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Business Cycle Volatility: Does the European-Style Safety Net Help?

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Abstract
The global recession of 2007–2009 raised an interesting question: are the European welfare states with their large governments and extensive social safety nets more immune to business cycles than their income peers in the OECD? In this paper, we test empirically whether that has been the case in the long run. Our sample includes twenty-one OECD countries and a thirty-nine-year time period from 1970 through 2007. Our tests measure whether the level of government intervention in economies is significantly related to the variability in income growth.

JEL codes: E32, H11, I38, N10, O11, P51
Keywords: Baxter-King filter, Business cycle, Government size, Safety net, Welfare state, Growth volatility

I. Introduction

Volatility
Synonyms: instability, unpredictability, precariousness, explosive nature
Antonyms: stability, constancy, steadiness, firmness, solidity, permanence, immovability

The great volatility in market outcomes has arguably been the biggest shortcoming in capitalism's successful run in the last few centuries. In fact, in his theory of historic materialism, Karl Marx argued that the capitalist system, while historically necessary in helping to increase nations' capacity to produce goods, will face crises of increasing severity over time. Its end will come when the masses of laborers will not put up with the crises and subsistence level wages

anymore and they unite to force a change. Contrary to his prediction, capitalism has not collapsed, but survived and flourished. Marx was right, though, that economic volatility, the constant and at times erratic tendency of the economy to cycle from good times to bad times and back, seems to be one of the hallmark features of capitalist systems.

That capitalism never died, as Marx predicted, has much to do with the reforms of the critical inner parts of the system in the last 130 years. The capitalist renewal process started in earnest in the 1870s with the Prussian welfare policies, partially enabled by the wealth generated through capitalist policies, and has been ongoing ever since.[1] A defining moment in this renewal process was the 1936 publication of John Maynard Keynes's *The General Theory of Employment, Interest and Money*. During the economic calamity of the Great Depression, when people were starting to doubt the long-term viability of capitalist economies, Keynes provided new answers to the critical question of the time: is there anything one can do to tame the extreme economic volatility in economic outcomes under capitalism? Keynes famously identified (but did not explicitly explain) the variability in aggregate demand as the culprit behind economic cycling, and then suggested that governments, through their spending and taxation (deficit) policies, should take an active role in smoothing the demand for goods and services.

In the ensuing decades, governments accepted Keynes's policy prescription to varying degrees. In one side of this policy debate is a group of countries that has little or no trust in government-provided solutions, arguing that the Keynesian solution leads to (in this order) larger governments, higher taxes, and ultimately lower average incomes. This group is often characterized by its affinity for laissez-faire economic policies. On the other side of the continuum are the welfare states, which have not only embraced Keynesian demand management, but have also created highly elaborate social insurance systems aimed to shield their citizens as much as possible from market volatility.

During the Great Recession of 2007–2009, a question arose whether economies with a strong government presence were coming out of the crisis faster and less damaged than economies with a lesser government presence. In this paper, we test empirically for the historical association between government size and type, and the

[1] See Fay (1950) on Bismarck's welfare state.

severity of business cycles. Our sample of analysis includes twenty-one developed countries and comparable country-level data for 1970–2007. In particular, our tests measure whether the variability in income growth in high-income countries since 1970 is significantly related to the type of capitalism and the level of government intervention. Our specific interest is to compare countries at the opposite ends of the capitalist range (laissez faire vs. welfare states). Our contribution to the existing literature is threefold. First, we compare economic volatility in two specific country groups rather than analyzing volatility in just one single country or one larger group of countries. Second, our measures of volatility (CV, Baxter-King filtering) are more advanced than has been the norm in much of the previous literature. Finally, rather than following the standard of choosing between a cross-section and time series, our analysis covers twenty-one countries over thirty-nine years.

II. Economic Cycles: A Historical Overview

Classical economists maintained that supply will create its own demand. That is, the level of production will determine income, which in turn will very nearly ensure that there is adequate demand for the goods produced. Furthermore, as long as labor markets remained competitive, paying workers at rates significantly below their economic contribution would not happen. Capitalism was seen to have the potential to radically change the face of entire societies, helping the masses to escape the low incomes of agrarian societies.

Not all classical economists agreed. While Marx and Engels (1848, p. 65) acknowledged that "the bourgeoisie, during its rule of scarcely one hundred years, has created more massive and more colossal productive forces than have all preceding generations together," they also maintained that the economic condition of the working class during the capitalist industrialization would become not better, but increasingly worse. While capitalism in their view did provide appropriate incentives for capital owners to invest their profits and constantly improve the means of production, Marx's "Law of the Tendency of the Rate of Profit to Fall" stated that the ever-worsening cycling in economic outcomes will ultimately be the undoing of the capitalist system (Marx and Engels 1867). In particular, Marx and Engels argued in their *Communist Manifesto* (p. 72) that "the growing competition among the bourgeoisie, and the resulting commercial crises, make the wages of workers ever more fluctuating," dragging an ever-larger portion of the middle class to

the ranks of the proletariat. At that point, with its gigantic means of production and exchange, "[the bourgeois society] is like the sorcerer, who is no longer able to control the powers of the subterranean world which it has called up by his spells" (Marx and Engels 1848, pp. 66–67). The exploited working class would take control of all the productive assets with any means necessary and establish first, socialist, and then, communist societies. The notion that capitalism would die in the long term seemed inevitable to Marx.

Marx was wrong about the inevitable demise of capitalism, but he was partially correct in his prediction that the degree of income inequality would be the critical factor in determining capitalism's long-term fate. Indeed, during the nineteenth century, the benefits and faults of capitalism became all too clear to the masses and rulers alike. The rise in societies' productive capacities was stunning—never had there been so much wealth—yet, the rising disparity in the living conditions of the haves and have-nots was also becoming ever-more apparent. The mass misery of workers during the industrial revolution is well-documented in the literary classics by Carlyle, Dickens, Fourier, Melville, Owen, Saint-Simon, Schiller, Wright, and others. For the new system of production to survive, it seemed some moderation needed to be incorporated into it. The problem was that economic cyclicality often hit the less-wealthy the hardest, eroding the popular support for capitalism.

The capitalist transformation did start in earnest during the last decade of Marx's life, though, and has continued ever since. Every wealthy society of the twenty-first century has introduced elements to capitalism to moderate what are viewed as its built-in undesirable tendencies. The interpretation of what these undesirable tendencies are and what—if anything—needs to be done about them, though, has varied widely from country to country and over time.

During the Great Depression, many people questioned openly the future of capitalism, with Soviet socialism presenting itself as a viable alternative. In fact, as Kornai (1992) notes, Soviet plans were created under the notion that if a plan covers the entire economy, much if not all of the uncertainty can by definition be planned away. It was in this context that Keynes proposed a way to get capitalism back on its feet. The Keynesian solutions were active demand management by governments (discretionary spending, taxation), and the building of automatic income stabilizers (entitlement spending), such as social security or unemployment insurance, to economic systems. Starting in the 1930s and 1940s, select Western governments

started to institute these changes to their capitalist systems.[2] The early results, typically at least partially attributed to the new government involvement, were impressive, with Japan, Germany (and the socialist Soviet Union), and, to a lesser extent, France and Italy posting the highest growth rates in the world in the 1950s.[3] The fact that the deviations from free market policies did not seem to stall economic growth, but to foster it, led many countries to further experimentation with regard to government's role in the economy. Encouraged by the early evidence, governments started to grow and take up new responsibilities.

Governments' rising role in capitalism is not without controversy. Austrian business cycle theory (sometimes called the Mises-Hayek business cycle theory), in particular, has provided intellectual counterbalance to the Keynesian view. The Austrians—among them Hayek (1979), Cochran (2001), Garrison (2004), and Sechrest (2006)—argue that the excessive fluctuation in business investments (the root cause of the business cycle) is the result of monetary excesses instigated by governments. It is the money and credit expansion that will lead to boom times, during which business investment starts to flow to unsound uses. The misallocation of capital will only be corrected by recessions, when markets will reallocate capital to more efficient uses.

The lessons of the Austrian business cycle theory are twofold. First, since government-created bubbles are seen as the root cause of market volatility (and excess unemployment), it is argued that governments should stay away from active monetary policy. Second, if governments cannot stay away from monetary policy, they should run it with the greatest moderation to avoid creating bubbles and also to have in place an institutional framework (including fully predictable monetary policy) that during recessions allows markets to reallocate resources quickly.[4] Institutions supportive of free markets will allow for a swift adjustment of resource flows when necessary, minimizing the length and depth of economic cycling. As Olson (1982), North (1990), and Acemoglu et al. (2003) have shown, weak institutions, on the other hand, allow contractual uncertainties in

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[2] Stein (1994) provides an excellent account of the evolution in government's role in the U.S. economy.

[3] For a good presentation on comparative national growth rates, see Maddison (1995).

[4] Kent et al. (2005), for instance, show that due to policy lags, fiscal policy can be highly procyclical, exacerbating rather than dampening economic volatility.

society to linger, causing sudden economic shocks to have unnecessarily harsh reductions in output when market participants react to the new circumstances.

III. Basic Statistics on Economic Volatility

The countries that that have gone the furthest in their experimentation with the role of government are commonly called the welfare states. Merriam-Webster's dictionary defines "welfare state" as "a social system based on the assumption by a political state of primary responsibility for the individual and social welfare of its citizens." In practice, this has meant governments following commodity egalitarianism, setting a high minimum standard for a social safety net and for a public provision of basic goods and services. The mix typically includes comprehensive retirement, disability, and employment insurance, plus public health and education systems. In addition, direct income transfers are used to bolster the incomes of the poorest citizens.

As Kenworthy (1999) and Bradley et al. (2003) show, the welfare states have lower absolute and relative poverty rates when compared with their peers at similar income levels. Commonly cited examples of classical welfare states include Germany, the Netherlands, and Scandinavia (Denmark, Finland, Iceland, Norway, and Sweden) in particular.[5] Since relatively many goods and services are provided by the government, a high level of taxation is the natural consequence of these systems. When comparing the current relative size of government in Scandinavia to that in the United States, for instance, the average government in the former is over 60 percent larger, according to the OECD.

Table 1 provides a one-year snapshot of the most recent numbers for the size of government, as measured by tax revenues as a percentage of GDP, for twenty-one wealthy OECD countries. The country with the highest tax revenues as percentage of GDP in 2007 was Denmark, at almost 49 percent. The four Nordic countries averaged about 46 percent, which is 10 percentage points above the OECD average. The Anglosphere, as a whole a more laissez-faire group of countries (Australia, Canada, Ireland, New Zealand, the United Kingdom, and the United States), had a relative size of

[5] Iceland has been an OECD member since 1961. Unlike for the other four Scandinavian countries, the OECD database lacks comparable macro data for Iceland until recently. As a result, the analysis in this paper will focus on the Nordic-4 group.

government three percentage points below the OECD average and a full 13.5 percentage points below that of the Nordic four. In terms of revenues, the top thirteen countries in the list of twenty-one are European, while five of the last eight are from the Anglosphere.

Table 1. Government Size in Twenty-One OECD Countries

Rank	Country	Revenue, %/GDP	Group Averages	Revenue, %/GDP
1	**DENMARK****	48.7	OECD	35.8
2	**SWEDEN****	48.3	Anglosphere	32.5
3	**BELGIUM**	43.9	EU-15	39.7
4	**NORWAY****	43.6	Nordic-4	45.9
5	**FRANCE**	43.5		
6	**ITALY**	43.5		
7	**FINLAND****	43.0		
8	**AUSTRIA**	42.3		
9	**NETHERLANDS**	37.5		
10	**SPAIN**	37.2		
11	**PORTUGAL**	36.4		
12	**GERMANY**	36.2		
13	**UK***	36.1		
14	New Zealand*	35.7		
15	Canada*	33.3		
16	**GREECE**	32.0		
17	Australia*	30.8		
18	**IRELAND***	30.8		
19	**SWITZERLAND**	28.9		
20	Japan	28.3		
21	United States*	28.3		

Note: *Anglosphere, **Nordic-4,
European countries in bold uppercase.
Data source: *OECD Stat Extracts 2010*.

In the last few decades, the welfare states have run macroeconomic policies that are not Keynesian per se, yet in terms of outcomes they closely resemble the original Keynesian thinking. The welfare states are not strikingly more active than others in fighting downturns with new discretionary spending programs. Rather, they have built programs that will automatically start helping individuals in business downturns. Some of these entitlement programs are

countercyclical in nature (unemployment insurance, early retirement, access to extra training and education), while others (social security, health insurance) guarantee a constant stream of income or services regardless of the economic cycle. As Darby and Mélitz (2008) and Furceri (2009) note, since most of these entitlement programs do not have a spending cap, they act as standard Keynesian stimulus spending in downturns.

While these automatic stabilizer programs, sometimes called social expenditure programs, can be found in all wealthy countries, their size in Europe is much above the OECD average, as Table 2 shows.[6]

[6] *OECD Factbook 2007* states that social expenditures "as a percentage of GDP are a measure of the extent to which governments assume responsibility for supporting the standard of living of disadvantaged or vulnerable groups. Public social expenditure comprises cash benefits, direct 'in-kind' provision of goods and services, and tax breaks with social purposes. To be considered 'social', benefits have to address one or more social goals. Benefits may be targeted at low-income households, but they may also be for the elderly, disabled, sick, unemployed, or young persons. Programmes regulating the provision of social benefits have to involve: *a*) redistribution of resources across households, or *b*) compulsory participation. Social benefits are regarded as public when general government (that is central, state, and local governments, including social security funds) controls relevant financial flows. The expenditures shown here refer only to public social benefits and exclude similar benefits provided by private charities." As with Table 1, Table 2 is a simple snapshot of a typical year: the rankings do vary from year to year.

Table 2. Social Expenditure in Twenty-One OECD Countries

Rank	Country	Spending, %/GDP	Group Averages	Spending, %/GDP
1	**FRANCE**	28.4	OECD	19.3
2	**SWEDEN****	27.3	Anglosphere	17.4
3	**AUSTRIA**	26.4	EU-15	23.5
4	**BELGIUM**	26.3	Nordic-4	24.8
5	**DENMARK****	26.1		
6	**GERMANY**	25.2		
7	**FINLAND****	24.9		
8	**ITALY**	24.9		
9	**PORTUGAL**	22.5		
10	**SPAIN**	21.6		
11	**GREECE**	21.3		
12	**NORWAY****	20.8		
13	**UK***	20.5		
14	**NETHERLANDS**	20.1		
15	Japan	18.7		
16	**SWITZERLAND**	18.5		
17	New Zealand*	18.4		
18	Canada*	16.9		
19	**IRELAND***	16.3		
20	United States*	16.2		
21	Australia*	16.0		

Note: *Anglosphere, **Nordic-4,
European countries in bold uppercase.
Data source: OECD Stat Extracts 2010.

In relative terms, the EU-15 social expenditure is 45 percent higher than that of the United States. The Nordic four spent a full 54 percent more on social matters than the United States. When considering Tables 1 and 2 together, the overall picture is clear: the European countries rely considerably more on the Keynesian-type market intervention than the more laissez-faire Anglosphere does, or the United States alone. The European OECD countries have much larger governments on average and more extensive social programs than their income peers in the OECD.

IV. Empirical Findings

So, what are our findings on business cycle volatility? To start with, Table 3 ranks twenty-one OECD countries based on the coefficient of variation (CV; standard deviation/mean) of their long-run real GDP growth rate. On the basis of simple standard deviation, the differences in government size do not seem to matter a great deal; the volatility among country groups is fairly uniform. This is partly an unfair comparison, though. Economies with a large government presence have also experienced growth rates well below that of the group of countries with lower government presence. When the sample means of growth rates differ considerably between groups, relative standard deviation (CV) gives a better sense of the true output volatility than does simple standard deviation, the standard choice of the previous literature.

Table 3. Real Average Annual GDP Growth Rate, 1970–2008, Twenty-One OECD Countries

Rank	Country	Mean	Median	Min.	Max.	SD	CV
1	Australia*	3.58	3.69	-3.36	8.97	2.31	**0.65**
2	Canada*	3.33	3.59	-3.71	8.84	2.39	**0.72**
3	**FRANCE**	2.31	2.13	-3.88	6.30	1.84	**0.80**
4	United States *	3.13	3.11	-4.11	9.55	2.50	**0.80**
5	**SPAIN**	2.95	3.04	-4.45	8.83	2.51	**0.85**
6	**NORWAY****	3.28	3.19	-5.35	14.06	2.85	**0.87**
7	**AUSTRIA**	3.00	2.97	-5.37	11.37	2.64	**0.88**
8	Japan	4.77	4.15	-8.67	16.58	4.51	**0.95**
9	**NETHERLANDS**	2.10	2.44	-5.03	5.87	2.04	**0.97**
10	**UNITED KINGDOM***	2.42	2.55	-5.89	9.98	2.37	**0.98**
11	**GREECE**	2.60	2.93	-3.74	7.19	2.68	**1.03**
12	**PORTUGAL**	2.45	2.61	-4.08	10.65	2.65	**1.08**
13	New Zealand*	2.98	2.91	-5.85	14.87	3.23	**1.08**
14	**GERMANY**	2.65	2.58	-6.62	16.15	2.96	**1.12**
15	**SWEDEN****	2.19	2.71	-6.91	8.24	2.50	**1.14**
16	**IRELAND***	4.64	5.71	-9.31	15.13	5.54	**1.19**
17	**BELGIUM**	2.06	2.09	-4.25	19.68	2.49	**1.21**
18	**FINLAND****	2.67	3.29	-9.81	10.58	3.48	**1.31**
19	**SWITZERLAND**	1.89	2.36	-9.07	8.61	2.58	**1.37**
20	**ITALY**	1.48	1.64	-6.51	6.31	2.07	**1.40**
21	**DENMARK****	1.61	1.82	-6.99	7.25	2.47	**1.54**

Note: *Anglosphere, **Nordic-4, European countries in bold uppercase.
Data source: *World Development Indicators*.

As Table 3 shows, the European countries (in bold uppercase) inhabit the bottom of the list. What this means is that business cycle fluctuations have actually been relatively higher in Europe than elsewhere in the OECD over the last four decades. Based on these numbers alone, it appears that the automatic stabilizers in Europe have not been particularly successful in taming GDP fluctuations.

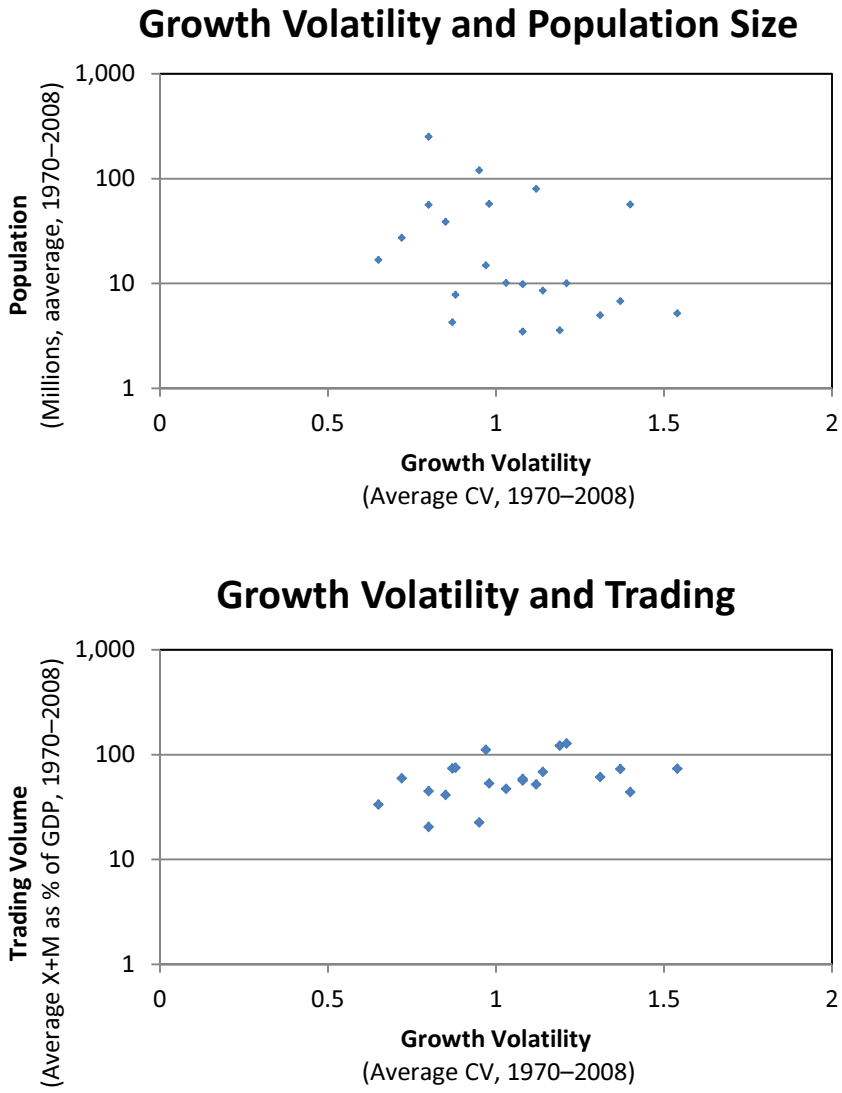
A legitimate argument can be made, though, that many European countries may be particularly vulnerable to exogenous shocks, given their relatively small populations and dependence on international trade. One may speculate that the level of specialization and the resulting dependence on foreign trade will make countries inherently less stable than their larger, more diversified counterparts.

Figure 1 shows the correlations between 1970 and 2008 for population size and growth volatility (CV) and for foreign trade as a percent of GDP and growth volatility (CV). The Pearson correlation

coefficient between growth volatility and population size is -0.297, meaning that small countries' GDP growth rates are moderately more volatile than large countries'. The Pearson correlation between growth volatility and foreign trading was +0.360, meaning that trade dependency is loosely and positively related to GDP volatility.[7] As Table 6 will show later, though, the extent of foreign trading does not appear to be a decisive factor in business cycle volatility.

[7] Rodrik (1998) argues that economic openness and government size are closely associated. Opening up for trading creates economic uncertainty, and voter resistance in democracies, which can be overcome by new redistributive government programs. Afonso et al. (2010), though, point out that in their study of 132 countries, there was little evidence of governments quickly responding to new economic conditions.

Figure 1. Growth Volatility and Population Size and Foreign Trading in 21 OECD Countries



Data source: World Development Indicators.

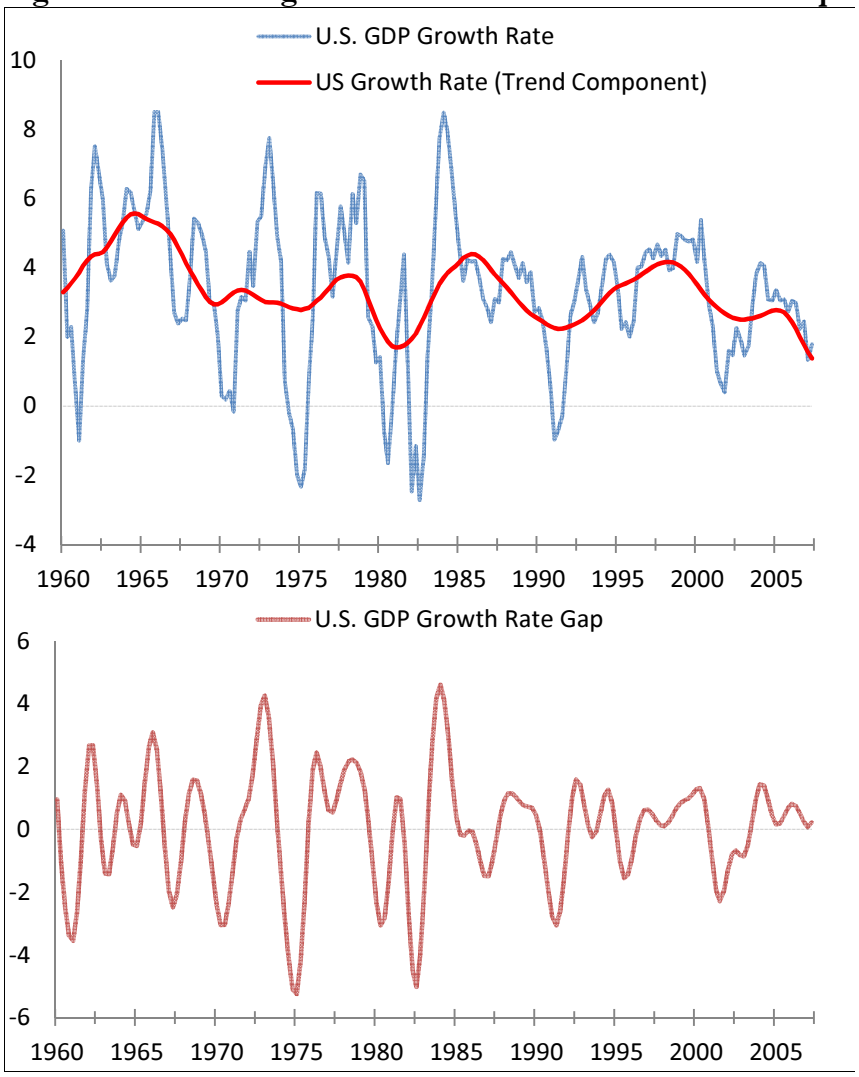
Next, we wanted to find out how much the recorded quarterly GDPs had actually deviated from each country's long-run GDP growth trend. To create the trend for each of the twenty-one

countries, we used Baxter-King (1999) filtering.[8] Figure 2 shows the smoothed long-run growth trend for one sample country, the United States. The bold line in the upper graph is the long-run growth trend for the United States, whereas the fluctuating line in the lower graph shows quarterly deviations from the trend. We calculated the filtered series for each of the twenty-one OECD countries. Furthermore, we separated the data into periods when the cycle is above the trend and periods when the cycle is below the trend.[9]

[8] The Baxter-King (BK) filter separates the data into three components: a long-run trend, a medium-run business cycle, and short-term noise. The trend contains cycles over eight years in length, the business cycle contains cycles between 1.5 and eight years, and the noise is attributed to cycles less than 1.5 years in length. For this study, we are mainly interested in the cycle component.

[9] The BK filter is not the only method commonly used to isolate the business cycle. Using the Hodrick-Prescott (HP) (1997) filter leads to slightly higher deviations because it isolates cycles between 0.5 years and eight years instead of the 1.5 to eight years used in the BK filter. The main results of the paper are substantially the same when using the HP and BK filters.

Figure 2. Baxter-King Filter: The U.S. GDP Growth Rate Gap



Data source: *OECD*.

As the next step, we compared two country groupings: the Nordic-4 (which has a relatively high level of government involvement) and the Anglosphere (which has relatively low level of government involvement). For the Nordic group, the average tax revenue/GDP ratio (2007), for instance, was 46 percent, while the same average for the Anglosphere was 33 percent.

Table 4 shows the negative deviations from the GDP growth trend in five-year intervals for the Nordic-4 and the Anglosphere.[10] The table indicates that the GDP deviations below the trend were less severe in the Nordic countries in the 1970s and to some extent in the 1980s. Since then, the Anglosphere has shown more GDP stability.[11]

Table 4. Baxter-King Filter: GDP Gap in Selected Countries

Group/Year	'70–'74	'75–'79	'80–'84	'85–'89	'90–'94	'95–'99	'00–'04	'05–'07	Total
Nordic Countries									
Denmark	–	–	-1.17	-1.54	-1.20	-0.74	-0.97	0.00	**-0.94**
Finland	-0.09	-1.63	-0.81	-0.80	-3.03	-0.6	-1.13	-0.12	**-1.03**
Norway	-1.04	-1.31	-2.13	-1.61	-0.83	-1.68	-0.97	-0.05	**-1.20**
Sweden	0.00	-1.77	-1.07	-0.34	-1.58	-1.66	-1.16	-0.02	**-0.95**
Total	**-0.38**	**-1.57**	**-1.30**	**-1.07**	**-1.66**	**-1.17**	**-1.06**	**-0.05**	–
Anglosphere									
Australia	-1.21	-1.47	-3.90	-2.20	-2.06	-0.47	-0.93	-0.21	**-1.75**
Canada	-1.59	-1.23	-2.82	-1.42	-1.51	-1.30	-1.10	0.00	**-1.57**
Ireland	–	–	–	–	–	–	-0.96	-0.05	**-0.96**
NZ	–	–	–	-1.22	-1.54	-1.22	-0.90	-0.06	**-1.22**
UK	-1.29	-2.17	-2.32	-0.22	-1.27	-0.51	-0.71	-0.10	**-1.21**
U.S.	-2.59	-3.17	-2.59	-0.63	-1.34	-0.87	-1.21	0.00	**-1.77**
Total	**-1.67**	**-2.01**	**-2.91**	**-1.14**	**-1.55**	**-0.87**	**-0.97**	**-0.07**	–

Data source: *OECD*.

When using the CV as our measure of volatility, we do not find the typical negative relationship between government size and volatility: GDP fluctuations in Europe and in the European welfare states, in particular, do not seem to be consistently lower than those of their income peers over time. While this finding goes against the earlier common wisdom, it is consistent with Crespo-Cuaresma et al. (2003) and Debrun et al. (2008), who found that government spending past around 40 percent of GDP yields few stability benefits.

[10] While only negative deviations are shown, the qualitative results for the positive deviations were identical.

[11] That economies have grown to be less volatile over the last two generations (as measured by the standard deviation of growth rates) is well documented in the past literature, including Gali (1994) and Fatás and Mihov (2001).

Our volatility finding (no great difference between country groups) applies only at the aggregate level of the GDP. What effect government involvement has on individual lives—say, on the income volatility of the poorest—is beyond the scope of this paper.[12]

To figure out whether the particular character of a government, its institutional quality, has an effect on business cycles, we used the Fraser Institute's Economic Freedom of the World (EFW) index to classify countries into groups based on their level of economic freedom. The ratings run from 1 (not free) to 10 (completely free), with the twenty-one OECD countries scoring between 5 and 9 in the time period 1970 through 2007. Table 5 again reveals the trend toward more stability over time, but also shows that the business cycle, especially in the economically most free countries (score 8 to 9), appears to be less volatile than in countries with lower economic freedom. Thus, the quality of a nation's institutions and policies, as measured by economic freedom, seems to be a precursor for higher economic stability. This finding is consistent with the basic premise of the Austrian School that resource flows respond to economic shocks best under free market conditions.

[12] For instance, Mobarak (2005) has shown that at the micro level, the poor are disproportionately affected by macroeconomic volatility. As Ovaska and Takashima (2010), we did not consider the connection between government actions and variability in some more holistic (and arguably, more important) measure to society, such as happiness or life satisfaction.

Table 5. Baxter-King Filter: GDP Gap and Economic Freedom (EFW)

Group/Year	'70–'79	'80–'89	'90–'99	'00–'07	Total
Positive Gap					
EFW					
5–6	1.67	1.01	–	–	**1.30**
6–7	1.03	1.33	1.16	1.48	**1.19**
7–8	1.83	1.36	1.24	1.06	**1.25**
8–9	–	–	1.00	0.86	**0.89**
Total	**1.47**	**1.23**	**1.20**	**1.01**	–
Negative Gap					
EFW					
5–6	-1.55	-0.96	–	–	**-1.22**
6–7	-1.04	-1.38	-1.49	-1.00	**-1.31**
7–8	-2.27	-1.34	-1.23	-0.49	**-1.06**
8–9	–	–	-0.87	-0.56	**-0.62**
Total	**-1.55**	**-1.22**	**-1.28**	**-0.52**	–

Data source: *OECD and The Fraser Institute.*

Next, we ran fixed effect (FE) regressions trying to identify the institutional factors that best explain growth volatility. We used the five main categories and the subindices of the Economic Freedom of the World index.[13] Our FE model included twenty-one OECD countries and data for the period 1970 through 2007. Table 6 shows a representative result of these regressions. While the table only shows a regression for the factors explaining a deviation below the growth trend, the results did not change when the dependent variable was deviations above the GDP growth trend.

[13] The Economic Freedom of the World index is only available every five years from 1970 to 2000 and then annually after 2000. In order to match data frequencies, the dependent variable in this case is average magnitude of the cycle above or below trend within the five-year period corresponding to the measured values of economic freedom.

Table 6. Baxter-King Filter: GDP Gap and Economic Freedom Components. Dependent Variable: Deviations below GDP Growth Trend

Variable	Coefficient	p-value
Constant	-3.62	0.00***
Government size	0.07	0.56
Freedom of foreign trade	-0.07	0.55
Regulations	0.53	0.00***
Legal environment	-0.04	0.61
Sound money	-0.02	0.77

Note: Fixed-effects model, 133 observations between 1970 and 2007. 21 cross-sectional units, robust (HAC) standard errors. [***] significant at 1% level.

The main finding of these regressions was that the level of regulation matters for business cycles. In particular, we found that for every one-unit decrease in regulatory score (on a scale of 1–10), the value of actual output moves 0.53 percentage points further from the long-run potential output. Turned around, high EFW scores in the regulation of credit, labor, and business cause a distinct decrease in business cycle volatility. The regulatory score for the three areas is determined by how much regulation limits competition and the operation of markets, and it includes variables such as price controls, hiring and firing practices, bureaucratic red tape, and the effect of regulations on work incentives. For 2005, the regulatory scores for the Anglosphere, the Nordic-4, and the world were 8.3, 7.4 and 6.8, respectively.[14]

Finally, we analyzed the length of the business cycles for the group of OECD countries. Table 7 shows data for twenty countries, with the earliest observations for some countries starting from the 1950s. The length of the business cycle was calculated from the results of the Baxter-King filter, the length being the time from the

[14] In addition, we calculated standard deviations of growth gaps for five-year blocks and then used those as a dependent variable in a panel regression. The results are almost identical to the results using just the negative or positive gaps. Again, regulation appears to be the key.

start of one period of a negative growth cycle until the start of the next negative growth cycle (roughly from recession to recession).

When analyzing the length of the business cycle at the country level, it becomes clear that there is no apparent pattern to classify countries into distinct groups. Countries of the Anglosphere and Europe (Nordic-4, EU-15) are equally dispersed across the sample. Country groups based on population, government size, or economic freedom also do not produce a distinct pattern. In fact, as Table 7 shows, countries ranked between 6 and 17 in cycle length are statistically indistinguishable from each other.

When using the length of deviations from a trend output level as the business cycle measure, the answer to our original research question, "Does the European-style safety net provide for extra macroeconomic stability?," is again, "No." The economies of the European welfare countries do not cycle any less than the economies of the laissez-faire countries.

Table 7. Baxter-King Filter: Length and Frequency of Business Cycles

Country	Start Date	No. of Quarters	No. of Cycles	Avg. Cycles per Quarter	Avg. Cycle Length
UK	1960	189	11	0.059	16.91
Germany	1964	173	10	0.061	16.50
U.S.	1960	189	13	0.069	14.54
Switzerland	1969	153	10	0.069	14.50
Spain	1974	133	10	0.076	13.10
Sweden	1973	137	10	0.078	12.80
Canada	1960	189	15	0.079	12.60
New Zealand	1986	83	6	0.080	12.50
Ireland	2001	24	2	0.080	12.50
Denmark	1981	105	8	0.082	12.25
Portugal	1981	104	8	0.083	12.13
Finland	1974	132	11	0.083	12.09
Japan	1960	189	15	0.083	12.07
France	1974	133	11	0.083	12.00
Austria	1968	157	12	0.083	12.00
Netherlands	1981	104	7	0.083	12.00
Australia	1963	175	14	0.083	12.00
Italy	1984	93	8	0.088	11.38
Belgium	1984	93	9	0.099	10.11
Norway	1970	148	16	0.111	9.00

Data source: *World Development Indicators.*

V. Conclusion

The global recession of 2007–2009 raised an interesting question: Are the European welfare states, with their large governments and extensive social safety nets, more immune to business cycles than their income peers in the OECD? Using data from 1970 on, we compared the severity and length of business cycles in a group of twenty-one high-income OECD countries. Based on the coefficient of variation for GDP growth rates, and the extent and length of deviations from the GDP trend growth as defined by the Baxter-King filter, our answer is no. The European countries are economically no more stable than their income peers elsewhere. This

finding holds for various country groupings based on population or government size, the extent of foreign trading, and culture (language). The only factor that we found to be robustly associated with more economic stability was economic freedom, and the quality of regulation on credit, labor, and business in particular.

Policy-wise, our main finding was the real-world absence of extra macroeconomic stability in countries with large public sectors and automatic stabilization programs. A group of countries with the largest governments was found to be macroeconomically no more stable than a group with relatively small governments. Lately, much analysis has centered on whether the proposed new fiscal pact for the Eurozone takes away governments' ability to stabilize their economies. Based on our empirical findings, this concern seems overblown: macroeconomic stability does not go hand-in-hand with government spending. In fact, when looking at the last one-and-a-half decades of our analysis, the deepening European integration, if associated with increases in government interventions and poorer-quality regulations, may actually end up aggravating GDP fluctuations.

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