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The effects of fiscal stimulus packages on employment

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Economic and
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Analysis
Department

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Preface

The primary goal of the ILO is to contribute, with member States, to achieve full and productive employment and decent work for all, including women and young people, a goal embedded in the ILO Declaration 2008 on *Social Justice for a Fair Globalization*,[1] and which has now been widely adopted by the international community.

In order to support member States and the social partners to reach the goal, the ILO pursues a Decent Work Agenda which comprises four interrelated areas: Respect for fundamental worker's rights and international labour standards, employment promotion, social protection and social dialogue. Explanations of this integrated approach and related challenges are contained in a number of key documents: in those explaining and elaborating the concept of decent work,[2] in the Employment Policy Convention, 1964 (No. 122), and in the Global Employment Agenda.

The Global Employment Agenda was developed by the ILO through tripartite consensus of its Governing Body's Employment and Social Policy Committee. Since its adoption in 2003 it has been further articulated and made more operational and today it constitutes the basic framework through which the ILO pursues the objective of placing employment at the centre of economic and social policies.[3]

The Employment Sector is fully engaged in the implementation of the Global Employment Agenda, and is doing so through a large range of technical support and capacity building activities, advisory services and policy research. As part of its research and publications programme, the Employment Sector promotes knowledge-generation around key policy issues and topics conforming to the core elements of the Global Employment Agenda and the Decent Work Agenda. The Sector's publications consist of books, monographs, working papers, employment reports and policy briefs.[4]

The *Employment Working Papers* series is designed to disseminate the main findings of research initiatives undertaken by the various departments and programmes of the Sector. The working papers are intended to encourage exchange of ideas and to stimulate debate. The views expressed are the responsibility of the author(s) and do not necessarily represent those of the ILO.

José Manuel Salazar-Xirinachs
Executive Director
Employment Sector

[1] See http://www.ilo.org/public/english/bureau/dgo/download/dg_announce_en.pdf

[2] See the successive Reports of the Director-General to the International Labour Conference: *Decent work* (1999); *Reducing the decent work deficit: A global challenge* (2001); *Working out of poverty* (2003).

[3] See http://www.ilo.org/gea. And in particular: *Implementing the Global Employment Agenda: Employment strategies in support of decent work, "Vision" document*, ILO, 2006.

[4] See http://www.ilo.org/employment.

Foreword

In these times of a global crisis in the real economy, which has quite obviously become a jobs crisis, the central challenge facing countries is how to accelerate recovery in the labour market once the crisis in capital markets abates. Experience shows that the recovery of the labour market lags significantly behind recovery in capital markets – often by as much as five years if not longer.

Characteristic of this crisis, unprecedented as it is in its magnitude, is the aggressive way in which governments have endeavoured to roll out not merely financial rescue packages, but fiscal rescue packages destined toward the real economy. Indeed, all 30 OECD countries have acted with dispatch in an effort to stave off the worst consequences of the crisis on employment and livelihoods. Often, these additional measures come on top of existing automatic stabilizers the usefulness of which the present crisis has demonstrated in mitigating the depth of troughs in the economy.

This paper by Dr. Veena Jha presents a remarkably thorough and balanced treatment of what is known and what is not as to the various instruments comprising fiscal rescue efforts in their impact on employment. Would a general tax cut be more effective than, say, more spending on infrastructure? The paper answers questions of this nature with authority. One element of an answer relates to the time it takes to put a measure into effect. For example, infrastructure projects have a larger "fiscal multiplier" than tax cuts. (People, uncertain of the future, tend to save.) That said, a tax cut can be put into place immediately, whereas the number of "shovel-ready" projects might be limited. In developing countries, moreover, infrastructure projects might be difficult to implement not only because of limited "fiscal space", but because of a dearth of institutional capacity as well.

At a moment when policymakers are grasping for alternatives to safeguard jobs and create new ones, this paper is of particular value in its analysis of possible measures, and the tradeoffs that some of these pose.

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1. Introduction

Fiscal stimulus refers to the use of fiscal policy – government spending or tax measures – to support or revive an economy in recession. There is disagreement among economists about the effectiveness of the stimulus, with some sceptical of any significant effects while others expecting very large effects.[5] Some suggest that fiscal stimulus packages could lead to short term increases in GDP and employment. In the long term, they could reduce output by increasing the nation's debt and crowding out private investment. However, if fiscal stimulus packages result in improvements to roads and highways and increased spending for basic research and education, than such investments may offset the decrease in output in the long run. In general, any economy produces close to its potential output on average, and that potential level is determined by the stock of productive capital, the supply of labour, and productivity. Short-run stimulative policies can affect long-run output by influencing those three factors, although such effects would generally be smaller than the short-run impact of those policies on demand.[6]

The output and hence employment effects of fiscal stimulus packages will also depend on their composition. At a broad macroeconomic level, spending measures tend to have higher multiplier effects than tax cuts, the ratio is estimated at 1.6:1, and the effects are felt over one and a half years.[7] While spending measures have received more mainstream attention over the last few months, tax measures actually represent 56 per cent of the net effect of fiscal stimulus, according to a recent OECD report.[8] However, an IMF report estimates that two thirds of the fiscal packages consist of spending measures in the G20 countries.[9] Additionally the multiplier effects of stimulus packages may differ considerably between developed and developing countries as it is driven in part by the need to save. Developing countries particularly in Asia tend to have a higher marginal propensity to save. This is because they have typically poor social protection measures and hence need higher savings to protect themselves against health or other such emergencies. In these cases, the multiplier effects of stimulus packages are expected to be lower.[10] Multiplier effects also depend on the extent of backward and forward integration in the production process. These tend to be higher in larger economies than in small ones, also accounting for different employment and output effects. [11]

One issue that has been little explored in the literature on fiscal stimulus packages is the time taken to roll these out. The faster the roll out the shorter would be the recession and labour market recovery. In general such expenditures tend to be implemented slowly as

[5] Congressional Budget Office, (CBO) USA, 2008, Options for Responding to Short-Term Economic Weakness

[6] Christina Romer and Jared Bernstein, “The Job Impact of the American Recovery and Reinvestment Plan” (January 9, 2009), and Macroeconomic Advisers, “Fiscal Stimulus to the Rescue” (January 19, 2009).

[7] Christina D. Romer, February 27, 2009, The Case for Fiscal Stimulus: The Likely Effects of the American Recovery and Reinvestment Act.

[8] OECD, March 2009, Fiscal Packages Across OECD Countries: Overview and Country Details.

[9] International Monetary Fund, The State of Public Finances: Outlook and Medium-Term Policies After the 2008 Crisis, Prepared by the Fiscal Affairs Department; in cooperation with other departments Approved by Carlo Cottarelli March 6, 2009.

[10] Dr Keynes's Chinese patient, Nov 13th 2008, The Economist

[11] Erik Dietzenbacher, Interregional Multipliers: Looking Backward, Looking Forward, Regional Studies, Volume 36, Issue 2 April 2002 , pages 125 – 136.

is evidenced by the fact that Canada has spent just 5 per cent of its package in the first five months of this year.[12] Similarly, Congressional Budget Office estimates that almost 60 per cent of the new spending projects would take place after September of 2010.[13] Some leaders feel that it may be necessary to accelerate the roll out of the fiscal stimulus packages of the Group of Seven and G20 nations to mitigate the impact of a deeper-than-expected recession.[14] Overall, the IMF expects the world economy to shrink 1.3 per cent in 2009, with growth of 1.9 per cent to follow in 2010. (Global economic growth of less than 3 per cent is considered to be a recession).

To disburse the fiscal stimulus packages administrative and institutional capacity is required. In general it is easier to upscale existing disbursement channels rather than build new ones. The process of bidding which is inevitable in government procurement contracts may also be time consuming and cumbersome. Tax breaks may be easier to administer even though they have smaller multiplier effects than spending increase. The employment effects of stimulus programmes will also depend on the administrative and institutional capacity for delivery. The employment effects of government spending is expected to be higher, but the administrative capacity required for disbursing government expenditure is also likely to be more exacting.

This paper analyses the different facets of fiscal stimulus packages with a view to understanding their possible employment effects. Such a comparative analysis will also help in developing a framework for a toolkit on what works from an employment point of view. The circumstances in which fiscal stimulus packages are implemented may also differ across countries making it easier to obtain quick labour market gains in some. Developing countries may experience very different institutional and administrative conditions and hence may need to design their packages differently. From a policy point of view, the purpose is also to understand which components can be accelerated to deliver on employment goals in both developing and developed countries.

Keeping these points in view, section 2 examines the size and composition of the fiscal stimulus packages. Section 3 analyses the different components of developing country stimulus packages. Section 4 seeks to understand the factors that determine their short run employment of output effects across a range of countries. Section 5 lists out some case studies on the success and failures of fiscal stimulus packages. Section 6 analyses the government debt issues which guide the long run effects of fiscal stimulus packages. Section 7 concludes with some observations on whether and how fiscal stimulus packages can be made to work to bring economies out of recession.

[12] Ottawa has spent 5 per cent of its stimulus package, Paul Vieira, Financial Post Published: Thursday, May 14, 2009

[13] CBO, 2009, p. 3.

[14] Flaherty to push G20 for faster rollout of stimulus packages, By Paul Vieira, Financial Post, April 23, 2009.

2. Size and composition of fiscal stimulus packages

The size of the fiscal stimulus packages is of material importance as it has to be large enough to bring economies out of recession. At the same time it should not lead to huge government debts which could crowd out private investment or constrain the long run growth prospects of an economy. According to the IMF, the total amount of stimulus in the G-20 amounts to about $692 billion for 2009, which is about 1.4 percent of their combined GDP and a little over 1.1 percent of global GDP. This falls short of what is needed to tackle the current economic crisis. The IMF, for instance, has called for stimulus equal to 2 percent of global GDP.15

Table 1: G20 stimulus packages

Country	IMF	JPMorgan	Difference	
			IMF-JPMorgan	JPMorgan as % of IMF
Argentina	1.3	0.5	0.8	38
Australia	0.8	2.4	-1.6	300
Brazil	0.3	0.3	0.0	100
Canada	1.5	1.1	0.4	73
China	2.0	2.1	-0.1	105
France	0.7	1.0	-0.3	143
Germany	1.5	1.3	0.2	87
India	0.5	5.0	-4.5	1000
Indonesia	1.3	0.0	1.3	0
Italy	0.2	0.1	0.1	50
Japan	1.4	2.0	-0.6	143
Korea	1.5	1.1	0.4	73
Mexico	1.0	1.4	-0.4	140
Russia	1.7	1.1	0.6	65
Saudi Arabia	3.3	n.a.	n.a.	n.a.
South Africa	1.3	1.6	-0.3	123
Spain	1.1	1.9	-0.8	173
Turkey	0.0	0.0	0.0	n.a.
United Kingdom	1.4	1.6	-0.2	114
United States	1.9	2.0	-0.1	105
Total-GDP Weighted				
PPP	1.4	1.8	-0.3	124
US$	1.4	1.7	-0.2	115

Source:Truman, February 24th, 2009, Assessing Global Fiscal Stimulus: Is the World Being Short-Changed? REALTIME ECONOMIC ISSUES WATCH

[15] Assessing the G-20 Economic Stimulus Plans: A Deeper Look, by Eswar Prasad and Isaac Sorkin March 2009. Countries covered by this study are: Argentina, Australia, Belgium, Brazil, Canada, China, The Czech Republic, European Union, France, Germany, Hong Kong, Hungary, India, Ireland, Italy, Japan, Netherlands, Russia, Singapore, South Korea, Switzerland, Taiwan, Turkey, United Kingdom and United States.

Table 1 shows the extent of the stimulus packages for the G20 countries as identified by IMF and JPMorgan. Several features stand out. There are substantial differences between the two sets of estimates, as indeed between these and the OECD estimates or the ILO estimates. On average JPMorgan's estimates are about 20 percent larger, but for 7 countries they are smaller. On the IMF's estimates only three countries (China, Saudi Arabia, and the United States) come close to meeting the 2 percentage-point criterion. Six countries make it on the JPMorgan estimates (Australia, India, Japan, and Spain, in addition to China and the United States, with no estimate for Saudi Arabia). Although the IMF publication uses purchasing power parity (PPP) weights to measure the total, PPP weights may not be an appropriate measure for global spending. While estimates differ, most estimates converge in the range between 1.4 and 1.7 percent of global GDP.

The ILO estimates the fiscal stimulus as a percentage of GDP for 32 countries at 1.7 per cent, while as percentage of world GDP it is 1.4 per cent (see Table 2). Stimulus as a percentage of GDP for advanced economies is 1.3 per cent and for developing and emerging economies it is 2.7 per cent. Furthermore, fiscal stimulus announced by the G20 is close to 90 per cent of the total global economic stimulus as it includes the two biggest contributors, the United States and China.[16] The OECD estimates the size of the fiscal packages over the period 2008-10 at about 3½ per cent of OECD 2008 GDP, and the estimated growth from these would amount to around ½ per cent for the average OECD country.[17]

Three countries – the U.S., China and Japan – account for about $424 billion of the overall stimulus in 2009, with their shares in the overall global stimulus amounting to 39 percent (U.S.), 13 percent (China) and 10 percent (Japan). In 2010, the U.S. would account for over 60 percent of planned stimulus. China and Germany are the next largest contributors with China contributing 15 percent of G-20 stimulus and Germany contributing 11 percent. Measures for 2010 in the U.S. stimulus package amount to 2.9 percent of 2008 GDP, China's 2.3 percent, and Germany's 2.0 percent. In summary, while almost all countries have signed on to the fiscal stimulus program, the size of the stimulus varies substantially across countries, with some of the stimulus packages looking downright meek (e.g., France, which has proposed measures amounting to only 0.7 percent of GDP in 2009). For the remaining G-20 economies, the total fiscal stimulus amounts to 1.0 percent of their overall GDP.[18]

ILO estimates suggest that China has announced the biggest total package as a percentage of GDP (13 per cent), followed by Saudi Arabia (11.3 per cent), Malaysia (7.9 per cent), and the United States (5.6 per cent).[19] (see Table 2)

Spending versus tax cuts

Most countries that have announced multiple waves of stimulus have increased the share of spending (compared to tax cuts) in the second round, just as the U.S. has done from January 2008 to January 2009. For example, Germany's stimulus in November 2008 was largely composed of tax cuts. The second stimulus package announced in January 2009 was largely tilted towards spending. Similar features can be found in the stimulus measures

[16] Sameer Khatiwada, Stimulus packages to counter global economic crisis, DP/196/2009, International Labour Institute, Geneva, Switzerland

[17] OECD Economic Outlook, March 2009, Interim Report,

[18] Eswar Prasad and Isaac Sorkin, op.cit

[19] Sameer Khatiwada, op.cit

announced in Australia in October 2008 and February 2009, and in Spain in March 2008 and November 2008. There is a great deal of variation across countries in the share of the stimulus that is devoted to tax cuts. In the U.S., this share is about 45 percent. Some countries – including Brazil, Russia and the U.K. – have focused almost entirely on tax cuts. Others—including Argentina, China and India – have mostly proposed spending measures. Among the G-20 countries excluding the U.S., about one-third of the stimulus is accounted for by tax cuts and the remainder by[20] spending measures.

Through a broad analysis of fiscal stimulus packages of about 40 countries, the ILO shows that almost all of them are directed at either increasing spending on public goods and services, or increasing consumption through personal income tax cuts, cash transfers, and increasing investment through corporate tax cuts. Half the countries have announced spending increases in infrastructure and on education and health.[21]

Expansion of social security benefits

A tenet of the *American Recovery and Reinvestment Act*[22] is the expansion of social security benefits, by increasing spending on public health, unemployment and disability benefits, food stamps and other social security programs. Brazil and Mexico are expanding their cash transfer programs to millions of citizens,[23] South Africa is lowering retirement age and extending child benefits up to the age of 18. Most governments announced plans to expand social security benefits for the population, such as strengthening unemployment benefits (e.g. Canada, France, Russia, UK, US), increased cash transfer programs (e.g. Brazil, Canada, Chile, France, Italy, Indonesia, Japan, Mexico, Philippines, South Korea, Thailand), housing support (e.g. Australia, China, Italy, Mexico, Spain, US), child benefits (e.g. Australia, Brazil, Germany, Mexico, South Africa, Spain) and pensions (e.g. Argentina, Australia, Canada, China, France, Philippines, Russia, Spain); or extending concessional loans to low-income citizens (Saudi Arabia). Some governments, like Taiwan Province of China, have issued coupons for consumers valid at all wholesale and retail stores, a kind of basic income.[24]

Measures aimed at stimulating private investment through subsidies

Several fiscal stimulus packages are aimed at stimulating private investment. Generally, this includes subsidies and corporate tax breaks, most often support to cash-strapped small and medium-size companies (SMEs) and large export earners. Brazil, Canada, Chile, France, Germany, India, Indonesia, Portugal, Russia, Spain, South Korea, US, among others, plan cuts in corporate taxes and tax rebates. In Germany, the new Act guarantees S$514.4 billion worth of interbank loans with maturities of up to three years and allocates US$ 25.7 billion to back up this guarantee; in addition, to stimulate the economy, the German Federal Cabinet introduced a package focused on tax incentives and subsidies

[20] Ernst and Young, 2009, Worldwide fiscal stimulus – tax policy plays a major role

[21] Ortiz, Isabel, Fiscal stimulus Plans-the need for a Global New Deal

[22] The US American Recovery and Reinvestment Act, February 17 2009.

[23] Mexico, National Agreement in Support of Family Households 7 January 2009.

[24] Special Statute for Distributing Consumption Vouchers for Revitalizing the Economy, December 5, 2008. Taiwan, Province of China

to industry.[25] Some countries have focused on strategic sectors, such as construction (e.g. Canada, Germany, Norway), agriculture (e.g. Russia, Vietnam), auto industry (e.g. Brazil, France, Germany, Hungary, Russia, Spain, US), tourism and miscellaneous exporters (e.g. Spain, Chile, Finland, Switzerland). In Argentina and Japan, the package includes incentives for SMEs to hire and put on the books workers who currently are informal/temporary[26], and in Spain and the UK, to companies contracting unemployed heads of households.[27] Several stimulus packages have placed emphasis on the viability of large firms, especially in the financial and automotive sectors. In some cases, measures have been explicitly targeted at SMEs (e.g. Japan, the Republic of Korea, and Mexico). In addition, public investments in infrastructure, construction and housing will also provide new market opportunities for firms.[28]

Infrastructure development

Virtually all countries are allocating large sums to infrastructure development. The People's Republic of China will focus most of its stimulus package in social infrastructure (low-income housing; sanitation, schools…) as well as economic infrastructure, including railways, highways, airports, upgrading of power grids, post-earthquake rebuilding.[29] In France, €11.1 billion (nearly half of the stimulus package) will be provided for direct state investment, including large state-run companies to improve rail and energy infrastructures and the postal service, higher education, research and improvement of state-owned properties. [30]Other countries are introducing incentives for development of environmentally friendly technologies (Canada, China, Germany, Poland, Portugal, UK, US).

In its recent study, Ernst & Young examine tax-related fiscal stimulus measures in 24 key jurisdictions.[31]

Types of tax based fiscal stimulus efforts include:

Accelerated depreciation programs – to improve cash flow for businesses by allowing them to write off the costs of investments more rapidly (adopted by countries such as India, Australia, Canada, The Czech Republic, France, Germany, Ireland, Netherlands, Russia, Singapore and United States).

Carryforward and carryback provisions – to provide cash flow assistance by giving traditionally profitable companies more latitude in using net operating loss credits they are accumulating in the current difficult environment (adopted by countries such as Australia (proposed), France, Japan, Singapore, S Korea, Taiwan, United Kingdom and United States).

[25] Financial Market Stabilization Fund, effective on October 18, 2008 *(Gesetz zur Errichtung eines Finanzmarktstabilisierungsfonds)*

[26] Argentina Law 26476 on Anti-Crisis Measures (R*égimen de regularización impositiva, promoción yprotección del empleo registrado, exteriorización y repatriación de capitales).*

[27] *Plan Espanol para el Estimulo de la Economia y el Empleo, "Plan E"*, January 12 2009

[28] Sameer W, ILO, Op.cit

[29] Premier Wen Jiabao Presides over State Council Executive Meeting, Decides on Ten Measures to Increase Domestic Demand. Xinhuanet, Nov. 19, 2008.

[30] Loi 2008-1061 du 16 octobre 2008 de finances rectificative pour le financement de l'économie, Journal Officiel, Oct. 17, 2008

[31] Ernst and Young, op.cit

Reductions in corporate income tax rates – to improve cash flow, stimulate overall demand and encourage investment, as well as to be more attractive in the international competition for jobs and investment (adopted by countries such as Canada, The Czech Republic, Italy, Japan, Netherlands, Russia, Singapore, South Korea and Taiwan).

Enhancements to the research and development tax credit – to provide added incentive for companies to maintain their investment in innovation, and to attract new R&D activity, despite current economic challenges (adopted by countries such as Australia (proposed), Belgium, Canada, France, Ireland, Italy, Russia, Singapore and S Korea).

Indirect tax changes – to maintain demand by reducing the costs of goods and services (adopted by countries such as India, Australia, Belgium, Brazil, Canada, China, The Czech Republic, France, Hong Kong, Hungary, Ireland, Netherlands, Russia, Switzerland and United Kingdom).

Personal income tax measures – to increase overall demand by increasing after-tax pay, particularly for lower and middle income taxpayers (adopted by countries such as Argentina, Australia, Brazil, The Czech Republic, Hungary, Russia, S Korea, Switzerland, Taiwan and United States).

Among the significant emerging trends, the Ernst and Young study points out that some of the recently instituted tax-based fiscal stimulus measures are permanent, but many are temporary. Also, in many cases, the new measures favor certain types of activity, with manufacturing, technology, energy efficiency and transportation among commonly targeted categories. In some cases, more generous support is offered for small- and medium-sized enterprises, which generally have been hit hardest by current economic challenges. Along the same lines, the majority of personal income tax measures have focused on lower- and middle-income earners. The expenditure measures favour infrastructure development or greater equity. Most of these measures are expected to boost the economy. Infrastructure and subsidies to firms will provide benefits which would be spread over the longer term. However social protection measures are expected to immediately stimulate the economy and provide short term relief. This would particularly be the case for cash strapped households whose effective demand could be stimulated by improved social protection measures.

Speed of Stimulus

Countries vary in the degree of frontloading of their stimulus packages. This is partially a function of the peculiarities of the budget process in each country – countries may not announce stimulus for the future though they intend to enact it as part of their regular budget process. Of the 19 countries that make up the G-20, only four countries – China, Germany, Saudi Arabia, and the U.S. – plan to spend as much or more on stimulus (as a share of GDP) in 2010 than in 2009. In other words, there is a fair amount of frontloading in the stimulus packages of the G-20 countries, with much of the stimulus taking effect in 2009. The roll out of the stimulus packages is determined by the perceptions of the length of the economic recession. Roll out also depends on the number of shovel ready projects that are readily available to the government. It could also reflect difficulty in ramping up government expenditure quickly, especially on infrastructure and other investment projects. Some countries recognized the coming crisis and implemented stimulus plans in 2008. This list includes Australia, China, Japan, Korea, Saudi Arabia, South Africa, Spain, U.K. and the U.S. [32] But the execution, both in terms of size and speed, leaves much to be desired in some of the G-20 countries.[33]

The OECD countries also broadly show the same trends as the G20 countries. On the basis of currently announced measures, the crisis-related fiscal stimulus is typically expected to be strongest in 2009, although again with some country variation. Discretionary fiscal measures to cushion the decline in activity were implemented already in 2008 in several countries (including Australia, Canada, Korea, New Zealand, Spain and the United States). It is, however, in 2009 that a vast majority of countries will implement large supportive measures. For some countries (Canada, Finland, Germany, the Netherlands, New Zealand, Sweden and the United States), the sizes of fiscal packages in 2009 and 2010 are broadly comparable, implying a more or less continued pace of fiscal injection into 2010. There are two countries (Denmark and the Slovak Republic) that plan to have significantly larger packages in 2010. For most other countries, however, the fiscal injection is projected to taper off in 2010, the United Kingdom being in an extreme position with a tightening associated with the end of the temporary cut in VAT rate.[34]

Starting Q3 2008 through Q4 2009, the GDP growth in the US economy is expected to contract. RGE Monitor forecasts that private demand will decline close to $900 bn. RGE Monitor estimates that out of the $787 bn fiscal package, only around $364 bn of stimulus will actually kick-in during 2009-10, which might raise GDP growth by 2.5 per cent during 2009-10. Thus, fiscal policy will still be insufficient to offset the contraction in private demand, let alone lead to positive GDP growth in the second half of 2009.

For most of the Asian countries, stimulus packages are expected to be frontloaded tapering off towards the end of 2009. This applies equally to tax and to expenditure measures. [35] There is very little information available on how much of the stimulus packages have actually been rolled out. Preliminary estimates suggest that less than 10 per cent of the actual packages have been rolled out in the first five months of 2009.[36] In fact it is expected that most infrastructure spending will most likely not start coming on line until the fourth quarter of 2009 and its full effect is at least 12 to 18 months away. In other words, the fiscal stimulus measures are more likely to be a 2010 story.[37]

3. Fiscal stimulus packages in developing countries in comparison to developed countries

Developing countries have also adopted large fiscal stimulus packages though their sizes and composition vary from those of developed countries. In general Asia has adopted larger fiscal stimulus packages than other parts of the world as a proportion of their GDP. Apart from South Africa other AFRICAN countries have adopted few or no measures. Most Asian countries have adopted spending measures which are a high percentage of their GDP, substantially above 2 per cent. Developing Asia as a whole is likely to spend about

[32] IMF. Op.cit

[33] Ibid

[34] OECD, Fiscal Measures in the OECD,op.cit

[35] ESCAP, 2009,

[36] Fiscal Stimulus in G20 countries, Forbes.com

[37] Anthony Karydakis,2009,Stimulus will take a while to work, Fortune Magazine, January 2009

3.9 per cent of its total GDP on fiscal stimulus in 2009. However when China is removed from this figure, the regional percentage falls to 1.4 per cent.[38]

The size of countries' fiscal stimulus packages varies greatly, ranging from the US$586 billion Chinese measure to be implemented over two years, to Viet Nam's package worth around US$1billion.[39] In relative terms, the Chinese measure accounts for approximately 7 per cent of the country's GDP each year – a figure surpassed only by Singapore's stimulus package announced for 2009. The Philippines, Republic of Korea and Thailand are planning to spend between 3 to 4 per cent of their respective GDP to increase demand. India's two fiscal packages together represent less than 1 per cent of the country's GDP.[40]

The ILO paper argues that it is not always clear how much of a package is new spending versus previously planned spending. Some Asian governments had already put in place some helpful policies and programmes that are now mitigating the crisis' adverse impact but are not necessarily considered as a part of the fiscal response.

The composition of fiscal stimulus packages in Asia differs greatly across the region, depending on the magnitude and type of impacts of the economic crisis, the degree of integration, existing policies and other factors. In China and Malaysia, planned fiscal stimulus is mainly in the form of increased government spending, especially investment in infrastructure. Both countries have been affected by decreased export demand for their goods and by decline in FDI inflows. Maintaining domestic investment is critical to increase aggregate demand, especially in China. [41]

In India, fiscal measures place greater emphasis on supporting particular industries, including labour-intensive and export-oriented businesses. The package also includes measures aimed at ensuring liquidity in the financial system and encouraging investment in infrastructure. The reason for this approach seems to be threefold. First, the impact of the global crisis on the country has not been as sharp as in some other Asian economies because exports form only 10-15 per cent of India's GDP. Second, the impact has been primarily limited to urban industrial areas. Because India's urban areas are not closely integrated with the country's vast rural economy, the overall impact has been muted. In fact industrial sector is moving towards the vast rural sector. Third, India has already put in place country-wide rural poverty alleviation programmes, which are financed outside the stimulus packages.[42]

In Thailand, demand stimulus is aimed at consumers, supporting living standards and household spending through a variety of measures. Compared with India, Thailand is a more open economy as well as more integrated in terms of rural-urban linkages. Therefore, the impact of the crisis on its export sectors and its social fallout has spread rapidly from urban to rural areas.[43]

In Singapore, fiscal stimulus is aimed at firms and consumers, while promoting competitiveness and skills development in the medium term. The country's small domestic

[38] ILO Regional Office for Asia and the Pacific, Bangkok, 2009 The fallout in Asia: Assessing labour market impacts and national policy responses to the global financial crisis, Paper presented at a conference in Manila on 18-20 February 2009

[39] ILO Regional Office for Asia and the Pacific, 2009, op.cit, Annex 4

[40] IMF: World Economic Outlook Database (October 2008).

[41] ILO regional office for Asia and the Pacific, 2009, op.cit

[42] Ibid

[43] Ibid

market combined with its heavy reliance on global demand suggests that the ability of fiscal stimulus alone to support growth and recovery may be limited.[44]

In many Latin American countries fiscal stimulus packages are well below 2 per cent of the GDP for two main reasons. First, the collapse in export prices and volumes has a direct and large impact on public finances. The IMF estimated that a 35 percent decline in commodity prices, like the one observed from a year ago, would cause a reduction in fiscal revenue (in terms of GDP) of about 7 percent in Trinidad and Tobago, 6 percent in Venezuela, 4 percent in Ecuador and Bolivia, 3 percent in Mexico and Chile, and 1.5 percent in Peru and Argentina. This effect, combined with the reduction in general tax revenues, is exerting pressure on borrowing requirements, even before any consideration is made about a discretionary fiscal stimulus.[45]

Second, in some cases, government debt is already over 50 percent of GDP, a sign of sustainability problems. In those cases where public debt is under 40 percent of GDP, the real question is whether additional financing is available. This explains the differential fiscal responses in the region. The larger economies, with lower debt-to-GDP ratios and greater access to private capital flows, have announced fiscal plans to counteract the effects of the crisis. These include Argentina, Brazil, Chile, Mexico and Peru.[46]

Brazil has focused on tax cuts. The tax on financial transactions will be cut from 3 percent to 1.5 percent, while personal income tax rates were lowered to favor those who earn up to US$875 per month. The estimated cost of these measures is 0.5 percent of GDP. Additional investments were announced, but they rely on the private sector or will not take place anytime soon, like the high-speed train connecting Rio de Janeiro and São Paulo. [47]

The Mexican government decided to accelerate investments in infrastructure. Again much of it depends on the private sector, so the net effect is difficult to assess. Supplemental budget allocations have been announced for social programs, especially in the area of employment protection. The IMF has estimated that the total additional expenditures amount to 1 percent of GDP. [48]

Chile has the largest stimulus package in the region. On the revenue side, effective corporate and personal income tax rates were reduced, while the stamp duty was eliminated for 2009. A US$7 billion public investment budget was announced, including a 10 percent real increase in housing subsidies. In addition, the package includes an employment subsidy for low-wage young workers, as well as additional cash transfers to low income households. The cost is estimated at US$4 billion, or 2.2 percent of GDP, making it the largest fiscal stimulus package in Latin America. [49]

Mainly through the forced nationalization of pension savings, the government of Argentina has been able to finance a larger fiscal deficit. Export taxes have been lowered as well as employer's social security contributions. On the expenditure side, an additional allocation for social programs was adopted, as well as a large public works plan worth

[44] Ibid

[45] Antonio Spilimbergo, Steve Symansky, Olivier Blanchard, and Carlo Cottarelli, 2008, Fiscal policy for the Crisis, IMF Staff position note, December 29, 2008.

[46] Ibid

[47] The Limits to Fiscal Stimulus in Latin America and the Caribbean, Mauricio Cárdenas, Director, Latin America Initiative, Julia Guerreiro, Research Assistant, Global Economy and Development, The Brookings Institution

[48] Ibid

[49] Ibid

US$4.4 billion, or 1.3 percent of GDP. However, given that the funding is entirely based on forced domestic savings many question its effectiveness from the demand point of view.[50]

The Peruvian program is based on a US$1.4 billion increase in public investment in 2009 (1.1 percent of GDP), mostly for roads, housing and hospitals. The program also includes additional incentives for non-traditional exports and an increase in social programs with an estimated cost of 0.15 percent of GDP.

All in all, the total effective stimulus in five of the seven largest economies in the region is estimated to amount to USD 27 billion, or 0.8 percent of their combined GDP. This might not be enough to offset the effects of the crisis, but is a realistic limit on what can be done for other countries in the region. Few countries could do more without wearing down confidence in their ability to pay their debt.[51]

In general there is little difference between the stimulus packages of developed and developing countries. Their size differs according to their initial conditions, degree of integration in the global economy and the size of their budget deficits. There is a greater emphasis on spending in Asian countries and greater emphasis on tax reduction in Latin American countries. The Asian countries have a more comprehensive package, but several developing countries rely on stimulating private investment to take them out of the economic crisis. Several measures were instituted as part of the budget process and while they would stimulate the economies cannot be strictly correlated to the current economic crisis.

4. Effectiveness of fiscal stimulus packages

Good politics makes a bad multiplier

The composition of the fiscal packages clearly reflects political compromises, which unfortunately will also limit their effectiveness to prop up a nascent recovery soon. The fiscal multiplier – a gauge of "bang-for-the-buck"– associated with each of them is an indicator of their relative effectiveness. The value of the fiscal multiplier critically depends upon the share of different elements of the fiscal stimulus package.

Public investment has the highest short-run multiplier. On impact, the one-to-one relationship between public investment and GDP makes its multiplier 1.0. [52]Just under a quarter of the stimulus in most countries is directed at public investment (see Table 2). The figure is much higher for developing countries where it varies between 40 and 100 per cent. This limit reflects the need for so-called "shovel-ready" projects that can be used for quick injection of demand. The identification of such projects, that also bring longer-term value, could have begun earlier and must now proceed apace.

Multipliers for raising incomes of consumers are smaller because consumers are likely to save part of any additional income. The aim, therefore, has to be to target any additional income to liquidity-constrained households who are likely to spend. In this regard, the significant reliance on proposed reductions in the personal income tax rate will bring limited benefits. Only the richest half of the population pays personal income taxes. In

[50] Ibid

[51] Ibid

[52] Antonio Spilimbergo, Steve Symansky, and Martin Schindler, May 2009, Fiscal Multipliers, IMF staff position paper,SPN/09/11

contrast, reductions in social contributions or an increase in social benefits provide more short-term stimulus. While proponents of personal income tax reduction may argue that it has longer-term incentive effects, so does the reduction of payroll taxes, which is also more strongly stimulative in the short run and which could have received greater weight.

Finally, incentives for private sector investment are likely to have minimal multipliers in the current environment of low business confidence and corporate stress. Yet, more than one-tenth of the various packages are measures designed to bolster private investment, such as accelerated depreciation rules and greater deductibility of expenditures.

Initial conditions also determine how effectively and how quickly fiscal stimulus packages can turn the global economy around. Deflationary pressure are coming from a variety of sources, including the sharp decline in stock market and housing wealth, the related desire to rebuild assets and to repay debts, the difficulty of accessing credit in a world of deleveraging, and the much-increased uncertainty surrounding future economic developments.[53] IMF analysis implies that if fiscal policy and monetary policy work together, they can make a significant contribution to preventing the economy from weakening further and falling into a vicious cycle of deep recession and deflation. The main policy conclusions of this multiplier analysis are threefold. First, temporary expansionary fiscal actions can be highly effective provided that monetary policy is accommodative. Second, the effects of the fiscal expansion are magnified if it involves multiple countries. And third, the type of fiscal instrument used to bring about the increased fiscal deficit can have a large influence on the size of the fiscal multiplier.[54]

Empirical estimates of multipliers

The empirical estimates of fiscal multipliers are dispersed over a very broad range, reflecting the inherent difficulty of identifying the working of a fiscal impulse in the economy. In particular, simultaneity problems (most notably the two-way linkages between economic activity and fiscal balances) make it very difficult to pin down the effects of discretionary fiscal actions. In studies that pay close attention to the identification of fiscal stimulus in the United States[55], a fiscal stimulus of 1 percent of GDP has been found to increase GDP by close to 1 percentage point at impact and by as much as 2 to 3 percentage points of GDP when the effect peaks a few years later.[56] On the other hand, Perotti[57] finds much smaller multipliers for European countries using the same identification strategy that was employed by the US study.[58]Cross-country studies often find small fiscal multipliers

[53] The IMF has recently called for global fiscal stimulus and discussed core principles for the fiscal response to the crisis. See Lipsky (2008), Spilimbergo and others (2008), and Decressin and Laxton (2009). See also IMF (2009) for a discussion of the state of public finances after the 2008 crisis.

[54] See, for example, Yates (2003). Even those who believe that monetary policy can continue to have significant effects in such circumstances agree that its impact is blunter, less predictable and harder to gauge than in normal situations.

[55] Blanchard, Olivier, and Roberto Perotti, 2002, "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output," *Quarterly Journal of Economics*, Vol. 117, pp. 1329–1368.

[56] Romer, Christina, and David Romer, 2008, "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks" (unpublished; University of California, Berkeley).

[57] Perotti, Roberto, 2005, "Estimating the Effects of Fiscal Policy in OECD Countries," CEPR Discussion Paper No. 4842 (London: Centre for Economic Policy Research).

[58] Blanchard and Perotti (2002), op.cit.

and in some cases multipliers with a negative sign.[59] The most notable studies with "negative multipliers" are found in the literature on expansionary fiscal contraction initiated by Giavazzi and Pagano (1990)[60] and surveyed in Hemming, Kell, and Mahfouz (2002).[61] F*iscal expansions can be contractionary* if they decrease consumers' and investors' confidence, especially if the fiscal expansion raises, or reinforces, fiscal sustainability concerns.

Net effects on output and employment

While the size of fiscal multipliers can vary significantly and can even be negative, the IMF estimates the short run multiplier in the range of 0.5 to 1.62 The estimates of fiscal packages are based on the ILO study by Sameer Khatiwada.[63]. Using employment elasticities estimated by the ILO64 and the multipliers estimated by IMF, approximate short run effects on output and employment are estimated below in Table 2.

The highest employment and output effects are observed in developing Asia because of the higher employment elasticity of growth. [65]As stated above the stimulus packages for a number of Asian countries are also significantly above the 2 per cent prescribed by the IMF. The range of growth and employment effects estimated by the World Bank are also similar and relatively modest.[66]Japan shows negative employment effects because of the negative employment elasticity of growth. The same can be observed for South Africa. This may however change with affirmative employment policies. The highest growth in output and employment is observed for Saudi Arabia because both the employment elasticity and the size of the stimulus is higher. European countries generally have lower effects both because the stimulus is small and the elasticities are low. The Latin American countries have low employment effects despite good stimulus packages on account of low employment elasticities. It must be noted that these figures may underestimate the employment and output effects as they do not estimated the effects of third country stimulus packages on exports. For example, for developing Asia as a whole, the value of shipments in the first half of 2008 was down by a little over 1 per cent compared with a world decline of 4 per cent. The moderation of the contraction in April-June compared to January-March in clothing import growth may be attributed to the fiscal stimulus, but this is unlikely to persist into the second half of 2008.[67] The push in the G20 meeting for Europe to match the stimulus packages in the US was presaged on fears that the Germans in

[59] Charlotte Christiansen, 2008, *Mean Reversion in US and International Short Rates* CREATES Research Papers 2008-47, School of Economics and Management, University of Aarhus.

[60] Francesco Giavazzi & Marco Pagano, 1990. "Can Severe Fiscal Contractions Be Expansionary? Tales of Two Small European Countries," NBER Chapters, in: NBER Macroeconomics Annual 1990.

[61] Hemming, Richard, Michael Kell, and Selma Mahfouz, 2002, *The Effectiveness of Fiscal Policy in stimulating Economic Activity- A review of the literature*, IMF working paper 02/2008.

[62] IMF, May 2009, op.cit

[63] Sameer Khatiwada, 2009, op.cit.

[64] Steven Kapsos, 2005, The employment intensity of growth: Trends and macroeconomic determinants, International Labour Office, Employment strategy Papers, Employment Trends Unit, Employment Strategy Department

[65] See also Redward, Peter, May 2009, EM Asia Outlook: Signs of Improvement in second quarter of 2009, Barclay's Capital

[66] World Bank, April 2009, Battling the forces of Global Recession, East Asia and Pacific update

[67] Asian Development Bank, 2008, Asian Development Outlook, 2008 Update

particular would use the demand created by the US and British Stimulus to surge German exports. Thus Germany and France would get the benefit of the stimulus without footing the bill for it.[68]

Table 2: Employment and output effects of fiscal stimulus packages

	Total fiscal package (% of GDP	Employment elasticity of growth	Income multiplier effect (multiplier of 0.5)	Employment effect with income multiplier 0.5 (% age change)	Income Multiplier effect (multiplier of 1)	Employment effect with income multiplier 1 (% age change)
Argentina	3.9	0.01	1.95	0.02	3.9	0.04
Australia	2.5	0.56	1.25	0.70	2.5	1.40
Belgium	0.5	0.57	0.25	0.14	0.5	0.29
Brazil	0.2	0.68	0.1	0.07	0.2	0.14
Canada	2	0.44	1	0.44	2	0.88
Chile	2.3	0.28	1.15	0.32	2.3	0.64
China	13	0.17	6.5	1.11	13	2.21
France	1.1	0.57	0.55	0.31	1.1	0.63
Germany	2.8	0.05	1.4	0.07	2.8	0.14
Hungary	3.8	0.03	1.9	0.06	3.8	0.11
India	0.3	0.36	0.15	0.05	0.3	0.11
Indonesia	1.2	0.43	0.6	0.26	1.2	0.52
Italy	0.3	0.74	0.15	0.11	0.3	0.22
Japan	2.3	-0.24	1.15	-0.28	2.3	-0.55
Korea	2.7	0.38	1.35	0.51	2.7	1.03
Malaysia	7.9	0.67	3.95	2.65	7.9	5.29
Mexico	4.7	0.67	2.35	1.57	4.7	3.15
Netherlands	0.8	0.7	0.4	0.28	0.8	0.56
New Zealand	3.8	0.6	1.9	1.14	3.8	2.28
Norway	0.6	0.26	0.3	0.08	0.6	0.16
Philippines	3.7	0.76	1.85	1.41	3.7	2.81
Portugal	1.1	0.4	0.55	0.22	1.1	0.44
Russia	1.1	0.13	0.55	0.07	1.1	0.14
Saudi Arabia	11.3	1.11	5.65	6.27	11.3	12.54
South Africa	1.2	-0.23	0.6	-0.14	1.2	-0.28
Spain	0.8	0.72	0.4	0.29	0.8	0.58
Switzerland	0.3	0.1	0.15	0.02	0.3	0.03
Thailand	2.8	0.38	1.4	0.53	2.8	1.06
United Kingdom	1.3	0.37	0.65	0.24	1.3	0.48
United States	5.6	0.2	2.8	0.56	5.6	1.12
Vietnam	0.9	0.35	0.45	0.16	0.9	0.32

[68] www.stratfor.com

	Likely Spending in 2009 (% of GDP)	Employment Elasticity of Growth	Income Multiplier Effect (Multiplier of 0.8)	Employment effect with income multiplier 0.8 (% age change	Income Multiplier Effect (Multiplier of 1.6)	Employment effect with income multiplier 1.6 (%age change)
Argentina	3.9	0.01	3.12	0.03	6.24	0.06
Australia	1.1	0.56	0.88	0.49	1.76	0.99
Belgium	0.5	0.57	0.4	0.23	0.8	0.46
Brazil	0.2	0.68	0.16	0.11	0.32	0.22
Canada	1	0.44	0.8	0.35	1.6	0.70
Chile	2.2	0.28	1.76	0.49	3.52	0.99
China	6.1	0.17	4.88	0.83	9.76	1.66
France	1.1	0.57	0.88	0.50	1.76	1.00
Germany	1.2	0.05	0.96	0.05	1.92	0.10
Hungary	4	0.03	3.2	0.10	6.4	0.19
India	0.3	0.36	0.24	0.09	0.48	0.17
Indonesia	1.2	0.43	0.96	0.41	1.92	0.83
Italy	0.3	0.74	0.24	0.18	0.48	0.36
Japan	1.5	-0.24	1.2	-0.29	2.4	-0.58
Korea	1.3	0.38	1.04	0.40	2.08	0.79
Malaysia	4.2	0.67	3.36	2.25	6.72	4.50
Mexico	1.9	0.67	1.52	1.02	3.04	2.04
Netherlands	0.8	0.7	0.64	0.45	1.28	0.90
New Zealand	3.7	0.6	2.96	1.78	5.92	3.55
Norway	0.6	0.26	0.48	0.12	0.96	0.25
Philippines	1.3	0.76	1.04	0.79	2.08	1.58
Portugal	1.1	0.4	0.88	0.35	1.76	0.70
Russia	1.1	0.13	0.88	0.11	1.76	0.23
Saudi Arabia	4	1.11	3.2	3.55	6.4	7.10
South Africa	1.3	-0.23	1.04	-0.24	2.08	-0.48
Spain	0.8	0.72	0.64	0.46	1.28	0.92
Switzerland	0.3	0.1	0.24	0.02	0.48	0.05
Thailand	1.2	0.38	0.96	0.36	1.92	0.73
United Kingdom	1.2	0.37	0.96	0.36	1.92	0.71
United States	1.8	0.2	1.44	0.29	2.88	0.58
Vietnam	1.1	0.35	0.88	0.31	1.76	0.62

Output and employment effects in the three large economies

Likely effects in the US

The largest fiscal stimulus packages are in the US and China. Taking all of the short- and long-run effects into account, CBO of the US estimates that the fiscal stimulus packages would increase GDP between 1.4 percent and 3.8 percent by the fourth quarter of 2009, between 1.1 percent and 3.3 percent by the fourth quarter of 2010, between 0.4 percent and 1.3 percent by the fourth quarter of 2011, and declining amounts in later years.

Beyond 2014, GDP is expected to be reduced between zero and 0.2 percent. Correspondingly, the increase in employment would be by 0.8 million to 2.3 million by the fourth quarter of 2009, by 1.2 million to 3.6 million by the fourth quarter of 2010, by 0.6 million to 1.9 million by the fourth quarter of 2011, and by declining numbers in later years.[69] The effect on employment is never estimated to be negative, despite lower GDP in later years, because CBO expects that the U.S. labour market will be at nearly full employment in the long run. The reduction in GDP is therefore estimated to be reflected in lower wages rather than lower employment, as workers will be less productive because the capital stock is smaller.[70]

Serious questions have been raised on whether this would be enough to turn round the economy. The likely scale of employment loss is extremely large. The U.S. economy has already lost nearly 2.6 million jobs since the business cycle peak in December 2007. In the absence of stimulus, the economy could lose another 3 to 4 million more. Thus, a potential total job loss of at least 5 million has to be countered. Even with the large prototypical package, the unemployment rate in 2010Q4 is predicted to be approximately 7.0 per cent, which is well below the approximately 8.8 per cent that would result in the absence of a plan. In light of the substantial quarter-to-quarter variation in the estimates of job creation, a reasonable range for 2010Q4 is 3.3 to 4.1 million jobs created. For example, spending on protecting the vulnerable will create 83 per cent as many jobs in 2009Q4 as it will in 2010Q4. That is, this spending will have nearly equal effects in the two periods.[71]

The estimates suggest that 30 per cent of the jobs created will be in construction and manufacturing, even though these industries employ only 15 per cent of all workers. The other two significant sectors that are disproportionately represented in job creation are retail trade and leisure and hospitality (mining is also represented disproportionately, but employs less than 1 per cent of all workers). Construction, manufacturing, retail trade, and leisure and hospitality all employ large numbers of low- and middle-income workers whose incomes have stagnated in recent decades and who have suffered greatly in the current recession. Summing across industries suggests that the total number of created jobs likely to go to women is roughly 42 per cent of the jobs created by the package.[72]

If the same relationship between movements in overall unemployment and movements in workers working part-time for economic reasons holds for the effects of the recovery package, the program will allow about 1.8/2.3 times 3.4 million, or 2.7 million, workers to move from part time to full time. It will reduce the underemployment rate by more than three percentage points compared to its level in the absence of the recovery package.[73]

Others have argued that with limited multiplier effects of tax cuts for households and firms and delay in the multiplier effects of federal and state government spending, much of the impact on growth in 2009-10 will come from automatic stabilizers such as unemployment benefits, food stamps, Medicaid, and transfers to states. Therefore, the stimulus should have allocated higher spending on automatic stabilizers, transfers to states

[69] Christina D.Romer, Feb 27, 2009, Fiscal Stimulus- the likely effects of the ARRA, Economics Wayne Marr

[70] Ibid.

[71] Romer and Barenstein, The Job effects of American Recovery and Reinvestment Plan, Jan 10, 2009

[72] Ibid

[73] Ibid

and payroll tax cuts and cut back spending on government projects that have high short-run fiscal costs but impact growth only in the long run.[74]

On a quarterly basis, many households will receive tax credits from tax filing, some shovel-ready infrastructure projects will start at the federal and state levels, and states will use federal transfers to fund immediate needs in education, Medicaid, transport and unemployment benefits – these factors might temporarily boost spending in Q2 and Q3 2009 before the economy wears off again starting Q4 2009. In fact, a similar trend was witnessed in Q2 2008 when tax rebates temporarily boosted consumer spending, retail sales and leakages via imports, before the economy fell off the cliff in Q3 2008. The US treasury had distributed in early summer 2008 tax bonuses of around 120 billion $. However, the citizens have saved more than 75 percent of this package. The effect on total consumption is nearly evaporated by now because the consumers have acted in a sensible way. They have run into much too high debts during the time of cheap money.

In 2010, as jobs losses and bank write downs continue and *home prices* keep falling, GDP growth and private demand will remain sluggish. And though the amount of stimulus and its impact on growth will be relatively higher in 2010 than in 2009, it might still be insufficient if financial sector woes and consumer recession worsen. As a result, another stimulus package by late 2009 or early 2010 may need to be announced.

The extent of job creation estimated by the administration might also be optimistic since the boost to consumer spending and investment by firms due to the stimulus will be limited in 2009-10. The extent to which the unemployed from finance, retail, professional services and even high-value manufacturing can move to the construction, energy and health care sectors is also limited in the short-term. Jobs in renewable energy, green technology and the technology sector will be created in the later years subject to investment in these sectors and labour training. Services that accounted for a large share of job creation in recent years will continue to shed jobs at a high pace while lay-offs in corporate, finance and manufacturing (exports) sectors will remain elevated. In fact, RGE Monitor expects *job losses* to reach close to 3 million in 2009 while lay-offs will continue through early 2010 as consumer spending remains sluggish, and firms restructure and cut costs. Thus the stimulus, at best, might slow the pace and scale of lay-offs rather than prevent them all together or restart hiring.

The Congressional Budget Office estimates that the stimulus package will raise the fiscal deficit by $185 bn in FY2009 and by $399 bn in FY2010. RGE Monitor forecasts that the need for another stimulus package and funds for the *banking sector* will push the *fiscal deficit* to over $1.6-1.8 trillion in FY2009 (already $569 bn in FY Oct 2008-Jan 2009) and will keep it over a trillion even in FY2010[75]

In fact based on trade and investment effects Martin Wolf argues that US rescue efforts need to be big enough not only to raise demand for US output but also to raise demand for the surplus output of much of the rest of the world. Given the persistent structural current account deficit, how large does the fiscal deficit need to be to balance the economy at something close to full employment? Assuming, for the moment, that the private sector runs a financial surplus of 6 per cent of GDP and the structural current account deficit is 4 per cent of GDP, the fiscal deficit must be 10 per cent of GDP,

[74] Ibid

[75] Arpitha Bykere, Feb 22, 2009, U.S. Fiscal Stimulus Package: Little Bang For Buck? RGE Analysts' EconoMonitor

indefinitely....And to get to this point the fiscal boost must be huge. A discretionary boost of $760bn (€570bn, £520bn) or 5.3 per cent of GDP is not enough.[76]

Likely effects in the Euro area

The German experience with fiscal stimulus is not very encouraging. For instance, Germany fell flat on its face with its expenditure programmes in the 1970s. Government debt started to grow at unprecedented rates, but unfortunately unemployment increased in parallel.

The old Keynesian argument that stimulating demand in times of crisis is necessary to reduce current account imbalances for instance within the euro area may be short-sighted. The cumulated loss in Italian and other euro area countries' competitiveness has become so severe that its negative effects could no longer be offset by the housing boom which anyway came to a drastic end in the wake of the financial crisis. Again, this is evidence of a further case in which a significant lack of competitiveness simply cannot sustainably be cushioned and covered by stimulating domestic demand. Instead, it can be shown empirically that structural reforms in weaker euro area countries are on the agenda more pressingly than ever. This argument can be generalized for several other euro area member countries as, for instance Portugal and Greece and, later on, also Ireland and Spain.[77]

Likely effects on China

As the global financial crisis worsens, fears over a sharp economic downturn in Mainland China have heightened. The authorities have rolled out a series of measures to mitigate the adverse impacts of the financial crisis. On the fiscal policy front, the central government announced in November 2008 that a stimulus package of RMB4 trillion yuan would be launched during 2009-2010, with most of the funds targeted at infrastructure. The economic outlook for the Mainland economy hinges critically on the effectiveness of this package, since it is unlikely that the external environment will provide much stimulus in the coming year.[78]

Analysis using the IO-table shows that the fiscal stimulus of RMB2 trillion yuan in 2009 could lead to a direct increase of close to RMB1.7 trillion yuan of output, implying a fiscal multiplier of around 0.84. Further analysis of the labour income generated by such an increase in output shows that the fiscal package could potentially generate 18 million to 20 million new jobs in non-farming sectors, depending on how the fiscal spending is allocated across sectors. The impact seems large, but displaced workers might incur costs in moving into sectors that require new skills. Policy measures that facilitate such transition would help to make the fiscal policy more effective in job creation.[79]

The effectiveness of the fiscal stimulus hinges not only upon the production and employment structure of an economy, but also upon its cyclical conditions, the exchange

[76] The Aftermath of Financial Crises, December 2008; www.economics/harvard.edu/ faculty/rogoff/files/ Aftermath.pdf; Banking Crises, December 2008, National Bureau of Economic Research Working Paper 14587, December 2008, www.nber.org; Prospects for the US and the World, December 2008, www.levy.org

[77] Angsar Belke, Should Fiscal policies be coordinated at a time of crisis

[78] Dong He, Zhiwei Zhang and Wenlang Zhang, 9 March 2009, *How large will be the effect of China's fiscal- stimulus package on output and employment*? Hong Kong Monetary Authority, Working Paper 05/2009

[79] Ibid

rate regime, its openness and other factors. Our simulations using the IMF Global Integrated Monetary and Fiscal model, which has been calibrated by us for the Asia-Pacific region, show that while the fiscal multiplier on output ranges between 0.80 and 0.84 in the short run, it is about 1.1 in the medium run under the current cyclical background of a significant global economic downturn. The distinction between the short term and medium term effects is important for the discussion of the economic outlook in 2009. [80]

Second order effects through trade and protectionism

While fiscal stimulus packages are mainly domestically driven, they have spawned a profusion of special interest groups seeking special deals from the government. This has fuelled global concerns over protectionism. There is an unclear approach to "picking losers" who should benefit from proposed bailout measures. Most packages identify sector strategies as the only urgent priority and propose that significant state resources be made available to those sectors, along with accepted trade measures and appropriate incentives. It further speaks about the need for tax relief targeted at firms in distress.

Moral hazards may arise if the government intervened systematically as an equity holder to protect a few large firms. The firms, once bailed out, are likely to take less care in their decisions, which may render them less worthy of bailout. The risk of picking losers is heightened by the fact that the effect of the credit crunch differs among firms. A scheme to provide selective support may end up subsidising a small group of large companies that are relatively well placed to weather the downturn, at the expense of smaller firms with shallower pockets, and taxpayers.

The capacity of the government to identify worthy recipients and ensure taxpayer money is not wasted is relatively limited. A more likely outcome is that the most powerful and best organised will capture the lion's share of any funds available. Therefore, care must be taken in designing interventions so that any provision of public funds or guarantees is open to many firms across all sectors, to avoid competitive distortions. The terms under which such arrangements are proffered should be determined upfront and made available for public scrutiny.

The trade measures identified in fiscal stimulus packages are loosely specified. The backing given to increasing tariffs would reduce competitive pressures at a time when the currency is depreciating, thereby providing more protection. Furthermore, exports around the world are collapsing, reducing competitive market pressure. While tariff increases may not violate World Trade Organisation (WTO) commitments if not raised beyond WTO ceilings, they would run against the need for systemically significant economies not to resort to protectionist measures.

Generally fiscal stimulus packages advocate strengthening preferential procurement in the domestic markets. Many developing countries practice this, and are not a signatory to the relevant WTO agreement. The "buy America" clause in the US stimulus package overlooked the fact that the US was within its WTO rights, though because it shields firms from competitive pressures, a time limit on such measures is required. Otherwise entrenched interest groups will build up. Developing countries with a narrow tax base and escalating social expenditures, could find it even more difficult to sustain an ambitious procurement policy for long.

[80] Ibid

5. Case studies

Japan’s experience with fiscal stimulus packages in the 1990s

During that “lost decade”, Japan's government was very aggressive in implementing a fiscal stimulus. In 1991, public debt represented 60 percent of the country’s GDP. By 2002, it had increased to about 140 percent—that 80 percent increase in government debt over a period of just 11 years implies a very large and very decisive stimulus of 7 percent of GDP per year. Yet, Japan did not get out of the crisis. This was because people chose to increase saving, which mitigated the effects of government spending.

The relevant lesson from Japan’s experience is clear: even if governments around the world agree to implement coordinated fiscal stimulus packages, there is still the issue of whether these fiscal programs will increase aggregate demand enough to offset the excess capacity that has been built up during the 2002-07 bubble. It seems that if public spending delivers higher levels of investment and rational economic agents believe that their income will not be taxed for repayment in the future, the Ricardian equivalence effect will not exist. If policymakers can design a system that allows public projects and programs to generate enough returns to repay themselves, the chance of success is high.

China’s economic stimulus of 1998-2002 is an example of a successful fiscal policy strategy that enhances growth by targeting binding constraints of growth

It illustrates the possibility of combating deflation effectively while overcoming the Ricardian equivalence problem. The Chinese economy entered a period of deflation for nearly five years at the end of 1997. In the midst of the Asian financial crisis, China’s neighbours all depreciate their currencies with sharp economic slumps in Indonesia, Korea, Malaysia, the Philippines, and Thailand. There was heavy deflationary pressure on China, with many economists advocating a parallel depreciation of the RMB. Instead, the authorities decided to hold the exchange rate steady, and to orchestrate a very large fiscal expansion, 1998-2002. The Government issued an estimated RMB 660 billion in bonds specifically to finance infrastructure—which may have induced a total of four times more of bank loans, private and local government investment. As a result, China went through a deflationary period whilst at the same time still recording an average growth rate of 7.8 percent—the highest in the world at that time. More importantly still, most of the projects in the stimulus package were targeted to the release of bottlenecks to growth. Examples of these include the highway system, port facilities, telecommunications, and education.[81] The Chinese economy got out of deflation in 2003; average annual GDP growth rate increased from annual average of 9.6 percent in 1979-2002 to 10.8 percent in 2003-2008. The high growth rate led to an increase in government revenue, which allowed public debt to decline from about 30 percent of GDP in the 1990s to about 20 percent in 2007.

[81] In 1998, China only had 4,700 kilometers of highway. With the fiscal stimulus, the highway system increased more than five times in five years.

The way to break the constraint of Ricardian Equivalence is therefore to invest the fiscal stimulus in projects and programs that release bottlenecks to growth

When examining the impact of fiscal stimulus, it is important to note that public investment has the highest short-run multiplier. Tax cuts on the other hand are likely to have minimal multiplier effects (Only about 15 percent of the 2008 tax rebates in the US led to additional spending)[11] particularly in the current environment, as liquidity constrained households save a proportion in anticipation of future tax rises. Despite this fact, recent stimulus packages in developed countries, such as the United States, the United Kingdom and Germany, have allocated a significant proportion of funds to tax cuts. This inefficiency reflects, not only the lack of so-called "shovel-ready" projects that can be used for quick injection of demand, but also the fact that in matured high-income countries, much of the critical infrastructures already exists. It is therefore hard to find "bottlenecks" impeding developed country growth. As a result, many projects, such as those in which the Japanese government invested in the 1990s, would not increase growth potential. Therefore, the effect of Ricardian Equivalence should not, therefore, be dismissed in developed countries.

Developing countries have more of the type of projects that remove bottlenecks to growth than developed countries

High-return shovel ready opportunities may be limited in developed countries where a large share of effective investment and consumption demands have already been realized under the market system (especially thanks to the easy credit in the previous years). By contrast, they tend to abound in developing countries. Clearly, some fraction of fiscal resources must be injected in developed countries that are the epicenter of current crisis. But the main policy objective should be to create demand as quickly and efficiently as possible. This can be done by channelling investment to where it can be most effectively utilized and by investing in the developing world. Infrastructure investment, both domestic and regional, can generate strong forward and backward linkages with other sectors and facilitate growth and further investment in traditionally poorer areas of the population. The importance to growth of infrastructure is all the more acutely felt in developing countries due to the binding constraints it imposes on business.

6. Ballooning deficits and fiscal stimulus packages make long term effects uncertain

Another key factor to consider is that many governments are already contending with ballooning deficits and sharply falling tax revenues, even as they launch aggressive spending and tax-based fiscal stimulus programs. The Ernst and Young study urges companies to recognize that these same governments will soon have to find a way to pay for the tax relief and other stimulus they are providing.

For example, in its recent budget announcement, the United Kingdom presented a series of significant income tax increases geared toward high earners, signalling an increased focus on reducing their budget deficit. Hungary, which has generally taken a more conservative approach to fiscal stimulus due to budget challenges, is preparing to increase its value-added tax from 20 per cent to 25 per cent, while also introducing a series of personal income tax rate reductions as it shifts its focus toward taxing consumption more heavily than income.[82]

Fiscal stimulus packages would result in an increase in government debt. To the extent that people hold their wealth as government bonds rather than in a form that can be used to finance private investment, the increased debt would tend to reduce the stock of productive private capital. In economic parlance, the debt would "crowd out" private investment. (Crowding out is unlikely to occur in the short run under current conditions, because most firms are lowering investment in response to reduced demand, which stimulus can offset in part.) The Congressional Budget Office of the United States works on the basic assumption that, in the long run, each dollar of additional debt crowds out a third of a dollar's worth of private domestic capital (with the remainder of the rise in debt offset by increases in private saving and inflows of foreign capital). Because of uncertainty about the degree of crowding out, more and less crowding out could affect the long-run effects of fiscal stimulus.[83]

The crowding-out effect would be offset somewhat by other factors. For example spending on infrastructure, such as improvements to roads and highways, might add to the economy's potential output in much the same way that private capital investment does. Other provisions, such as funding for grants to increase access to education, could raise long-term productivity by enhancing people's skills. And some provisions would create incentives for increased private investment. For example, increased spending for basic research and education might affect output only after a number of years, but once those investments began to boost GDP, they might pay off over more years than would the average investment in physical capital (in economic terms, they have a low rate of depreciation). Therefore, in any one year, their contribution to output might be less than that of the average private investment, even if their overall contribution to productivity over their lifetime was just as high. Moreover, although some carefully chosen government investments might be as productive as private investment, other government projects would not be so, particularly when rapid disbursal of fiscal stimulus packages is a political compulsion. The response of state and local governments that received federal stimulus grants would also affect their long-run impact; those governments might apply some of that money to investments they would have carried out anyway, thus lowering the long-run economic return on those grants.

Several European governments such as Germany have hesitated to use fiscal stimulus measures because:

Demands for favoured measures by various interest groups would be difficult to contain,

The goal of achieving long-term debt sustainability would be set back. [84]

It has taken several years of consolidation efforts for Germany to reach a budget balance in 2008. This, in turn, has required building a policy and political consensus on the need for fiscal discipline. While critics of German hesitation saw in Germany a fiscal space that needed to be used, German authorities saw the likely erosion of a fragile political consensus and the loss of momentum in their goal of debt sustainability.[85]

[82] Ernst and Young, 2009, op.cit

[83] CBO, Jan 2008, Options for Responding to Short-Term Economic Weakness, CBO, Washington

[84] The German fiscal stimulus package in perspective, Alina Carare,.Ashoka Mody Franziska Ohnsorge , 23 January 2009

[85] Ibid

Table 3: Initial conditions and fiscal stimulus in G20 countries

	Initial conditions		Spending in 2009			Total size of stimulus		
Country	Gross public debt as % of 2008 GDP	Fiscal Balance as % of 2008 GDP	USD amount (bn)	% of 2008 GDP	Tax cut share	USD (bn)	% of 2008 GDP	Tax cut share
Argentina	51	1.7	4.4	1.3	0	4.4	1.3	0
Australia	15.3	0.3	8.5	0.8	47.9	19.3	1.8	41.2
Brazil	40.7	N/A	5.1	0.3	100	8.6	0.5	100
Canada	62.3	0.1	23.2	1.5	40.4	43.6	2.8	45.4
China	15.7	0.4	90.1	2.1	0.0	204.3	4.8	0.0
France	64.4	-2.9	20.5	0.7	6.5	20.5	0.7	6.5
Germany	62.6	0.9	55.8	1.5	68	130.4	3.4	68
India	59.0	-4.2	6.5	0.5	0.0	6.5	0.5	0.0
Indonesia	30.1	-1.3	6.7	1.3	79.0	12.5	2.5	79.0
Italy	103.7	-2.7	4.7	0.2	0.0	7.0	0.3	0.0
Japan	170.4	-3.1	66.1	1.4	30.0	104.4	2.2	30.0
Korea	27.2	0.9	13.7	1.4	17.0	26.1	2.7	17.0
Mexico	20.3	0.0	11.4	1.0	0.0	11.4	1.0	0.0
Russia	6.8	6.2	30.0	1.7	100.0	30	1.7	100.0
Saudi Arabia	17.7	11.2	17.6	3.3	0.0	49.6	9.4	0.0
South Africa	29.9	0.2	4.0	1.3	0.0	7.9	2.6	0.0
Spain	38.5	-2.4	18.2	1.1	36.7	75.3	4.5	36.7
Turkey	37.1	-1.5	0.0	0.0	N/A	0.0	0.0	N/A
U.K	47.2	-4.8	37.9	1.4	73.0	40.8	1.5	73.0
U.S.A	60.8	-3.2	268	1.9	44.0	841.2	5.9	34.9

Source:IMF/CIA Factbook, Various news sources and calculations by Eshwar Prasad and Isaac Dorkin, 2009, op.cit

Table 3 also shows that only some of the G20 countries which collectively account for over 90 per cent of the global GDP and global fiscal stimulus packages have the fiscal space to launch aggressive fiscal stimulus package programmes. Only Australia, China, Russia and Saudi Arabia have sound fiscal positions. Most of the others are running deficits or have precarious fiscal positions and hence would find these packages unsustainable. [86]

In terms of government deficits and their impacts on the overall space for expansionary policies, the picture in Asia is mixed. China, Indonesia, the Philippines and Thailand are in a strong overall fiscal position. India and Malaysia had higher fiscal deficits, but because of large reserves and current account surpluses, they too had fiscal space.[87] Reserves fell sharply in Pakistan (where they stood well below 10 per cent of GDP

[86] Eeshwar Prasad and Sorkin, op.cit

[87] World Bank: Weathering the Storm: Economic Policy Responses to the Financial Crisis (November 2008).

prior to the onset of the crisis), ultimately resulting in a US$7.6 billion IMF loan to the country to shore up the financial market. In Cambodia, reliance on overseas aid to finance a quarter of its national budget has restricted the Government's ability to provide fiscal stimulus.[88]

Most Asian economies entered the crisis with large reserves and relatively low levels of foreign and domestic debt. In mid-2008, mainland China had one-quarter of the world's foreign exchange reserves – an astounding US$1.9 trillion or more than 50 per cent of the country's GDP. As a share of GDP, many other Asian economies entered the crisis with very sizeable reserves: Singapore (105 per cent), Malaysia (65 per cent), Thailand (40 per cent), Viet Nam (28 per cent), Republic of Korea (26 per cent), India (25 per cent), the Philippines' (22 per cent), and Indonesia (13 per cent). [89]Several countries were adversely affected by the economic crisis. The Republic of Korea's fell by approximately 25 per cent from the high reached in March 2008.[90] Malaysia's reserves declined by 16 per cent from September through November and Indonesia's declined by nearly 14 per cent over the same period, though the situation stabilized in December.[91]

Investors are betting the EU has 20 per cent chance of breakup due to deficits "The bond yields of some European nations surged as governments planned to sell record amounts of debt in 2009 to revive economies battered by the global recession. The 11 biggest economies in the euro region will increase government debt issuance this year by about 26 percent to 1.05 trillion euros ($1.38 trillion) from 830 billion euros in 2008, London-based *Ricardo Barbieri-Hermitte*, head of European rates strategy at Bank of America Corp., wrote in a report last month. Fiscal deficits will reach 11 percent in Ireland, 6.2 percent in Spain and 3.8 percent in Greece this year, according to ING.

"Chile may be the next Latin America country to tap international debt markets, borrowing as much as $600 million, Leos said. Mexico, Brazil and Colombia have sold foreign bonds in the past two months. Chile and Peru may issue debt before the end of the first quarter, Leos said.

Chilean Finance Minister Andres Velasco said on Jan. 6 the government plans to issue its first foreign bonds since 2004 to help fund a fiscal stimulus plan. Peru may sell about $600 million in 30-year bonds, former Peruvian Finance Minister Luis Valdivieso said Jan. 15.

Brazil, which sold $1 billion of 10-year bonds on Jan. 6, may tap international bond markets at least three times this year, Leos said.

ING Groep NV estimates foreign bond sales may rise 68 percent to a four-year high of $65 billion in 2009 as developing countries seek to finance deficits and replenish foreign reserves after the financial crisis sparked capital outflows and drove down commodity prices."[92]

[88] Daniel Ten Kate: "Cambodia keeps tax breaks as shortage of cash prevents stimulus", Bloomberg, 26 January 2009

[89] Source: IMF: International Financial Statistics Online (2009).

[90] William Sin: "South Korea's Foreign Reserves Rise to $201.2 Billion", Bloomberg, 5 January 2009.

[91] Source: Official central bank websites as cited in ILO Regional Office for Asia and the Pacific, op.cit .

[92] Angsar, op.cit

The fiscal stimulus will not provide insurance against further confidence loss unless it is firmly anchored in a credible medium-term consolidation strategy aimed at safeguarding fiscal sustainability. As such, the most important and lasting outcome of the new stimulus package may well be the introduction of a new deficit rule to improve long-term fiscal sustainability. The new rule would require that the proposed structural budget deficit not exceed 0.5 per cent of GDP.

Countries such as China would have more fiscal space for stimulus. However China's GDP is only 6 per cent of the global GDP. This would imply that even a 13 per cent stimulus of 6 per cent would be negligible in global terms.

7. Conclusions

There is mixed evidence on the effectiveness of fiscal stimulus packages in generating employment and output gains in a recession. However certain issues have to be kept in mind when administering a package. A fiscal stimulus should be timely (as there is an urgent need for action), large (because the drop in demand is large), lasting (as the recession will likely last for some time), diversified (as there is uncertainty regarding which measures will be most effective), contingent (to indicate that further action will be taken, if needed), collective (all countries that have the fiscal space should use it given the severity and global nature of the downturn), and sustainable (to avoid debt explosion in the long run and adverse effects in the short run). The challenge is to provide the right balance between these sometimes competing goals – particularly, large and lasting actions versus fiscal sustainability.

However, in deciding whether to use fiscal policy, countries must also pay attention to the fiscal space available and to the credibility of the fiscal authorities. Some countries have financing constraints – either high borrowing costs or difficulties in financing deficits at any cost, while others are constrained by high levels of debt. In addition, it is important to emphasize that while fiscal and monetary policy can help support demand in the short run, these tools have limitations and should not be viewed as a substitute for dealing with financial sector issues.[93] The importance of a clear commitment to long-run fiscal discipline by countries wishing to engage in short-run discretionary fiscal stimulus cannot be overemphasized. In the absence of such a perceived commitment, expansionary fiscal actions can lead to increases in long-term real interest rates, which tend to offset the stimulus effects on GDP of the fiscal actions. This concern about long-run sustainability and the associated credibility of the fiscal authorities is all the more important in today's circumstances, where many countries face longer-term fiscal issues related to an aging population, such as expenditures on medical care, and the fiscal pressures generated by measures necessary to deal with the current crisis in the financial system.

There are two major problems with fiscal stimulus packages: first, most developing countries are constrained by either fiscal space or/and foreign exchange reserve.

Developing countries might not be in the position to implement counter-cyclical policies. Many low-income countries entered the current crisis with fiscal deficit because of the fuel and food crises, which had led them to increase subsidies. Their fiscal position is already weak. Moreover, an estimated one-third of developing countries currently have large current account deficits of 10 percent of their GDP. (see Table 3)Those fiscal and foreign exchange constraints bring into question the feasibility of the fiscal stimulus policies currently proposed or implemented elsewhere.

[93] IMF, 2008. Op.cit

Second, developed countries are constrained by the Ricardian Equivalence.

Developed countries are less constrained by fiscal space or foreign exchanges. However, questions about the effectiveness of their fiscal stimulus packages usually arise from two issues. One is whether a large multiplier from public spending ever exists and one is whether such multipliers are subject to diminishing returns. Contrary to Keynesian theory, proponents of the so-called Ricardian equivalence point to the fact that households tend to adjust their behaviour for consumption or saving on the basis of expectations about the future. Any fiscal stimulus package is then perceived as immediate spending or tax cuts which will need to be repaid in the future. In such situation, it is conceivable that the multiplier could be less than 1, with the GDP seen as given so that an increase in government spending does not lead to an equal rise in other parts of GDP.[94] Whilst scepticism, based arguments of Ricardian Equivalence about the effectiveness of fiscal stimulus packages is inspired by theoretical model that relies on stringent assumptions, it is also clear that tax cuts or spending programs financed through borrowing will eventually have to be paid.

However in a globalised world fiscal stimulus packages of one country can affect demand in other countries through trade and investment. While government procurement and fiscal stimulus packages seek to interfere with terms of trade of nations, ultimately equilibrium will be established around the average potential of the country as was stated in the introduction. To determine these effects some general equilibrium analysis which takes account of trade and investment linkages would be needed. While this is clearly beyond the scope of this paper, such an analysis which builds on global supply chains of products and services is required.

[94] See G. Francesco and M. Pagano, “Can Severe Fiscal Contractions Be Expansionary?—Tales of Two Small European Countries,” in: O.J.Blanchard and S. Fischer, *NBER Macroeconomics annual 1990*, Cambridge, MA., MIT Press

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