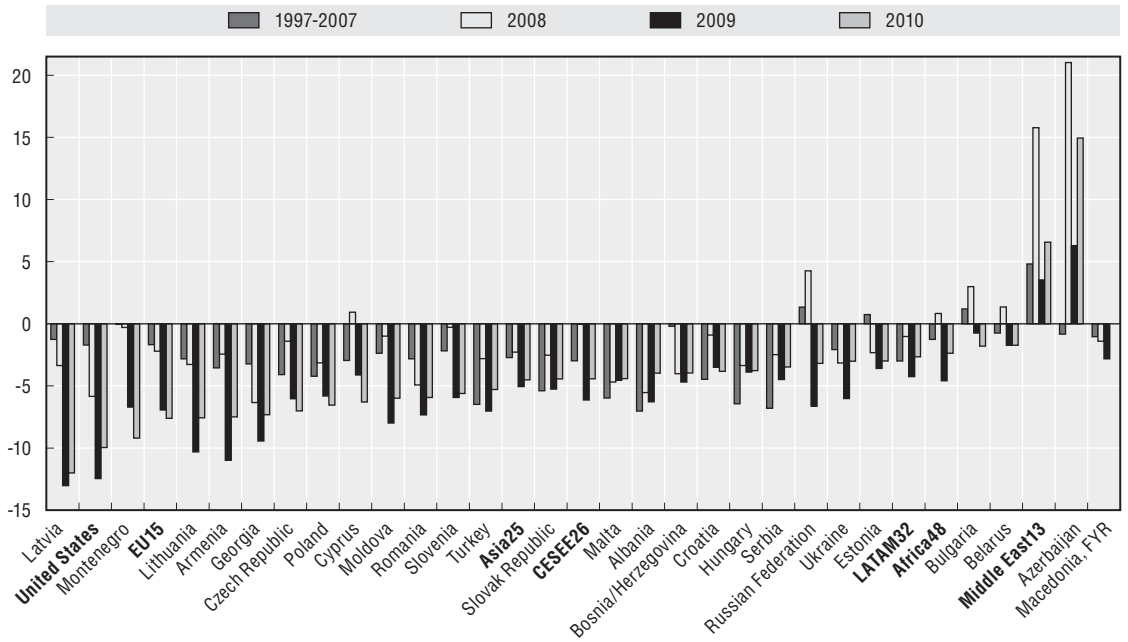
We return to the issue of euro-area entry and the need for improvements in budgetary governance in the final section of this article.

3. The impact of the crisis on budget policy: main channels

The crisis has, through various channels, had a significant impact on the budget policy of all countries, including CESEE countries. However the strength of certain channels varies across countries according to their specific circumstances. Figure 8 indicates the headline budget deficit numbers for CESEE countries in comparison with some major economies. Budget deficits outcomes are rather diverse and are related to a large number of factors, to be discussed later.

Figure 8. **General government budget balance, 1997-2010**

% of GDP



Note: Countries are ordered according to their 2010 balance (except Macedonia, FYR).

Source: Eurostat, EBRD, IMF WEO (October 2009). The 2009 forecast for Macedonia, FYR is from the EBRD (spring 2009); the 2010 forecast is not available.

From the perspective of most CESEE countries, the impact of the crisis can be summarised as: 1) a significant revenue shortfall; 2) changes in the global economic environment that have led to external financial constraints and less growth in main export destination markets; and 3) a significant change in the medium/long-term outlook.

3.1. Direct fiscal impact

The most serious impact of the crisis on budget policy has been felt on the revenue side. With declining economic activity, all kinds of tax revenues decline. Progressive income taxes and corporate taxes act as automatic stabilisers, as do unemployment and other welfare benefits. In addition, countries that have scope may engage in discretionary fiscal stimulus programmes to boost domestic demand. We believe that the current economic environment is a classical Keynesian situation that would in principle demand such discretionary policies. However, as we will discuss in more detail in Section 6, both the desirability of, and the scope for, such actions fundamentally depend on the circumstances of individual countries, such as their size and openness, the credibility and strength of fiscal institutions, and the level of government debt. Last, but not least, fiscal support for the financial sector (which is different from discretionary fiscal stimulus) has a crucial role, as the health of the banking system and its potential for credit expansion is crucial for the recovery.

3.2. Changes in the global economic environment

Changes in the global economic environment have important impacts on all countries, but especially on open economies. The crisis affects capital flows, risk premia, trade, migration and also the outlook of major economies. These impacts in turn affect the economies of CESEE countries, thereby limiting their budgetary policies.

First, as we have discussed in Section 1.2, countries in this region in general have relied heavily on capital inflows to finance investment (and also consumption in many cases). The global nature of the crisis, the ongoing de-leveraging process, and the general reduction in global liquidity have substantially reduced capital inflows and will even lead to capital outflows. For example, the October 2009 IMF *World Economic Outlook* includes a forecast for capital flows that foresees substantial decline. These factors pose significant constraints on the ability to raise capital.

Second, the capital that is available will be more expensive, and risk premiums are expected to remain considerably higher than their pre-crisis levels, implying a higher cost of capital for all economic sectors, including the government. Indicators measuring the risk that emerging and developing countries represent for lenders, such as credit default swaps (Figure 5) or emerging market bond indices, have shown dramatic increases, suggesting a rise in risk perceptions. These indicators measure current risk perceptions, but it is unlikely that risk perception will decline to pre-crisis levels in the near future. Some authors argue that emerging market bond spreads and credit default swaps were unjustifiably low before the crisis and hence a return to that situation is unlikely.

Third, the substantial fall in global trade, coupled with moves towards protectionism by major destination markets, have an impact on a key pillar for economic success in the generally small and open CESEE economies. Central and south-eastern European economies in particular heavily depend on trade with the EU, while eastern European countries are similarly reliant on the Russian Federation. Their previous success was partly based on the building up of (partly inter-company) trade relations. With the recession in western Europe and the Russian Federation, CESEE exports will be hit seriously, also reflecting the general finding that cyclical swings in small, open economies tend to be greater than in more advanced economies. Furthermore, many export destination countries are considering the adoption of various subsidies for certain sectors, which could

further distort trade relations. Any undermining of the close integration of production networks within Europe, and the resulting job losses, would pose a challenge to eastern countries. While this effect is in some respects cyclical, if recession in western Europe and the Russian Federation is long-lasting and results in the rise of trade-distorting policies, the challenges for CESEE countries will also be long-lasting and serious. Commodity-exporting countries, including of course the Russian Federation, have also been hit by lower demand and revenues for an uncertain duration. Furthermore, in some of the countries there is a high level of specialisation/concentration of activities in a few sectors. Depending on which sectors these are (oil, cars, pharma, high-tech services, etc.), and how important foreign direct investment (FDI) is in these sectors, this might affect their sensitivity of those countries to cyclical downturns, and the sustainability of their long-term growth.

Fourth, migration may also be affected. Some countries in the region have experienced very large outflows of workers to richer economies, with citizens from the new EU member states and western Balkan countries heading primarily to western Europe, and those of CIS countries heading to the Russian Federation. With the economic slowdown in western Europe and the Russian Federation, labour outflows may slow and even partially reverse. Remittances, which play a very significant role in some of these countries, could dwindle substantially. These developments would have additional adverse consequences. If some of the countries in the region experience very large economic contractions over extended periods, then migration outflows may speed up again, exacerbating the effects of the crisis and undermining the long term prospects of some countries.[12]

Finally, in addition to reduced capital flows, rising risk premia, declining trade, falling remittances and potential reverse migration, developments in the major economies may themselves have major impacts on CESEE countries. Major economies have accumulated huge budget deficits, as a consequence of automatic stabilisers, and also as a result of the huge support given to the financial sector, and discretionary fiscal stimulus in some cases. This has led to abrupt increases in government debt in major economies, which will require more countercyclical fiscal policy in the future to maintain credibility. However, prolonged budgetary adjustments in major economies run the risk of reducing growth for a prolonged period (perhaps after an initial rebound immediately after the crisis due to huge output gaps that will have likely emerged). Such a prolonged adjustment in major economies will significantly impact CESEE countries.

3.3. Reconsideration of the medium- and long-term economic outlook

For all of the reasons discussed so far, the previous "growth model" of CESEE countries is at risk, and substantial downgrades in growth prospects compared to the pre-crisis outlook can be expected.[13] Reconsideration of the medium- and long-term economic outlook for these countries will have consequences for future budgetary policies. In particular, budgetary expenditure planning must consider new revenue realities.

Furthermore, the crisis will likely have lasting negative wealth effects on these countries. The fall in the price of certain assets, and their future outlook, should be evaluated in the light of pre-crisis expectations for these prices. While asset prices will likely bottom out, if they have not yet done so, their future outlook is not just uncertain, it is also likely that there will be a downward shift in price levels compared to the pre-crisis outlook.[14]

The fall in housing prices impacts especially those countries that had huge housing booms in previous years.[15] The fall in commodity prices impacts commodity exporter countries.[16] Wherever foreign currency loans were granted and the exchange rate has depreciated, a wealth effect operates because of the increased debt/income ratio. Increases in the interest rate, both for domestic and foreign currency denominated loans, increases the debt service/income ratio.

Many of the countries have funded pension systems, and the losses assumed directly challenge those who are to retire in the coming years. The downgraded prospects compared to pre-crisis outlooks will also have an effect.

The consequence of all of these wealth effects is a downward shift in consumption patterns. The current crisis is different from a "regular" bust in a business cycle. Consumption smoothing, if any, will work to a much lesser extent. Instead, heightened falls in consumption are likely due to changed expectations about the future, to wealth effects and also to the difficulties in obtaining credit (supply plus higher real interest rates).

4. Budget policy reactions in CESEE countries

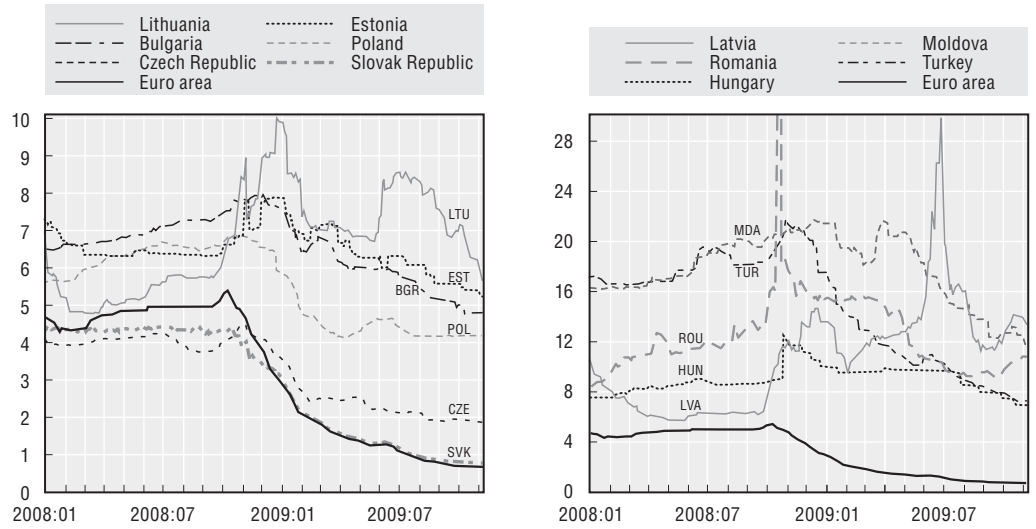
Budget policy reactions can be understood only in the broader context of other macroeconomic policies and constraints. Due to the substantial revenue shortfall and external financing constraints, most countries simply do not have scope for discretionary fiscal stimulus. In addition, many countries face significant confidence constraints as well. Eight countries (Armenia, Belarus, Bosnia-Herzegovina, Hungary, Latvia, Romania, Serbia, and Ukraine) have standby agreements with the IMF,[17] and Turkey is in talks. The loans granted under these agreements are conditional on the implementation of a comprehensive economic programme aimed at ensuring fiscal consolidation, structural reform and support for the financial system.[18]

On the other hand, the Russian Federation, a large and not-so-open economy with huge fiscal reserves (and low gross government debt, see Figure 4) has scope for fiscal stimulus, and indeed has rightly embarked on a significant fiscal stimulus programme. However, as also highlighted by, *e.g.* World Bank (2009a), the scope for further fiscal stimulus in 2009 and 2010 appears limited due to the remaining downside risks in the global and Russian economies, and the exhaustion of a large part of Russia's Reserve Fund. Because of its low government debt, the Russian Federation has room to borrow externally, which is indeed planned for 2010. But while that is being done, longer term fiscal sustainability should be prioritised, which will require reforms to broaden the revenue base and ensure greater efficiency in public and social programmes.

In parallel with budget constraints, monetary policy reactions were varied across countries. Three-month interbank interest rates also reflected this (Figure 9). Some countries (*e.g.* Czech Republic, Poland and Slovak Republic) cautiously cut interest rates, while others had to raise them substantially (*e.g.* Hungary and Romania). Monetary policy actions were determined by pressures on exchange rates, currency composition of debt, and of course by the credibility of economic policies and inflation prospects. The Russian Federation and Ukraine aimed for exchange rate stabilisation. The Russian Federation has lost one-third of its reserves in defending the exchange rate.

A recent IMF staff position note (IMF, 2009) assessed fiscal stimuli in G20 countries and in a few CESEE countries, while the European Commission (2009) presents assessment for all 27 EU countries. In this section, we first report the IMF (2009) and European Commission

Figure 9. **Three-month interbank interest rates, 2 January 2008-6 November 2009**



Note: The Romanian rate peaked at 49.81% on 20 October 2008, but for better readability of the right-hand side panel, the vertical axis has a 30% cut-off.

Source: Datastream and National Bank of Moldova.

(2009) results for CESEE countries in comparison to some G20 countries. In Annex A, we report our own data collected from various sources, which cover all 26 CESEE countries.

Table 2 shows that the Russian Federation adopted the largest stimulus among G20 countries in 2009, and the sixth largest for the three-year period from 2008 to 2010. In particular, the Russian Federation's stimulus is larger than that of the United States, and of any single European country (as a percentage of GDP), both in 2009 and the three-year 2008-10 period.

Turkey's discretionary fiscal stimulus is the second lowest among G20 countries. The June 2009 stimulus, which is not included in IMF (2009) and hence Table 2, is estimated to be 0.3% of GDP.

Table 3 indicates that most of the EU member CESEE countries have not implemented discretionary stimulus measures.

Using a different methodology, Saha and von Weizsäcker (2009) estimate that discretionary fiscal measures amount to 0.5% of GDP in Poland in 2009.

Annex A details the various measures adopted in response to the crisis for all 26 CESEE countries. Budget policy reactions vary substantially across countries. The less vulnerable countries (*e.g.* the Czech Republic, Malta, Poland, Slovenia) implemented discretionary stimulus measures, but most countries instead engaged in fiscal consolidation.

Direct measures for supporting the financial sector were generally low or zero in CESEE countries (see Tables 4 and 5 and Annex A). Four CESEE countries (Hungary, Poland, the Russian Federation and Turkey) are included in IMF (2009) in this respect (reported in Table 4). As an integral part of its IMF programme, Hungary gave the largest (among these four countries, in terms of GDP) support to the financial sector that required upfront government financing. Still, measures in all four countries have been dwarfed by the measures that have taken in advanced G20 countries, which are reported in the last row of Table 4. Table 5 highlights that among the EU member CESEE countries only Hungary and Latvia provided support for the financial sector.

Table 2. **Estimated cost of discretionary measures in G20 countries**

% of GDP, relative to 2007 baseline

	2008	2009	2010	All three years
Saudi Arabia	2.4	3.3	3.5	**9.2**
South Africa	2.3	3.0	2.1	**7.4**
China	0.4	3.1	2.7	**6.2**
Korea	1.1	3.7	1.2	**6.0**
Australia	1.2	2.5	2.1	**5.8**
Russian Federation	0.0	4.1	1.3	**5.4**
United States	1.1	2.0	1.8	**4.9**
Japan	0.3	2.4	1.8	**4.5**
Spain	1.9	2.3	. .	**4.2**
Germany	0.0	1.6	2.0	**3.6**
Canada	0.0	1.9	1.7	**3.6**
Indonesia	0.0	1.4	0.6	**2.0**
India	0.6	0.6	0.6	**1.8**
United Kingdom	0.2	1.5	0.0	**1.7**
Argentina	0.0	1.5	. .	**1.5**
France	0.0	0.7	0.8	**1.5**
Mexico	0.0	1.5	. .	**1.5**
Brazil	0.0	0.6	0.5	**1.1**
Turkey	0.0	0.8	0.3	**1.1**
Italy	0.0	0.2	0.1	**0.3**

Note: Countries are ordered according to the sum of the stimulus over 2008-10.
Source: Extracted from Table 3.4 of IMF (2009), "Fiscal Implications of the Global Economic and Financial Crisis", IMF Staff Position Note, June, Washington DC. See detailed notes to the table in IMF (2009).

Table 3. **Fiscal stimulus measures in EU countries, 2009 and 2010**

% of GDP, relative to 2008 baseline

	2009								**2010**
	Total	Expenditure	Revenue	Measures aimed at households	Increased spending on labour market measures	Measures aimed at businesses	Increased public investment	Of which public infrastructure	**Total**
Bulgaria	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Cyprus	**0.1**	0.1	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Czech Republic	**1.0**	0.5	0.5	0.0	0.5	0.1	0.4	0.4	**0.5**
Estonia	**0.2**	0.2	0.0	0.0	0.2	0.0	0.0	0.0	**0.3**
Hungary	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Latvia	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Lithuania	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Malta	**1.6**	1.3	0.3	0.3	0.0	0.1	1.3	0.7	**1.6**
Poland	**1.0**	0.3	0.7	0.6	0.0	0.1	0.3	0.3	**1.5**
Romania	**0.0**	0.0	0.0	0.0	0.0	0	0.0	0.0	**0.0**
Slovak Republic	**0.1**	0.1	0.0	0.0	0.0	0.1	0.0	0.0	**0.0**
Slovenia	**0.6**	0.5	0.1	0.0	0.1	0.3	0.2	0.0	**0.5**
Total euro area	**1.1**	0.5	0.5	0.4	0.1	0.2	0.3	0.1	**0.8**
United Kingdom	**1.4**	0.4	1.0	1.2	0.0	0.0	0.2	0.0	**0.0**

Source: Extracted from Table I.1.1 of European Commission (2009), "Public Finances in EMU", *European Economy*, 5/2009 (provisional version), Directorate-General Economic and Financial Affairs of the European Commission.

Table 4. **Headline support for the financial sector and upfront financing need**

% of 2008 GDP

	Capital injection (A)	Purchase of assets and lending by treasury (B)	Central bank support provided with treasury backing (C)	Liquidity provision and other support by central bank (D)	Guarantees (excluding deposit insurance) (E)	Total (A+B+C+D+E)	Upfront
Hungary	1.1	2.2	0.0	4.8	1.1	9.2	3.3
Poland	0.0	0.0	0.0	0.0	3.2	3.2	0.0
Russian Federation	0.6	0.5	0.4	7.6	0.5	9.6	1.7
Turkey	0.0	0.3	0.0	0.0	0.0	0.3	0.0
G20 advanced economies	3.2	4.4	1.2	18.7	22.9	50.4	5.8

Source: Extracted from Table 2.1 of IMF (2009), "Fiscal Implications of the Global Economic and Financial Crisis", IMF Staff Position Note, June, Washington DC. See detailed notes to the table in IMF (2009).

Table 5. **Public interventions in the banking sector**

% of projected 2009 GDP

	Capital injections		Guarantees on bank liabilities		Relief of impaired asset		Liquidity and bank funding support		Total for all approved measures	Total effective for all measures	Deposit guarantee scheme
	Total approved measures	Effective capital injections	Total approved measures	Guarantees granted	Total approved measures	Effective asset relief	Total approved measures	Effective liquidity interventions			
Bulgaria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	EUR 50 000
Cyprus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	EUR 100 000
Czech Republic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	EUR 50 000
Estonia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	EUR 50 000
Hungary	1.1	0.1	5.9	0.0	0.0	0.0	0.0	0.0	7.0	0.1	100%
Latvia	1.4	0.0	10.9	2.8	0.0	0.0	10.9	6.1	23.1	8.9	EUR 50 000
Lithuania	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	EUR 100 000
Malta	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	EUR 100 000
Poland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	EUR 50 000
Romania	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	EUR 50 000
Slovak Republic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100%
Slovenia	0.0	0.0	32.8	0.0	0.0	0.0	0.0	0.0	32.8	0.0	100%
Total euro area	2.6	1.4	20.6	8.3	12.0	0.7	1.3	0.7	36.5	11.1	
United Kingdom	3.5	2.6	21.7	9.5	0.0	0.0	25.1	18.7	50.3	30.8	ca. EUR 57 000

Source: Extracted from Table III.6.1 of European Commission (2009), "Public Finances in EMU", *European Economy*, 5/2009 (provisional version), Directorate-General Economic and Financial Affairs of the European Commission.

The key reason for this discrepancy is that CESEE countries did not hold US-related toxic assets. However, domestic losses due to falling income, rising unemployment, the bursting housing booms, currency depreciation and increases in retail interest rates, increase the ratio of non-performing loans and lead to risks of huge losses in some countries. Again, there are substantial differences across the 26 CESEE countries.

The banking system plays a crucial role in financing CESEE economies. Furthermore, due to the substantial foreign ownership of the banking system in many CESEE countries, the behaviour of foreign banks is decisive for these countries. In recognition of these factors, there has been strong international backing for stabilisation of financial systems in CESEE countries, thereby easing the pressure on their budget policies (see Box 2).

Box 2. **External support for the CESEE financial sector**

The EU's commitment not to let any systemically important bank fail in the euro area, or in Sweden (whose banks own most of the banking system in the Baltic countries), the commitment that packages designed to help international banking groups can also benefit their subsidiaries, and the European Central Bank's liquidity support to euro-area banking groups, have also helped their subsidiaries in the CESEE region.

Efforts to stabilise the financial system in CESEE countries (irrespective of the ownership structure) are supported by the joint action plan of the EBRD, EIB Group and World Bank Group, unveiled on 27 February 2009. This initiative aims to support the CESEE banking sectors and bank lending to businesses, in particular to small and medium-sized firms, up to a level of EUR 24.5 billion over two years in the form of equity and debt finance, credit lines, and political risk insurance.

The so-called "Vienna Initiative", which is a multilateral effort to secure financial sector stability in those CESEE countries with substantial foreign bank ownership, aims to stimulate coordination between all relevant stakeholders, including international banking groups, home and host country authorities, international financial institutions and the EU. The aim of the initiative is to develop a common understanding on key issues, to secure the commitments made by both international banking groups and home and host country authorities, and to coordinate a fair burden-sharing.

Furthermore, agreements between central banks, most notably the euro/lats swap offered to Latvia by the Danish and Swedish central banks and the Swedish krona/Estonian kroon swap offered by Sweden to Estonia, are also helpful for the stability of the banking sector. The option of getting foreign exchange liquidity in exchange for domestic currency alleviates the pressure on domestic currency markets.

5. Lessons from previous emerging market crises to budget policy

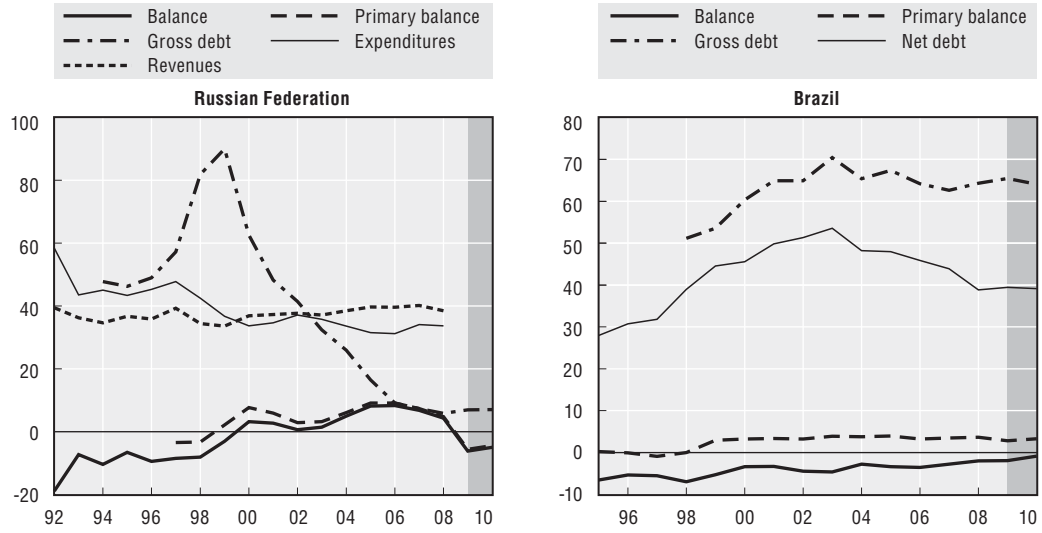
Previous economic crises were a major cause of structural reforms in general, and of the budget in particular. For example, Henriksson (2007) presents an excellent essay about fiscal reforms in Sweden, which were prompted by the deep Swedish economic and financial crisis of the early 1990s. Kopits (2008) lists some examples from CESEE countries. Baksay and Kiss (2009) describe and analyse the new Hungarian fiscal responsibility law that was adopted by the Parliament in December 2009. The law was initiated well before the crisis but the crisis has sped up its finalisation and passing.

Let us highlight two other cases: the Russian Federation and Brazil after 1998. Both countries experienced serious crises in 1998/99; furthermore, Brazil's economic history since the oil shocks was a tale of crises, instability, hyper-inflation, temporary economic booms followed by serious busts, and serious fiscal tensions between the central and regional governments. However, despite the global nature of the current crisis, instead of asking for help from the IMF, both countries intend to invest USD 10 billion in notes to be issued by the IMF to support the Fund's activities elsewhere. The fiscal consolidation and reform, as well as changes in monetary and exchange rate policies prompted by the 1998/99 crises, changed the position of these countries from potential and actual recipients of IMF loans to suppliers.

The Russian Federation's fiscal policy was characterised by very high deficits before the 1998 crisis, averaging 8.5% of GDP between 1993 and 1997 (Figure 10).[19] Business subsidies amounted to about 16% of GDP, with little social benefit. The external financial constraints posed by the crisis forced substantial budget consolidation and vital fiscal reforms.

Figure 10. **General government budget data in the Russian Federation and Brazil**

% of GDP



Note: Gross debt for Brazil is based on the official method used until 2007 (this is still in use, though it has now been supplemented with another method). The new method indicates that gross debt was between two and nine percentage of GDP lower between 2006 and 2009, in comparison to the former method, when data from both methodologies are compared side by side.

Sources: Russian Federation: EBRD (for 1992-2006) and IMF (for 2007-10) except the primary balance, which is from the IMF in the full period; Brazil: *Banco Central do Brasil* (1995-2008) and IMF (2009-10).

Consolidated general government expenditures were cut substantially from a peak value of 48% of GDP in 1997 to 34% of GDP in 2000. The average expenditure ratio over 1999-2007 was also 34% of GDP and hence the consolidation turned out to be permanent with little time variation (Figure 10).[20] The largest declines in non-interest spending, compared to the pre-crisis years, have been in transfers to regions and in capital expenditures. However, wages, social transfers, and defence spending have also been cut. Many inefficient subsidies were abolished, levelling the playing field. Interest costs, measured in rubles, rose with the exchange rate depreciation following the 1998 crisis, but after rescheduling the debt, cash interest spending also decreased from over 4.5% of GDP in 1995-97 to about 3% in 2000.

The government continued its tax crusade against the oligarchs, launched in 1997-98, with success. The government started applying the tax laws to big enterprises, especially the oil and gas companies, which had previously enjoyed individually negotiated tax rates. Substantial progress was also made in monetisation and rollback of barter, which had risen to 54% of all inter-company payments in 1998, but fell back below 15% by 2001, and continued to fall in subsequent years.

At the same time, revenues were centralised away from the regions to the central government through statutory increases in federal shares of value-added tax (VAT) and income tax in 1999, and through the introduction of new tax-sharing rules in 2000. The reintroduction of export taxes in early 1999 and their subsequent expansion were major sources of higher revenue. A new aggressive bankruptcy law tightened the budget constraints. Later, in 2001-02, a radical tax reform was implemented,[21] measures were taken to make doing business easier and to secure property rights, and progress was also

made with financial sector reform. Starting in 2004, most of the windfall oil revenues were saved in a Stabilisation Fund that was later divided into a Reserve Fund and a National Welfare Fund (of which the former was indeed used in 2009 to cover the budget deficit).

All of these factors and the related financial stabilisation of the economy have contributed to the Russian Federation's excellent budget performance in the post-crisis period, and to strong economic growth.[22] Still, the reforms implemented in response to the 1998 crisis are not the end of the story. The Russian Federation still faces significant fiscal challenges and there is much room for further improvement (see, *e.g.* OECD, 2009, and World Bank, 2009a). Furthermore, as we shall demonstrate in the next section, the Russian Federation is one of the lowest ranking of the 26 CESEE countries in terms of preventing corruption and maintaining the rule of law. The government has a crucial role in making improvements in these areas.

Brazil also implemented very ambitious fiscal reforms after the 1998-99 crises.[23] In 1998, the federal government announced its first Fiscal Stabilisation Programme, comprising four initiatives: 1) fiscal adjustment to increase the primary surplus of the consolidated public sector (in contrast to the pre-crisis close-to-zero and small negative primary balances, a primary balance target of plus 3.75% of GDP was introduced, which was later raised to 4.25%); 2) institutional reform, including the social security system and administrative reform; 3) redesign of fiscal federalism based on a comprehensive debt financing and restructuring agreement with federal states and local governments; 4) reform of the budgetary process and the introduction of fiscal rules. The primary balance targets were generally reached (Figure 10). The debt-restructuring agreement with federal states and local governments was the basis for the change in sub-national governments' fiscal performances after 1998. The improvements were further consolidated after the approval of the May 2000 Fiscal Responsibility Law, which set out a general framework for budgetary planning, execution and reporting for the three levels of government. The law called for sustaining the structural adjustment of public finances and constraining public indebtedness. It comprised three types of fiscal rules: general targets and limits for selected fiscal indicators; corrective institutional mechanisms in case of non-compliance; and institutional sanctions for non-compliance. Brazil's public sector had substantial foreign currency liabilities before the 1998 crisis, but it could gradually reduce the foreign exchange exposure to less than 10% of GDP. Fiscal policy was accompanied by strict monetary policy with inflation targeting under floating exchange rates, which was again a fundamental revision of pre-1999 policies. Fiscal reforms played a crucial role in Brazil's good growth performance after 1999 and in Brazil's resistance to the current global crisis.

6. Budget policy options in CESEE countries

In principle, the current global economic environment calls for Keynesian policies. Although potential output is also likely to be falling in all countries of the world, actual output is falling to a much greater extent. As a result, in many countries large negative output gaps are expected, and hence the fall in actual output is not just a case of correcting pre-crisis positive output gaps that existed in many countries, including the CESEE region.

Furthermore, the development of large negative output gaps is not just the result of domestic factors. The current crisis is likely to be a once-in-a-generation event, affecting all countries world wide. The falls in external demand and remittances are clearly external factors, as well as disturbances in international financial markets and the resulting global changes in liquidity and capital flows to emerging and developing countries.

Temporary discretionary fiscal actions, as well as monetary policy easing, are precisely suitable for overcoming the demand shortage. Many countries, most notably major economies but also many emerging economies, are rightly adopting various fiscal stimulus measures (see Table 2).

In CESEE countries, government debt is generally low in most (but not all) cases (see Figure 4). In principle, this would provide even more room for discretionary fiscal stimulus.

Having said that, the viability of discretionary fiscal stimulus in CESEE countries has to be looked at from the angle of country-specific circumstances.

First, financial constraints pose unavoidable limitations to such policies. Even countries with low government debt levels and substantial fiscal reserves, such as Estonia, are seriously constrained by the revenue shortfall resulting from the unexpected depth of the recession. Contingent liabilities should also be taken into account when deciding on discretionary measures. The crisis has substantially increased the risk of further government intervention in the banking system. Furthermore, the debt level tolerance of markets is lower for emerging and developing countries than it is for major economies. Government debt defaults occurred at reasonably low debt levels (see, for example, Sturzenegger and Zettelmeyer, 2006). For example, among recent cases of government default, the public debt-to-GDP ratio was 37% in Ukraine, 45% in Argentina, 54% in the Russian Federation and 66% in Ecuador, in the year before the government default.

Second, the impact of the fiscal stimulus on the domestic economy crucially depends on whether a country is large and closed, or small and open. In small and open economies, the effect of the stimulus can easily show up in increased imports. The Great Depression taught us that protectionism can prolong the recession and hence this is not the path small and open countries (and of course all other countries) should follow. On the other hand, small and open economies can benefit from the stimulus implemented in their main destination markets through trade and migration links.

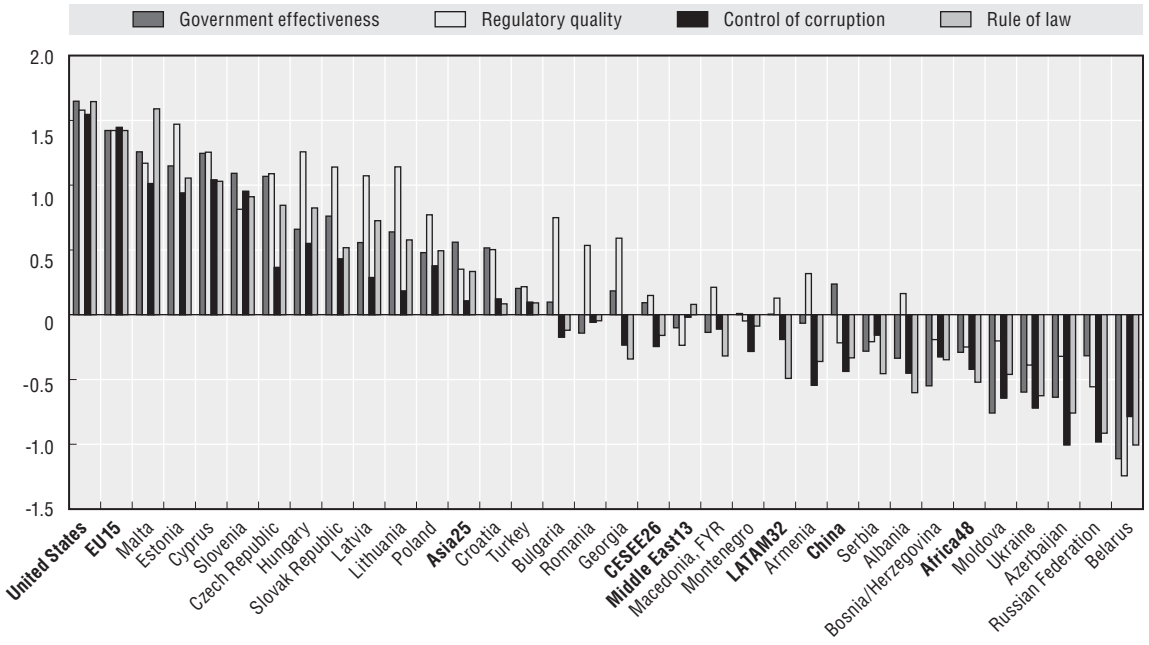
Third, the results of the fiscal stimulus very much depend on the strength and credibility of fiscal institutions. Figure 11 presents the four out of the six World Bank governance indicators on which governments have the greatest impact. Although large variation is evident, in many countries government effectiveness, regulatory quality, control of corruption and the rule of law still lags substantially behind the EU15 and the United States.[24]

Fourth, related to the previous point, the potential effect of stimulus programmes on investors' confidence should be considered. The weaker the credibility of the stimulus programme is, the more likely it will result in increased risk perception and, eventually, higher interest rates and capital outflows.

Fifth, as capital is becoming scarce, the potential for private investment to be crowded out is also an important factor for countries facing external financing constraints.

Regarding the above list of issues, there is a key dividing line between CESEE countries. On the one hand, the Russian Federation is big, has low debt and substantial fiscal reserves and hence may be less exposed to the risk of loss of investors' confidence, especially since the rouble has been allowed to depreciate significantly. Discretionary fiscal stimulus was the right decision for the Russian Federation. Azerbaijan also has substantial reserves and its economy is still expected to grow by about 7.5%, both in 2009 and 2010 (see Figure 1).

Figure 11. **World Bank Governance indicators, 2008**



Note: The average score of all countries of the world is zero. Countries are ordered according to the average of the four indicators.

Source: World Bank (2009), *Governance Matters 2008*, The World Bank, Washington DC.

On the other hand, all other countries have much narrower or even zero scope for discretionary measures, though there are important differences between countries. Poland and Turkey, for example, are larger countries than most of the CESEE, and their debt levels are around 50% of GDP. Such a debt level is higher than in many other CESEE countries, but still at a level that does not itself pose a risk of a loss of credibility, provided that the stimulus package is implemented in a credible and timely way. The Czech Republic, Slovak Republic and Slovenia, the latter two of which enjoy the sheltering effect of the euro area, also have greater scope for fiscal stimulus, as they did not accumulate significant vulnerabilities before the crisis. However, their small and open economy characteristics certainly limit the effectiveness of Keynesian policies on their domestic economies. Countries that have had to rely on IMF programmes have no scope at all for stimulus, and other CESEE countries should be very cautious as well.

The limited scope for fiscal stimulus leads us to ask if the crisis can be used as an opportunity to reform fiscal institutions, improve their quality and embark on a necessary budgetary consolidation. As we discussed in Section 5, many previous crises prompted substantial fiscal reforms and serious budget cuts, despite earlier arguments that challenging interest groups and reducing public expenditures would be impossible.

External financial constraints, while costly in the short run, help to expose the weaknesses of fiscal institutions, and prompt reforms that have the potential of paving the way to much better macroeconomic outcomes. The crisis is certainly very painful in many respects. Unemployment has increased dramatically in many countries; many people have lost their homes; many corporations have gone bankrupt, etc. However, the crisis, and especially its global nature, also helps in communicating to the general public the need for budgetary adjustment and structural reforms, including fiscal reforms.

Still, there are limits, and highly pro-cyclical budget cuts during a severe recession should be avoided. For example, the latest forecasts for GDP falls in Latvia in 2009 are in the 15-20% range. The Latvian authorities decided to maintain the exchange rate peg and had no other choice but to rely on the international community for emergency financing. As the recession became much deeper than what had been seen up to the point when the programme was designed, the budget deficit widened even more, requiring additional and substantial fiscal efforts to limit it, so that Latvia could receive the subsequent tranches provided by the financing programmes. This happened even though international financial institutions agreed to somewhat higher deficit levels. In June 2009, the Latvian Parliament passed a new budget law with additional cuts. While much blame can be laid on the Latvian side for past behaviour (in particular, fiscal expenditures were increased substantially before the crisis and little was done to limit the credit boom and the huge current account deficit) the EU should be more flexible with regard to Baltic aspirations to join the euro area.[25]

Regarding budget policy options for the future, some general principles could be laid down:

- As a priority that is relevant both for the very short run and the longer term, the good functioning of the financial system should be maintained. At the same time, so-called "zombie lending" should be avoided.[26]
- The crisis should be used as an opportunity for structural reforms to enhance growth in general and fiscal frameworks in particular. Reforms to avoid future pro-cyclical policies, and to increase credibility and the quality of budgeting, such as fiscal responsibility laws comprising medium-term fiscal frameworks, fiscal rules[27] and independent fiscal councils, should be considered where such institutions do not exist. When fiscal consolidation is accompanied by fiscal reforms that increase credibility, non-Keynesian effects[28] may offset the contraction caused by the consolidation to some extent.
- Protection of the most vulnerable should be prioritised. Unemployment has different social consequences in rich and poor countries. In poor countries, household saving is typically lower and the risk of poverty is larger.
- Debates over healthcare and pension reforms should be re-opened, especially in countries facing serious demographic pressures.
- Spending on pro-growth policies, such as education and innovation, should be maintained but rationalised so as not to destroy the longer term post-crisis growth prospects of these countries.
- Long-term fiscal sustainability should be highly prioritised. All of the above recommendations would contribute to this.

How to do all of these at the same time when significant fiscal consolidation is needed in many countries? There are some countries that did manage this during crisis episodes. Let us quote a sentence from Henriksson's (2007) excellent essay on "Ten Lessons About Budget Consolidation", which was inspired by his active involvement in the dramatic Swedish budgetary measures that were taken after the crisis of the early 1990s:[29] "The bottom line may thus be: if you have to consolidate, wait for a deep crisis to occur, and it will be easy to do, easy to communicate and easy to be re-elected." The crisis is here now and the opportunity should not be missed.

Notes

1. This article analyses 26 countries of central, eastern, and south-eastern Europe: 12 central European and Baltic members of the EU (Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovak Republic, Slovenia); the 7 European Commonwealth of Independent States (CIS) countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova, Russian Federation, Ukraine); 5 non-EU countries of former Yugoslavia (Bosnia and Herzegovina, Croatia, FYR Macedonia, Montenegro, Serbia; data for Kosovo are not available), and Turkey and Albania.

   The information in this article with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey will preserve its position concerning the "Cyprus issue".

2. In our view, comparison to a benchmark, *i.e.* the downward revision of the forecast level of GDP at a future date, is a better measure of the severity of the crisis than the actual fall in GDP. For example, zero growth has a different meaning for a country that has been used to growing and was expected to continue to grow in the future by 2% per year, than for a country in which these numbers are 6% per year. Nevertheless, we also show and discuss actual changes in GDP.

3. China is included separately in Figure 1.

4. See Darvas and Szapáry (2008) for further details on capital inflows and credit growth in the EU member CESEE countries.

5. For example, Latvia is trying to implement heroic efforts to cut the budget deficit in the context of a GDP fall of about 15-20% in a single year.

6. It is preferable to use government consumption rather than, *e.g.* government expenditures or balance, for studying the pro-cyclical nature of budget policy, because these latter indicators are strongly influenced by the business cycle (*e.g.* through transfers, debt service and tax revenues), while government consumption is a more direct policy tool. See Kaminsky, Reinhart and Vegh (2004) for a detailed discussion.

7. Quarterly data before 1995 are generally not available for CESEE countries, but even if available, they are likely burdened with substantial structural changes. Still, our sample starting in 1995 may also include structural breaks due to, for example, changes in fiscal policy regimes, which would necessitate time-varying parameter SVARs. This issue is left for further research.

8. Note that impulse response functions in SVARs measure the effects of unanticipated shocks.

9. In the case of Poland, the Schwarz information criterion suggested two lags. However, with two lags the estimated model turned out to have an unstable root, and the impulse response functions became explosive. We therefore used only one lag for Poland.

10. Using a panel of developed countries, Ilzetzki and Vegh (2008) also found such a pattern.

11. For example, Greece has had much higher government debt and a much higher current account deficit (as a percentage of GDP) than Hungary in the past few years. Immediately after the collapse of Lehman Brothers, Hungary experienced serious speculative attacks on its currency and government bond markets, and had to rely on a multilateral financial assistance programme, while tensions in Greece were milder, at least till the finalisation of the article (November 2009). Hungary's current account deficit is expected to shrink from 6% of GDP in 2007 to 3% of GDP in 2009 and 2010, while Greece is still expected to have a current account deficit in excess of 11% of GDP both in 2009 and in 2010, according to the October 2009 forecasts of the IMF. The government debt-to-GDP ratio is also expected to remain much higher in Greece than in Hungary. In June 2009 the spread over German ten-year government bond was 186 basis points for Greece and 668 basis points for Hungary.

    While macroeconomic indicators were in many cases better for Hungary than Greece, Hungary was still one of the weakest among the new EU member states, and hence it was not surprising that Hungary was the first to turn to the IMF for emergency financing. Our calculations indicate that Hungarian fiscal policy was the most pro-cyclical among the 26 CESEE countries, and government debt was also the highest in 2007 (Figure 4). Government expenditure (as a percentage of GDP) was also the highest in Hungary and not just because of higher interest spending. By using a proper method to compare government expenditures in four new EU member states, Kiss and Szemere (2009) conclude that the Hungarian government spends considerably more than its neighbours.

12. Ahearne *et al.* (2009) estimate the potential migration impacts of the crisis for new EU member states. They found that in the short run, the crisis is likely to lead to a lower stock of migrants from the new member states in the EU15 than would have been the case without the crisis, on account of diminished job opportunities for migrants. By contrast, in the longer run, the crisis is set to lead to an increase in migration from the new member states, compared to what would have happened without the crisis. This is because the crisis has undermined the economic growth model of those new member states that relied heavily on external financing to fuel their growth.
13. See Darvas and Veugelers (2009) for a detailed analysis of growth prospects of CESEE countries.
14. At time of finalising this article, November 2009, stock indices have increased substantially from their bottom in February/March 2009 and currencies also have strengthened in most countries. The future outlook of asset prices is uncertain. Still, the current levels of, *e.g.* stock prices, are still just a fraction of their pre-crisis values.
15. See Égert and Mihaljek (2007) on housing prices and their determinants in some CESEE countries during the boom years.
16. At the same time, the fall in commodity prices improves the terms of trade of commodity importers.
17. The IMF programme for the three EU countries (Hungary, Latvia, and Romania) was part of a coordinated international lending programme. The EU and the World Bank contribute to all three programmes; the Czech Republic, Denmark, Estonia, Finland, Norway, Poland, Sweden and the EBRD have contributed to the Latvian programme; the EBRD and the European Investment Bank (EIB) have contributed to the Romanian programme.
18. As a precautionary measure, Poland has applied for, and received, the IMF's new Flexible Credit Line, which is granted to countries that adopted sound policies in the past.
19. Main sources for the Russian summary are IMF (2000, 2001) and Åslund (2007).
20. By studying 85 fiscal consolidation episodes in 24 OECD countries since 1978, OECD (2007) finds that consolidations based on expenditure cuts, including social spending cuts, tended to be larger and longer-lasting than consolidations based on revenue increases.
21. Key elements include reduction in, and consolidation of, social fund contributions, improvements to VAT, sharp reduction in turnover taxes, the introduction of a flat personal income tax at a reduced average rate, strengthened excise taxes, amendments to the profit tax that reduce the rate while eliminating most exemptions, and a new simplified system for the taxation of mineral resources.
22. As OECD (2009) emphasises, temporary factors have also contributed to the strong recovery after the Russian crisis of 1998, including the undervaluation of the rouble, low capacity utilisation and spare labour resources.
23. The main source for the Brazilian summary is Goldfajn and Guardia (2004).
24. A direct measure of the quality of fiscal institutions is presented in, *e.g.* Fabrizio and Mody (2008), for EU member countries (for which data are available). The index shows that some EU member CESEE countries lag behind the EU15.
25. There are serious concerns with the euro accession criteria. Two decades after the designing of the criteria and one decade since the launch of the euro, it is time to reform the criteria and to strengthen their economic rationale. There is a straightforward way to do that: the EU treaty itself specifies an obligation on the Council to lay down the details of the convergence criteria and the excessive deficit procedure. See the economic and legal aspects of reforming the criteria in Darvas (2009).
26. On zombies see, for example, Ahearne and Shinada (2005) and Caballero, Hoshi and Kashyap (2006).
27. Kopits (2004) argues that fiscal policy rules (if well designed and properly implemented) can be useful commitment tools for emerging market economies exposed to macroeconomic volatility and high capital mobility. They can be instrumental in avoiding myopic policies that result from dynamic inconsistency and or/political distortions, and in a broader sense they can help to depoliticise the macroeconomic policy framework. Regarding the interaction of fiscal rules and fiscal consolidations, OECD (2007) finds that countries with fiscal rules achieved better results in consolidating public finances. Furthermore, fiscal rules can also contribute to better performance in a monetary union. As Darvas, Rose and Szapáry (2007) have shown, when a country has a chance to run a substantially and persistently higher budget deficit than other countries, it likely creates idiosyncratic shocks that result in the business cycle deviating from that in the rest of the

currency union. This would violate one of the most important criteria of the optimality of currency areas: the synchronisation of business cycles.

28. The "non-Keynesian effects of fiscal consolidation" refers to increased private sector demand in response to cuts in government spending. If fiscal adjustment credibly signals fiscal sustainability and reduces the expected tax burden on the private sector, private sector demand may start again to compensate for the fall in government demand. Rzońca and Ciżkowicz (2005) present evidence that non-Keynesian effects were indeed in force in new EU member states. Giudice and Turrini (2007) study fiscal consolidations that have been undertaken in the EU in the last 30 years and conclude that roughly half of these episodes have been followed by higher growth. Their results indicate that the consolidations that turned out to be expansionary were more likely to have started in periods with output below potential, and to have been based on expenditure cuts rather than on tax increases.

29. As a result of the budget consolidation measures, government debt in Sweden turned out to be 53% of GDP in 2000 instead of increasing to 128% of GDP, as was projected by the OECD in 1994 (*OECD Economic Outlook*).

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ANNEX A

Budget policy measures in CESEE countries

Country	Stimulus packages and/or support for the most vulnerable	Spending reductions	Augmentation of revenue	Support for the financial sector	Notes
Albania	Increase in public sector wages and pensions (Source: SETimes.com) totalling 0.7% of GDP.	2009 budget review aiming at revising/ reducing overall expenditures to be finally approved during September 2009 in Parliament; Council of Ministers draft decision to prohibit tendering of investment projects after 31 July 2009; order by the Minister of Finance to prohibit extensions/reallocations after 20 July 2009; cuts in social contribution rate by 5% (Ministry of Finance).	Council of Ministers approved a law to increase excise duties on tobacco, alcoholic drinks and coffee with an impact of around 0.2% of GDP (Ministry of Finance).	Guarantees for retail bank deposits and savings of individuals were increased to EUR 20 000, almost doubling the previous coverage (Ministry of Finance).	IMF programme expired in January 2009, but the government has not asked for a successor programme (Economist Intelligence Unit [EIU]). The IMF is advising spending reductions (SETimes.com). Fiscal rules: 1) organic budget law stipulates that public debt, including guarantees, should not exceed 60% of GDP; and 2) the amount of budget deficit should not exceed the amount of capital expenditures. The second rule applies to central and local government. The increase in wages and pensions was made possible by the contingency fund planned for the 2009 budget (Ministry of Finance).
Armenia	The IMF-supported programme includes an increase in social spending of about 0.3% of GDP (IMF), such as increased social payments, or subsidies for newborn children (*www.armenianow.com*, EIU). Credits to help SMEs (*www.armenianow.com*).	Postponing the disbursement of some funds for non-essential projects (EIU); practice of drawing up three-year expenditure plans ended (EIU).	The Parliament rescinded its December 2008 decision to raise excise taxes on imported alcohol and tobacco to avoid reducing imports and then tax revenues. Tax reforms (tax administration, evasion) launched in mid-2008. Reduce tax evasion through compulsory cash registers and incentives to prompt customers to ask for receipts (EIU).		Emergency loans from foreign governments (Russian Federation) and international financial institutions (IFIs) (IMF standby agreement) (RGE Monitor, EIU). Pension reform to alleviate the burden on the system (*www.armenianow.com*). The IMF approved a USD 540 m loan (5% GDP) to Armenia in March 2009 under the Fund's fast-track Emergency Financing Mechanism procedures, and the country let its currency fall by 21% against the dollar. This emergency funding came shortly after Armenia received poverty reduction funds (RGE Monitor). The amount was increased to USD 823 m (almost 8% GDP) in June 2009 (IMF).
Azerbaijan	Increase spending on social welfare (EIU).				The effect of lower oil prices could force transfers from the State Oil Fund (EIU).
Belarus	The government will limit reduction of social spending and income distribution. Healthcare spending, social subsidies and public sector wages are increasing (EIU). Housing assistance for families with three or more children, non-cash housing subsidies for low-income families, and unemployment assistance will be increased (IMF). Reduce burden on businesses: cuts in turnover tax and introduction of a flat rate of income tax (EIU).	Wages can be frozen; less extensive subsidies; substantial expenditure cuts are to be made: construction, maintenance costs and transport services (EIU).	Import duties and tariffs have been increased (EIU).		IMF standby agreement (USD 3.52 bn, or about 7% of Belarus' GDP) initially approved in January 2009 and increased in June. The revised arrangement will support the government's economic programme and help Belarus contain the effects of a greater than expected impact from the global financial crisis. To reduce the resulting financing gap, the authorities will maintain a balanced budget in 2009, despite lower revenues; will keep monetary policy adequately tight; will allow more exchange rate flexibility within a fluctuation band which is now ±10% around the parity rate; and will deepen structural reforms (IMF). Belarus widened its currency bank in June 2008 (RGE Monitor).

Country	Stimulus packages and/or support for the most vulnerable	Spending reductions	Augmentation of revenue	Support for the financial sector	Notes
Bosnia-Herzegovina	VAT burden is to be eased (EIU).	Public sector wage cuts, tightened eligibility for invalidity benefits. Measures agreed focus on fiscal consolidation and public sector wage restraint, which, in addition to ensuring stability in the short term, will also help put public finances on a sustainable path (RGE Monitor). Central and local governments have put forward a number of measures to cut spending (EIU), with the Federation needing to make the biggest effort (RGE Monitor).	Increased excise duties (EIU).	Support adequate liquidity and capitalisation of banks under the IMF programme.	July 2009: USD 1.57 bn IMF Stand-By Arrangement (IMF). The authorities' programme aims to safeguard the currency board, consolidate public finances and put them on a sustainable medium-term path, maintain adequate liquidity and capitalisation of banks, secure sufficient external financing and restore confidence.
Bulgaria	The 2009 budget does not foresee any fiscal stimulus measures (Source: Economic and Monetary Union [EMU] report). This is in compliance with the 90% rule set in the 2009 State Budget Law. Specific measures were taken: – Salaries in the budgetary sector and pensions have been increased (1.3% GDP) (EMU report), but salaries have been frozen since the beginning of 2009. – Higher capital spending (0.1% of GDP) (EMU report). – Lower pension social contribution rate (European Commission).	At the beginning of June, the government said it would cut ministers' pay by 15% in addition to already limiting spending to 90% of the budgeted amount (Forbes). Limits for the disbursement of non-interest expenditure in case of a worse-than-budgeted revenue outcome (EMU report).	Increases in the mandatory minimum insured income thresholds, in the healthcare contribution rate, in excise rates and in property valuations for local property taxes (total: 1.8% of GDP) (EMU report).	Extension of deposit guarantees up to EUR 50 000, following the European Commission proposals. No capital injections or liquidity or bank support have been implemented (EMU report).	Maintaining positive balance under the consolidated fiscal programme (3% of GDP as set in the Addendum to the last Convergence Programme) in order to ensure public finance long-term sustainability; restricting expenditure reallocated through the budget in the medium term (to 40% of GDP as set in the Addendum to the last Convergence Programme).
Croatia	Some anti-recession measures and maintenance of the standard of living of socially vulnerable groups (Ministry of Finance). As welfare (pension, health, unemployment) expenditure increased by EUR 2 bn (about 4% of GDP), there seems to be no space for further increases. Government is planning to shorten the work week and ensure additional money for unemployed in central government budget (Institute of Public Finance [IPF]).	Mostly symbolic spending reductions (about 0.3% of GDP) (IPF), including a public sector wage cut of 6% (Forbes). After cutting spending in April 2009, further cuts were made in a second supplementary budget targeted at state aid to public enterprises; material costs and capital investments were cut, salaries of government officials were further reduced by 5% and parliamentarian pensions by 10%. Third supplementary budget was announced in which further cuts to salaries, pensions and social rights could be expected (Ministry of Finance).	Parliament approves VAT hike from 22% to 23%, additional crisis tax (payroll tax) was introduced with two tax rates: 2% for salaries, pension and capital gains until HRK 3 000 and 4% above HRK 6 000. It has considered revision of existing taxes by raising existing tax rates or broadening tax base (vocational houses tax, inheritance and gift taxes, yachts, etc.). All in all, increase of tax burden is small (IPF).	Increase in guaranteed savings deposits from HRK 100 000 to HRK 400 000. No capital injections or liquidity or bank support have been implemented due to good capitalisation and profitability of banks (Ministry of Finance). As in previous years, government provides additional funds for state Croatian Bank for Reconstruction and Development (HBOR) in order to provide subsidies loans to the private sector (IPF).	New Budget Act of 2008 requires multi-year planning.

Country	Stimulus packages and/or support for the most vulnerable	Spending reductions	Augmentation of revenue	Support for the financial sector	Notes
Cyprus	Stimulus measures: 1) infrastructure projects (0.4% of GDP) speeding up the implementation of infrastructure and other projects; 2) tourism (0.32% of GDP) – increase the budget for Cyprus Tourism Organisation, reduction of VAT rate applied to hotel accommodation from 8% to 5%, reduction of landing fees levied on airlines; 3) social cohesion (1.1% of GDP) introduction of a scheme for the provision of loans to low-income families for the acquisition of their primary residence, and promoting local tourism through grants for low-income families (Ministry of Finance).		Increase in excise duty on petrol (with compensating measures to offset it) (EMU report).	Extension of deposit guarantees up to EUR 100 000, following the European Commission proposals. No capital injections or liquidity or bank support have been implemented (EMU report).	Public expenditure is expected to increase only slightly, as higher social transfers are offset by savings in interest payments (EMU report).
Czech Republic	Several stimulus packages, including higher public sector wages, infrastructure projects (0.4% of GDP), bank recapitalisation, and lower social security (SS) contributions (Ministry of Finance). Reduced SS contributions and write-down of capital goods will reduce revenue by 0.7% of GDP, while indexation of pensions will increase spending by 0.2% of GDP (EMU report). Additional spending equal to about 1.9% of GDP financed partly from the government's reserve fund (budgeted but unused funds from previous years) (EIU). More welfare provisions for the unemployed, better protection for employees in bankrupt firms, and higher tax deductions for children (EIU). All these measures would expire at the end of 2010 (EIU). Impact on General Government Sector: 1.95% of GDP; Fiscal stimulus: 4.7% of GDP (Czech Ministry of Finance). Act on Support for Economic Growth and Social Stability, an amendment to the Act on Social Security Insurance and an amendment to the Income Tax Act, has been approved, the final decision will be made by the government formed on the basis of the early elections in autumn 2009.	Proposed public sector wage freeze and budget cuts for all ministries in 2009 (ordinary expenditures), up to 0.6% of GDP (Ministry of Finance, European Commission) and 2010 (EIU). Pensions will be increased by the minimum allowed by law (inflation) (EIU).		Extension of deposit guarantees up to EUR 50 000, following the European Commission proposals. No capital injections or liquidity or bank support have been implemented (EMU report).	

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Estonia	Increase in pensions and advancement of enforcement of the new Labour Law (in total, 0.8% of GDP) (European Commission, EMU report). Mandatory payments into the second-pillar pension funds were suspended.	The government has agreed to budget cuts of some EEK 9 bn (4% of GDP), including slashing public sector salaries by 10% and abandoning planned increases in pensions (raise 5% from 1 April 2009; initial plan would have been approximately 14%)(Forbes). During 2009 the general government budget position has been improved by a total of EEK 16.1 bn (7.3% of the GDP).	Employers' and employees' contributions will rise to finance the Unemployment Insurance Fund (EIU). Increase in social tax minimum contribution basis, suspension of state contributions to the mandatory funded pension scheme, and increase in the unemployment insurance contribution rate (in total, +1.4% of GDP) (EMU report). Increase in VAT and excise duties on motor fuel (Forbes, 18 June).	Extension of deposit guarantees up to EUR 50 000, following the European Commission proposals. No capital injections or liquidity or bank support have been implemented (EMU report).	The government has reserves as a result of past surpluses. By the end of June 2009 general government financial assets amounted to EEK 12.95 bn (5.8% of GDP). Two supplementary budgets in 2009. Strategy for the next four years with strict measures to achieve a balanced budget by 2012.
Georgia	Increased public expenditure: war with the Russian Federation, social welfare, modernising armed forces, and, especially, infrastructure projects. Budget approved in December 2009 included increased spending for investment projects, as part of a stimulus package (part of it to be financed by international donors) (EIU). Income and dividend tax cuts (Bloomberg) 9 June, announced position of the Ministry of Finance on spending priorities of GEL 312 m (1.5% GDP), increased budgetary appropriations and content of Economic Stimulus Plan (Ministry of Finance).				Quasi-state agencies could increase investments to compensate the shortfall left by private investors (EIU). The National Bank has sold reserves to support the (EIU) EBRD and the International Finance Corporation (IFC) joint loan to the National Bank (USD 200 m, 1.8% GDP) (EIU).
Hungary	Spending programmes have been created to maintain employment and protect jobs and to temporarily guarantee mortgage payments for unemployed people (IMF). Modernisation and subsidy programme for district heating schemes (EMU report). Somewhat higher income ceiling in the progressive personal income tax implies a slight decrease in tax burden.	June 2009: New fiscal plan that includes freezing public sector wages and cutting elements of the pension system (Wall Street Journal [WSJ]): cut of the 13th monthly pension payment for some groups of pensioners; partly compensated for by suspension of the 13th monthly salary in the public sector and a nominal freeze of public wages; cuts in the operational costs of budgetary institutions; cuts in specific government programmes; postponement of the five-year pension correction programme and the regular indexation of family allowances (all these specific measures will amount to an estimated 1.05% of the GDP) (EMU report).	Moves towards introducing wealth-based taxation in 2010 (property tax) (EIU). Temporary 8% tax (surcharge) on the profits of energy companies for 2009 and 2010 (EMU report). VAT and excise duties increase from July 2009.	Extension of deposit guarantees, following the European Commission proposals. Political guarantee of all bank deposits (IMF European Outlook). Approved measures for capital injections amounting to 1.1% of GDP (effective capital injections meant 0.1% of GDP) and 5.9% of GDP for approved guarantees on bank liabilities (have not been made effective) (European Commission).	USD 25.5 bn (20% GDP) credit agreement from the IMF, EU, and World Bank in October 2008 (IMF). The IMF and the EU agreed to allow Hungary to raise its budget deficit to 3.9% of GDP in 2009 from an earlier 2.9% target, limiting the need for spending cuts. Fiscal responsibility low comprising fiscal rules (real debt should not increase in the medium term combined with expenditure ceilings and rules for the primary balance), three-year rolling budget planning and the establishment of an independent fiscal council (Baksay and Kiss, 2009).

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Latvia	Social spending to increase by 1.5% of GDP between 2008 and 2009, moving closer to EU/OECD averages (IMF). Increase in the minimum wage and increase in social payments (EMU report).	Significant budget cuts, in line with the conditions offset by the international lending programme. New budgetary cuts in June to come into force on 1 July: public sector wage bill to fall by 20% – for the second time in 2009 –, pensions by 10%, and also parental benefits will be reduced. The whole budget will decrease by 10% (Source: *Les Echos*, 18 June 2009, Latvian Ministry of Finance). Administrative expenditures will be reduced, and boards are liquidated in state-owned capital companies (Ministry of Finance). The expenditure cuts approved in June mean 4% of GDP (Financial Times [FT]).	Increases in VAT and excise duties (2.66% of GDP; EMU report), and reduction in income tax-exempt earning level (EIU, Ministry of Finance). Dividends from state-controlled corporations will be increased (Ministry of Finance).	November 2008: Measures designed to save the JSC Parex Bank: a state guarantee covering certain existing and new loans, a one-year state deposit to support the bank's immediate liquidity needs, and subordinated loans to strengthen its capital base. May 2009: The Latvian government will acquire newly issued ordinary shares and subordinated term debt (*www.news.cn*, *www.eumonitor.net*). 1.4% of GDP would be available for capital injections and 10.9% of GDP for bank liability guarantees (2.8% of GDP has been effectively used for granting guarantees). 6.1% of GDP has been used for effective liquidity interventions. Deposit guarantee up to EUR 50 000 (EMU report).	EUR 7.5 bn (36% GDP) loan from the EU, IMF; World Bank, some individual EU countries and EBRD approved in December 2008/January 2009.
Lithuania	In February 2009, the government adopted the Economic Recovery Plan, amounting to approximately 5 % of GDP with the aim of improving conditions for doing business, facilitating business access to borrowing and maintaining jobs. This economic recovery plan foresees accelerated use of EU financial assistance, easing of borrowing for the private sector through introduction of financial engineering and on-lending to organisations to implement public investment projects. The plan was framed with the support of loans from the European Investment Bank (Ministry of Finance). Some incentives for enterprises have also been approved (tax credits, tax exemption for firms investing in technology modernisation, and shift of public investment programmes from long-term to short-term projects), as well as measures to facilitate access to liquidity, to promote exports and investments and to improve energy performance in buildings (Ministry of Economy). The personal income tax rate was cut (EMU report).	The initial 2009 state budget, through a comprehensive tax reform and expenditure reductions, was amended leading to savings of 4% of GDP. The 2009 budget was further reviewed in May 2009 with an additional consolidating result of 3.3% of GDP, and in July (second revision of the state budget) with consolidation of 0.3% of GDP. Package of saving measures in social security funds are under consideration within government and will be presented in autumn 2009 (Ministry of Finance). The expenditure cuts included reducing public sector wages, investment and other current expenditure (European Commission). Reductions in contributions to pension funds, and in transfers to local governments (European Commission, EMU report).	The government formed in December 2008 adopted a substantial fiscal consolidation package that included both wide-ranging tax changes and major expenditure restraints. On the revenue side, the main measures included increases in VAT and excise duties (but a cut in personal income tax); increased corporate income tax and tax on dividends; most tax exemptions removed, broadening the tax base (European Commission), inclusion of some professions in the social security system (European Commission).	So far there has been no need for capital injections or liquidity or bank support. However, for the purpose of supporting or bailing out financial institutions, the following steps have been taken: 1) The deposit insurance amount has been increased from EUR 22 000 to EUR 100 000, equivalent to the amount in litas by paying out 100 % of the insured deposit. 2) The draft Law on Financial Sector Sustainability has been prepared, the purpose of which is to enable the government, when necessary, to take measures such as state guarantees; redemption of bank assets; state involvement in bank capital; taking bank shares for public needs. They would be applied to banks whose financial situation could disturb the smooth functioning of the banking system. 3) The guarantee limit of LTL 3 bn for loans received by the banks or financial liabilities assumed otherwise, in order to strengthen financial stability and credibility of the banking system in Lithuania.	Speed up absorption of EU funds, simplifying companies' procedures (Ministry of Economy). Consultations with IMF and World Bank on structural reforms (healthcare, education, social security system, pensions and public sector). End of July 2009: Lithuania's new president has admitted that her country could be forced to seek help from the International Monetary Fund if it fails in efforts to raise more money from foreign capital markets to prop up its teetering economy.

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Macedonia, FYR	Three sets of measures: initial plan in November 2008 offering around EUR 300 m (4.6% GDP) in assistance, to companies with liquidity problems as well as to companies with good financial performance. The most important measure was the change to tax on profits. Starting from 1 January 2009, profit is taxed only if distributed to capital owners; second package adopted in March 2009, adopted an ambitious seven-year programme, worth EUR 8 bn (122% of estimated 2009 GDP, 17.5% a year if evenly distributed) for infrastructure projects, although much of that programme will now need to be postponed. Third set of measures adopted in April 2009, divided into three components: a revised budget; credit support to companies, including subsidised interest rates, co-financing and credit guarantees, and other measures to support companies, including measures to facilitate exports and imports, reduce costs, etc. Social security contribution reforms, which include cuts in social contributions paid by employers (EIU) as well as introduction of the gross wage system. However, this measure was not part of the anti-crisis packages but regular structural reform (Ministry of Finance).	The revised budget (April) cut expenditure by 7% to match expected reduced revenue: reduction in current expenditure, postponement of planned increase of public administration wages, recruitment freeze in the administration until end 2009 (EIU) and reduction in expenditures with high imports component (mainly capital expenditures).			

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Malta	No formal fiscal stimulus package, but targeted support, within the framework of EU regulations, to assist a number of domestic firms suffering from the slump in international trade, amounting to just EUR 3.7 m (0.06% GDP). The tourism industry, which is being hit especially hard by the economic slump, has also received some modest support, with the government having announced a capital repayment moratorium for up to one year on bank loans to hotel owners and operators, albeit on a case-by-case basis (EIU). The measures are aimed at increasing public investment in infrastructure and the environment, supporting manufacturing, tourism and small and medium-sized enterprises (SMEs), and households' purchasing power (European Commission, EMU report).	Sharp reduction in state subsidies on LPG products (EIU) and other subsidies (1.4% of GDP) (EMU report), although this measure is not directly related to fiscal stimuli, but had a separate policy objective related to the redirection of expenditure towards other initiatives (Ministry of Finance).	Increase in excise duty and environmental measures (0.4% of GDP) (EMU report), although this measure is not directly related to fiscal stimuli, but had a separate policy objective related to the redirection of expenditure towards other initiatives (Ministry of Finance).	The only measure so far undertaken to support the banks is an extension of Malta's deposit guarantee scheme to cover deposits up to EUR 100 000 (EIU).	
Moldova	Priority investment programmes will be maintained, and social security could be enhanced. Tax amnesty, zero tax on reinvested earnings applied even before 2009, reducing the interference of controlling bodies by reducing the number of inspections. Continued support for SMEs. Imports for investment purposes are exempted from VAT. Further liberalisation of the economy (Ministry of Finance, Central Bank).	Lack of an operating parliament in the first half of 2009 hindered decision making, but government implemented budget cuts under its responsibility and prepared proposals for the new parliament. The measures include: cuts of recurrent spending by 20%, including administration spending; postponement of any new wage bill increasing; reduction of vacant positions and a recruitment freeze; revision of legislation in terms of the abolition of bonuses and privileges in the public sector; reduction of enrolment in higher and secondary special educational institutions; closure or integration of ineffective educational institutions (Ministry of Finance).	Enhanced tax administration.	Financial system is not as badly hit because little western integration. Only three commercial banks are backed by foreign capital. The Central Bank of Moldova has increased liquidity to support the credit flow to businesses by commercial banks as well as reduced basic refinancing rate (from 21% in September 2008 to 11.5% in July 2009) and mandatory reserves of commercial banks (from 22% to 16%) (Ministry of Finance, Central Bank).	The IMF's three-year poverty reduction and growth facility expired in May 2009 but it seems unlikely that any further lending will be approved until a new government has been formed (EIU).

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Montenegro	For 2009, approximately EUR 18 m (0.5% GDP) was budgeted for projects aimed at creating jobs (training programmes) and for stimulating entrepreneurship and self-employment. The government approved measures aimed at decreasing taxes, increasing net income, early redemption of internal debt, abolishment of certain fees, support to entrepreneurship, as well as readiness to provide long-term financial assistance to domestic banks through cooperation with international financial institutions (Ministry of Finance).	Decrease public administration spending (no new public jobs, reduction of current spending) (Ministry of Finance).		The Central Bank of Montenegro will allow the commercial banks to use up to 20% of compulsory reserves for the purchase of treasury bills, increasing liquidity (Ministry of Finance).	Plans for cuts in tax and social contribution rates, and for increases in capital and social expenditure will substantially increase the deficit in 2009 and beyond, implying a risk of rapidly rising public debt (IMF).
Poland	Poland introduced a stimulus package in November 2008. Budget-related measures include personal income tax reduction, more favourable tax treatment of research and development (R&D) spending, increased depreciation allowance for SMEs and new businesses and shortened period for VAT refunds. Other measures include state financial support offered to unemployed for the repayment of their mortgages. (Ministry of Finance [MoF]) Abolition of the top 40% rate of personal income tax in January 2009 (EIU). The number of brackets have streamlined, leaving only two brackets, set at 18% and 32%. (MoF) Lower taxes on business (EMU report).	Various reductions in state budget expenditures amounting to some PLN 21 bn in 2009 – compared to the original amounts planned in the state budget for 2009. Measures include reduction in subsidies and replacement of early pensions with less costly "bridge pensions", reduction in government intermediate consumption (MoF).	Increase in excise duties (0.2% of GDP) (EMU report).	Extension of deposit guarantees, following the European Commission proposals, up to EUR 50 000 (EMU report). No capital injections, liquidity support or guarantee on bank liabilities have been approved (EMU report), though IMF(2009) indicates guarantees (beyond deposit guarantees).	Other measures included further reduction in administrative burdens for businesses and measures stimulating entrepreneurship and SME activities by improving the conditions for starting up new businesses. There were also steps taken to speed up the absorption of the EU funds, encourage public-private partnership (PPP) projects and simplify public procurement rules (MoF). IMF flexible credit line in the amount of SDR 13.69 bn as a precautionary instrument only.
Romania	Investment programmes will be maintained and social security enhanced. Ambitious capital expenditure programmes for infrastructure, education and health. The IMF-supported programme provides room for additional spending of RON 250 m (amounting to 0.05% of GDP) in 2009 and RON 500 m (0.1% of GDP) in 2010 to improve social protection for the most vulnerable groups during the economic downturn (EIU, IMF). Increase public investment by 1% of GDP (EMU report).	The budget was modified in April 2009 to include considerable fiscal tightening in the three final quarters of the year. Expenditure cuts were concentrated on the public sector wage bill and public sector consumption (all ministries will have budgetary cuts except for social spending) (EIU). Reductions are estimated in –2.2% of GDP (EMU report).	Flat-rate income and profit tax and VAT tax were unchanged, but introduction of a controversial "lump sum" tax (regressive turnover tax) for companies (EIU). Increase of social contribution rate and excise duties. Update of the tax base for local property taxes (in total, 1% of GDP) (EMU report).	Extension of deposit guarantees up to EUR 50 000, following the European Commission proposals (EMU report).	EUR 20 bn loan from the EU, IMF (standby agreement), World Bank, EIB and EBRD approved in May 2009. Structural reforms in education and healthcare (EIU, May 2009). Ongoing process for fiscal responsibility law and unified public wages system.

Country	Stimulus packages and/or support for the most vulnerable	Spending reductions	Augmentation of revenue	Support for the financial sector	Notes
Russian Federation	The federal expenditure target has been increased by 7% compared with the original level of the budget (EIU). RUB 1.6tn (4.1% of GDP) are earmarked for anti-crisis measures.	Expenditure cuts: general administration, various investment programmes – road building (EIU).	One-off injection from the investment income earned by stabilisation funds (January 2009) (EIU).	Capital injections to banks (EIU). Russian government capital has gone primarily to larger, more systemically important banks as the government tries to restart lending to consumers and companies. Although Russia has over 1 000 banks, 100 of them account for 90% of the transactions (Moodys). The reserve requirement, which was cut to just 0.5% in October 2008, was raised to 1.5% in June and is scheduled to rise to 2.5% in August. This compares with a reserve requirement of 8% before the cuts started, so the situation is still far from normal (EIU).	The Russian Central Bank and the Bank for Economic Development also will provide money for government anti-crisis measures (EIU). First budgetary deficit since 1999. The deficit will be financed by drawing on the reserve fund, which manages over USD 100 bn and is one of Russia's two sovereign wealth funds (RGE Monitor), but Russia also plans to return to the international bond market in 2010 (EIU). Exchange rate defence: one-third of foreign exchange reserves were lost. After that the rouble depreciated by about 20%. All fiscal rules were cancelled – to be restored later. Pressure to launch budget reforms discussed but not implemented for about a decade.
Serbia	Increase in pensions in late 2008. A stimulus package includes a cheap lending facility to Serbian companies that do not lay off workers, and for lending to stimulate exports and to grant a new consumer credit line for the purchase of construction materials (EIU).	The fiscal deficit targets for 2009-10 have been raised, but additional fiscal adjustment measures – mainly falling on recurrent spending – are also being taken (IMF).	Tax increases have been rejected by the government (EIU).		Standby agreement with the IMF (January 2009). In May, the agreement was extended (until March 2011) and increased up to EUR 2.9 bn (10% of Serbia's GDP). The government's unilateral implementation of the interim trade agreement with the EU led to a decline in customs collections (EIU).
Slovak Republic	0.5% of GDP for anti-crisis measures, counterbalanced by savings in other areas (EMU report). November 2008 plan was aimed primarily at accelerating public infrastructure investments (also because of difficulties in finding private financing), energy savings and energy security, reduced taxes for low-income employees, simpler business bureaucratic procedures, legal reinforcement of EIB instruments, strengthening employment services, and speeding up payments by the state to businesses (Ministry of Finance). Measures: temporary increase in tax-free income, changes in welfare measures, subsidy for the purchase of new cars. The government may also need to provide budget financing to the social insurer (EIU). February 2009: two other stimulus packages, primarily focusing on the labour market and on boosting demand (Ministry of Finance).	Cut expenditure by savings on state consumption, merging ministries and abolishing some regional state administration offices (EIU).	Increased excise duties on tobacco and changes in social contributions and capital transfers from the second pension pillar (total: 0.6% GDP) (EMU report).	From 1 January 2009, foreign bank branches that accept deposits in the Slovak Republic under an EU single banking licence are permitted to join the Slovak deposit protection system. The measure of the National Bank of Slovakia on the liquidity of banks and branches of foreign banks, in effect from 15 November 2008, introduced more stringent requirements on liquidity management, especially by means of a new liquidity indicator (Ministry of Finance). Extension of deposit guarantees, following the European Commission proposals (unlimited for physical persons and some categories of legal persons) (IMF European Outlook). No financial support to the banking sector.	Stimulus plan measures approved in November 2008 included improved absorption of EU funds. Plan followed by two other stimulus packages.

Country	Stimulus packages and/or support for the most vulnerable	Spending reductions	Augmentation of revenue	Support for the financial sector	Notes
Slovenia	Recovery package adopted in December 2008: Offset some of the shortfall in economic activity by undertaking infrastructure projects and providing liquidity to companies (EIU). Three anti-crisis packages have been implemented. Among the measures: – Elimination of payroll tax, reduction of the corporate tax rate, and additional investment allowance for companies and sole proprietors (1% GDP) (EMU report). – Wage subsidy for shorter hours worked, support for SMEs and start-up companies, subsidies for investment in new technologies and R&D (EMU report). Total estimated: 0.9% of GDP. – Implementation of a decision to eliminate "wage disparities" in public sector. – Increases in specific transfers in kind (EMU report).	Measures to restrain the wage bill (EMU report).	Increase in excise duties (0.9% of GDP) (EMU report).	The government will make available EUR 12 bn (30% GDP) in guarantees for bank loans, as well as temporary unlimited guarantees for all retail bank deposits and savings.	Consultations on structural reforms (healthcare, pensions, social security system, labour market and public sector). Implementation, if agreement is reached, will not be immediate (Slovenia is among the group of countries that will have to increase their age-related public expenditure the most) (EIU).
Turkey	Since May 2008, various measures to boost employment and regional development through public investment, to increase credit to SMEs, increased budget transfers to local governments, VAT reductions, and increased subsidies (Ministry of Finance). Various tax cuts for individuals, businesses and consumers, and cuts in social security contributions. New stimulus measures have been announced in June 2009 with a strong regional dimension (classifying provinces into four regions and imposing different tax and subsidy incentives across regions). Incentives include corporate tax cuts, exemptions for companies paying social security premiums for new workers, interest rate subsidies, increased public sector hiring, regional investment incentives for 12 specific sectors, extension of vocational education (EIU, Ministry of Finance).			No serious problem in the banking system.	Discussions on a possible standby loan agreement with the IMF, but no apparent progress. New fiscal rule in 2010.

Country	Stimulus packages and/or support for the most vulnerable	Spending reductions	Augmentation of revenue	Support for the financial sector	Notes
Ukraine	The IMF-supported programme maintained the inflation indexing of social spending (0.8% of GDP) (Ministry of Finance). Measures include: 1) protection of the poor against gas price increases through the life-line tariff and housing and utility allowance; 2) protection of the unemployed through the unemployment insurance system; and 3) expansion of two well-targeted social safety programmes identified by the World Bank (IMF).	A sharp tightening of fiscal policy is expected in 2009, although the IMF has agreed to a deficit of 6% of GDP instead of the initially planned 4%, due to worse than expected output decline (IMF). Much of the fiscal tightening is likely to come through reining in expenditure on goods and services in non-priority areas (EIU).	Increased pension contributions by private entrepreneurs; higher electricity and gas tariffs for those that consume more (EIU).	Bank recapitalisation programme: the state will receive full control over the recapitalised bank.	IMF standby agreement approved in November 2008 (USD 16.4 bn, or 9.1% of GDP) (IMF). The authorities agreed to the introduction of a floating exchange rate, to "help the economy adjust to external shocks, discouraging dollarisation and excessive risk-taking by unhedged borrowers, and allowing monetary policy to focus on inflation objectives", tightening monetary policy to avoid excessive exchange rate depreciation, if needed (IMF).

Note: Empty cells in the table indicate either no measures or lack of information.

The first version of this table was compiled mostly by Maite de Sola, whose contribution is greatly appreciated. Comments and additions from delegates from Albania, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Lithuania, Macedonia, FYR, Malta, Moldova, Poland, Romania, Slovak Republic, Slovenia, Turkey, and Ukraine at the OECD's 5th Meeting of Senior Budget Officials from Central, Eastern and South-Eastern European Countries, held on 25-26 June 2009 in St. Petersburg, Russian Federation, are also highly appreciated. Anto Bajo from the Institute of Public Finance provided additional information for Croatia, which is also greatly appreciated.

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Is New Public Management Really Dead?

by
Jouke de Vries*

This article, originally presented as a keynote speech at the June 2009 meeting of the OECD Working Party of Senior Budget Officials, explores the state of new public management from the perspective of current political theory and presents relevant findings from a 2009 OECD comparative study, "Value for Money".

JEL classification: H830.

Keywords: New public management; NPM; public administration; Dunleavy; public governance reform; value for money.

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1. A paradigm shift

New public management (NPM) is related to the changing balance of power between economic theories since the 1980s. The economic doctrines of Keynes, which ruled after the Second World War, grew outdated in the 1980s. Keynes' economic theory could not explain stagflation, a combination of inflation and long-term unemployment. Consequently, the Keynes theory was attacked by three alternatives: monetarism, supply-side economics and public choice theories. The combination of these ideas is collectively known as neo-liberalism. Economic neo-liberalism is currently in deep trouble as a consequence of the worldwide financial crunch. After more than 30 years of ideological hegemony, neo-liberalism today seems powerless to explain developments in the real world. Does this also have an effect on the ideas of new public management, clearly an offspring of neo-liberalism?

Ideas about paradigms and paradigm shifts are based on the work of Thomas Kuhn. He makes a distinction between periods of normal science and revolutionary science. Reality can be observed through a new theoretical lens following a paradigm shift. However, according to Kuhn, an old paradigm will not disappear immediately.

Kuhn's theory was used by Peter Hall to examine and understand the change in economic policy making in the United Kingdom. When Margaret Thatcher came to power, the dominant ideas of Keynes were replaced by neo-liberalism. Hall elaborated on the theory of paradigm shifts and connected this with decision-making and policy-learning theories. According to Hall's theory, there are three possibilities for change: changes of the first, the second and the third order. A first-order change is very small: a marginal change. A second-order change is slightly bigger, but is still incremental. A third-order change is a general paradigm shift. Small changes are a consequence of technical learning by civil servants and specialists. A general change is a consequence of societal learning. A general or paradigmatic change is mostly the result of a crisis or anomaly.

2. Dunleavy's arguments

In 2005, Patrick Dunleavy, Professor of Political Science and Public Policy within the Government Department of the London School of Economics (LSE), published an article entitled "New Public Management is Dead – Long Live Digital-Era Governance" (Dunleavy *et al*., 2005). As the title of this article suggests, Professor Dunleavy proposes that the organisational paradigm of new public management has become obsolete.

Professor Dunleavy is critical of new public management. Because there is new public management, there must have been "old" public management. The traditional theory of public management – without the term new – stated that politics is important for understanding how public organisations operate. Initially, public organisations were studied with the help of theories originally developed to explain the workings of the private sector, so there was not enough knowledge about the functioning of public organisations in a political context. Public management theory brought politics into the analysis.

New public management was a reaction to the traditional public administration theories. Because of financial and fiscal problems of the welfare state, we needed new

ideas to innovate public organisations. Based on the neo-liberal paradigm, different sets of ideas for public organisations were developed, which we called "new public management". Public organisations were equated with private organisations. An entrepreneurial spirit was introduced into the public realm; however, the political dimension was left out.

In Dunleavy's view, there are three important characteristics of NPM:

- disaggregation;
- competition;
- incentivisation.

An interesting part of his analysis concerns the assumption that links the change of a public management regime (new public management) to the level of autonomous citizen competence and the level of institutional and policy complexity in solving societal problems. Professor Dunleavy assumes a connection between NPM, growing societal complexity, declining trust in bureaucracy and the representative democracy. On the basis of his analysis, it is possible to provide a partial explanation for the rise of populist parties, on both the left and the right of the political spectrum, who are very critical of new public management, usually without being familiar with the term. The conclusion is that new public management leads to more complexity and, at the same time, does not solve societal problems. According to Dunleavy, the new alternative is digital era governance (DEG), which sets out some important ideas:

- reintegration;
- needs-based holism;
- digitisation changes.

3. Remarks concerning Dunleavy's analysis

I'd like to make some remarks about Dunleavy's analysis. First, new public management is an abstraction which suggests a unity of ideas. In practice, however, there is a great variety in implementation. This is explained by the characteristics of the various countries, distinctive political regimes and organisational and institutional cultures. Second, in my opinion, digital-era governance is an (integral) part of the NPM movement. Perhaps digital-era governance is growing more dominant within NPM and is breaking out of its cocoon. It could develop into a new avenue of thought. My third proposition is that the term DEG combines two modes of thinking. One is about technological developments and possibilities within public organisations as a consequence of the information and communication technology (ICT) revolution. The other is about governance. My fourth observation is that presenting just one competing (sub)paradigm to NPM is too rigid. Apart from digital-era governance, characterised, according to Dunleavy, by the aim to make more use of the newest technologies to improve the relations between the state and the citizens, there are four other avenues of thought at this moment breaking out of the NPM cocoon:

1. the new Weberian state which aims to restore the legitimacy of the state by placing more emphasis on non-economic values and societal problems;
2. the government-governance theory about vertical and horizontal steering within the so-called network society;
3. the "glocalisation" theory – the word refers to a combination of globalisation and localisation processes – which analyses the relations between the national state and international organisations on the one hand and regional and local organisations on the other;
4. theories about new combinations between the state, civil society and the market.

However, at this time, we are not sure if any of these avenues will eventually lead to a paradigm shift. So NPM is not really dead: parts of it are still very much alive.

4. "Value for Money", a comparative OECD study

Though the NPM paradigm is in trouble, it is still far too early to speak in terms of a third-order change, and keeping in mind the fact that a traditional paradigm never completely disappears. For instance, we do not know how long the financial crisis will last. As we have seen, there are some alternative theories, but at this time, they do not have enough power to bring about a serious breakthrough.

Societal learning will not be achieved, but there is and will be a form of technical learning by civil servants and specialists from the fields of economics, public administration and political science. The evidence for this can be found in "Value for Money" (originally called "Efficiency I"), the comparative OECD study carried out at the request of the Dutch government.

The Dutch government requested the Value for Money study because the coalition which came to power in 2007 wanted to reduce the overall size of the government bureaucracy. The formal reason for the study is that the Dutch government is interested in an international comparison of public service employment. The unspoken goal seems to be to gather as many facts and figures about the Dutch bureaucracy as possible in order to counter the sharp ideological assault on that bureaucracy.

Value for Money is a comparative study. The research has been carried out in eight different countries: Australia, Canada, Denmark, Finland, Ireland, New Zealand, Sweden and the United Kingdom. These countries are thought to be broadly comparable to the Netherlands and have been at the forefront of public governance reform in the past. The study comprises two parts: a quantitative part and a qualitative part. My first conclusion is that it is very difficult to compare all these countries. As the report itself states:

> It should be recognised that in spite of similarities, the differences between the central governments in the sample countries are vast. They are the result of long historical developments. In addition, the countries are diverse in geographical circumstances and national resources, which have given rise to a wide variety of public policies and governance structures. (OECD, 2010, p. 22)

The second conclusion is that a lot of information is not available.

5. Specific conclusions about the Netherlands arising from the Value for Money study

Overall government employment and central government employment are relatively small in the Netherlands, both in terms of the population being served and as a share of domestic employment. Excluding the health and education sectors, it appears that the Nordic countries still have the largest overall government organisations, followed by the Netherlands. However, excluding health and education, the Netherlands has the largest central government employment, largely due to the high centralisation rate in the Netherlands: 42% of Dutch overall government employment is in central government.

In the last few years, though, some governments realised that not everything about NPM had worked out as intended, as staff levels had increased in all task areas, especially in the area of support services. In addition, there were many problems with output steering and control. This led to another change of direction and to a more pragmatic approach involving recentralisation of ministerial support services, *ad hoc* downsizing operations, shared services schemes and a more intelligent steering of independent agencies, which resisted a centralisation movement of the central state.

In Value for Money, there are some examples of first- and second-order changes, for example:

- more careful planning of output and outcome steering;
- permanent deliberation on performance targets;
- more transparency on input use by agencies.

In theory and practice, learning processes are taking place. They are stimulated by comparative studies, symposia and benchmarking. The learning process is speeding up as a consequence of political incidents or crises such as the financial crunch, which leads to serious reflections about the inner and deeper core of the existing ideas within politics, bureaucracy and society. However, crises are part of the market economy, and capitalism has proved to be very resilient through time.

6. Conclusions

New public management is in trouble, but it is not really dead. There are some new avenues of thought. However, none of these new approaches is strong enough to be the paradigmatic alternative. Civil servants will stick to first- and second-order changes. Within the system, they will try to optimise the performance of public organisations. Value for Money proves that Dutch civil servants are implementing modest changes.

Finally, I want to restate a crucial part of the analysis Dunleavy made. In his model of reasoning, there are four variables: the regime of ideas (NPM), the complexity, the citizens and the solution of societal problems. His thesis is that the regime of new public management leads to a growing complexity without solving societal problems. The central theme in NPM has been efficiency, more than effectiveness. To restore the legitimacy of the state, we need to think about changes in government and bureaucracy in relation to serious long-term societal problems and the day-to-day problems of citizens.

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Do Public-Private Partnerships Create Value for Money for the Public Sector? The Portuguese Experience

by
Joaquim Miranda Sarmento*

Over the last few decades, public-private partnerships have been increasingly used by governments around the world to finance and manage complex operations. Doubts about their efficiency have been raised, however. Criticism of public-private partnerships reflects the fact that governments tend to use them as "off-budget" operations, to avoid fiscal constraints. Do they generate "value for money" to the public sector? The literature is less than unanimous. How one assesses value for money in these types of arrangements has become extremely important for public managers.

In this article, we propose that the best way to evaluate value for money is to conduct a public sector comparator prior to the bid. To do this, it is necessary to estimate the costs in the case of a public procurement versus public-private partnerships payments, and to define what discount rates will be used (in order to find the net present value of the two options), to best compare and make the right decision for taxpayers. One of the most important costs to include in a public sector comparator is the risk transfer to the private sector, which is the ultimate motive for a greater level of efficiency. Having a not-optimal risk allocation will reduce the probability of a good decision from public managers. The scope of this work does not include, however, whether or not public investment should be carried out. The cost-benefit analysis of the investment versus other options should be made prior to the analysis described here.

JEL classification: G380, H540

Keywords: Public-private partnerships; value for money; public sector comparator; discount rate

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Do public-private partnerships generate more efficiency and create more "value for money" for the public sector? When and under which conditions do they prove to be more efficient than traditional procurement? When should public managers choose to develop projects using public-private partnerships and when should they use more traditional forms of procurement? These are the questions that will drive the discussion in this article.

Although there is no unanimous definition of public-private partnerships, for the purposes of this article, we have used the OECD definition of a PPP as:

> … an agreement between the government and one or more private partners (which may include the operators and the financers) according to which the private partners deliver the service in such a manner that the service delivery objectives of the government are aligned with the profit objectives of the private partners and where the effectiveness of the alignment depends on a sufficient transfer of risk to the private partners (OECD, 2008, p. 17).

The involvement of private companies in public-private partnerships can vary from designing roads, hospitals, schools or prisons to financing and maintaining them.

With regard to defining "value for money", it should not be about cost-effectiveness alone, without regard for the quality of the service provided. In fact, value for money is the least expensive option for the same output and quality of service.

In choosing to develop a project using traditional public procurement, or public-private partnerships, the decision should be based on a financial evaluation of the alternatives. This article's intention is to determine a methodology to evaluate whether a certain public investment should be conducted by traditional procurement or by using public-private partnerships.

This work is motivated by the fact that countries have been increasingly using public-private partnerships, and in many cases, doubts about their efficiency have been raised. The truth is that public-private partnerships help fill the so-called "infrastructure gap", considering that many governments cannot afford high levels of investment. Governments also tend to believe that they can save money by bringing private sector efficiency into public sector projects.

Is this presumption correct? Does the private sector add value and efficiency to public projects? We aim to answer these questions as well in the pages to come.

1. A brief survey of the literature

1.1. Introduction and main concepts

Over the years, the main discussion in the literature about public-private partnerships has been whether the arrangement is on, or off, the balance sheet. It has not been about whether or not it represents good value for money (Grimsey and Lewis, 2005).

Grimsey defines value for money as "the best price for a given quantity and standard of output, measured in terms of relative financial benefit". What is necessary here is a

comparative analysis of the costs of the different solutions for the same outputs, in order to make comparisons with the bidder's cash flow.

Moralos and Amekudzi (2008) argue that value for money aids public agencies in determining whether to pursue a project as a public-private partnership rather than through traditional procurement procedures, as long as they can account for the costs and savings throughout the project's lifetime. Value for money should also ensure that the public sector is focussed on the quality and competence of the private sector work and not on the lowest bid. Value for money is one of the leading tools available to public managers to assess the value of pursuing a project through a public-private partnership *versus* traditional procurement, because it provides the public sector with a simple methodology and an easy tool for estimating costs, benefits and risks involved in the project. It can also be applied to different countries and different realities.

According to Shaoul (2005), value for money is also associated with the three "Es": economy, efficiency and effectiveness.

Value for money in a public-private partnership scheme is related to the idea that public-private partnerships can produce a flow of services at least equivalent in quality to that which could be provided by the public sector, but at a lower overall cost (taking everything into account, particularly the allocation of risk).

According to Fitzgerald (2004), value for money can be delivered through risk transfer, innovation, greater asset utilisation and integrated whole-of-life management.

There are usually two components of value for money: a quantitative one (including all factors that can be measured by the public sector comparator), and a qualitative one (aspects that cannot be quantified).

Grimsey and Lewis (2007) point out that on the public side, public-private partnership schemes appear to work well. The difference lies in levels of responsibility and accountability, because the public sector is not exposed to the economic drivers that private companies are. The cost for the public sector to raise the necessary funds for the project has no relation with project risks. A wide variety of performance outcomes can be swept under the administrative mat, and the principals involved are often insulated from the consequences of their actions and decisions.

Well-structured public-private partnerships can introduce clear lines of accountability, transparency of outcomes and performance. In fact, one of the benefits of public-private partnerships is the ability to resolve the large cost overruns and delays in traditional public procurement ("optimism bias"). Grimsey and Lewis (2007) enumerate several studies where public-private partnerships construction performance was evaluated and where the overall gains of public-private partnerships are demonstrated. For this purpose, value-for-money tests are based on comparisons of the public-private partnerships application with the benchmark cost of providing the specified service using conventional public procurement methods.

Spackman (2002) argues that private financing of public services has produced clearer objectives, new ideas, better planning, and the incentives of wider competitive tendering, but also higher top management attention, consultancy and legal fees and risk premiums. Spackman refers to the Arthur Andersen (2000) study, which concludes that public-private partnerships offer excellent value for money.

Economic theory suggests that the performance differences may lie in the characteristics of public-private partnerships that differentiate them from conventional procurement. The literature has identified three reasons for this: ownership, bundling and risk transfer.

Blanc-Brude, Goldsmith and Valila (2006) argue that ownership rights are a good starting point for considering the economic consequences of public-private partnerships, under incomplete contracting arrangements (Macniel, 1974; Grossman and Hart, 1986; Hart and Moore, 1990). Under a public-private partnership, the public sector transfers land, property or facilities controlled by it to the private sector, which is given ownership or control rights for the term of the concession or lease. This assignment of the residual control rights provides an incentive for the private sector entity to undertake relation-specific cost-saving investment (for example, in road maintenance technology) that increases productive efficiency. In the absence of this assignment, the private firm would not be sure that the investment would pay off and there would be under-investment in the new technology. Turning over control rights for the infrastructure can alleviate this problem.

Another defining characteristic of public-private partnerships is "bundling", whereby the infrastructure assets construction and operation are combined in a single contractual framework (Hart, 2003). The issue has been framed in terms of transaction costs, with the choice being between bundled or unbundled structures, decided by whether it is easier to write contracts on service provision than on the quality of the building.

The transfer of risk to the private sector can also make a public-private partnership more cost efficient than traditional procurement. Grout (1997, 2003, 2005) emphasises information costs and the incentive structure created by the public-private partnerships service payment mechanism. An effective transfer of risk from the public to the private sector can lead to a more explicit treatment of risk, since it is the acceptance of risk that gives the private entity the motivation to price and produce efficiently. Private finance (debt and equity) is central to this process, although its role has been overlooked thus far in the theoretical public-private partnerships literature. That is the only way, which is not possible in the public sector, to use risk management techniques. In the public sector, risk is transferred to taxpayers or end users, and therefore, the cost of capital is lower than in the private sector.

Moralos and Amekudzi (2008) identified four phases in a public-private partnership procurement process:

1. an initial feasibility assessment, in which is determined whether the project is economically viable and whether it should be run under public-private partnerships;
2. the procurement phase, that is the bidding process;
3. the construction phase; and
4. the operation phase.

Typically value for money is conducted during Phase 1. It may also be used in Phase 2, but just to assure that the bids from the private sector are below the costs under traditional procurement.

1.2. Public sector comparator

There are four alternative approaches to evaluating value for money for public-private partnerships: *i*) a full cost-benefit analysis; *ii*) a public sector comparator (PSC)

public-private partnership comparison before bids are invited; *iii)* a UK-style public sector comparator value-for-money test after bids; and *iv)* reliance on a competitive bidding process.

The public sector comparator is based on estimates of full costs, revenues and risks, set out in cash flow terms, discounted at the public sector rate to determine the net present value (NPV), and after that compared with the discounted value of payments (along with risks and costs retained by the public sector) to the private supplier. This could be done before the bid, using a hypothetical public sector comparator and a "shadow" public-private partnership, or prior to the final approval of the deal.

The public sector comparator is therefore the financial difference between the two procurement options for the same project. Grimsey argues that the public sector comparator is much simpler and easier to compile than any of the alternatives presented. It is presented as a cost-effective trade-off between a full cost-benefit analysis of all project options (as is done in Germany) and simply selecting the best private bid (as in France). It also ensures that all options are subject to the same analysis and tests.

Grimsey also recommends that a public sector comparator calculation should be carried out prior to evaluating the bids for two reasons: one, so that the public sector comparator will be a "pure" public sector option; second, to allow the public decision maker to know what the private bid should have to improve value for money when compared to the public sector comparator. Therefore, it is very important to keep the public sector comparator up to date. The public sector comparator becomes a negotiating tool for the public sector, which leads to achieving the best possible deal.

A raw public sector comparator should provide a base costing including capital and operating costs, and represent a full and fair estimate of all costs of publicly delivering the same volume and level of performance, service and residual asset value that is required from the private sector under the public-private partnership alternative.

Once the NPVs of both the public sector comparator and the public-private partnership have been prepared and adjusted to a comparable basis, then a simple comparison of the two can be carried out. *Ceteris paribus* (*i.e.* quality and risk allocation), value for money is demonstrated when the total present value cost of private sector supply is less than the net present value of the base cost of the service, adjusted for the cost of the risks to be retained by the government, cost adjustments for transferable risk, and competitive neutrality effects.

Grimsey and Lewis (2005) suggest that there are alternatives to the public sector comparator and that calculating it involves many complexities and ambiguities that must be a relevant factor in the decision of which type of procurement to choose. Nevertheless, developing a public sector comparator framework will be an important tool for public sector managers, because it will help them to understand the project, the risks involved and how to deal with them contractually. In fact, the risk analysis required for the public sector comparator must be seen as part of a broader process of risk identification, allocation and management. In many cases, the difference between the public sector comparator and the private sector proposal will be relatively narrow and the procurer has to make professional judgments as to the value for money to be derived from contracting with the private sector and the risks which that route involves, while not ignoring that there are also large risks in the public procurement route, as indicated by the "optimism bias".

1.3. Risk allocation

To achieve value for money by using public-private partnerships, transfer risks are an essential part of the process. These are not limited to construction risks (and as Grimsey states, there is a long history of publicly procured contracts being delayed and turning out to be more expensive than budgeted), but other types of risks as well. Therefore, much of the risk of public-private partnerships comes from the complexity of the project itself.

Grimsey and Lewis (2000) state that value for money requires an equitable allocation of risks between the public and private sectors. It is fundamental not to create a conflict between public sector need to demonstrate value for money and private sector need for robust revenue that supports the project finance. Risk evaluation is complex, requiring that it be analysed from the different perspectives of the public and private sectors. Knight's (1921) definition of risk and uncertainty is used in this analysis (risk is randomness with knowable probabilities; uncertainty is randomness with unknowable probabilities).

In an empirical study of a high-school project, Heald (2003) found that value for money depended entirely on an assessment of the transfer of risk. Heald found that risk transfer (estimated at over GBP 2 million) was crucial to the economic viability of the project. Two factors contributed significantly to the risk transfer: the costs rates applied in the construction phase and design quality. Taken together these two factors constitute around two-thirds of the value of the entire risk transfer. Any inaccuracies in these areas could have major implications in terms of value for money.

In a study by the Audit Commission (2003), it was found that economic viability was entirely down to risk transfer in 9 of the 11 schemes. In fact, without risk transfer, five of the projects would have negative value-for-money percentages of more than 10%.

Regardless of uncertainty, the measurement and methodology of risk transfer is rendered problematic because all possible outcomes cannot be predicted and weighted, and the complete array of results covering all eventualities cannot be compiled when the issue is uncertainty, not risk.

After evaluating risks, the public sector must find the optimal risk allocation to determine which part would be the best to manage each risk. Risk transfer is a very important driver for value for money. Transferring too little risks to the private sector would make the project inefficient, but transferring too much will result in higher payments and reduce value for money (Moralos and Amekudzi, 2008).

In practice, governments do not usually budget for systematic risks or uncertainty, and therefore, the public sector comparator can only contain project-specific risks that are identified and quantified with no adjustment for systematic risk or uncertainty. This is because the public sector as a whole can ignore uncertainty across their whole portfolio, while the private sector cannot.

1.4. Discount rate

The rate at which future cash flows are discounted is another important issue in the literature about public-private partnerships and the public sector comparator. The public sector comparator is assessed over the life of the public-private partnerships in NPV terms, which means that the rate used to discount cash flows has a big impact.

There are five main approaches. One is based on the fact that the discount rate should reflect government-policy preferences, using a "social rate of time preferences". Grimsey

and Lewis (2005) suggest that the discount rate should have two elements: first, the basic "social time preference rate" (STPR). This represents the rate that society is willing to pay for receiving something now rather than in the future. Calculations (*e.g.* HM Treasury, 2003) suggest that, in most developed countries, this is around 3.5-4.0% in real terms (*i.e.* before allowing for price inflation). Second, some allowance for other factors, mainly to ensure that the public sector does not assess the benefit of projects without taking into account the risk to which it exposes taxpayers in the process (for example, the potential to incur additional costs if things go wrong).

As far as STPR is concerned, Spackman (2002) argues that it will be unmanageable for any government to administer different general rates for these two quantities. It would be computationally complicated, and generate endless confusion. However, the distinction between them is essential to understanding the economics of public sector costing.

The second approach, which derives from the first one, argues that the discount rate should reflect the "social opportunity cost of capital". This will depend on the level of non-diversifiable risk in a project. It is in effect the pre-tax internal rate of return (IRR) that can be expected from private sector investments with the same risk. This calculation uses a deviation of the capital asset pricing model (CAPM), and is used by Canada and New Zealand.

The third approach is a hybrid of the "social time preference rate" and the "social opportunity cost of capital". This approach assumes that the appropriate public cost of capital for most practical purposes is the sum of the tax-exclusive real interest cost of government debt, the typical quantum of tax paid on marginal returns to private sector capital, and a factor for "systematic risk". The tax component is conceptually clear, but estimation is complex. Current UK Treasury guidance, originally drafted when real interest rates were much higher than today, suggests that this cost of capital falls within the same range of plausibility (4-6%) as social time preference. The adjustment for UK tax, however, combined with the adjustment for risk, cannot easily justify adding more than about one percentage point to the cost of indexed gilts, which in early 2002 was 2.0-2.5%.

The fourth approach is the "equity premium", *i.e.* the cost of capital for the public sector is considerably below the CAPM values, and so the discount rate should be the pre-tax government borrowing rates.

The fifth approach uses the risk-free interest rate of the country, *i.e.* the interest rate of the public debt, according to the maturity of the project.

Many authors (*e.g.* Brealey and Myers, 2003), following the "perfect capital markets", suggest that the idea that the public sector has a lower cost of finance is an illusion. If that were true, it would simplify the public-private partnership policy, but it is not clear. Grout (2003) argues that despite the lack of unanimity, there is a tendency for economists to favour the use of similar discount rates in the idealised situation of complete markets. However, he states that the reason for the divergence between private sector and public sector discount rates is not related to the usual arguments provided in the literature. Even in a world of complete capital markets and no distorted taxation, it may still be appropriate to use a higher discount rate for public-private partnerships than the public sector equivalent.

In some countries, the long-term borrowing rate is used as a proxy for the discount rate. In countries with an AAA credit rating this rate tends to be close to the "social time preference rate" and below a risk-adjusted discount rate. On the contrary, the United Kingdom has

used a 6.0% discount rate for many years, recently adopting a 3.5% "social time preference rate", with instructions to public authorities to estimate the other factors separately, like risk, that were previously reflected in the discount rates.

Spackman (2002) states that the cost of senior debt to public-private partnership projects is now typically two or three percentage points above the cost of government debt (including the cost of insurance to achieve an AAA rating). The premium is much higher than the cost of systematic risk to publicly financed projects. This is often described as the "equity premium puzzle", although simple expected utility theory should not be expected to capture people's aversion to fluctuations in equity markets. HM Treasury (2000) suggests that private capital costs add an extra one to three percentage points. The main text of the report says that, while senior debt finance will be not more than between one and three percentage points above the public sector borrowing rate, higher returns will be demanded for junior debt and equity finance. The study did not look closely at financing rates; this should be the subject of further study. However, there are very little data on returns to PFI (private finance initiatives, equivalent to public-private partnerships in the United Kingdom) equity, and it appears that no such study has taken place.

An example from Australia (Victoria Department of Treasury and Finance, 2003), where new guidance material on discount rates was disclosed, recommends the use of a specific discount rate to each project, according to the risk associated with that project. There is an application of the CAPM model to the public-private partnerships project evaluation, recognising in the model that the cost of capital/discount rate is specific to each project and is a function of the risks. In a perfect market, this would lead to the conclusion that, as long as there is sufficient competition to drive every component of the deal to maximum efficiency, the appropriate discount rate would be the rate of return implicit in the winning bid, and therefore one would not need to develop a specific discount rate for analysis.

Grimsey and Lewis (2007) refer to a PricewaterhouseCoopers study. This study takes a starting point that, with competition, project internal rates should reflect exactly the returns required by the various investors, as in the weighted average cost of capital (WACC). In the sample presented in the study, the IRR was on a 7.7% average. The weighted average cost of capital is estimated using CAPM to be 5.3%. Thus the "spread", the amount by which the average project internal rate of return is higher than the cost of capital, is 2.4% per annum. Of this amount, 1.7% is thought to be accounted for by two factors: unrecovered bid costs on other projects (about 1.0%); and the higher cost of private sector borrowing compared with public sector borrowing (about 0.7%). Consequently, the "excess" project return to project investors is estimated at being at most about 0.7%. "At most" is used because some part of this margin, attributed in the report to "structural issues" that have limited competition in the bid market, could be a margin built in for uncertainty, which is not allowed for in the analysis (Grimsey and Lewis, 2005).

Grimsey proposes two methods: one is to adjust risk by adding a risk margin to a risk-free discount rate (reflecting systematic risk rather than idiosyncratic risk). This would mean the use of a risk-adjusted discount rate added to a risk-free discount rate to account for "risky" cash flows, while using a risk-free rate for "non-risky" cash flows. It is a discount rate that reflects the government's time value of money, plus a systematic risk premium for the inherent risks involved in the project. They categorise risk in bands, as very low, low and medium (*e.g.* a project that falls into the very low risk band will have a risk premium of

1.8%, to be added to the 3.0% risk-free rate in real terms). The reward for bearing risk depends only on the systematic risk of an investment, because other risks can be diversified. The other option is to value risk in the cash flows so that a risk-free discount rate is applied to cash flow forecasts that have been adjusted for risk. Although the two processes are in theory alike, in practice they may lead to different results.

The classic paper on variability risk in the public sector is Arrow and Lind (1970), which concluded that cost is generally negligible, because it is spread so widely and hence thinly across the population. Currie (2000), using the arguments discussed below, criticises the application of the Arrow and Lind conclusion to the public sector. Grout (1997) sees it as equally applicable to private sector costs, but also argues that public sector benefits should be discounted at the same risky rate as in the private sector. The three most common criticisms of Arrow and Lind relate to correlation with income, risk spreading, and implications for public ownership.

Grout (2003) uses a financial test for public-private partnerships. In each case, the project delivers a flow of benefits, $vt(g)$ and $vt(p)$, and costs, $Ci(g)$ and $Ct(p)$, where r_v and r_c are the discount rates for benefits and costs and where p, g and t denote public-private partnerships, public sector, and time, respectively. A cost-benefit test would opt for public provision if:

$$\int_0^\infty v_t\,(g)e^{-r_v(g)t}\ \ dt - \int_0^\infty c_t\,(g)e^{-r_c(g)t}\ \ dt > \int_0^\infty v_t\,(p)e^{-r_v(p)t}\ \ dt - \int_0^\infty c_t\,(p)e^{-r_c(p)t}\ \ dt \quad (1)$$

In contrast, a pure finance-base test compares the cost to the government of public provision with the cost to the public sector of conducting the project as a public-private partnership. The financial cost to the government of public provision is the cost stream that the public sector has to fund:

$$\int_0^\infty c_t(g)e^{-rt}\,dt \quad (2)$$

where r is the discount rate used by the government in the pure finance test. Within public-private partnerships, the government has to fund the present value (PV) of the service specified in the contract. That is, service quantity, q_t, is measured and the private sector is funded according to the agreed price, p_t, per unit. The financial cost to the government of the public-private partnerships is:

$$\int_0^\infty p_i\,q_t\ \ e^{-rt}\,dt \quad (3)$$

Using this pure finance test, public provision is preferred if:

$$\int_0^\infty c_t(g)e^{-rt}\,dt < \int_0^\infty p_i\,q_t\ \ e^{-rt}\,dt \quad (4)$$

Risks also have implications for the discount rate. Broadbent and Laughlin (2003) note Grout's (1997) argument, later developed further in Grout (2003), that the value-for-money test is biased against the public sector. His argument runs as follows. When public sector provision is being valued, a discount rate is applied to a cost cash flow. This cash flow represents the cost of building the facility in the public sector. In contrast, for valuing the private sector provision, a discount rate is applied to a stream that constitutes an outlay for the public sector but is a revenue item to the private entity and is being valued from the revenue side. With public-private partnerships, this revenue stream is not the equivalent cost of building the facility. It is the cash flow associated with the flow of benefits valued at the price in the contract. There is no reason to suppose that the risk characteristics are equivalent for these two cash flows. Indeed, Grout argues that there is every reason to

suppose that they are not, because in general, costs are less risky than revenues (particularly when the revenues depend on the provision of services of suitable quality). Therefore, he contends that a higher discount rate should be used for the public-private partnerships than for the public sector equivalent. If not, it will suggest that the private sector is less efficient than the public sector.

Using the Gorman polar form and a linear payment schedule, Grout explicitly calculates the risk characteristics of these cash flows as measured by their beta (the weighted covariance between the cash flow and aggregate income). It is easy to show that the β for the revenue cash flow is:

$$\beta r = \frac{cov(R,m)}{var\ (m)} = \frac{\sigma R}{\sigma m} = p \sum_i b(p) \tag{5}$$

And the β for the cost stream is:

$$\beta c = \frac{cov(C,m)}{var\ (m)} = \frac{\sigma c}{\sigma m} = c \sum_i b(p) \tag{6}$$

where

$$m = \sum_i mi$$

and

$$\rho_{r,m}\ \frac{\sigma_r \sigma_m}{\sigma_m^2} = \frac{\sigma_r}{\sigma_m}\ with\ \rho_{r,m} = 1$$

Thus the ratio of the betas is equal to the ratio of price to marginal cost:

$$\frac{\beta r}{\beta c} = \frac{price}{marginal\ cost} \tag{7}$$

In general, the public sector cost in the comparison should not be discounted at the same rate as the private sector. Failure to do so will suggest that private provision is less efficient than public provision since the PV of the private will be overestimated relative to the public. That is, the relevant beta for the public sector component of a pure finance test should be that given by (6) and the relevant beta for the public-private partnerships should be that given by (5).

1.5. Final remarks

According to Kintoye *et al.* (2002), as quoted in Ball *et al.* (2007), the lack of transparency in public-private partnerships risk evaluation constitutes an area of serious concern. The public sector comparator inevitably focuses on factors that can be easily quantified and expressed in monetary terms.

Heald (2003) expresses concern about the extent that value-for-money assessments can be carried out by consulting firms that "are not neutral referees, but interested players".

As Moralos and Amekudzi (2008) argue, a public sector comparator is a hypothetical scenario; it relies on estimations made by agencies and the experience of staff, which may lead to significant errors, due to the complex financial models used and lack of experience in the public sector to handle it. Moralos and Amekudzi cite a study by Corner (2006), where the author studied the use of the public sector comparator of PFIs in the United Kingdom using the House of Commons Committee of Public Account's findings and discovered some of the major weaknesses in the applications of the value-for- money analysis. The fact that a NPV of a public-private partnership turned out to be more costly than a public

sector comparator, does not mean that the traditional procurement should be chosen, because the calculations may be biased. The authors state, "The main purpose of the public sector comparator and public-private partnerships comparison is to aid agencies in determining whether to pursue the project as public-private partnerships or not pursue the project at all".

Although the value-for-money assessment can be used to determine whether to pursue public-private partnerships, public agencies must be aware of the complexities of the overall public-private partnerships process and the limitations of the value-for-money methodology. It is important that agencies realise that value for money cannot be the only factor in the decision to pursue a project as a public-private partnership; they must evaluate their own capacity to manage such large, complex, and long-term projects aside from what the final value might say.

Critics of public-private partnerships argue that there is no substantive risk transfer under public-private partnerships. Grimsey and Lewis (2007) claim that this is not correct. Under a public-private partnership approach, the contractor is forced to think longer term and cannot just "walk away", having completed the construction. The contractor has ongoing, long-term responsibility for the facility's performance, which is reflected in performance-based monthly payments. Even if the contractor is unable to fulfil its obligations, and terminates the partnership, it cannot take the facility away and, in most cases, the assets revert to the public sector.

The main reason for using public-private partnerships is that they have proved a way to resolve the large costs overruns and delays in traditional public procurement, the "optimism bias". Grimsey and Lewis (2005) cite two 2002 studies (Flyvbjerg, Holm and Buhl, 2002; MacDonald, 2002) that confirm the results of earlier research by Pickrell (1990) and Fouracre, Allport and Thomson (1990). In the first study, Flyvbjerg, Holm and Buhl examined 258 large transport infrastructure projects spanning 20 countries, the overwhelming majority of which were developed using conventional approaches to public procurement. Costs were found to be underestimated in 90% of the projects, and in most cases, substantially so. In the other major study, the UK Treasury commissioned MacDonald to review 50 large public procurement projects in the United Kingdom over the last 20 years, 11 of which were undertaken under public-private partnerships/PFI. On average, the public-private partnerships/PFI projects came in under time (compared to 17% over time for the others), and capital expenditure resulted in an average 1% cost overrun (relative to an average cost overrun of 47% for traditional procurement projects).

Studies from some specific sectors in the United Kingdom report broadly consistent results. Parker and Hartley (2003) record claims that public-private partnership contracts for UK defence services have resulted in cost savings between 5% and 40% compared with conventional public procurement. That said, the authors express concern regarding whether these cost savings will be maintained over the projects' full durations due to the inherent uncertainties of long-term contracting.

2. Evaluating value for money in the public sector: a proposed theoretical model

When defining a methodology for evaluating value for money in public-private partnerships, the first question to ask is what is the best approach?

A simple answer does not exist, and countries, as we have seen, use several different approaches. Nevertheless, we believe that the best choice is a public sector comparator prior to the bid, for three reasons:

1. It is the best way to know the detailed cost of the project if developed by the public sector. With that information only is it possible to ensure a well-informed decision on the part of the public managers. The public sector choice cannot simply be the lowest bid. It has to be the lower bid, with the same outputs, and below the public sector comparator cost. Otherwise, if the lower bid is still above the public sector comparator, choosing to develop the project via a public-private partnership scheme will be a bad decision. In fact, the core concept of doing a public-private partnership is that the private sector can achieve a greater level of service with lower costs than the public sector. But that is a condition that is necessary to prove and the public sector comparator is the best way to do this. However, that does not mean that after running the public sector comparator, there is no need for a negotiation. On the contrary, a negotiation with the participation of several private bidders is crucial, because that competition among the bidders will enable the public sector to negotiate the best value at the lowest cost.
2. We do not believe that most countries' public administrations will have the necessary resources and skills to undertake more detailed and complex analyses, as is required by a complete cost-benefit analysis of all the alternatives. However, developing a public sector comparator methodology will certainly improve accountability and public management competences.
3. Although running a public sector comparator after the bid might show if value for money were achieved, if the result is negative, a renegotiation of the public-private partnership would be in order. Such a process is more complex and difficult than the public-private partnership process itself. This does not mean that the public sector comparator should not be revised, but only within a few years of operation.

In order to use the public sector comparator methodology suggested here, three preconditions must be met:

1. The government's decision to use a public-private partnership scheme is not already determined by the need to remove an investment from its balance sheet. This is particularly important in countries with strong fiscal rules, like European Union members, and particularly in countries with large budget deficits and high public debt. The bigger the fiscal constraint, the more important this precondition becomes. If the government's decision to accept the project depends only on putting off the annual budget deficit, then value for money will serve no role in the process. The fact that the project is carried out by a private consortium does not guarantee that it will be more efficient than if run by the public sector.
2. The project must be affordable. Affordability being one of the public-private partnership benchmarks, it is necessary that the cost of the project is included within the constraints of the budget and is financially sustainable in the long term. The public authorities should demonstrate that the service fees are affordable within the budget constraints. This means that the service fees should not be manipulated so that the payments are low in the first few years of the contract and high in the long term. This would make the public-private partnership affordable only in the beginning. It is also important to understand that if the choice is between a public-private partnership and no project,

there will be strong pressure to use data and assumptions that misguide the real cost of the two options, in order to lead to a decision to choose the public-private partnership.

3. The investment should be needed and there is no better alternative for the taxpayers' money (the opportunity-cost test). This last precondition is almost always subject to discussion and controversy. Nevertheless, and considering that this is outside the scope of this article, we must say, that contrary to the evaluation of private sector investments, the simple fact that the investment does not achieve the minimum hurdle rate required does not exclude the project by itself. Being a public sector project, other issues matter, besides maximising value, like defence, social assistance, etc.

We regard the public sector comparator as the estimation of the full cost of a project totally funded and operated by the public sector. We also believe that the public sector comparator should be detailed, and should incorporate some of the "project finance best practices", especially regarding costs, revenues, risk assessment, finance and discount rates.

How, then, should a public sector comparator be built? The first step is to collect as much useful and valid information as possible. This could be the first obstacle for public managers. Information will be vital in order to estimate project revenues and expenses. If the operation is already running, and what the government is considering is only a change of management (from public to private) (*e.g.* an already functioning hospital), the exercise is quite simple, especially if there are already good levels of accountability. Measuring costs and revenues in this exercise can, and should, be simple if the public entity already has sound financial statements. The exercise is then to estimate what the realistic savings and efficiency improvements would be. Having found that value, the public sector comparator, in annual terms, will be:

$$PSC = \text{Retained risks} + [\text{public entity costs} * (1 - C) - \text{public entity revenues} * (1 + R)] + \text{estimate cost of risks transfer.} \quad (8)$$

With C = Efficiency gains as a percentage of public entity costs; R = Efficiency gains as a percentage of public entity revenues.

Note: Usually revenues < costs

Therefore, the decision for public-private partnerships in an already operating project is when:

$$[\text{Retained risks} + \text{Annual payment for public-private partnerships} - \text{Corporate tax}] < PSC \quad (9)$$

$$\Leftrightarrow \text{Annual payment for public-private partnerships} - \text{Corporate tax} < [\text{public entity costs} * (1 - C) - \text{public entity revenues} * (1 + R)] + \text{estimate cost of risks transfer} \quad (10)$$

Note that efficiency gains play the major role in this particular case. Therefore, it is vital not to have optimist assumptions on gains, otherwise the public sector comparator will be unrealistic, and will drive private bidders away. Using benchmarks from the private sector, and having independent consultants evaluating those hypothetical gains should be considered.

When regarding a new project, estimating future revenues and expenses is more difficult, and yet, fundamental. If the new project is in a sector where there is already experience, it is easier. Experience from similar projects helps to estimate future data. Yet, managers should not rely completely on that historical background. Estimations of future changes and tendencies are still critical.

However, if the new project is in a sector where there is no past experience, or that experience is limited, a set of tools should be used by managers in order to help make the best possible assumptions. Market testing and scenario analysis are two of the best options.

Setting up the future outflows of the project is the essential part of this analysis. As it is a public project, the annual outflow is:

$$OF = \textit{Base costing of the project} \tag{11}$$

Note that there is a large difference to the cash flow to the firm, as used in corporate finance:

$$FCFF = EBIT\ (1 - t) + Depreciations/Amortisations - Change\ in\ NWC - Capex \tag{12}$$

where *NWC* is the *net working capital*.

In the public sector, however, there are no earnings before interest and tax (EBIT), once there are no taxes, and there is no interest rate in the project (the public debt is in government, not allocated to any specific project or agency). Therefore, amortisations and depreciations do not have a fiscal impact; thus, there is no reason to consider it.

Three important issues are related to the base costing of the projects (BCP). First, if there are revenues, the base cost will be (*costs – revenues*), assuming that, as is common in these types of projects, revenues are not enough to cover expenses. The second issue is that besides the direct costs of the project (*e.g.* the cost of building a road, and the maintenance costs during the lifetime of the project), it is also necessary to include the indirect costs, such as administrative, hidden costs, costs with eminent domain, opportunity costs and third-party revenues shares, if applied. The third and last issue is related to inflation: a nominal outflow should be used in the analysis.

Therefore, the annual base costing of the project is:

$$BCP = [(\textit{direct costs} + \textit{indirect costs}) - \textit{Revenues}] \tag{13}$$

Having calculated the long-term base costing of the project, it is necessary to find the public sector comparator. However, the risk costs and the tax revenues are not yet included in the calculations.

$$PSC = Capex + Retained\ risks + BCP + public\text{-}private\ partnerships\ transfer\ risks\ estimation\ costs + Corporate\ tax\ from\ public\text{-}private\ partnerships \tag{14}$$

There is no "one rule fits all" for transfer risks, but the literature and experience tell us that for the transfer of risk to be most effective, risks must be transferred to the party best able to manage them. Risk can be defined as the probability that the actual outcome (*e.g.* sales, costs, profits, etc.) will deviate from the expected one, and should be distinguished by endogenous and exogenous risks.

The transfer risks estimation costs is probably the most important step in these analyses, mainly because this is where the private sector efficiency is more likely to be ensured. A public sector comparator that is not risk adjusted will not give a clear and realistic image of the total cost of the project, once the NPV of the payments of a public-private partnership is likely to be higher than the NPV of the project costs, because of the higher cost of finance. In order to estimate the risk transfer to the private sector, it is necessary to identify all the relevant risks to be transferred, assign a cost for each one, if they were retained by the public sector, and then measure the probability of the event occurring and its cost impact. Then, it is also necessary to determine the probable timing

for that event occurring and calculate the NPV of those risks, and adding that NPV to the public sector comparator. However, a variety of outcomes should be used instead of a single risk transfer NPV.

If sufficient data are available, the probability of the deviation of those outcomes can be estimated statistically. Some statistics tests must be used regarding simulations, and considering the risks allocation as a probability distribution. However, if that is not possible, should data be insufficient, then subjective, but realistic, probabilities might be used, using benchmarking with other sector projects (for instance, the Australian government uses 8% of the project value to estimate transferable risks [OECD, 2008]). Unlike the private sector, the public sector is not profit driven, and therefore the risk of deviations in costs or revenues is much higher. Delivering a service or good under public-private partnerships must be used to reduce those risks. It is then necessary to find the optimal allocation of risk between the two parties, private and public. But it is also important to ensure that no highly subjective judgments about the value of risks transferred are made in order to make public-private partnerships less expensive than the public sector comparator. This risk calculation should not be made to overrun costs in the public sector so as to choose the private sector solution.

Public-private partnerships are one of the best ways to transfer risks from the public to the private sector. Public-private partnerships become a risk-sharing agreement with the private bidder. Therefore, the risk allocation process is vital to success. Projects must have an optimal risk allocation, and if insufficient risks were allocated to the private sector, it will be very difficult for a public-private partnerships to generate value for money. This is because risk transfer becomes much more effective when there is a "whole of cycle" contract with a single private entity. This allows the public entity to know the exact cost of providing the service in the long term, having a predictable budget. The "whole of cycle" means that the risk associated with changes during the long-term contract and the complexity involved in this type of large-scale project are being considered.

It is also important to know that if the risks transferred to the private sector were really and definitely transferred, and that they will not revert again to the public sector. If there is a probability that during the life of the contract the risk could revert to the public sector, this has to be evaluated and considered in the calculations of the risk transfer estimated costs. A fundamental analysis would include the renegotiation and the financial rebalancing agreement.

An important issue which the literature and experience tend to forget in the calculation of the public sector comparator is corporate taxes. Once there are corporate taxes in most countries, and as public-private partnerships consortiums usually do not have a tax-free benefit, the tax revenues from the private initiative have to be accounted for in the public sector comparator. It is simple to understand why: if the decision is to carry out the project via the public sector, those revenues will not exist, and therefore, there is an opportunity cost in the decision that must be taken into account.

$$T = EBT * \text{marginal corporate tax} - \text{Tax benefits} \quad (15)$$

The cost of the public-private partnership, which is the NPV of the payments agreed with the private bidder, plus the cost of the risk retained.

$$\text{Public-private partnerships cost} = \text{Retained risks} + \text{Cost of service payments} - \text{Corporate tax} \quad (16)$$

$$\text{Public-private partnerships cost} < \text{PSC cost} \quad (17)$$

Cost of service payments – Corporate tax < – Capex + BCP + public-private partnerships transfer risks estimation costs + Corporate tax from public-private partnerships (18)

As the retained risks are equal on both sides of the equations, and are discounted at the same discount rate, we can eliminate both in the equation. However, in practical analysis, costs should be measured in order to find the real impact of those risks.

Another way of analysing the public sector comparator *versus* public-private partnerships is to use incremental outflows (Table 1).

Table 1. **Incremental outflows for public-private partnerships *versus* the public sector comparator**

Gains (in NPV)	Losses (in NPV)
Capex	Payments to the private bidder
+ Reinvestments or major reparations	Corporate tax
+ *BCP = [(direct costs + indirect costs) – Revenues]*	
+ Corporate taxes	
+ Transferred risks	

Notes: Incremental OF = public-private partnerships – public sector comparator.
If NPV > 0 – Choose public-private partnerships.
If NPV < 0 – Choose public sector comparator.

At this point, one aspect must be stressed: as the public sector tends to be less efficient than the private sector, it is necessary to ensure that this analysis is realistic, and therefore, a sensitive analysis of the numbers is fundamental. One should analyse the impact of deviation in each one of the public sector comparator components, especially the initial capital expenditure (although the risk of cost deviation can be mitigated by a construction contract with a private company), and especially the operational costs in the long term.

What discount rate should be used? As we have seen, the literature is everything less than unanimous on this question.

We do not think that the public sector should exclusively use the private sector rate, for two reasons. First, doing so will undermine the private sector need for efficiency. Second, the exogenous risks from the public sector perspective are always lower than the private sector. But, we also do not agree with the simple use of the public debt interest rate. Although there is an argument for the use of a generic discount rate, *i.e.* that the public sector spreads risks over many projects, the average risk should be used rather than the project risk. We do not agree with this proposition, mainly because this would mean treating high-risk and low-risk projects in the same way. Besides, there is a substantial difference in the cash flows that are being discounted. In the public sector comparator, costs consist mainly in a high level of initial capital expenditure and a low level of long-term operational costs, whereas the costs of public-private partnerships consist in a long-term payment to the private bidder.

We think that there should be three discount rates applied to the public sector comparator and two discount rates to the public-private partnerships.

For the public sector comparator, a riskless discount rate should be used to discount the capital expenditure and the retained risks. The rate should be the interest rate of bonds for the maturity of the project (should be the *Rf*). There is a simple reason for that: the capital expenditure is in the first years of operating, which means that the impact of the discount rate is small. Besides that, a fixed price contract can be made with the private sector for the

construction of the infrastructure, reducing the risk of cost deviation to a very low level. Also retained risks in public-private partnerships tend to be risks that the public sector is more likely to manage, and if they occur, the cost can be financed by public debt.

A default risk interest rate should be used for discounting the cost of service and maintenance, and also for the transferred risks. The reason for this is that two future cash flows are subject to the same risk, whether they are managed by the public or private sectors. The risks transferred in a public-private partnership are risks that the private sector is more likely to manage, and so they should be discounted at that risk rate. The CAPM model should be used for calculating that risk.

$$CAPM: E(Ri) = Rf + \beta i\,[E(Rm) - Rf] \quad (19)$$

As for the $E(Rm)$ and the βi, if the public-private partnership is in a sector where the private sector is already present, like roads or health, the benchmark with the market is possible and it is the best solution. If the public-private partnership is in a sector where there is no private initiative, there should be an attempt to measure the risk associated with the project.

As for the public-private partnerships, the future payments to the private consortium should be treated as public debt, because that is what they really are (future payment obligations due to today's decisions). As that, the public debt interest rate for the maturity of the project should be used to discount those future payments. Although each public-private partnership should be discounted with this rate, the intensive use of public-private partnerships, and the budget consequences in the long term, may affect the rating of the public sector, leading to a higher interest rate, and therefore, affecting the future evaluation of public-private partnerships (Table 2).

Table 2. **Discount rates**

Discount rates	Public-private partnerships	Public sector comparator
Rf: risk-free rate	Payments Retained risks	Capital expenditures Retained risks
$Ru = Rf + \beta u\,[Rm - Rf]$	n.a.	Operational costs Transferred risks
$Re = Rf + \beta l\,[Rm - Rf]$	Corporate tax	Corporate tax

Note: With βu the unlevered beta and βl the levered beta.

3. The Portuguese experience

By way of practical analysis, we will use the Portuguese experience on public-private partnerships. Portugal set up its first public-private partnership in 1993 (Vasco da Gama Bridge in Lisbon), and since then, it has promoted 14 public-private partnerships (through 2008). The public-private partnership projects were primarily in transport, basically roads. Recently, the Portuguese government has announced the launch of public-private partnerships in health, roads, the new Lisbon international airport and the TGV (*train à grande vitesse*, or high-speed train).

For 15 years, the 14 public-private partnerships contracted represented a private investment of EUR 10 billion and around EUR 20 billion of public payments for the next 30 years, according to a Court of Audit Report. Portugal invests more than any other country in public-private partnerships when considering the value of the public-private partnerships per capita, and about twice as much as the United Kingdom (PricewaterhouseCoopers, 2005).

Parpública, a taskforce under the Ministry of Finance, was created to advise and evaluate public-private partnerships, with the mission of promoting the use of public-private partnerships in the development of public services, to lead to better quality and efficiency. Parpública is also the entity responsible for technical support of the Ministry of Finance in public-private partnership procedures.

Until 2006, Portugal had never run a public sector comparator when setting up public-private partnerships. The first public-private partnerships with a public sector comparator prior to the bid were the new hospital in Braga and the new hospital in Cascais. Until then, the decisions on public-private partnerships were based on the best bid. Since 2003, a discount rate of 6.08% was set when evaluating public-private partnerships. This discount rate was applied in the 2006 public-private partnerships for the new Braga and the new Cascais hospital.

The example that we will use is the most controversial public-private partnerships in Portugal, the SCUT (*Sem Custos para o Utilizador*, which means "without costs to the user") highway project. This was divided into seven procedures between 1999 and 2001. Since it was set up, there has been strong discussion and controversy whether this was the best option, and if these public-private partnerships have, in fact, delivered value for money to the public sector.

The SCUT public-private partnerships were designed for a total of construction of 930 kilometres of highways, with a shadow toll payment, where the state budget, rather than the users, pays the private consortium. The state has arranged an annual yearly payment for the utilisation of the roads with the private bidders, therefore using the taxpayers' money instead of directly charging the users. These payments were structured in three bands:

- Band A: a payment of x per vehicle per kilometre for the first (a * 1 000) vehicles per day (vpd)/km.
- Band B: a payment of y per vehicle per km for the next (b * 1 000) vpd/km.
- Band C: All higher levels of vpd/vkm = no payment.

The main argument for this arrangement was that most of the highways were in poor regions, and that the construction of these facilities would help to develop those regions. However, only 55% of the total kilometres was in regions with these characteristics, which suggests that somehow this public benefit was unfair. Criticism of the SCUT agreement has also concerned affordability, mainly because the state payments were delayed to start in 2006, and there was no accommodation on the fiscal sustainability of the budget, considering that since 2001, Portugal has been facing fiscal constraint regarding deficit. In fact, to pay the annual SCUT fee from 2006 to 2020, it is necessary to allocate each year 20% of value-added tax (VAT) revenues, or 27% of income tax, or the total annual budget of the Ministry of Transport.

When setting up the SCUT public-private partnerships, there was no public sector comparator conducted by the government. That was, in our opinion, one of the major reasons for the discussion on whether this decision created value for money or not. The decision to use public-private partnerships was not based on any financial analysis, and there was no idea of what would be the cost of doing it solely by the public sector. This was also a conclusion of the 2003 audit on public-private partnerships, from the Court of Audit of Portugal. In fact, there was no study on the economy, efficiency and effectiveness of these public-private partnerships.

The risk analysis was also misguided in this project. The audit stated that for instance, in the SCUT Beira Litoral, the bidder that won transferred fewer risks than the other proposal. As an example, the fact that the bidder did not take the risks of tunnel construction, making the public sector pay the extra cost of one kilometre of tunnels, made the proposal more expensive than the one that was initially negotiated.

In the SCUT public-private partnerships, the public sector accepted some risks that should have been assigned to the private sector (*e.g.* the risk of widening the roads due to more traffic, or the costs of eminent domain), and others were assigned to the private sector, when they should have remained on the public side (*e.g.* the environmental studies and projects). Other aspects related to risk assessment is that the risks retained by the public sector were not calculated.

Portugal has set up a large number of public-private partnerships in a short period of time, without ensuring that the public sector was capable of managing them. The newness of the experience, added to the fact that the Portuguese administrations were not prepared for such a level of complexity and technique, were some of the factors that led to some bad decisions in this area. In addition, there was no legal framework until 2003, and until that date, the participation of the Ministry of Finance was next to nothing. Instead of launching a high number of public-private partnerships, a pilot should have been undertaken. This is particularly true in the health sector, where from 2002 to 2009, ten public-private partnerships were launched, without any experience, and in very complex models, with no parallels in any other country.

Some of the reasons for the failure of the public-private partnerships in the health sector were: the complexity of the model, which made the analysis very technical, and therefore more prone to error; the absence of similar international experiences; the lack of experience and qualified human resources in public-private partnerships in the Health Ministry; the red tape costs; the high number of public-private partnerships and the investment associated; the failure to comply with the deadlines for several procedures; and the inflexibility of the bidder procedures.

4. Data and results

With regard to the SCUT project, the payments agreed by the state in 2000 are presented in Table 3. They were programmed to start in 2006 and finish by 2031. The Portuguese Republic interest rate debt in 2003, for a ten-year maturity, was 4.5%. Therefore, the NPV of the payments is around EUR 7.98 billion (in 2002).

In 2003, the Portuguese government decided to use a 6.0% discount rate for public-private partnership projects. Using that rate, the NPV of the payments is around EUR 6.65 billion (in 2002) (Table 4).

Assuming that 930 kilometres could have been built and maintained by the public sector, what would have been the cost?

Although the cost of a highway depends on the localisation, due to the field constraint, most of these roads were built in northern and central Portugal, with a more difficult terrain (data provided by BRISA [the largest highway operator in Portugal, which today has more than 1 500 kilometres of concessions, and in 2001 was mainly publicly owned and had around 1 000 kilometres] in 2001) (Table 7).

The total cost for the private sector was around EUR 3 billion, according to Table 9.

Table 3. **Annual payments to the SCUT public-private partnerships, with a 4.5% discount rate**

In EUR thousands

	Annual payment (in EUR million)	Discount factor	NPV payments	Taxes	Discount factor	NPV taxes	NPV PPP
2003	22 032	1.045	21 083	0	1.258	0	21 083
2004	51 471	1.092	47 134	0	1.583	0	47 134
2005	253 729	1.141	222 342	0	1.991	0	222 342
2006	329 272	1.193	276 115	0	2.505	0	276 115
2007	588 523	1.246	472 261	0	3.151	0	472 261
2008	658 658	1.302	505 781	12 964	3.964	3 271	502 510
2009	668 124	1.361	490 957	90 519	4.986	18 154	472 802
2010	678 644	1.422	477 212	94 872	6.273	15 125	462 087
2011	704 005	1.486	473 728	102 922	7.891	13 043	460 685
2012	695 867	1.553	448 088	102 581	9.927	10 334	437 754
2013	650 085	1.623	400 582	92 815	12.488	7 432	393 149
2014	667 784	1.696	393 768	98 903	15.710	6 296	387 472
2015	682 721	1.772	385 240	104 284	19.763	5 277	379 963
2016	662 584	1.852	357 777	100 880	24.862	4 058	353 720
2017	686 006	1.935	354 473	108 348	31.276	3 464	351 009
2018	645 482	2.022	319 171	99 813	39.345	2 537	316 634
2019	666 629	2.113	315 433	106 676	49.496	2 155	313 278
2020	661 835	2.208	299 679	107 036	62.266	1 719	297 960
2021	610 931	2.308	264 717	95 849	78.331	1 224	263 494
2022	618 968	2.412	256 651	99 377	98.540	1 008	255 642
2023	609 800	2.520	241 961	98 583	123.963	795	241 166
2024	575 704	2.634	218 595	91 536	155.946	587	218 008
2025	530 530	2.752	192 768	81 698	196.180	416	192 352
2026	424 213	2.876	147 500	54 436	246.794	220	147 280
2027	393 297	3.005	130 862	45 822	310.467	148	130 714
2028	393 755	3.141	125 373	45 118	390.568	116	125 257
2029	370 162	3.282	112 785	38 376	491.335	78	112 707
2030	281 947	3.430	82 207	15 454	618.099	25	82 182
2031	171 118	3.584	47 744	0	777.568	0	47 744
Total	**14 953 876**		**8 081 988**			**97 482**	**7 984 506**

To this value, we must add the cost of large highway repairs. We estimate a need for such repairs every ten years, with a cost of 10% of the construction cost per kilometre, and so, EUR 290 million ten years after the operation started (in 2013), and that value adjusted for inflation another ten years later (in 2023, with the value of EUR 350 million). The discount factor for the capital expenditure will be the same used to discount the future payments to the public-private partnerships: 4.5% or 6.0%.

There is no widely accepted process for determining the costs associated with performing highway maintenance if done by the transportation agency itself.

The annual cost of maintenance and operating highways for BRISA represents around 30% of sales. In 2001, this came to around EUR 150 million (30% * EUR 500 million; Table 8). That represents a maintenance and operating cost of EUR 190 000 per kilometre. Over the next few years, from 2003 to 2009, the annual operating and maintenance cost per kilometre was around EUR 150 000. The SCUT 930 kilometres would mean an operating cost of EUR 140 million a year. However BRISA has some operational costs that SCUT does not have, mainly regarding the charging of tolls. A large part of the BRISA operational costs are regarding toll charges; these costs do not exist in SCUT. Although

Table 4. **Annual payments to the SCUT public-private partnerships, with a 6.0% discount rate**

In EUR thousands

	Annual payment (in EUR million)	Discount factor	NPV payments	Taxes	Discount factor	NPV taxes	NPV PPP
2003	22 032	1.060	20 785	0	1.258	0	20 785
2004	51 471	1.124	45 809	0	1.583	0	45 809
2005	253 729	1.191	213 036	0	1.991	0	213 036
2006	329 272	1.262	260 814	0	2.505	0	260 814
2007	588 523	1.338	439 779	0	3.151	0	439 779
2008	658 658	1.419	464 328	12 964	3.964	3 271	461 057
2009	668 124	1.504	444 341	90 519	4.986	18 154	426 187
2010	678 644	1.594	425 790	94 872	6.273	15 125	410 665
2011	704 005	1.689	416 699	102 922	7.891	13 043	403 656
2012	695 867	1.791	388 568	102 581	9.927	10 334	378 235
2013	650 085	1.898	342 457	92 815	12.488	7 432	335 024
2014	667 784	2.012	331 868	98 903	15.710	6 296	325 573
2015	682 721	2.133	320 086	104 284	19.763	5 277	314 809
2016	662 584	2.261	293 062	100 880	24.862	4 058	289 004
2017	686 006	2.397	266 246	108 348	31.276	3 464	282 782
2018	645 482	2.540	254 092	99 813	39.345	2 537	251 555
2019	666 629	2.693	247 562	106 676	49.496	2 155	245 407
2020	661 835	2.854	231 870	107 036	62.266	1 719	230 151
2021	610 931	3.026	201 921	95 849	78.331	1 224	200 697
2022	618 968	3.207	192 997	99 377	98.540	1 008	191 989
2023	609 800	3.400	179 376	98 583	123.963	795	178 581
2024	575 704	3.604	159 761	91 536	155.946	587	159 174
2025	530 530	3.820	138 891	81 698	196.180	416	138 475
2026	424 213	4.049	104 772	54 436	246.794	220	104 551
2027	393 297	4.292	91 638	45 822	310.467	148	91 490
2028	393 755	4.549	86 551	45 118	390.568	116	86 436
2029	370 162	4.822	76 760	38 376	491.335	78	76 682
2030	281 947	5.112	55 157	15 454	618.099	25	55 132
2031	171 118	5.418	31 581	0	777.568	0	31 581
Total	**14 953 876**		**6 746 596**			**97 482**	**6 649 114**

Table 5. **NPV sensitivity analyis, with a *Rf* = 4.5% (in EUR thousands)**

Operational costs	Capital expenditures									
	Case based	Δ with PPP	Δ = 10%	Δ with PPP	Δ = 20%	Δ with PPP	Δ = 50%	Δ with PPP	Δ = 100%	Δ with PPP
Base case	4 033 646	–3 950 861	4 347 481	–3 637 025	4 639 219	–3 345 287	5 514 431	–2 470 075	6 973 118	–1 011 388
Δ = 10%	4 113 017	–3 871 489	4 457 980	–3 526 526	4 772 404	–3 212 102	5 715 677	–2 268 829	7 287 798	–696 709
Δ = 20%	4 192 388	–3 792 118	4 545 289	–3 439 218	4 859 713	–3 124 793	5 802 985	–2 181 521	7 375 106	–609 400
Δ = 50%	4 430 502	–3 554 004	4 807 214	–3 177 293	5 121 638	–2 862 868	6 064 910	–1 919 596	7 637 031	–347 475
Δ = 100%	4 827 358	–3 157 148	5 243 756	–2 740 751	5 558 180	–2 426 327	6 501 452	–1 483 054	8 073 573	89 067

data are not available, we will use the data provided by the Portuguese Public Road Institute (Estradas de Portugal) to the new "AETransmontana" (Banco Efisa – Análise da viabilidade económica): a SCUT launched in 2007 had an operating and maintenance cost of EUR 65 000 per kilometre.

Thus, the annual operating and maintenance cost of SCUT would be EUR 50.6 million in the first year. We use 3.0% estimation for the annual growth of these costs.

Table 6. **NPV sensitivity analyis, with a *Rf* = 6.0%**

Operational costs	Capital expenditures									
	Case based	Δ with PPP	Δ = 10%	Δ with PPP	Δ = 20%	Δ with PPP	Δ = 50%	Δ with PPP	Δ = 100%	Δ with PPP
Base case	3 863 729	–2 785 385	4 140 318	–2 508 796	4 427 834	–2 221 280	5 250 199	–1 398 914	6 620 809	–28 304
Δ = 10%	3 943 100	–2 706 014	3 943 100	–2 706 014	4 507 205	–2 141 909	5 329 571	–1 319 543	6 700 180	51 067
Δ = 20%	4 022 471	–2 626 643	4 299 061	–2 350 053	4 586 576	–2 062 538	5 408 942	–1 240 172	6 779 552	130 438
Δ = 50%	4 260 585	–2 388 529	4 537 174	–2 111 939	4 824 690	–1 824 424	5 647 056	–1 002 058	7 017 665	368 552
Δ = 100%	4 657 441	–1 991 673	4 934 030	–1 715 083	5 221 546	–1 427 568	6 043 912	– 605 202	7 414 522	765 408

Table 7. **BRISA's financial indicators, 2003-07**

	2003	2004	2005	2006	2007
Sales (EUR million)	560	574	577	586	646
EBITDA (EUR million)	403	424	418	418	460
EBITDA (%)	72%	74%	72%	71%	71%
Operational costs (EUR million)	157 000	163 000	159 000	168 000	187 000
ROE	16%	12%	18%	11%	15%
Number of kilometres	1 000	1 106	1 106	1 106	1 346
Operational costs by km (EUR million)	157	147	144	152	139

Source: BRISA annual financial reports.

Table 8. **BRISA's financial indicators, 2001**

In EUR

Number of kilometres of highways	789.5
Assets valuation – highways	2 865 784 212
Total operational revenues	476 998 882
Total operational costs	63 930 654
Depreciations and amortisations	91 875 292

Source: BRISA 2001 financial statements.

For calculating the corporate tax, we have estimated the financial statements of the private operators (Table 9). We used the agreed payments, the operational costs and a debt with a maturity over 20 years and an average cost of debt of 6.75% (Table 10).

Table 9. **Capital expenditures of the SCUT public-private partnerships**

PPP	No. of km	Capex (EUR millions)
SCUT Beira Interior	178	438
SCUT Interior Norte	155	499
SCUT Algarve	129	243
SCUT Costa de Prata	105	298
SCUT Grande Porto	72	465
SCUT Beiras litoral e alta	176	753
SCUT do Norte Litoral	115	228

Source: Portuguese Public Road Institute (Estradas de Portugal).

The major risks to be transferred to the private sector in public-private partnerships are: construction risks, demand risks, operation risks and maintenance risks.

Table 10. **Financial indicators of the private operators of SCUTs**

	Beira Interior	Interior Norte	Algarve	Costa de Prata	Beiras litoral e alta	Norte Litoral	Total
Capex	438 000	499 000	243 000	298 000	753 000	228 000	2 459 000
Debt (%)	90.60	98.00	83.10	91.30	91.20	76.00	90.28
Debt	396 828	489 020	201 933	272 074	686 736	173 280	2 219 871
Equity (%)	9.40	2.00	16.90	8.70	8.80	24.00	9.72
Equity	41 172	9 980	41 067	25 926	66 264	54 720	239 129
Debt/equity	10	49	5	10	10	3	9
Cost of debt (%)	8.83	6.09	6.30	5.92	6.33	7.38	6.75
Cost of equity (%)	13.00	13.18	7.72	11.89	13.10	6.41	10.50
Tax (%)	25.00	25.00	25.00	25.00	25.00	25.00	25.00
WACC (%)	7.22	4.74	5.23	5.09	5.48	5.75	5.59
IRR (before tax) (%)	7.35	9.59	6.67	8.43	9.24	6.68	n.a.

Source: IEP – Portuguese Public Road Institute.

For the construction risks, the fact that the private bidders were all construction firms significantly reduced that risk. This is a risk, usually aligned with environmental projects, archaeology discoveries or costs with eminent domain. We do not think that this level of risk was higher.

In the SCUTs, the actual demand risk transfer to the private sector was limited: Band A was set up for a traffic level that ensured that the lenders were taking little real traffic risk. Once there is only a limit in revenues for a high level of traffic, the level of demand risk is reduced. This model of payment ensures future cash flows, which made the project much less riskier. This fact was disclosed by the financial institutions once the average debt was 90% of the capital expenditure.

As no data are available for this part of the public sector comparator (mainly because studies are not available as they were considered confidential), we will use an estimation of 10% of the total value of the project for the construction risks, and 10% of the operational costs for the maintenance risk.

For the risk transfer to the private sector, the literature tends to consider the risk level on transport as low or medium low. As an example, Australia (Partnerships Victoria), use a low level band for roads with no tolls, giving a $\beta u = 0.5$, with a market risk premium of 6.0%, a real risk free rate of 3.0%, for a discount rate of 6.5%.

The discount factor for the tax income is calculated by using the CAPM:

$$CAPM: E(Ri) = Rf + \beta i\,[E(Rm) - Rf]$$

where $Rf = 4.5\%$; $\beta i = 3.875$; $E(Rm) = 5.5\% + 4.5 = 10\%$

having $\beta L = \beta u\,[1 + D/E\,(1 - t)] = 0.5 * [1 + 9 * (1 - 0.25)] = 3.875$

where $E(Ri) = 4.5\% + 3.875 * (10\% - 4.5\%) = 25.8\ \%$

The discount factor for the operational costs and the risks transferred to public-private partnerships is:

$$RU = RF + \beta u * (Rm - RF) = 4.5\% + 0.5 * 5.5\% = 4.5\% + 2.25\% = 6.75\%$$

5. Conclusion

In this article, we have provided an overview of how public-private partnerships are evaluated in terms of creating value for money to the public sector. We have determined

that the literature is less than unanimous about whether public-private partnerships create value for money or not. We have proposed a financial analysis, using the public sector comparator prior to the bid as the best option to do this type of evaluation. This analysis is based on the NPV of the public-private partnership payments and corporate tax revenues *versus* the cost of doing it via public sector procurement, using the NPV of the cost of investment, operation and maintenance, risk transfer and corporate tax revenues lost. We also have established some guidelines to assess what discount rate should be used for each type of future outflow.

To carry out a credible and independent analysis, there are three preconditions: *i)* there must be no predisposition to carry out the work via a public-private partnership in order to strike the investment off budget, due to fiscal constraints; *ii)* the project should be affordable; and *iii)* the investment should be the best allocation for public resources. This final condition is essential to understand the scope of this work. We are not discussing whether or not the investment should be made; this should have already been analysed and decided. The point in this paper is whether to use traditional procurement or public-private partnerships. That is to say, which option brings more value for money to the public sector?

We have used the SCUT experience in Portugal by way of analysis. The results confirm that using public-private partnerships in the conditions set up in the contracts did not add value for money to the public sector. If traditional procurement had been used, it would have been far less expensive, even given the public sector's tendency to be less efficient. We find that, carrying it with the same costs in mind (our base scenario), it would have cost EUR 2 billion or EUR 3 billion less, when considering 4.5% or 6.0% as the *Rf* (Table 11). Even with a 50% extra cost of capital expenditure and operating costs, it still would have been a better solution to use public procurement rather than the public-private partnership.

Table 11. **NPV of the two base scenarios of PPP and PSC**

In EUR thousands

	Rf = 4.5%		Rf = 6.0%	
	PSC	PPP	PSC	PPP
NPV of cost of public sector procurement (including capital and operational expenditure)	3 688 988		3 519 071	
NPV of service fees – NPV of tax		7 984 506		6 649 114
NPV of risk adjustments	305 735		305 735	
NPV of additional tax	38 923		38 923	
Total risk-adjusted NPV cost	**4 033 646**	**7 984 506**	**3 863 729**	**6 649 114**

The level of risk transfer to the private sector in the SCUT was very low, and that undermined the performance of the public-private partnership. We question whether a shadow toll system is the most appropriate one.

We concluded that the negotiation of the SCUT public-private partnerships was not correctly managed, mainly because no studies were undertaken prior to the negotiation. Having carried out a public sector comparator would have shown that the bidders' offer was unrealistic, and that taxpayers' money could have been saved.

It is important to say that the result obtained here does not necessarily mean that public-private partnerships should not be considered as a valid option for the public sector. They are indeed. When considering the level of public debt and the needs for investments

in replacing or creating new infrastructures, private sector efficiency and capability of raising debt is crucial for these efforts. However, in this particular case, the analysis that should have taken place before the decision was lacking. One of the open questions is the externalities impact of building these roads, considering that the option might have been not to build at all. It is necessary to calculate the economic impact of this investment using the social time preference rate.

What we have clearly claimed is that there should be no prejudiced belief in public-private partnerships, and they should be looked upon without any ideological predisposition. This is equally valid for those who believe that using the private sector is a guarantee of better efficiency, and for those who do not believe in private sector virtues.

International experience and results regarding whether public-private partnerships create value for money are not entirely consensual. Some studies indicate that public-private partnerships have created value for money, by reducing costs, deadlines or improving services. In some cases, those studies have been criticised, and the argument that a comparison between the performance of a public-private partnership and traditional procurement might be biased in favour of public-private partnerships. But many projects all over the world have failed, with the public-private partnerships returning to public management.

According to a UK National Audit Office report, public-private partnerships in the United Kingdom have been delivered on time and on budget more often than traditional procurement. Traditional procurement has been on time and on budget only 30% of the time, while public-private partnerships have been on time and on budget around 70% of the time (National Audit Office, 2003).

We argue that public-private partnerships are a good solution, but only when the public sector is capable of negotiating with the private bidders, when they know exactly what the limits of those negotiations are, and when they understand the point at which there are no more advantages in turning to a private sector solution.

In fact, public-private partnerships have the potential to promote greater levels of efficiency by involving the private sector. However, this will only happen if the efficiency earnings exceed the higher cost of finance that the private sector brings due to higher interest rates. This can be achieved by having the private sector invest in reducing lifecycle costs, by using higher standards in construction, by more frequently handling maintenance and by investing in new technology, or simply by having better management and a simpler process.

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