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Keynesian Dominance in Crisis Therapy

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Abstract:

This paper scrutinizes the debate of Keynes and Hayek concerning the adequate response to economic crises from a historical perspective. In a first step the development of the Keynesian economic theory, its ascent during the Great Depression and its use during financially sound times is analyzed. In a second step the Hayekian critique to discretionary government intervention and its long run consequences is scrutinized. In the last step it is analyzed why, in the wake of a crisis, short-run oriented Keynesian therapy dominates long-run Hayekian therapy as in the most recent crisis.

Keywords: Keynes, discretionary fiscal policy, monetary policy

JEL: B20, E 12, E 52, E 62

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1 Introduction: The Duel of the old Antagonists

Hayek and Keynes – their theories are as controversial as ever. The global financial crisis, which started in 2007 in the US, reignited the debate on the appropriate response to economic crisis. Short-run versus long-run effects, top-down versus bottom-up approaches and discretionary versus rule-based policies dominate the current political and economic debate (Maurel/ Schnabl 2012).

The Keynesian theory gained economic relevance in the midst of the Great Depression. Before the “General Theory” (Keynes 1936) the consensus was to intervene as little as possible in the market mechanism. But during the Great Depression the classical ideas of Adam Smith (1776) to rely on the self-healing forces of the market proved, at least in the short run, disappointing (Galbraith 2007). In contrast the postulation of Keynes (1936) to jumpstart the economy by expansive monetary and fiscal policies seemed promising, as expansive discretionary policies are apparently able to soften the clash of a crisis.

Whereas Keynes’ General Theory focused on crisis therapy in recession, later on economists modelled the Keynesian policy to symmetrically smooth the business cycle (Hicks 1937, Samuelson/ Nordhaus 1948). Yet, at the end of the 1960s the originally anti-cyclically modelled fiscal policy had turned out to be de facto pro-cyclical. Independent from the phase of the business cycle government spending aimed to keep aggregate demand at high levels to ensure stable and high employment. In practise, the public spending in recessions was hardly followed by saving in booms, which led to structurally rising government debt.

Since the release of the General Theory and the following “Keynesian revolution” in economic policy making the short-run effects of expansive macroeconomic policy as well as the long-run threats, in form of unsustainable public debt, inflation, overinvestment and distorted resource allocation have been criticised. One of the most fervent opponents of Keynes’ theories was Friedrich August von Hayek (e.g. 1944, 1945, 1978, 1995).

The controversy of the two economists dates back to the early 1930s. In an open letter to *The Times* on 17th October 1932 Keynes among other economists¹ argued that in war time it was a “patriotic duty” to cut private expenditure. However, in times of a recession expenditure, regardless of their type, must be increased to stimulate demand and employment. Assuming that the private sector reduces consumption and investment due to declining wealth and rising uncertainty the public sector must compensate the declining demand. Especially as increased savings are not entirely transformed into rising investment because of negative economic sentiment and rising liquidity preference public demand has to increase (Keynes et al. 1932a).

Two days later *The Times* printed a reply signed by Hayek among others economists² who agreed with Keynes et al. (1932) that hoarding money may lead into an undesired deflation. But contrary to Keynes et al. (1932) they argued that spending for investment is preferable to spending for government consumption as the deficiency of investment was a main problem of the crisis. Further Hayek et al. (1932) argued that the “imprudent borrowing and spending” of the public sector was a main reason of the recession. Credit financed public spending, as proposed by Keynes et al. (1932) would burden future budgets as interest rates increase and private investment is crowded out. To revive the economy the government would have to avoid excess spending and abolish trade and capital controls (Hayek et al. 1932).

Already in this early encounter of Keynes and Hayek the questions of spending for consumption or investment and which role the public sector should play are controversial issues. Comparing the controversy of the 1930s with today’s economic debate shows that Keynes’ and Hayek’s ideas are still topical as reflected in a wide range of literature discussing the Keynesian and Austrian theories. E.g. Steele (2001), Foley (2006), Skidelsky (2009), O’Driscoll (2011) and Wapshott (2012) analyse the similarities and differences of the two approaches. Hazlitt (1959), Lewis (2009) and Sanz Bas (2011) criticize the Keynesian theory from an Austrian perspective. This paper extends this literature by scrutinizing the Keynesian crisis response in the short run and

¹ The letter was signed by David H. MacGregor, Arthur C. Pigou, John M. Keynes, Walter Layton, Arthur Salter and J.C. Stamp. It will be referred to as “Keynes et al. (1932)”.

² The letter was signed by Theodor E. Gregory, Friedrich A. von Hayek, Arnold Plant and Lionel Robbins. It will be referred to as “Hayek et al. (1932)”.

the Hayekian critique in particular with respect to the long-run consequences to show that the Keynesian crisis therapy prevails over the Hayekian approach which, however, leads to rising government debt, inflation and new crisis.

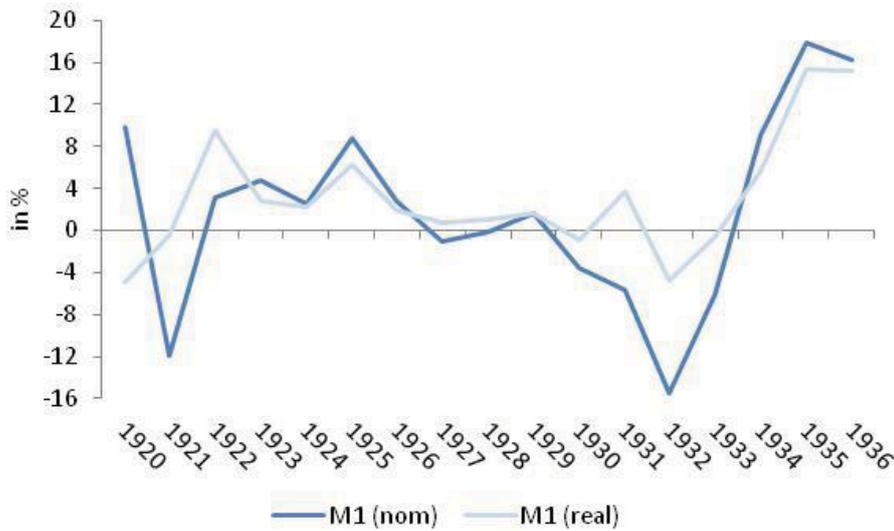
2 Keynes' Rise during the Great Depression

2.1 The Great Depression as Accelerant

In the US output began to decline in summer 1929. Only a few months later the stock market crashed. Albeit the stock market crash did not necessarily trigger the recession it certainly contributed to the exceptional depth and duration of the Great Depression (Romer 1993). Hayek (1979) argued that the expansive policy of the US Fed during the 1920s had paved the way for the stock market boom which finally culminated into the crisis. Easy monetary policy – substantial interest rate cuts and expanding money supply (see figure 1 & 2) – since the early 1920s had led to overinvestment and inevitable bursting bubbles first in the real economy (e.g. in the construction sector) and later in the stock market.

When the Fed realized that the speculation in the stock market had led to price increases which were decoupled from the real economy it changed its monetary policy stance. Monetary tightening began in spring 1928 to counteract the speculative activities on the US stock market. Even after the black Friday in September 1929 the tightening continued as the US dollar became the target of speculative currency attacks in late 1931 (see figure 2). To defend the dollar's value under the gold standard the central bank raised interest rates to prevent gold from flowing out (Friedman/ Schwartz 1963). But depositors continued to withdraw money and bank runs spread across the country triggering a nationwide banking crisis. People liquidated their bank deposits to hold their money in cash, which led to a decline in the deposit-to-currency ratio in commercial banks. The declining money-multiplier and bank failures diminished the money supply additionally to the tightening measures of the Fed (Romer 1993). The growth rates of the US money supply which had turned negative in the late 1920s remained negative until 1933 (figure 1).

Figure 1: Money Supply



Data source: Hamilton (1987, p. 152).

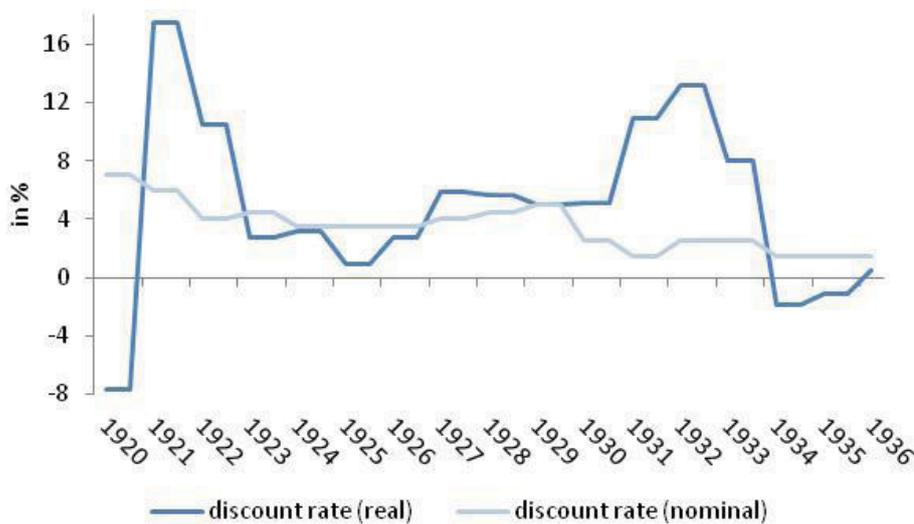
The tight monetary policy of the Fed caused a debt-deflation process and thus the deepening and the prolonging of the depression (Fisher 1933; Friedman/ Schwartz 1963; Hayek 1979; Hamilton 1987; Bernanke 1995, 2004b). The burst of the stock market bubble in October 1929 had revealed the over-indebtedness of financial markets participants. Asset prices declined while liabilities remained high causing balance sheet recessions: Households and firms changed objectives from maximizing profits to minimizing debt (Koo 2011). On an individual scale this is not a concern, but if on an aggregated level markets participants liquidate their debt at once it drastically reduces aggregate demand which is likely to lead the economy into a liquidity trap (Koo 2011). Furthermore the deleveraging led to shrinking bank deposits and declining velocity of money in circulation which increased the downward pressure on prices further (Fisher 1933).³

Falling aggregate demand and debt burdens exceeding profit opportunities resulted in bankruptcies. Demand for loans was reduced as declining prices signaled declining wages and profits thereby raising expectations concerning growing real interest and real loan repayment burdens (Romer 1993). Unpaid interests and sour loans set finan-

³ Quantity theory of money: $M * V$ (money supply and velocity were both falling) = $P * Y$ (prices and/or nominal GDP must fall, too).

cial institutions under pressure. Bank lending to finance private investments was reduced as liquidity holdings and the share of safer government bonds in the portfolio of the commercial banks were increased. The restricted bank lending (credit crunch) and – in expectation of further falling prices – postponed consumption and investment (see figure 3) put further pressure on the private sector adding to the deflationary spiral (Bernanke 1995). Prices, output and employment continued to shrink. The depressed business sentiment and the uncertainty in the financial sector led to cash hoarding which caused further reduction of the velocity of money thus exacerbating the vicious circle of deflation. In the financial sector this led to disturbances in the rates of interest; nominal rates fell whereas real rates rose (Fisher 1933). Even though the Fed reduced the discount rate from 5% in 1929 to 1.5% - 2.5% after the stock market crashed, real rates rose to double-digits in the subsequent years due to the surging deflation (figure 2).

Figure 2: US Nominal and Real Discount Rate



Data source: Hamilton (1987, p. 152).

Given the economic situation of the early 1930s Keynes (1936, p. 34, 378) criticized that the assumptions of the classical theory for equilibria with full employment are only satisfied by accident. He rejected the idea that savings and investment are balanced by interest rate changes and thus savings are entirely transformed into investment. For Keynes (1936, p. 167) “[t]he rate of interest is not the “price” which brings

into equilibrium the demand for resources to invest with the readiness to abstain from present consumption. It is the “price” which equilibrates the desire to hold wealth in the form of cash with the available quantity of cash”. In the classical theory the form of money holding for future consumption is neglected. But if the liquidity preference is high money is held in cash instead of being deposited into bank accounts. As a consequence savings cannot be transformed into investment.

Liquidity preference tends to be high when the rate of interest is low as the opportunity costs for hoarding money are low. Thus, in contrast to the classical theory, which associates declining interest rates with rising investments, in the Keynesian theory a declining interest rate may lead to underinvestment. Keynes (1963, p. 25/26) also criticized that according to Say’s law supply is to create its own demand independently from the level of output. This implies that persistent involuntary unemployment is non-existent. This contrasted sharply with economic reality of the 1920s (in Europe)⁴ and the 1930s (in Europe and the US). The inconsistency of the classical theory with the economic reality in mind Keynes ultimate objective of the General Theory was to analyze the determinants of unemployment (Keynes 1936, p. 89). In contrast to the classical theory he argued that the interplay of consumption and investment leads only by coincidence to full employment. With the General Theory Keynes (1936, p. 28) provided a model where underemployment in the state of equilibrium was possible and could be cured by government interventions.⁵

According to Keynes (1936, p. 25, 28-30) output is determined by effective demand⁶, which is determined by the propensity to consume and investment. Consumption is mainly determined by income. The marginal propensity to consume (the proportion of the additional income which is spent on consumption) is assumed to be less than one since a certain share of the additional income is saved (Keynes 1936, p. 96). The saved income share does not add to effective demand and therefore has a negative

⁴ In Europe the economic environment was already critical before the US stock market crashed. Due to sluggish demand the unemployment was persistently high in the UK and Germany throughout the 1920s (Stewart 1967).

⁵ For policymakers this part of the Keynesian theory was in particular attractive as it meant that via policy interventions a superior equilibrium than the market solution could be reached (Skidelsky 2009). The scope for fiscal and monetary policy intervention and thus the sphere of political influence were widened.

⁶ Effective demand is defined by the intersection of the aggregate demand and the aggregate supply function of public and private agents (Keynes 1936, p. 25). In this paper the terms effective demand and aggregate demand are used as synonyms.

effect on employment. “The expectation of consumption is the only *raison d'être* of employment, there should be nothing paradoxical in the conclusion that a diminished propensity to consume has *vet. par.* a depressing effect on employment.” (Keynes 1936, p. 211). With the “paradox of poverty in the midst of plenty” Keynes (1936, p. 30) argued that the increasing wealth of a society enlarges the deficit in effective demand as wealth increases while the propensity to consume declines and thus the gap between actual and potential output widens.

The second component of effective demand is investment which is determined by the marginal efficiency of capital, long-term expectations and the interest rate. In the Keynesian theory the interest rate is the price which equilibrates the available amount of cash with the willingness to hold cash – the liquidity preference.⁷ The liquidity preference, which’s “necessary condition is the existence of uncertainty as to the future of the rate of interest” (Keynes 1936, p. 168) can be subdivided into three motives: transaction, precautionary and speculative motive. Whereas the first two are not sensitive to the interest rate, the quantity of money absorbed by the speculative-motive, i.e. the expectation of future investment opportunities, determines the rate of interest (Keynes 1936, p. 167/170-171).

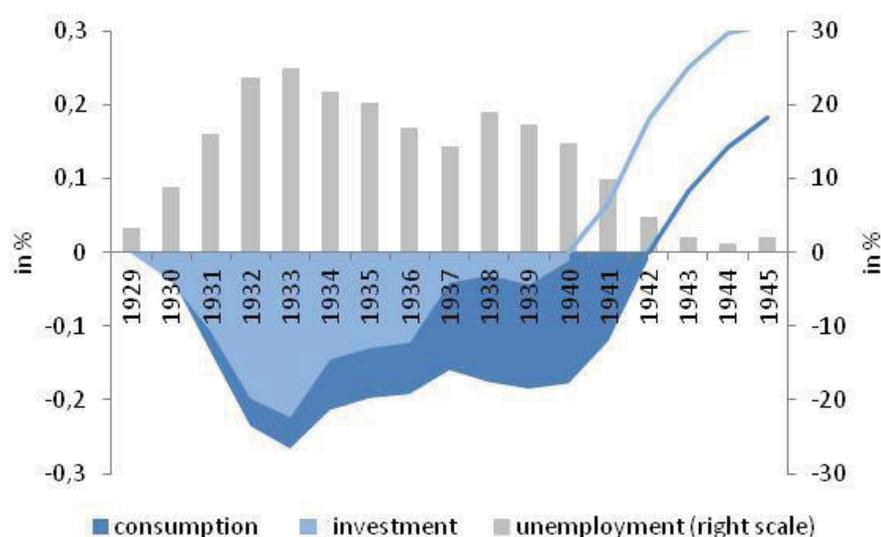
During the Great Depression liquidity preference was high due to low nominal interest rates and high uncertainty. In anticipation of further falling prices and expected rising returns in the future consumption and investment were postponed. Savings were held in cash as – given an uncertain environment – cash allows for a quick response to market changes and as the very low nominal interest rates accounted for low opportunity costs of holding money. Since money held in cash is not available for investment, not only private consumption but also investment declined, leading to a shortfall in effective demand and high unemployment throughout the 1930s.

Figure 3 illustrates the gradual decline of investment and consumption in the US starting from 1929 which only reached the pre-crisis level in the early 1940s. During

⁷ Hoppe (1992) points out that the functional relationship of liquidity preference and interest rate in the General Theory is not unidirectional, but that the two variables determine each other. On the one hand Keynes argued that the liquidity preference determines the rate of interest, as the interest rate is regarded to be a reward for not holding cash. On the other hand it is argued that the demand for money is determined by the interest rate (Hoppe 1992).

this period of low effective demand unemployment rose significantly and remained at double digits until 1941.

Figure 3: US Consumption, Investment and Unemployment Rates



Note: Consumption and investment rates as percentage difference to base year 1929.

Data source: Historical Statistics of the United States (1975).

Keynes (1936, p. 30) argued that “the mere existence of an insufficiency of effective demand may, and often will bring the increase in employment to a standstill *before* a level of full employment has been reached”. The result is a market equilibrium with persistent involuntary unemployment as experienced in the late 1920s and early 1930s. To restore full employment the government must enhance effective demand by indirectly or directly increasing consumption and/or investment (Keynes 1936, p. 378). For this purpose the government has two options on hand – monetary and fiscal policy.

With respect to the restrictive monetary policy by the Fed in the late 1920s and early 1930s Keynes (1936, p. 173) claimed that in the face of crisis the central bank must respond by quickly and drastically reducing interest rates. But expansive monetary policy alone is not effective as it does not directly lead to higher employment as the classical theory would suggest. In the classical theory an increase in the quantity of money is associated with lower interest rates and rising investment and employment.

Keynes (1936, p. 173) on the contrary argued that if the liquidity preference increase counteracts the money supply increase a monetary expansion doesn't lead to an interest rate reduction. The rising liquidity preference can be explained by the uncertainty of the crisis (bank failures, etc.) and also by the money expansion itself as it brings the interest rate towards zero. Individuals prefer to hold cash in expectation of better future investment opportunities as the opportunity costs for hoarding money become low. The rising liquidity preference leads, due to declining saving deposits and therefore to rising interest rates for credit to the private sector which counteracts the effects of the money supply expansion. But even if the interest rate can be reduced investment must not necessarily pick up if during the crisis the marginal efficiency of investment is falling faster than the interest rate (Keynes 1936, p. 173). The falling marginal efficiency can be explained by deteriorated expectations and uncertainty concerning the future interest rate. But even with investment being stimulated it does not necessarily raise employment. If the propensity to consume falls stronger than investment increases effective demand remains insufficient (Keynes 1936, p. 173).

Due to these reasons monetary policy plays a minor role in curing a crisis and can be viewed as a necessary but not sufficient criterion which must be accompanied by expansionary fiscal policies to be effective (Keynes 1936, p. 378). Prior to the Great Depression fiscal expansion as an economic policy instrument was hardly under consideration (DeLong 1998). But after the publication of the General Theory the Keynesian fiscal policy, which can be divided in indirect and direct measures, dominated the crises response.

Assuming that poor people have a higher propensity to consume than wealthy ones the government can indirectly increase consumption by distributing income more equally via the tax system. The increased disposable income for low income agents leads to increasing demand. Investment on the other hand can be directly increased by "loan expenditure", e.g. debt-financed public investment programs (Keynes 1936, p. 128/129). Given involuntary unemployment and under-utilized capacities Keynes (1936, p. 123) stressed that – due to the multiplier effect⁸ – government spending is

⁸ The concept of the multiplier was originally introduced by Khan (1931). Keynes (1933) argued that the new expenditure must be additional and not a substitute for existing expenditure to be effective. He also argued

multiplied with the marginal propensity to consume⁹ resulting in additional effective demand.¹⁰

Keynes' monetary policy recommendations to stimulate effective demand (investment and consumption) and prevent unemployment (Keynes 1936, p. 378-380) were straight forward: expansive monetary policies to encourage private investment, to finance public investment programs and to prevent crowding out of private activity. In the aftermath of the Great Depression Keynes' active government policy dominated the classical theory which could not explain the persistent slump and offered no remedy but relied on the self healing powers of the market.¹¹

Even though the General Theory was primarily a crisis theory Keynes argued that the interest rates must be kept low independently from the business cycle to maintain high employment. He did not mention an exact figure but argued that the interest rate should be kept at the level of marginal efficiency of capital at which full employment is reached (Keynes 1936, p. 375). The fiscal expansion on the other hand must be reversed during a boom to not only balance the budgetary deficit which arose in the crisis but to build up a surplus to prepare for the next recession. Keynes (1937, p. 11) argued that “[t]he boom, not the slump, is the right time for austerity at the Treasury”. The countercyclical policy, deficit spending in recessions and raising taxes in booms, along with low interest rates is to smooth the business cycle and ensure a high level of employment in the long run.

2.2 Post-War Boom

The Great Depression worked like a catalyst for the Keynesian theory, even though not the first Keynesian government spending program – the New Deal – but the enhanced government demand management during the World War II restored the economic strength of the Western Allies (Krugman 2005, Feldstein 2009). Convinced by

that the additional spending would cause inflation if capacities were fully utilized, but given the deep depression inflation was unlikely.

⁹ Keynes (1936, p. 96) argued that the marginal propensity to consume was positive but less than one.

¹⁰ However, there is no consensus amongst economists concerning the effectiveness or the size of the multiplier. Keynes (1936, p. 128) suggested the multiplier to be around 2.5. Recent analyses vary widely, depending on specific characteristics of the economy, on the applied theoretical framework and the assumptions (see chapter 4.2).

¹¹ In contrast to the classical theory Keynes (1933, p. 14) argued that increasing employment and balancing the budget are not contradictory. But as the budget can't be balanced with a high level of unemployment the first step must be to increase employment – the budget follows.

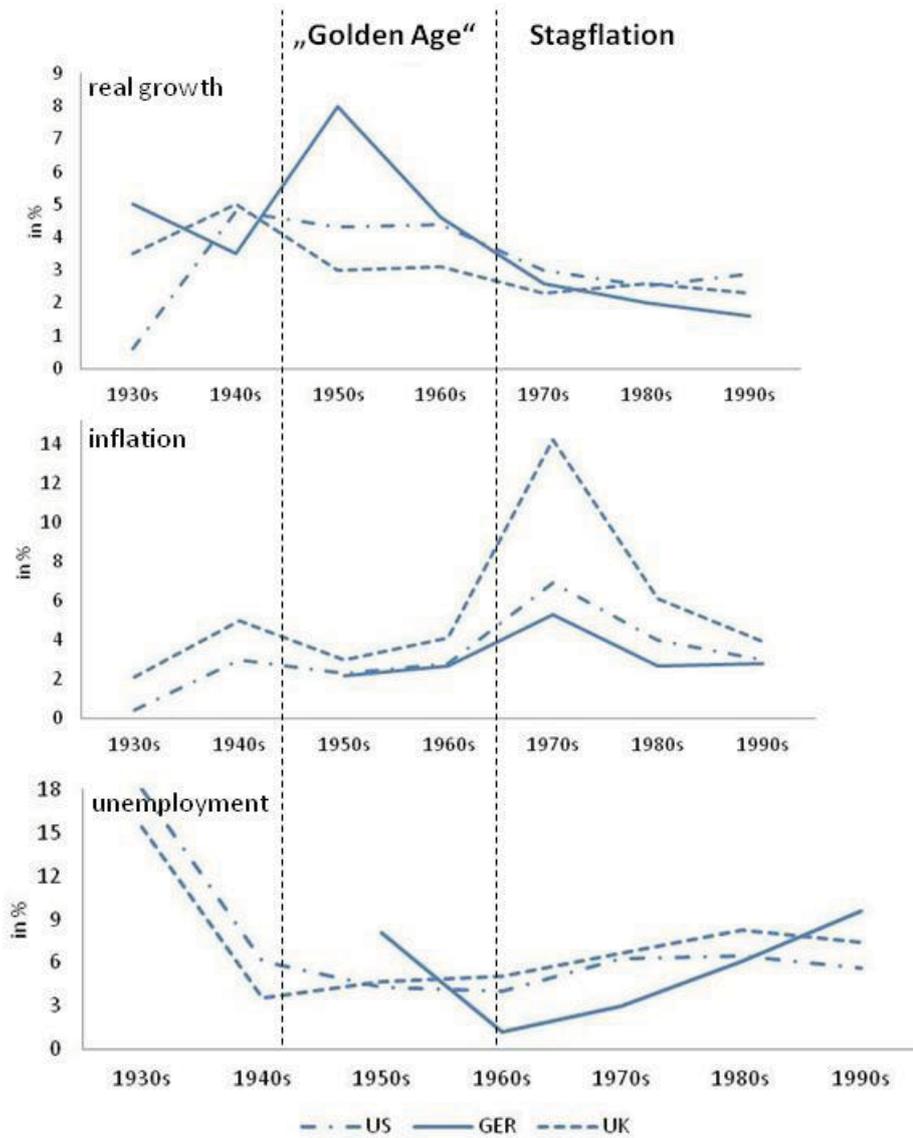
the effectiveness of expansive fiscal policies Keynesian ideas dominated the postwar understanding of economic policy making of most western industrial economies after WWII. Governments and international organizations¹² accepted their responsibility to maintain high employment and growth throughout the business cycle based on the anti-cyclical spending hypothesis (Skidelsky 2009). The classical theory of a market dominated economy and low government interventions was pushed into the background.

In the White Paper “Employment Policy” of 1944 the British government took over responsibility for full employment. As monetary policy alone was argued to be not sufficient to stabilize total expenditure, public investment was envisaged to maintain a stable level of effective demand and high employment (British White Paper 1944, p. 20/21). Two years later the “Employment Act” in the US followed. The initial bill provided for full employment at all times for all Americans ensured by government expenditure (Santoni 1986). The final act was legalized in a weakened form. The full employment government guarantee was transformed into the “promotion of maximum employment, production and purchasing power” (Santoni 1986). In Germany, the Keynesian policies were implemented into law in 1967. The act to promote economic stability and growth comprised the “magic square”; price stability, a high level of employment, balanced foreign trade and adequate economic growth. The government’s social responsibility for a balanced economic development became an integral part of the German constitution.

The implementation of Keynesian policies into practice varied. In Britain the government increased social expenditure whereas in the US tax cuts and on the European continent public investment aimed to stimulate growth in recession (Skidelsky 2009). For the two decades following World War II Keynesian policies seemed to work. Figure 4 shows that the “golden age” of postwar reconstructions was characterized by high growth rates, low inflation and low unemployment (e.g. Kindleberger 1992; Skidelsky 2009).

¹² E.g. the United Nations (Article 55) adopted the promotion of full employment in 1945 (Wapshott 2012).

Figure 4: Economic Indicators for the US, Germany and the UK



Data source: Sabillon (2004).

In most industrialized countries the period of the “golden age” was dominated by some kind of Keynesian government activity, but if the resulting decline in unemployment was due to Keynesian stimulus is controversial. Alternative explanations for the unusually high and stable growth rates are the catching-up process and the high level of investment after wartime destructions (e.g. Kindleberger 1992; Eichengreen 1994; Temin 2002). The pent-up demand for postponed private investment and consumption during the depression and the war were unleashed in the years after the war (Stewart 1967). Labor was shifted from the agricultural to the more productive indus-

trial sectors and the elastic labor supply kept wages low and investments profitable (Kindleberger 1992; Eichengreen 1994). Liberalizing international trade promoted specialization, productivity and growth. Growing international trade following the dismantling of trade barriers had positive spillover effects for participating countries as prices fell and technologies were exchanged (Kindleberger 1992; Temin 2002).¹³

This implies that the factors behind the growth of the “golden age” were market driven factors such as private investment decisions, the shift of resources (in particular labor) to more productive sectors and the promotion of free trade. The active role of the government may have added to a growth impulse, which was already in place. Yet, at the end of the 1960s linked to rising fiscal spending and monetary expansion inflation levels rose (see figure 4).

3 The Shift to Stagflation and Hayek’s Golden Age

Friedman and Schwartz (1963) argued that inflation is always a monetary phenomenon. As inflation occurs with a time lag the roots of the inflation of the 1970s were in the monetary policies of the 1960s. The US financed increased military expenditures (in particular the Vietnam war) and spending programs (e.g. Johnsons’ Great Society Program) by keeping interest rates low and expanding the domestic money supply. The lack of fiscal and monetary policy discipline fueled inflation and turned the US balance of payments surplus into a deficit (in/since the beginning of the 1970s) (Eichengreen 1991).

In 1971 President Nixon suspended the US dollar from the gold parity what heralded the end of the Bretton Woods System. Whether and to what extent the expansive US monetary policy also affected the oil price and contributed to the subsequent oil price shocks in the 1970s is controversially discussed (see e.g. Bernanke et al. 1997). Broad consensus, however, prevails that the dominant Keynesian fiscal and monetary policies of the 1950s and 1960s paved the way into a period of high inflation, low growth and rising unemployment (e.g. Friedman 1962, 1968; Buchanan/ Wagner 1977; Hay-

¹³ Eichengreen (1994) argues that domestic and international institutions as the EPU (European Payments Union), ECSC (European Coal and Steel Community), GATT (General Agreement on Tariffs and Trade) and Bretton Woods contributed essentially to free trade and post-war growth.

ek 1978, 1995; Solow 1992; Lewis 2009; Sanz Bas 2011). Whereas the inability of the classical theory to explain the high and persistent unemployment in the 1930s had paved the way for the Keynesian revolution, in the 1970s it was the emergence of stagflation and the inability of the Keynesian theory to provide remedies which marked the end of the Keynesian era.¹⁴

3.1 Economies in Stagflation

The government demand management in the 1950s and 1960s was reflected in increasing fiscal expenditure. The US government’s expenditure rose from about 20% of GDP (1950) to 30% of GDP (1970). The government budget was, despite the economic prosperity of the “golden age”, constantly in deficits (except for 1956 when the budget surplus was 0.1%). General government debt increased since the early 1980s not only in the US but in most industrialized countries (figure 5a and b).

Figure 5a: US Federal Government Deficit or Surplus and Expenditure

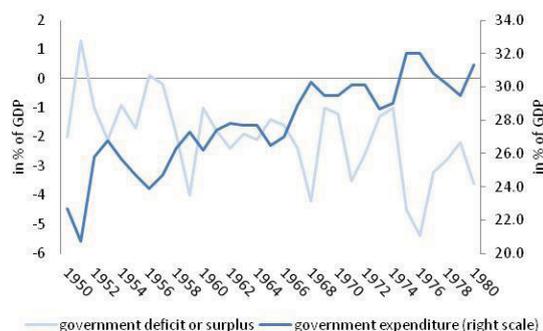
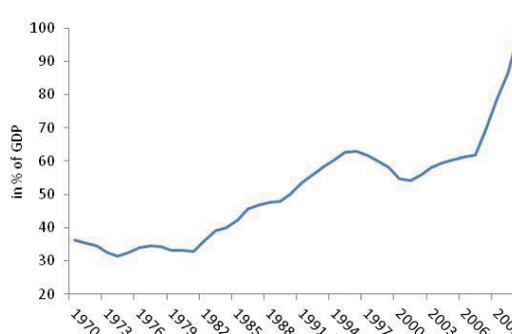


Figure 5b: General Government Debt of the US, UK and Germany



Note: Government debt as weighted average.

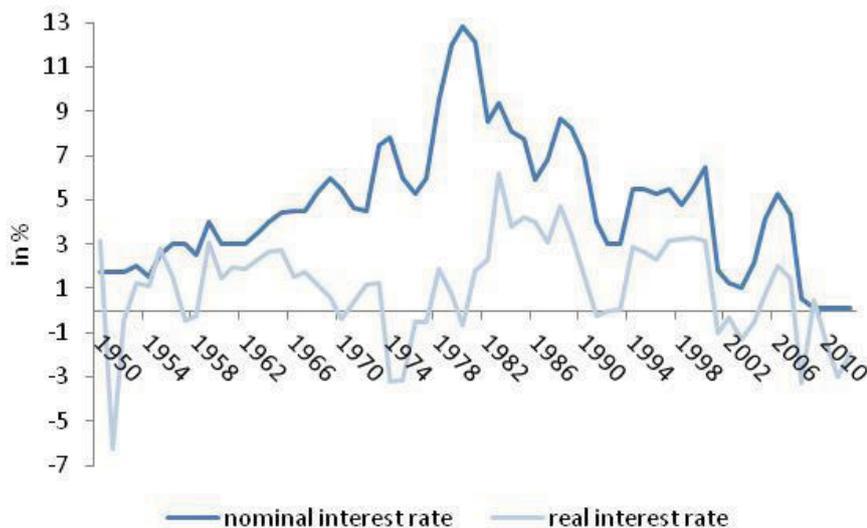
Data source: US Office of Management and Budget, Historical Tables (figure 5a) and IMF (IFS) (figure 5b).

The persistent budget deficits even during boom periods contradicted Keynes’ (1937) postulation of an anti-cyclical fiscal policy. To finance the public expenditures and to keep the debt service at bay monetary policy had to remain expansive. Nominal interest rates increased only slowly after the war. Until the late 1960s the discount rate

¹⁴ In the Keynesian theory the aggregate demand can be less than the supply potential which causes underemployment or it can be greater which leads to inflation. But the parallel existence of the two phenomena during the 1970s could not be explained (Bomberg 1976).

remained below 5%. The low interest rate policy finally fueled inflation. From the early 1960s to early 1980s US inflation rates rose from below 1.5% to above 10%. Even with relatively high nominal interest rates the real interest rate remained low. During the 1960s the average real interest rate was about 2.3% and during the 1970s it was slightly below zero (figure 6). Bernanke (2004a) explained the expansive monetary policy by “output optimism” and “inflation pessimism” of the Federal Reserve. Policymakers tried to use expansive monetary policy to ensure full employment, by relying on the Phillips-curve, but refused to accept that expansive monetary policy was source of inflation and resource misallocation. This policy approach seemed successful to the late 1960s, but turned sour in the 1970s.

Figure 6: US Discount Rate



Data source: IMF (IFS).

Since the publication of Keynes' General Theory the opponents of expansive macro-economic policies had stressed the long-run threats. The stagflation of the 1970s triggered a fundamental criticism of the Keynesian policy approach. Hayek (1978, p. 192) stated that “[T]he responsibility for current world-wide inflation,..., rests wholly and squarely with the economists, or at least with that great majority of my fellow who have embraced the teachings of Lord Keynes.”

Hayek (1974, 1978) and Buchanan and Wagner (1977) argued that the public demand management drives the economy into an inflation-unemployment spiral. The exces-

sive monetary and fiscal policy entailed by Keynes' mistaken idea of a direct relationship of employment and aggregate demand misallocates resources and postpones necessary adjustment structural processes (Hayek 1974). With rising inflation prices would lose their signaling and allocation function. As the relative price structure as well as the production structure get distorted investment projects and economic sectors with low marginal efficiency are kept alive artificially (Steele 2001). Labor is shifted into sectors which are only profitable because of the artificial price rise. The high level of employment can only be maintained by a continuing or accelerating inflation; an inflation-unemployment spiral sets in. The longer expansionary monetary and fiscal policies are maintained the more fragile the economy becomes as more resources are misallocated. As soon as inflation slows down the unemployment "cured" by aggregate demand stimulus becomes apparent being higher than without the previous macroeconomic expansion (Hayek 1974, 1978; Buchanan/ Wagner 1977).

Milton Friedman (1962, 1968) criticized the Phillips-curve, which provided the theoretical basis for the government demand oriented macroeconomic policies of the 1960s and 1970s.¹⁵ The Phillips-curve suggested a tradeoff between the rate of unemployment and the wage (price) by allowing for surprise inflation. Friedman (1961, 1968) argued that the negative relationship of unemployment and the wage (price) level was only temporary as long as inflation was unanticipated. In the long run he regarded the relationship not to be neutral but positive. High rates of inflation would be accompanied by high rates of unemployment. He further argued that monetary policy in general was not able to target the rate of interest or unemployment in the long run and that monetary policy affects the economy with a variable lag, increasing the amplitudes of the business cycle.

The Keynesian full employment policy would increase economic instability as the government lacked the knowledge of the appropriate direction and magnitude of policy actions. Thus Friedman (1953) rejected discretionary "fine-tuning" and argued in favor of a rule-based fiscal and monetary policy. Kydland and Prescott (1977) developed a theoretical framework showing that discretionary policies as the attempt to increase employment by determining the inflation rate, increase economic instability. Their time inconsistency model shows that it is rational for politicians to readjust

¹⁵ Friedman was not the only economist to criticize the Phillips-curve (see e.g. Phelps 1967 or Eichenbaum 1997).

their announced rate of inflation to increase employment in the short term. This does not only result in a higher than socially optimal inflation but – as private agents anticipate that politicians deviate from the announced inflation rate – trade unions will bargain for higher wages and thus additionally fuel inflation. Inflation and market structure distortions on the other hand dampen the long-run growth performance (Maurel/ Schnabl 2012).

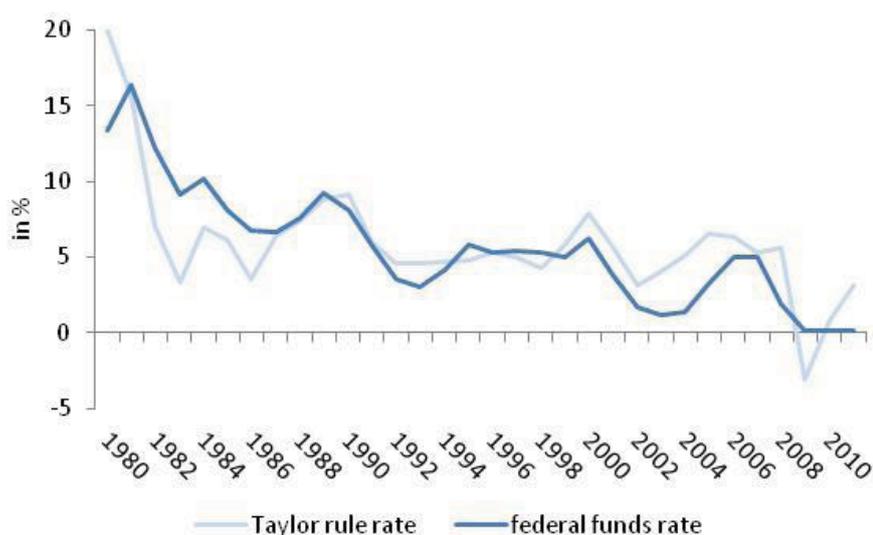
In contrast to the Keynesian top-down approach which argues that unemployment can be cured by more government spending, Hayek's bottom-up approach stresses the superiority of the market. Information supplied by individual market participants cannot be obtained by a single institution and the pretence of knowledge of any public institution leads to inflation and misallocation (Hayek 1974). "The more we try to provide full security by interfering with the market system, the greater the insecurity becomes" (Hayek 1944, p. 30). Fluctuations of the business cycles are inherent to the market system and not the sign of a persistent crisis. They are part of an evolutionary process where unproductive investments or economic sectors are revealed and winded up. Government attempts to counteract the downturn will leave the economy worse off.

3.2 The Monetary Counterrevolution

After the Keynesian theory dominated the economic policies of the industrialized world for more than 20 years the consequences of the expansive macroeconomics had become intolerable at the end of the 1970s as government debt and inflation had increased to unprecedented levels in the postwar period. With their works in the 1960/70s Friedman and Hayek (among others) heralded a monetary counterrevolution which was politically implemented in early 1980s and ended the period of high and volatile inflation. By strictly tightening the monetary policy the US Fed chairman Paul Volcker brought inflation down from 13.5% in 1980 to below 5% since 1983. The extraordinary long period of low inflation and economic prosperity which followed (Great Moderation) is explained by improved macroeconomic policy making (Bernanke 2004a; Summers 2005; Taylor 2011). The main contributing factor is seen in the transition from discretionary monetary policies during the 1950s to the 1970s

to rule-based policies in the 1980s (Bernanke 2004a, Taylor 2011). Central banks became more independent from governments and inflation targeting became a key objective. The monetary policy of the Fed became modelled with the Taylor rule¹⁶. In the beginning of the 1980s the federal funds rate was above the Taylor rule rate, indicating a particularly restrictive monetary policy to combat double-digit inflation. After the inflation rate was brought down to a moderate level (since the mid 1980s), the federal funds rate matched the Taylor rule for the following 15 years up to the turn of the millennium (figure 7). The increased credibility and predictability of the Fed ensured not only low actual but also low expected inflation and created a positive environment for investment as uncertainty was reduced (Summers 2005).¹⁷

Figure 7: US Federal Funds Rate and Taylor Rule Rate



Data source: IMF (IFS and WEO), author's calculations.

While the monetary policy was tightened in the 1980s fiscal policy continued to smooth cyclical fluctuations of the business cycle. Despite the economic and political change from Keynesian demand management to the principles of the Washington Consensus (Skidelsky 2009) – i.e. fiscal consolidation, privatization, free trade and

¹⁶ $i_t = \pi + i^* + \alpha(\pi - \pi^*) + \beta(q - q^*)$, with i = Taylor rule rate (target interest rate), i^* = “equilibrium” interest rate = 2 (as proposed by Taylor (1993)), π = inflation, π^* = inflation target = 2%, q = actual output, q^* = optimal output, α and $\beta = 0.5$ (as proposed by Taylor (1993)).

¹⁷ Rogoff (1985) regarded the enhanced globalization and liberalization of capital flows and trade as another factor for low inflation. The international division of labor increased specialization and intensified international competition which reduced the price level. The globalization process accelerated after the fall of the wall in 1990.

deregulation (Williamson 1990) – government debt in relation to GDP increased strongly since the early 1980s (figure 5b). It seemed that the monetary counterrevolution remained restricted to the 1980s and to monetary policy making.

4 The Hushed up Keynesian Renaissance

In the late 1980s monetary policy became active again. The return from rule-based and restrictive monetary policy to discretionary policy making was triggered, as in the 1930s, by economic turbulences, now with a focus on financial markets.

4.1 Comeback of Active Monetary Policy

The new Fed chairman Alan Greenspan reacted to the stock market crash of the 1987 by drastically reducing interest rates and keeping them low throughout the 1990s.¹⁸ In the same manner the Fed responded when in 2000 the dot-com bubble busted. The federal funds rate was cut from 6.5% to 2% from November 2000 to November 2001. Another two years later the interest rate was down to 1%. Even though growth recovered relatively quickly the federal funds rate remained low to not stifle the recovery.¹⁹ Inter alia Taylor (2007) criticizes that the Fed kept the interest rates too low for too long leading the US economy into an excessive housing boom. Figure 7 shows that the federal funds rate is constantly below the Taylor rule rate since 1999 (except for 2008). When the Fed finally raised interest rates in 2006 the housing prices collapsed getting private investors and financial institutions into distress. To prevent the economy from collapsing the Fed reduced interest rates immediately towards zero (12/2008).

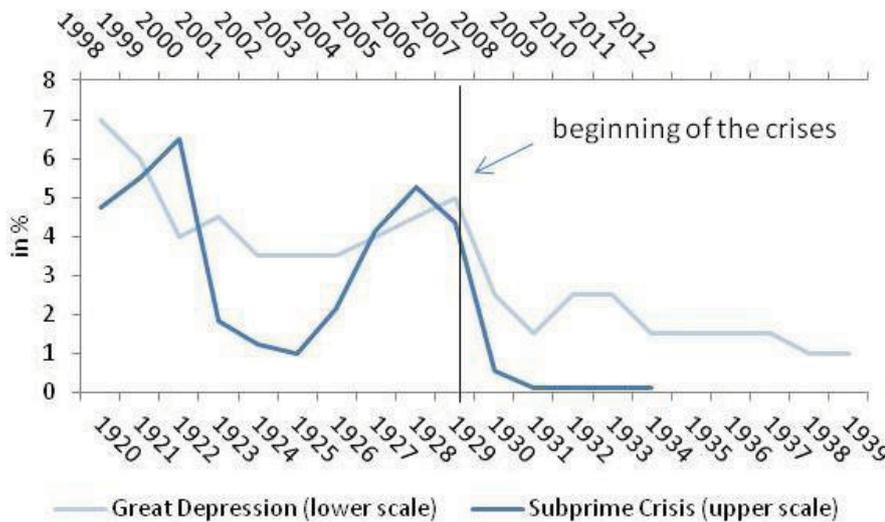
The movements of the Fed's discount rate prior and subsequent the subprime crisis show the same pattern, although with a larger magnitude, as during the period of the Great Depression (figure 8). The phase prior to the crisis is characterized by a period of low interest rates (which is likely to have contributed to the pre-crisis boom). The

¹⁸ At about the same time in 1989 the real estate bubble in Japan busted. First the downturn was considered an ordinary part of the business cycle and the government relied on the self healing forces of the market (Okumura 2003). The Bank of Japan (BoJ) kept the money market rate above 6% throughout 1991. When the share prices continued to fall and the growth rates of the economy did not recover within the "usual" time of the business cycle the BoJ reacted by gradually reducing the money market rate to stimulate the economy. In the late 1990s the BoJ established the zero interest rate policy (ZIRP) which is mainly in place until today.

¹⁹ Since 2004 the growth rate was above 3 per cent (WEO, IMF 2010), interest rate data is retrieved from IMF (IFS).

start of the crisis is preceded by an interest rate increase which is instantly followed by fierce interest rate cuts. The interest rate cuts during the build-up of the subprime bubble were more pronounced than during the stock market boom preceding the Great Depression. Also in response to the subprime crisis the interest rate cuts were more pronounced than in the early 1930s reaching the zero lower bound instantly. The immediate and drastic interest rate cuts can be explained by the Fed’s chairman Ben Bernanke’s stance to not repeat the same mistake – a too restrictive monetary policy – as during the Great Depression.²⁰

Figure 8: US Discount Rates during the Great Depression and the Subprime Crisis



Note: The graphs start seven years prior to the outbreak of the crises.

Data source: Hamilton (1987, p. 152) and IMF (IFS).

4.2 Limits of Conventional Monetary Policy Promote Fiscal Expansion and Unconventional Monetary Measures

When nominal interest rates reach the zero bound the potential of conventional monetary policy to respond to a crisis becomes very limited. In this case the crisis responsibility for macroeconomic stability falls back to fiscal policy measures. The Keynesian fiscal crisis therapy – i.e. increasing effective demand by tax reliefs to enhance the purchasing power of low income families, eased bank lending conditions to

²⁰ Bernanke intensively studied the Great Depression and acknowledged that the Fed’s restrictive monetary policy was, as argued by Friedman and Schwartz (1963), wrong. At a Conference to Honor Milton Friedman Bernanke (2002) said: “I would like to say to Milton and Anna: Regarding the Great Depression. You’re right, we did it. We’re very sorry. But thanks to you, we won’t do it again.”

stimulate private investment and outright government spending (Keynes 1936, p. 378) – return to the economic agenda.

The Economic Stimulus Act of 2008 and the American Recovery and Reinvestment Act of 2009 are the two largest countercyclical fiscal stimulus packages in history worth over US\$ 900 billion (Congressional Budget Office 2008, 2012). The former provided recovery rebates for individuals and business as well as conforming loan limit increases for the Federal Housing Administration (US Congress 2008). The aims of the latter are to preserve and create jobs, provide investments for inter alia technological advances, transportation and environmental protection as well as the stabilization of state and local government budgets (US Congress 2009).

The return of the short-run oriented Keynesian fiscal policies in the wake of the crisis can be explained by economic as well as political considerations. Economically the return of Keynesian fiscal crisis response was mainly driven by the limited effectiveness of conventional monetary policy once it had reached the zero lower bound. In this environment the efficiency of discretionary fiscal policies, measured by the fiscal multiplier²¹, is assumed to be positive and substantially higher than during booms (see for example Christiano et al. 2009; Ramey 2011; Auerbach/ Gorodnichenko 2012; DeLong 2012; Romer 2012, Solow 2012).²² One reason is that theoretically debt-financed government spending drives inflation expectations up, which, keeping the nominal interest rate constant, reduces the real interest rate and stimulates the economy (Ramey 2011; DeLong 2012).

Another argument is that the subprime crisis was from the beginning expected to be very deep and long-lasting, so that despite its implementation lag the fiscal stimulus was assumed to have enough time to become effective during recession (Blanchard et al. 2010). Furthermore, crowding out of private investment is less likely as on the one hand the expansive monetary policy guarantees ample cheap liquidity and – if e.g. Krugman (2009) and Skidelsky (2009) are right that the crisis is demand side

²¹ The fiscal multiplier is the “ratio of a change in output to the discretionary change in the fiscal deficit that caused it” (IMF 2012).

²² The size of the multiplier is still highly disputed as it depends on the one hand on country-specific characteristics such as monetary policy stance, phase of the business cycle, exchange rate system, openness of the economy, the composition, duration and financing of the fiscal measure, scale of existing automatic stabilizers and debt level of the country. On the other hand the underlying theoretical framework plays a crucial role (see for example Christiano et al. 2009; Ramey 2011; Auerbach/ Gorodnichenko 2012; Batini et al. 2012; DeLong 2012; IMF 2012, Romer 2012, Solow 2012).

driven – the level of private investment is too low to fully utilise existing capacities thereby reducing the risk of inflation (Auerbach/ Gorodnichenko 2012, IMF 2012).

Besides the economic arguments political considerations play a crucial role in the return of Keynesian fiscal crisis response. Keynes' arguments that spending during a recession is a "patriotic duty" (Keynes et al. 1932) and that the budget must not be balanced annually but over the business cycle (Buchanan/ Wagner 1977), exempts politicians from annual budget constraints. Driven by reelection considerations politicians tend to debt-finance additional government spending as on the one hand voters do not feel the true costs of the measure as the burden is shifted into the future (Buchanan and Wagner 1977). On the other hand voters behave myopic. They tend to evaluate accomplishments of politicians only over the electoral period which results in higher than socially optimal debt-financed government interventions (Nordhaus 1975). Another argument of Keynes which significantly widens the discretionary policy scope of politicians in recessions is that an underemployment equilibrium can exist (Keynes 1936, p. 30). In this situation a higher employment rate can only be reached by increased government demand. The market failure opens the door for direct government interventions which are in particular attractive as they give the politicians the chance to act during a depression, which could be an important argument during elections.

Today as during the Great Depression the limits of the conventional monetary policies apparently justify the use of Keynesian fiscal policies from an economic as well as from a political perspective. But a crucial difference between the time when Keynes wrote the General Theory and today is the level of government indebtedness. In 1929 the US government debt to GDP ratio was about 16%, at the start of the subprime crisis the ratio already exceeded 60%. Five years after the outbreak of the Great Depression government debt to GDP was 40%. Five years after the start of the subprime crisis US government debt to GDP has risen above 100%.²³ The high debt levels in the US as well as Japan and Europe considerably restrict today's options to cure the crisis by fiscal measures, as they raise concerns of the solvency of states.

²³ Reinhart and Rogoff (2010), <http://www.reinhartandrogoff.com/data/browse-by-topic/topics/9/> and IMF (IFS) data.

Therefore, to keep government debt and long-term interest rates low, the Fed (as well as the BoJ and ECB) were forced into unconventional monetary measures. Bernanke (2008) stated that “[d]espite the efforts of the Federal Reserve, the Treasury, and other agencies, global financial markets remain under extraordinary stress. Action by the Congress is urgently required to stabilize the situation and avert what otherwise could be very serious consequences for our financial markets and for our economy. In this regard, the Federal Reserve supports the Treasury’s proposal to buy illiquid assets from financial institutions.”

The unconventional monetary policy tools of the Fed consist of the large-scale asset purchases – known as quantitative easing (QE1, QE2 and QE3) – and forward guidance of the federal funds rate (e.g. Federal Open Market Committee (FOMC) 2011, 2012a, 2012b) (Yellen 2011). Forward guidance works through the expectation channel as it influences future market expectations. In mid 2011 and in the beginning of 2012 the FOMC committed itself to low refinancing cost for the next couple of years (FOMC 2011, 2012a).

In the end of 2012 the committee linked its interest rate decisions for the first time in history directly to the state of the economy. The federal funds rate is to be kept between 0 to 0.25 percent as long as the unemployment rate remains above 6.5 percent (FOMC 2012b). The purchase of mortgage-backed securities and longer-term Treasury securities works through the portfolio channel, by depressing longer-term interest rates as well as term premiums (Yellen 2011). Yellen (2011) and Williams (2011) argue that both, forward guidance and asset purchases, have successfully contributed to the stimulating effects of the already accommodative monetary policy.²⁴ But the effects are limited. Once in place forward guidance will not account for further easing and another round of asset purchases must be of very large scale to significantly reduce the interest rate at the long end of the yield curve.

The large-scale asset purchases by the Fed changed the composition and considerably expanded the central bank’s balance sheet (from about US\$ 900 billion in August

²⁴ Williams (2011) analyses various studies which find significant effects of forward guidance on the market expectations concerning the future interest rate. E.g. immediately after the announcement of the FOMC (2012) to at least keep the interest rate down until 2013 two-year as well as ten-year Treasury yields fell by 0.1 and 0.2 percentage points respectively (Williams 2011). Same is true for large-scale asset purchases. Seven empirical estimations concerning the effectiveness of the Fed’s large-scale asset purchases (QE1 and/ or QE2) compared by Williams (2011) find that the effects on Treasury yields rank (except for one outlier) between 0.15 and 0.30 percentage points

2007 to well over US\$ 2 trillion since late 2008)²⁵. In the short run the risk taking of the Fed stabilized the financial sector and prevented the economy from collapsing. In the longer run, however, the expansion of the central bank's balance sheet may lead to less fiscal discipline as the budget deficits are monetarized and the misallocation of resources is perpetuated (Hayek 1974, 1978; Iwata/ Takenaka 2011). On an international scale the central bank's balance sheet expansion leads to competitive depreciation and competitive inflation of central bank balance sheets. In the long run the expanded balance sheets result in destabilized financial and real sectors on a domestic as well as international scale.

Above all, the very expansive monetary policy is only effective if the crisis is supply side driven, e.g. money supply shortage caused the recession. If however, the crisis is demand side driven, e.g. declining in demand for credit etc., cheap money does not solve the problem (Skidelsky 2009). This argument follows Keynes's reasoning in the General Theory. He assumed a rising liquidity preference during depressions, as future prospects are gloomy. People hoarded cash in expectation of better investment opportunities in the future with the opportunity costs of hoarding money being low (Keynes 1936). In this case the economy is, as during the Great Depression, close to a liquidity trap and regardless of whether or not conventional and unconventional monetary policy measures are effective fiscal intervention is indispensable (Krugman 2005, 2009). As the fiscal intervention must be accompanied by expansive monetary policy to prevent crowding out effects this leads into an accumulating intervention spiral of expansionary fiscal and monetary policies. But the interventions only postpone structural problems. Financial markets can no longer work effectively as interest rates close to zero lost their signalling and allocation function. An artificially low interest rate (set by the central bank) is likely to result in mal- and overinvestment. With very low financing costs an investment boom is initiated. Even investment projects with low profitability, which under normal conditions would not be realized, are realized as the interest rate drops below the internal rate of the project and thus the rate of return seems positive (Hoffmann/ Schnabl 2009). As soon as budgetary or political limitations slow the expansion down or even stop it, the misallocation of re-

²⁵ The data is retrieved from the Board of Governors of the Federal Reserve System, http://www.federalreserve.gov/monetarypolicy/bst_recenttrends.htm.

sources and structural distortions become apparent (most likely) being higher than without the previous macroeconomic expansion (Hayek 1974, 1978).

5 Why is the Answer always Keynesian?

Economic history shows that in the midst of a crisis Keynesian fiscal measures dominate economic and political decision making. During financially sound times the Hayekian view, that government intervention distorts the market mechanism, fuels inflation, increases public debt and depresses long-run growth, prevails. In the wake of a crisis, however, Keynesian fiscal policies seem to become an appropriate means to stabilize the financial sector as well as the real economy by maintaining aggregate demand in the short run. Politically the implementation of fiscal policies is attractive as the Keynesian theory laid the foundation for politicians to actively intervene in the business cycle and counteract the negative effects of a recession regardless of budget restrictions. Driven by the political business cycle and myopic voters, the debt-financed short-run oriented Keynesian fiscal crisis therapy dominates Hayekian long-run strategies.

Monetary policy is argued to be not an appropriate means to counteract a crisis as with a rising liquidity preference additional money is hoarded in cash instead of being invested in the economy (e.g. Keynes 1936, Krugman 2009, Romer 2012). Thus monetary policy is primarily viewed as a tool to finance the fiscal stimulus which revives the economy. Once the interest rate reached the zero lower bound central banks are forced into unconventional monetary measures to finance the expansive fiscal policies and keep the public debt service at bay. During the last three decades the central bank's interventions led to a huge expansion of the central banks' balance sheets and distortions of financial and real markets. Hayek (1978) argued that these policy measures lead to an ever increasing intervention spiral with unsustainable high public debt, distorted market structures and inflationary pressure. In the moment the expansion slows down the suppressed problems – hidden unemployment, distorted investment structure, unsustainable public debt – become apparent but on a larger scale than prior to the state's intervention.

References

- Belke, Ansgar; Gros, Daniel (2010): Global Liquidity, World Savings Glut and Global Policy Coordination. DIW Berlin, Discussion Paper, No. 973.
- Auerbach, Alan; Gorodnichenko, Yuriy (2011): Fiscal Multipliers in Recession and Expansion, NBER Working Paper 17447.
- Batini, Nicoletta; Callegari, Giovanni; Melina Giovanni (2012): Successful Austerity in the United States, Europe and Japan, IMF Working Paper, WP/12/190.
- Congressional Budget Office (2008): Economic Stimulus Act of 2008.
- Congressional Budget Office (2012): Estimated Impact of the American Recovery and Reinvestment Act on Employment and Economic Output from October 2011 Through December 2011.
- Bernanke, Ben (1995): The Macroeconomics of the Great Depression: A Comparative Approach, *Journal of Money, Credit, and Banking*, Vol. 27, No. 1
- Bernanke, Ben (2002): At the Conference to Honor Milton Friedman, University of Chicago, Chicago, Illinois November 8.
- Bernanke, Ben (2004a): The Great Moderation, Remarks by Governor Ben S. Bernanke, At the meetings of the Eastern Economic Association, Washington, DC.
- Bernanke, Ben (2008): Statement before the Committee on Banking, Housing, and Urban Affairs, United States Senate, September 23,
- Bernanke, Ben (2004b): Money, Gold, and the Great Depression, Remarks by Governor Ben S. Bernanke, At the H. Parker Willis Lecture in Economic Policy, Washington and Lee University, Lexington, Virginia.
- Bernanke, Ben; Gertler, Mark; Watson Christopher; Friedman, Benjamin (1997): Monetary Policy and the Effects of Oil Price Shocks, *Brookings Papers on Economic Activity*, Vol. 1997, No. 1.
- Blanchard, Olivier; Dell’Ariccia, Giovanni; Mauro, Paolo (2010): Rethinking Macroeconomic Policy, IMF Staff Position Note, SPN/10/03.
- Bombach, Gottfried (1976): *Der Keynesianismus 1, Theorie und Praxis keynesianischer Wirtschaftspolitik : Entwicklung und Stand der Diskussion*, Springer Verlag.
- British White Paper (1944): Employment Policy, Minister of Reconstruction.

- Buchanan, James; Wagner, Richard (1977): *The Collected Works of James M. Buchanan*, Volume 8, *Democracy in Deficit: The Political Legacy of Lord Keynes*, Liberty Fund.
- DeLong, Bradford (2012): *Fiscal Policy in a Depressed Economy*, Harvard University and NBER Working paper.
- Eichenbaum, Martin (1997): *Some Thoughts on Practical Stabilization*, *The American Economic Review*, Vol. 87, No. 2.
- Eichengreen, Barry (1991): *Epilogue: Three Perspectives on the Bretton Woods System*, in: *A Retrospective on the Bretton Woods System: Lessons for International Monetary Reform*, by Bordo, Michael; Eichengreen, Barry (editors), University of Chicago Press.
- Eichengreen, Barry (1994): *Institutional Prerequisites for Economic Growth: Europe after World War II, Restructuring and Adjustment: Perspectives from Post-World War II Europe*, *European Economic Review* No. 38.
- Federal Open Market Committee (FOMC) (2011): *Press Release*, August 9, 2011.
- Federal Open Market Committee (FOMC) (2012a): *Press Release*, March 13, 2012 and September 13, 2012.
- Federal Open Market Committee (FOMC) (2012b): *Press Release*, December 12, 2012
- Feldstein, Martin (2009): *Rethinking the Role of Fiscal Policy*, NBER Working Paper No. 14684.
- Fisher, Irving (1933): *Debt-Deflation Theory of Great Depressions*, in *Econometrica*, Vol. 1, No. 4.
- Foley, Duncan K. (2006): *Lineages of Crisis Economics from the 1930s: Keynes, Hayek, and Schumpeter*, the talk draws extensively on chapter 5 of the book *Adam's Fallacy*, Harvard University Press.
- Friedman, Milton (1953): *Essays in Positive Economics*, University of Chicago Press.
- Friedman, Milton (1961): *The Lag in Effect of Monetary Policy*, *Journal of Political Economy*, Vol. 69, No. 5.
- Friedman, Milton (1962): *Capitalism and Freedom*, University Of Chicago Press.
- Friedman, Milton (1968): *The Role of Monetary Policy*, *The American Economic Review*.

- Friedman, Milton; Schwartz, Anna (1963): *A Monetary History of the United States, 1867-1960*, Princeton University Press.
- Galbraith, John Kenneth (2007): *Der große Crash 1929. Ursachen, Verlauf, Folgen*. 3. unveränderte Auflage, München.
- Hamilton, James (1987): *Monetary Factors in the Great Depression*, *Journal of Monetary Economics* 19
- Hayek et al. (1932): *Spending and Saving, Public Works from Rates*, *The Times*, Oct 19th.
- Hayek, Friedrich August von (1944): *The Road to Serfdom*. Routledge.
- Hayek, Friedrich August von (1945): *The Use of Knowledge in Society*, *American Economic Review*, XXXV, No. 4.
- Hayek, Friedrich August von (1974): *The Pretence of Knowledge*, Nobel Prize Lecture by Hayek, Lecture to the memory of Alfred Nobel, December 11.
- Hayek, Friedrich August von (1978): *The Campaign against Keynesian Inflation*, in: *New Studies in Philosophy, Politics, Economics and the History of Ideas*. Great Chicago: University of Chicago Press.
- Hayek, Friedrich August von (1979): *Interviewed by Diego Pizano July, 1979* published in: *Diego Pizano, Conversations with Great Economists: Friedrich Hayek, John Hicks, Nicholas Kaldor, Leonid Kantorovich, Joan Robinson, Paul Samuelson., Jan Tinbergen*.
- Hayek, Friedrich August von (1995): *Contra Keynes and Cambridge: Essays, Correspondence*, *The collected works of F. A. Hayek, Volume IX*.
- Hazlitt, Henry (1959): *The Failure of the New Economics, An Analysis of the Keynesian Fallacies*, *Foundation for Economic Education*.
- Hicks, John Richard (1937): *Mr. Keynes and the Classics: A Suggested Interpretation*. In: *Econometrica* Volume 5 Issue 2, p. 147-159.
- Hoffmann, Andreas; Schnabl, Gunther (2009): *A Vicious Cycle of Financial Market Exuberance, Panics and Asymmetric Policy Response – An Overinvestment View*. CESifo Working Paper 1288.
- Hoppe, Hans-Hermann (1992): *The Misesian Case against Keynes*, in: *Dissent on Keynes, A Critical Appraisal of Keynesian Economics* edited by Mark Skousen, Praeger Publishers.

- International Monetary Fund (2012): Fiscal Monitor, Balancing Fiscal Policy Risks.
- Iwata, Kazumasa; Takenaka, Shinji (2011): Central Bank Balance Sheet Expansion: Japan's Experience, BIS Working Paper No 66.
- Kahn, Richard (1931): The Relation of Home Investment to Unemployment, Economic Journal No 41 June.
- Keynes et al. (1932): Private Spending, Money for Productive Investment, A Comment by Economists, The Times, Oct. 17th.
- Keynes, John Maynard (1936): The General Theory of Employment, Interest and Money. Macmillan Cambridge University Press, for Royal Economic Society.
- Keynes, John Maynard (1937): The General Theory of Employment. Quarterly Journal of Economics, Vol. 51.
- Kindleberger, Charles (1992): The Legacy of the Golden Age, The 1960s and their Economic Consequences, Edited by Alec and Frances Cairncross.
- Koo, Richard (2011): The World in Balance Sheet Recession: Causes, Cure, and Politics, Real-World Economics Review, Issue no. 58.
- Krugman, Paul (2005): Fiscal Policy Poised for a Comeback? In: Oxford Review of Economic Policy 21 (4), p. 515–523.
- Krugman, Paul (2009): The Return of Depression Economics and the Crisis of 2008. New York.
- Kydland, Finn; Prescott, Edward (1977) Rules Rather than Discretion: The Inconsistency of Optimal Plans. Journal of Political Economy 87, pp. 473-492.
- Lewis, Hunter(2009): Where Keynes Went Wrong: And Why World Governments Keep Creating Inflation, Bubbles, and Busts.
- Maurel, Mathilde; Schnabl, Gunther (2012): Keynesian and Austrian Perspectives on Crisis, Shock Adjustment, Exchange Rate Regime and (Long-Term) Growth. Open Economies Review 23.
- Nordhaus, William (1975): The Political Business, The Review of Economic Studies, Vol. 42, No. 2.
- O'Driscoll, Gerald P. (2011): Hayek and Keynes: What Have We Learned?, The Journal of Private Enterprise 27 (1).
- Okumura, Hirohiko (2003): Japan in Crisis. Economic Crisis and Economic Policies in Japan since the 1990s, CESifo Volume 4, Number 4.

- Phelps, Edmund (1967): Phillips Curves, Expectations of Inflation and Optimal Unemployment over Time, *Economica*, New Series, Vol. 34, No. 135.
- Ramey, Valerie (2011): Can Government Purchases Stimulate the Economy?, University of California, San Diego and National Bureau of Economic Research, Prepared for the Journal of Economic Literature forum on "The Multiplier."
- Reinhart, Carmen; Rogoff, Kenneth (2010): *This Time Is Different: Eight Centuries of Financial Folly*, Princeton University Press.
- Rogoff, Kenneth (1985). The Optimal Degree of Commitment to an Intermediate Monetary Target, *Quarterly Journal of Economics*, No. 100.
- Romer, Christina (1993): The Nation in Depression, *Journal of Economic Perspectives*, Volume 7, No. 2.
- Romer, David (2012): What have we Learned about Fiscal Policy from the Crisis? in: *In the Wake of the Crisis*, Blanchard, Romer, Spence and Stiglitz (editors), IMF and MIT press.
- Samuelson, Paul; Nordhaus, William (1948): *Economics: An Introductory Analysis*, McGraw–Hill.
- Santoni, G (1986): The Employment Act of 1946: Some History Notes, Federal Reserve Bank of St. Louis.
- Sanz Bas, David (2011): Hayek's Critique of The General Theory: A New View of the Debate between Hayek and Keynes, *Quarterly Journal of Austrian Economics*, Vol. 14, No 3.
- Skidelsky, Robert (2009): *Keynes: The Return of the Master*, Public Affairs.
- Smith, Adam (1776): *An Inquiry into the Nature and Causes of the Wealth of Nations*, London.
- Solow, Robert (1992): Growth with Equity Through Investment in Human Capital.
- Solow, Robert (2012): Fiscal policy, in: *In the Wake of the Crisis*, Blanchard, Oliver; Romer, David; Spence, Michael; Stiglitz; Joseph (editors), IMF and MIT press.
- Steele, Gerald (2001): *Keynes and Hayek: The Money Economy*, Routledge Foundations of the Market Economy.
- Stewart, Micheal (1967): *Keynes and after*, Penguin Books
- Summers, Peter (2005): What Caused The Great Moderation? Some Cross-Country Evidence, Federal Reserve Bank of Kansas City.

- Taylor, John (1993): Discretion Versus Policy Rules in Practice, Stanford University.
- Taylor, John (2007): Housing and Monetary Policy, NBER Working Paper No. 13682.
- Taylor, John (2011): The Cycle of Rules and Discretion in Economic Policy, National Affairs.
- Temin, Peter (2002): The Golden Age of European growth reconsidered, European Review of Economic History No. 6.
- U.S. Department of Commerce (1975): Historical Statistics of the United States, Colonial Times to 1970, Part I and II.
- US Congress (2008): Public Law 110 - 185 - Economic Stimulus Act of 2008, 110th Congress, Approved February 13, 2008.
- US Congress (2009): Public Law 111 - 5 - American Recovery and Reinvestment Act of 2009, 111th Congress, Approved February 17, 2009.
- Wapshott, Nicholas (2012): Keynes Hayek: The Clash that Defined Modern Economics, W. W. Norton & Company.
- Williams, John (2011): Unconventional Monetary Policy: Lessons from the Past Three Years, FRBSF Economic Letter, No. 31.
- Williamson, John (1990) What Washington Means by Policy Reform, in: Latin American Adjustment: How Much Has Happened?, Peterson Institute for International Economics
- Yellen, Janet (2011): Unconventional Monetary Policy and Central Bank Communications, At the University of Chicago Booth School of Business U.S. Monetary Policy Forum, New York, February 25.

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