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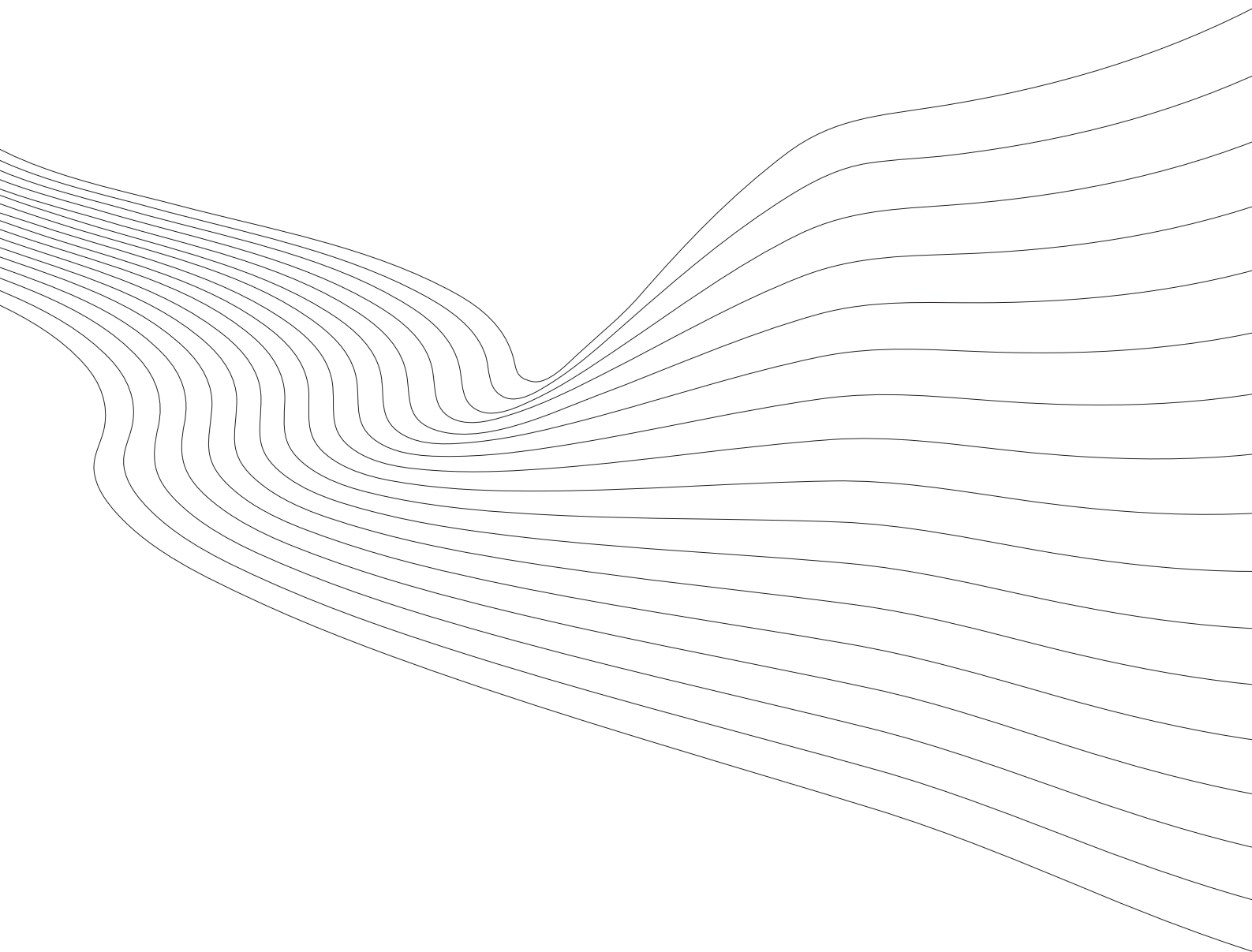
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Discretionary Fiscal Policy: The Case of Switzerland

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Abstract

Towards the end of 2009, the world economy was recovering from its deepest recession since the end of World War II. Most countries around the world took resort to fiscal policy in order to foster this recovery. In this paper, we first discuss the pros and cons of discretionary fiscal policy from a history of economic thought perspective. Next, we summarise the fiscal policy measures taken in Switzerland. Then we use simulations with the KOF macroeconomic model to assess the effects on the Swiss economy of a) the Swiss measures on the one hand and b) the fiscal stimulus packages taken by Switzerland's most important trading partners on the other. The KOF September 2009 forecast, which incorporates the fiscal stimuli that were launched or in the pipeline at that time, serves as the baseline scenario. To assess the impacts of the fiscal stimulus packages in Switzerland and abroad, we re-run the KOF macroeconometric model counterfactually, modifying the variables pertaining to the domestic and the international economy respectively to represent a situation in which no fiscal action had been taken. We find that the spillover from the foreign efforts to curb the recession clearly dwarfs the effect from the domestic stimulus packages. This holds even if we resort to an extremely cautious scenario where external demand for Swiss exports derived from the weighted GDP of the most important importers is only 50% of what it would be in normal times. Hence we conclude that in addition to its own (rather limited) efforts to fight the recession, Switzerland took a long free ride that by far exceeded the short one it paid for.

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The free-rider reproach is not justified. The momentum of the Swiss economy is not driven by exports, but by domestic demand. We do not simply profit from others' programmes.¹

Jean-Pierre Roth, Chairman of the Governing Board of the Swiss National Bank (January 2001 – December 2009)

0 Introduction

The world economy is recovering from a recession that represented the sharpest decline in economic activity since the end of World War II. What is remarkable is not only the depth and the global synchronicity of the collapse beginning in the second half of 2008, but also the fact that the recession became virulent as a liquidity crisis. Because of that, most economies slid into a 'liquidity trap' which made it difficult to galvanise the economy using monetary policies. This induced governments in most developed countries to take refuge to fiscal policy, although the dimension of the stimulation packages – measured as the share of expenditures in nominal gross domestic product (GDP) – varied widely across countries (see OECD, 2009a).

Naturally, the economic turmoil and the policy reactions to it beg interesting questions like: Were the fiscal policy measures necessary at all – and were they adequate? Roos (2009) investigates such questions for Germany. He concludes that, given the depth of the crisis, a fiscal stimulus was necessary and that the dimension of the German packages as well as the mix of the different stimulation measures were overall adequate. He criticises, however, that the stimulus came too late and that the communication policy of the German government concerning the necessity, goals and projected effects of the stimulation packages has been 'disastrous'.

What would be interesting in addition to Roos's (2009) study is a model-based estimation of the quantitative effects of the stimulation measures on the overall economy (including multiplier effects). Roos (2009) does not provide that. He does provide, however, a discussion of the type of models that should be used to estimate the effects. According to Roos (2009, pp. 390f.), there are currently three types of models available, two of which – the structural vector-autoregressive (SVAR) models and the (calibrated or estimated) dynamic stochastic general equilibrium (DSGE) models – he discards as being applicable in 'normal times' only.² The crisis of 2008–2009, however, was characterised by malfunctioning financial markets, high uncertainty and probably irra-

¹ Neue Zürcher Zeitung, 28 November 2009, p. 37 (authors' translation).

² The limited usefulness of DSGE models when the economy is far off from equilibrium has been highlighted by numerous observers of the 2008–2009 crisis; see e.g. De Grauwe (2009) and OECD (2009a).

tional exuberance. Such phenomena are either assumed away in general equilibrium models or have not been observable to the same extent during the past periods on which the estimations of SVAR/DSGE models are based.³ Therefore, Roos (2009) recommends basing empirical analyses of fiscal policy effects during the 2008–2009 crisis on the third model type, which is traditional macroeconomic models in the Keynesian tradition. These models, as argued in Roos (2009), have more ‘loose ends’ which allow for hands-on adjustments of parameters in order to adapt them to extreme situations.

This paper intends to contribute to filling the gap Roos’s (2009) study has left open by providing model-based estimations of the quantitative effects of the anti-crisis stimulation measures on the overall economy. The economy we look at is Switzerland. For our estimations we use the KOF Swiss Economic Institute macroeconomic model, which is a structural model in the New Keynesian tradition, allowing to treat not only fiscal stimuli as exogenous, but also demand shocks from abroad, which are a key feature of the cyclical dynamics in Switzerland. Referring to a smaller open economy than e.g. Germany, Japan or the US, the international linkages of demand shocks as well as potential spillovers from fiscal stimuli abroad become more visible.

The paper is structured as follows. Section 1 sketches the current state of the world economy and that of Switzerland. Section 2.1 goes on to discuss the pros and cons of discretionary fiscal policy from a history of economic thought perspective. The Keynesian mainstream view of the 1950s and 1960s, which held that ‘rational fiscal policy’ has solved the problems of unemployment and slow economic growth, was later-on replaced by utmost scepticism against the merits of fiscal policy. This scepticism remained dominant among economists and policymakers virtually until the crisis escalated in 2008, but was then (somewhat surprisingly) abandoned. Section 2.2 summarises the fiscal policy measures taken in Switzerland in reaction to the crisis, and section 3 analyses their effects. After the KOF macroeconomic model is described in section 3.1, sections 3.2 and 3.3 present the results of counterfactual simulations in which both the domestic and foreign stimulus measures are ‘switched off’. Comparing these results with our baseline scenario (the KOF September 2009 business cycle forecast), we find that discretionary government spending has reduced the decline of Swiss GDP by some 0.5%, and that additional spending in the near future will encounter

³ See e.g. Cwik and Wieland (2009), who try to quantify the effects of fiscal stimuli referring to five different DSGE models. They find that government spending will crowd out private investment and – due to Ricardian equivalence – private consumption, so that the main result of an intervention is not a sizeable and lasting positive effect on output, but rather a distortion that exhibits negative effects on total value added. Not surprisingly, the negative effect is more pronounced the more forward looking expectations are modelled (for an elaboration on this point, see Wallis, 2004). We agree with Roos that these findings, which may be quite adequate when the economy is close to equilibrium, are not particularly revealing for the present situation. For now, it is imperative to refer to models that allow for starting way off equilibrium and then to see in how far policy actions have an influence on the path back to normal.

a positive multiplier of up to 1.5, provided the right measures are chosen. The highest multiplier is found for government expenditure (1.6), the lowest (0.6) for a linear reduction in income tax rates. We hence conclude that more government spending, targeted primarily at low income households with a high marginal propensity to consume, would be an adequate, timely and targeted measure. Last but not least, we show that the effect of the fiscal stimuli in Switzerland's major export destinations dwarfs the results of the domestic efforts, which implies that Switzerland to a considerable degree took a free ride out of the recession.

1 The US subprime mortgage crisis and its consequences

1.1 The world economy in recession

In 2008, the world economy slipped into the most severe recession since the end of World War II. The crisis originated in the US housing market. The boom in residential construction, which had gained momentum in 2003, ebbed at the turn of the year 2005/06, quickly making way for a sharp decline. US house prices began to drop in mid-2006. The burst of the housing bubble had unexpectedly strong repercussions on the global financial system. It became apparent that US banks had generously approved mortgages for people who could not afford to service them – the so-called no-income-no-assets (NINA) or 'sub-prime' mortgages – or, more precisely, to people who could have serviced their mortgages only under the condition that house prices had kept rising. As this condition was no longer valid, foreclosure rates picked up. In an attempt to spread risk, US banks had securitised sub-prime mortgage debt and sold the resulting asset-backed securities world-wide. With the stream of mortgage interest payments ebbing, these securities – and also the second-round securities based on them – dramatically devaluated. Banks had to write down their assets to an unprecedented extent, suddenly facing severe balance sheet problems. In March 2008, the investment bank Bears Stearns went under water and had to be rescued in a last-minute collaborate effort by the Fed and JPMorgan Chase. In September 2008, the investment bank Lehman Brothers was less lucky and had to file for bankruptcy. This triggered what former Fed chairman Alan Greenspan called a 'once in a century credit tsunami'.

Of course, the financial crisis is not the whole story behind the recession. The world economy had grown at above-average rates between 2004 and 2007, and a cyclical downturn was in the offing. Also, the oil price surged from around \$90 to over \$140 over the first half of 2008 amidst the financial turmoil, pulling inflation rates up and dragging purchasing power out of consumers' pockets. A closer look at US industrial production and capacity utilisation for instance shows that both already dropped markedly in August 2008, i.e. *before* the collapse of Lehman Brothers. It was the

coincidence of several large adverse shocks – the burst of the housing bubble in the US and a number of European countries, the financial crisis, and the oil price hike – which made this recession special in that it hit a number of important industries (construction, banking and insurance, transportation, manufacture of vehicles) at the same time.

According to currently available data, the recession began in the US at the turn of the year 2007/08. By the following quarter it had spread to the rest of the world. One salient feature of the 2008/09 recession is that it hit the whole world synchronously. Another characteristic is the collapse of industrial production and world trade after the Lehman shock. The sudden drying-up of credit markets seems to have contributed significantly to the breakdown of world trade in that it made trade credit and bank guarantees unavailable. Production on the other hand was curtailed because firms facing credit constraints aimed at converting stocks into cash instead of incurring production costs. Somewhat ironically therefore, countries relying on exports and manufacturing – especially Japan and Germany – were hit harder by the recession than countries more closely associated with the financial crisis (like the US or the UK). Table 1 summarises past GDP growth rates and projections for 2009 for the world, its major economies, and Switzerland.

Table 1: GDP growth rates, 2009–2011: IMF staff projections

	2007	2008	2009	2010	2011
World	5.1	3.0	-1.1	3.1	4.2
Advanced economies	2.7	0.6	-3.4	1.3	2.5
US	2.1	0.4	-2.7	1.5	2.8
European Union	3.1	1.0	-4.2	0.5	1.8
Germany	2.5	1.2	-5.3	0.3	1.5
France	2.3	0.3	-2.4	0.9	1.8
Italy	1.6	-1.0	-5.1	0.2	0.7
UK	2.6	0.7	-4.4	0.9	2.5
Japan	2.3	-0.7	-5.4	1.7	2.4
Canada	2.5	0.4	-2.5	2.1	3.6
Australia	4.0	2.4	0.7	2.0	3.3
New Zealand	3.2	0.2	-2.2	2.2	2.4
Emerging and developing countries	8.3	6.0	1.7	5.1	6.1
Brazil	5.7	5.1	-0.7	3.5	3.5
Russia	8.1	5.6	-7.5	1.5	3.0
India	9.4	7.3	5.4	6.4	7.3
China	13.0	9.0	8.5	9.0	9.7
<i>Memorandum</i>					
Switzerland	3.6	1.8	-3.4	0.1	1.4

Sources: IMF, World Economic Outlook, October 2009 (www.imf.org/external/pubs/ft/weo/2009/02/index.htm).
For Switzerland: KOF Swiss Economic Institute, Forecast September 2009 (www.kof.ethz.ch/news/?t=kp)

1.2 Impact of the crisis on the Swiss Economy

From 2003–2007, the Swiss economy experienced GDP growth rates far above average and at the same time without the negative side effects that usually accompany such a boom period – rising inflation rates and bottlenecks on the labour market. The increased immigration of well-trained workers from EU countries – due to the progressive easing of migration restrictions until their final abolishment in June 2007 – prevented wages from rising steeply, at the same time giving a significant impulse to residential construction, which thus held up comparatively well throughout the crisis.

Initially, Switzerland appeared to be little affected by the world-wide downswing. The losses of its two internationally active big banks (UBS and Credit Suisse) were however extraordinary. Both had to raise additional capital; and in order to rescue the UBS, the central government provided CHF 6 bill., while the Swiss National Bank was ready to take over toxic assets with a maximum face value of USD 54 bill.. Moreover, countries assuming that their taxpayers had hidden substantial fortunes as well as the capital income resulting from these behind the screens of Swiss banking secrecy laws, were no longer ready to accept the peculiar distinction made in Switzerland between ‘tax evasion’ and ‘tax fraud’ – only the latter was regarded to be a criminal offence. In March 2009 Switzerland finally declared its readiness to negotiate treaties with provisions to provide information to foreign tax offices on suspected cases of tax evasion. The factual end of banking secrecy for foreign tax evaders challenges one of the most profitable pillars of the Swiss banking sector, thus adding to its distress. Consequently, valued added of the financial sector dropped sharply already in 2008, and it is not likely that it will reach its prior heights in the foreseeable future.

Swiss exporting industries were hit by the crisis in 2008 when world-wide sales expectations plunged, but due to still quite resilient domestic demand as well as to a then still impressive contribution of transit trade to GDP growth of about 0.7 percentage points, the 2008 year-on-year GDP growth rate still reached 1.8%. However, by September 2008, it became evident that the crisis had hit Switzerland, and forecasters changed their outlooks to recession scenarios.

The drop of overall economic activity began in the middle of 2008 and continued at least until mid-2009. Quarterly GDP estimates from the Swiss Department of Economics released on November 30, 2009, indicate a return of the September quarter-on-quarter growth rate into positive territory, but as the data are provisional, we cannot yet be sure when exactly the trough will be dated once the final data are available. Be this as it may, it will take years until real GDP reaches its pre-crisis peak level. Even if demand for Swiss exports from abroad should pick up considerably, with capacity utilisation now at record low levels, domestic equipment investment will not reach its trough before the end of 2010. Moreover, unemployment is still rising with a peak to be expected

around mid-2010, which should depress private consumption. The KOF hence forecasts a slow economic recovery for Switzerland. The pre-crisis level of GDP will not be reached until 2012, which is outside the forecast horizon of KOF's macro model. Table 2 summarises the September forecast for the Swiss economy for 2009–2011 and the most important demand components.

Table 2: KOF September 2009 forecast for Switzerland, 2009–2011

	Percentage change against															
	2001-2008	previous quarter (annualized, trend cycle component)												previous year		
		2009				2010				2011				2009	2010	2011
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Private consumption	1.5	0.6	0.7	0.5	0.3	0.1	0.1	0.3	0.9	1.6	2.0	2.0	1.9	0.7	0.3	1.4
Public consumption	1.3	3.2	3.0	2.3	1.1	0.3	1.0	1.4	1.1	0.7	0.7	0.4	-0.1	2.5	1.2	0.8
Gross fixed capital formation	1.6	-4.6	-4.3	-5.7	-5.9	-4.8	-1.5	1.5	2.0	2.5	2.9	3.1	3.0	-4.6	-3.4	2.2
– Construction	0.6	5.7	7.3	2.7	-0.8	-0.6	0.7	0.6	-0.9	-0.8	-0.4	-0.3	-0.8	2.7	0.6	-0.4
– Machinery and equipment	2.4	-12.2	-12.2	-12.1	-11.1	-8.6	-2.9	2.4	4.2	5.6	6.1	6.2	6.3	-10.1	-6.8	4.6
Exports of goods (1) and services	4.9	-18.7	-11.1	-1.6	1.9	0.0	-0.3	3.8	7.3	8.3	7.0	6.1	7.4	-11.6	0.1	6.5
– Goods	4.9	-19.1	-8.6	0.9	3.6	1.8	1.7	6.8	9.0	8.2	7.0	6.3	7.6	-12.5	2.3	7.3
– Services	4.6	-18.2	-16.4	-7.3	-2.4	-4.3	-5.4	-4.0	1.8	8.0	8.3	5.9	6.6	-9.7	-4.9	4.4
Imports of goods (1) and services	3.7	-11.8	-10.6	-7.1	-0.6	2.7	5.7	7.8	8.2	8.6	8.2	6.7	7.1	-7.8	0.9	7.9
– Goods (1)	3.2	-15.6	-12.9	-7.8	0.6	4.2	7.5	11.2	11.2	10.4	9.2	7.5	8.0	-10.2	1.9	9.8
– Services	6.0	3.3	-2.2	-2.0	-4.2	-2.4	-2.2	-5.2	-2.5	2.1	3.9	3.2	3.8	2.7	-2.8	0.6
Change in stocks (2)	0.0	1.0	-1.2	-1.7	-0.2	1.7	2.1	0.9	0.0	-0.2	-0.2	-0.3	-0.3	0.0	0.4	0.1
Gross domestic product (GDP)	1.9	-5.5	-3.1	-0.4	0.5	0.1	-0.1	0.4	1.2	1.7	1.7	1.9	2.2	-3.4	0.1	1.4

(1) Without valuables (i.e. precious metals, precious stones and gems as well as objects of art and antiquities)

(2) Percentage contribution to GDP-growth

Notice that for this forecast, the domestic as well the foreign fiscal stimulus packages by Switzerland's most important trading partners that were launched or in the pipeline in September have been incorporated. We shall return to this point in section 3.

Before this, let us turn our attention to the theoretical discussion on what can be expected from discretionary fiscal policy (in section 2.1) as well as to an account of the fiscal policy measures that were implemented in Switzerland over the course of the present crisis (section 2.2).

2 Measures to curb the crisis

2.1 Should the state intervene? – A brief review of a long-standing debate

Before the Great Depression of the 1930s, active fiscal policy was definitely unpopular with economists. In Britain (the spearhead of economics at that time), the so-called Treasury View prevailed, according to which any increase in government spending would normally crowd out an equal amount of private spending. The typical view was like that expressed by Hawtrey (1925), who argued that public works have to be financed either out of current income or through raising

credit. In the first case, public expenditure would necessarily crowd out private consumption. If the public works are financed through credit expansion on the other hand, Hawtrey admits that employment would rise. However, it is not the public works program as such, but the credit expansion that is responsible for the boost. An expansion of private credit would do the same job; and Hawtrey posits that in times of economic slack the state should concentrate on the stimulation of credit expansion by means of monetary policy. Interestingly though, he mentions that there might be extraordinary times, for instance the period 1894–96, in which „the bank rate has been reduced to the lowest point, and ... business still refuses to respond” (Hawtrey, 1925: 45). Unfortunately, Hawtrey does not offer any explanation as to why „trade obstinately refused to revive” (ibid.).

Arguably, Hawtrey describes what later has been called a ‘Keynesian situation’: a state of affairs in which monetary policy becomes ineffective because either banks (or even private households) do not offer credit due to their high ‘liquidity preference’ (Keynes, 1936, ch. 13), or firms do not exert any demand for credit despite low interest rates, due to extraordinarily pessimistic expectations concerning the ‘marginal efficiency of capital’ (Keynes, 1936, ch. 22). In such situations, which later have been christened ‘liquidity trap’ and ‘investment trap’, respectively, even proponents of the Treasury View could have advocated a stimulation of the economy through fiscal policy. Nevertheless, discretionary fiscal policy counts as ‘Keynesian’ – and rightly so, in our view, because it was Keynes who introduced concepts like liquidity preference or the marginal efficiency of capital from which a theoretical rationale for fiscal policy could be deduced.

The initial reaction to Keynes’s *General Theory* in the economics profession was reserved, to say the least. Most book reviewers were irritated by Keynes’s departure from the then prevailing mainstream, with the most critical voice being that of Pigou (1936) whom Keynes had singled out as ‘whipping boy’ in his book whenever he needed to attack what he called ‘classical economics’. It was not until the end of World War II that the ‘Age of Keynes’ dawned. Robert Lekachman, in his book of the same title (Lekachman, 1966), carefully reconstructs the process in which Keynesian ideas – and especially the idea of securing full employment by means of fiscal policy – took hold among academic economists and policymakers in the US and Britain after the war. When reading Lekachman’s book today, one cannot help but being amazed by the optimism – others might call it hubris – with which the author looks into the future, being convinced that all major economic problems could be solved by the application of fiscal policy.⁴ Notably, his notion of fiscal policy has

⁴ For instance, Lekachman (1966: 284f) writes: „It is as certain as such things can be that never again will an American government profess helplessness in the face of unemployment, recession, and lagging economic growth. Rational fiscal policy expressed in the use of taxes as stabilizing agents and the acceptance of deficits without guilt may be a belated achievement but not the less treasurable because it comes a generation after the birth of the doctrine which justifies public action”.

shifted away from being a last resort when all other means fail toward being a tool governments should use all of the time.

With hindsight, the post-war swing in the profession's attitude towards the effectiveness of monetary versus fiscal policy was too pronounced. From the Treasury View, which held that monetary policy was a potent instrument to promote economic stability, „(o)pinion shifted almost to the opposite extreme, that ‘money doesn't matter’; that it is a passive factor which chiefly reflects the effects of other forces; and that monetary policy is of extremely limited value in promoting stability” (Friedman and Schwartz, 1963: 300). Milton Friedman, especially, set himself the task to counterattack the ‘Keynesian Revolution’.

Friedman was sceptical of the Keynesian mainstream of his time in many respects. For one thing, he criticised the widespread belief in the efficacy of demand management through fiscal policy. Implicit in his postulate of a ‘natural’ activity level of the economy – emblematised by his concept of the ‘natural rate of unemployment’ (Friedman, 1968) – was the conclusion that both discretionary fiscal and monetary policy could stimulate the economy only in the short run. Expectational errors concerning real wages are the ultimate reason why unemployment could temporarily fall below its ‘natural’ level. Since this benefit comes at the price of an accelerating inflation, however, such policies are no real policy option according to Friedman.

With his concept of the ‘natural rate of unemployment’, Friedman explicitly draws on Wicksell (1898), who called an interest rate which comes along with zero inflation ‘natural’. Likewise, Friedman called the rate of unemployment that comes along with zero inflation ‘natural’. If the supply side guides economic activities to their ‘natural’ level, there is no room for Keynesian ‘quantity reactions’. The demand side becomes unimportant and fiscal policy with it. Apart from the short-term effects mentioned earlier, changes in money supply lead to proportionate changes in the price level. Because – according to Friedman and Schwartz's (1963) empirical analysis – past business cycles (including the Great Depression) were caused by mistaken discretionary actions of monetary policy, the central bank should announce a rule for the growth of a monetary aggregate and stick to it. So both discretionary fiscal and monetary policy are ruled out.

Although Friedman's specific monetary rule lost its appeal relatively quickly, his general plea for basing economic policy on rules rather than discretion remained uncontroversial among mainstream economists as well as policymakers until the recent outbreak of the global financial and economic crisis. The same is true for his rejection of demand-side interventionism and the re-focus of economic theory and policy toward the supply side on the one hand and the long run on the other. In the 1970s, Friedman's arguments against discretionary fiscal policy were further strengthened by

Kydland and Prescott's (1977) demonstration of the time inconsistency problem⁵ as well as more generally by the dominance of New Classical macroeconomics with its pronouncedly sceptical stance on the economic wisdom of governments.

In the early 1970s, the New Classical macroeconomists radicalised Friedman's scepticism toward fiscal policy in that they disputed fiscal policy's ability to stabilise the unwanted short-term fluctuations of business activity. (Friedman, for his part, mainly had opposed the Keynesian pretension to be able to secure permanent full employment by means of fiscal policy.) At the basis of the New Classical attack on short-term stabilisation policy was the rediscovery of Muth's (1961) 'rational expectations' by Lucas (1972).

Friedman's argument that expansionary monetary policy could temporarily reduce unemployment below its 'natural' level was based on the assumption that workers form expectations adaptively, which would lead them to underestimate real wages during inflationary periods. Employers on the other hand are assumed to know that the real wage is below the level compatible with 'natural' unemployment, hence they hire workers. According to this view, the efficacy of monetary policy rests on systematic expectational errors. If the latter are ruled out – as in the concept of rational expectations – monetary policy is no longer capable of moving prices away from their expected (or equilibrium) values. As Sargent and Wallace (1975, 1976) have pointed out, stabilisation policy – even by monetary means – is then impossible. Accordingly, Keynesianism was boldly pronounced 'dead' (Lucas and Sargent, 1978) – but, as we now know, prematurely.

Lucas mainly adhered to Friedman's analytical framework; he merely replaced adaptive expectations with rational expectations. Although monetary policy becomes ineffective, money in Lucas' theory remains significant. According to Friedman, business cycles are caused by mistaken impulses from monetary policy. Lucas adds that foreseeable monetary impulses will not have real consequences. However, monetary impulses which come as a surprise – and are hence not subject to the formation of rational expectations – will have real consequences. Lucas assumes that entrepreneurs know the prices of their own products at all times. Information on the general prices level on the other hand comes in with a time-lag. Therefore, entrepreneurs will initially misinterpret a rise in

⁵ The time inconsistency problem can be explained as follows. Assume that in equilibrium the 'government' announces some economic policy that it deems optimal. The 'citizens' trust the 'government' and adapt themselves to the announced policy. The strategic behaviour of the 'citizens' (in the game-theoretic sense) can have the consequence that, after some time has elapsed, the announced policy does not look optimal to the 'government' any more. A policy which was optimal in the beginning does not stay optimal; hence optimal policy is 'time inconsistent'. The 'government' now has an incentive to depart from its announced course by means of discretionary policy. If it does, however, it will have lost credibility with the 'citizens' in the next time period; and the 'citizens' will amplify their strategic behaviour. The upshot is that, with hindsight, it would have been better if the 'government' had not departed from its announced policy in the first place. It follows that fiscal policy also should be rule-based rather than discretionary (which is the opposite of what the Keynesians had advocated).

the general price level caused by a surprising monetary shock as a rise in the relative prices of their products and expand their production. Thus, surprising monetary shocks can cause up- or downswings, during which markets nevertheless remain in equilibrium, as defined by this approach (Lucas, 1975). Lucas thus assumes perfect markets and an inter-temporal general equilibrium. Business cycles are the result of monetary surprises in combination with incomplete information on the part of the entrepreneurs. They do not result from wage or price rigidities, which Lucas rules out.

New Classical macroeconomics dominated the academic discourse during the 1970s. In the end however, this approach may have failed because it „proved to be *too* successful”, as Woodford (1999: 23) puts it. Given that information on the aggregate price level comes in relatively quickly, a theory of economic fluctuations that rests on monetary surprises combined with mis-interpretations of price trends cannot convincingly explain the length of real-world business cycles. At the beginning of the 1980s, macroeconomics was therefore in a state of crisis. Two quite different strands of thought emerged from here (cf. Blanchard, 2000).

The New Keynesians reclaimed market imperfections, which had already been the ‘old’ Keynesians’ main justification for departures from Walrasian general equilibrium.⁶ What was ‘new’ about New Keynesianism was that it incorporated the consensus meanwhile reached in the mainstream concerning the microeconomic standards macroeconomic models must meet (especially inter-temporal optimisation and rational expectations). The New Classical assumption of permanent market clearing was dropped, however. Wage and price rigidities – which can also be micro-founded because adjustments inflict ‘menu costs’ on agents and are hence sub-optimal under certain circumstances – lead to departures from general equilibrium and can explain phenomena like unemployment and business fluctuations.

What dissatisfied some economists about the New Keynesian approach, however, was that the New Keynesians dropped Lucas’ central assumption of permanent market clearing. Critics argued that individuals’ rational actions would always result in some market equilibrium. Also, the New Keynesian assertion that ‘menu costs’ could be micro-founded was not met with general acclaim. However economists who wanted to stick to permanent equilibrium confronted the challenge of explaining business cycles differently than Lucas had done. This led to the development of ‘Real business cycle’ (RBC) theory. In this approach, as in Lucas’ theory – yet in contrast to Keynesian views –, short-term economic fluctuations are considered equilibrium phenomena, but Lucas’ hy-

⁶ It is important to note that Keynesianism and Walrasian general equilibrium theory are by no means irreconcilable paradigms. On the contrary, as Woodford (1999: 8) notes: „(T)he most important early contributions of general-equilibrium theory as a paradigm for economic analysis ... gave prominence to Keynesian macroeconomic theory as an important application of general-equilibrium analysis. Furthermore, some of the most important critics of general-equilibrium analysis in this period on methodological grounds happen also to have been leading critics of Keynesian macroeconomics”.

prothesis that fluctuations are triggered by monetary surprises is dropped. Renouncing the monetarist tradition, RBC theorists declared that money was inessential: it has no – not even a short-term – impact on real magnitudes (King and Plosser, 1984). RBC theory identifies technology shocks as the main cause for economic fluctuations (Kydland and Prescott, 1982; Long and Plosser, 1983).

Unlike Lucas, RBC theory claims to be able to reproduce the main empirical characteristics (‘stylised facts’) of real-world business cycles. For that purpose, specific algebraic expressions are allotted to the different functions describing supply and demand decisions in a general equilibrium model. The functional parameters are chosen to ensure that in reaction to a simulated supply shock, the ‘calibrated’ model produces data which resemble certain stylised facts. The RBC literature was quite successful in this methodological respect. It has become standard now to display the short-term dynamics of the macro-economy in terms of a micro-founded inter-temporal general equilibrium model with specific algebraic functions and stochastic elements. RBC theory’s exclusive focus on the real side of the economy, however, has triggered criticism. Also, empirical evidence is strong that monetary impulses *do* have an impact on real value added (Christiano, Eichenbaum and Evans, 1998) – an impact that RBC theory in its original formulation had ruled out.

In the 1990s, a synthesis between RBC theory and New Keynesian theory held sway in the mainstream. This is now known as the ‘New neo-classical synthesis’ because – just like in the ‘old’ neo-classical synthesis – general equilibrium theory is used to model ‘Keynesian’ phenomena (cf. Woodford, 1999). The methodology stems from the RBC side, but as in New Keynesian theory, wage and price rigidities are now allowed for; and wage and price formation is modelled in detail. Unlike New Classical and RBC models, New Synthesis models do not imply permanent market clearing. Rather, the supply-side forces highlighted by RBC theory determine the course of potential output, while wage and price rigidities are responsible for departures of demand from the potential. Both supply and demand shocks can cause fluctuations of economic activity. These fluctuations are not regarded as optimal (equilibrium) reactions to the shocks, but count as disequilibrium states of affair (which is in the Keynesian tradition). Monetary policy is assigned a stabilising role. Fiscal policy, however, is still blanked out. Entering the new millennium, New Synthesis analysis using (sticky-price) Dynamic Stochastic General Equilibrium (DSGE) models was the cutting edge of business cycle theory.

After the outbreak of the global financial crisis in mid-2007, however, economists and policy-makers world-wide began to reconsider policy recommendations Keynes had made during the Great Depression. In the light of the consensus reached in mainstream economics over the past decades that discretionary fiscal policy is at best ineffective and probably even harmful, this reconsideration

might at first sight have come as a surprise. Yet, our glance back at the debate over the pros and cons of fiscal policy is helpful for understanding why fiscal policy has come back.

The monetarist counterrevolution and its aftermath were spurred mainly by the *permanent* use of discretionary fiscal policy that had established itself by the mid-1960s in the US and elsewhere – i.e. by what Lekachman (1966) has called ‘rational fiscal policy’ or what Lerner (1943) has called ‘functional finance’. On the other hand, while being opposed to premature recourse to government spending on public works, even proponents of the Treasury View had considered extraordinary situations where fiscal policy would be the only available remedy because the means of monetary policy were exhausted. In an attempt to explain the ineffectiveness of monetary stimuli in such extraordinary situations, Keynes famously postulated a nexus between money and uncertainty.⁷ If uncertainty is predominant – e.g. after a huge shock to the system – ‘liquidity preference’ rises almost without limit. What the Great Depression and the 2008/09 financial and economic crisis have in common is that they both began as liquidity crises. From the aftermath of the ‘Black Friday’ Keynes had drawn the conclusion that economic agents demand money to cope with uncertainty. This conclusion found renewed empirical support after the Lehman shock when the ‘liquidity preference’ of the general public and the banks alike skyrocketed. Because banks refused to lend to each other any longer, interbank markets ran dry, and central banks had to fill in as lenders of last resort. Commercial banks, on their part, hoarded the base money thus received on their accounts with the central banks instead of granting credit, whilst their customers shifted time deposits toward more liquid assets like demand deposits and cash. Monetary policy had a tough time stabilising the financial system – it was unable to contribute to a stabilisation of the real economy on top of that. In this situation, if policymakers wanted to provide relief, they could only do so by means of fiscal policy; and governments around the world decided to fall back on this instrument.

The next section describes which measures were taken in Switzerland. Section 3 analyses the impact these measures had on the Swiss economy.

2.2 Switzerland’s fiscal policy measures to stabilise the economy

Switzerland is a federal state, and economic stabilisation policy is in the responsibility of the central government. So the following account focuses on the central government’s activities.⁸ The latter,

⁷ „Because, partly on reasonable and partly on instinctive grounds, our desire to hold money as a store of wealth is a barometer of the degree of our distrust of our own calculations and conventions concerning the future. ... The possession of actual money lulls our disquietude; and the premium which we require to make us part with money is the measure of the degree of our disquietude” (Keynes, 1973: 115f).

⁸ Notice that this account refers to fiscal policy measures only, i.e. the huge rescue package for the UBS (see section 1.2 above) as well as the massive easing of monetary conditions by the Swiss National Bank are not elaborated on.

however, accounts for only about 40 percent of total public expenditure. As the spending behaviour of the lower levels of government (cantons, communes) can impact quite strongly on fiscal policy, some remarks on these are also necessary.

Swiss economic policy has a strong tradition of non-interventionism (economic liberalism), and the major issue in expenditure policy during the pre-crisis years has been the reduction of fiscal deficits and the debt ratios.⁹ This said, the federal government reacted surprisingly quickly, albeit rather modestly, to the economic downswing. It decided to pursue a stepwise course, with each step being made dependent on the latest state of information about the economic situation and the success of the previous measures.

The first step consisted in topping up the budget for 2009 by CHF 430 mill. in November 2008. It comprised mainly public investments that were brought forward in time as well as freeing some government expenditure, that had been blocked as a savings measure. Part of the additional expenditure consists of subsidies to the cantonal governments, committing those to an increase, too. The total impulse ensuing from the first step is therefore estimated at CHF 550 mill. (about 0.1 percent of GDP) over the year 2009.

A second package was passed in parliament early in March 2009. It entailed CHF 710 mill. of additional expenditure by the central government. A considerable part of this is subsidies to third parties. These should trigger off another CHF 550 mill., giving a total impulse of CHF 1.2 bill. (about 0.2 percent of GDP) from mid-2009 to mid-2010. The second step comprised a wide range of projects with a broad regional coverage focussing mainly on investments in public and private transport infrastructure, but also including regional development, applied research, environmental protection and energy conservation, and tourism marketing, among others.

The first and second packages of additional government expenditure were aimed mainly at inducing investments that would have been carried out at a later point in time anyway. They were accompanied by some other measures designed to support the economy.

- 1) Enterprises had been given the possibility to accumulate tax-deductible financial reserves for the event of economic difficulties. These 'job-creation reserves', which amounted to a total of CHF 550 mill at the beginning of 2009, were de-blocked for the purpose of financing additional investments in the years 2009 and 2010. However, considerable

⁹ See Schaltegger (2009) for a historical account of anti-cyclical fiscal policy measures and their success in Switzerland. He concludes to let monetary policy along with the automatic stabilisers take care of anti-cyclical policy. Discretionary fiscal measures to fight a recession in his view have only moderate effects on aggregate demand, but they are certain to increase the public debt (p. 25 f.). This is a quite representative statement of the Swiss consensus among academic economists and politicians presently in office.

deadweight effects can be expected, as the public authorities will have difficulties to verify whether the reported investment is indeed additional to what was originally planned.

- 2) The duration of time for which firms can claim short-time work indemnity for their workers was extended from 12 to 18 months. This measure aims at preventing lay-offs by enticing firms to reduce work hours instead. The unemployment insurance then covers 70 to 80 percent of the shortfall in wages. Appealing as the idea is, empirical results of studies conducted by the KOF Swiss Economic Institute show that firms using this instrument shed labour to a greater, not lesser degree than others (see Frick and Wirz, 2005). Rather than preventing unemployment, short-time work indemnity seems to be a part of labour-shedding practices in Switzerland, dampening the negative effects of rigidities on firms' liquidity.

- 3) The coverage of export risk insurance was extended to help avoid liquidity constraints.

A third fiscal package was decided on in September 2009, comprising CHF 300 mill. of additional expenditure in 2010. Their focus is almost entirely on the labour market, with wage-subsidies to reduce youth and long-term unemployment, and subsidies for training. The major part will only come into force if the unemployment rate exceeds 5 percent. This is, however, to be expected for the second half of 2010. In addition, the refund of energy taxes will be brought forward to 2010, which will boost private disposable income by CHF 650 mill. this year. Not explicitly part of the stimulus measures, but certainly motivated by the current state of the economy, was the decision to postpone a planned VAT increase in the range of CHF 1.1 bill. Taken together, the measures of the third stage add up to CHF 2.0 bill. (or 0.4 percent of GDP).

As was mentioned above, the cantons and communes have an important part in fiscal policy. Traditionally, they have acted pro-cyclically with a certain time lag (see also Schaltegger, 2009). The results of a survey conducted by the federal administration imply that during 2009 and 2010, cantons and major cities plan considerable additional expenditures and tax cuts (see Seco, 2009). These are, however, only to a minor part motivated by business cycle considerations. Besides, the figures are open to question as it is not clear what the reference level for the reported increases is. Although we expect cantons and communes to pursue a mildly expansionary fiscal policy in 2009 and 2010, no account of this is taken in the following simulations.

The total size of the discretionary fiscal measures in Switzerland for the years 2009 and 2010 amounts to 1.0 percent of GDP.¹⁰ Compared with other countries (see table 3), this is a very moderate figure. Although international comparisons must be viewed with a certain caution (as the reliability of national data can differ) they can nonetheless serve to give a general impression of the respective governments' reaction to the crisis.¹¹ Even with the third package, Switzerland ranks at the lower end of OECD countries, which is another confirmation of its basically non-interventionist economic policy stance. More than in most OECD countries, the emphasis of Swiss measures was on the expenditure rather than the tax revenue side, with about 80 percent of the total falling upon spending measures. A breakdown of these into various components shows a strong focus on public investments.¹² Considering that spending measures – especially investment expenditure – generally prove to have a bigger impact on total final demand than tax reductions (see for instance IMF 2008, OECD 2009a and Hemming, Kell and Mahfouz, 2002), the effectiveness of the Swiss measures should however be relatively high compared with other countries.

3 The effects of discretionary fiscal policy measures on the Swiss economy

In this section, we refer to the KOF September 2009 forecast for the Swiss economy 2009–2011 (published on September 25, 2009). In this forecast, the domestic as well the foreign fiscal stimulus packages by Switzerland's most important trading partners that were launched or in the pipeline in September 2009 are incorporated. In order to assess the impacts of the fiscal stimulus packages in Switzerland and abroad on the Swiss economy, we re-run the KOF macroeconomic model counterfactually, modifying (a) the exogenous variables pertaining to the domestic economy as if there had not been any Swiss fiscal policy package (CH scenario), and (b) the exogenous variables pertaining to the international economy as if there had not been any fiscal policy packages in Switzerland's most important export destinations (WORLD scenario).

Section 3.1 gives a brief description of the KOF model. Section 3.2 addresses the effects of the domestic fiscal policy stimuli, and section 3.3 assesses the joint effect of the foreign fiscal policy measures on Switzerland.

¹⁰ This figure includes one third of the 'job-creation reserves' and CHF 1.6 bill. of cantonal expenditures. No further tax measures other than the mentioned VAT postponement are included, as these are not taken to be motivated by business cycle considerations.

¹¹ Another relevant aspect is the underlying fiscal stance in the respective countries. An alternative way of comparison would be to consider estimates of the changes in the structural government fiscal balances.

¹² Specifically subsidised expenditures have been treated as public spending, even if the projects concerned are carried out by the private sector.

Table 3: Size and structure of discretionary fiscal measures, 2008–2010

	2008-2010 net effect on fiscal balances			Composition of spending measures		
	Total	Expenditure in percent of 2008 GDP	Tax Revenue	Final consumption	Investment	Transfers *)
	in percent of 2008 GDP			in percent of 2008 GDP		
Korea	-6.1	-3.2	-2.8	0	1.2	1.7
USA	-5.6	-2.4	-3.2	0.7	0.3	0.5
Australia	-5.4	-4.1	-1.3	0	3	1.1
Japan	-4.7	-4.2	-0.5	0.2	1.2	2.1
Turkey	-4.4	-2.9	-1.5	0.6	1.2	0.3
Canada	-4.1	-1.7	-2.4	0.1	1.3	0.4
Luxembourg	-3.9	-1.6	-2.3	0	0.4	1.2
Spain	-3.9	-2.2	-1.7	0.3	0.7	1.2
New Zealand	-3.7	0.3	-4.1	0.1	0.6	-0.6
Denmark	-3.3	-2.6	-0.7	0.9	0.8	0.1
Sweden	-3.3	-1.7	-1.7	1.1	0.3	0.1
Finland	-3.2	-0.5	-2.7	0	0.3	0.1
Germany	-3.2	-1.6	-1.6	0	0.8	0.6
Czech Republic	-2.8	-0.3	-2.5	-0.1	0.2	0.2
Netherlands	-2.5	-0.9	-1.6	0	0.5	0.1
United Kingdom	-1.9	-0.4	-1.5	0	0.4	0.2
Mexiko	-1.6	-1.2	-0.4	0.1	0.7	0.1
Belgium	-1.4	-1.1	-0.3	0	0.1	1
Slovak Republic	-1.3	-0.7	-0.7	0	0	0.7
Austria	-1.2	-0.4	-0.8	0	0.1	0.2
Norway	-1.2	-0.9	-0.3	0	0.4	0
Poland	-1.2	-0.8	-0.4	0	1.3	0.3
Switzerland (KOF) ¹	-1.0	-0.8	-0.2	0.1	0.5	0.2
Portugal	-0.8	0	0.4	0.4
France	-0.7	-0.6	-0.2	0	0.2	0.3
Switzerland (OECD)	-0.5	-0.3	-0.2	0.3	0	0
Italy	0	-0.3	0.3	0.3	0	0.3
Greece	0.8	0	0.8	-0.4	0.1	0.5
Iceland	7.3	1.6	5.7
Hungary	7.7	7.5	0.2	-3.2	0	-3.8
Ireland	8.3	2.2	6.0	-1.8	-0.2	-0.1
G7	-4.1	2.1	-2.0			
OECD averages						
all (unweighted) ²	-1.7	-0.9	-0.9	0.0	0.6	0.3
all (weighted) ²	-3.9	-2.0	-1.9			

¹ Including the third package of September 2009

² OECD excluding Greece, Mexico, Norway and Portugal

³ Transfers to sub-national government omitted

Cut-off date for information is 11 June 2009 except for Switzerland (KOF)

Sources: OECD 2009b except for Switzerland (KOF)

3.1 The KOF macroeconomic model

All simulations have been performed with the KOF Swiss Economic Institute macroeconomic model.¹³ This model is the backbone of KOF's regular quarterly forecasts for the Swiss economy. The KOF model has also been widely used in carrying out counterfactual simulation exercises assessing the economic consequences of alternative policy options. The most recent examples for

¹³ See Stalder (1991) for a detailed account of the first version of the model.

such simulations include Frick, Graff, Hartwig and Siliverstovs (2009), who assess the economic impact of the second stimulus package, Abrahamsen, Atukeren and Frick (2009), who estimate the impact of an investment program on employment in Switzerland, and Aeppli, Atukeren and Siliverstovs (2008), who simulate the economic impact of the bilateral agreements on free movement of persons between Switzerland and the European Union on the Swiss economy.

The KOF macroeconometric model subscribes to the New Keynesian modelling approach which also characterises the macro-model of the Swiss National Bank (see Stalder, 2001). This approach is also used in various policy-making institutions.¹⁴ In line with other models in this tradition, the KOF model distinguishes between the long-run properties governed by aggregate supply, and the short-run dynamics that are largely demand-determined. The model is sub-divided into four main closely interrelated blocks: the supply-side block, the demand-side block, the household-income block, and the monetary block. The supply-block, determining potential output, combines the following three features: the use of a vintage production function, monopolistic competition in the goods market, and the use of business tendency survey data collected at the individual firm level reflecting tensions in the goods and labour markets. The latter feature plays an important role in determining wage-price dynamics.

In the demand-side block, the components of total output are determined allowing for short-run deviations from long-run output. Such deviations, however, trigger wage and price adjustments in the aggregate supply block that bring the model back to the long-run equilibrium path.

In the household-income block, disposable household income is determined, which is the main factor for consumption decisions of households. Finally, the monetary block of the model contains equations for exchange and interest rates. In this block, a connection to foreign (German) interest rates is established through the interest parity condition.

The KOF model is a medium-scale structural macroeconometric model comprising 317 equations, 41 of which are stochastic. The remaining equations are identities and technical relations. The stochastic equations feature long-run cointegrating relations as well as short-run dynamics.

Importantly, Switzerland is a small open economy that is de facto – notwithstanding its political reservations vis-à-vis the EU – economically integrated into the common European market.¹⁵ With

¹⁴ See Vetlov and Warmedinger (2006), Angelini, Boissay and Ciccireli (2006), Angelini, D'Agostino and McAdam (2006) and Boissay and Villette (2005) for the description of the German, Dutch, Italian, and French blocks, respectively, of the ESCB multi-country model, which builds on previous modelling work on the Area Wide Model described in Fagan, Henry and Mestre (2005). Furthermore, Laxton, Isard, Farugee, Prasad and Turtelboom (1998) provide a description of the IMF structural multi-country macroeconometric model.

¹⁵ Agriculture is the exception, where Switzerland is up to this date protecting its domestic producers by import tariffs. However, the contribution of this sector to Swiss GDP is only minor (2007: 1.2%).

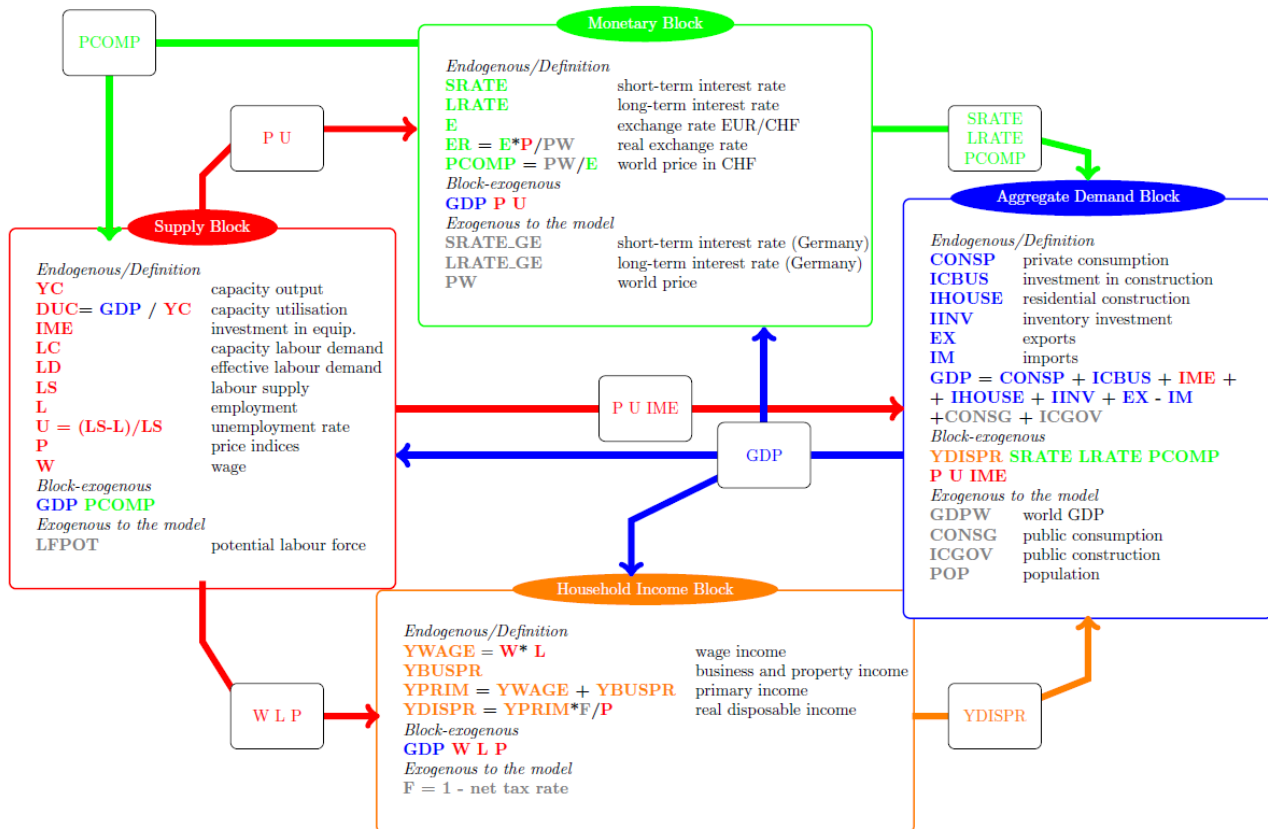
exports amounting to close to 40% of total demand (GDP plus imports),¹⁶ it is obvious that the Swiss business cycle is to a large degree triggered by the world economy, and in particular by the economic situation in its largest trading partners in the EU: Germany, France, Italy and the UK. The KOF model clearly reflects this link, showing high sensitivity to the exogenous variables for the international economy. Accordingly, for the forecast horizon of t+2 years, the model forecasts are mainly driven by the exogenously determined time paths of the variables representing the international economy. For the latter, KOF in-house experts for the US, the EU and Asia provide quarterly estimates.

The basic structure of each block as well as the major interaction channels between these four blocks are presented in figure 1. When presenting each block, we distinguish between the following groups of variables: first, the block-specific endogenous variables which are determined in the corresponding block; second, the endogenous variables determined elsewhere that serve as the explanatory variables in the stochastic equations of a given block; third, the exogenous variables specified outside the model. For example, for the demand-side block the endogenous variables modelled within this block are the demand-side components of GDP: private consumption, private residential and non-residential investment, inventory investment as well as exports and imports (both of goods and services). The endogenous variables supplied from the rest of the model are as follows: real disposable income, short- and long-term domestic interest rates, prices (both domestic and foreign), unemployment and private investment in equipment and machinery. In turn, the main output of the demand-side block is the total value of GDP representing a general level of domestic economic activity, which is supplied to the remaining three blocks. The third group representing exogenous variables is given by the world activity (measured as a weighted average of GDP in Europe, the USA and Japan), public expenditure, public construction and the size of the population.

The model overview presented in figure 1 allows tracking the origin of a stimulus impulse and its propagation through the model. Thus, the modelled impulses in our CH scenario originate in several blocks: the exogenous increase in public consumption as well as in public investment feed into the model through the demand-side block; the measures aimed at boosting private investment in equipment and machinery work through the supply side; similarly, the postponed introduction of the VAT impacts other model variables through domestic price equations attributed to the supply-side block; lastly, the cash injected into the economy by the refund of energy taxes boosts the disposable household income modelled in the household-income block.

¹⁶ According to the last numbers for 2008, the value of exports amounted to 56.4% of GDP and the value of imports was 45.2% of GDP.

Figure 1: The KOF macroeconometric model



In our WORLD scenario, the impact of increased world economic activity mainly affects the Swiss economy via the exports channel modelled in the demand-side block. An additional effect, counterbalancing an incited surge in exports, originates in the monetary block via appreciation of the Swiss Franc relative to the currencies of its main trading partners. Naturally, movements in exchange rates will also affect imports.

It is in order to remark that macroeconomic forecasts are rarely particularly precise estimates of the final data, and the error margin is especially wide close to turning points. The KOF forecasts are no exception to this rule. However, the lion's share of revisions – with the benefit of hindsight – can usually be attributed to unexpected shocks and deviations of the realised from the assumed paths of exogenous variables. In other words, the main difficulty of model based macroeconomic forecasts is not to model the key macroeconomic relations reasonably well, but the fact that the empirical world is characterised by numerous unexpected events and developments – shocks –, so that there are severe limits to the precision that can be achieved in determining the exogenous variables. Having said this, while the point estimates of macroeconometric model based forecasts should always be taken with a grain of salt, the information conveyed by alternative scenarios, i.e. the deviation of alternative outcomes rather than their absolute magnitudes, can be referred to with considerable more

confidence, as the main source of revisions is eliminated. Accordingly, while our baseline scenario – the KOF September 2009 forecast summarised above in table 2 – is presented in absolute magnitudes, our simulation results will be reported as deviations from the latter only.

3.2 The effect of measures implemented in Switzerland (CH scenario)

In this section, we refer to the KOF September 2009 forecast as the baseline scenario to assess the impacts of the fiscal stimuli in Switzerland on the Swiss economy. To this end, we re-run the model (counterfactually) *without* the domestic fiscal packages.

As discussed above, the discretionary fiscal measures in Switzerland for the years 2009 and 2010 (there were none in 2008) amount to 1.0 percent of GDP, which in comparison with other developed economies is a very moderate figure. Indeed the OECD (2009a: 109) ranks Switzerland's effort no. 25 out of 28 OECD countries, for which the necessary data could be assembled, and argues that Switzerland could and should have done more.¹⁷ Be this as it may, the magnitude of the discretionary measures can be assessed with reasonable precision. It is hence straightforward to run the first counterfactual scenario (CH) by modifying the variables to reflect a hypothetical situation in which the three packages had never been launched. In particular, the CH scenario controls for the effects of the stimuli packages on public consumption, public investment, private investment and private consumption as illustrated by figure 2.

Figure 3 summarises the effects of the three Swiss fiscal stimulus packages on GDP, private consumption, private equipment investment as well as exports and imports of goods. To give the reader some feeling of how the model reverts to equilibrium, we show the time paths of the quarterly data until 2012, although the published forecasts do not extend beyond 2011. All magnitudes are per cent increases due to the stimuli factored into the baseline scenario compared to the counterfactual simulation without stimuli. The GDP increase is moderate (roughly 0.5% at its peak). There is some –albeit weak – leakage via imports, whereas exports are hardly affected at all (as could be expected). Private consumption is affected similarly to GDP in timing and magnitude. In relative terms, equipment investment is the demand component that is affected most, with a peak toward the end of 2010.

¹⁷ In particular, the OECD (*ibid.*: 117) claims that in Switzerland, mainly because the income tax calculation is based on past income, the automatic stabilisers are amongst the weakest in the developed world (which is contrary to the praise of the domestic automatic stabilisers communicated by Swiss policy makers), so that there is more need for action than elsewhere. At the same time the OECD (*ibid.*: 118 ff.) finds that the scope for a proactive policy is comparatively wide, given the internationally low level of Swiss public debt, including long-term projections reflecting implicit obligations by the social security network (whereas the dominant Swiss discourse agrees with the finding of a low public debt, but wants to maintain this rather than use the resulting leeway).

Figure 2: Magnitude of fiscal stimuli factored out in the CH scenario (mill. CHF), 2009–2011

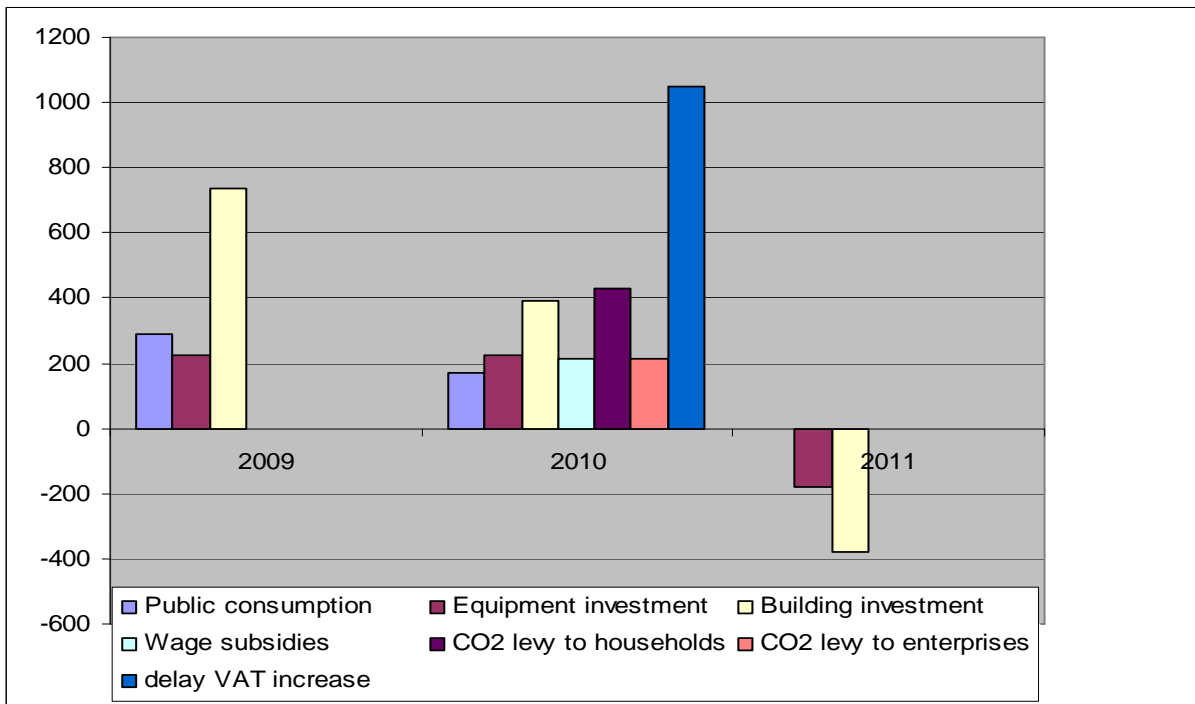
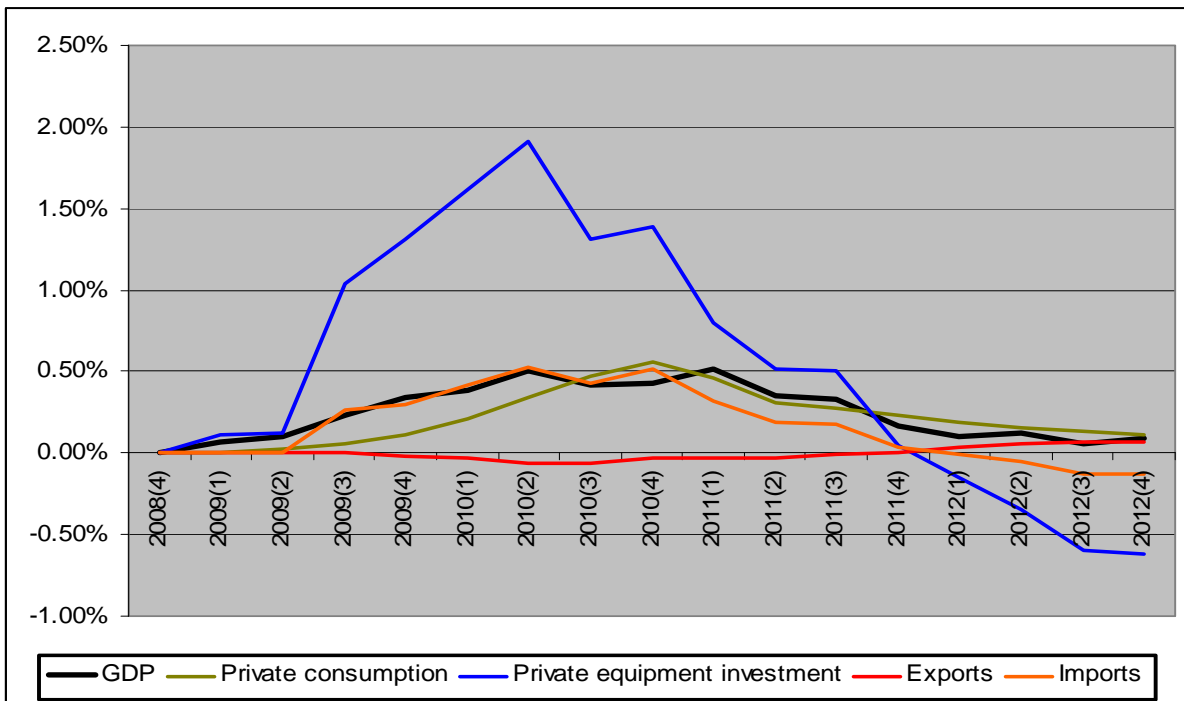


Figure 3: Reaction of key components of Swiss GDP to domestic fiscal stimuli, 2008–2012 (per cent change relative to ‘no discretionary stimuli’ CH scenario)



Based on the macroeconometric model, we can also assess the magnitude of the multipliers associated with the different discretionary measures that fiscal policy can resort to.¹⁸ We find that outright additional government expenditure yields the highest multiplier of roughly 1.5, and transfers to low-income households have a multiplier of 0.8. When the effects of the delay of the VAT increase are traced through 2012, the total multiplier equals 0.9. The lowest multiplier (0.6) is found for a linear reduction in income tax rates, a measure that – wisely so, as these results confirm – was not part of the recent fiscal stimuli in Switzerland, although it is quick and easy to implement and typically meets the least political resistance from opponents of a proactive fiscal policy.

3.3 The effects of measures implemented elsewhere (WORLD scenario)

In our WORLD scenario, the impact of increased world economic activity mainly affects the Swiss economy via the exports channel modelled in the demand-side block. An additional effect, counterbalancing an incited surge in exports, originates in the monetary block via an appreciation of the Swiss Franc relative to the currencies of Switzerland’s main trading partners. Naturally, movements in exchange rates will also affect imports.

The main transmission channel from the international economy to Switzerland in the KOF model are the exports of goods to developed countries, where the crucial exogenous variable is “market activity in developed countries”, a weighted average of real GDP projections in Switzerland’s major export destinations.¹⁹ The WORLD scenario reflects derived export demand based on the counterfactual weighted average of GDP abroad if there had been no foreign fiscal stimuli at all. We take estimates for the magnitude of foreign stimuli for the years 2008–2010 from OECD (2009a).

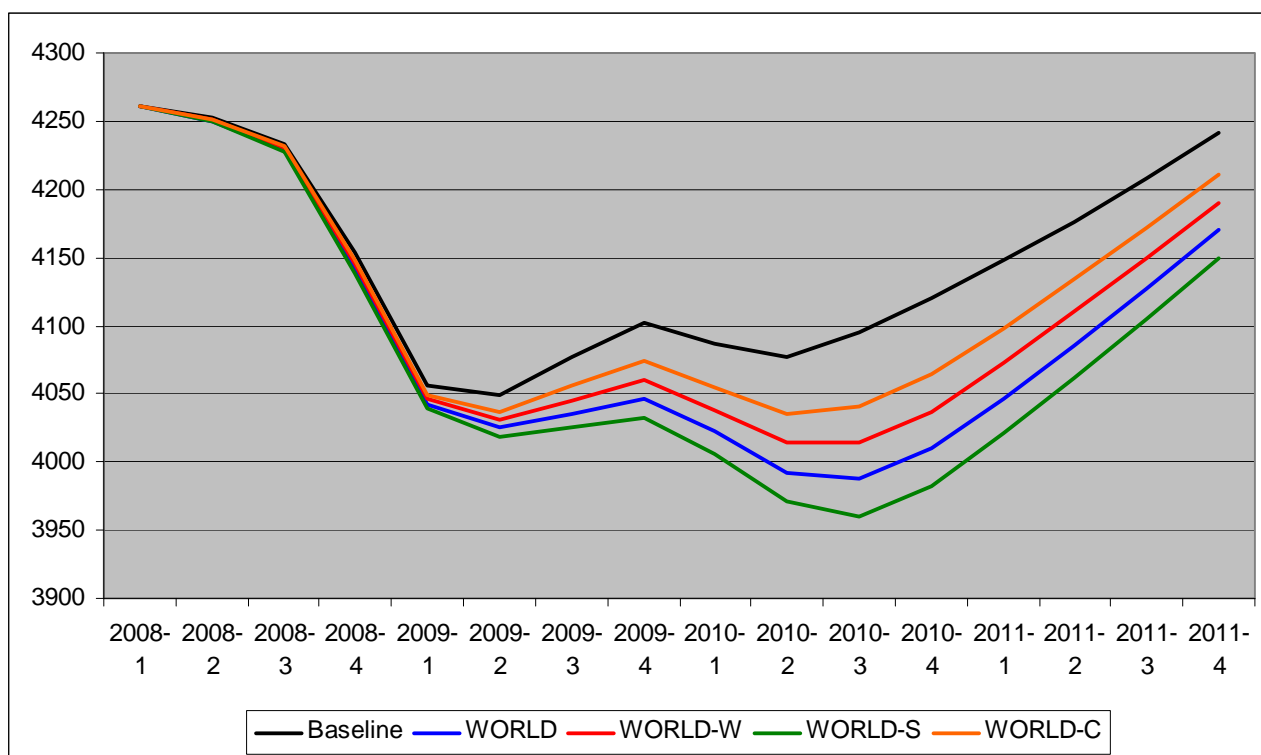
As the variation of the time paths of some crucial exogenous variables rests on external estimates, the degree of uncertainty is probably somewhat higher than for the CH scenario, where we have first-hand and detailed documentation on how to factor out the Swiss stimulus packages. To account for this uncertainty, we run two additional simulations where the decrease of the variable for export demand derived from the state of the international economy resulting from factoring out all foreign stimuli packages is increased by 25%, which amounts to a more optimistic view of the effect of foreign fiscal policy measures on the state of the world economy as ‘strong’ (WORLD-S), and a pessimistic scenario (WORLD-W), where the effect of the foreign fiscal stimuli on derived

¹⁸ See also Frick, Graff, Hartwig and Siliverstovs (2009: 32 f.).

¹⁹ Apart from this link, the international economy enters via exports to non-OECD countries (represented by another exogenous variable reflecting this demand component), exchange rates and deflators for imports and exports. Our simulations account for these transmission channels as well, but for space reasons, we restrict the presentation of changes to the exogenous variables in the WORLD scenario to the most important link.

export demand is ‘weak’ (25% less than with the standard calculus).²⁰ Finally, it should be born in mind that the KOF model derives export demand from Switzerland’s major export destinations from their weighted GDP, referring to the empirical estimate of the marginal propensity to import. Now, as some of the fiscal stimuli packages had elements designed to reduce the ‘leakage’ through the import channel, the historical propensity to import may not hold in this situation.²¹ Hence, to err on the safe side, we run an additional extremely ‘cautious’ scenario (WORLD-C), where the variable reflecting export demand from abroad is reduced by 50% vis-à-vis the standard WORLD scenario. Figure 4 shows how our assumptions regarding the WORLD scenarios are fed into the KOD model. As before, ‘baseline’ denotes the September 2009 model run, where the results of the fiscal stimuli packages at home and abroad are factored in.

Figure 4: Effect of fiscal stimuli abroad on derived demand for imports from Switzerland (WORLD scenarios), 2008–2011



²⁰ As we want to compare alternative scenarios, which exclude the fiscal policy measures, with the baseline, which includes them, world GDP is actually lower in the 'optimistic' scenario assuming strong effects of fiscal policy and vice versa (see Figure 4).

²¹ We are indebted to a critical discussant for this point. Yet, it is not trivial to assess the magnitude of this effect, or even the sign. Some measures – transfers or subsidies to agents with a high propensity to buy consumption goods, intermediary inputs or investment goods from Switzerland – may result in a situation where the historical propensity to import from Switzerland understates the real effect. A likely candidate is the massive interventions to increase the demand for new automobiles in Germany, from which Swiss suppliers of intermediary inputs should have greatly benefited. As any attempt to seriously estimate the weighted overall effect of the fiscal stimuli abroad on the propensity to import from Switzerland would go far beyond the scope of this paper, we leave it with this anecdotal evidence.

Figure 5: Reaction of key components of Swiss GDP to foreign fiscal stimuli, 2008–2012
(per cent change relative to the standard ‘no discretionary stimuli’ WORLD scenario)

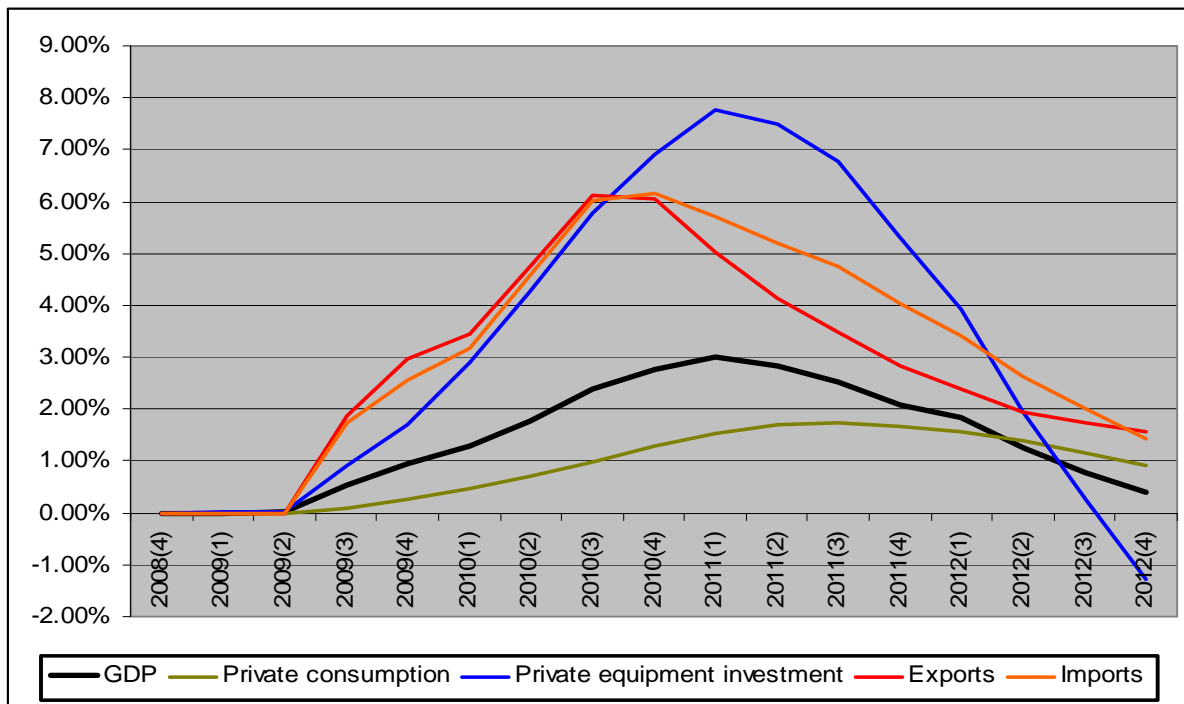
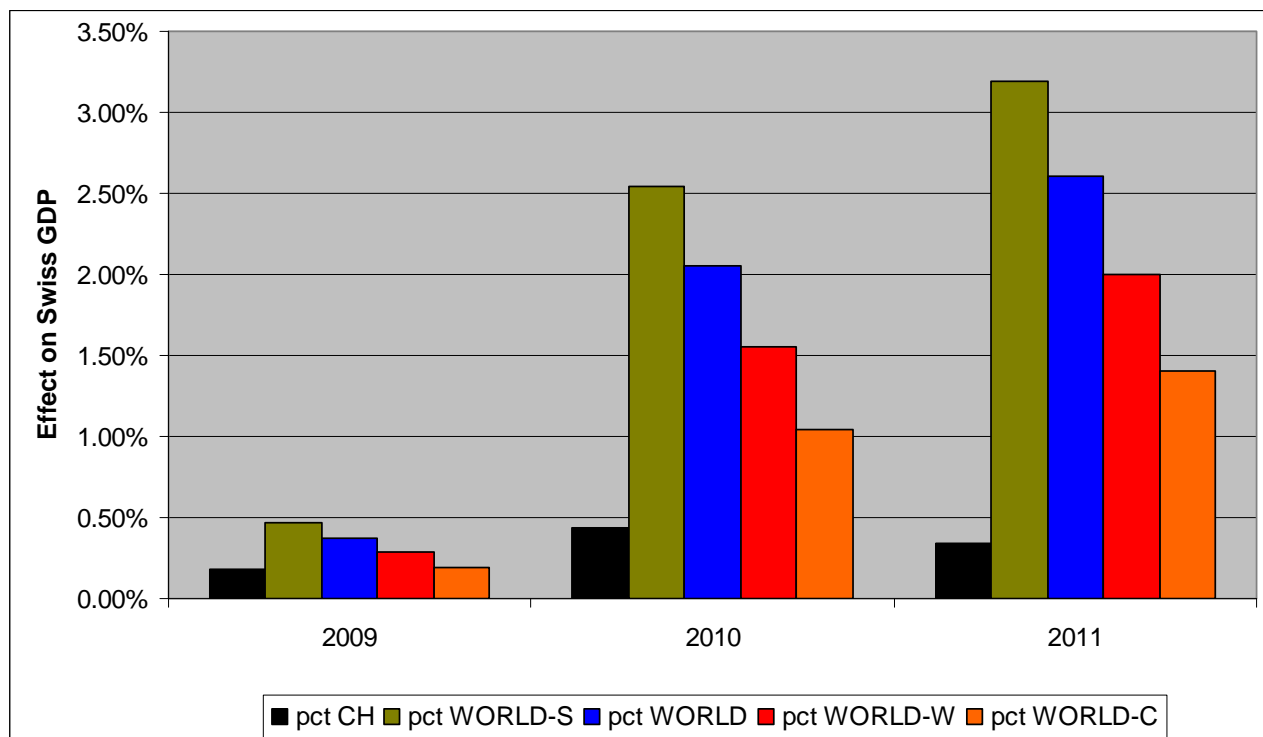


Figure 5 summarises the effects of the foreign fiscal stimulus measures on Swiss GDP, private consumption, private equipment investment as well as exports and imports of goods. We plot the time paths resulting from the standard WORLD scenario until 2012. The GDP increase is quite pronounced, reaching about 3% early in 2011. Additional exports – the main trigger in this scenario – peak in late 2010. Imports are moving largely in line with exports. Private consumption increases significantly, albeit with a lag (reflecting the reaction of employment). In relative terms, as in the CH scenario, equipment investment is the demand component that is affected most, but now the peak comes somewhat later, in early 2011.

The magnitudes of the domestic and the foreign fiscal measures are compared in figure 6. In 2009, neither the domestic nor the foreign measures – not even in the WORLD-S scenario – have an effect exceeding 0.5% of GDP, which is small, given the sharp drop in GDP caused by this recession. Yet already in 2009, the domestic discretionary fiscal policy measures lift GDP by only 0.18%, which is less than the foreign measures, even referring to the extremely cautious WORLD-C scenario (0.19%). The wedge widens in 2010 and 2011. The restricted magnitude of the Swiss packages restricts the effect on GDP to 0.43% in 2010 and 0.34% in 2011. For these two years, even the WORLD-C scenario yields effects that are about three times more pronounced (1.04% and 1.40%). The other scenarios’ effects on Swiss GDP literally dwarf their domestic counterpart,

amounting to 2.05% and 2.60% in the standard world scenario and going as high as 3.20% in the WORLD-S simulation.

Figure 6: Comparison of domestic and foreign fiscal stimuli packages' effects on Swiss GDP, 2009–2011 (per cent change relative to 'no discretionary stimuli' scenarios)

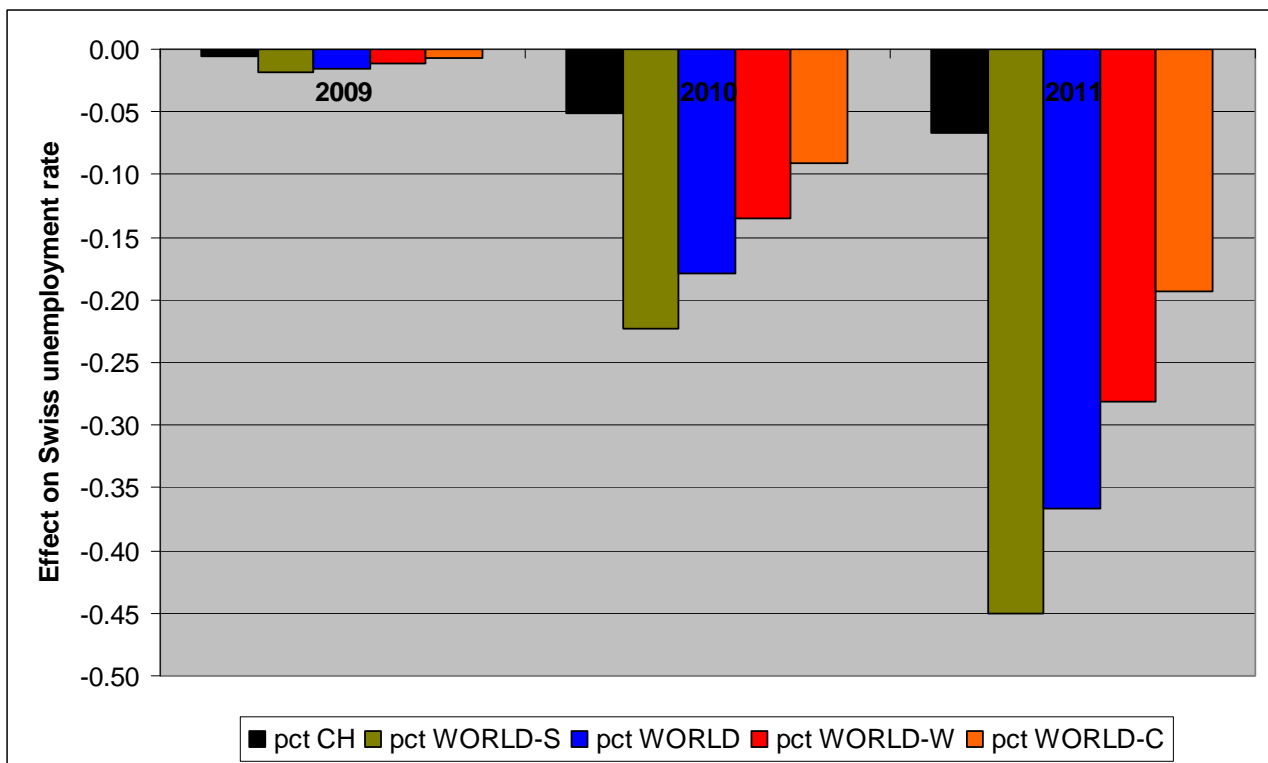


According to these simulations, the cumulative effects of the domestic discretionary fiscal policy measures until the end of 2011 amount to a moderate 0.95% of projected GDP for the three packages (corresponding to a multiplier close to unity), whereas the cumulative spillover from the discretionary fiscal measures abroad will have about three to six times that impact, depending on the WORLD scenario. The standard WORLD scenario yields a cumulative effect of 4.9% of Swiss GDP, the $\pm 25\%$ scenarios 3.8% and 6.0% respectively, and even the extremely pessimistic scenario shows an effect of 2.6%. The spillover from the foreign efforts to curb the recession clearly dwarfs the joint effect from the domestic stimulus packages, and this holds even if we resort to the extremely cautious scenario where external demand for Swiss exports derived from the weighted GDP of the most important importers is only 50% of what it would be in normal times.

Last but not least, let us have a look at the outcomes of the simulations regarding the Swiss labour market. A market outcome which economic policy is universally trying to influence is (involuntary) unemployment. Unemployment does not only imply foregone income, but also massive losses of self esteem and well-being for the affected individuals and families as well as leading to

hysteresis that may depress potential output growth in the future. Therefore, the success in keeping the unemployment rate low is one of the most important criteria to assess the appropriateness of economic institutions and policy. In line with this, discretionary fiscal stimulus measures are routinely justified as measures to curb unemployment. As the supply side of the Swiss labour market is fairly predictable, the KOF macroeconomic model is quite reliable in tracking the evolution of unemployment due to demand shocks. According to the September 2009 forecast, the official unemployment rate in Switzerland would reach a peak of close to 5.5% early in 2011. Figure 7 shows how much the fiscal measures have helped to prevent further rises.

Figure 7: Comparison of domestic and foreign fiscal stimuli packages' effects on Swiss unemployment rate, 2009–2011 (per cent change relative to 'no discretionary stimuli' scenarios)



As the graph shows, the effects of both domestic and foreign fiscal stimuli in 2009 are negligible (below 0.02 percentage point of the unemployment rate), which is reasonable, as most packages were launched late in 2008 or in 2009 and unemployment lags the business cycle. In 2010 and 2011, according to our model, the Swiss measures prevented an additional rise of the unemployment rate of 0.05 and 0.07 percentage points, whereas the foreign measures account for 0.18 and 0.37 respectively (WORLD scenario).²²

²² As a percentage of the unemployment rate, this corresponds to 1.0% and 1.2% for the domestic measures, and 3.4% and 6.3% for the foreign stimulus packages.

Similar to the effects on Swiss GDP, the improvement on the labour market due to the efforts of domestic fiscal policy is dwarfed by the spillover from abroad. In 2011, the WORLD-S scenario results in a 0.45 percentage points effect on the Swiss unemployment rate – more than six times the domestic 0.07 – and even the extremely cautious scenario finds a 0.19 percentage points effect, which is about three times the domestic effect. In other words, for one employee in Switzerland that will not have lost his or her job at the peak of the recession thanks to the domestic stimulus packages, there will be three to six who need to be grateful for the economic policy made abroad, where policy-makers did not hesitate to launch more sizeable measures than their Swiss colleagues.

4 Summary, Conclusion, Outlook

In this paper, we first give a short sketch of the state of the world economy and that of Switzerland toward the end of 2009. Then, we discuss the pros and cons of discretionary fiscal policy from a history of economic thought perspective. After summarising the fiscal policy measures taken in Switzerland, we refer to the KOF September 2009 forecast, where the domestic as well the foreign fiscal stimulus packages by Switzerland's most important trading partners that were launched or in the pipeline in September 2009 are incorporated. It hence serves as a baseline scenario to assess the impacts of the fiscal stimulus packages in Switzerland and abroad on the Swiss economy. To assess these, we re-run the KOF macroeconometric model counterfactually, modifying the exogenous variables pertaining to the domestic economy as if there had not been any Swiss fiscal policy package and the exogenous variables pertaining to the international economy as if there had not been any fiscal policy packages in Switzerland's most important export destinations. We find that the spillover from the foreign efforts to curb the recession clearly dwarf the joint effect from the domestic stimulus packages, and this holds even if we resort to the extremely cautious scenario where external demand for Swiss exports derived from the weighted GDP of the most important importers is only 50% of what it would be in normal times. We hence conclude that – intentionally or not – in addition to its own (and rather limited efforts) to fight the recession with proactive fiscal policy, Switzerland took a free ride that by far exceeded the one it paid for.

To our knowledge, the “free rider” assumption, though frequently referred to in the recent debate, has not before been addressed empirically with models that allow for analysing the paths from

a disequilibrium due to a pronounced demand shock back to the long-term growth path of the economy.²³ So our findings might add important evidence.

Having shown that a small open economy like Switzerland was indeed at least partly enjoying a free ride out of the recent recession makes the call for international coordination imperative. We can be sure that the next crisis will happen and if there are any lessons to be learnt from this one, the evidence of the free rider problem is one of them. Although a binding commitment to coordinated action as the first-best preparation for the next crisis cannot realistically be expected to cover all major economies, it nevertheless should be placed and remain on the agenda.

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²³ The simulations by Cwik and Wieland (2009, op. cit.) refer to DSGE models and hence rest on the (implicit) assumption that the economy starts from equilibrium, in which a fiscal stimulus appears like an exogenous shock. As Cwik and Wieland find that the overall effects on the *domestic* economy are small and quickly turn negative, as private consumption and investment are crowded out, it does not come to a surprise that international spillovers via the import channel is absent or negligible. Consequently, this approach does not find any coordination failure – it does not see any need for action in the first place. Interestingly, the resulting “no scope for action” recommendation, which is firmly rooted in academic economics (see e.g. Taylor 2009), has been treated with benign neglect by policy makers all over the world as soon as the recent downswing became malicious in late 2008 – fortunately, as we may add.

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