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with the Great Depression as Regards  
their Depth and the Policy Responses**

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## **Abstract**

This paper compares the Great Depression and the Current Crisis. It builds on the existing knowledge, what problems have led to the Current Crisis, and to which extent the problems were similar and different from that in the Great Depression. The focus of this paper, however, is to report stylized facts about the depth of the crises (the extent to which GDP, manufacturing production, employment, and stock prices dropped) and how economic policy reacted during the Great Depression and today. We also investigate to what extent different regions were affected depending on the crisis and whether the synchronization with which the Current Crisis spread was larger this time due to globalization. Finally, the probability is assessed that the fall in production has leveled off in 2009 and how economic policy should react in this phase, specifically since unemployment will stay very high (or will further increase).

JEL classification: E20, E30, E32, E44, E60, G18, G28

Keywords: financial crisis, business cycle, stabilization policy, resilience

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# A comparison of the Current Crisis with the Great Depression as Regards their Depth and the Policy Responses

## 1. Introduction and outline

The aim of this paper is to compare the Current Crisis with the economic crisis of the nineteen thirties (often referred to as the Great Depression, see *Bernanke, 2004*). The causes of the crisis are not in the centre of this paper (for this see *Aiginger, 2009A, B, C; Bernanke, 2004; Cooper (2008); Friedmann – Schwartz, 1963; Krugman, 2009; Eichengreen – O'Rourke, 2009; Galbraith, 1954; Schulmeister, 2009; Butschek, 1985; Sinn, 2009*), but have to be kept in mind, therefore we present also data on the build-up phase and we summarize our assessment in the appendix. The main focus is the depth of each crisis and the response of economic policy. It may be too soon in the Current Crisis to attempt such a comparison (or even premature). There are signs that in production and world trade the Current Crisis has leveled off, and in most countries the stock markets have definitely recovered between February 2009 and September 2009. However, there is no guarantee that the world economy will not be hit by a second wave of problems and at least there will be echo effects and periods where stock prices might decline. As far as unemployment, and probably also as far as insolvencies, are concerned the "Current Crisis" is not over at all. Private sector production is not rising in any industrialized country with sufficient speed or stability that the end of the crisis can be heralded. Even more premature is the analysis of the policy response, which we know about only for the first year or the first two years of the Current Crisis. We do not know the policy response in 2010 and later, especially if the crisis should prove to be broader and longer than indicators currently suggest in autumn 2009. Of course we do not know how fiscal and governmental policy will actually react in the "exit phase", when growth has started but employment as well as fiscal deficits approach the 10% level in many countries. And the negative social and economic consequences of the crisis will, in any event, be long lasting.

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## 2. Stylized economic facts

### 2.1 Comparing the depth of the crises as reflected by real GDP

Comparing the crisis in the nineteen thirties – referred to as the “Great Depression” – with the recent one – referred to as the “Current Crisis” – reveals three stylized facts:

- in both crises the build-up period was a period of high growth;
- growth was much more stable and less cyclical in the build-up period to the Current Crisis (in spite of the dot-com crisis which, with hindsight, was actually merely a growth recession), whilst in the USA in the 1920's there had been a recession and a variety of post-war troubles in Europe;
- the fall in GDP in the Great Depression dwarfed the decline in the Current Crisis; in most industrialized countries. It is likely that there will be only one year with declining GDP (2009) and the decline in world GDP in this year will prove to be smaller than the increase in the previous year and maybe also that of the following year.

#### *The build-up phase*

Even using annual GDP data we can still see the pattern of growth in the build-up to the Great Depression. World economic output increased by 45% between 1921 and 1929 (4.7% p.a.; see table 1)<sup>1</sup>. The development was bumpy with three absolute declines including a rather severe recession in the early twenties. The turmoil came as a consequence of World War I (WW I), which was felt even in the USA. In European countries intermediate falls in GDP were more pronounced, production was still not higher in many countries than pre-war level, reparation payment were done, hyperinflation occurred etc. (figure 1).

By contrast this time world output increased very steadily between 1990 and 2008. Growth amounted to 84% (3.5% p.a.) with no absolute decline in world GDP, in the USA and most European countries. The only exception among developed countries was Japan, which experienced a prolonged crisis between 1992 and 2003 (the “lost decade”). This was following a period of stronger growth where Japan successfully caught up with the rest of the world between 1950 and 1990. Between 2003 and 2007 growth in Japan was much less than in the USA or in Europe.

US literature has labeled the period between 1990 and 2000 (or 2008) as the period of “Great Moderation” since there was high growth without severe inflation. Even the dot-com crisis is difficult to find in the US GDP figures.<sup>2</sup>

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<sup>1</sup> If we compare the peak of 1929 with 1912 the growth of GDP had been 39%. We use data in PPP (1990 international Geary-Khamis Dollar).

<sup>2</sup> GDP increased by 0.8% and 1.6% respectively in the USA in the two years following the dot-com boom which may actually be called a growth recession rather than a crisis.

### The decline and patterns across countries in the Great Depression

The decline of world GDP between 1929 and 1932 reached between 15% and 27% of its previous peak (using annual data) in those countries hit most severely by the crisis (the USA, Germany, France and Austria). It was 10% for the world (in PPP) or in the unweighted average of the countries in Table 1. The decline in production lasted three years. The previous peak was reached again in 1935 (after six years).

The pattern of world output was shaped by the USA (which at the time of the Great Depression supplied 24% of world output (according to PPP values). US growth in the build-up phase was approximately the same as the growth in world GDP if we compare 1921 to 1929 (and stronger if we start in 1912). Higher growth in the pre-crisis period was experienced in France, Sweden, and Spain, all following severe losses in WWI. The decline between 1929 and 1932 was definitely more severe in the USA (-27%), followed by Austria (-20%), Germany (-16%) and France (-15%). The recession was really mild (less or equal to 6% in three years cumulated) in Spain, Finland, Sweden and the United Kingdom. GDP continued to increase in some countries (Denmark and Norway). In summary world output declined rather dramatically between 1929 and 1932, namely 10% and this was the case even though in some countries the recession was mild according to traditional pre-WWII standards.

Table 1: Comparison of two crises: decline of real GDP

	Great Depression			Current Crisis				
	1929/1921	1929/1912	1932/1929	2008/2000	2008/1990	2009 forecast	Trough 2009/ peak 2008	
	Annual data			Annual data		Quarterly data		
	Percentage change							
Austria	43.0	4.6	-19.8	17.3	50.9	-3.4	-4.4	<sup>1)</sup>
Germany	38.4	15.5	-15.8	9.8	35.2	-5.4	-6.7	<sup>2)</sup>
Belgium	33.4	27.2	-7.1	15.6	42.9	-3.5	-3.8	<sup>1)</sup>
Spain	34.2	58.8	-3.8	27.9	68.5	-3.2	-4.2	<sup>3)</sup>
France	61.0	33.6	-14.7	13.6	38.2	-3.0	-3.4	<sup>2)</sup>
Finland	55.7	53.4	-4.0	25.1	52.0	-4.7	-6.0	<sup>2)</sup>
Sweden	49.2	38.3	-4.3	20.9	47.6	-4.0	-6.4	<sup>3)</sup>
United Kingdom	28.5	16.2	-5.1	19.5	53.2	-3.8	-5.7	<sup>3)</sup>
USA	45.4	69.4	-27.0	19.0	64.7	-2.9	-3.9	<sup>1)</sup>
Japan	22.0	81.7	1.3	10.7	25.4	-5.3	-8.3	<sup>3)</sup>
World	44.7	38.8	-9.8	39.8	89.0	-1.3	-4.6	<sup>4)</sup>
Unweighted average over countries	41.1	39.9	-10.0	17.9	47.9	-3.9	-5.3	
Standard deviation	12.2	25.3	8.9	5.8	13.1	0.9	1.6	
Coefficient of variation	0.297	0.635	-0.886	0.325	0.274	-0.234	-0.301	

Note: 1990 international Geary-Khamis Dollar. - Germany: If we use Maddison (1995) the percentage change 1932/1929 is -23.5%. - World: Maddison (1995); missing years interpolated with growth of nine countries (Austria, Germany, Belgium, Spain, France, Finland, Sweden, United Kingdom, USA). - <sup>1)</sup> 2Q2009/2Q2008. - <sup>2)</sup> 1Q2009/1Q2008. - <sup>3)</sup> 2Q2009/1Q2008. - <sup>4)</sup> Weighted by GDP.

Source: World: WIFO calculations using OECD (Maddison, 1995: 1900-1949); individual countries: Groningen (1900-2006), WIFO (2006-2009).

If we go further into details, the causes for the crisis and the starting level look rather different. In the USA the crisis started with stock market crashes, after a period of high optimism, speculation and financial innovations (installment, credits etc.). Monetary policy had just tried to dampen speculation in the phase of an already faltering business cycle. In Germany and Austria past growth had been high, but hyperinflation at the start of the twenties was still in mind and production was low as compared to pre-war level. Further repercussions from WWI existed (reparation payments, restrictions as to trade policy); the political system was rather unstable. It looks in some way as there would have been very different economic situations at the start, which were "coordinated" by stock market developments, then by drops in export markets and finally by bank runs and failures. Nevertheless the coefficient of variation in table 1 shows much higher dispersion in the loss of output for the Great Depression.

### *Higher synchronization in the Current Crisis*

If we measure the depth of the current recession in annual rates it is very mild on a world scale. World economic output still increased in 2007 and 2008 (by 5.2% and 3.2% respectively) and is predicted to decrease by 1% to 2% in 2009.<sup>3</sup> The decline is different across countries in 2009, namely it is predicted to be 3% in the USA, 4% in the EU, and 5% in Japan. Among the large countries the strongest decline will probably – besides from Japan – occur in Germany with 5% in 2009. In Germany GDP increased by 1.3% in 2008 and is predicted to be flat in 2010 (with forecasts now changing into a positive range). Within Western Europe specifically high falls occurred in Iceland and Ireland, and within the new member countries in Hungary and the Baltic countries.

Of course the decline is stronger if quarterly data is used. The peak in quarterly seasonally adjusted GDP occurred between 4Q2007 and 3Q2008. Most predictions expect the lowest point to be reached in late 2009 (although in Germany and France seasonally adjusted GDP increased already in 2Q2009) and this might precede some flat quarters to come. If 4Q2009 is the lowest point, the decline in quarterly GDP will have been between 4% in the USA, 5% in the euro area and 7% in Germany. Japan will have a decline of about 8%.<sup>4</sup>

Therefore the decline from peak to trough is much less than in the Great Depression. This is true even if we use annual data for that period (which is an underestimation) and quarterly data for the Current Crisis. The decline occurred however in four to six quarters in the current recession. The drop of real GDP was mild at the beginning in 1929, the cumulative output less large due to its length.

If we take the current forecast for 2010, world output will once again reach its former peak from 2008 since the total fall has been 1.3% in 2009 and growth is predicted to be 1.9% in 2010.<sup>5</sup> The decline is forecast to be larger for the USA and the euro area, and severely hit

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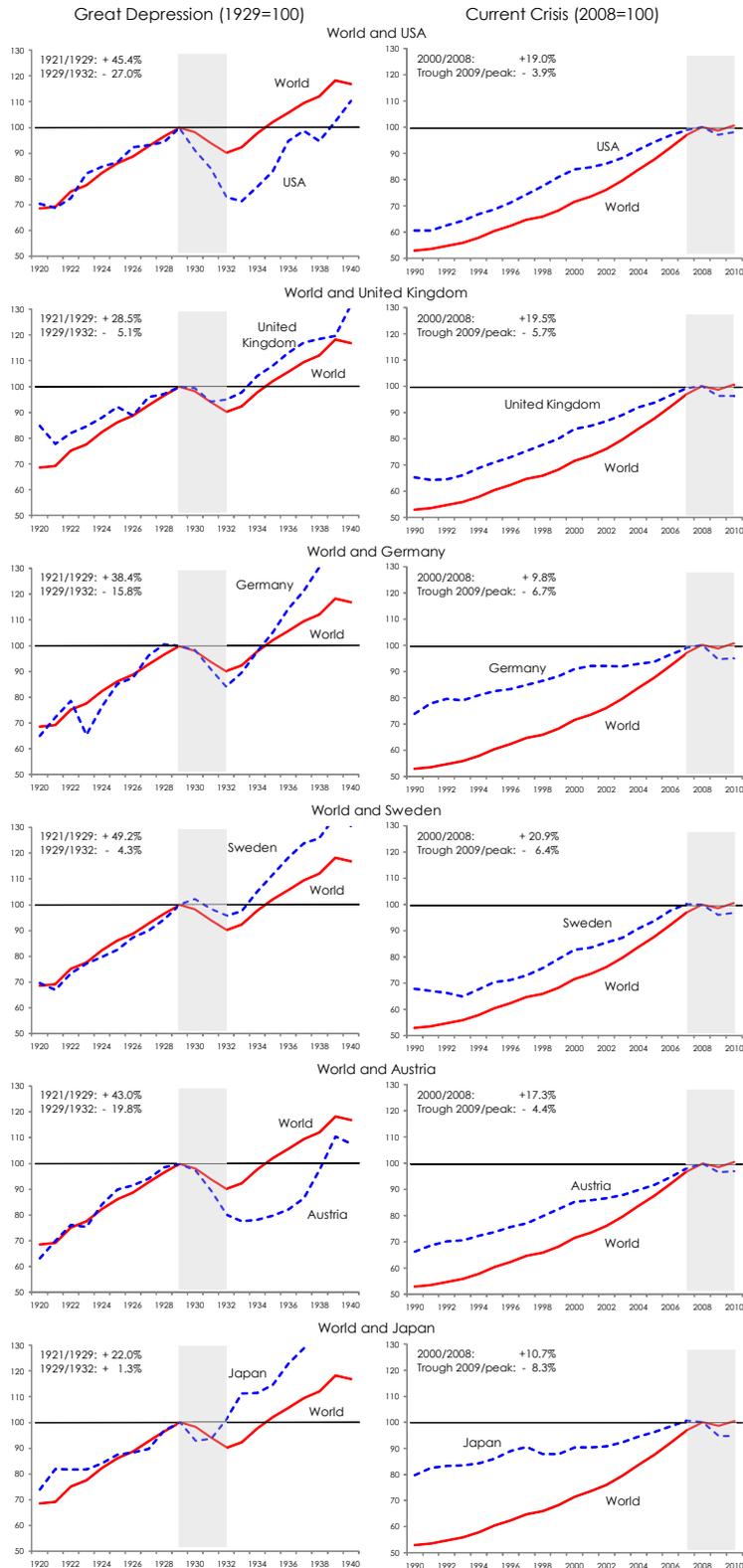
<sup>3</sup> In the September forecast of the IMF the decline is predicted to be 1.3%, a rebound for 2010 is predicted to be 2.9%

<sup>4</sup> Steeper declines occurred in Turkey, Russia, and the Baltic countries – all after extraordinary growth over the past five or ten years.

<sup>5</sup> IMF forecast June, in IMF forecast of September world output is expected to rise by 3% again in 2010.

countries in Eastern Europe and its neighbors (Russia, Ukraine etc.) are far away from this position. On the other hand China and India had no absolute decline at all and are rebounding strongly in 2009. So on a world scale and measured by GDP the extent (and length) of the decline is very different in the two crises.

Figure 1: Macroeconomic growth: boom and decline



## 2.2 Manufacturing – a different story

To our knowledge there is, as yet, no world index of industrial production available for a time span covering both crises. We have constructed an index (see table 2 and figure 2), using existing data on the industrial production in 10 countries, weighting these indices by GDP shares (see table A.3).

Preliminary evidence indicates that

- in the build-up phase of the crises, growth was stronger but more volatile over time in the Great Depression, but exhibited lower differences across countries,
- during the actual crisis the decline was less than in the Great Depression (if the Current Crisis levels in 2009), but the difference between the two crises is much less than in GDP.
- differences across countries are much less in the Current Crisis as regards the decline of manufacturing (at least if we stick to western European countries and the USA);
- If we use monthly data the speed of decline in the first phase of the downturn in the Current Crisis seems to have been similar to, if not stronger (in some countries) than, in the Great depression.

Table 2: Comparison of two crises: industrial production

	Great Depression		Current Crisis			
	1929/1921	1932/1929	Peak/2000	Peak/1990	2009 forecast <sup>1)</sup>	2Q2009/peak 2008
	Annual data			Quarterly data		
	Percentage change					
Austria	52.1 <sup>**)</sup>	-39.0	33.0 <sup>1)</sup>	77.2	-15.3	-20.5
Germany	51.8	-41.2	21.2 <sup>1)</sup>	33.5	-21.8	-24.3
Belgium	113.0	-36.5	12.3 <sup>2)</sup>	29.8	-19.0	-16.9 <sup>3)</sup>
Spain	48.1	-6.4	8.5 <sup>2)</sup>	23.8	-22.7	-22.8 <sup>3)</sup>
France	127.8	-26.0	2.4 <sup>2)</sup>	13.4	-18.2	-24.6
Finland	134.6	-13.1	25.4 <sup>2)</sup>	108.6	-24.3	-28.2 <sup>3)</sup>
Sweden	94.1	-10.6	19.1 <sup>2)</sup>	73.9	-22.3	-26.9 <sup>3)</sup>
United Kingdom	57.3	-10.8	0.9 <sup>2)</sup>	7.1	-12.9	-18.4
USA	87.9	-46.0	7.3 <sup>2)</sup>	56.6	-13.0	-15.7
Japan	50.0	-2.6	8.9 <sup>2)</sup>	4.7	-32.2	-32.1 <sup>3)</sup>
"World"	72.2	-29.5	8.0	34.3	-16.5	-18.9
Unweighted average over countries:	81.7	-23.2	13.9	42.9	-20.2	-23.0
Standard deviation	34.3	16.3	10.4	34.8	5.9	5.2
Coefficient of variation	0.420	-0.703	0.750	0.811	-0.290	-0.227

\*1) January to May 2009 compared to January to May 2008. – \*\*1) 1929/1923. – 1) Peak=2008. – 2) Peak=2007. – 3) 1Q2009/peak 2008. – 4) Weighted by GDP. – "World": Countries in table weighted by GDP.

Source: WIFO calculations using Mitchell, IFS, ST.AT.

### *The Great Depression*

The development of industrial production in the USA paints a similar picture to that of GDP: strong growth in both pre-crisis periods: +72% growth between 1921 and 1929 and +34% from 1990 to the peak in 2007/2008. The development was very cyclical in the period preceding the Great Depression with absolute declines in 1922 and 1925 in US manufacturing. By contrast in the Current Crisis there was only a small dip after 2000; otherwise development was steady in the phase of “great moderation”. However, in this phase US manufacturing dramatically lost market shares and the value added of manufacturing fell to 12% of GDP (Aiginger – Sieber, 2006).

The USA experienced the most severe decline of all countries (see table 2) in the Great Depression, nearly one half of previous output (-46%). Germany and Austria came close to this (about 40%). In Sweden, United Kingdom and Spain industrial production only declined by less than 11% (cumulated in three years). Development in Germany shows strong but cyclical growth.<sup>6</sup> Highest pre-depression growth was experienced in Finland, France and Belgium. In all these countries production had more than doubled.

Regaining pre-crisis levels of manufacturing output took between seven years in Germany and five years in the United Kingdom, but eight years in the USA. France did not regain its peak level before the fifties.

### *The Current Crisis*

Finland and Austria had the highest growth in the build-up to the Current Crisis. Spain, France, and the United Kingdom only had single-digit cumulated growth rates over nearly 20 years. In the Current Crisis we first look at annual data – using the decline between January and May 2009 as a forecast for the annual decline in 2009 and assuming that in 2010 there will be no further decline in manufacturing production.

On this basis the average decline in manufacturing using annual data amounts to 20%. The USA see the least decline, maybe as a result of previous deindustrialization, namely 13%. The highest decline occurred in Sweden and Finland (22% and 24% respectively), as countries which had a stable or increasing share of industrial output (against the trend for industrialized countries). On the basis of **quarterly** data, the average decrease in the reported countries was 23% (between 2Q2009 and the peak in different quarters of 2008).

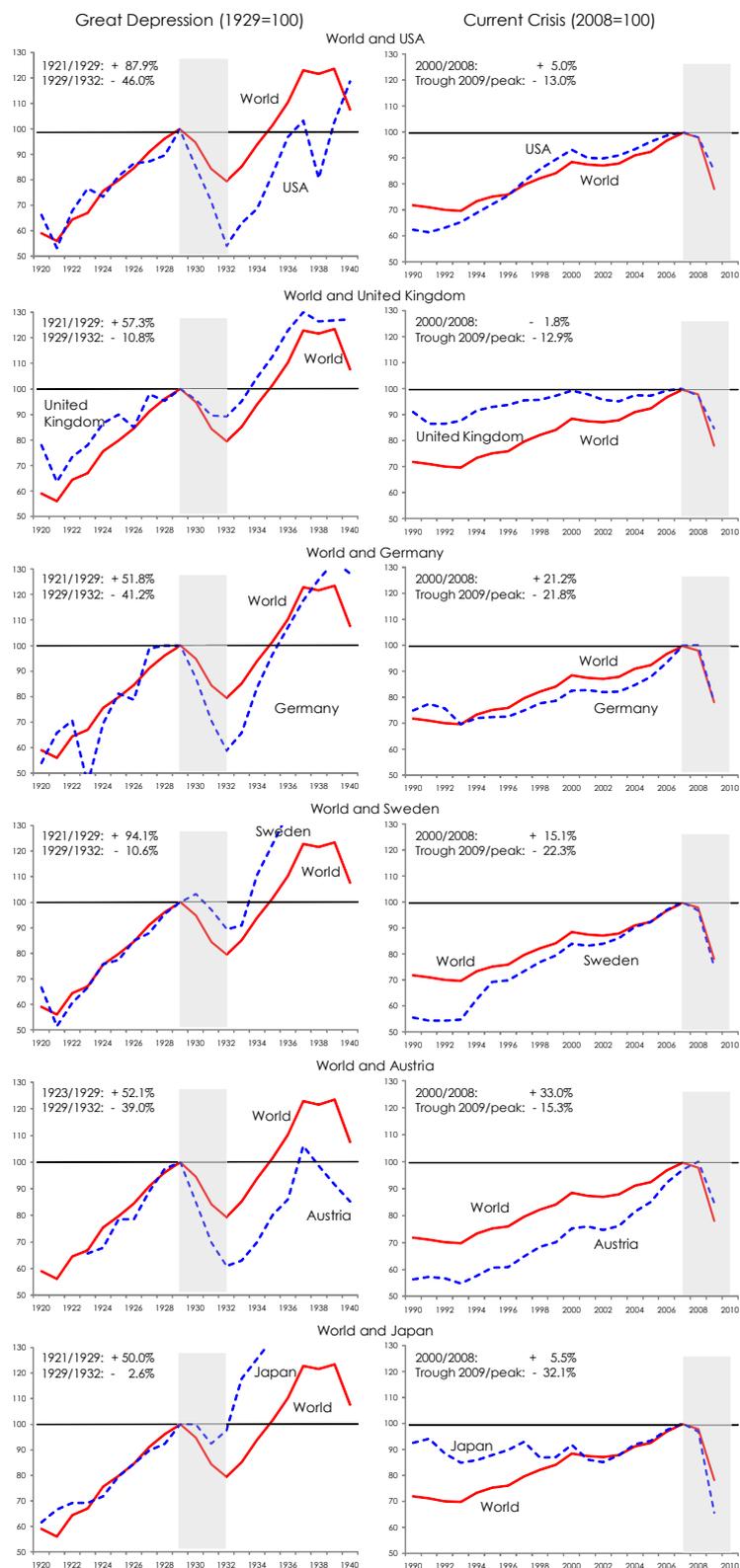
In the Current Crisis, as opposed to in the Great Depression, the decline was much more synchronized: the coefficient of variation is 0.2 for quarterly as well as annual data, nearly one third of that of the Great Depression which was 0.7. This reflects globalized markets.<sup>7</sup>

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<sup>6</sup> In both periods growth rates in German manufacturing over the whole pre-depression period were lower than the average of the countries reported in table 2.

<sup>7</sup> Cross country variations in growth were lower in the build-up phase of the Great Depression (average growth 82%, standard deviation 34, coefficient of variation 0.42), than in the build-up of the Current Crisis (43%, 35, 0.81 respectively).

Figure 2: Industrial production: boom and decline



## Summary

For manufacturing the current decline, if it really does stop in 2009, has been milder than in the Great Depression, although the difference is less for manufacturing than for total GDP. The decline occurred over a shorter period of time – four to six quarters – so that the speed of decline at the start of the crisis had been as fast, and in some countries faster, than in the Great Depression, definitely faster in August to October 2008.<sup>8</sup>

### 2.3 Exports – larger decline for a few months

Exports (at nominal rates, national currencies) increased in industrialized countries by more than 50% in the both build-up periods of the Great Depression, but quadrupled in the build-up phase of the Current Crisis (table 3, figure 3). Cross country differences were enormous in the decade preceding the Great Depression (between a near stagnation value of 4% in the United Kingdom and more than twofold increase in France). Cross country export growth was more similar between 1990 and 2008 (with the lowest growth in France and the highest in Sweden and Austria).

In the Great Depression the drop in exports amounted to 43% (annual data 1932/29), with the greatest decline in the USA and the smallest decline in Germany). In the Current Crisis the average decline in industrialized countries is 25%, in the world 30%, and across all countries between 15% and 40% of exports were lost (Finland suffered the strongest drop).

The results for exports are, as expected, similar to those for industrial production.<sup>9</sup> The drop in exports is less for industrialized countries than in the Great Depression (and overestimated since we use quarterly data in the Current Crisis). The difference between the depth in the Great Depression and the decline in the Current Crisis for exports is more pronounced than for industrial output. The larger difference between exports and the smaller as for manufacturing seems to be the effect of using nominal data for exports and real data for production (as deflation was strong in the Great Depression, while export prices are more stable in the Current Crisis). The story is worse for European enlargement countries and emerging economies like Russia and the Ukraine, but better for China and India.

Further, the decline in exports happened in a shorter time period (six quarters now as opposed to three years in the Great Depression).<sup>10</sup> Using monthly data indicates that the

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<sup>8</sup> This evidence is reflected also in *Eichengreen - O'Rourke (2009)* which shows that in the first 12 months of the crisis (calculated to start in June 1929 and April 2008, respectively) on the world scale the decline was surprisingly similar in both depressions (and stronger between April 2008 and October 2008). Data available in September 2009, shows the decline to have been less in the USA, but stronger in Italy and France. Currently we do not have monthly data for the thirties in the WIFO Long-term Database.

<sup>9</sup> Although industrial production is in real terms and exports in nominal value.

<sup>10</sup> The decline of real exports is much lower, export prices are estimated to decline by about 15% in 2009.

drop of exports between September 2008 and February 2009 was stronger in this recession. The lines crossed in July 2009.<sup>11</sup>

Table 3: Comparison of two crises: nominal export growth (in national currency)

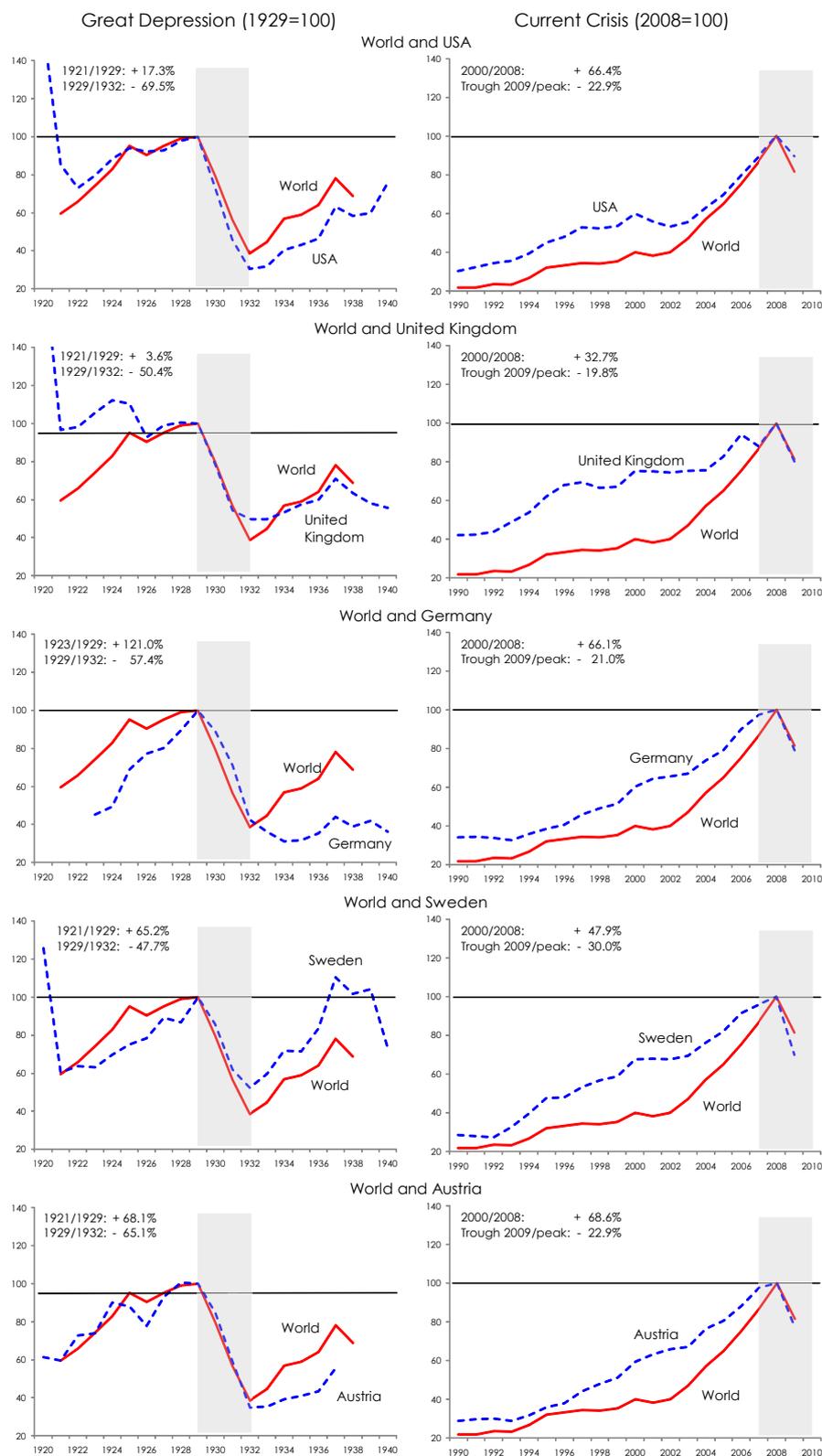
	Great Depression		Current Crisis			
	1929/1921	1932/1929	Peak/2000	Peak/1990	2009 forecast	1Q2009/ peak 2008 <sup>2)</sup>
	Annual data				Quarterly data	
	Percentage change					
Austria	68.1	-41.0	68.6	247.0	-22.9	-26.2
Germany	45.3 <sup>*)</sup>	-28.9	66.1	193.8	-21.0	-22.9
Belgium						-24.2
Spain						-25.7
France	153.6	-39.3	25.6	128.7	-21.1	-21.5
Finland						-40.7
Sweden	65.2	-38.1	47.9	249.7	-30.0	-20.7
United Kingdom	3.6	-45.8	32.7	138.3	-19.8	-14.8 <sup>3)</sup>
USA	17.3	-54.0	66.4	230.6	-10.6	-28.3
Japan						
World	67.5	-43.3	150.0	359.2	-18.4	-30.0 <sup>4)</sup>
Unweighted average over countries	58.8	-41.2	51.2	198.0	-20.9	-25.0
Standard deviation	53.0	8.4	18.8	53.9	6.2	7.1
Coefficient of variation	0.901	-0.203	0.367	0.272	-0.298	-0.282

\*) 1929/1924. -<sup>1)</sup> 1Q2009 compared to 1Q2008. - <sup>2)</sup> 2Q2008. - <sup>3)</sup> 3Q2008. - <sup>4)</sup> -36% in \$, -23% in €.

Source: WIFO calculations using Mitchell, IFS, WTO.

<sup>11</sup> Interestingly in the Great Depression world trade had continued to increase up to December 1929 (indicating that the Great Depression has not been triggered by a breakdown of world trade (see Eichengreen – O'Rourke, 2009). They start their figure with April 1929 which may be problematic since trade increased up to December.

Figure 3: Export growth: boom and decline



## 2.4 The stock market

To analyze the development of the stock market we use quarterly data<sup>12</sup>. The S&P index is our starting point to describe development in the USA since it is the best documented index, for Germany we use the DAX and its predecessor, for the United Kingdom the FTSE and its predecessor, for Japan the Nikkei and its predecessor. We construct a synthetic "world" index by weighing the indices according to the GDP share of each country in world GDP (without Japan).

Table 4: Comparison of two crises: stock markets (share prices)

	Great Depression				Current Crisis			
	Peak 1929/ trough 1921	Trough 1932/ peak 1929	Peak 1932/ trough 1930 <sup>1)</sup>	Peak 2007/ peak 2000	Peak 2007/ trough 2003	Trough 2008/ peak 2007	2Q2009/ trough 2008	August 2009/ trough 2009 <sup>1)</sup>
Quarterly data; percentage change								
Austria		-45.6	4.7	330.9	318.6	-65.2	19.9	69.0
Germany	-83.9	-62.1	3.5	14.1	237.7	-51.7	0.9	44.7
Belgium								
Spain								
France	335.3	-56.2	3.2	-6.1	131.2	-53.6	-2.4	36.7
Finland								
Sweden								
United Kingdom		-49.3	-4.1	72.6	191.1	-44.7	16.6	45.8
USA	377.9	-84.8	11.9	3.1	78.8	-50.0	5.1	30.7
Japan		-34.2		15.2	127.5	-55.3	12.4	35.7
"World"		-68.9	5.0	29.3	130.1	-47.7	9.9	32.7
Unweighted average over countries	209.8	-59.6		82.9	191.5	-53.0	8.0	45.4
Standard deviation	255.2	15.4		142.0	93.0	7.5	9.8	14.6
Coefficient of variation	1.217	-0.259		1.712	0.486	-0.142	1.224	0.321

<sup>1)</sup> Rebounds after the trough (no rebound in the United Kingdom). - "World": USA, United Kingdom, Germany and France weighted by GDP.

Source: WIFO calculations using <http://www.econ.yale.edu/~shiller/data.htm> for the USA; <http://stooq.de/q/d/?s=nikkei&c=0&i=m> for Japan; NBER Macrohistory Database; <http://finance.yahoo.com/q/hp?s=^CDAXX>, Gregor Gielen (1960-1979) for Germany; NBER Macrohistory Database; <http://stooq.de/q/d/?s=cac40>, IMF for France; - League of Nations; <http://stooq.de/q/d/?s=ftse250&c=0&i=m>, IMF for the United Kingdom; Monatsberichte des Österreichischen Institutes für Konjunkturforschung; <http://stooq.de/q/d/?s=atx&c=0&i=m>, IMF for Austria.

### Build-up period and decline

The build-up periods have some features in common and some are different.

In the USA the stock market quadrupled between 1921 (2Q) and its peak in 1929 (3Q). There had been no bust period in these nine years, only a few quarters with stagnation or relatively

<sup>12</sup> End of the quarter data; even monthly data was available, but we stick to quarterly data, which we think to be the best middle path between annual data which can hide important developments and monthly data which exhibit a lot of noise.

small declines (at least small for markets that are volatile). The increase accelerated, and came near to 50% in the four quarters preceding the peak.

In the Current Crisis the last ten years were more turbulent. Stock market prices had reached their peak in 2Q2001, and then declined by 30% until 1Q2003. The US stock market then recovered and exceeded its previous peak of 2000 by 6% in 2Q2007. In the period before 2000 there had been a strong and long increase and indeed a quadrupling in value since 1990.

In the Great Depression the Standard & Poor's index dropped from 100 (3Q1929) to 15 (2Q1932). This happened over a period of only eleven quarters. Then a temporary peak came in 1936/37, but the previous peak was reached only in 3Q1954. In the Current Crisis the maximum decline is 50% from the peak in 2Q2007. The minimum level was reached in 1Q2009, seven quarters after the peak. Since then the S&P index recovered by 20% (on a quarterly basis; somewhat more strongly for monthly data: 30%).

### *Country differences*

In Japan the fall of stock prices was relatively mild in the Great Depression (-34%). The development of the Japanese stock market, as reflected by the Nikkei, is very different over the last 20 years to other countries. It quadrupled between 3Q1982 and 4Q1989, and returned with a lot of short-term volatility to its 1983 value at the beginning of 2002 and 2003. It then doubled reaching a peak in 2Q2007, dropped to the 1983 level again and recovered slightly during 2009. In short it is very volatile and does not show a trend. Japan is the only country, other than Austria, where stock prices did decrease more strongly in the Current Crisis.<sup>13</sup>

Germany did experience a bumpy increase before the Great Depression, with a strong decline between 1Q1924 and 4Q1925. Then the index doubled reaching its peak in 2Q1928. Between this peak and 2Q1932 it declined to less than 30% of its maximum. It did not recover before 4Q1940 where the series is interrupted.

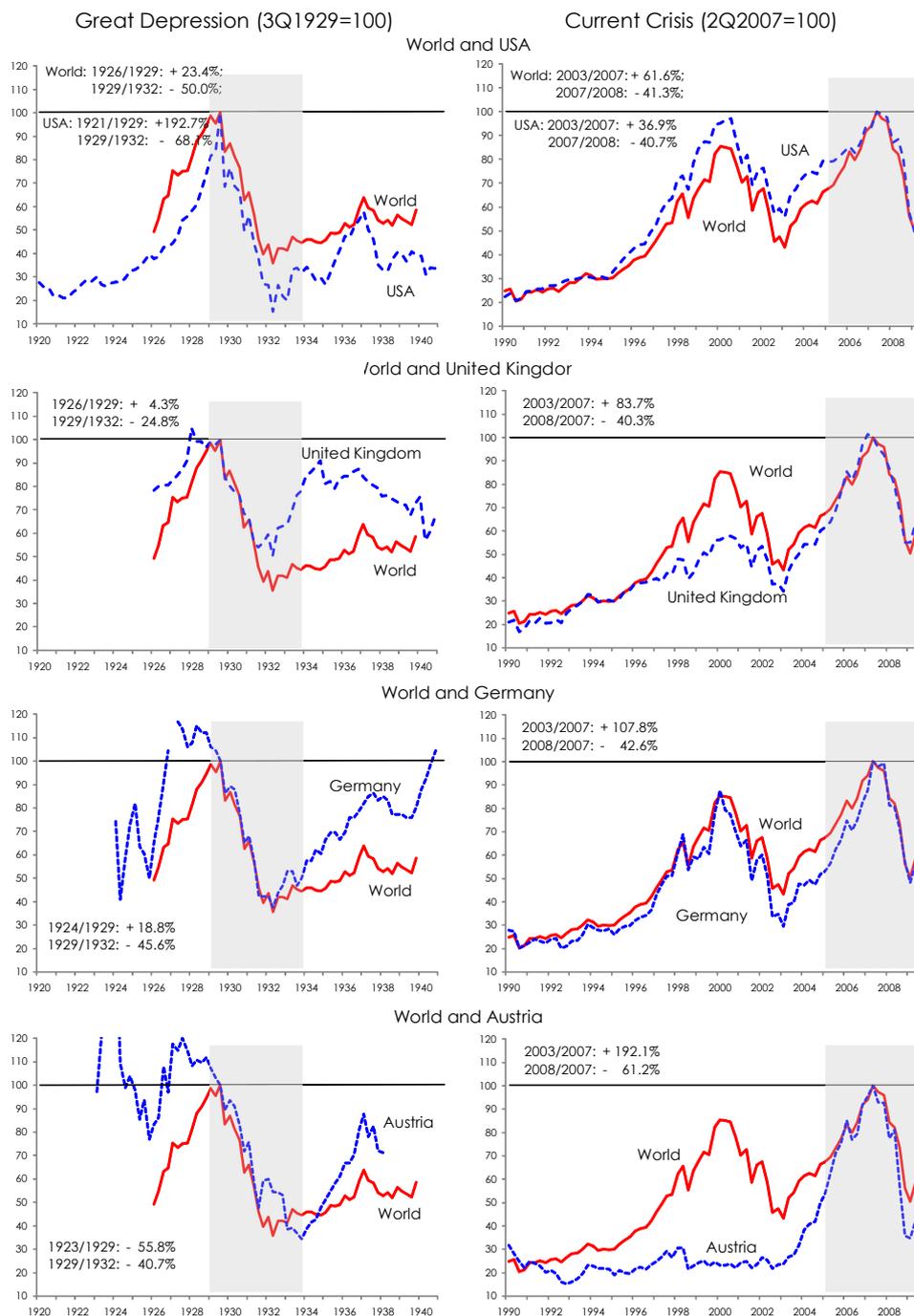
The DAX tripled between 1990 and 1Q2000, fell to less than half of this peak value in 1Q2003, reached a new maximum 14% above the former peak in 2Q2007. It fell to 48% of the 2Q2007 value in 1Q2009 and since then recovered by 19% on a quarterly basis and by 45% on a monthly basis (up to end of August 2009).

The UK FTSE more than tripled between 1990 and 3Q2000, then fell by 40%, and reached a maximum value in 1Q2007 which was much higher than its earlier peak (+75%). Then the FTSE fell to 4Q2008 by 45% from which point it has then increased again by 17%.

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<sup>13</sup> If we weight together all the six indices in table 4 (by GDP) the stock prices decline by 69% between 1929 and 1932 and by 44% in the Current Crisis. Stock prices rebounded by 45% up to August 2009 (unweighted average).

Figure 4: Stock market: boom and decline



The French CAC and its predecessor more than quadrupled up to 1929 (from 1Q1919), then declined by 60%, before starting to recover without reaching its previous peak before WWII. It also more than quadrupled in the run up to 2000, then lost more than half of its value in the wake of the dot-com crisis. It did not exceed the 2000 peak in 2Q2007 and even fell from the lower peak by another 54% until 1Q2009.

Table 5: Comparison of two crises: employment

	Great Depression				2008	Current Crisis			Trough 2009/ peak 2008	
	1929	1929/1921	1929/1912	1932/1929		2008/2000	2008/1990	2009 forecast		
	Annual data					Annual data				Quarterly data
	1,000 persons	Percentage change		1,000 persons	Percentage change					
Austria	2,032	-6.0	-10.9	-17.2	3,420	9.2	16.8	-2.7	-1.0	<sup>2)</sup>
Germany				-28.9	38,880	7.3	7.4	-1.5	-0.8	<sup>3)</sup>
Belgium										
Spain										
France				-19.1	25,914	7.2	14.5	-2.2	-0.4	<sup>4)</sup>
Finland										
Sweden					4,603	10.7	2.7	-2.4	-2.7	<sup>5)</sup>
United Kingdom	19,479	8.8	-2.1	-2.3	29,448	7.1	9.6	-2.4	-1.1	<sup>6)</sup>
USA	47,600	28.3	31.5	-13.7	145,363	6.2	22.4	-3.5	-3.9	<sup>7)</sup>
Japan								-3.0	-2.4	<sup>8)</sup>
Sum of countries	69,111	10.4	6.2	-16.3	247,627	7.9	12.2	-2.5	-1.6	
Standard deviation	22,991	17.2	22.4	9.6	52,903	1.7	7.1	0.7	1.4	
Coefficient of variation	0.998	1.658	3.616	-0.590	1.282	0.211	0.580	-0.267	-0.824	

1) 1932/1930. – 2) 1Q2009/4Q2008. – 3) 1Q2009/1Q2008. – 4) 2Q2009/4Q2008. – 5) 2Q2009/3Q2008. – 6) 1Q2009/2Q2008. – 7) 2Q2009/4Q2007. – 8) 2Q2009/2Q2007.

Source: WIFO calculations using The Economist; Economic Statistics 1900 -1983, 1985 and OECD; Eurostat.

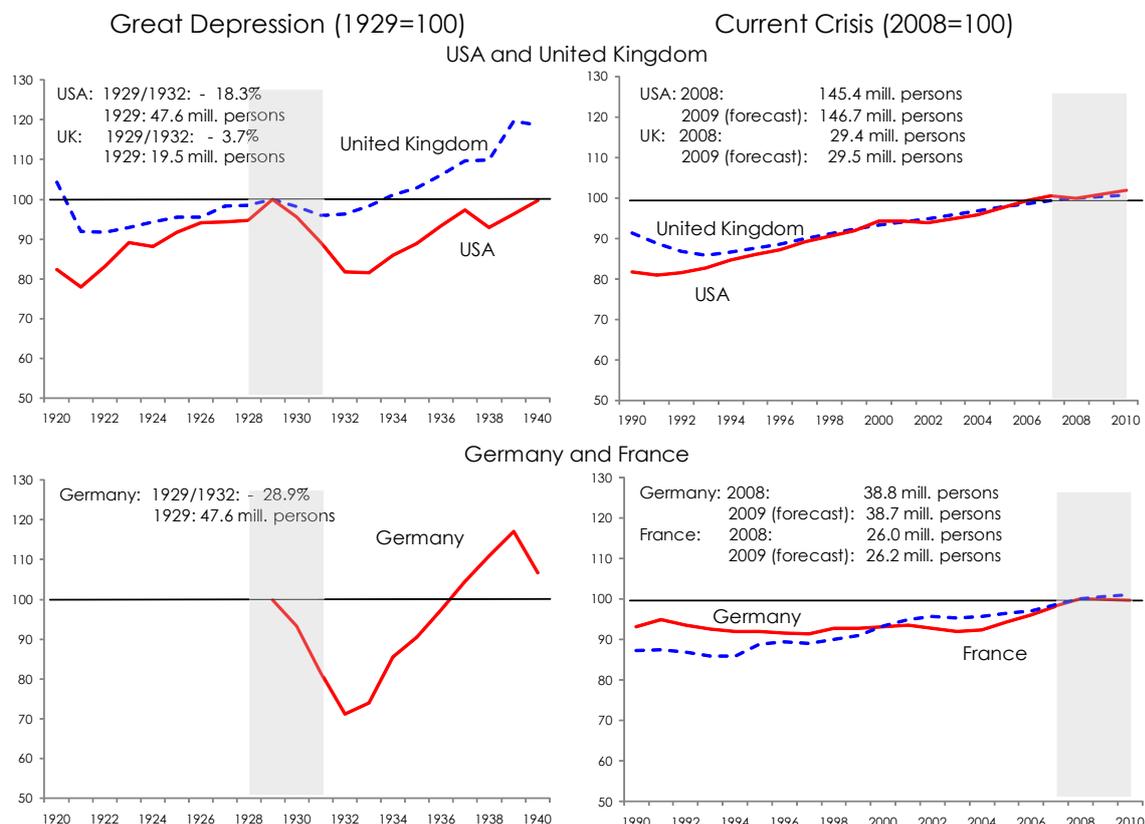
In Austria the decline of the stock market in the Current Crisis has actually been steeper than between 1929 and 1932, namely 65% and 46% respectively (see table 4). This is due to several facts which are specific to Austria: the decline in the stock market was rather mild in the Great Depression (which is surprising since Austria was a country severely hit in the Great Depression). Secondly, Austria had an extreme boom between 2000 and 2007 (the ATX quadrupled – in comparison with a twofold increase in the unweighted average of other countries). Thirdly, the debate about the engagement of Austrian firms in the East led to heavy disinvestment during the Current Crisis. However, Austria does have the highest rebound level since February 2009. These variations to the general trends demonstrate a rather thin market and a lack of specific information for worldwide investors about the Austrian markets (substituted by rather general assessments of country risks).

If we weight together the US S&P, the German DAX, the French CAC and the UK FTSE 250, we get a steep decline for this composite "World Index". In the Great Depression it declined by 69% and in the Current Crisis only by 48% (on the basis of quarterly data). On an individual country basis the decline in the Current Crisis is actually very similar in the four countries (in each country it falls between 45% and 54%).

The peak in 2007 had been 29% higher than the 2000 peak, however with large differences between countries (lower in France, higher in the United Kingdom). If the peak in 2007 is compared to the "interim trough" in 2003 (after the dot-com crisis) stock prices more than doubled in the composite index. The rebound since the lowest level (February 2009, now

measured on a monthly scale) has been 33% on average – again very similar across the four countries.<sup>14</sup>

Figure 5: Employment: boom and decline



This finding is somewhat at odds with the results of *Eichengreen – O'Rourke (2009)*. They used a world stock market index (citing the Global Financial Database), showing that the decline was faster in the first eleven months – starting in April 2008. Between month 5 to 11 after the start of their figure the decline was specifically fast (if the start is defined to be April 2008). What our data confirm is that in the six months between August 2008 and February 2009 – specifically the months following the Lehman Brothers' bankruptcy and the ensuing breakdown of the credit markets – the decline of stock prices had been very steep, maybe steeper than in the Great Depression. What is not reflected in the data is the assertion "that the proportionate decline in stock market wealth remains even greater than that at the comparative stage of Great Depression" (*Eichengreen – O'Rourke*, updated September, 1st 2009). If the figure in *Eichengreen – O'Rourke* for the Great Depression had started in October

<sup>14</sup> It is interesting to compare this rebound between February and August 2009 to the largest rebounds after 1929. On the monthly basis the lowest point of the composite index occurred in November 1929, the index started to rise again in December, but only by 13%, and then started to fall again. For the USA the rebound has amounted to 24% and occurred from November 1929 to May 1930. Therefore we cannot see any rebound in the Great Depression as strong as the rebound of 2009.

1929 instead of April this would not be the case. As far as the depth of the Current Crisis is concerned the data in this paper does not differ so much from that in *Eichengreen's – O'Rourke's* results (-50%). The difference to the Great Depression is the length of the decline in the Current Crisis. This ultimately depends on whether we have already reached the trough or whether a second wave might still come.<sup>15</sup>

Table 6: Comparison of two crises: unemployment rate

	Great Depression					Current Crisis						
	1921	1929	1932	1934	1932/1929	2000	2008	2009	2010	2010/2008	2009 trough/ peak 2008	
	Unemployment rate				Annual data Absolute change	Unemployment rate				Quarterly data Absolute change		
Austria	1.1	12.2	24.7	25.5	12.5	5.8	5.8	6.0	7.1	1.3	0.8	<sup>1)</sup>
Germany	2.8	9.3	30.1	14.9	20.8	7.8	7.5	8.6	10.4	2.9	0.3	<sup>2)</sup>
Belgium												
Spain												
France		0.1	4.0	5.1	3.9	8.6	7.4	9.6	10.7	3.3	2.0	<sup>3)</sup>
Finland												
Sweden						4.7	6.2	8.4	10.4	4.2	2.4	<sup>4)</sup>
United Kingdom	11.3	7.3	15.6	11.9	8.3	5.5	5.7	8.2	9.4	3.7	-5.2	<sup>5)</sup>
USA	11.7	3.2	23.6	21.7	20.4	4.0	5.8	8.9	10.2	4.4	4.8	<sup>6)</sup>
Japan							3.9	4.9	5.9	2.0	1.4	<sup>7)</sup>
"World"	6.6	3.0	15.4	13.0	12.4	3.7	5.0	7.1	8.2	3.2	2.3	
Unweighted average over countries	6.7	6.4	19.6	15.8	13.2	6.1	6.0	7.8	9.2	3.1	0.9	
Standard deviation	5.6	4.8	10.1	8.0	7.4	1.8	1.2	1.7	1.9	1.2	3.1	
Coefficient of variation	0.831	0.747	0.517	0.509	0.564	0.294	0.200	0.217	0.207	0.370	3.305	

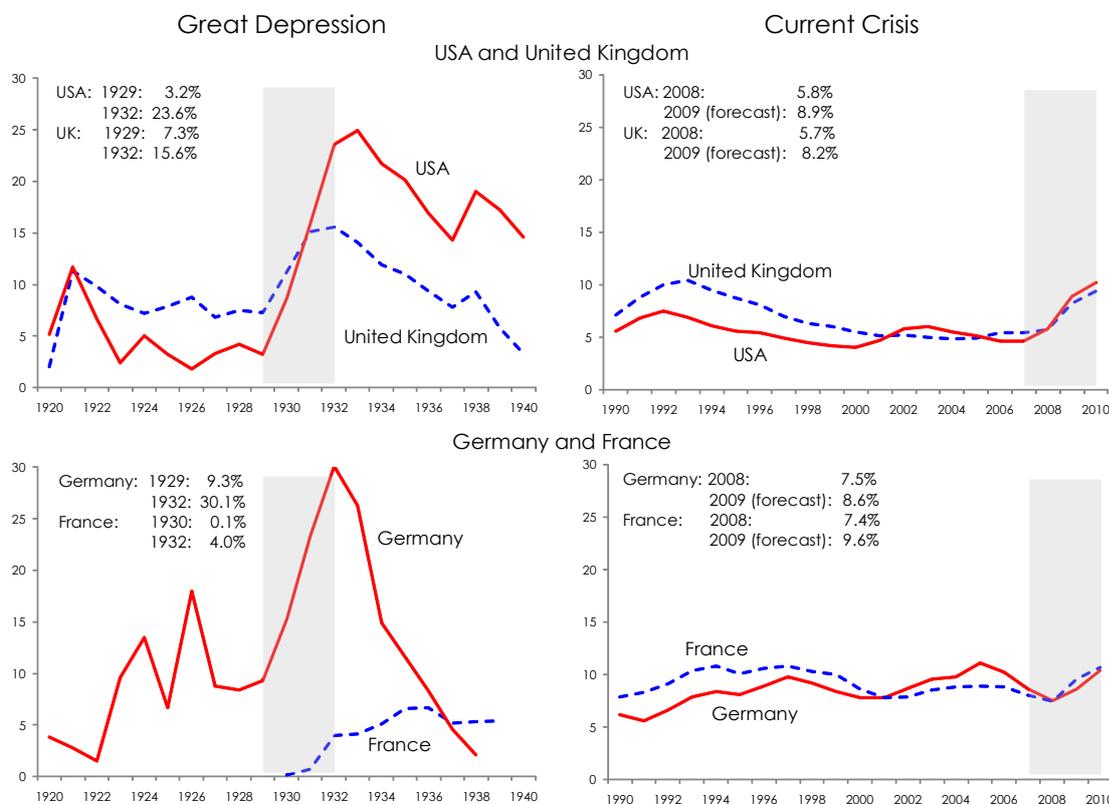
Note: "World": Weighted by GDP. – <sup>1)</sup> 1Q2009/2Q2008. – <sup>2)</sup> 1Q2009/3Q2008. – <sup>3)</sup> 2Q2009/1Q2008. – <sup>4)</sup> 2Q2009/3Q2007. – <sup>5)</sup> 1Q2009/1Q2008. – <sup>6)</sup> 2Q2009/4Q2006. – <sup>7)</sup> 2Q2009/1Q2008.

Source: WIFO calculations using The Economist; Economic Statistics 1900 -1983, 1985; OECD; Eurostat.

<sup>15</sup> A smaller issue is that the difference to the Standard and Poor's data is that the decline in *Eichengreen – O'Rourke* (2009) is only from 100 to 32, while in S&P it is from 100 to 25. Nevertheless if the decline has definitely stopped in the first quarters of 2009, it is much less than at that time (albeit stronger in some months).

Why *Eichengreen – O'Rourke* started in June 1929, not in September is not clear, between June and September the stock market index increased. *Eichengreen – O'Rourke* used data from the Global Financial Database, but do not specify which indices or countries are included in the "world".

Figure 6: Unemployment rate: boom and decline



### 3. Policy response

#### 3.1 Monetary policy: mildly, restrictive vs. aggressively, expansionary

##### *Monetary policy and its constraints in the Great Depression*

This is not the place to give evidence on the causality between monetary policy and the depression, neither whether restrictive monetary policy “caused” the Great Depression, nor whether monetary policy was too loose following the dot-com crisis in 2003. Here we just present stylized facts about monetary variables, mainly following *Bernanke (2004)* and *Eichengreen – Sachs (1985)* for the Great Depression (thus concentrating to some degree unduly on the US policy) and the *OECD (2009A)* for the Current Crisis. Additionally we present stylized facts for inflation, interest rates and money supply for the two crises.

*Friedman – Schwartz (1963)* argue that the causal link for the Great Depression ran from monetary policy to declining prices and output, thus giving poor policy making the blame for the start of the Great Depression, which was then aggravated due to the breakdown of the banking system. Other authors stress the strong decline in US consumption in 1930 (*Temin, 1976*). *Galbraith (1954)* names “bad distribution of income, ... bad corporate structure, ... bad banking structure ... dubious state of foreign balance ... and poor state of economic

intelligence". A large part of newer research stresses the role that the gold standard had played (Eichengreen – O'Rourke, 2009, Bernanke, 2004). The gold standard was re-enacted after WWI in most countries.<sup>16</sup> Under the gold standard each country had to defend its currency value and the money supply could not increase independently from the gold reserves (for given multipliers). The important role of this, with hindsight, flawed international monetary system prevented an active anti cyclical monetary policy. The importance of the gold standard for the length of the crisis is highlighted by the fact that "countries abandoning the gold standard were able to reflate their money supply and price levels and did so with some delay, while countries remaining on the gold were forced into further deflation" (Bernanke, 2004, p. 8). Countries with gold inflow tried to sterilize it, in countries with gold outflow the monetary base declined nearly automatically. Thus it was not the gold standard per se but the restrictive asymmetric handling of the regime, which made the Great Depression longer.

Table 7: Comparison of two crises: inflation/deflation (consumer prices)

	Great Depression							1932/1929 Percentage change	Current Crisis Forecast				
	1927	1928	1929	1930	1931	1932	1933		2006	2007	2008	2009	2Q2009/3Q2008
	Change over previous year								Change over previous year			Quarterly change	
Austria	2.2	2.1	3.1	0.0	-5.0	2.1	-2.1	-3.0	1.5	2.2	3.2	1.1	0.0
Germany	4.3	3.1	1.0	-4.0	-8.3	-11.4	-1.3	-22.0	1.9	2.8	2.6	0.7	-0.6
Belgium												1.2	-0.7
Spain												1.4	-0.7
France	4.4	0.0	6.4	1.0	-4.0	-9.3	-3.4	-12.0	2.5	2.5	2.8	0.9	-0.3
Finland												1.1	1.2
Sweden	-1.2	0.6	-1.2	-3.6	-3.1	-1.3	-2.6	-7.7	1.3	2.0	3.4	0.7	1.4
United Kingdom	-2.9	-1.0	-1.0	-4.0	-6.3	-2.2	-3.4	-12.0	-1.3	1.4	4.0	1.3	0.8
USA	-1.7	-1.1	0.0	-2.9	-8.3	-10.4	-5.1	-20.2	0.2	1.5	3.9	0.3	-2.3
Japan												-0.5	-1.9
"World" <sup>4)</sup>	-0.1	-0.2	0.6	-2.2	-5.8	-6.9	-3.1	-14.1	0.4	1.5	2.8	0.5	-1.1
Unweighted average over countries	0.9	0.6	1.4	-2.2	-5.8	-5.4	-3.0	-12.8	1.0	2.1	3.3	1.0	-0.1
Standard deviation	3.2	1.7	2.9	2.2	2.2	5.6	1.3	7.2	1.4	0.5	0.5	0.4	1.2
Coefficient of variation	3.667	2.766	2.094	-0.975	-0.379	-1.043	-0.443	-0.565	1.365	0.260	0.163	0.362	-9.952

Note: "World": Weighted by GDP.

Source: WIFO calculations using Mitchell, Eurostat.

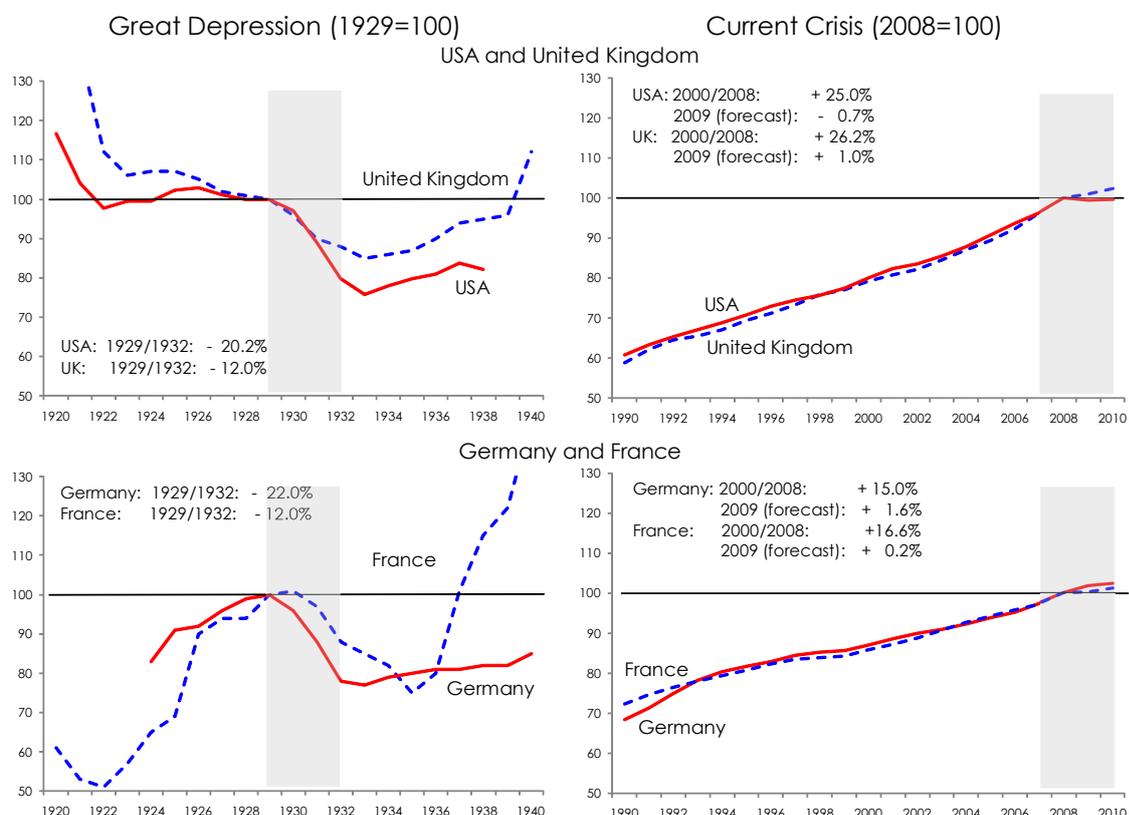
As for the start of the Great Depression, the Fed turned contractionary in 1928 to curb stock market speculation. The US monetary base (notes in circulation plus reserves of banks) fell by 6% between June 1928 and June 1930 despite an inflow of gold into the USA. Gold also rushed into France (after the Poincaré stabilization). This reduced the amount of gold available in other countries and forced them into a tight monetary policy.

<sup>16</sup> With exception of Spain which could not do it due to internal turmoil.

The second stage of the crisis occurred in 1931 due to the breakdown of banks ("Creditanstalt" in Austria etc.) which led to waves of bank crises (first in Germany) and then to exchange rate crisis, devaluations etc. The monetary base declined even further.

Interest rates remained constant in nominal terms, but on levels of 5.3% and 5.4% in the first three years of the crisis, then falling slightly to about 4% in the next four years. Due to the falling price levels for goods (deflation), ex post real rates amounted to 17% in 1929/1930 (Bernanke, 2004). These extraordinary high rates affected investment and consumption. Real rates then dropped to 9.4%, 6.5% and 2.8%. At such interest rates, together with declining demand, excess capacities and a high degree of uncertainty, it is clear that investment and consumption would decline. Debt inflation, falling assets and commodity prices increased the burden on all debtors, forcing them to sell assets etc.

Figure 7: Inflation: boom and decline



*Difference across countries according to Bernanke*

Bernanke describes the development of monetary supply using M1, the multiplier (M1 relative to monetary base), the relationship between monetary base and total reserves (the coverage ratio determined inter alia by statutory requirements) and the ratio of currency reserves to gold reserves.

In the USA M1 decreased by 25% between 1929 and 1933.<sup>17</sup> It later only reached its pre-depression level in 1935. The multiplier decreased even a little more, and did not recover before 1936. Monetary base relative to reserves was more or less stable with a significant drop in 1934 from 118 to 66. The ratio of reserves to gold was stable.

In the United Kingdom money supply first rose slightly (+ 2.5%), and dropped in 1931 by 10%. Then it recovered, but increased strongly as late as 1935 and 1936. The multiplier did not fall (in fact increased slightly). Monetary base to reserves was stable in 1930, and then it increased, finally dropping from 117 to 75% (1933) and then further up to 56% (1936).

In France the situation is different. Money supply increased by more than 10% in 1930 and 1931, but then never reached this level again until 1936. The multiplier dropped by a cumulative 10% in 1929/31 and then remained constant. Monetary base to reserves was more or less stable (the coverage rate increases strongly in 1935/36). Reserves to gold declined strongly in each year until 1932 and then remained more or less constant.

Using international comparable data (see table 8) we now outline the relationship between money supply (M1) and nominal GDP, as well as and inflation as measured by CPI.

### **USA**

Money supply in relation to GDP decreased from a level of 27% and 28% between 1924 and 1928 (specifically 27.2% in 1928), to 25.6% in 1929. In the next three years money supply increased relatively sharply (also in absolute terms or because of falling nominal GDP) but dropped again in 1934 and 1935, having a single extreme peak in 1936 and then again a decline. The final take off occurred between 1944 and 1946.

Consumer prices fell by 30% between 1929 and 1933, with the largest decrease in 1932 (10%). The decline was very small in 1930 (zero in 1929). There had been no inflationary period before the crisis (in fact +0.5% in 1923 until 1928). There was a deflationary period in 1921/22.

Summing up the results from *Bernanke* as well as those in table 10 monetary policy could have been much more expansionary without any fear of inflation, but it was not applied – maybe because of a faint memory of inflation after WWI (1916 to 1920) – but probably also due to the gold standard and the fear of a currency devaluation.<sup>18</sup>

### **Germany**

In Germany money supply was reduced relative to GDP in 1927, but then increased steadily and strongly until 1932. Thereafter it decreased until 1936, but increased rather strongly thereafter.

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<sup>17</sup> This time nominal rates might look more restrictive than they are, since prices were falling, too.

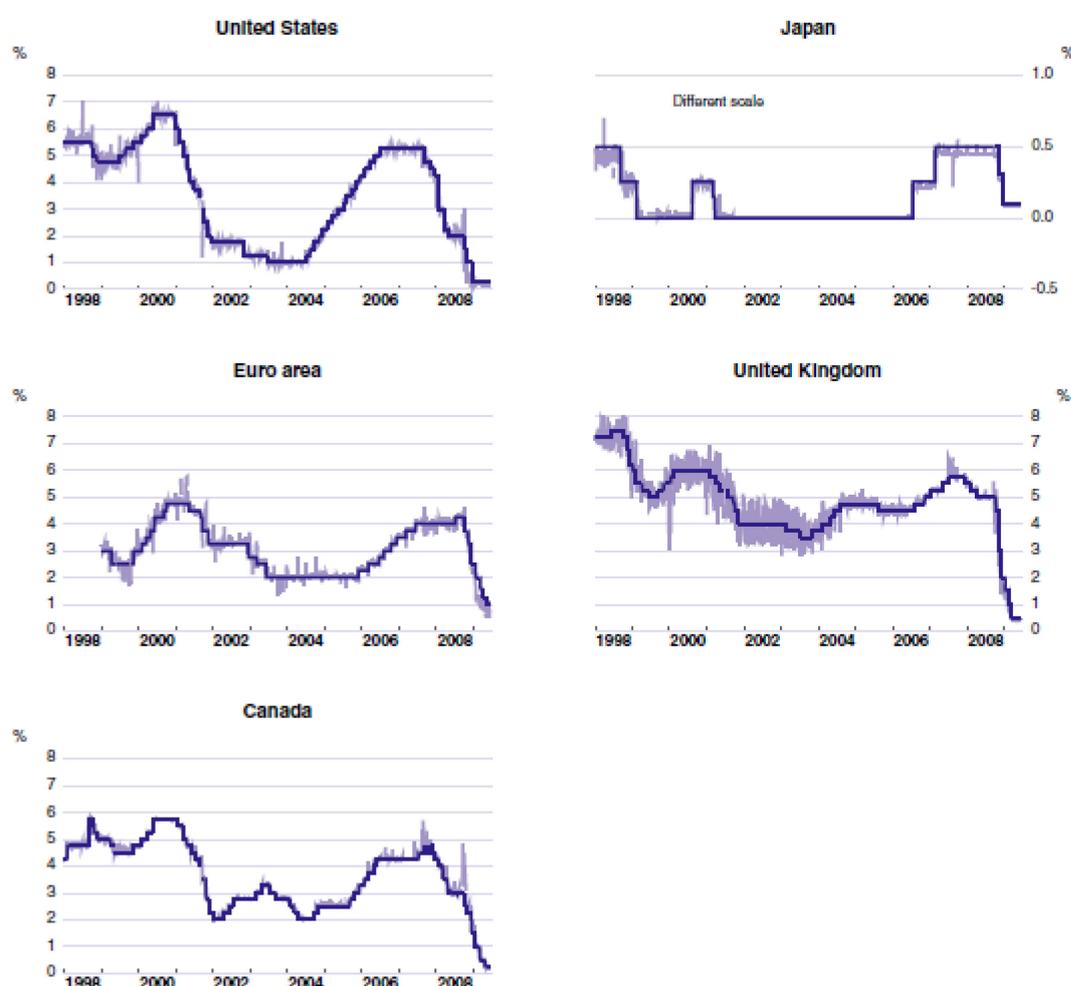
<sup>18</sup> The belief that economies will reach their equilibrium fast (without intervention) may have been important, too.

Inflation had been a little bit higher in the build-up period (and memory of hyperinflation after WWI still existed). Deflation occurred, reaching its peak in 1932. Moderate price increases characterized the period of 1934 to 1939.

### **United Kingdom**

In the United Kingdom money supply fell relatively dramatically between 1928 and 1931 (from 34.2% to 29.9% of GDP), then was increased quickly and strongly up to 38.3% of GDP in 1936. Consumer prices decreased steadily from 1926 (!) to 1934, but never at a two digit rate. The United Kingdom suspended the gold standard in September 1931.

Figure 8: Discount rates in major industrialized economies



Note: The dark line represents the main policy rate of the central banks. The light line plots the effective overnight rate.

Source: IMF, Bloomberg, Bank of Japan, Datastream, ECB. <http://dx.doi.org/10.1787/656585873210>

## France

France had a strongly expansionary monetary policy between 1926 and 1935 increasing money supply from 33.7% of GDP to 73.4%. There was a tiny dip in 1929 (-0.9% of GDP) and a large increase in 1932. Inflation had been rather strong in France before 1929 (6.4% in 1929). After the Great Depression it looked as if even the very expansionary monetary policy in France could not have prevented the following five years of falling consumer prices. France had the largest cumulative price decrease of the *reported countries*. It devaluated in October 1936.

The figures presented in *Bordo et al. (2001)* indicated a considerable increase in the money supply for the aggregate of the GDP-weighted countries between 1925 and 1929 (+16% cumulative). In 1929 and 1930 money supply was constant and then dropped for three years (in 1933 it was back at the 1925 level).

Table 8: Comparison of two crises: money supply (M1)

	Great Depression		Current Crisis		
	1929/1921	1932/1929	2007/2000	2007/2003	2008/2007
	Percentage change				
Austria	4,719.0	-16.5	78.4	44.5	8.3
Germany	361.0	-29.4	65.9	29.3	6.7
Belgium					
Spain					
France	115.9	20.2	84.7	35.1	1.5
Finland					
Sweden	-3.1	2.9	12.7	2.1	-1.0
United Kingdom	-10.0	-2.1	105.4	52.1	-1.4
USA	23.8	-20.8	24.7	4.1	17.2
Japan					
"World"	123.5	-11.0	41.5	16.1	8.1
Unweighted average over countries	867.8	-7.6	61.9	27.9	5.2
Standard deviation	1,891.9	18.1	36.1	20.7	7.1
Coefficient of variation	2.180	-2.381	0.582	0.744	1.361

Note: "World": Weighted by GDP.

Source: WIFO calculations using IFS, Bank of England, Riksbank, Saint Marc (1983, pp. 36-37).

### Monetary policy in the current crisis

Monetary policy in the current crisis was very courageous:

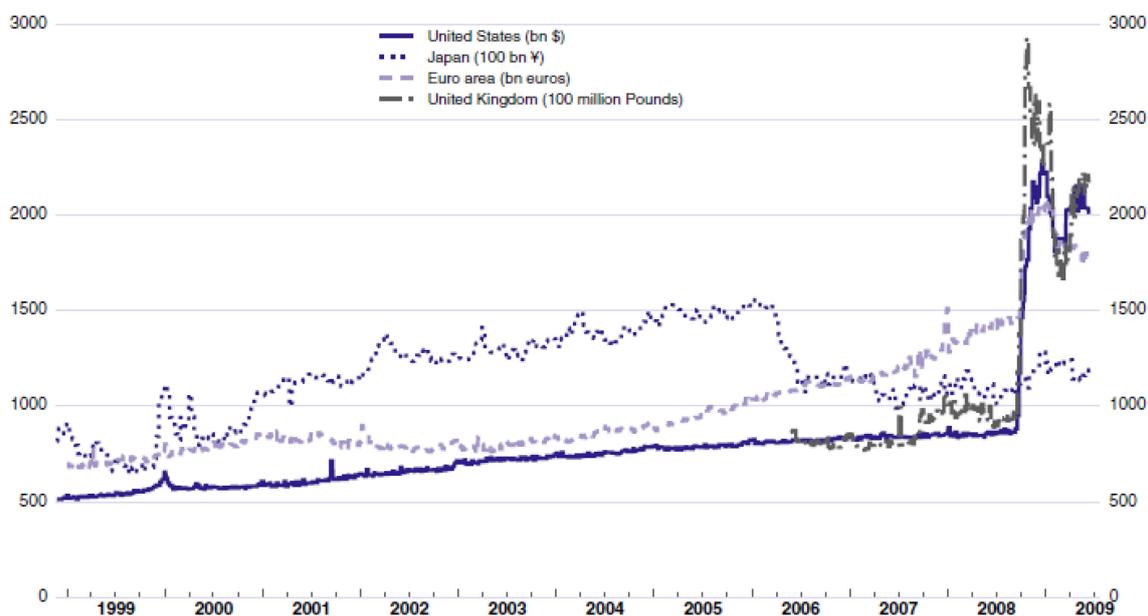
- discount rates were slashed to or near to zero (in Sweden even into the negative range),

- after exhausting the scope to reduce interest rates non-conventional measures to stimulate demand were used;
- the breakdown of the inter bank credit market was addressed, and the financial system was provided with credit and liquidity;
- banks and financial institutions were recapitalized using public funds, deposit guarantees were extended and debt was guaranteed;
- the problem of toxic assets and of solvency were addressed by ring fencing<sup>19</sup> bad banks (mainly in the United Kingdom) or via temporary public ownership (United Kingdom, USA, Iceland etc.).

Table 8 presents an overview of the financial relief measures, figure 8 an overview of discount rates and figure 9 shows how unconventional measures have led to the expansion of the balance sheets of central banks.

As far as conventional measures are concerned the Fed cut its interest rate from a level of 4% in 2008 (table 9) to a target range of 0% to 0.25% in December 2008. The ECB, starting from a somewhat lower level, still increased discount rates in June 2008 (to fight inflation) and subsequently reduced step by step to 1%. The United Kingdom acted last, but then reduced rates very quickly to ½% in 2008.

Figure 9: Expansion of Central Banks' balance sheets



Source: IMF, Datastream. <http://dx.doi.org/10.1787/656585873210>

<sup>19</sup> Ring fencing means providing public guarantee to specific assets after banks have absorbed a lump sum amount of toxic assets.

Unconventional measures fall into three categories (OECD, 2009A), namely:

- providing the banking sector with greater and cheap liquidity.
- expanding money supply through the creation of excess supply (quantitative easing)
- intervening directly in broader segments of the credit market

The Fed itself bought commercial papers and securitized products and started to conduct or expand outright open-market purchases of mortgage-backed securities and bonds and long-term government bonds with the aim of lowering interest rates.

As for the ECB unconventional measures have been more concentrated on easing the liquidity conditions and increasing the scale of its operations to provide liquidity to financial institutions. The ECB eased its collateral framework and lengthened the maturity of its operations to one year. It started to supply limitless liquidity at fixed rates (instead of allotting a limited amount of papers by competitive bidding). It recently announced a program where covered bonds will be directly purchased with the view of rehabilitating this impaired market segment (this description follows OECD, 2009B, p. 52).

Table 9: Comparison of two crises: nominal interest rates (as %)

		Great Depression							Current Crisis			2Q2009- peak 2008	2Q2009
		1927	1928	1929	1930	1931	1932	1933	2006	2007	2008		
		Annual data										Quarterly data Absolute change	
Austria	Discount rate	6.3	6.3	7.4	5.7	7.2	6.9	5.2	2.8	3.8	3.9		1.0
	Government bond yield			6.8	6.6	7.0	8.4	7.8	3.7	4.2	4.1		
Germany	Discount rate	5.8	7.0	7.1	4.9	6.9	5.2	4.0	2.8	3.8	3.9		1.0
	Long-term interest rate	7.9	7.0	7.4	7.2	7.0	8.4	7.2	3.8	4.3	4.2		
France	Discount rate	5.2	3.5	3.5	2.7	2.1	2.5	2.5	4.1	5.1	5.4		1.0
	Long-term interest rate	6.6	5.3	4.9	3.8	3.7	4.7	5.7	3.8	4.3	4.2		
Sweden	Bank rate	4.2	4.0	4.7	3.7	4.1	4.4	3.2	2.0	3.3	4.0	-4.1	0.5
	Government bond yield	4.6	4.6	4.6	4.2	4.2	4.3	4.0	3.7	4.2	3.9		
United Kingdom	Discount rate	4.7	4.5	5.5	3.4	4.0	3.0	2.0	4.6	5.5	4.7	-5.3	0.5
	Yields of bonds			4.6	4.5	4.4	3.8	3.4	4.5	5.0	4.5		
USA	Discount rate	3.8	4.3	5.3	3.3	2.5	3.0	2.8	5.0	5.0	1.9	-1.8	0.3
	Government bond yield	3.3	3.3	3.6	3.3	3.3	3.7	3.3	5.0	4.9	4.3		
Unweighted average over countries: discount rate		5.0	4.9	5.6	4.0	4.5	4.2	3.3	3.5	4.4	4.0		
Unweighted average over countries: all other (without USA)		6.4	5.6	5.6	5.2	5.3	5.9	5.6	3.9	4.4	4.2		
Unweighted average over countries: total		5.2	5.0	5.4	4.4	4.7	4.9	4.3	3.8	4.4	4.1	-3.7	0.7
Standard deviation		1.3	1.4	1.4	1.4	1.8	2.0	1.8	0.9	0.7	0.8	1.8	0.3
Coefficient of variation		0.268	0.273	0.259	0.316	0.392	0.416	0.434	0.243	0.148	0.198	-0.482	0.469

Source: WIFO calculations using Mitchell; IFS.

### Interest rates and consumer prices

A large difference between the Great Depression and the Current Crisis is price development. The inflationary pressure in the build-up period (or at least in the last few years before 1929) was very low especially in the United Kingdom. In the USA there was an underlying deflation tendency years before the Great Depression started (see table 7). By contrast 2008 was a year with rising inflation, and shortages in raw materials, energy and food. During the Great Depression prices fell fast, leading to a deflationary spiral. In the first phase of the depression (1929 to 1932) prices declined by 20% in the USA and in Germany, by

12% in the United Kingdom. The strongest decline was 7% (for the countries mentioned in table 7 in 1932). This fall in prices led to extremely high real interest rates (even for moderate nominal rates) which caused a further restriction of consumption (and investment).

Nominal interest rates for government bonds and fixed interest securities were at about 5% in 1929 (higher than in 1928) and decreased gradually and slowly to 4%. As compared to 1929 some countries had higher and others lower rates in 1933. Discount rates decreased in all countries for which data is available but there was no instance where they were reduced towards zero as in the Current Crisis (the lowest was 2% in the United Kingdom as late as 1933 which was already the fifth year of the crisis). Long-term interest rates remained at 4% decreasing slowly over five years from a maximum of 5.6% in 1929. Combined with deflation this gave very high real rates. In the current crisis there were also several months of high interest rates making it difficult for firms needing long-term finance, but the intervention of the state and state guarantees helped to ease the tightness in long-term finance.

Table 10: Development of money supply and its components in the Great Depression in the USA

	M1	Money multiplier <sup>1)</sup>	Base/reserves <sup>2)</sup>	Reserves/gold	Gold price	Gold quantity	Gold reserves national currency
	1929 = 100						
1929	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1930	94.3	92.3	94.8	100.0	100.0	107.7	107.7
1931	82.8	74.7	106.2	100.0	100.0	104.4	104.4
1932	77.0	66.9	108.8	100.0	100.0	105.7	105.7
1933	74.7	62.8	117.8	100.0	100.0	101.0	101.0
1934	86.2	63.3	66.1	100.0	169.3	121.7	206.1
1935	102.3	61.6	65.5	100.0	169.3	149.6	253.3
1936	116.7	61.4	67.5	100.0	169.3	166.4	281.7

Note: M1: money and notes in circulation plus commercial bank deposits. – Base: money and notes in circulation plus commercial bank reserves. – Reserves: international reserves of the central bank (foreign assets plus gold reserves) – Gold, pgold, qgold: gold reserves of central bank valued in local currency at the official domestic-currency price, physical quantity of gold – <sup>1)</sup> M1/base. – <sup>2)</sup> Coverage ratio: inverse of gold banking ratio (determined by minimum statutory requirement – if it exists. – <sup>3)</sup> Foreign reserves of country with gold standard could be counted as gold.

Source: Bernanke (2004), Chapter 1, Table 1, pp. 13ff.

We can use the balance sheets of the Central Banks as an overall indicator of the expansionary element of the monetary policy. In the Euro system Central Banks balance sheets increased by 36.5% between June 2009 (where the latest numbers are available) and June 2008 and by 65% relative to the pre-crisis value in June 2007. For the USA the increase was even more pronounced, namely 126.7% and 133.3% respectively. In the United Kingdom the balance sheets tripled relative to 2007 (+176%) and increased by 139.7% in comparison to 2008. For Sweden it was 235.7% and 212.8% respectively. In Japan balance sheets increased only by 21.1% (22.7%), Japan was least hit by the problem of toxic assets (but suffered from decreasing exports).

## Summary

In summary monetary policy in the Great Depression was mildly restrictive – with the possible exception of French policy at the time. In the USA monetary policy was consciously restrictive in 1928 in an attempt to curb stock market fluctuations. Then the multiplier decreased significantly due to faltering demand and higher risk aversion. Furthermore, the flow of gold between countries had asymmetric effects. The policy of countries losing gold was contractive and those with a gold inflow tried to sterilize it (this is a result of the policy regime). The failure of banks and the ensuing panic made increasing currency and bank deposits necessary which in turn dramatically decreased the money multiplier. Finally, in trying to defend exchange rates, central banks tried to increase their gold deposits and coverage ratios as a cushion against further attacks. There is strong evidence that after the gold standard was removed monetary policy became expansionary and became one element necessary towards ending the Great Depression.<sup>20</sup>

Table 11: Fiscal balances 2006 to 2010: Percent of GDP/Potential GDP

	2006	2007	2008	2009	2010
<b>United States</b>					
Actual balance	-2.2	-2.9	-5.9	-10.2	-11.2
Underlying balance <sup>2</sup>	-3.0	-3.5	-5.8	-7.7	-8.5
Underlying primary balance <sup>2</sup>	-1.0	-1.4	-3.8	-6.2	-6.8
Gross financial liabilities	61.7	62.9	71.1	87.4	97.5
<b>Japan</b>					
Actual balance	-1.6	-2.5	-2.7	-7.8	-8.7
Underlying balance <sup>2</sup>	-4.0	-3.8	-4.3	-5.9	-6.0
Underlying primary balance <sup>2</sup>	-3.3	-3.1	-3.5	-5.0	-4.7
Gross financial liabilities	172.1	167.1	172.1	189.6	199.8
<b>Euro area</b>					
Actual balance	-1.3	-0.7	-1.9	-5.6	-7.0
Underlying balance <sup>2</sup>	-1.6	-1.4	-1.9	-2.6	-3.8
Underlying primary balance <sup>2</sup>	1.0	1.2	0.7	0.0	-1.2
Gross financial liabilities	74.6	71.2	73.4	82.5	89.2
<b>OECD<sup>1</sup></b>					
Actual balance	-1.3	-1.4	-3.2	-7.7	-8.8
Underlying balance <sup>2</sup>	-2.4	-2.5	-3.8	-5.5	-6.2
Underlying primary balance <sup>2</sup>	-0.5	-0.6	-2.0	-3.8	-4.4
Gross financial liabilities	75.0	73.5	78.7	91.6	100.2

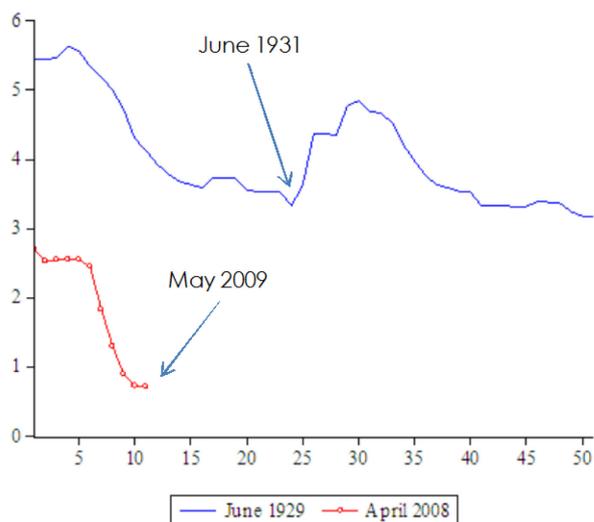
Note: Actual balances and liabilities are in percent of nominal GDP. Underlying balances are in percent of potential GDP. The underlying primary balance is the underlying balance excluding the impact of the net debt interest payments. – 1) Total OECD excludes Mexico and Turkey. – 2) Fiscal balances adjusted for the cycle and for one-offs.

Source: IMF, OECD Economic Outlook 85 database. <http://dx.doi.org/10.1787/656585873210>

<sup>20</sup> For an assessment of what caused an end to the Great Depression see Bordo (2008), Steindl (2008), Buchheim (2003), Bernanke (2004), Temin (1976).

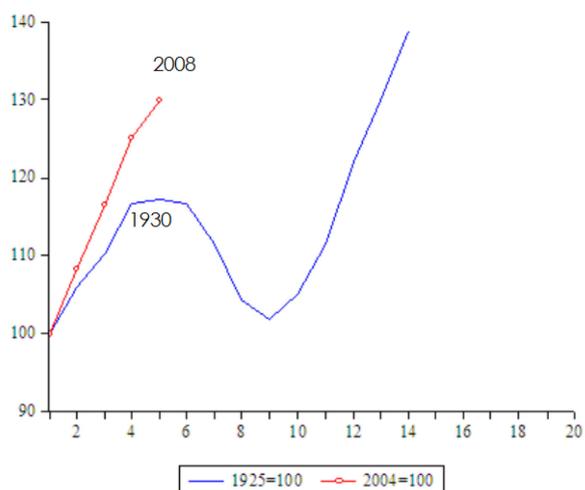
Monetary policy behaved differently in the Current Crisis and it had less restrictions. Interest rates were reduced to rates which were near to zero. No large region had a currency problem or a gold standard. After interest rates reached zero, "quantitative easing" was possible and was applied according to existing rules and where necessary even extending them. A general consensus between countries and monetary and fiscal authorities allowed for monetary easing, thus making monetary policy effective in a "liquidity trap" situation. Only countries (outside the euro area) with currency problems had no option but to increase the discount rate (and faced even more severe problems), but they obtained international help from the IMF, the EU and the World Bank. Since there has been no deflation in 2009, real and nominal interest rates did not differ very much. Short and long-term interest rates for consumers and investors were higher than usual in recessions. Interbank lending did break down. This together with the attempt by all banks to reduce leverage pushed up the interest rates (much above the discount rate). But in most cases nominal and real interest rates remained well below 10%, and then decreased rapidly as a result of policy measures such as guarantees, fresh equity and quantitative easing (including the direct purchase of a wide range of securities and commercial papers by the Fed and the ECB). The guaranteeing of private deposits and even loans to large firms decreased the level of uncertainty and interest rates.

Figure 10: Central Bank Discount Rates in Great Depression vs. Current Crisis (seven country average)



Source: Eichengreen - O'Rourke (2009).

Figure 11: Money Supplies in Great Depression vs. Current Crisis (19 countries)



Source: Eichengreen - O'Rourke (2009).

### 3.2 Fiscal Policy: balancing budgets vs. amplifying automatic stabilizers

Fiscal policy is not easy to describe without going into the details of federal, state and local budget data and country details. Furthermore, government expenditure, as well as taxes, is heavily influenced by the economic cycle, so that actual tax revenues will decline even if in a recession taxes are raised and government expenditure is slashed (and vice versa). "Full employment" budget data would reveal the effect of intentional policy measures as opposed to surpluses or deficits generated by the business cycle. However these are rarely available for the Great Depression (and not comparable to the Current Crisis). To our knowledge, an analysis where actual budget figures as well as full employment figures are calculated is available only for the USA (Brown, 1956).

#### *US fiscal policy in the Great Depression*

At all levels in the US government there was a budget surplus of about 1 bn \$ in 1929. Government expenditure increased in 1930 from 8.5 bn \$ to 9.2 bn \$ and remained stable in 1931. It then increased with the exception of a small dip in 1937 to 13.3 bn \$ in 1939. Tax revenues fell first slightly then massively to 6.4 bn \$ in 1932, thus creating a large deficit (20% of revenues) in 1932. The deficit was massive on the federal level; it was mitigated by surpluses at the state and local level.

The "anti-cyclical" balances were not the results of an intentional policy. On the expenditure side there was a "semi intentional part", namely the enactment of large bonuses for veterans by the Congress in 1931 (and 1936). Tax policy was highly pro-cyclical thus reducing the "automatic" decline due to decreasing business activity: tax rates were raised massively across the board but notably in lower and middle income groups; earned tax credits were slashed; corporate income tax was increased slightly; a gift tax was provided, and a broad

new list of excise taxes was levied. On the local level general sale taxes and excise taxation were raised. Full employment budgets were heavily contractionary – especially from 1933 to 1939 (Brown, 1956, p. 868).<sup>21</sup>

The conclusion of Brown, “fiscal policy has been an unsuccessful recovery device in the thirties – not because it did not work, but because it was not tried”, or by Hansen (1941) “despite a fairly good showing made in the recovery of 1937, the fact that neither before nor since has the administration pursued a real positive expansionist program ... federal government engaged in salvaging program and not a program of positive expansion”.<sup>22</sup>

### *Fiscal policy: country evidence*

Using standardized data on budget surpluses or deficits we see the following developments:

In the **USA** government (at the federal level) had surpluses in all years between 1920 and 1929, all about 1% of GDP, with no pro-cyclical or anti-cyclical movements. This also holds true for 1929 and 1930. In 1931 a small deficit occurred (–0.6% of GDP) followed by higher deficits in the range of 4% to 5% and finally 7% in 1936 (these deficits may contain a “New Deal” component). The deficit was reduced in 1937 and 1938 (to 3% and 1.4% respectively). In 1939 it was above 4% again.

In the Current Crisis the USA was one of the countries with a high deficit even before the crisis started (2.9% in 2007). It suffered an increasing deficit in 2008 due to a deteriorating business cycle. Early in 2009, one of the largest stimulus programs of any industrialized country (in relation to GDP) was initiated by President Obama.

**Germany** had budget deficits in the twenties; the deficit was somewhat smaller in 1929 (1.8%) of GDP and a little bit higher 1930 and 1931 (2.4% and 2.2%, respectively). A surplus was created in 1933 and a balanced budget in 1934. Given that GDP decreased by 15% between 1929 and 1932 the data reveal energetic attempts to counteract the automatic stabilizers.<sup>23</sup>

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<sup>21</sup> For a contrary view see *Smithies* (1946): “fiscal policy did prove an effective and indeed the only effective means of recovery”. This remark refers however to the period from 1938 onwards (and contrasts fiscal policy with government control on wages and prices). In April 1939 President Roosevelt sent a document to the Congress “Recommendations designed to stimulate further recovery”, “that was the first outright recommendation, ... designed to achieve recovery through fiscal policy” (*Smithies*, 1946, p. 16). “All the fiscal measures before had been trial and error, increasing some taxes, financing public work programs, then curbing expenditures to balance the budget, then enacting emergency budgets etc. ... The first phases of the New Deal continued Hoover’s policy of cheap money, home and farm relief programs, national industry recovery act, Labor Relations Act ...”.

<sup>22</sup> The US budget was expansionary in 1936 due to a bill providing large veteran bonuses on the initiative of the Congress. It was disliked but not vetoed by the President. The budget in 1937 was then specifically restrictive, due to the end of the bonuses and the start of social security contributions. This contractionary effect is described by *Romer* (2009) as premature elimination of public support for the economy, which led to another recession (which ended as the budget became expansionary again).

<sup>23</sup> Even acknowledging that the automatic stabilizers were much lower in the thirties (lower marginal tax rates, less social expenditures).

As far as the Current Crisis is concerned, Germany had just managed a balanced budget due to raising value added tax in 2008. Their stimulus package according to the OECD calculation is 3.2% of GDP (2009/2010) with about an equal share spent over the two years and in tax cuts as well as spending increases.

**Austria** managed a small surplus in 1929, followed by deficits of about 2% and 3% of GDP in 1930 and 1931. A balanced budget was reached in 1932 and then small deficits followed. The deficit was reduced in 1936 and 1937 to 0.4% and 0.7%, respectively.

Austria had a nearly balanced budget in 2008, and then started early with significant stimulus packages (including a tax reform in 2009). The stimulus packages are large if the tax reform is included as well as measures for family support. According to the restrictive OECD definition they are smaller.

Table 12: Comparison of two crises: budget deficit/surplus of central government (as % of GDP)

	Great Depression										Current Crisis							
	1920 to	1928	1929	1930	1931	1932	1933	1934	1935	1936	1931-	1931-	1932-	Forecast			2010-2008 Absolute change	
	Average	Annual data									Absolute change			Annual data				
Austria	-0.1	-0.7	0.2	-2.3	-3.1	-0.2	-2.7	-2.5	-1.7	-0.4	-3.3	2.7	-0.4	-0.7	-0.5	-4.3	-6.1	-5.6
Germany	-8.6	-2.3	-1.8	-2.4	-2.2	-1.9	1.0				-0.4	2.2	-0.1	-0.2	-0.1	-3.9	-5.9	-5.8
Belgium	-10.3	2.3	1.7	-1.9	-1.6	-3.9	-1.2	-2.2	-5.4	-4.6	-3.4	-2.9	-5.7	-0.3	-1.2	-4.6	-6.1	-4.9
Spain	-1.6	1.5	1.1	0.8	-0.3	-0.8	-1.3	-1.8	-0.9		-1.5	0.3	-1.9	2.2	-3.8	-7.8	-8.7	-4.9
France	-5.5	1.2	1.4	-1.5	-1.8	-1.7	-4.6	-3.8	-5.1	-6.9	-3.3	-5.1	-3.2	-2.7	-3.4	-6.6	-7.0	-3.6
Finland	-1.6	-2.1	-0.8	-1.9	-2.3	-2.6	-1.6	-2.8	-3.8	-3.7	-1.5	-1.4	-1.8	5.2	4.1	-1.5	-2.8	-6.9
Sweden	-1.7	-0.4	-0.6	-0.3	-0.4	-1.9	-4.0	-2.1	-2.5	-2.2	0.2	-1.8	-1.3	3.8	2.5	-3.3	-4.5	-7.0
United Kingdom	1.8	1.8	0.8	1.0	0.8	-0.2	1.0	0.5	0.4	0.2	0.0	-0.6	-0.9	-2.7	-5.5	-12.8	-14.0	-8.5
USA	0.9	1.0	0.7	0.8	-0.6	-4.7	-4.6	-5.5	-3.8	-7.0	-1.3	-6.4	-5.4	-2.9	-5.9	-12.1	-14.2	-8.3
Japan	8.0	4.5	3.9	2.4	3.1	0.1	-0.5	0.7	1.1	2.4	-0.8	-0.7	-3.8	-2.5	-2.7	-6.7	-8.7	-6.0
"World"	-0.5	0.8	0.6	0.1	-0.5	-2.5	-2.3	-2.7	-2.2	-3.5	-1.1	-3.0	-3.1	-1.9	-3.8	-8.7	-10.3	-6.5
Unweighted average over countries	-1.9	0.7	0.7	-0.5	-0.8	-1.8	-1.8	-2.2	-2.4	-2.8	-1.5	-1.9	-2.5	-0.1	-1.7	-6.4	-7.8	-6.2
Standard deviation	4.2	1.7	1.2	1.4	1.2	1.6	2.2	1.7	2.0	2.9	1.4	3.1	2.0	2.9	3.4	3.9	4.0	1.6
Coefficient of variation	-2.272	2.479	1.746	-2.744	-1.452	-0.875	-1.173	-0.797	-0.844	-1.039	-0.934	-1.579	-0.835	-36.872	-2.085	-0.616	-0.509	-0.266

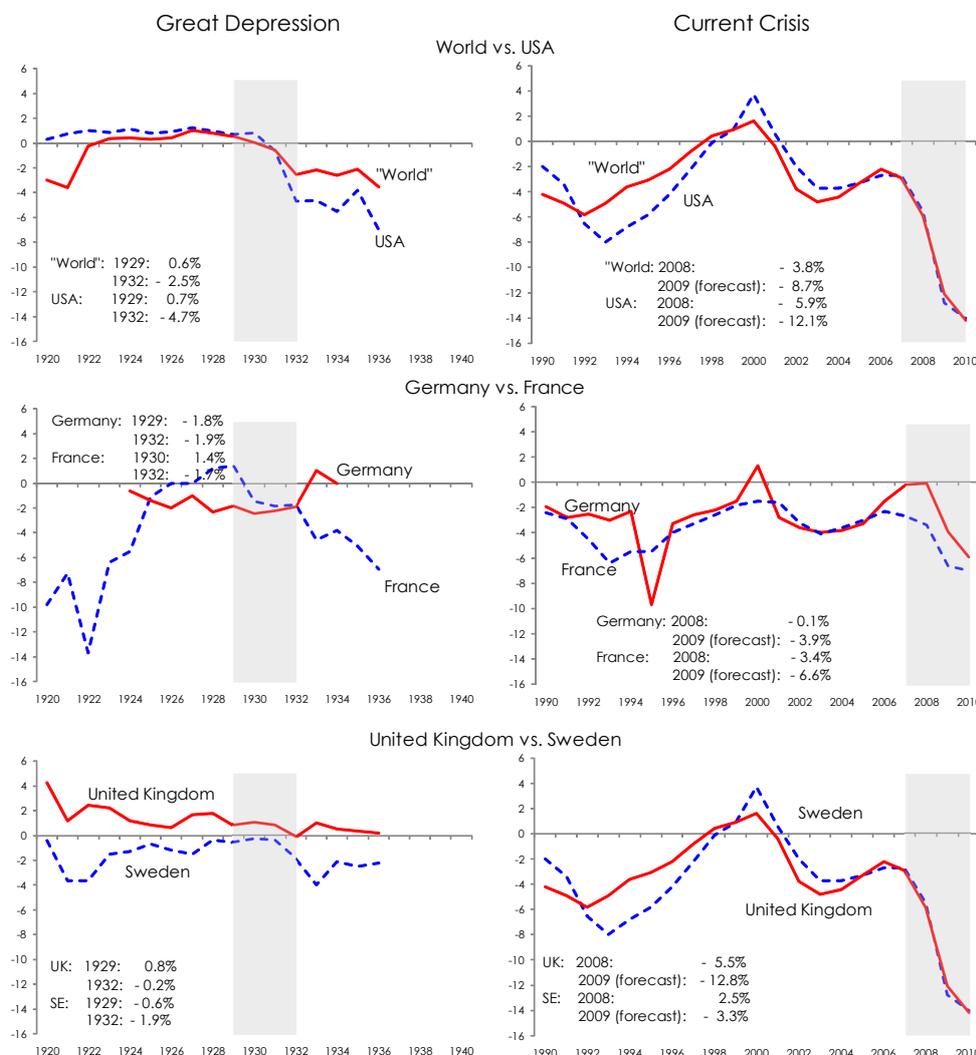
Note: "World": Weighted by GDP.

Sources: USA: 1900-1969: WIFO calculations using Mitchell 1999 (Central Government), 1970-2010: OECD (General Government, net lending). – Japan: 1900-1954: Bordo using Mitchell, 1970-2010: OECD (General Government). – Germany: 1900-1951: Bordo using Mitchell (1991), 1970-2010: OECD (General Government). – France: 1900-1949: Bordo using Mitchell (1992), 1970-2010: OECD (General Government). – Spain: 1900-1969: Bordo using Mitchell (1992), 1970-2010: OECD (General Government). – Belgium: 1920-1969: Bordo using Mitchell, 1970-2010: OECD (General Government). – Finland: 1900-1969: Bordo using Mitchell (1992), 1970-2010: OECD (General Government). – United Kingdom: 1900-1969: WIFO-calculations using Mitchell 1999, 1970-2010: OECD (General Government). – Sweden: 1900-1949: Bordo using Mitchell (1992), 1970-2010: OECD (General Government). – Austria: 1924-1937: WIFO-calculations, Bundesrechnungsabschluss and League of Nations (1927-1934): expenditures including redemption to loans (Central Government); 1970-2010: OECD (General Government).

**France** had a small surplus in 1928 and 1929, which it turned into a small deficit over the next three years; large deficits are reported from 1933 to 1937 (and even larger ones in the following years). The stimulus package 2009/2010 according to OECD is rather small (0.7% of

GDP over two years), biased to the expenditure side. Budget deficits were high already at the start of the crisis.

Figure 12: Budget surplus/deficit: boom and decline (as % of GDP)



The **United Kingdom** had budget surpluses during every year preceding the Great Depression and also during the ten following years (with a tiny deficit of 0.2% in 1932). It looks as if a balanced budget had been the first priority. The crisis was milder in the United Kingdom than in the USA, this is however not due to an expansion of fiscal policy.

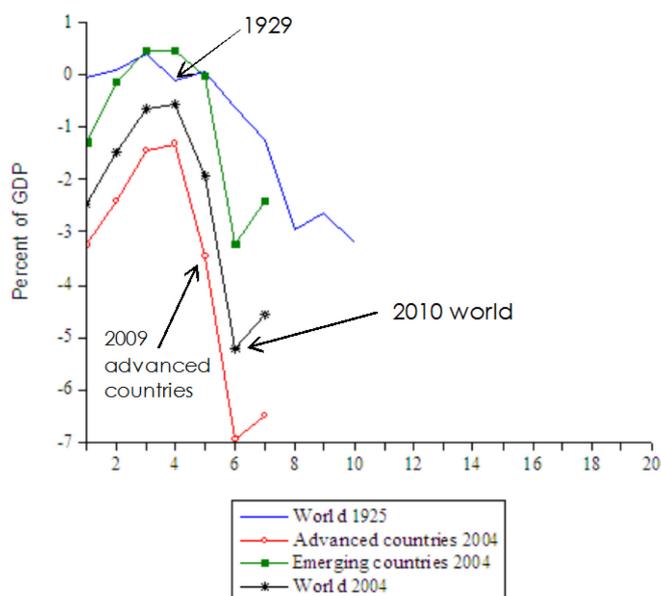
At the start of the Current Crisis the United Kingdom had the highest deficit of Western Europe; it suffered a further deterioration by the crisis. OECD measures the stimulus package to 1.9% of GDP, mainly via a tax reduction in 2009.

**Sweden** had small deficits in the run up to the Great Depression. In 1933 and the years that followed the deficit was somewhat higher without any policy change. Despite being neutral in the war they had double-digit deficits during the war.

Sweden had a budget surplus of 4% at the beginning of the Current Crisis. It enacted a strong stimulus package (3.3% of GDP equally divided between tax reductions and expenditure) where "green" measures are fostered and the already high research expenditure is further supported. It is one of the few countries using stimulus packages to improve future projects.

**Italy** is the only country which boosted demand early; deficits rose to 5% in 1932 and stayed at that level up until the war.

Figure 12: Government Budget Surpluses in the Great Depression vs. Current Crisis



Source: Eichengreen - O'Rourke (2009).

*Fiscal policy and stimulus packages: the overall picture in 2008/09*

Fiscal policy was intensively used in the Current Crisis to mitigate the downturn by providing stimulus packages, recapitalizing banks and allowing automatic stabilizers to work. This last element seems to be largest (and multipliers are higher in Europe). Automatic stabilizers have no implementation lag (which proved significantly again in this crisis). Very few countries had surpluses in their total fiscal balances at the start of the crisis. Japan and specifically the USA started with high deficits (2.5% and 2.7%, respectively). The euro area had a small deficit as compared to previous years (2007: -0.7%, but deficits were high in the United Kingdom and France).

All countries allowed the automatic stabilizers to work in 2008 and 2009; the OECD estimates that the cumulative effect of the automatic stabilizers over 2009 and 2010 made up for half of the “deterioration of fiscal balances” (OECD, 2009B, p. 56). The remaining half is made up of “structural measures” which can be further subdivided into discretionary measures in response to the financial crisis (making up one fifth); and a larger part from the loss of exceptional revenues related to the asset price boom and the buoyant growth in construction and financial service. Fiscal stances as measured by structural balances (adjusted for cycles and one-offs) are expansionary in 2009 and 2010. In Germany and Italy, as well as in the euro area as a whole, fiscal stance is expected to be more expansionary in 2010 than in 2009 (the same holds for the USA).

Estimating the size and timing of a stimulus pattern is not an easy task. Different assessments are provided by the OECD, the EU Commission and Saha – Weizsäcker (2009)<sup>24</sup>. The OECD assesses them to be about 4% of GDP for the years 2008 to 2010 (weighted average, unweighted 1.7%), using a rather restrictive definition of stimulus packages. The stimulus is concentrated in 2009; the second largest part will have an effect in 2010. The division between spending and tax cuts is about equal. The discretionary stimulus packages are highest in the USA, Australia, Korea, and in small European countries. Ireland, Hungary and Iceland could not afford an expansionary policy due to budget or currency problems.

While the extent and impact of fiscal packages is open to further investigation, the overall picture is clear. This time almost no countries tried to counteract the automatic stabilizers by enforcing a balanced budget. All countries tried to stimulate demand using fiscal measures, some with more room to maneuver than others due to past surpluses or a strong currency (or Euro membership)<sup>25</sup> and some with more courage than others (the non-European countries). This discretionary part of the fiscal policy is the part of the fiscal effects, one fifth according to a somewhat restrictive definition in OECD (2009B).

In almost all countries the public deficits are running at over 3%<sup>26</sup> (which was set as the upper limit by the EU). In the USA and in the United Kingdom public deficits are running into double-digit figures.<sup>27</sup> The actual deficit in 2009 is predicted to be 10% in the USA, 8% in Japan and 6% in the euro area (see table 11).

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<sup>24</sup> The size of the stimulus packages is calculated differently depending i) on whether the scope of the stimulus is limited to discretionary measures, ii) on which policies would have been implemented had there not been a crisis (i.e. which other policy measures are included in the stimulus packages) and iii) on whether or not the effects of any stimulus are calculated for one year or more. There are many extensive international comparisons by the OECD (*Interim Report, 2009*), by the European Commission (2009) and by Saha – Weizsäcker (2009). Estimates by the European Commission and by Saha - Weizsäcker are higher than those of the OECD, especially for European countries.

<sup>25</sup> In Hungary, Iceland, Ireland and the Baltic States there were in fact negative stimuli as a result of the very high deficits of the state.

<sup>26</sup> The EU Commission reckons that in 2009 12 and in 2010 17 EU countries will break the rules on deficit limits. The goal of the ensuing excessive deficit procedures should be to work on a medium term path of adjustment (while the countries are being encouraged to increase short-term deficits).

<sup>27</sup> In some countries there are also short-term purchasing incentives (scrapping premiums or reduction of VAT).

Governments are providing guarantees, to a large extent for savings, in part for bonds and only to a small extent for loans, and are recapitalizing banks. The state thus prevents the complete collapse of the large banks and financial institutions and in some cases also supports large firms (automobile industry).

### *Summary*

Fiscal policy in the Great Depression was restrictive in most countries insofar as the government tried to prevent the deficit which would have been created by the automatic stabilizers (reduced tax inflow, higher expenditure). Overall, budgets in the "world" were balanced or slightly in the surplus region in 1929. 1930 and 1931 small surpluses or small deficits occurred, for 1932 on the deficits were between 2% and 3% of GDP in the average over the countries in table 12.<sup>28</sup> The fact that GDP decreased by 10% means that there must have been attempts to counteract the automatic stabilizers, especially in the first two years of the Great Depression. On the other hand there had been attempts to target expenditure quite specifically (relief work, veteran bonuses etc). Later during the Great Depression there were explicit measures to combat unemployment through public work (New Deal in the USA, preparation for the war in Germany). From 1932 to 1936 budget deficits amounted to 4% of GDP in many countries (USA, France, Italy, and Netherlands). Others like the United Kingdom and Japan tried again, and with success, to balance their budgets. The literature is undecided as to what was essential in bringing an end to the Great Depression, but alongside an expansionary monetary policy, the more active approach of some governments will have helped as will the preparations for war later on.

In the Current Crisis fiscal policy adopted an expansionary stance in almost all countries. The larger proportion of increased budget deficits is the result of reduced tax revenues and increased government spending ("automatic stabilizers"). In addition fiscal stimulus packages were created in which there were tax cuts and increases in expenditure, including expenditure recapitalizing the banks. The cuts in taxes stretched from income tax to VAT. Undisputed is that the packages in the USA were bigger than in Europe (OECD: 5.6% on average 2008 to 2010, compared with 0.9% in the EU). In Australia, Canada, New Zealand, Korea and China the packages were also very large.

### **3.3 Labor market and employment policy**

The unemployment and even more the employment data demonstrate that the difference between the two crises has been dramatic, even if we extend the horizon of the Current Crisis to 2010 and 2011 (using predictions). We know from past crises that the turning point for unemployment can be two years later than for production (*Reinhardt – Rogoff, 2009*).

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<sup>28</sup> See also Bordo (2001), Eichengreen - O'Rourke (2009).

### *The Great Depression*

One fourth of the labor force was unemployed in the Great Depression in the USA, Germany, and Austria (15% in the United Kingdom). At that time the labor force was between one third (USA) and one half of the persons employed today in most other countries (again with the United Kingdom at the lower end).<sup>29</sup> GDP is between eightfold and tenfold today as compared to 1929, and even a dramatic decrease of 10% in the industrialized countries in the Current Crisis (which will not occur according to today's predictions) would not destroy the picture of a much richer society (at the beginning and hopefully at the end of the crisis). Social security systems will furthermore prevent poverty (at least absolute poverty in developed countries).

However, unemployment is the one variable where we really have no way of knowing how the story might end, even if the decrease in production is leveling off (as it seems to do in September 2009). Unemployment figures will increase in the next one to one and a half years, if not for longer surpassing 10% in the USA and possibly also in the EU. For most countries economic growth of 1 to 1½% is not sufficient to decrease unemployment.

The **USA** had a severe crisis in 1921 in which unemployment rose from 1.4% to 11.7% within two years, the lowest rate was then reached in 1926 with 1.8%. Thus the pre-crisis period had been bumpy and the data show the cooling off of the real economy well before 1929. Unemployment then rose from 3.2% in 1929 to 24.9% in 1933, it then declined a little, and then had an often cited one year increase in 1938 (see fiscal policy chapter). The New Deal, expansionary monetary policy and/or the preparation for the war eliminated unemployment between 1941 and 1945.

The development in the **United Kingdom** was similar to that of the USA as regards the crisis of 1920. The unemployment rate at the start of the Great Depression was much higher (7.3%), but increased less than in the USA, reaching a maximum of 15.6% in 1932.

**Germany** and **Austria** had no crisis in 1921/22, indeed their lowest unemployment rate was 1.5% in 1922 and 1.1% in 1921, respectively. They did have hyperinflation and then the unemployment rate skyrocketed until 1926 (to 18% and 13%, respectively). Unemployment showed a falling trend up until 1929 (at levels of 9.3% and 12.2%, respectively). Fiscal policy became more expansionary from 1932 onwards – initially without any military focus. Hitler's policy slashed unemployment to less than 5% in 1937 in Germany (then to 2% in 1938). In Austria unemployment decreased slightly until 1937, then it was halved by 1938 and then eliminated.<sup>30</sup>

Employment figures give a similar picture: a very strong decline in the USA and in the United Kingdom in 1921, where the one-year decline in absolute figures was as large as in the first

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<sup>29</sup> The population has been growing since the thirties but much less than employment, showing increasing employment ratios.

<sup>30</sup> There is an alternative view that recovery was already on course before Hitler's program could be have any affect (Buchheim, 2003).

year of the Great Depression. Employment loss in the Great Depression was larger in the USA (9 million out of 47.6 million), and very small in the United Kingdom (0.7 million out of 19.5 million). Previous levels were regained in 1941 in the USA. Employment loss was similar in Germany and Austria (-5.1% and -0.3% between 1929 and 1932, respectively).

### *Current Crisis*

In the Current Crisis unemployment had reached its lowest level of between 4% and 5% in the USA and in the United Kingdom, well before the crisis started (in 2006 and 2004, respectively). It increased during the crisis rapidly specifically in the USA, from 4.6% in 2007 to 9% for 2009. Germany has a somewhat different pattern as it experienced a double-digit unemployment rate in 2005 (11%). This decreased through labor market reform and export led growth in 2008 to 7.5%, and up to now a steep increase has been prevented.

### *Employment policy: from relief programs to short working time subsidies*

As far as economic policy is concerned the differences in macroeconomic policy are described in the chapter on fiscal and monetary policy. As far as labor market policy itself is concerned we concentrate on the USA, due to the focus of the international literature. For other countries see *Eichengreen – Hatton (1988)*. The USA tried to mitigate unemployment early through intensive work relief programs (in which the government employed people at low wages). Starting in 1930 0.6%, and then in 1935 a maximum of 5.9% of unemployment was "parked" in relief programs: the unemployment rate including relief program workers was 20.1% in 1935, and 14.2% without (*Margo, 1993, p. 42*). Another important feature of labor market policy was that firms did not cut wages. Indeed real wages were increasing sharply during the recession e.g. by 20% between 1929 and 1931. Then a phase of ups and downs came, but with a trend of 30% higher real wages in 1939 as compared to 1929 (*Margo, 1993; Bernanke, 2004; etc*). This trend of rising real wages is blamed for the length of the recession according to the macroeconomics of the time. There had been a lot of variation in working times, which mitigated costs for firms and which may have encompassed an element of lowering wages not reflected in the statistics. There are several explanations as to why real wages increased despite the slump. The first one is the stickiness of nominal wages which, due to falling prices, increased in real terms. Other authors cite an echo effect from the recession in 1921, in which wages had been cut and the crisis worsened. Furthermore, reference is given to a social norm, that firms should not decrease wages in recession. Finally, the concept of efficiency wages could be used. Firms did not like to cut wages since this lowered motivation and productivity.

A macroeconomic policy – in the Keynesian tradition – was not applied and there would have been no channel at that time. Roosevelt's New Deal Legislation, the National Industry Recovery Act of 1933, established guidelines that raised nominal wages and prices and encouraged higher levels of employment through reducing the working week. Part of the legislation was declared unconstitutional in May 1935; its effect had been investigated by

Weinstein (1980) and criticized by Temin (1976) for increasing the persistency of unemployment.

In the Current Crisis in many countries labor market policies have been used to dampen the effects on employment of the declining economic activity. Programs have been started to support shorter working time in specifically hard-hit firms ("Kurzarbeitsprogramme"). This is likely to be the reason why e.g. in Germany and Austria the increase in unemployment and the decline in employment compared with the decline in GDP is actually less than in the USA. A less pronounced decline in employment in turn stabilizes GDP via consumption. The impact of the crisis is also reduced if the mismatch between the supply and demand of qualifications is minimized and if regional and job mobility is increased. In many countries, before the crisis, the job market was close to full employment, especially for qualified people, and firms were limited in their ability to expand production. Indeed even during the crisis there are some job vacancies where there is a lack of appropriately qualified people.

A general shortening of work time has not been considered (the same holds for large early retirement programs), specifically since in most industrialized European countries the population of working age is predicted to shrink in the next years due to an ageing population. Efforts to re-train workers is in theory high on the agenda since unemployment is very different across qualifications and sectors, but it proved difficult to implement in a crisis which came at such a high speed.

### **3.4 Protectionism**

As it is well known one of the policy changes in the Great Depression was to shelter one's own economy from the negative impacts of the world depression. A specific form of protectionism – cited over and over in the literature – was the *Smoot-Hawley Tariff Act* (1930), in which tariffs on imports were raised. In parallel, tariffs and duties were also increased in many other countries. The average tariff rate across the fourteen countries rose by 12.7% during the Great Depression (Newell – Symons, 1988).

It is difficult to find general indicators for protectionism. One could use the customs inflow as percent of GDP. This indicator was flat for the USA between 1925 and 1928, but increased somewhat in 1929. There was no specific pattern in the following years, but then a steep increase in 1936.

In European countries the level of custom inflows relative to GDP was higher. The receipts strongly increased already in the build-up period (specifically in France, Germany and Austria). Receipts relative to GDP were flat in the United Kingdom and decreased a little bit in Sweden. From 1929 to 1935 they exploded in the United Kingdom and France. The increase was not so pronounced in Germany and tariffs relative to GDP decreased in Austria starting in 1931. In general the picture indicates more restrictive policies in the European countries relative to the USA with the exception of Sweden.

Thus protectionism – if measured correctly by this indicator – did not start the Great Depression, but played a role in prolonging and deepening it. It seems to have been applied more in Europe than in the USA, where the Smoot–Hawley Tariff Act is so prominently discussed.

This time international coordination meetings (G20, EU Commission, IMF, and OECD) discuss and monitor the danger of protectionism (apart from WTO). “Buy National Clauses” were clandestinely or openly put into many stimulus programs, usually arousing international protest. They were consequently mitigated, albeit not totally abandoned. New export duties came into existence even before the crisis (to limit the outflow of resources or food in the period of scarcity before the crisis started), but these have up to now been limited. Rising tensions could however come up if the crisis continues and problems arise if there are large imbalances (see the conflict about tires between the USA and China in September 2010 and the Chinese threats of retaliation).

Table 13: Crises vs. Periphery: growth of GDP (1990 international Geary-Khamis Dollar)

	Great Depression					Current Crisis				
	1929	1930	1931	1932	1932/1929	2007	2008	2009	2010	2010/2007
USA	6.1	-8.9	-7.7	-13.2	-27.0	2.1	0.4	-2.8	1.9	-0.5
Euro area	2.7	-1.6	-5.2	-3.1	-9.6	2.7	0.6	-4.4	0.2	-3.7
Germany	-0.4	-1.4	-7.6	-7.5	-15.8	2.6	1.0	-5.8	0.6	-4.4
France	6.8	-2.9	-6.0	-6.5	-14.7	2.3	0.3	-2.2	0.6	-1.3
United Kingdom	2.9	-0.7	-5.1	0.8	-5.1	2.6	0.7	-4.7	0.3	-3.7
Japan	3.1	-7.3	0.8	8.4	1.3	7.3	5.6	-6.1	1.5	0.7
Eastern Europe	1.0	-1.9	-3.4	-5.6	-10.5	7.3	5.6	-6.1	1.5	0.7
Russian Federation	2.8	5.8	1.9	-1.1	6.7	8.1	5.9	-9.6	3.3	-1.2
Ukraine						7.3	2.1	-7.8	1.6	-4.4
Brazil	0.2	-6.0	-2.2	3.5	-4.9	5.4	5.1	-1.2	3.8	7.8
South Korea	-4.8	-4.9	1.3	0.9	-2.8	5.1	2.2	-1.4	3.3	4.1
China	.	1.3	1.0	3.2	5.6	13.0	8.9	8.1	8.6	27.9
India	4.2	0.7	-0.7	1.1	1.2	9.0	7.5	5.5	6.9	21.2
Indonesia	2.8	0.7	-7.5	-1.2	-7.9	6.3	6.1	2.6	4.0	13.3
World	3.7	-1.9	-4.2	-4.0	-9.8	3.8	1.6	-2.5	2.1	1.2
Unweighted average over countries	2.0	-2.2	-2.2	-0.7	-4.8	6.7	4.5	-2.1	3.3	6.0
Unweighted average over periphery countries	1.0	-0.6	-1.4	0.1	-1.8	7.7	5.4	-1.2	4.1	8.7
Standard deviation	3.1	4.5	3.6	5.8	9.9	3.0	2.8	5.6	2.5	10.6
Coefficient of variation	1.527	-2.072	-1.687	-8.192	-2.057	0.446	0.613	-2.664	0.756	1.771

Note: "Periphery countries": all countries in table but USA, euro area and Japan.

Source: Groningen (1900-2006), Oxford Economic Forecasting Ltd. (2007-2010, real data).

#### **4. Conclusion, summary, caveats**

(1) The goal of this paper is to compare the Great Depression of the last century with the Current Crisis, which started in 2007 and spread across the world at increasing speed in 2009. The comparison does not focus on the causes of either crises or on any similarities or differences (since this is done in other papers). Rather we focus on and compare the depth of the crises and the policy reaction. Both these aspects make it necessary to analyze the build-up period to the crises and this is done mainly by looking for stylized facts. This serves to enrich the search for the causes and consequences of the crises. The analysis and comparison of the two crises should also help to assess the probability of its recurrence. The analysis has to be seen as an early or even possibly premature attempt, since even though as of September 2009, the fall in production seems to be leveling off, we cannot be sure of this. What we do know from economics and from history is that the crisis will have a longer negative effect on the labor market, and will have a lasting impact on budgets, leverage ratios, risk taking and the behavior of firms, consumers, and governments in general. The negative social and economic consequences will be long lasting, as will be hopefully the lessons learned by the economic and political system and the impetus for reforms (international coordination, regulation, longer-term goals etc.).

(2) The depth of the two crises, if the current one levels off in 2009, will have been very different. The difference is largest for real GDP, and less pronounced for exports and for industrial production. It is also very different for the stock market, even though this is a market where the ups and downs are likely to continue and the current rally may not last. The largest difference is seen in employment and unemployment (the level of and changes in both). In addition the starting position regarding income, poverty, social security net and income differences (between rich and poor) could not be larger. The income level (price adjusted GDP) at the start of the two crises differ on a scale of 1:8 or 1:10.

(3) The loss of GDP (at PPP) between 1929 and 1932 reached between 15% and 25% in the countries most hit by the crisis, and about 10% for the average of industrialized countries (for estimates of world GDP). It took six years to regain the pre-crisis level, with some countries not managing this before the start of WWII (USA, France, Spain – 1951 – and Austria). In the Current Crisis world GDP is forecast to shrink between 1% and 2% in only one year (2009). World economic growth was higher (than the one year loss) in the year before the Current Crisis (2008) and world GDP currently is forecast to surpass the old maximum in 2010. The decline in GDP in 2009 is expected to be larger for the USA (as compared to the decline of world GDP) and even larger for the euro area and for the EU 27. Amongst the large countries GDP loss in 2008/2009 is forecast to be highest in Japan and in Germany, both, however, reported growth as soon as in 2Q2009. The fall is still larger in Ireland, Finland, and Sweden and in some new EU member countries. Outside the EU, Russia, Ukraine and Turkey are especially hit. Output is expected to grow even in 2009 in Poland, China and India, in the latter countries at a high and increasing rate (after diminished growth in late 2008). In the

Great Depression the drop in GDP was largest in the USA (-27% between 1929 and 1932), followed by Germany, Austria, and France, with the United Kingdom facing a small recession. Denmark and Japan continued to enjoy positive growth between 1929 and 1932.

The extent of both crises is not fully reflected in annual data. If we use quarterly data, the loss for the USA and the EU in the Current Crisis increases to 4% and that of Germany to 7%. Both rates are still definitely lower than the loss in the Great Depression (which using quarterly data would also show higher rates of maximum decline).

(4) In both crises economic growth was buoyant in the eight years preceding the crisis. This growth dynamic was more stable in the Current Crisis, despite of the dot-com crisis, which proved with hindsight to only be a growth recession. Some countries, notably the USA, had had a severe recession at the start of the twenties. Austria and Germany suffered from hyperinflation in the 1920s. At the start of the recession in 1929 inflation was moderate. There were no shortages of raw material, energy, or food, and there was even a little underlying deflationary tendency (in the United Kingdom, USA), overcapacities were reported in different industries in the USA, several European countries had low outputs relative to pre-WWI GDP. Cyclical growth had peaked before, although stock prices continued to rise, expectations were more optimistic than the actual facts supported. Leading indicators (similar to the Harvard Barometer) predicted a depression as early in 1928.<sup>31</sup>

At the start of the Current Crisis, shortages of raw material, energy, and food existed and inflation was increasing to a level not known before in the period of "great moderation". This was the label used to characterize the period between 1990 and 2007 for combining solid growth with low inflation. World economic growth reached 20% over five years (2002 to 2007), with higher growth rates in Asia, the BRIC, and Eastern Europe contributing to the shortage mentioned (and stimulated speculation which pushed prices to above equilibrium values).

(5) As far as manufacturing is concerned the decline in the Current Crisis is also smaller than in the Great Depression, but the difference is smaller than for GDP. A composite indicator of "world" industrial production, weighted by GDP, decreased by 30% in the Great Depression, and only by 19% in the Current Crisis, as measured by annual rates (and assuming the lowest value is reached in 2009). This is specifically true for the USA and Germany. In Japan, Spain, United Kingdom, Finland and Sweden the fall in production has been steeper in this crisis. Cross country variation in the rates of decline is much less in the Current Crisis. This is a consequence of globalizing industrial markets.

(6) The decline of exports (and world trade, in nominal figures) is also smaller in the Current Crisis. The difference between the decline in exports falls between the larger difference in GDP loss and the smaller difference in manufacturing production. The decline in exports for the USA in the Current Crisis is much smaller (as compared to the Great Depression but also to other countries). The decline in the Current Crisis is very similar across countries and

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<sup>31</sup> "The picture resembles the typical constellation at the beginning of a depression", (WIFO Monthly Bulletin (Monatsberichte), December 1928, p. 188. Indicators used referred to money market, stocks and goods.

had been very strong between September 2008 and February 2009 (taking monthly data by *Eichengreen - O'Rourke, 2009*), stronger than during the Great Depression.

(7) Unemployment during the Great Depression jumped from 3% in 1929 to 15% in 1932, reaching 25% in Austria and the USA, and 30% in Germany (16% in the United Kingdom). In the Current Crisis it started with levels between 5% and 8% in most industrialized countries, and the unemployment rate is bound to reach the 10% mark in the EU and the USA. We are definitely not in a position at the moment to know the end of the story, since unemployment rates continue to increase well after the production ceases to decline and starts to grow. Decreasing unemployment would need growth rates, currently not predicted in most countries (at least for 2010).

Employment decreased by 16% on average across countries in the Great Depression (-14% in the USA, -29% in Germany). Employment loss is forecast to be 2.6% in the EU in 2009 and 3.5% in the USA.

(8) Switching to quarterly or monthly data (wherever possible) and looking at the speed of the decline shows that for manufacturing, exports and stock prices there are several months where the speed of decline between the Great Depression and the Current Crisis had been similar or even larger in the Current Crisis. For the stock markets the decline was at first smaller in the lingering phase of the Current Crisis, then between August/September 2008 and February/March 2009 steeper. The decline continued beyond the first 18 months in the Great Depression, while this time stock prices started to rebound in March 2009 (by more than one third up to August 2009). Industrial production declined faster in this crisis from August to October 2008. The same is true for world trade between September 2008 and February 2009.

The similarity of the speed of decline, even if only over a few months and with regards to the most volatile indicators, demonstrates that the potential for a much steeper recession existed in the Current Crisis. It furthermore indicates very strongly that the difference in economic policy between the Great Depression and the Current Crisis mattered. Additionally two institutional factors helped slow any decline: manufacturing today is only a much smaller part of the economy (services sector and public sector are larger), and secondly some countries on the "periphery" (i.e. countries which do not lead in per capita income and which were not at the epicenter of the crisis) did not suffer that much from the problems of the industrialized countries, some countries had reserves to stabilize their economies, others received assistance from the IMF. On the other hand financial globalization and intensified trade relations could have had the potential to create a longer and much synchronized global crisis.

(9) Two specific features of the Great Depression were its length and that it occurred in several stages. It started with the stock market crash (October 1929) hitting economies at the downturn of a business cycle. This was followed by a breakdown of world trade, then by a wave of bank runs and bank failures. Economic policy reacted lenient, indecisive and late. Monetary policy was restricted by the gold standard and was applied in an asymmetric, restrictive way. The fiscal policy tried to balance budgets and prevented automatic stabilizers

from working. Competitive devaluations, rising taxes and tariffs, and finally a premature reduction of deficits (in the USA in 1937) increased the length of the Great Depression. It was the length, not the initial speed, of the Great Depression, which made the cumulative decline in output and employment that large. This time the speed in the beginning was high, mitigated by some new economic characteristics and by decisive and – at least partly coordinated – policy measures.

(10) It is not easy to describe the policy reaction from data alone. Specifically data demonstrating the role of purposive policy (as opposed to automatic changes in fiscal balances or changes in money supply driven by a downturn) are rarely available over the whole period and monetary as well as fiscal multipliers are very different between then and now. So we have partly to rely on assessments in the literature, qualitative reports and on specific data not comparable across countries and over time.

(11) Monetary policy did not try aggressively and consistently to counteract market forces in the Great Depression. In the USA money supply was purposefully reduced in 1928 in order to dampen speculation. World money supply increased in 1929, was then flat up until 1931, and then decreased strongly up until 1934. From that point on money supply increased steadily and strongly. The lack of an expansionary monetary policy holds true also for the other countries, maybe with the exception of France. Monetary policy was restricted at that time by the gold standard, which had been hailed as a success in the 1920s due to its predicted ability to prevent inflation. However, with the gold standard the money supply was limited from above. Additionally countries tried to prevent devaluations. To make things worse the gold regime was handled in an asymmetric way, insofar as countries losing gold were forced to automatically be restrictive, while countries with gold inflow, tried to sterilize it through monetary policy. As the money multiplier then decreased endogenously due to lower demand and higher risk aversion, money supply decreased further and even mildly positive measures like lowering discount rates (moderately) did not work. Real rates remained very high since prices were falling.

In contrast, monetary policy in the Current Crisis slashed discount rates to near zero (somewhat less and somewhat later in Europe). It flooded the money supply by open market purchases and less conventional operations of “quantitative easing”, including buying commercial papers and changing the rules for collateral etc. The extent of the measures taken by monetary authorities is not something that can be clearly seen from indicators on the money supply itself (like M1), but rather from the increase in the assets in the balance sheets of the central banks. Monetary policy was coordinated between the main regions. At the interface between monetary and fiscal policy governments offered guarantees for deposits and loans and banks were recapitalized. Where necessary governments took a stake (temporary ownership) in banks and sometimes even manufacturing firms and supported “bad” banks or ring fenced toxic assets.

Monetary policy was more easily to be applied in the Current Crisis. Firstly it was not limited by the gold standard. Secondly, the remit of monetary policy was interpreted flexibly and

broadly. Thirdly, there were no haunting memories of hyperinflation since globalization and European integration had led to decades of low inflation. Most European countries were sheltered from devaluation by membership of the euro area. Some countries which were not members of the EMU had to devalue. They had less room to lower interest rates. They were, however, supported by the IMF and the EU.

(12) A striking difference between the Great Depression and the Current Crisis is that there has been no deflation this time round. Nominal interest rates could thus be decreased more easily in the Current Crisis. During the Great Depression deflation transformed low and moderately decreasing nominal interest rates into high real rates. Although there were periods in the Current Crisis, where long-run financing was difficult and expensive, these periods were shortened by monetary policy and complementary guarantees. Support measures by governments and international organizations were also provided.

(13) Fiscal policy is difficult to describe using ex post data, since some of the changes in budget balances occur due to cyclical movements and some are due to discretionary measures. Examining the budget balances alone shows that no country purposefully increased its deficit as a means of combating the Great Depression in its early phases. For some countries and in some years the budget fell into the red. In most cases this led to more restrictive expenditure and attempts to raise taxes. It seems that by and large the policy goal was to have a balanced budget, only in rare cases allowing a deficit to finance some extraordinary measures such as relief work, investment in infrastructure or payments to war veterans. From 1932 to 1936 budget deficits amounted to 4% of GDP in many countries (USA, France, Italy, Netherlands). Other countries like the United Kingdom and Japan tried again, with success, to balance their budgets. What actually brought about an end to the Great Depression remains controversial, but in addition to the expansionary monetary policy used, the more active approach of some governments will definitely have made a contribution, as did the preparations for war later on.

Some of the largest deficits occurred where efforts were made to reduce unemployment, such as via the New Deal in the USA. However, even the impact of these measures is not easy to decipher in the budget balances. Overall, history does not have a clear verdict on the success of the New Deal, specifically whether it was the pro-active approach of the new administration in the USA ("we do care") or the actual expenditures themselves (fiscal deficits) which helped to overcome the depression. The largest deficit was in 1936 in the USA, probably as a result of the introduction of the veterans' bonus (enacted by the Congress, Roosevelt was not in favor of it, but did not veto it). The following decline in the deficit, which led to a new recession in 1937, was the consequence of the end of the veteran bonuses and the start of social security payments. In the later phase of the Great Depression, the deficits became higher in many countries. First public work was provided to increase employment and then preparations for war were started.

In the Current Crisis all countries allowed automatic stabilizers to work, and boosted demand additionally by increasing deficits. This was done more aggressively in non-European countries

and in countries with surpluses or low deficits at the beginning of the crisis. The extent of the stimuli is not easy to determine, since some measures (such as tax reductions) had been planned before, but in any event the stimuli were substantial. Since all countries implemented some form of stimulus package, the loss of any effect due to imports was reduced. The European Commission did loosen its rules for maximum deficits (not formally but in content), applying the clause of "exceptional circumstances" in the Maastricht Treaty. The OECD gave up the Paris Consensus<sup>32</sup> and favors an active policy mix to combat the crisis.

(14) Protectionist measures always rear their ugly head in recessions and crises. This time round there were no extra customs on imports, as with the Smoot-Hawley Tariff Act in 1930 with its negative consequences which then echoed around the world. National stimulus programs contain "buy national" clauses, which were criticized and then softened. Rescue packages concentrate on "domestic" firms, but in many cases the burden of supporting multinational firms has been shared across countries. The danger of protectionism is well known today, but soft protectionism will still occur and it may be difficult to preclude more openly protectionist measures if the crisis continues for a longer time. Some countries tried specific measures to reduce the labor supply, specifically by introducing measures of temporary short-term work (thus preventing layoffs).

(15) The Current Crisis had the potential to decline much more steeply and over a much longer period of time, indeed maybe even reaching the dimensions of the Great Depression (with regard to GDP loss, not with regard to the income level or poverty). Favorable structural characteristics may have been helpful in avoiding this outcome (lower manufacturing share, larger public sector, less dependency and more autonomy of industrializing countries, specifically China and India). However, on the other hand fiscal, trade and investment globalization may have caused the spread of the crisis to be more synchronized than in the Great Depression. This in itself could have accelerated the cumulative downward forces. However, economic policy learnt some lessons from history and acted on these lessons. This together with the fact that policy was more internationally coordinated meant it was possible to divert the course of this crisis from following that of the Great Depression, at least in terms of depth and length.

To be fair economic policy was not out rightly restrictive in the Great Depression. Monetary policy was only mildly restrictive at the beginning (to stop speculation and an overoptimistic mood since money supply had increased fast in the late twenties). Unfortunately the gold standard and its asymmetric implementation led to a decrease in the money supply from 1932 onwards. In addition lower interest rates (discount rates) were transformed into high real rates as a result of deflation. Quantitative easing was not known about or feasible at that time and haunting memories of hyperinflation were not congenial to any cooperation between monetary and fiscal authorities. Banks were partially bailed out or nationalized,

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<sup>32</sup> Labeled by *Aiginger* in parallel to the Washington Consensus as advice to deregulate product and labor markets and wait for positive reaction with regard to growth and unemployment.

deposits guaranteed and rescue packages implemented, but in an ad hoc and ex post way. Monetary policy switched to an expansionary gear after 1932.

Fiscal policy was also not completely restrictive. Budgets which were balanced in 1929 went into deficit. The deficits of 0.5% and 1% in 1930 and 1931 respectively were very low and indicate that governments tried to balance automatic stabilizers. The demand stimulating effects of an increase of the fiscal deficit from zero to 3% in 1932 is not that far different from today's, if we take into account that the government share in GDP was much lower. The expectation (and the advice of economists) was that governments should try to balance the budget in bad times, and therefore governments actually reduced expenditure and increased taxes. This did not eliminate deficits, but rather served to curb demand, effectively aggravated a failing banking system and actually prolonged the crisis. Fiscal policy did switch into a more expansionary track rather late (from 1932 onwards).

(16) The difference between policy reaction then and now is, that in the Current Crisis all players in economic policy, and all countries from the first moment on were determined to combat the crisis using all necessary measures, and even if this meant stretching current rules to their limits (e.g. those of the Maastricht Treaty or the separation between monetary and fiscal policy). This is in contrast to the Great Depression where most governments were indecisive or restrictive, and where monetary policy was restrictive and bound by restrictive rules or bad memories. Monetary policy became specifically restrictive (1932) just as fiscal policy became a little bit more expansionary. Countries tried to improve their individual situation through devaluations, import restrictions and tariffs. Even if some countries tried to be more expansionary in one or other policy, it was not enough, because other policies or countries were not supportive. Furthermore, multipliers are very small for an individual country, especially if other policy areas are handled restrictively.

(17) There are many caveats in this paper which must be borne in mind. One is a lack of data and its comparability across countries and over time. For most indicators data for only a few countries was used (mainly the large industrialized countries). Sometimes data is only available for benchmark years and had to be interpolated. Most of the data is annual data. Quarterly or monthly data could be added for few countries or recent periods. More data could in principle become available, if one could dig deeply into archives and national statistics. The second and most important caveat is that the Current Crisis is not over. It may be leveling off as far as production is concerned. But it will continue in employment and in fiscal and trade imbalances etc. We know from the Great Depression that there were several phases in which the nightmare was expected to be over, but this turned out to not be the case. Importantly, at the moment we do not know how economic policy will react in the later phases of the Current Crisis and in the exit phase. There had been an astonishing consensus among economists and politicians about how to proactively combat the crisis this time. We do not know whether the consensus will last, if at the same time unemployment and budget deficits approach the 10% mark (or the 7% mark for countries with better conditions).

Furthermore we cannot yet know how much policy makers, firms and consumers have learned in the crisis.

(18) There are some arguments which give hope that the Current Crisis will not share that feature of the Great Depression where new problems kept arising every time there was hope that it was all over. The main phases in the Great Depression were the stock market crash, then the breakdown of world exports and finally bank runs and failures. To these you could maybe add the breakdown of overoptimistic expectations especially in the USA in the starting phase of the crisis and the early reduction of fiscal impulses in 1937. In the Current Crisis most of these steps seem to have come at once in 2009.

In terms of policy we can learn from the Great Depression. Firstly it is crucial not to eliminate economic impulses through monetary and fiscal policy prematurely. Banks must not be allowed to pay back the public funds too early. As regards economic policy it might be advisable to further commit to economic intervention if there continues to be signs of weaknesses, or new failures of systemic banks, or if there are countries at the brink of insolvency. Governments and the IMF should keep reserves for further contingencies. Secondly, economic policy should refrain from open or clandestine protectionism. Thirdly, the expectation must be that the recovery will need time. Growth will come but it will be low and bumpy. Reforms of the public sector are necessary to increase efficiency so that debts can actually be reduced without having to increase taxes on labor, corporations and consumption too much. In any event deep seated reforms have upfront costs, which are acceptable until about 2010. Thereafter expenditure needs to decrease rapidly. Furthermore, public expenditure needs to shift from old structures (cash for clunkers) to investing in future needs. Finally and most importantly, the microeconomic problems (incentives, regulatory failure) as well as the macroeconomic problems (imbalances, relationship between the financial and real sector, and income distribution) which have led to the Current Crisis should be tackled with rigor. These issues were not sufficiently addressed in the "firefighting phase" of the Current Crisis.

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## Appendix

Table A.1: Overview of the causes of the crisis

Trigger:	Unsecured loans to US home owners Politically welcomed, cleverly sold Bundled, rated and passed on
Regulation failures:	Underestimation of risks and belief in self regulation Overwhelmed by innovations and internationalization Pro cyclicalities were supported by rules (mark to market valuation, Basel II) Oligopoly structure of rating agencies, incompatibilities; stock market listing Neglect of cumulative systemic risks Insufficient regulation of the derivative market, Special Purpose Vehicles, Hedge Funds
Inflated expectations of returns:	Heterogeneity of profits across to countries/businesses, activities New forms of equity substitutes Leveraging of banks, the firms and consumers
Imprudent in incentive systems/risk management:	Bonus for short term success, stock options Overleveraging and hybrid capital Illusion about the benefits of mergers and firm size (market wide oligopolies) Speculation as an attractive career Higher earnings in financial capital relative to real capital Risk free promises from advisors, pension funds in mathematical model
Macro-economic imbalances:	Savings surplus of the emerging Asian countries, oil producers Triple deficit in the USA: trade, budget and savings Insufficient reduction in money supply after the recovery in 2002 Reinvestment of rent seeking capital in the USA
Aggravating factors:	Bubbles in currency, raw material, oil and food stuffs Specialized plus just-in-time relationships with purchasers/subcontractors Short-term view regarding profits, accounting rules and analyst's reports Shortages of raw materials, energy, food stuffs Unequal income and wealth distribution Provision of loans and then selling them on ("originate to distribute")
Weakness in coordination:	IMF, World bank, G7, competition policy, tax havens Underestimation of systemic risks

Source: Aiginger (2009A), <http://www.wifo.ac.at/aiginger/crisis/>

Table A.2: Strategies to combat the crisis (in addition to regulatory reform)

Monetary policy	Reduce interest rates Increase money supply Purchase commercial papers including private loans
Fiscal policy	National, international, regional stimulus programs Lifting formal/informal barriers to the take up of new debt Strategic spending (future investment: education, R&D, green technology) Improve the incentive structures of taxation
Guarantees	Savings Small loans Long term industry financing Small pensions, minimum level of social insurance benefits Fight poverty through employment
Reduce risks	Currency fluctuation: coordination, corridors Improve incentive structures: transparency, accounting rules
Working time	Combine short time work with training, certificates and qualifications Reduce youth unemployment through training Making informal jobs more professional
Reduce mismatch between supply and demand	Career advice Re-training, mobility increasing measure Increasing choices (type of cars etc.)
Reintroduce buffers and reserves	Longer rather than shorter term success criteria Foster non-market based relationships, trust Stock piling, regional supply relationships Fixed interest rates, less complex financial products Diversified product and supplier networks Stricter monopoly controls, monitor inconsistencies
Promote European model	Strengthen, medium term, consensual solution Expand role as environmental forerunner, Turn green technologies into a leading segment of the economy Promote electric cars and solar powered charging stations Reducing social insurance payments (not benefits) for low incomes

Source: Aiginger (2009B), <http://www.wifo.ac.at/aiginger/resilience/>

Table A.3: Share of countries in world GDP

	1900	1913	1920	1929	1932	1940	1950	1960	1990	2000	2006
EU 15	33.2	32.5	31.2	30.6	30.9	28.7	24.9	25.5	21.3	19.7	17.0
Germany	8.2	8.7	6.9	7.4	7.1	8.4	5.0	6.6	4.7	4.2	3.5
France	5.9	5.3	5.1	5.4	5.3	3.7	4.1	4.1	3.8	3.4	2.9
Italy	3.0	3.5	3.9	3.5	3.9	3.5	3.1	3.5	3.4	3.0	2.4
Spain	1.7	1.5	1.9	1.8	2.0	1.2	1.2	1.1	1.7	1.7	1.6
Netherlands	0.9	0.9	1.2	1.2	1.3	1.0	1.1	1.1	1.0	1.0	0.8
Belgium	1.3	1.2	1.2	1.1	1.2	0.8	0.9	0.8	0.6	0.6	0.5
Austria	0.9	0.9	0.6	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.4
Finland	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
United Kingdom	9.4	8.2	8.6	7.1	7.6	7.3	6.5	5.4	3.5	3.3	3.0
Sweden	0.7	0.6	0.7	0.7	0.7	0.7	0.9	0.8	0.6	0.5	0.5
Portugal	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.3
Greece	0.3	0.3	0.0	0.4	0.5	0.4	0.3	0.3	0.4	0.3	0.4
Ireland	0.0	0.4	0.0	0.2	0.3	0.2	0.2	0.1	0.2	0.2	0.2
USA	15.8	18.9	24.1	23.7	19.7	20.7	27.3	24.3	21.4	21.9	19.6
Japan	2.6	2.6	3.8	3.6	4.1	4.7	3.0	4.4	8.6	7.2	6.1
Sum of countries	51.3	53.6	58.6	57.4	54.9	53.5	54.7	53.7	50.9	48.4	42.4

Note: 1990 international Geary-Khamis Dollar. - World: Maddison (1995); missing years interpolated with growth of nine countries (US, DE, FR, UK, ES, BE, FI, SE, AT).

Source: World: WIFO calculations using OECD (Maddison, 1995: 1900-1949); individual countries: Groningen (1900-2006), WIFO (2006-2009).

Table A.4: Content of the stimulus packages (SP)

	Infrastructure		Science, R&D and innovation		Education		Green Technology	
	% of GDP	% of SP	% of GDP	% of SP	% of GDP	% of SP	% of GDP	% of SP
Germany	0.50	35.7	0.10	7.1	0.60	42.9	0.20	14.3
France	0.24	85.7	0.00	0.0	0.04	14.3	0.00	0.0
Finland	0.48	90.6	0.01	1.9	0.02	3.8	0.02	3.8
Sweden	0.27	42.5	0.29	45.6	0.02	2.5	0.06	9.4
Portugal	0.03	4.1	0.13	17.8	0.41	56.2	0.16	21.9
Poland	0.07	84.7	0.01	15.3	n.a.		0.00	2.4
Norway	0.16	66.7	0.01	4.2	0.01	4.2	0.06	25.0
Europe	0.27	41.0	0.09	14.0	0.22	33.6	0.07	11.4
Europe (incl. Norway)	0.25	42.9	0.08	13.5	0.18	31.3	0.07	12.3
USA	0.70	38.9	0.11	6.1	0.58	32.2	0.41	22.8

Source: WIFO calculations using tip (2009), OECD, Saha – Weizäcker (2009).

Table A.5: The size of stimulus packages (as % of GDP)

2009/2010		2009/2010	
Germany	1.65	Poland	1.25
France	0.55	Hungary	-4.40 <sup>1)</sup>
Italy	0.00	Czech Republic	0.75
Spain	1.45	Slovakia	0.05
Netherlands	0.95	Slovenia	0.55
Belgium	0.40	Cyprus	0.05
Austria	1.80	Estonia	0.25
Portugal	0.50	Malta	1.60
Finland	1.70	8 new members	0.01
Greece	0.00	USA	5.60 <sup>1)</sup>
Ireland	0.50		
Luxembourg	1.30		
United Kingdom	0.70		
Sweden	1.50		
Denmark	0.60		
EU 15	0.91		

Note: Minus = budget consolidation; pro-cyclical policy: Hungary, Romania, Baltic States. – <sup>1)</sup> OECD.

Source: European Commission, OECD.

Table A.6: Strategy elements to increase resilience: feasibility and side effects

	Controllable by economic policy	Growth effect	Cost effect	National possible/ only international
<b>Policy Area 1: More resilient Economic structures</b>				
Strategy 1: Upgrading the industrial structure	difficult	positive	-	national
Strategy 2: Regional diversification of exports	somewhat	rather positive	-	national
Strategy 3: Build in buffer and avoid lock – In	partly (stocks)	negative	increasing	rather international
Strategy 4: Strengthening automatic stabilizers	yes	rather negative	-	national
<b>Policy Area 2: Increasing economic growth</b>				
Strategy 5: Investing into the future	yes	positive	short-term increasing/ long-term decreasing	national
Strategy 6: Directing the public sector towards growth	yes	positive	short-term increasing	national
Strategy 7: Projects with a dual purpose, high employment and growth effects	yes	yes	short-term increasing	national
<b>Policy Area 3: Emphasising on longer-term goals</b>				
Strategy 8: Measure performance over the long term	partly	rather positive (?)	increasing?	international
Strategy 9: Start ups	somewhat	positive	increasing private	national
Strategy 10: Anti Cyclical wage policy	partly	?	increasing	rather international
Strategy 11: Thinking more long term (European Model)	marginal	rather positive (?)	rather increasing	international
<b>Policy Area 4: Avoiding a crisis</b>				
Strategy 12: Smart regulation	yes	positive	-	international
Strategy 13: Work against the pro-cyclical nature of R&D expenditure	yes	positive	public increasing	national
Strategy 14: More critical evaluation of mergers and company size	yes	?	short-term increasing	international
Strategy 15: Tax financial transactions, evaluate financial innovations, reduce speculation	yes	rather positive (?)	slightly increasing	only international
Strategy 16: Deleveraging and a more stable shareholder structure	marginal	rather positive (?)	increasing	rather international
Strategy 17: More regionalization	somewhat	negative	increasing	national (limited)
<b>Policy Area 5: Crisis stabilizing institutions</b>				
Strategy 18: Budget surplus before a crisis	yes	short-term/ long-term	?	national
Strategy 19: Construction ready projects	yes	yes	positive	national
Strategy 20: Supporting firms with a viable business model only	somewhat	yes	slightly increasing	national
Strategy 21: Innovative solutions to limit unemployment	rather yes	yes	positive	national
Strategy 22: Experience rating	yes	-	decreasing	national
Strategy 23: Broader company goals, trust and for distribution	difficult	positive?	short-term increasing/ long-term neutral	also national

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