Fiscal policies in Europe and the United States during the Great Depression[1]

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Abstract: This paper discusses the fiscal policy reactions and economic policies of European countries and the United States during the Great Depression. Economic as well as economic history literature has tended to overlook the fiscal policy aspects of the Great Depression, in particular in relation to European countries. This paper concentrates specifically on this aspect, providing a comprehensive discourse on the background of the crisis and using for analysis a data set compiled from available international sources. On this basis, central government reactions, mainly on the expenditure side, are analysed. Thus, this paper provides new information concerning the economic policies during the Great Depression and helps to understands how the Great Depression developed.

The conclusion reached is that fiscal policies between the two World Wars were mainly neo-classical, i.e. expenditure reacted to the development of revenue. In certain European countries, for example the Netherlands and Sweden, some counter-cyclical fiscal policies can be observed. However, as the governments there were smaller and the effect therefore comparably limited, this did not play a key role in the economic recovery. Finally, the paper briefly discusses the similarities and differences between the Great Depression and the current crisis.

JEL-codes: H30, H50, H60, H62, H63, N12, N14, N42, N44

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1. Introduction

The current economic and financial crisis has been likened in many respects to the Great Depression. One obvious similarity is that both recessions originated in the United States. The Great Depression is generally associated with October 1929 and the initial stock market crash in New York. The current crisis also started in the United States with the collapse of the sub-prime mortgage market and from there spread around the world. In terms of economic data, the decline in global industrial output also tracks the decline in industrial output observed during the Great Depression.[2]

However, one crucial difference between the current crisis and the Great Depression is the policy response, in particular in the area of fiscal policy. While government policy-making seemed "helpless" during the Great Depression, the current crisis elicited a massive response not only from central banks, but also from fiscal policy-makers.[3]

To date economic literature has largely overlooked the influence of fiscal policy on the Great Depression. This is surprising because "since the Great Depression macroeconomists have laboured diligently in an effort to understand the circumstances that led to the wholesale collapse of the economy[4]". However, while the majority of papers and articles on fiscal policies focus on the development of one specific country, this paper aims to focus on European countries as the majority of existing literature on the Great Depression deals with the United States.[5] One reason for the lack of literature on fiscal policy would seem to be that many researchers concluded from the prevailing neo-classical approach widely held in the 1920s and 1930s — which did not recognise a particular role for fiscal policy in the fine-tuning of the economy — that fiscal policy played a negligible role. In addition, governments during the 1920s and 1930s were much smaller than today and consequently the

[2] Eichengreen and O'Rourke, 2009.
[3] Compare to the conclusion of Cechetti, 1997.
[4] Cechetti, 1997.
[5] There are some attempts to analyse fiscal policies: Brown (1956) analysed fiscal policies in the United States. However, the lack of data means it is not possible to replicate for Europe the detailed analysis he presented in his paper. Topp (1988) analysed the development of Danish fiscal policies from the Great Depression to the end of the Second World War from a theoretical point of view. Viren (2006) also conducted an empirical exercise comparing fiscal policies in Europe before and after the Second World War.

importance of fiscal variables was also less marked. The common understanding was that from the point of view of economic growth, it was not important whether the government or private sector was consuming. In addition, borrowing money was not viewed as a relevant activity. If the money was loaned from the domestic financial markets, it was believed it would have been consumed domestically anyway. Thus it would not affect overall economic development. Similarly, loaning money abroad was seen as using future consumption possibilities. The idea of medium-term budget balance over the business cycle had not yet been accepted and governments tried to maintain a balanced budget in each budget year. Taxation, loaning money and government consumption were considered only useful for redistributive actions.[6] The Keynesian idea of the government's role as a "balancer" of economic growth and the idea that an investment would actually create additional growth were not predominant, even though similar ideas had been presented before the publication of John Maynard Keynes' classic study entitled "The General Theory of Employment, Interest and Money" in 1936.[7]

Another reason for the neglect of fiscal aspects is the lack of reliable data. At the time there were no national accounts and only some of the main aggregates of national accounts have since been reconstructed for this period. In the 1920s and 1930s there was no OECD or IMF to collect comparable data from different countries.

This paper takes a fresh look at fiscal policies during the Great Depression and uses a data set compiled from different sources for an empirical analysis of the fiscal responses in the years 1924-38. One conclusion that can be drawn from this analysis is that some European governments seemed less "helpless" than others. For example, Sweden conducted what would today be termed counter-cyclical policies. However, fiscal policy was not a key factor for recovery in any of the economies. The differences and similarities between the Great Depression and the current crisis are also briefly discussed.

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[6] This way of thinking is reflected in several arguments of the time. For example, Tuhti (1932) discussed the increase in public expenditure in European countries arguing that domestic transactions, loans and government consumption are simply the redistribution of money. According to him, non-domestic loans would simply reallocate consumption within time and area. As an example he used Germany, which was paying war reparations to other countries. According to Tuhti, this was only the reclassification of income (and correctly so because nothing was received in exchange).

[7] For example, similar conclusions to those reached by Keynes were drawn independently by the Stockholm School. The best known members of the Stockholm School were: Dag Hammarskjöld, Erik Lindahl, Gunnar Myrdahl and Bertil Ohlin. See for instance: Kiander and Vartia (1998), pp. 7-13.

The paper is structured as follows: Section 2 discusses the background of the crisis and the institutional setting. Section 3 addresses questions related to the availability of data, the data set used and methodology. Section 4 provides the results and analyses the fiscal policy reaction to the Great Depression. Finally, Section 5 draws some general conclusions and discusses whether lessons learned from the 1920s and 1930s can be of use in the current economic discussion.

2. Background of the Great Depression and institutional setting

2.1. Background of the Great Depression

The start of the Great Depression is generally associated with Black Thursday, 24 October 1929, when the stock markets crashed. It was followed by a second strong crash on Black Tuesday, 29 October 1929. While the highest quotation on the New York stock exchange was 381 points (1926=100) on 3 September, on 13 November it had fallen to 198 points. However, this was simply an outward manifestation of the crisis rather than the underlying cause.

The length and seriousness of the Great Depression varied between countries and they can thus be classified into three categories: countries which were strongly affected by the crisis, i.e. their per capita GDP dropped around 20%; countries which were moderately affected by the crisis, i.e. per capita GDP dropped around 10%; and finally, countries which were hardly affected by the crisis. As Table 1 shows, the crisis was most pronounced in Austria, Germany and the United States where per capita GDP dropped by more than 20% respectively, and in France where per capita GDP dropped by almost 20%. The second group includes Belgium, Czechoslovakia, Finland, Greece, Italy, the Netherlands, Romania, Spain, Sweden and the United Kingdom. The variation in duration as well as intensity of the crisis is exemplified by Belgium and the Netherlands where the crisis lasted longer than in several other European countries, i.e. longer than the more common three to four years. The final group of countries, i.e. countries which were hardly affected by the crisis, include Bulgaria, Denmark, Norway and Portugal. At this stage it should be emphasised that the figures presented in Table 1 are only indicative. They were estimated significantly later and are based on weak statistical sources.

What was the underlying reason for the Great Depression? The 1920s was generally an unstable economic period and economic fundamentals were strained. At

the beginning of the 1920s Italy, Norway, the United Kingdom and the United States were affected by a short recession.[8] The most plausible and generally accepted explanation for the reason behind the crisis which culminated in the Great Depression is that the shock of the First World War, coupled with the policies adopted afterwards, led to the economic disaster of the inter-war years. More specifically, the gold standard – reintroduced in the 1920s to cure the instability of the immediate post-war years – prevented the world economy from dealing with the problems which emerged at the end of the decade and deepened in the early 1930s. The failure of institutions which were intended to enhance international cooperation, such as the League of Nations, exacerbated the failure of national governments to provide leadership and cooperation. Policy failures therefore had greater impact than may have been the case in other circumstances because the underlying situation was so difficult.[9]

The First World War fundamentally changed the world order that had previously been in existence. Before the First World War the United Kingdom had occupied the leading role in the world economy. It invested significantly abroad and thus helped countries which had problems with their balance of payments. Additionally, the United Kingdom had a free trade policy and there were markets for the goods it imported from all over the world. Countries which had temporary financial problems could obtain financing in London by issuing bonds. After the First World War the United States occupied this position and became the leading country in the world economy. Unfortunately, it was not immediately ready to accept this role. The First World War transformed the United States from a net foreign debtor to a net foreign creditor.[10] However, its unwillingness to become an international actor on the political and economic stage was reflected in its trade, monetary and customs policy as well as its immigration policy and overall attitude to international cooperation. US policy was closed and protectionist. The fact that the United Kingdom was no longer in a position to remain the leading power in the world economy was belatedly accepted in the 1930s. With the benefit of hindsight, if US policy had been more open, the Great Depression may have been shorter and less serious.[11]

[8] In the case of Norway and the United States, this is not apparent in Table 1 as this depression only occurred in 1920 and 1921. The table presents only average growth rates for 1919-25. For these countries, the positive growth rates in the remaining years cancel out the negative growth in 1920 and 1921.
[9] See Cameron (1989), pp. 408-419. Feinstein, Temin and Toniolo (1997), pp. 187-190.
[10] See Eichengreen (1992), pp. 219-220.
[11] See Cameron (1989), pp. 408-419; Feinstein, Temin and Toniolo (1997), pp. 187-190.

Table 1: GDP per capita growth in European countries and the United States 1919-39 (measured in 1990 international Geary-Khamis dollars[12])

	1919-1925	1925-1928	1929	1930	1931	1932	1933	1934-1935	1935-1939
Austria	4.0	3.7	1.1	-3.1	-8.3	-10.6	-3.6	0.6	9.5
Belgium	7.2	2.6	-1.7	-1.5	-2.4	-5.2	1.6	1.1	2.7
Bulgaria	1.5	7.6	-3.2	8.8	13.2	-0.7	0.4	-3.9	5.2
Czechoslovakia	4.6	6.1	2.2	-3.8	-4.0	-4.6	-4.8	-1.4	4.2
Denmark	3.4	1.4	6.1	5.2	0.4	-3.5	2.3	0.9	2.6
Finland	7.9	5.0	0.4	-1.9	-3.2	-1.2	6.0	3.4	3.3
France	8.2	1.5	6.3	-3.8	-6.5	-6.5	7.1	-0.9	3.4
Germany	2.4	6.3	-0.9	-1.9	-8.1	-7.9	5.8	3.7	8.8
Greece	3.7	2.1	4.8	-3.6	-5.5	7.2	4.6	0.9	2.2
Italy	-2.1	2.2	2.6	-5.7	-1.4	2.5	-1.4	2.0	5.0
Norway	3.5	3.4	9.1	7.1	-8.4	4.3	1.9	1.8	5.1
Netherlands	6.0	4.0	-0.5	-1.5	-7.5	-2.9	-1.6	-0.1	3.6
Portugal	3.3	1.2	9.5	-2.4	3.8	0.7	5.5	-0.9	-0.5
Romania	…	-1.3	-5.9	5.8	0.8	-6.9	3.5	0.2	1.2
Spain	2.6	2.6	6.0	-4.3	-3.5	1.2	-2.9	1.0	-7.0
Sweden	3.6	4.0	5.8	1.8	-3.9	-3.1	1.5	3.3	5.9
United Kingdom	-0.8	2.1	2.7	-1.1	-5.6	0.2	2.5	2.4	2.8
United States	1.5	1.3	5.0	-9.9	-8.4	-13.8	-2.7	3.4	6.4

Sources: Maddison 2001. Maddison 2003. Author's calculations.
Note: Bulgaria has estimates from 1924 onwards; Czechoslovakia has estimates from 1920 onwards, additionally the time series ends in 1937; Greece has estimates from 1921 onwards; Romania has estimates from 1926 onwards, additionally the time series ends in 1938.

The decline began in the United States, where it was also deepest, and was transmitted to other countries through several mutually reinforcing channels. Such channels operated powerfully because national economies were linked together by the fixed exchange rate of the gold standard. Price deflation in the United States produced price deflation abroad since the United States accounted for more than one-third of the global demand for primary products. US Federal Reserve monetary policy, which was less than accommodating, was reinforced by the shift from bank deposits into currency induced by financial instability and attracted a steady stream of gold into the United States, thus draining reserves from other central banks and forcing them to restrict domestic credit in order to defend gold convertibility. The decline of US

[12] The Geary-Khamis dollar, also known as the international dollar, is a hypothetical unit of currency that has the same purchasing power the US dollar had in the United States at a given point in time. The years 1990 or 2000 are often used as a benchmark for comparisons that run through time. It is based on the twin concepts of purchasing power parities (PPP) of currencies and the international average prices of commodities. It shows how much a local currency unit is worth within the country's borders. It is used to make comparisons both between countries and over time. For example, comparing per capita gross domestic product (GDP) of various countries in international dollars, rather than based simply on exchange rates, provides a more valid measure to compare standards of living. For further information concerning the calculation method, see: Handbook of the International Comparison Programme, Annex II, United Nations, New York 1992.

merchandise imports, which was initiated by the contraction and reinforced by the Smoot-Hawley Tariff[13], created difficulties for foreign manufacturers.[14]

The Great Depression represents the culmination of both an economic and financial crisis which developed in parallel. The Great Depression was therefore the result of several developments and political misjudgements. On the real economy side, decreases in private consumption and investment were the first indications of the Great Depression. This had a multiple impact on other parts of the economy by increasing unemployment and consequently further decreasing private consumption. As can be seen in Table 2, the development was further fed by faster deflation in several countries. Thus the crisis spread through the economy and throughout most of the world.[15] On the development of the crisis there are lot of literature and for instance ensuing Great Depression, Irving Fisher developed a theory called debt-deflation[16]. Additionally, Kenneth Rogoff has analysed the development of different economic crisis[17].

[13] The Smoot-Hawley Tariff Act (sometimes known as the Hawley-Smoot Tariff Act; officially the Tariff Act of 1930) was signed into law on 17 June 1930 and raised US tariffs on over 20,000 imported goods to record levels. After it was passed many countries retaliated and increased their own tariffs on US goods. As a result American exports and imports were reduced by more than half.
[14] See Eichengreen (1992), pp. 225-226.
[15] See Cameron (1989), pp. 408-419.
[16] See Fisher (1933), pp. 337-357.
[17] For instance he has said that in the current crisis America had the classical preconditions of massive finance crisis: trillions of dollars of debt secured by an inexorable deflating asset bubble. Bank writedowns already totalled more than $ 500 billion in August 2008. If Lehman had not been allowed to fail, some other firm would have, with similar result, according to him. See for instance Reinhart and Rogoff (2008).

Table 2: Inflation developments in European countries and the United States 1919-39 (as annual changes of cost of living indices)

	1924-28	1929	1930	1931	1932	1933	1934-38
Austria	7.5	3.1	0.0	-5.0	2.1	-2.1	-0.2
Belgium	14.3	6.4	0.0	-9.0	-9.9	-1.2	1.6
Bulgaria	3.4	3.1	-8.0	-13.0	-7.5	-8.1	-2.4
Czechoslovakia	1.7	-1.0	-2.0	-4.1	-2.1	-1.1	1.7
Denmark	-3.2	-1.0	-5.0	-5.3	-1.1	3.4	2.7
Finland	1.7	-1.0	-8.0	-7.6	-1.2	-3.6	1.7
France	11.0	6.4	1.0	-4.0	-9.3	-3.4	6.9
Germany	4.6	1.0	-4.0	-8.3	-11.4	-1.3	1.3
Greece	9.8	3.1	-13.0	0.0	5.7	7.6	2.7
Italy	1.4	32.6	-25.4	-10.3	-2.2	-6.0	4.3
Norway	-3.9	-4.8	-3.0	-5.2	-2.2	-1.1	3.0
Netherlands	-0.6	0.0	-6.0	-5.3	-6.7	0.0	0.1
Portugal	…	…	-5.0	-11.6	-2.4	0.0	1.0
Romania	9.7	-1.0	-28.3	-16.9	-6.8	-3.6	4.4
Spain	-0.1	3.1	3.0	3.9	-3.7	-2.9	-0.5
Sweden	-0.8	-1.0	-3.0	-3.1	-2.1	-1.1	1.5
United Kingdom	-1.0	-1.0	-4.0	-6.3	-2.2	-3.4	2.3
United States	0.6	-1.2	0.0	-7.0	-10.1	-9.8	1.9

Sources: Mitchell, B.R.: International Historical Statistics, Europe 1750-2000, Fifth Edition, Palgrave Macmillan 2003. Bureau of Labour Statistics, USA.
Note: The data only start from 1924 due to hyperinflation in the previous years in some European countries. The Portuguese inflation series starts from 1930; the Spanish series ends in 1935.

The financial crisis was related to a financing crisis which culminated in a banking crisis and the collapse of the gold standard. The United States ceased to supply capital to Europe at the previous lavish level and from 1931 onwards was actually a net recipient of long-term capital. The only other country in a strong financial position was France, which attracted ever larger quantities of gold and foreign exchange. However, both the US and French authorities refused to take steps to relieve the mounting crisis of confidence and liquidity in the rest of the world and the banking system was drawn into the gathering storm. A succession of bank failures had occurred throughout the 1920s and there were problems of varying magnitude in Spain in 1925, Poland in 1926 and 1927, and in Norway and Italy in 1927. The problem reached Germany in 1929 when the collapse of the *Frankfurter Allgemeine Versicherung* was followed by the failure of other smaller banks and withdrawals from saving banks in Frankfurt and Berlin.[18]

The crisis undermined the entire central European banking system. The second largest Austrian bank, *Bodencreditanstalt*, collapsed in 1929. This was followed in

[18] See Feinstein, Temin and Toniolo (1997), pp. 107-117.

1931 by the failure of the biggest Austrian bank, *Credit-Anstalt*[19]. Two months later one of the major German banks, *Darmstädter und Nationalbank*, closed its doors. Many other European countries suffered bank runs and failures, with an especially severe crisis in Hungary where the banks were closely linked to those in Austria and Romania. A leading Swiss bank also had to be rescued by a take-over. By contrast, French banks were generally in a strong position by the end of the 1920s and largely avoided the crisis of 1929-31, with only a few failures in 1930-31. British commercial banks were also largely unscathed, finding strength in their branch structure and security in their traditionally cautious policy towards involvement in industry.[20]

The banking crisis placed the gold standard under additional strain. In the case of the German banking crisis, the *Reichsbank* ran out of assets and by the beginning of July 1931 had fallen below its statutory requirement of 40% reserves. As a result, it was unable to borrow any more funds. The French, who had ample reserves to lend to the *Reichsbank*, attached political conditions that were unacceptable. Germany finally abandoned the gold standard in July/August 1931.[21] A few months later, on the 20 September 1931, the United Kingdom also abandoned the gold standard. The main reason for this was the weak balance of payments position on both the current and the capital account. The banking crisis in continental Europe further exacerbated these problems. By the time the United Kingdom was forced to abandon the gold standard, seven other countries worldwide had already done so. After its departure, another 24 countries rapidly followed suit, including Sweden, Denmark, Norway, Finland, the Irish Free State, Greece and Portugal. In Europe, only France, Belgium, the Netherlands, Switzerland, Italy, Poland and Lithuania remained linked to the gold standard.[22] This solution was originally meant to be temporary but attempts to move back to the gold standard were unsuccessful. As already mentioned, adherence to the gold standard worsened the effects of the Great Depression. Spain is often cited as an example of a country that avoided the worst excesses of the Great Depression by

[19] Harold James, an economic historian at Princeton University, has said that Lehman's failure was analogous to the collapse of Credit-Anstalt in 1931.
[20] Ibid.
[21] See Feinstein, Temin and Toniolo (1997), pp. 108-110.
[22] In some countries (for instance the United States and France), an attempt was made to cut wages in order to avoid devaluation. However, these attempts were unsuccessful. The general conclusion in the literature for this failure is that it was a "coordination failure", i.e. employees would have been willing to accept lower wages if they had been confident of the readiness of others to do likewise. Only government intervention could break this logjam. See for instance: Eichengreen (1992), pp. 226-228.

remaining outside the gold standard.[23] Additionally, war debts and reparations were burdening some European public finances – in particular German public finances. Several countries had war debts to the United States and it therefore attempted to enforce repayment. Naturally, this served to deepen the economic crisis in these European countries. This has been described as one of the least successful and is the most criticised aspect of US foreign policy during the inter-war era.[24]

As the banking crisis in Europe spread, US President Hoover announced in 1931 the suspension of repayments of war debts and reparations for one year. Following the so-called Hoover Moratorium, European countries and the United States met in Lausanne in June 1932. Practically all payments related to war debts and reparations were stopped after this meeting. In 1933 Hitler announced that Germany would not pay its war debt and reparations. In fact, the only country which repaid its war debts after both the First and Second World War was Finland.[25]

2.2. Institutional setting

When analysing inter-war fiscal policy, it is important to take into account changes in the institutional setting. The reason for this is twofold. First, it is debatable whether the public finance policy and economic development of a dictatorship can be analysed in the same way as those of a democracy. Furthermore, the issue of including war reparations and expenditure specifically aimed at sustaining dictatorship in the analysis is rather philosophical as preparation for war increases GDP but not welfare. The classical argument of welfare economics is that in order to increase the societies welfare from one point of time to another, the welfare of everybody has either to increase or stay as it is. Even though GDP, which is used as an indication of welfare or well-being, increased under the dictatorships in the 1930s, such dictatorships cannot be said to have increased overall well-being.

In addition, both the economy and related economic decisions in a dictatorship work in a manner fundamentally different to those in a democracy. In a dictatorship, the markets are not free and capital flows are normally limited. In some respects, the fascist economies were similar to socialist economic systems as in both cases the

[23] Feinstein, Temin and Toniolo (1997), pp. 110-116.
[24] Rhodes (1969), pp. 787.
[25] Cameron (1989), pp. 408-419.

economy was strictly controlled by the regime.[26] For instance, in Germany the Nazis used Four Year Plans to organise their investment programme. These plans were in many ways similar to the Soviet Five Year Plans. However, according to Feinstein et al. (1997) the Four Year Plans under the Nazi regime were even more chaotic than their Soviet counterparts at the start of central planning. The Four Year Plans did not replace other bureaucracies; they were simply added on top and competed with them. Capital markets and prices were also controlled. Private companies were terrorised and punished if they put their own interests before those of the Third Reich. The Italian fascist regime, which was 11 years older than the Nazi regime, provides another example of the parallels between fascist and socialist economic planning. In the 1920s, after a brief spell of free trade and market-oriented policies (1922-25), Mussolini moved towards a more controlled economy.[27]

Second, governments in dictatorships tend to be larger than those in democracies. However, it would be wrong to draw any conclusions concerning the size or activity of the public sector on such a basis. For instance, the Four Year Plans were clearly directed towards preparation for war. The economic policies of the Nazi regime initially brought people back into work, but after a few years their focus shifted from reviving the economy to reallocating resources into military and supporting activities. Historians have debated whether specific investment projects – such as the Autobahns – were actually part of the war effort. There can be no doubt that the Nazi regime's economic policies increasingly favoured heavy industry, aeroplane manufacture and armaments. If munitions production was not expanded immediately on assumption of power, it had been within a few years.[28] Table 3 shows the institutional establishment of European countries in 1919-33 and 1933-39, according to which countries can be divided into three categories. First, countries which were already dictatorships in the beginning of the 1920s and remained dictatorships in the 1930s. Second, countries in which the political regime changed in the 1930s and became a dictatorship. The beginning of the 1930s was a politically restless period throughout Europe and there were several attempts to assume political power using non-democratic means: some failed, others were successful. The third

[26] This is a political debate. However, dictatorships are rarely interested in growing the economy as such and the motives of growth are ideologically driven. Thus GDP growth was not measured as such in the Soviet bloc, rather the statistical system focused on capturing whether the objectives of the Five Year Plans, and thereby also their underlying ideological purpose, were attained.
[27] Feinstein, Temin and Toniolo (1997), pp. 174-175.
[28] Ibid.

category comprises countries which remained democracies during the entire inter-war period.

The first category of countries which were already dictatorships in the 1920s includes Bulgaria, Italy, Lithuania, Poland, Portugal, Spain and Yugoslavia. The second category of countries in which a fascist or semi-fascist group assumed political power in the 1930s includes Estonia, Germany, Greece, Latvia and Romania. The third category of countries which remained democratic comprises Belgium, Czechoslovakia, Denmark, Finland, France, Hungary, the Irish Free State, Luxembourg, the Netherlands, Norway, Sweden, Switzerland and the United Kingdom (and of course the United States).

Table 3: Institutional establishment in the European countries in the inter-war period

Country	1919-1933	1933-1939	Comment
Austria	Democracy	**Dictatorship**	3/1933 onwards *coup d'état* if Dollfuss: dicatorship by the semi -fascist "Fatherland Front"
Belgium	Democracy	Democracy	
Bulgaria	**Dictatorship**	**Dictatorship**	6/1923 until 1930 and again 1934 onwards a putsch of officers
Czechoslovakia	Democracy	Democracy	
Denmark	Democracy	Democracy	
Estonia	Democracy	**Dictatorship**	3/1934 onwards dictatorship of Konstatin Paets
Finland	Democracy	Democracy	
France	Democracy	Democracy	
Germany	Democracy	**Dictatorship**	1/1933 onwards Hitler's seizure of power
Greece	Democracy	**Dictatorship**	8/1936 onwards *coup d'état* by General Metaxas
Hungary	Democracy	Democracy	
Ireland (Irish Free State)	Democracy	Democracy	
Italy	**Dictatorship**	**Dictatorship**	10/1922 onwards B. Mussolini
Latvia	Democracy	**Dictatorship**	5/1934 onwards by the *coup d'état by* K. Ulmanis: presidential dictatorship
Lithuania	**Dictatorship**	**Dictatorship**	12/1926 to 1929 dictorial regime of Smetona/Voldemaras. 12/1932 onwards authorian one party state
Luxembourg	Democracy	Democracy	
Netherlands	Democracy	Democracy	
Norway	Democracy	Democracy	
Poland	**Dictatorship**	**Dictatorship**	5/1926 onwards military putsch by Pilsudski
Portugal	**Dictatorship**	**Dictatorship**	5/1926 onwards military uprising by General Gomez da Costa, who was driven from power by General Carmona. 7/1932 onwards the formation of Salazar government
Romania	Democracy	**Dictatorship**	2/1930 Personal regime of King Carol II turned into a royal dicatatorship in 1938 by *coup d'état*
Spain	**Dictatorship**	**Dictatorship**	9/1923 until 1930 Primo de Riviera and 9/1936 General Franco
Sweden	Democracy	Democracy	
Switzerland	Democracy	Democracy	
United Kingdom	Democracy	Democracy	
Yugoslavia	**Dictatorship**	**Dictatorship**	1/1929 onwards coup *d'état by* King Alexander

Source: Kinder and Hilgemann (1979), pp. 138-139.

3. Data and methodology

The crisis which led to the Great Depression was both economic and financial in nature. However, as governments did not react to the financial crisis, they allowed banks to collapse and go bankrupt. Therefore the reaction to the financial shock is not analysed in this paper and the paper focuses only on the economic crisis.

The first issue is how to measure fiscal policies and, in particular, how to measure expansionary and contractionary fiscal policies using the limited amount of available data. A neutral fiscal policy implies when the changes in cyclically adjusted budget balances are zero. In the optimal case budget would be in balance where G = T (Government spending = Tax revenue). Government spending is fully funded by tax revenue and overall the budget outcome has a neutral effect on the level of economic activity. An expansionary fiscal policy involves a net increase in the government deficit (G > T) through rises in government spending or a fall in tax revenue, or a combination of the two and thus, also an increase of in changes in the cyclically adjusted budget balances. This leads to a larger budget deficit or a smaller budget surplus than previously experienced, or a deficit if the budget had previously been balanced. A contractionary fiscal policy (G < T) occurs through higher tax revenue or reduced government spending, or a combination of the two. This would lead to a lower budget deficit or a larger surplus than previously experienced, or a surplus if the budget had previously been balanced (in terms of cyclically adjusted budget balances).

Fiscal policy can be used by governments to influence the level of aggregate demand in the economy in an effort to achieve the economic objectives of full employment and economic growth. Keynesian economics suggests that adjusting government spending and tax rates are the best ways to stimulate aggregate demand. This can be used in times of recession or low economic activity as an essential tool in providing the framework for stronger economic growth and moving towards full employment.

Unfortunately, there are certain limitations to the data available for the period under examination and it was not possible to find a systematic data source for unemployment or tax rates. Therefore this paper utilises practically all the data available from international sources. In the 1920s and 1930s there was no OECD or

IMF to define and collect comparable data from different countries. Although the League of Nations collected some fiscal data and published them in the Statistical Yearbook of the League of Nations, the majority of data available are purely national data sources collected for national use and therefore not internationally comparable.[29]

In practice the following data are available for this analysis: central government debt, central government deficit, central government expenditure and revenue. Additionally there are current and constant price GDP estimations, which are estimated ex post as statistical institutes started to compile national accounts after the Second World War.

Often fiscal policies are analysed by examining cyclically-adjusted budget balances. However, as a result of the lack of data a rather simplistic method has been used to estimate cyclically-adjusted budget balances (CAB), which are consequently defined as follows:

$$(1.) \qquad CAB = B - \Delta O\overline{G} * \zeta B,Y$$

where B stands for budget balance in relation to GDP, $\Delta O\overline{G}$ for the change in output gab and $\zeta B,Y$ for the coefficient which defines the effect of the output gab and is approximated in this case as government expenditure in relation to GDP. The output gabs are estimated by calculating GDP trends using the Hodrick-Prescott (1997) filter[30] and then defining the GDP caps equal to the differences of development of actual GDP and GDP trends.[31] The underlying GDP series are GDP per capita growth measured in 1990 international Geary-Khamis dollars.[32]

Cyclically-adjusted budget balances are a better indication of expansionary or contractionary fiscal policies than non-adjusted budget balances because budget imbalances can increase as a result of the degenerating economic situation. Such budget imbalances can often be run by decreasing revenue rather than increasing expenditure. The cyclical adjustment in the balance corrects this effect. As the quality of the estimated cyclically-adjusted budget balances is not optimal, this paper additionally presents the actual budget balances where the effect of the degenerating economic situation is not eliminated. During the Great Depression the reason for

[29] Viren (2006) also reached this conclusion in his work when comparing fiscal policies before and after the Second World War.
[30] The smoothing parameter λ=100 was used.
[31] For further details see the April 2002 issue of the ECB's Monthly Bulletin.
[32] Maddison 2001 and Maddison 2003.

decreasing revenues was the falling number of taxable entities rather than decreasing tax rates. Unfortunately, there is no taxation data available which would help verify whether a decrease in taxation played a role in the decrease of revenues.

Therefore this paper focuses on analysing government expenditure using two complementary methods. First, central government expenditures as a contribution to GDP growth is estimated. Second, simple linear regressions between central government expenditure growth and GDP growth are estimated.

Central government contributions to GDP growth are calculated by first deflating government expenditure by an implicit GDP price index or cost of living index. The data used are discussed later in this paper. The impact of the growth in government expenditure on GDP growth is then calculated as follows

when GDP (Y) is defined as:

(2.) $$Y = C + I + G + X - M$$

where C stands for private consumption, I for investment, G for government consumption, X for exports and M for imports.

The growth rates are defined as follows:

(3.) $$\Delta Y = (Y^t - Y^{t-1}) / Y^{t-1}$$

then growth can be presented as:

(4.) $$\Delta Y = (C^t + I^t + G^t + X^t - M^t - C^{t-1} - I^{t-1} - G^{t-1} - X^{t-1} + M^{t-1}) / Y^{t-1}$$

and when the contribution of government expenditure (of which growth in relation to the total is actually calculated) to GDP growth is calculated, all the other components except government consumption (which can be equal to t-1 if there is no increase but is normally unequal to t-1) are defined to be equal in period t and t-1, i.e. $C^t = C^{t-1}$; $I^t = I^{t-1}$; $G^t \neq / = -G^{t-1}$; $X^t = X^{t-1}$ and $M^t = M^{t-1}$, the formula can be presented as:

(5.) $$\Delta Y_G = (G^t - G^{t-1}) / Y^{t-1}$$

where ΔY_G stands for the government expenditure contribution for GDP growth.

If the contributions are calculated similarly for all the components, then:

(6.) $$\Delta Y = \Delta Y_C + \Delta Y_I + \Delta Y_G + \Delta X_X - \Delta X_M .$$

However, it should be noted that the available government data are government expenditures and thus, the data do not cover only government consumption and investments but also transfers to other sectors. Transfers have an effect on the other components of the formula and from this point of view there is a small estimation error in the formula. However, this error should not have a large contribution to the results as it is safe to assume that the central government transfers to the other sectors were considerably small.

The second calculation, i.e. the linear regressions between the growth in real government expenditure and GDP growth rates have been calculated as follows:

when the regression line (model) between Y_i (government expenditure growth at constant prices) and X_i (GDP growth) and $i = 1,\ldots, n$ is:

(7.) $$Y_i = \alpha + \beta X_i + \varepsilon_i$$

where α is the Y intercept, β is the slope of the line and ε_i is a random term associated with each observation.

As we are estimating the regression between Y_i and X_i, we are particularly interested in the slope of the line β:

(8.) $$\beta = \frac{\sum_{i=1}^{N}(x_i - \bar{x})(y_i - \bar{y})}{\sum_{i=1}^{N}`(x_i - \bar{x})^2}$$

and α is calculated as follows:

(9.) $$\alpha = \bar{y} - \beta\bar{x}$$

The linear regression described above has been run to verify whether there is a relation between government consumption growth and a decrease in GDP. The assumption behind this hypothesis is that if government expenditure increases when

GDP decreases, and the growth of real government expenditure increases less or decreases less when GDP grows then the policy is counter-cyclical. If the increase of GDP and real government expenditure has a positive correlation then the policy is pro-cyclical.

However, it should be borne in mind that the indication of this regression analysis is very weak as the number of the observations is low. The low number of the observations allows possible outliers to disturb the results. However, as discussed later in this paper, the data have already been control before hand in such a way that the most of the implausible data are excluded. Additionally, it should be borne in mind that the quality of the data do not only effect on the regression analysis but also to the other results presented in this paper.

The counter-cyclical growth of real government expenditure does not mean that fiscal policy would be counter-cyclical. If this is financed by increasing taxes then the fiscal effect is neutral. Unfortunately, there is no annual taxation data available, but an assessment of how the policy was financed has been performed by estimating cyclically-adjusted budget balances and compiling annual government debt-to-GDP ratios, as well as compiling budget deficit numbers for the countries.

Fiscal policy can also react after a short time-lag, i.e. it usually takes a little while before the government realises that the country is in a recession and expansionary fiscal policy is needed. As the data used are annual data and the quality of data with regard to time periods[33] are not totally reliable, corrections concerning the time periods have not been performed.

The analysis covers the years from 1926 to 1938. The starting year is selected partly on the basis that the data are incomplete before 1926 or appear to be implausible. These data would have caused strange results in the data analysis and therefore, the data excluded.[34] This aims at eliminating improbable conclusions which are not directly related to the Great Depression.

The data used in this paper were collected from several sources. As there are various problems regarding data quality, the data were cross-checked using available sources. The most plausible estimate was then used and therefore the figures themselves are also based on several sources. Government expenditure and revenue

[33] The accounting years are often not identical to the calendar year.
[34] Due to this reason, also some countries like Belgium are left out of this analysis. The quality problems in the data are fundamental in these cases and thus, the data were implausible.

data are based mainly on the historical statistics compiled by B.R. Mitchell.[35] However, some of the country data presented here are not plausible, for instance the growth rates or magnitude of the series were not deemed credible. In these cases, the data from the Statistical Yearbook of the League of the Nations have been used.[36] However, both data sets remain problematic and the data are not fully comparable across countries. In some cases, the accounting period is the calendar year and in others it is not. There are also several accounting changes within the time series. Additionally, in most cases the time series do not include direct (re)armament expenditure, while in some, these are included. Finally, for some countries there are no data for the whole time period. An effort was made to take these issues into account and, in some instances, the data have been adjusted.

A further weakness is that the estimates include only central government data, i.e. the fiscal activities of municipalities and local governments are not captured. The reason is that there is no international data source which would include local government data for this time period. However, it can be assumed that local governments were not active in fiscal policies. Table 4 shows a comparison of the size of central government expenditure and total government expenditure in some countries, thus illustrating that a large part of government expenditure is not considered due to this lack of data.

Table 4: Comparison of the share (%) of total government expenditure of GDP (by Maddison) and the share (%) of central government expenditure of GDP (by League of Nations) in 1938

	1938-Maddison	1938-League of Nations
France	23.2	13.22
Germany	42.4	12.73
Netherlands	21.7	19.37
United Kingdom	28.8	20.18
United States	19.8	10.18

Source: Total government expenditure: Maddison 1995. Central government expenditure: League of Nations (1927-1944): Statistical Yearbook of the League of Nations, 1927-1942/44, Geneva. The Bureau of Economic Analysis, USA. Author's calculations.
Note: Central government expenditure for Germany is from 1934.

[35] Mitchell, B. R.: International Historical Statistics, Europe 1750-2000, Fifth Edition, Palgrave Macmillan, New York 2003.
[36] Countries which are included in the analysis at this stage are: Austria, Belgium, Bulgaria, Denmark, Finland, France, Germany, Greece, Italy, Norway, the Netherlands, Portugal, Romania, Spain, the United Kingdom, Sweden and the United States. The Greek, Italian and US data are based on League of Nations data.

The GDP data used in the ratio and growth contributions are also based on B.R. Mitchell's data. Only the US data are based on data from the Bureau of Economic Analysis. The national accounts data were estimated after the period under examination because countries only started to compile national accounts after the Second World War.[37] As a result, there are several quality issues related to the national accounts data. Statistical sources in the 1930s were not compiled on the basis of reliable and comparable national accounts. The GDP estimates do not include any estimates of income in kind, such as the rental value of owner-occupied housing or farmers' consumption of their own products, although these two items are of relative importance for the period under analysis. Finally, the quality of the goods at constant price estimates has the same designation.[38] There are no GDP estimates available for Czechoslovakia, Portugal and Romania, and, in addition, some time series do not cover the whole time period. These issues and other methodological remarks are mentioned under the tables.

Government expenditure is deflated with the implicit GDP price index of B.R. Mitchell. However, in some cases, the price indices are implausible and therefore the cost of living index has been used instead. Finally, as a result of the highly problematic nature of the Belgian data, the time series is incomplete and growth rates implausible, it was decided to remove Belgium from the analysis.

In the case of the linear regression analysis, the estimates of GDP growth are based on Maddison (2001, 2003). These estimates are presented as constant Geary-Khamis dollars per capita, which are generally considered the most appropriate for describing economic growth for this period. As the time period is short, the fact that these are presented in per capita terms does not significantly affect the growth rates.

4. Fiscal policies in the inter-war period

Based on Equation 5, Table 5 shows the growth contributions of central government expenditure to GDP and GDP growth. Based on Equation 8, Table 6 shows a summary of the results of the linear regression analysis. The detailed results

[37] The compilation of national accounts and the overall development of statistical analysis occurred partly a result of the Great Depression. Keynesian economic theory and the Great Depression reinforced the need for better statistical systems which would help the coordination of economic policies.

[38] Mitchell, B. R.: International Historical Statistics, Europe 1750-2000, Fifth Edition, Palgrave Macmillan, New York 2003.

of the linear regression analysis are presented in Annex 1. The conclusions which can be drawn from these two tables are similar. Additionally, Table 7 presents conventional budget balances and Table 8 shows cyclically-adjusted budget balances based on Equation 1. Finally, Table 9 presents estimated central government debt-to-GDP ratios.

The results suggest that the majority of countries had quite responsive fiscal policies – when the economy was growing government expenditure also increased and when the economy was contracting, after a short delay, government expenditure also started to decrease. In Germany, Finland and Spain there is a slightly stronger indication of pro-cyclical policies.

For the majority of countries, policies were neither pro nor counter-cyclical in the inter-war period. As already discussed, the Great Depression's impact also varied across countries. The regression analysis suggests that in rare cases there is a clear dependency between GDP growth and government expenditure. If the coefficient in Table 6 is positive, this indicates policy is pro-cyclical; if the coefficient is negative government consumption is increasing in real terms when GDP growth is negative. However, this cannot be considered convincing evidence because the number of observations is quite limited.

A few countries did employ counter-cyclical fiscal policies. The expansionary fiscal policy employed by the United States is evident in the data. However, the conclusions concerning US fiscal policies are only partially confirmed as the time series in this analysis only starts from 1930. The main criticism regarding US fiscal policies in previous studies is that the expansionary policies started relatively late. Cary Brown (1956) concluded in his article that the federal government's fiscal action was more expansionary throughout the 1930s than it was in 1929. It can also be seen in Table 5 that economic policy was only slightly expansionary at the beginning of the 1930s, and only after Franklin D. Roosevelt introduced the New Deal in 1933 did US government expenditure start to be aggressively expansionary. Eichengreen (1992) emphasised that the most important fiscal change of the period in the United States was in 1932; and it was a tax increase not a reduction. As shown in Table 7, central government budget deficits were increasing but were still moderate until 1932. Table 8 confirms this observation as cyclically-adjusted budget balances only increased remarkably in the latter part of the Great Depression. The driving force behind budget deficits until 1932 was decreasing revenues. As can be seen in Table 9, this led to an

increase in central government debt. However, the importance of the New Deal in the recovery is debatable. Rather it is the role of monetary policy and the abandonment of the gold standard which are considered key to recovery from the Great Depression.

Table 5: Central government expenditure's contribution to GDP growth (CG) rates and GDP growth rates

	1925-28		1929		1930		1931		1932		1933		1934-38	
	CG	GDP	CG	GDP	CG	GDP	CG	GDP	CG	GDP	CG	GDP	CG	GDP
Austria	1,2	4,0	-0,2	1,5	2,8	-2,8	0,9	-8,1	-4,4	-10,2	-4,1	-3,4	-3,0	2,8
Belgium	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bulgaria	-0,6	5,5	4,2	-3,4	-2,8	-5,4	-1,3	5,7	-1,1	-5,4	1,0	0,0	1,3	10,0
Czechoslovakia	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Denmark	0,2	2,4	-0,2	6,7	0,5	6,0	0,3	1,1	0,4	-2,6	-0,4	3,2	0,3	10,0
Finland	1,8	6,1	-1,2	1,2	2,5	-1,4	-0,3	-2,3	-6,1	-0,5	1,1	6,7	1,1	6,7
France	3,5	2,0	1,1	6,7	-1,1	-2,9	3,6	-6,0	-2,5	-6,5	6,3	7,1	-1,3	1,1
Germany	1,0	5,0	-0,3	-4,2	0,8	-4,6	-1,0	-10,9	-0,8	-4,9	0,8	13,4	-4,9	12,9
Greece	3,7	0,0	-3,7	-4,3	7,3	8,9	0,6	-8,2	-5,4	6,7	-0,6	2,1	0,4	3,9
Italy	-0,9	3,5	2,2	1,5	4,4	-5,9	-2,5	-0,8	4,0	3,9	6,8	-0,8	0,6	3,2
Norway	0,8	6,2	0,5	10,7	0,0	3,9	0,4	-7,5	-0,1	2,8	-1,3	1,2	0,4	5,5
Netherlands	-0,1	4,3	0,5	2,2	0,9	2,2	3,0	-5,9	1,5	-3,6	2,2	-3,0	0,2	5,5
Portugal	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Romania	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Spain	0,1	4,4	0,9	2,6	0,5	-0,3	0,5	1,6	1,4	3,8	0,8	-0,9	-0,1	1,4
Sweden	0,0	5,1	0,7	7,7	0,6	5,7	0,6	-7,0	1,3	-2,4	2,5	2,3	0,2	4,6
United Kingdom	0,3	2,3	0,6	2,4	0,8	-0,1	2,4	7,8	-3,9	-23,6	2,6	16,6	0,8	4,3
USA	...	...	...	...	0,5	-8,6	1,5	-6,4	1,3	-13,0	3,4	-1,3	0,2	6,9

Source: League of Nations (1927-1944): Statistical Yearbook of the League of Nations, 1927-1942/44, Geneva. The Bureau of Economic Analysis, USA. Author's calculations.

Note: GDP estimates are based on League of Nations data and are not the same as those in Table 1. The reason for this is that the government expenditure data and GDP data presented are based on the same source and are thus consistent. The German series begins from 1925 and ends in 1935. The Austrian series ends in 1937. The Spanish series ends in 1935. The Greek series begins from 1928. The US series begins in 1930.

In Europe, the Netherlands and Sweden seem to have been conducting expansionary fiscal policies. Sweden, which is often referred to as conducting Keynesian fiscal policy even before Keynes, has some indication of a counter-cyclical fiscal policy. As can be seen in Table 5, in 1931 and 1932 when the economy was declining, government expenditure was positively contributing to economic growth. Table 6 also indicates that Swedish fiscal policy was slightly expansionary, although the P-value indicates the result is not very reliable and the results of the regression analysis are not very reliable due to the reasons mentioned earlier in this paper. During the Great Depression, the Swedish budget deficit and government debt also increased. As illustrated in Table 8, cyclically-adjusted budget balances were actually improving until 1931 and after this the Swedish government started to expand its fiscal policy. This slight counter-cyclical fiscal policy is also confirmed in the existing literature. For instance, Gustafsson et al. (1974) observed that fiscal policy acted as a slight positive impulse for economic recovery. However, they added that Sweden also increased taxes during the Great Depression in order to finance government actions. Jonung (1981) has emphasised that although fiscal policy in Sweden was slightly

counter-cyclical, monetary policy was mainly responsible for the recovery. It should also be noted that Sweden was one of the countries which left the gold standard at quite an early stage.

As previously mentioned, the crisis in the Netherlands lasted slightly longer than in other European countries. The GDP growth estimates presented in Table 5 slightly overestimate GDP growth and the estimates presented in Table 1 are more accurate, i.e. the crisis actually started in the Netherlands in 1929 and, as both sources indicate, continued until 1934.

Both Tables 5 and 6 indicate that Dutch fiscal policy was counter-cyclical. As can be seen in Table 6, when compared to other countries the R-square is quite high and the P-value is low, which indicates that the result is relatively reliable. However, as mentioned earlier, the results of the regression are not very reliable. As can be seen in Table 8, cyclically-adjusted budget balances confirm this observation. Despite the expansionary fiscal policy, the Netherlands did not recover quickly. The main underlying reason is that the Netherlands only left the gold standard in 1936 when France also devalued its currency. In the current literature, Dutch fiscal policy is considered neutral or contractionary and only deemed expansive towards the end of the crisis. This analysis indicates that fiscal policy was actually slightly expansionary at the beginning of the crisis. As can be seen in Tables 7 and 8, Dutch government deficit and debt increased during the crisis. This paper confirms that even though Dutch fiscal policy was expansive, the effect was not strong enough to enable the country to avoid the crisis.

Table 6: Summary of the linear regression analysis between GDP growth and real government expenditure growth (detailed results are presented in Annex 1)

	co-efficient	P-value	R-square
Austria	0,1582	0,2195	0,1465
Belgium	…	…	…
Bulgaria	-0,1171	0,5431	0,0381
Czechoslovakia	…	…	…
Denmark	0,0080	0,9394	0,0006
Finland	0,1431	0,0851	0,2675
France	0,0147	0,8700	0,0028
Germany	0,3491	0,0546	0,4315
Greece	-0,2236	0,0220	0,5008
Italy	-0,0380	0,3821	0,0771
Norway	0,0510	0,7430	0,0112
Netherlands	-0,2979	0,0232	0,4177
Portugal	…	…	…
Romania	…	…	…
Spain	0,1532	0,1545	0,2361
Sweden	-0,1412	0,1832	0,1698
United Kingdom	-0,0521	0,7367	0,0118
USA	-0,4107	0,0327	0,5602

Source: Author's calculations.
Note: The German series begins in 1925 and ends in 1935. The Austrian series ends in 1937. The Spanish series ends in 1935. The Greek series begins in 1928. The US series begins in 1930.

Tables 5 and 6 also show Greek fiscal policies seem to be counter-cyclical. However, it would be wrong to conclude that Greece conducted fiscal policy along Keynesian lines. The Great Depression did not affect Greece too seriously and during the few years of depression the Greek government did not adopt a particularly expansionary fiscal policy. The negative coefficient of the linear regression can be explained by the decrease in government expenditure when the economy was growing rather than expansionary fiscal policy when the economy was contracting.

Table 7: Central government budget balances

	1924-28	1929	1930	1931	1932	1933	1934-38
Austria	-6.4	-6.8	-9.7	-11.5	0.0	-5.8	-4.1
Belgium	-1.2 …		-2.5 …	…	…		-5.0
Bulgaria	-1.8	-6.7	-5.3	-3.0	-2.1	-1.4	-0.7
Czechoslovakia	… …	…	…	…	…	…	…
Denmark	-0.2	0.2	0.3	0.3	0.0	0.9	0.7
Finland	-1.6	-0.8	-1.9	-2.3	-2.6	-1.6	-3.3
France	0.0	-0.9	2.8	0.0	0.0	-2.0	-1.1
Germany	-1.7	-1.8	-2.5	-2.2	-1.9	1.0 …	
Greece	…	-0.3 …		-5.5	0.6	0.5	0.6
Italy	-1.3	-1.5	-3.9	-0.9	-3.4	-2.5	-3.3
Norway	-6.7	-6.5	-6.1	-7.0	-6.7	-5.4	-5.2
Netherlands	-2.4	-1.9	-2.5	-6.6	-8.6	-11.3	-8.8
Portugal	… …	…	…	…	…	…	…
Romania	… …	…	…	…	…	…	…
Spain	-0.6	1.1	0.8	-0.3	-0.8	-1.3	-1.4
Sweden	-1.0	-0.6	-0.3	-0.4	-2.0	-4.1	-2.2
United Kingdom	1.2	0.8	1.0	0.8	-0.2	1.0	0.4
USA	…	0.2	-1.0	-3.8	-5.2	-7.1	-3.3

Source: Mitchell, B. R.: International Historical Statistics, Europe 1750-2000, Fifth Edition, Palgrave Macmillan, New York, 2003. League of Nations (1927-1944): Statistical Yearbook of the League of Nations, 1927-1942/44, Geneva. The Bureau of Economic Analysis, USA. Author's calculations.
Note: The Belgian series is incomplete in 1925-26, 1928-29 and 1930-33. The French figure for 1924 is implausible and therefore not used in the table. The German series covers only 1925-33. The Spanish series ends in 1935. The Greek series does not cover the years 1924-28 and 1930. The US series starts from 1929.

In the other countries analysed, fiscal policies seemed to be defined by budget balance. Several studies dealing with Finnish economic policies also suggest it was neo-classical and that revenues basically defined expenditure.[39] Cyclically-adjusted budget balances confirm that the deficit was increasing over time and that the increase was not related to the Great Depression as such. Articles discussing Danish fiscal policies also confirm that inter-war period fiscal policy was neo-classical. Academic debate has mainly been concerned with the benefits and drawbacks of Keynesian policy.[40]

Table 8: Cyclically-adjusted budget balances

	1924-28	1929	1930	1931	1932	1933	1934-38
Austria	-6.8	-7.0	-9.2	-9.8	1.3	-5.3	-4.4
Belgium	-1.2 ...		-2.2 ...	...	...		-5.2
Bulgaria	-2.1	-5.4	-6.2	-4.5	-1.7	-1.1	-0.8
Czechoslovakia	… ...	…	...	…	…	…	
Denmark	-0.1	0.0	0.2	0.4	0.4	0.8	0.7
Finland	-2.3	-0.4	-1.0	-0.9	-1.8	-2.2	-3.7
France	0.0	-1.6	3.3	1.1	1.0	-3.4	-1.2
Germany	-2.0	-1.6	-2.1	-1.1	-0.7	0.7 …	
Greece	…	-1.0	1.3	-3.5	-0.6	-0.1	0.5
Italy	-1.4	-1.8	-2.6	-0.5	-3.7	-1.7	-3.5
Norway	-6.7	-7.0	-6.4	-6.0	-6.8	-5.3	-3.5
Netherlands	-2.6	-1.8	-2.3	-5.5	-8.2	-11.0	-9.0
Portugal	… ...	…	…	…	…	…	
Romania	… ...	…	…	…	…	…	
Spain	-0.7	0.6	1.2	0.0	-1.1	-1.2	-2.0
Sweden	-1.1	-0.9	-0.3	0.2	-1.3	-3.9	-2.4
United Kingdom	1.0	0.5	1.5	2.2	0.2	0.9	0.1
USA	… ...	…		-3.3	-4.1	-6.8	-3.6

Source: Mitchell, B. R.: International Historical Statistics, Europe 1750-2000, Fifth Edition, Palgrave Macmillan, New York 2003. League of Nations (1927-1944): Statistical Yearbook of the League of Nations, 1927-1942/44, Geneva. The Bureau of Economic Analysis, USA. Author's calculations.
Note: The Belgian series is incomplete in 1925-26, 1928-29 and 1930-33. The French figure for 1924 is implausible and therefore not used in the table. The German series only covers 1925-33. The Spanish series ends in 1935. The Greek series does not cover the years 1924-28 and 1930. The US series starts from 1929.

As already discussed, several countries became dictatorships in the 1930s. In these countries one could expect fiscal policies to be expansionary as dictatorships are based on central planning and a government-controlled economy. However, analysis of the data does not confirm this assumption. As indicated in the tables, the time series

[39] Beckman, Johansen, Sejersted and Vartianen 1974, pp. 37-39. Pekkarinen and Vartianen 1993, pp. 96-104.
[40] Topp 1988.

for several dictatorships end at the beginning of 1930s. In addition, direct military expenditure is excluded in most of the government expenditure estimates. As a result, for the majority of the countries analysed government expenditure is underestimated. However, direct military expenditure is not related to strategies aimed at recovering from the Great Depression and this should be taken into consideration when evaluating the significance of the exclusion of such data. Secondly, as discussed earlier, these expenditures were specifically aimed to destroy rather than increase welfare, as the classical welfare economy expects, and therefore, these also should be excluded from the analysis.

Table 9: Central government debt-to-GDP ratios

	1924-28	1929	1930	1931	1932	1933	1934-38
Austria	21.2	15.6	16.1	21.5	23.7	36.5	38.5
Belgium	123.7	…	78.7	…	…	…	98.3
Bulgaria	36.3	40.6	46.1	51.7	58.0	64.1	53.5
Czechoslovakia	…	…	…	…	…	…	…
Denmark	22.8	20.2	23.8	24.2	24.7	22.9	19.6
Finland	11.1	13.1	15.8	17.8	28.8	26.9	14.8
France	96.6	83.3	83.8	94.7	106.8	111.0	126.6
Germany	6.8	11.3	14.4	20.7	23.9	21.7	18.5
Greece	79.2	84.9	89.7	105.8	97.8	88.1	78.6
Italy	63.8	64.0	71.9	83.9	90.9	99.8	97.2
Norway	32.6	37.6	35.8	39.5	39.5	40.4	31.8
Netherlands	54.5	43.5	43.7	48.8	58.4	64.7	72.6
Portugal	…	…	…	…	…	…	…
Romania	…	…	…	…	…	…	…
Spain	58.2	59.9	65.2	64.2	61.6	65.1	60.7
Sweden	20.4	19.0	18.4	21.6	26.9	29.6	23.5
United Kingdom	187.4	179.3	179.7	185.9	194.8	208.3	182.6
USA	…	16.3	17.8	22.0	33.2	40.0	40.6

Source: Mitchell, B. R.: International Historical Statistics, Europe 1750-2000, Fifth Edition, Palgrave Macmillan, New York 2003. League of Nations (1927-1944): Statistical Yearbook of the League of Nations, 1927-1942/44, Geneva. The Bureau of Economic Analysis, USA. Author's calculations.
Note: The Austrian series covers only 1924-37. The Belgian series is incomplete for 1925-26, 1928-29 and 1931-33. The Bulgarian series is incomplete for 1924-26. The Spanish series is incomplete for 1924-26 and 1936-28. The French series is incomplete for 1924 and additionally only covers domestic debt and thus excludes war debt. The German series excludes 1924. The Greek series excludes 1924-27. The Italian series excludes 1937-38. The US series excludes 1924-28.

5. Epilogue: the past and the present

Are there any lessons that might be drawn from the historical events studied in this paper? It is said that history does not repeat itself. Nevertheless, several similarities between the Great Depression and today's financial and economic crisis can be observed. However, firm conclusions should not be drawn from these as the world today is a very different place to that of the 1930s. In the 1930s the effects of the First World War could still be felt and residual problems related to the war had yet to be solved. The resultant increased political instability hindered democracy from

developing strong foundations in several countries. The world economy and financial markets were not as integrated as they are today and national markets were far more protected. Finally, the level of development was also markedly different – for instance the importance of the non-monetary economy was much greater than today – and this is not fully captured in the estimates used in this paper.

At the start of the Great Depression, several countries experienced a financial crisis similar to the current crisis. However, the policy reaction was very different. During the Great Depression banks and insurance companies were not rescued and this increased problems regarding financial intermediation.

With regard to the importance of fiscal policies in the 1930s, it can be concluded that fiscal policies in most of the European countries analysed were neo-classical where revenue defined expenditure – although in several countries the crisis led to an increase in central government deficit and debt. In certain countries, there is some evidence of slight expansionary fiscal policies. Sweden, which recovered quickly from the crisis, increased government expenditure during the Great Depression. The Netherlands, where the Great Depression was relatively long, also conducted an expansionary fiscal policy in the 1930s. The fiscal policies in these countries assisted recovery but, as also concluded in several previous studies, monetary policy played a more significant role.[41] However, the contributions of these national economies are negligible compared with today's fiscal rescue packages.

From the point of view of Keynesian fiscal policy, the most important contribution of the Great Depression was that counter-cyclical economic policy was inaugurated as a policy option and the importance of economic policy was realised. As a result, statistics and national accounts were developed further and an increasing amount of resources dedicated to economic research.

Overall, when the underlying reasons of the Great Depression are analysed, the importance of international cooperation becomes ever more apparent. During economic downturns, protectionism tends to increase: the Great Depression is a monument to the potentially shocking consequences of such a development. Protectionist and nationalist policy options also seem to be increasingly on the agenda in today's crisis – as demonstrated in the form of huge rescue packages given directly to specific industries deemed of national importance. However, during the Great

[41] See for instance: Feinstein, Temin and Toniolo 1997, pp. 187-204.

Depression protectionism manifested itself in a slightly different form from that seen today – the main tool employed being the direct limiting of world trade and capital movements.

Furthermore, during the Great Depression the change in world economic leadership was only realised in the 1930s. In the aftermath of the First World War, the United Kingdom was no longer in a position to remain the leading world economic power and the United States took over this role. As this change was not immediately perceived, closed US policies served to deepen the recession. Today's crisis shows signs of a potentially similar constellation. The Chinese and Indian economies are growing quickly and they are increasingly important players in the world economy. However, media and economic discussion still focus on the United States – although it may well be that China and India come to play predominant roles in the recovery process of the current crisis. The difference is of course that China and India are opening rather than closing their economies – and that during the current crisis they have increased investment in western economies.

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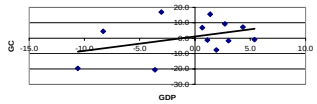
Annex 1: Country level linear regression calculations between GDP growth and real government expenditure growth

Source: League of Nations (1927-1944): Statistical Yearbook of the League of Nations, 1927-1942/44, Geneva. Maddison 2001. Maddison 2003. Author's calculations.

Austria



SUMMARY OUTPUT

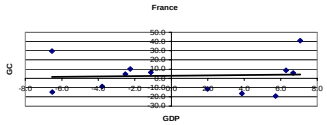
Regression Statistics	
Multiple R	0.382717
R Square	0.146473
Adjusted R Square	0.06112
Standard Error	4.827264
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	39.98905	39.98905	1.716086	0.21949064
Residual	10	233.0247	23.30247		
Total	11	273.0138			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.530331	1.396054	-0.379878	0.711979	-3.64093294	2.5802716	-3.6409329	2.580272
X Variable 1	0.158197	0.120761	1.309995	0.219491	-0.11087643	0.4272701	-0.1108764	0.42727

France



SUMMARY OUTPUT

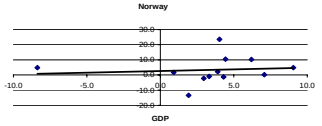
Regression Statistics	
Multiple R	0.053033
R Square	0.002813
Adjusted R Square	-0.096906
Standard Error	5.392114
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	0.820041	0.820041	0.028204	0.869977
Residual	10	290.749	29.0749		
Total	11	291.569			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	0.696357	1.578113	0.441259	0.668413	-2.8199	4.212613	-2.8199	4.212613
X Variable 1	0.01474	0.087768	0.167942	0.869977	-0.18082	0.2103	-0.18082	0.2103

Norway



SUMMARY OUTPUT

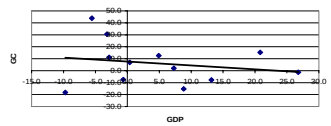
Regression Statistics	
Multiple R	0.106017
R Square	0.01124
Adjusted R	-0.087636
Standard Er	4.480073
Observation	12

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	2.281571	2.281571	0.113675	0.742968
Residual	10	200.7105	20.07105		
Total	11	202.9921			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	3.146032	1.387886	2.266779	0.046826	0.053627	6.238436	0.053627	6.238436
X Variable	0.051008	0.151288	0.337157	0.742968	-0.286082	0.388097	-0.286082	0.388097

Bulgaria



SUMMARY OUTPUT

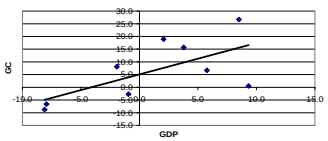
Regression Statistics	
Multiple R	0.195254
R Square	0.038124
Adjusted R Square	-0.058064
Standard Error	11.27158
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	50.35577	50.35577	0.39635	0.54309513
Residual	10	1270.486	127.0486		
Total	11	1320.842			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	5.724494	3.442164	1.663051	0.12728	-1.94512673	13.394114	-1.9451267	13.39411
X Variable 1	-0.117123	0.186038	-0.629564	0.543095	-0.53164161	0.297396	-0.5316416	0.297396

Germany



SUMMARY OUTPUT

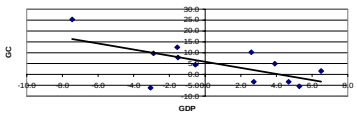
Regression Statistics	
Multiple R	0.656853
R Square	0.431456
Adjusted R Square	0.350235
Standard Error	5.194607
Observations	9

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	143.3428	143.3428	5.31215	0.054603
Residual	7	188.8876	26.98394		
Total	8	332.2304			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	-1.099214	1.992352	-0.551717	0.598306	-5.810373	3.611946	-5.810373	3.611946
X Variable 1	0.349142	0.151484	2.30481	0.054603	-0.009061	0.707344	-0.009061	0.707344

Netherlands



SUMMARY OUTPUT

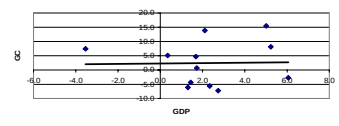
Regression Statistics	
Multiple R	0.646296
R Square	0.417698
Adjusted R	0.359468
Standard Er	3.356452
Observation	12

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	80.81191	80.81191	7.173224	0.023161
Residual	10	112.6577	11.26577		
Total	11	193.4696			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	2.157985	1.107285	1.948898	0.079894	-0.3092	4.625169	-0.3092	4.625169
X Variable	-0.297875	0.111219	-2.678288	0.023161	-0.545686	-0.050065	-0.545686	-0.050065

Denmark



SUMMARY OUTPUT

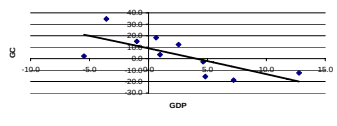
Regression Statistics	
Multiple R	0.024641
R Square	0.000607
Adjusted R Square	-0.099332
Standard Error	2.65488
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.042822	0.042822	0.006075	0.93940946
Residual	10	70.48388	7.048388		
Total	11	70.5267			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	2.185561	0.805954	2.711769	0.021867	0.3897834	3.981339	0.3897834	3.981339
X Variable 1	0.007953	0.102032	0.077945	0.939409	-0.21938843	0.2352942	-0.2193884	0.235294

Greece



SUMMARY OUTPUT

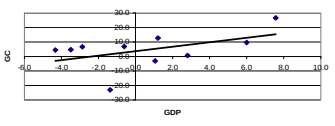
Regression Statistics	
Multiple R	0.707677
R Square	0.500807
Adjusted R Square	0.438408
Standard Error	3.997614
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	128.2609	128.2609	8.025876	0.022048
Residual	8	127.8473	15.98092		
Total	9	256.1082			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	3.168858	1.296231	2.44467	0.04027	0.179741	6.157974	0.179741	6.157974
X Variable 1	-0.223637	0.07894	-2.832998	0.022048	-0.405673	-0.041601	-0.405673	-0.041601

Spain



SUMMARY OUTPUT

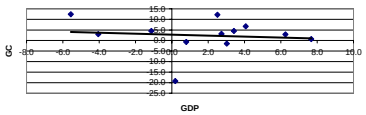
Regression Statistics	
Multiple R	0.485929
R Square	0.236127
Adjusted R	0.140643
Standard Er	3.677389
Observation	10

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	33.44207	33.44207	2.472943	0.154465
Residual	8	108.1855	13.52319		
Total	9	141.6276			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	-0.113569	1.247825	-0.091013	0.92972	-2.99106	2.763922	-2.99106	2.763922
X Variable	0.153202	0.097422	1.572559	0.154465	-0.071454	0.377857	-0.071454	0.377857

UK



SUMMARY OUTPUT

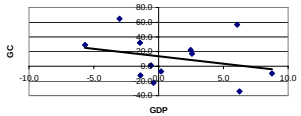
Regression Statistics	
Multiple R	0.108693
R Square	0.011814
Adjusted R	-0.087004
Standard E	4.040953
Observatio	12

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	1.952251	1.952251	0.119555	0.736681
Residual	10	163.293	16.3293		
Total	11	165.2453			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	1.783546	1.220727	1.461053	0.174698	-0.936403	4.503496	-0.936403	4.503496
X Variable	-0.052084	0.150634	-0.345767	0.736681	-0.387718	0.283549	-0.387718	0.283549

Italy



SUMMARY OUTPUT

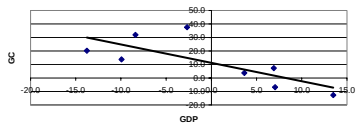
Regression Statistics	
Multiple R	0.277752
R Square	0.077146
Adjusted R	-0.015139
Standard Er	4.245338
Observatio	12

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	15.06624	15.06624	0.83595	0.382074
Residual	10	180.2289	18.02289		
Total	11	195.2952			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	1.584856	1.31392	1.206204	0.255501	-1.342741	4.512453	-1.342741	4.512453
X Variable	-0.037961	0.041519	-0.914303	0.382074	-0.13047	0.054549	-0.13047	0.054549

USA



SUMMARY OUTPUT

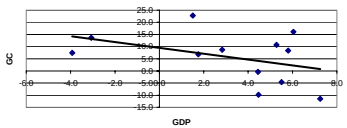
Regression Statistics	
Multiple R	0.748458
R Square	0.560189
Adjusted R	0.486888
Standard E	6.937079
Observatio	8

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	367.768	367.768	7.642238	0.032661
Residual	6	288.7384	48.12307		
Total	7	656.5064			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	4.411503	3.020049	1.460739	0.194389	-2.978296	11.8013	-2.978296	11.8013
X Variable	-0.410679	0.148557	-2.76446	0.032661	-0.774185	-0.047174	-0.774185	-0.047174

Sweden



SUMMARY OUTPUT

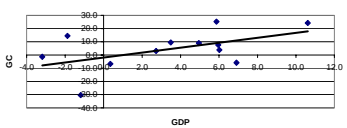
Regression Statistics	
Multiple R	0.412032
R Square	0.169771
Adjusted R	0.086748
Standard Er	3.400926
Observatio	12

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	23.65151	23.65151	2.044864	0.183212
Residual	10	115.663	11.5663		
Total	11	139.3145			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	3.962308	1.131061	3.503176	0.005696	1.442145	6.48247	1.442145	6.48247
X Variable	-0.141166	0.098718	-1.429988	0.183212	-0.361123	0.078792	-0.361123	0.078792

Finland



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.517172
R Square	0.267466
Adjusted R	0.194213
Standard E	3.714539
Observatio	12

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	50.37925	50.37925	3.651252	0.085089
Residual	10	137.978	13.7978		
Total	11	188.3573			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	2.758463	1.121434	2.459765	0.03369	0.259753	5.257174	0.259753	5.257174
X Variable	0.143067	0.074872	1.910825	0.085089	-0.023758	0.309893	-0.023758	0.309893