

UNIVERSITY OF WUPPERTAL
BERGISCHE UNIVERSITÄT WUPPERTAL

EUROPÄISCHE WIRTSCHAFT
UND
INTERNATIONALE MAKROÖKONOMIK



Paul J.J. Welfens

The True Cost of BREXIT for the UK: A Research Note

EIIW Diskussionsbeitrag 234

EIIW Discussion Paper 234



Europäische Wirtschaft und Internationale Wirtschaftsbeziehungen
European Economy and International Economic Relations

ISSN 1430-5445

Paul J.J. Welfens

The True Cost of BREXIT for the UK: A Research Note

October 2017

Herausgeber/Editor: Prof. Dr. Paul J.J. Welfens, Jean Monnet Chair in European Economic Integration

EUROPÄISCHES INSTITUT FÜR INTERNATIONALE WIRTSCHAFTSBEZIEHUNGEN (EIIW)/
EUROPEAN INSTITUTE FOR INTERNATIONAL ECONOMIC RELATIONS
Bergische Universität Wuppertal, Campus Freudenberg, Rainer-Gruenter-Straße 21,
D-42119 Wuppertal, Germany
Tel.: (0)202 – 439 13 71
Fax: (0)202 – 439 13 77
E-mail: welfens@eiiw.uni-wuppertal.de
www.eiiw.eu

JEL classification: E00, F15, E6, F5, O52

Key words: Brexit, UK, Global Britain, EU, Disintegration

Summary:

The HM Treasury analysis (2016) of the long-term benefits of EU membership for the UK implicitly argues that the associated output loss of BREXIT is 10%, while Patrick Minford has argued that a 4% output increase could be expected. More recent analysis from Rabobank suggests an output loss of 18 % for the UK in the event of a 'no-deal' BREXIT. The subsequent rough estimate presented here shows that real national income is likely to fall by 16% in a no-deal BREXIT – where a 2% income gain from a possible US-UK transatlantic trade and investment partnership treaty and 1% gain resulting from zero tariffs on the import of agricultural products have been included. The cumulated income loss – based on a present value-analysis – is almost three times as large as the UK output decline during the Great Depression; however, the BREXIT-related output decline would be spread over a period of about 15 years. For the lower strata of society serious problems will emerge in such a setting; it is strange that the Remainers in the UK have almost no voice in terms of political party representation. As regards power in Brussels: based on Banzhaf values (game theory), the big countries in the EU will be the winners of BREXIT; even if Scotland joins later.

Zusammenfassung:

Die HM Treasury Studie (2016) über die langfristigen Vorteile einer EU Mitgliedschaft Großbritanniens zeigt, dass der Einkommensverlust durch einen BREXIT 10% beträgt, während Patrick Minford argumentierte, dass eine Steigerung von 4% erwartet werden könnte. Eine neuere Analyse der Rabobank deutet auf einen Verlust von 18% für Großbritannien im Falle eines BREXIT-No-Deals hin. Die nachfolgende grobe Schätzung zeigt, dass das reale Nationaleinkommen in einem No-Deal-BREXIT um 16% fallen wird – wobei ein 2%iger Einkommengewinn aus einem möglichen transatlantischen Handels- und Investitionspartnerschaftsabkommen zwischen den USA und Großbritannien sowie 1% Gewinn aus dem Wegfall von Zöllen auf die Einfuhr von landwirtschaftlichen Erzeugnissen aufgenommen wurde. Der kumulierte Einkommensverlust – basierend auf einer Barwertanalyse – ist fast dreimal so groß wie der Rückgang des britischen Einkommens während der Weltwirtschaftskrise; der BREXIT-bedingte Einkommensrückgang würde jedoch über einen Zeitraum von etwa 15 Jahren verteilt. Für die unteren Schichten der Gesellschaft werden in einem solchen Umfeld ernste Probleme auftreten; es ist seltsam, dass die Remainer im Vereinigten Königreich fast keine Stimme im Bezug auf die Repräsentation durch politische Parteien haben. Was die Macht in Brüssel anbelangt: Auf der Grundlage der Banzhaf-Werte (Spieltheorie) werden die großen Länder in der EU die Gewinner des BREXIT sein; auch wenn Schottland sich später anschließt.

Prof. Dr. Paul J.J. Welfens, Jean Monnet Professor for European Economic Integration; Chair for Macroeconomics; President of the European Institute for International Economic Relations at the University of Wuppertal, (Rainer-Gruenter-Str. 21, D-42119 Wuppertal; +49 202 4391371), Alfred Grosser Professorship 2007/08, Sciences Po, Paris; Research Fellow, IZA, Bonn; Non-Resident Senior Fellow at AICGS/Johns Hopkins University, Washington DC

Prof. Welfens has testified before the US Senate, the German Parliament, the EP, the IMF etc.

welfens@eiiw.uni-wuppertal.de , www.eiiw.eu

EIIW 2015 = 20 years of award-winning research

The True Cost of BREXIT for the UK: A Research Note

EIIW Discussion Paper 234

Table of Contents

Table of Contents.....	1
List of Figures	2
List of Tables.....	2
1. Introduction	3
2. Cost and Benefit of BREXIT for the UK.....	3
3. Perspectives	9
References.....	12
Appendix	13

List of Figures

Figure 1: Office for Budget Responsibility GDP forecast.....	10
Figure 2: The UK's Decreasing GDP Forecast for 2020 (Difference between 2017 and 2015 Forecast: 4.2% Reduction)	11
Figure 3: Norgrove Letter	15

List of Tables

Table 1: A Cost-Benefit Analysis of BREXIT for the UK (assuming no UK-EU deal is reached)	8
Table 2: UK: Median equivalised ¹ disposable household income by quintile, 1977-2015/16, UK (2015/16 prices ²) in year ending 2016	10
Table 3: EIIW calculations on the Office for Budget Responsibility's GDP Forecasts	11

1. Introduction

With the British EU referendum of June 23, 2016, the UK moved towards a historical change as 51.9% of the UK voters were in favour of leaving the EU. There was no consensus how big the economic cost of BREXIT would be. Patrick Minford (2016) argued that a post-BREXIT UK could realize a 4% rise in terms of real income provided that all import duties would be abolished; e.g. cheaper agricultural imports would translate into a decline of the aggregate price level and this implies a positive real income effect. This form of Global Britain approach, however, is unrealistic since a free trade agreement with China would mean a sharp contraction of British industry (while the US might also not want a UK-China free trade agreement for strategic reasons) and a project for a free trade agreement with India would mean that India's government would raise the issue of easier visa conditions for workers from India interested in finding a job in the UK. However, the anti-EU immigration rhetoric of PM Cameron and later of PM May has created a social climate in the UK which suggests that one cannot assume that the British population would welcome more immigration from India (for more on this and other BREXIT-related issues, see WELFENS/ HANRAHAN (2017)). Among those studies which have suggested a high BREXIT cost there is the Treasury analysis (HM Government, 2016) which suggests in a long-term perspective, two primary costs of BREXIT – in sum roughly 10% of GDP (2016): roughly £194 billion GBP or €237 billion or \$263 billion (converted on the basis of the average exchange rates for the year 2016 from the ECB).

2. Cost and Benefit of BREXIT for the UK

If there is BREXIT without an EU-UK deal about future access to the EU Single Market, the same rules and tariffs will apply for the UK as for other member countries of the World Trade Organization. The EU would get about £5 billion, i.e. about €5.5 billion which would go to Brussels as EU receipts and would effectively replace about half of the UK contributions to the EU. The UK can expect about £13 billion per year as additional tariff revenue from the imports from the EU (Germany's exporters would face about £3 billion to be paid as tariffs in the UK, UK exporters to Germany face £1 billion to be paid (see PROTTS, 2016; civitas, Potential Post-BREXIT Tariff Costs for EU-UK Trade). One should notice that British exporters in many cases will have to reduce their respective export prices – net of EU import tariffs – so that British firms will face lower profits than in a situation without BREXIT. EU exporters to the UK are often in a better position in terms of market power in the UK, so that prices in the UK will be raised as a consequence of British import tariffs. Hence the incidence of British import tariffs will largely put a burden on British importers and consumers, respectively. If one assumes that £10 billion of EU firms' tariff payments will ultimately be paid by British consumers, this would be an annual welfare loss of 0.5% of UK GDP. If a lower amount is effectively paid by British consumers, namely 0.25% of UK GDP – this is considered as a realistic assumption here – the present value of British GDP losses from import taxation will be 8% if the interest rate used to capitalize the respective annual burden is 3%.

It is worth noting, that British exporters will, in many cases, need to reduce the prices of exports to the EU27 such that UK firms will show falling profits – UK companies will have to adopt the role of ‘price takers’ in the EU27 compared to EU firms in the UK; this means that EU exporters will be better positioned after BREXIT to pass a share of the tariff burden onto British consumers in the form of higher prices. In the case that a tariff burden of £10 billion GBP on EU exports heading to the UK can be passed on to British consumers in the form of price rises, this would correspond to an annual loss of welfare of 0.5% of British GDP; if £5 billion can be passed on (here assumed to represent a plausible magnitude of the eventual outcome) this would mean a loss of 0.25% of GDP; the net present value of these losses, obtained by capitalizing these future costs in the context of UK import duties at an interest rate of 3%, would be about 8% of British GDP. On this basis, one can consider the overall balance from a welfare economics perspective, where the effect will be felt in terms of real income or, more accurately, in terms of per capita consumption. The main aspects regarding BREXIT-related welfare gains and losses for the UK can be summarized as follows:

- 1) The UK will no longer be paying net contributions to the EU budget of approximately 0.4% of GDP; if one wishes to understand the present value of future contributions which the UK will not be paying, one can divide the 0.4% of GDP figure by an appropriate interest rate (in the following, it is assumed that the normal value of the interest rate will be 3%: this would give a present value of future UK contributions to the EU budget of 13.3% of the UK’s 2016 GDP) = welfare gain.
- 2) The transfer of the burden of tariffs for EU27 exports onto British consumers in the amount of £5 billion GBP (0.25% of British GDP) = welfare loss (the present value of this would be 8.3% of GDP).
- 3) British exporters to the EU will pay circa £6 billion pounds in the form of import tariffs, assuming that large share of the burden of tariffs will be borne by UK exporters losses could amount to £5 billion. Relative to the UK GDP of 2016, this represents 0.25% of GDP = welfare loss. The present value of this is a welfare loss of 8.3% of GDP (an alternative calculation assumes for the UK a 6% value added export rate and that profits comprise one third of this, i.e. 2% - where 60% of this – that is, 1.2% of the profit ratio accrues to British firms; if the profit ratio would decline by 10% this would amount to 0.12% of GDP per year – the present value of which is 4% of GDP as a BREXIT-related loss arising from the tariff burden on British firms exporting from the UK to the EU27).

Summing the welfare effects of 1), 2) and 3) one arrives at a figure of 3.3% as a welfare loss for the UK as a result of leaving the European Union. One can then consider

- 4) A reduction of GDP of 6-7% in the context of worsened future access to the single market (source: HM Government, Treasury analysis, 2016); the marginal cases of a ‘no-deal’ exit from the EU is associated with a loss for the UK of 7% (a negotiated access to the single market can be associated with a welfare loss for the UK of 6% of GDP).
- 5) A 6% reduction of UK GDP means an associated 1% reduction of the EU27 GDP, and in turn a further 0.2% reduction of the UK’s GDP in terms of a feedback effect.

- 6) Forgoing the advantages for the UK of a realization of the single market deepening which had been negotiated by Cameron with the EU in early 2016, which amount to a further loss of 4% of GDP (source: HM Government, Treasury analysis, 2016).
- 7) The real depreciation of the Pound is assumed to be relatively strong, such that within a decade after 2019 the share of foreign investors in the UK capital stock has risen to 30%, compared to 17% in 2016: with a profit share of 1/3rd, one can consider that an additional welfare loss 4.3% of gross national income (GNI) in the form of increased profits shall be transferred from the UK to the source countries of the relevant direct investment flows, so that the real per capita gross national income will suffer a greater fall than real gross domestic product.

Taking all of the above effects into effect, a prudent calculation of the welfare loss for the UK could, considering the foreseeable reduction in real income, arrive at a figure of 18.8% of national income. If, in addition, UK import tariffs on food stuffs would be reduced considerably (a call for such a reduction was emphasized by BREXIT-supporting Patrick Minford), this could bring a gain in real income of 1%, so that total the loss for the UK amounts to 17.8% of national income. However, the revenue from import duties will naturally be less than would otherwise be the case, at the same time, the import duties paid by EU exporters would also be lower. The magnitude of losses as a result of a ‘no deal’ BREXIT can thus be estimated at -17.8% of UK national income or per capita income – related to 2016 figures – respectively. This would mean about £346 billion for the UK, which represents a loss of £5,300 per person, or €6,000 per Briton. If one assumes that the EU27 will not conclude the free trade agreement (TTIP) with the United States, while the UK does indeed do so, then assuming that UK could expect a real income gain of about 2% - an estimate arrived at on the basis of the TTIP modeling carried out in JUNGMITTAG/WELFENS (2016) – this would mean BREXIT could still result in an income loss of 15.8% rather than 17.8%. Here it is assumed that the real income gain which was calculated for Germany as a result of TTIP (2%) would be broadly similar to what the UK could hope to achieve, even though the UK in comparison to Germany is smaller in terms industry and thus would profit less from industry-related direct investment flows as Germany; however, the transatlantic trade and investment relationships between the UK and the US are, relative to national value added, greater than is the case of Germany, so that even in the case of a ‘mini-TTIP’ between the UK and the US could indeed result in a 2% real income gain. However, even considering this advantageous (for the UK) eventuality, an income loss of circa 15-16% is a high price to pay for BREXIT.

Not included in the previous calculations are the negative effects on the UK’s international negotiating power – for example in terms of trade deals – which will also emerge after BREXIT (the UK represents, on the basis of 2016 figures, only 1/5th of the EU28’s weight in terms of GDP). With an income decline of 15% or so due to BREXIT the UK will indeed pay a high price for leaving the European Union. Assuming an extremely negative long-term scenario, which could imply a disintegration of the EU and a raising of the UK’s defense expenditure from 2% to 4% - where 4% was the relative relation of military spending to national income prior to the First World War in the context of rivalry between the large European powers -, then the present value of this relative rise in terms of expenditure for defense would be (2% of GDP/3% interest rate) 67% of an annual GDP. As far as one considers per capita consumption in a standard welfare analysis and accepts public and private consumption as perfect substitutes, an extremely significant channel of

loss becomes apparent. From that perspective, in the worst case scenario BREXIT – relative to 2016 –almost 75% of the per capita consumption could be regarded as lost due to BREXIT, assuming a proportional relationship between consumption and real disposable income.

Rabobank has published a study by ERKEN ET AL. (The Permanent Damage of BREXIT), which employs an ambitious methodology on the basis of a modified NiGEM model, which has found even higher losses. This study however does not take into account the repercussion effects of the EU27 on the UK economy nor does it reflect the income loss of 4% which is related to the non-realization of the EU Single Market deepening which had been negotiated by Cameron.

In contrast to the analysis above, Rabobank does not consider a unilateral sinking of tariffs on agricultural imports on the part of the UK and also the rise in cumulated direct investment flows to the UK due to increased international mergers and acquisitions involving foreign and UK firms. On the contrary, in the ‘no deal’ BREXIT scenario, the authors expect a decline in FDI inflows to the UK and thus a reduction of the capital stock (by 14% against a benchmark of no BREXIT) and of the knowledge capital stock (reduced by 12%). By 2030, BREXIT will have resulted in a decline of GDP by 18%; in absolute terms £400 billion. In the event of a soft BREXIT, in which the UK leaves the Customs Union but remains a member of the EU Single Market, the reduction in terms of GDP is 10%. The decline of GDP of the EU27 in all three scenarios considered by the Rabobank study is 2% (assuming the EU27 GDP in 2016 of about €12,500 billion in current prices this would amount to €250 billion). For the Netherlands, it is estimated that the GDP will decline by 3.5% to 4.25% (ERKEN ET AL.); the trade intensity between the Netherlands and the UK is relatively high and therefore the Netherlands will be strongly impacted economically-speaking by BREXIT. A similar result holds for Belgium.

One strange approach which seems widespread within the UK government is a certain propensity to ignore key insights from trade theory, foreign direct investment analysis and innovation theory. Clearly, the UK’s restricted access to the geographically closest market, the EU27, will be a disadvantage and the rather weak market power of many UK exporters brings the specific disadvantage that those exporters will have to reduce net export prices (net in the sense of before EU import tariffs). Some exporters will try to fetch higher prices in the domestic British market as a compensation - for the reduced profitability of exports to the EU - so that profit rates will not drop. This, however, will be to the disadvantage of British consumers. There would be an additional negative real income effect in the UK. One should not underestimate the resilience of the British economy in the long run. However, a decade after BREXIT it will be a different economy. Foreign ownership of the UK capital stock will reach about 40% in 2030, following the logic of FROOT/STEIN (1991) that a real devaluation will bring higher FDI inflows, namely via international mergers & acquisitions; this development could already be observed in 2016. Foreign companies will increasingly not only acquire British industrial firms but services firms as well. Sooner or later more than 50% of the UK’s capital stock will be in the hands of foreign owners, often from China, Japan, Korea, the US and the EU27 countries. While one might argue that this loss of economic control is not very relevant for the country – a typical argument in a small open economy (e.g. Ireland, the Netherlands or Belgium) – the case of a rather large economy such as the UK is different. If the UK wants to continue its role as a global power, it will have to rely on a minimum number of leading British banks

and industrial firms. In deep contrast to smaller European countries, the UK has the ambition of being a strong political voice on the international stage and it is obvious that dominant foreign ownership would weaken such ambitions. Hence, with BREXIT, there is more at stake than simply economic welfare effects, power aspects in the international arena will play a role as well.

In the EU, BREXIT will bring a rising power of big economies, namely Germany, France and Italy; and even more so of Poland and Spain: This is the view derived from Banzhaf power index analysis (KIRSCH, 2016) that shows how BREXIT would affect relative power in those fields where weighted majority voting is required in the EU (a 55% majority of countries and 65% of the EU population). Germany could consider this to be an opportunity to push more strongly for long-term reforms in the Eurozone and the EU which would lead to a bigger role e.g. for national – and possibly in the future also supranational – debt brakes, ideally enshrined in the respective national constitutions. The EU27 – without the traditional pro-free trade quartet of Germany, the UK, the Netherlands and Denmark - could become more protectionist in the future and if the Trump administration adopts a similar approach – concerning the US itself, but international policy as well (e.g. TPP) - the UK will be a global loser as a result of its own BREXIT approach. The prospects for Global Britain will be rather modest, even if a UK-US free trade treaty should be adopted.

The following table summarizes the main analytical elements related to the costs and benefits of BREXIT – particularly in the case of no deal being reached - for the United Kingdom. Even under fairly favorable circumstances, namely a UK-US free trade treaty and the unilateral reduction of agricultural import tariffs, the UK welfare loss would be hardly less than 16% of national income (in a strict sense the welfare loss should be measured in terms of reduced consumption, but as consumption is proportionate to disposable national income a focus on national income dynamics should be sufficient for a solid analysis here).

If BREXIT brings a reduction of EU28 national income by about 2%, the US national income will be reduced by about 0.4% and global income could shrink by about 0.3%. If, however, BREXIT undermines regional integration outside Europe as well, there will be additional negative effects from a global perspective. The largest cost could come from the interaction of a new banking deregulation wave in the US – already visible in the US in 2017 under the Trump Administration – and similar new deregulation moves in the UK, namely once BREXIT has been implemented and a rather nervous government facing low output growth tries to stimulate growth through the reduction of corporate tax rates and the deregulation of banks. A joint US-UK deregulation will put EU27 countries under serious pressure to also implement excessive deregulation (WELFENS, 2017a; 2017b). The only way to avoid this risk of excessive Western deregulation of banks and financial services, respectively, is to adopt joint UK-EU27 financial regulations – and this topic indeed should become a key element in the EU-UK negotiations. In the absence of such an agreement the next Western banking crisis is only a question of time, not least since the Trump Administration has also started to undermine the international watchdog of regulation, namely the Bank for International Settlements.

Table 1: A Cost-Benefit Analysis of BREXIT for the UK (assuming no UK-EU deal is reached)

1) Avoiding annual net contributions to the EU of 0.4% of Gross Domestic Product (GDP)	Capitalized at an interest rate of 3% gives a present value (long-term) of 13.3% of annual national income
2) Effect of UK imports from the EU burdened with tariffs after BREXIT: 0.25% of Gross Domestic Product	8.3% of UK Gross Domestic Product (2016)
3) Reduced profits for UK firms due to lowering net prices (before EU tariffs) in the Single Market	8.3% of UK Gross Domestic Product (2016)
4) Reduced output in the UK of 6% in the long term due to worsened access to the EU single market	6% of Gross Domestic Product (2016) according to the UK Treasury analysis (2016) on the advantages of British membership of the EU: assuming a UK-EU deal (in the no deal scenario: 7.0% of UK Gross Domestic Product)
5) Macro feedback effect from 4), which would lead to a 1% reduction of income in the EU27 which, in turn, causes an associated further reduction of 0.2% of income in the UK. of 1%	0.2% of UK Gross Domestic Product
6) Non-realization of the benefits due to single market deepening which was negotiated by Cameron with the EU at the beginning of 2016	4% of UK Gross Domestic Product (according to the UK Treasury analysis (2016) on the advantages of British membership of the EU)
7) Effect of a raised share of foreign ownership of the UK's capital stock as a result of the real depreciation of the Pound from 17% in 2016 to 30% in 2030	4.3% of UK Gross National Income
8) Unilateral abolition of tariffs on agricultural products	1% of UK Gross Domestic Product
9) UK-USA "mini-TTIP" agreement	2% of UK Gross Domestic Product
Total Effect in % of Gross National Income	-15.8% (net) of UK national income

Additional welfare loss from higher inflation and reduced international bargaining power of UK

3. Perspectives

With rising international trade protectionism – mainly stimulated by the US under Trump – and a new wave of excessive banking deregulation, the OECD countries could be heading for a rather unstable post-BREXIT world. Excessive banking deregulation in the US under Trump followed by similar banking deregulation in the UK – since government wants to counter the negative output effects from BREXIT – will put strong pressure on EU countries to follow suit and thus the next international banking crisis is set to develop in the long run.

The new politico-economic stability of the West would undermine prospects of economic catching up in developing countries and thereby would bring new immigration pressures from the South for both Europe and the US. Thus a broader BREXIT analysis indicates many more challenges than the traditional narrow view. It is fairly clear that the EU should adopt broader politico-economic reforms – whether there is BREXIT or not. The current institutional architecture of the EU implies that the Community would disintegrate in the long run; and Eurozone-specific reforms are necessary on top of that. The EU should adopt broad institutional reforms, including stricter admission criteria for Eurozone membership and a stricter implementation of national debt brakes; plus a higher EU budget – so far only 1% of gross domestic product. The latter is a key problem since the Forschungsgruppe Wahlen – an expert group on voting in Germany – has shown that voters at the national election easily understand what the key political topics and fields are, while at the European elections a majority indicates that they do not understand what key policy fields are relevant at the EU level; consequently, there is a tendency to vote rather strongly for radical parties as a means to express general dissatisfaction. Those radical parties have won the European elections in the UK and France in 2014 and the radical, right-wing start-up party AfD obtained 7% in Germany. These radical parties then reinvest the reputation and EU funds obtained in Brussels into national elections so that the EU becomes a source of political radicalization in Europe and creates a self-inflicted need for a strange grand coalition in the European Parliament until that day when an anti-EU majority will dominate.

Table 2: UK: Median equivalised¹ disposable household income by quintile, 1977-2015/16, UK (2015/16 prices²) in year ending 2016

Table 1: UK: Median equivalised¹ disposable household income by quintile, 1977-2015/16, UK (2015/16 prices²) in year ending 2016
£ per year (2015/16 prices)

Quintile groups of all households ranked by equivalised ¹ disposable income				
Year	Bottom	2nd	3rd	
2015/16	13,586	20,007	26,332	

Source: Office for National Statistics

BREXIT loss (cumulated) 15.80%	2,146.59	3,161.11	4,160.46
Disposable household income			
After BREXIT loss effects	11,439*	16,846	22,172

Notes:

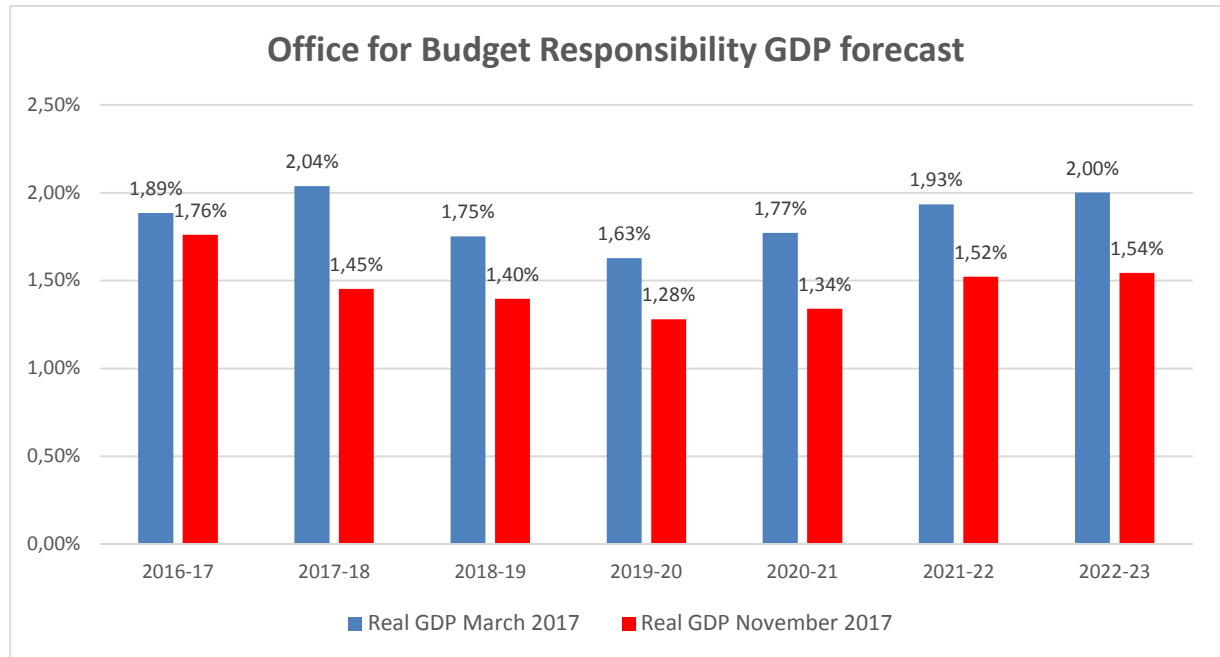
1 Income figures have been deflated to 2015/16 prices using the consumer prices index including owner-occupiers' housing costs (CPIH).

* if £ 200 is the income loss for the lowest income group in BREXIT year 1, this is equivalent to a 1.5% real income loss and a loss of similar magnitude would occur in BREXIT year 2, followed by somewhat smaller percent income losses in the following years.

Source: Office of National Statistics and EIIW calculations

<https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/bulletins/householddisposableincomeandinequality/financialyearending2016>

Figure 1: Office for Budget Responsibility GDP forecast



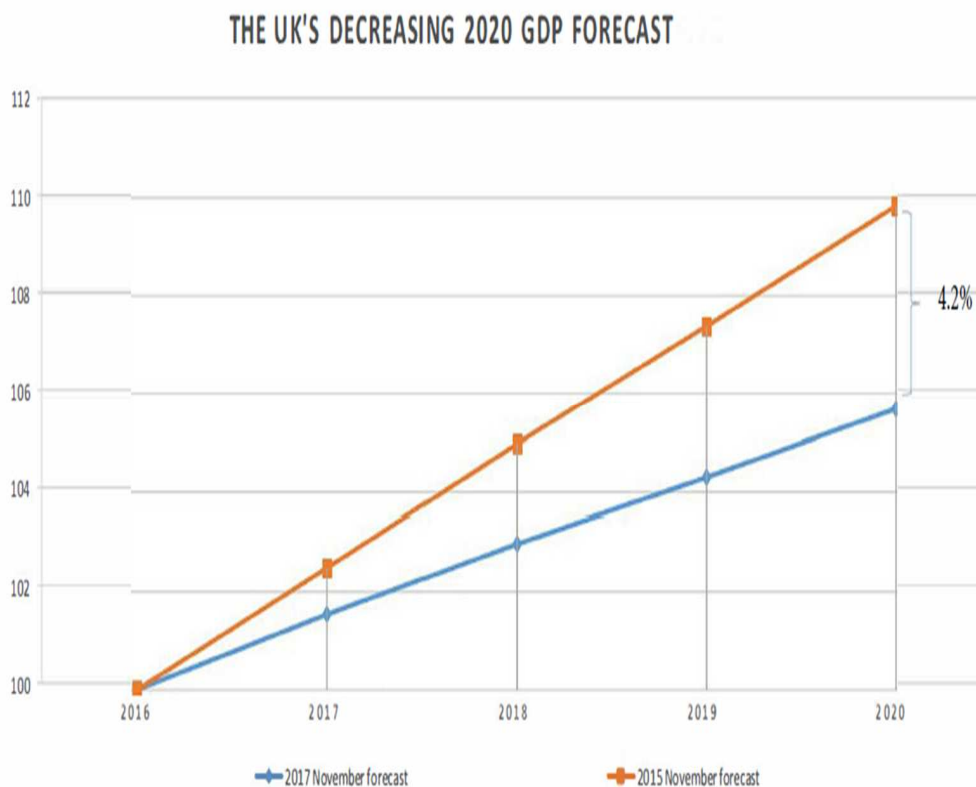
Source: Office for Budget responsibility Spring (March 2017) and Autumn (November 2017) Forecast; <http://budgetresponsibility.org.uk/>

Table 3: EIW calculations on the Office for Budget Responsibility's GDP Forecasts

2015 November forecast								2017 November forecast						
Percentage change on a year earlier, unless otherwise stated								Percentage change on a year earlier, unless otherwise stated						
	Outturn		Forecast						Outturn		Forecast			
	2014	2015	2016	2017	2018	2019	2020		2016	2017	2018	2019	2020	
Output at constant market prices								Output at constant market prices						
product (GDP)	2,9	2,4	2,4	2,5	2,4	2,3	2,3	Gross domest	1,8	1,5	1,4	1,3	1,3	
GDP levels (2015=100)	100,0	102,4	104,8	107,4	110,0	112,6	115,1	GDP levels (2016=100)	100,0	101,5	103,0	104,3	105,7	
GDP levels (2016 = 100)			100,0	102,5	105,0	107,4	109,8	GDP per capi	1,0	0,9	0,8	0,7	0,7	
Output gap	-1,0	-0,7	-0,4	-0,1	0,0	0,0	0,0	Output gap	-0,2	-0,2	-0,1	-0,2	-0,2	
Expenditure components of GDP								Expenditure components of real GDP						
Household con	2,6	2,9	2,6	2,3	2,3	2,1	1,9	Household con	2,8	1,5	0,8	1,2	1,2	
General govern	1,9	1,7	0,4	0,6	0,5	0,5	1,1	General govern	1,1	0,3	1,0	0,7	0,5	
Business invest	4,6	6,1	7,4	7,1	7,0	6,6	4,5	Business invest	-0,4	2,5	2,3	2,3	2,4	
General govern	7,6	3,0	0,8	0,6	-1,6	1,7	9,2	General govern	1,5	2,4	1,4	2,3	6,2	
Net trade ¹	-0,4	0,1	-0,2	-0,1	-0,1	-0,1	-0,1	Net trade ¹	-0,9	0,4	0,2	0,0	0,0	
Inflation								Inflation						
CPI	1,5	0,1	1,0	1,8	1,9	2,0	2,0	CPI	0,7	2,7	2,4	1,9	2,0	
Labour market								Labour market						
Employment (i)	30,7	31,1	31,5	31,7	31,9	32,0	32,2	Employment (i)	31,7	32,1	32,3	32,4	32,5	
Average earnings	1,5	2,6	3,4	3,7	3,6	3,7	3,9	Average earnings	2,8	2,3	2,3	2,3	2,6	
LFS unemployment	6,2	5,5	5,2	5,2	5,3	5,4	5,4	LFS unemployment	4,9	4,4	4,3	4,4	4,6	
Claimant count	1,04	0,80	0,77	0,82	0,86	0,87	0,88							
Difference of GDP forecast in 2020								Difference of GDP forecast in 2020						
								4,2						

Source: Office for Budget Responsibility

Figure 2: The UK's Decreasing GDP Forecast for 2020 (Difference between 2017 and 2015 Forecast: 4.2% Reduction)



Source: EIW calculations based on data from the Office for Budget Responsibility

References

- ERKEN, H. et al. (2017), The Permanent Damage of Brexit, Rabobank Special, Rabobank/Raboresearch, Utrecht, October 12.
- FROOT, K.; STEIN, J. (1991), Exchange rates and foreign direct investments. Quarterly Journal of Economics, 106(4), 1191-1217
- HM Government (2016), The long-term economic impact of EU membership and the alternatives, HM Treasury analysis, London, April 2016.
- JUNGMITTAG, A.; WELFENS, P.J.J. (2016), Beyond EU-US Trade Dynamics: TTIP Effects Related to Foreign Direct Investment and Innovation, EIIW Discussion Paper No. 212 www.eiiw.eu.
- KIRSCH, W. (2016), The Brexit and the distribution of power in the Council of the EU <https://www.fernuni-hagen.de/stochastik/downloads/powerbrexit.pdf>
- MINFORD, P. (2016), Understanding UK trade agreements with the EU and other countries, Cardiff Economics Working Papers, Working Paper E2016/1, Cardiff Business School, Cardiff University.
- PROTTS, J. (2016), Potential post-Brexit tariff costs for EU-UK trade, civitas Briefing Note, October 2016.
- WELFENS, P.J.J.; HANRAHAN, D. (2017), The Brexit Dynamics: British and EU27 Challenges After the EU Referendum, *Intereconomics*, Vol. 52, Issue 5, 302-307. <https://doi.org/10.1007/s10272-017-0693-4>
- WELFENS, P.J.J. (2017a), An Accidental BREXIT, London: Palgrave
- WELFENS, P.J.J. (2017b), Foreign Financial Deregulation under Flexible and Fixed Exchange Rates: A New Trilemma, EIIW Discussion Paper No. 238 www.eiiw.eu

Appendix

MAIN POINTS FROM PROF. WELFENS PRESENTATION OF AN ACCIDENTAL BREXIT AT GEORGETOWN UNIVERSITY, WASHINGTON DC, SEPTEMBER 12, 2017

- 1) The result of the British EU referendum of June 23, 2016, was 51.9 % for BREXIT. The expected 'fair' result, however, would have been 52.1% for REMAIN – namely if the Cameron government's information brochure (16 pages, sent to all households in England April 9-11) would have mentioned the key finding of the Treasury Study that BREXIT would mean a -10% real income effect in the long run: -6% from weaker EU single market access in the future and a -4% non-realized gain from the enhanced EU single market implementation that Mr. Cameron had obtained in negotiations with the EU. Using standard UK popularity functions, which show the link between output growth and government popularity, suggests that the inclusion of the income loss figure in the 16-page information brochure would have resulted in a clear REMAIN vote. This information blunder is very strange, and this all the more since the Cameron government had, in the run-up to the Scottish Independence referendum in 2014, clearly informed voters that every Scot would lose £1,400 Pounds in the case of independence – and all the benefits from British EU membership. The income loss of BREXIT according to the 2016 Treasury analysis amounted to £1,800 Pounds per capita, yet this info was suppressed in the information brochure.
- 2) There has been an intensive debate about EU immigration which Mr. Cameron portrayed as a major burden for the UK. However, the OECD has shown that immigration in the UK brings net benefits for the British budget. This has not prevented Mrs. May – she had been the Home Secretary (interior minister) in the Cameron governments for six years – from repeating the point about the massive long run immigration burden in the White Paper of 2017 which, however, also shows a graph according to which non-EU immigration had been the dominant phenomenon. The anti-immigration rhetoric of Cameron has mainly served to create a scapegoat for the massive cuts in government transfers to local communities after the Transatlantic Banking Crisis: - 3.5 percentage points of national income within five years which brought an under-provision of local public goods; and this problem was then blamed on EU immigrants.
- 3) The May government has announced a new Global Britain strategy according to which a series of new free trade agreements (FTA) will be concluded by the UK after BREXIT and this should raise output growth considerably. Such a strategy will not deliver on promise since the only free trade agreements with major trading partners to be concluded concern the US and Japan. An FTA with India will be difficult since the Indian government will want to negotiate about both trade and easier visa conditions for Indian workers – and immigration is not popular in the UK. An FTA with China is hardly conceivable since the US will oppose this for strategic reasons and since a broad FTA would bring a sharp contraction of UK industry. A Global Britain approach will be very difficult to implement if the Trump Administration continues undermining multilateralism, the World Trade Organization and the Bank for International Settlements et cetera.
- 4) The British EU referendum of 2016 was a disorderly - thus violating the principles of political rationality and fairness in a serious way. It is impossible to draw any valid conclusions from this distorted referendum as to what the British majority

really wants in terms of EU membership. The promise of the Leave campaign that BREXIT would come at no cost or would even bring economic benefits is quite doubtful. The strong Pound depreciation – about 15% in the year since the referendum – drives up the inflation rate which has reached almost 3% in 2017 instead of the 1% or so anticipated in 2016. The Pound depreciation rate is also equivalent to a 15% loss of the British GDP share in world gross domestic product and hence the British leverage in international negotiations will reduce. The suggestions of the Leave group in the UK that the country could play a new leadership role in the Commonwealth is totally misleading: Dean Acheson already noted clear doubts about such an idea as a relevant view in his speech at West Point in 1962.

- 5) Knowledge about the EU institutions in the UK was particularly weak. In a survey by the Bertelsmann Foundation, two simple questions about the EU were put to respondents in EU countries and could be answered correctly by 81% of the German respondents, 80% of the Italian respondents, 74% of the French respondents, 53% of the Polish respondents, but only 49% of British respondents; the UK joined the EU in 1973, Poland in 2004 – lack of adequate information policy by the EU in the United Kingdom thus was part of the problem surrounding EU membership.
- 6) The EU should adopt broad institutional reforms, including stricter admission criteria for Eurozone membership and a stricter implementation of national debt brakes; plus a higher EU budget – so far only 1% of gross domestic product. The latter is a key problem since the *Forschungsgruppe Wahlen* – an expert group on voting in Germany – has shown that voters at the national election easily understand what the key political topics and fields are, while at the European elections a majority indicates that they do not understand what key policy fields are relevant at the EU level; consequently, there is a tendency to vote rather strongly for radical parties as a means to express general dissatisfaction. Those radical parties have won the European elections in the UK and France in 2014 and the radical, right-wing start-up party AfD obtained 7% in Germany. These radical parties then reinvest the reputation and EU funds obtained in Brussels into national elections so that the EU becomes a source of political radicalization in Europe and creates a self-inflicted need for a strange grand coalition in the European Parliament until that day when an anti-EU majority will dominate.
- 7) BREXIT also risks having a negative impact on the peace process in Northern Ireland and the Good Friday Agreement in particular – an agreement which was reached partly due to support from then President Bill Clinton.
- 8) With a weakening of Western Europe there will be problems for the West. In the future, the US will rely on Germany's government as a voice in Brussels, at the same time a more Germany dominated EU will not find broad political support from EU27 partners. Both the US and the EU should consider options for better cooperation, particularly in a consistent policy for foreign direct investment in China where a more level playing field is needed. Germany and the EU27 without the UK and traditional US support look like a new problem version of the Home Alone movies.

PS: About true lies in the BREXIT campaign: On September 17, 2017, Sir David Norgrove, Chair of the UK Statistics Authority, wrote a letter to Foreign Secretary Boris Johnson, concerning the alleged £350 million in weekly contributions to the EU emphasized by the latter in his pro-BREXIT campaign, stating “This confuses gross and

net contributions...It is a clear misuse of official statistics". For a copy of said letter, please see overleaf...

Figure 3: Norgrove Letter



UK Statistics Authority
1 Drummond Gate
London
SW1V 2QQ

Telephone: 0207 592 8645
E-mail: david.norgrove@statistics.gsi.gov.uk
Website: www.statisticsauthority.gov.uk

Chair of the UK Statistics Authority, Sir David Norgrove

Rt Hon Boris Johnson MP
Foreign Secretary
Foreign and Commonwealth Office
King Charles Street
London
SW1A 2AH

17 September 2017

Dear Foreign Secretary,

I am surprised and disappointed that you have chosen to repeat the figure of £350 million per week, in connection with the amount that might be available for extra public spending when we leave the European Union.

This confuses gross and net contributions.¹ It also assumes that payments currently made to the UK by the EU, including for example for the support of agriculture and scientific research, will not be paid by the UK government when we leave.

It is a clear misuse of official statistics.

Yours sincerely

A handwritten signature in black ink that reads "David Norgrove".

Sir David Norgrove

¹ For further detail on official statistics relating to the UK's financial contributions to the EU, see [Sir Andrew Dilnot's letter of April 2016 to the Rt Hon Norman Lamb MP regarding UK contributions to the EU](#).

EIIW Discussion Papers

ISSN 1430-5445:

Standing orders (usually about 10 issues): academic rate 90 Euro p.a.; normal rate 250 Euro p.a.
Single orders: academic rate 10 Euro per copy; normal rate 30 Euro per copy.

Die Zusammenfassungen der Beiträge finden Sie im Internet unter:

The abstracts of the publications can be found in the internet under:

<http://www.eiiv.eu>

- No. 100 **Gavrilencov, E.:** Macroeconomic Situation in Russia - Growth, Investment and Capital Flows, October 2002
- No. 101 **Agata, K.:** Internet, Economic Growth and Globalization, November 2002
- No. 102 **Blind, K.; Jungmittag, A.:** Ausländische Direktinvestitionen, Importe und Innovationen im Dienstleistungsgewerbe, February 2003
- No. 103 **Welfens, P.J.J.; Kirn, T.:** Mittelstandsentwicklung, BASEL-II-Kreditmarktprobleme und Kapitalmarktperspektiven, Juli 2003
- No. 104 **Standke, K.-H.:** The Impact of International Organisations on National Science and Technology Policy and on Good Governance, March 2003
- No. 105 **Welfens, P.J.J.:** Exchange Rate Dynamics and Structural Adjustment in Europe, May 2003
- No. 106 **Welfens, P.J.J.; Jungmittag, A.; Kauffmann, A.; Schumann, Ch.:** EU Eastern Enlargement and Structural Change: Specialization Patterns in Accession Countries and Economic Dynamics in the Single Market, May 2003
- No. 107 **Welfens, P.J.J.:** Überwindung der Wirtschaftskrise in der Eurozone: Stabilitäts-, Wachstums- und Strukturpolitik, September 2003
- No. 108 **Welfens, P.J.J.:** Risk Pricing, Investment and Prudential Supervision: A Critical Evaluation of Basel II Rules, September 2003
- No. 109 **Welfens, P.J.J.; Ponder, J.K.:** Digital EU Eastern Enlargement, October 2003
- No. 110 **Addison, J.T.; Teixeira, P.:** What Have We Learned About The Employment Effects of Severance Pay? Further Iterations of Lazear et al., October 2003
- No. 111 **Gavrilencov, E.:** Diversification of the Russian Economy and Growth, October 2003
- No. 112 **Wiegert, R.:** Russia's Banking System, the Central Bank and the Exchange Rate Regime, November 2003
- No. 113 **Shi, S.:** China's Accession to WTO and its Impacts on Foreign Direct Investment, November 2003
- No. 114 **Welfens, P.J.J.:** The End of the Stability Pact: Arguments for a New Treaty, December 2003
- No. 115 **Addison, J.T.; Teixeira, P.:** The effect of worker representation on employment behaviour in Germany: another case of -2.5%, January 2004
- No. 116 **Borbély, D.:** EU Export Specialization Patterns in Selected Accession Countries, March 2004
- No. 117 **Welfens, P.J.J.:** Auf dem Weg in eine europäische Informations- und Wissensgesellschaft: Probleme, Weichenstellungen, Politikoptionen, Januar 2004

- No. 118 **Markova, E.:** Liberalisation of Telecommunications in Russia, December 2003
- No. 119 **Welfens, P.J.J.; Markova, E.:** Private and Public Financing of Infrastructure: Theory, International Experience and Policy Implications for Russia, February 2004
- No. 120 **Welfens, P.J.J.:** EU Innovation Policy: Analysis and Critique, March 2004
- No. 121 **Jungmittag, A.; Welfens, P.J.J.:** Politikberatung und empirische Wirtschaftsforschung: Entwicklungen, Probleme, Optionen für mehr Rationalität in der Wirtschaftspolitik, März 2004
- No. 122 **Borbély, D.:** Competition among Cohesion and Accession Countries: Comparative Analysis of Specialization within the EU Market, June 2004
- No. 123 **Welfens, P.J.J.:** Digitale Soziale Marktwirtschaft: Probleme und Reformoptionen im Kontext der Expansion der Informations- und Kommunikationstechnologie, Mai 2004
- No. 124 **Welfens, P.J.J.; Kauffmann, A.; Keim, M.:** Liberalization of Electricity Markets in Selected European Countries, July 2004
- No. 125 **Bartelmus, P.:** SEEA Revision: Accounting for Sustainability?, August 2004
- No. 126 **Welfens, P.J.J.; Borbély, D.:** Exchange Rate Developments and Stock Market Dynamics in Transition Countries: Theory and Empirical Analysis, November 2004
- No. 127 **Welfens, P.J.J.:** Innovations in the Digital Economy: Promotion of R&D and Growth in Open Economies, January 2005
- No. 128 **Welfens, P.J.J.:** Savings, Investment and Growth: New Approaches for Macroeconomic Modelling, February 2005
- No. 129 **Pospieczna, P.:** The application of EU Common Trade Policy in new Memberstates after Enlargement – Consequences on Russia’s Trade with Poland, March 2005
- No. 130 **Pospieczna, P.; Welfens, P.J.J.:** Economic Opening up of Russia: Establishment of new EU-RF Trade Relations in View of EU Eastern Enlargement, April 2005
- No. 131 **Welfens, P.J.J.:** Significant Market Power in Telecommunications: Theoretical and Practical Aspects, May 2005
- No. 132 **Welfens, P.J.J.:** A Quasi-Cobb Douglas Production Function with Sectoral Progress: Theory and Application to the New Economy, May 2005
- No. 133 **Jungmittag, A.; Welfens, P.J.J.:** Institutions, Telecommunications Dynamics and Policy Challenges: Theory and Empirical Analysis for Germany, May 2005
- No. 134 **Libman, A.:** Russia's Integration into the World Economy: An Interjurisdictional Competition View, June 2005
- No. 135 **Feiguine, G.:** Beitritt Russlands zur WTO – Probleme und Perspektiven, September 2005
- No. 136 **Welfens, P.J.J.:** Rational Regulatory Policy for the Digital Economy: Theory and EU Policy Options, October 2005
- No. 137 **Welfens, P.J.J.:** Schattenregulierung in der Telekommunikationswirtschaft, November 2005
- No. 138 **Borbély, D.:** Determinants of Trade Specialization in the New EU Member States, November 2005
- No. 139 **Welfens, P.J.J.:** Interdependency of Real Exchange Rate, Trade, Innovation, Structural Change and Growth, December 2005
- No. 140 **Borbély D., Welfens, P.J.J.:** Structural Change, Innovation and Growth in the Context of EU Eastern Enlargement, January 2006
- No. 141 **Schumann, Ch.:** Financing Studies: Financial Support schemes for students in selected countries, January 2006

- No. 142 **Welfens, P.J.J.:** Digitale Innovationen, Neue Märkte und Telekomregulierung, März 2006
- No. 143 **Welfens, P.J.J.:** Information and Communication Technology: Dynamics, Integration and Economic Stability, July 2006
- No. 144 **Welfens, P.J.J.:** Grundlagen rationaler Transportpolitik bei Integration, August 2006
- No. 145 **Jungmittag, A.:** Technological Specialization as a driving Force of Production Specialization, October 2006
- No. 146 **Welfens, P.J.J.:** Rational Regulatory Policy for the Digital Economy: Theory and EU-Policy Options, October 2006
- No. 147 **Welfens, P.J.J.:** Internationalization of EU ICT Industries: The Case of SAP, December 2006
- No. 148 **WELFENS, P.J.J.:** MARKTWIRTSCHAFTLICHE PERSPEKTIVEN DER ENERGIEPOLITIK IN DER EU: ZIELE, PROBLEME, POLITIKOPTIONEN, DEZEMBER 2006
- No. 149 **Vogelsang, M.:** Trade of IT Services in a Macroeconomic General Equilibrium Model, December 2006
- No. 150 **CASSEL, D., WELFENS, P.J.J.:** REGIONAL INTEGRATION, INSTITUTIONAL DYNAMICS AND INTERNATIONAL COMPETITIVENESS, DECEMBER 2006
- No. 151 **Welfens, P.J.J., Keim, M.:** Finanzmarktintegration und Wirtschaftsentwicklung im Kontext der EU-Osterweiterung, März 2007
- No. 152 **Kutlina, Z.:** Realwirtschaftliche und monetäre Entwicklungen im Transformationsprozess ausgewählter mittel- und osteuropäischer Länder, April 2007
- No. 153 **Welfens, P.J.J.; Borbély, D.:** Structural Change, Growth and Bazaar Effects in the Single EU Market, September 2008
- No. 154 **Feiguine, G.:** Die Beziehungen zwischen Russland und der EU nach der EU-Osterweiterung: Stand und Entwicklungsperspektiven, Oktober 2008
- No. 155 **Welfens, P.J.J.:** Ungelöste Probleme der Bankenaufsicht, Oktober 2008
- No. 156 **Addison J.T.:** The Performance Effects of Unions. Codetermination, and Employee Involvement: Comparing the United States and Germany (With an Addendum on the United Kingdom), November 2008
- No. 157 **Welfens, P.J.J.:** Portfoliomodell und langfristiges Wachstum: Neue Makroperspektiven, November 2008
- No. 158 **Welfens, P.J.J.:** Growth, Structural Dynamics and EU Integration in the Context of the Lisbon Agenda, November 2008
- No. 159 **Welfens, P.J.J.:** Growth, Innovation and Natural Resources, December 2008
- No. 160 **Islami, M.:** Interdependence Between Foreign Exchange Markets and Stock Markets in Selected European Countries, December 2008
- No. 161 **Welfens, P.J.J.:** Portfolio Modelling and Growth, January 2009
- No. 162 **Bartelmus, P.:** Sustainable Development – Has It Run Its Course?, January 2009
- No. 163 **Welfens, P.J.J.:** Intégration Européenne et Mondialisation: Défis, Débats, Options, February 2009
- No. 164 **Welfens, P.J.J.:** ЭКОНОМИЧЕСКИЙ РОСТ, ИННОВАЦИИ И ПРИРОДНЫЕ РЕСУРСЫ, February 2009
- No. 165 **Welfens, P.J.J.; Vogelsang, M.:** Regulierung und Innovationsdynamik in der EU-Telekommunikationswirtschaft, February 2009

- No. 166 **Welfens, P.J.J.:** The International Banking Crisis: Lessons and EU Reforms, February 2009
- No. 167 **Schröder, C.:** Financial System and Innovations: Determinants of Early Stage Venture Capital in Europe, March 2009
- No. 168 **Welfens, P.J.J.:** Marshall-Lerner Condition and Economic Globalization, April 2009
- No. 169 **Welfens, P.J.J.:** Explaining Oil Price Dynamics, May 2009
- No. 170 **Welfens, P.J.J.; Borbély, D.:** Structural Change, Innovation and Growth in the Single EU Market, August 2009
- No. 171 **Welfens, P.J.J.:** Innovationen und Transatlantische Bankenkrise: Eine ordnungspolitische Analyse, August 2009
- No. 172 **Erdem, D.; Meyer, K.:** Natural Gas Import Dynamics and Russia's Role in the Security of Germany's Supply Strategy, December 2009
- No. 173 **Welfens P.J.J; Perret K.J.:** Structural Change, Specialization and Growth in EU 25, January 2010
- No. 174 **Welfens P.J.J.; Perret K.J.; Erdem D.:** Global Economic Sustainability Indicator: Analysis and Policy Options for the Copenhagen Process, February 2010
- No. 175 **Welfens, P.J.J.:** Rating, Kapitalmarktsignale und Risikomanagement: Reformansätze nach der Transatlantischen Bankenkrise, Februar 2010
- No. 176 **Mahmutovic, Z.:** Patendatenbank: Implementierung und Nutzung, Juli 2010
- No. 177 **Welfens, P.J.J.:** Toward a New Concept of Universal Services: The Role of Digital Mobile Services and Network Neutrality, November 2010
- No. 178 **Perret J.K.:** A Core-Periphery Pattern in Russia – Twin Peaks or a Rat's Tail, December 2010
- No. 179 **Welfens P.J.J.:** New Open Economy Policy Perspectives: Modified Golden Rule and Hybrid Welfare, December 2010
- No. 180 **Welfens P.J.J.:** European and Global Reform Requirements for Overcoming the Banking Crisis, December 2010
- No. 181 **Szanyi, M.:** Industrial Clusters: Concepts and Empirical Evidence from East-Central Europe, December 2010
- No. 182 **Szalavetz, A.:** The Hungarian automotive sector – a comparative CEE perspective with special emphasis on structural change, December 2010
- No. 183 **Welfens, P.J.J.; Perret, K.J.; Erdem, D.:** The Hungarian ICT sector – a comparative CEE perspective with special emphasis on structural change, December 2010
- No. 184 **Lengyel, B.:** Regional clustering tendencies of the Hungarian automotive and ICT industries in the first half of the 2000's, December 2010
- No. 185 **Schröder, C.:** Regionale und unternehmensspezifische Faktoren einer hohen Wachstumsdynamik von IKT Unternehmen in Deutschland; Dezember 2010
- No. 186 **Emons, O.:** Innovation and Specialization Dynamics in the European Automotive Sector: Comparative Analysis of Cooperation & Application Network, October 2010
- No. 187 **Welfens, P.J.J.:** The Twin Crisis: From the Transatlantic Banking Crisis to the Euro Crisis? January 2011
- No. 188 **Welfens, P.J.J.:** Green ICT Dynamics: Key Issues and Findings for Germany, March 2012
- No. 189 **Erdem, D.:** Foreign Direct Investments, Energy Efficiency and Innovation Dynamics, July 2011

- No. 190 **Welfens, P.J.J.:** Atomstromkosten und -risiken: Haftpflichtfragen und Optionen rationaler Wirtschaftspolitik, Mai 2011
- No. 191 **Welfens, P.J.J.:** Towards a Euro Fiscal Union: Reinforced Fiscal and Macroeconomic Coordination and Surveillance is Not Enough, January 2012
- No. 192 **Irawan, Tony:** ICT and economic development: Conclusion from IO Analysis for Selected ASEAN Member States, November 2013
- No. 193 **Welfens, P.J.J.; Perret, J.:** Information & Communication Technology and True Real GDP: Economic Analysis and Findings for Selected Countries, February 2014
- No. 194 **Schröder, C.:** Dynamics of ICT Cooperation Networks in Selected German ICT Clusters, August 2013
- No. 195 **Welfens, P.J.J.; Jungmittag, A.:** Telecommunications Dynamics, Output and Employment, September 2013
- No. 196 **Feiguine, G.; Solojova, J.:** ICT Investment and Internationalization of the Russian Economy, September 2013
- No. 197 **Kubielas, S.; Olender-Skorek, M.:** ICT Modernization in Central and Eastern Europe, May 2014 Trade and Foreign Direct Investment New Theoretical Approach and Empirical Findings for US Exports & European Exports
- No. 198 **Feiguine, G.; Solovjova, J.:** Significance of Foreign Direct Investment for the Development of Russian ICT sector, May 2014
- No. 199 **Feiguine, G.; Solovjova, J.:** ICT Modernization and Globalization: Russian Perspectives, May 2014
- No. 200 **Syraya, O.:** Mobile Telecommunications and Digital Innovations, May 2014
- No. 201 **Tan, A.:** Harnessing the Power of ICT and Innovation Case Study Singapore, June 2014
- No. 202 **Udalov, V.:** Political-Economic Aspects of Renewable Energy: Voting on the Level of Renewable Energy Support, November 2014
- No. 203 **Welfens, P.J.J.:** Overcoming the EU Crisis and Prospects for a Political Union, November 2014
- No. 204 **Welfens, P.J.J.; Irawan, T.:** Trade and Foreign Direct Investment: New Theoretical Approach and Empirical Findings for US Exports and European Exports, November 2014
- No. 205 **Welfens, P.J.J.:** Competition in Telecommunications and Internet Services: Problems with Asymmetric Regulations, Dezember 2014
- No. 206 **Welfens, P.J.J.:** Innovation, Inequality and a Golden Rule for Growth in an Economy with Cobb-Douglas Function and an R&D Sector, März 2015
- No. 207 **Perret, J.K.:** Comments on the Impact of Knowledge on Economic Growth across the Regions of the Russian Federation
- No. 208 **Welfens, P.J.J.; Irawan T.:** European Innovations Dynamics and US Economic Impact: Theory and Empirical Analysis, June 2015
- No. 209 **Welfens, P.J.J.:** Transatlantisches Freihandelsabkommen EU-USA: Befunde zu den TTIP-Vorteilen und Anmerkungen zur TTIP-Debatte, Juni 2015
- No. 210 **Welfens, P.J.J.:** Overcoming the Euro Crisis and Prospects for a Political Union, July 2015
- No. 211 **Welfens, P.J.J.:** Schumpeterian Macroeconomic Production Function for Open Economies: A New Endogenous Knowledge and Output Analysis, January 2016
- No. 212 **Jungmittag, A.; Welfens, P.J.J.:** Beyond EU-US Trade Dynamics: TTIP Effects Related to Foreign Direct Investment and Innovation, February 2016

- No. 213 **Welfens, P.J.J.:** Misleading TTIP analysis in the 6th/7th May 2016 issue of DER SPIEGEL, May 2016
- No. 214 **Welfens, P.J.J.:** TTIP-Fehlanalyse im SPIEGEL Heft 6. Mai 2016, Mai 2016
- No. 215 **Welfens, P.J.J.; Irawan, T.; Perret, J.K.:** True Investment-GDP Ratio in a World Economy with Investment in Information & Communication Technology, June 2016
- No. 216 **Welfens, P.J.J.:** EU-Osterweiterung: Anpassungsprozesse, Binnenmarktdynamik und Euro-Perspektiven, August 2016
- No. 217 **Perret, J.K.:** A Spatial Knowledge Production Function Approach for the Regions of the Russian Federation, June 2016
- No. 218 **Korus, A.:** Currency Overvaluation and R&D Spending, September 2016
- No. 219 **Welfens, P.J.J.:** Cameron's Information Disaster in the Referendum of 2016: An Exit from Brexit? September 2016
- No. 220 **Welfens, P.J.J.:** Qualitätswettbewerb, Produktinnovationen und Schumpetersche Prozesse in internationalen Märkten, October 2016
- No. 221 **Jungmittag, A.:** Techno-Globalisierung, October 2016
- No. 222 **Dachs, B.:** Techno-Globalisierung als Motor des Aufholprozesses im österreichischen Innovationssystem, October 2016
- No. 223 **Perret, Jens K.:** Strukturwandel in der Europäischen Union am Beispiel ausgewählter Leitmärkte mit besonderem Bezug auf die Innovationstätigkeit der Mitgliedsländer, October 2016
- No. 224 **Irawan, T.; Welfens, P.J.J.:** ICT Dynamics and Regional Trade Bias in Asia: Theory and Empirical Aspects, October 2016
- No. 225 **Korus, A.:** Erneuerbare Energien und Leitmärkte in der EU und Deutschland, October 2016
- No. 226 **Dachs, B.; Budde, B.:** Fallstudie Nachhaltiges Bauen und Lead Markets in Österreich, October 2016
- No. 227 **Welfens, P.J.J.:** eHealth: Grundlagen der Digitalen Gesundheitswirtschaft und Leitmarktperspektiven, October 2016
- No. 228 **Korus, A.:** Innovationsorientierte öffentliche Beschaffung und Leitmärkte: Politische Initiativen in der EU, October 2016
- No. 229 **Irawan, T.; Welfens, P.J.J.:** IKT Dynamik und regionale Handelsverzerrungen in Asien: Theorie und empirische Aspekte, Oktober 2016
- No. 230 **Nan, Yu:** Innovation of renewable energy generation technologies at a regional level in China: A study based on patent data analysis, December 2016
- No. 232 **Welfens, P.J.J.:** Negative Welfare Effects from Enhanced International M&As in the Post-BREXIT-Referendum UK, April 2017
- No. 233 **Udalov, Vladimir; Welfens, Paul J.J.:** Digital and Competing Information Sources: Impact on Environmental Concern and Prospects for Cooperation, April 2017
- No. 234 **Welfens, Paul J.J.:** The True Cost of BREXIT for the UK: A Research Note, October 2017
- No. 236 **Welfens, Paul J.J.:** Techno-Globalisierung, Leitmärkte und Strukturwandel in wirtschaftspolitischer Sicht, August 2017
- No. 238 **Welfens, Paul J.J.:** Foreign Financial Deregulation under Flexible and Fixed Exchange Rates, June 2017
- No. 239 **Welfens, P.J.J.; Kadiric, S.:** Neuere Finanzmarktaspekte von Bankenkrise, QE-Politik

und EU-Bankenaufsicht, July 2017

No. 240 **Welfens, P.J.J.; Hanrahan, D.:** The BREXIT Dynamics: British and EU27 Challenges after the EU Referendum, May 2017

Weitere Beiträge von Interesse:

Titels of related interest:

Paul J.J. Welfens (2017), *An Accidental Brexit*, Palgrave MacMillan London

Paul J.J. Welfens (2017), *Macro Innovation Dynamics and the Golden Age*
New Insights into Schumpeterian Dynamics, Inequality and Economic Growth, Springer
Heidelberg

Paul J.J. Welfens (Nov. 2016), *Brexit aus Versehen: Europäische Union zwischen*
Desintegration und neuer EU, Springer Heidelberg

Paul J.J. Welfens; Jens K. Perret; Tony Irawan; Evgeniya Yushkova (2015), *Towards*
Global Sustainability, Springer Berlin Heidelberg

Paul J.J. Welfens; A. Korus; T. Irawan (2014), *Transatlantisches Handels- und*
Investitionsabkommen: Handels-, Wachstums- und industrielle Beschäftigungsdynamik in
Deutschland, den USA und Europa, Lucius & Lucius Stuttgart

Paul J.J. Welfens (2013), *Grundlagen der Wirtschaftspolitik*, 5. Auflage, Springer Berlin
Heidelberg

Paul J.J. Welfens (2013), *Social Security and Economic Globalization*, Springer Berlin
Heidelberg

Paul J.J. Welfens (2012), *Clusters in Automotive and Information & Communication*
Technology, Springer Berlin Heidelberg

Paul J.J. Welfens (2011), *Innovations in Macroeconomics*, 3rd revised and enlarged
edition, Springer Berlin Heidelberg

Paul J.J. Welfens (2011), *Zukunftsfähige Wirtschaftspolitik für Deutschland und Europa*,
Springer Berlin Heidelberg

Paul J.J. Welfens; Cillian Ryan, eds. (2011), *Financial Market Integration and Growth*,
Springer Berlin Heidelberg

Raimund Bleischwitz; Paul J.J. Welfens; Zhong Xiang Zhang (2011), *International*
Economics of Resource Efficiency, Physica-Verlag Heidelberg

Paul J.J. Welfens; John T. Addison (2009), *Innovation, Employment and Growth Policy*
Issues in the EU and the US, Springer Berlin Heidelberg

Paul J.J. Welfens; Suthiphand Chirathivat; Franz Knipping (2009), *EU – ASEAN*,
Springer Berlin Heidelberg

Paul J.J. Welfens; Ellen Walther-Klaus (2008), *Digital Excellence*, Springer Berlin
Heidelberg

- Huub Meijers; Bernhard Dachs; Paul J.J. Welfens** (2008), Internationalisation of European ICT Activities, Springer Berlin Heidelberg
- Richard Tilly; Paul J.J. Welfens; Michael Heise** (2007), 50 Years of EU Economic Dynamics, Springer Berlin Heidelberg
- Paul J.J. Welfens; Mathias Weske** (2007), Digital Economic Dynamics, Springer Berlin Heidelberg
- Paul J.J. Welfens; Franz Knipping; Suthiphand Chirathivat** (2006), Integration in Asia and Europe, Springer Berlin Heidelberg
- Edward M. Graham; Nina Oding; Paul J.J. Welfens** (2005), Internationalization and Economic Policy Reforms in Transition Countries, Springer Berlin Heidelberg
- Paul J.J. Welfens; Anna Wziatek-Kubiak** (2005), Structural Change and Exchange Rate Dynamics, Springer Berlin Heidelberg
- Paul J.J. Welfens; Peter Zoche; Andre Jungmittag; Bernd Beckert; Martina Joisten** (2005), Internetwirtschaft 2010, Physica-Verlag Heidelberg
- Evgeny Gavrilentov; Paul J.J. Welfens; Ralf Wiegert** (2004), Economic Opening Up and Growth in Russia, Springer Berlin Heidelberg
- John T. Addison; Paul J.J. Welfens** (2003), Labor Markets and Social Security, Springer Berlin Heidelberg
- Timothy Lane; Nina Oding; Paul J.J. Welfens** (2003), Real and Financial Economic Dynamics in Russia and Eastern Europe, Springer Berlin Heidelberg
- Claude E. Barfield; Günter S. Heiduk; Paul J.J. Welfens** (2003), Internet, Economic Growth and Globalization, Springer Berlin Heidelberg
- Thomas Gries; Andre Jungmittag; Paul J.J. Welfens** (2003), Neue Wachstums- und Innovationspolitik in Deutschland und Europa, Physica-Verlag Heidelberg
- Hermann-Josef Bunte; Paul J.J. Welfens** (2002), Wettbewerbsdynamik und Marktabgrenzung auf Telekommunikationsmärkten, Springer Berlin Heidelberg
- Paul J.J. Welfens; Ralf Wiegert** (2002), Transformationskrise und neue Wirtschaftsreformen in Russland, Physica-Verlag Heidelberg
- Paul J.J. Welfens; Andre Jungmittag** (2002), Internet, Telekomliberalisierung und Wirtschaftswachstum, Springer Berlin Heidelberg
- Paul J.J. Welfens** (2002), Interneteconomics.net, Springer Berlin Heidelberg
- David B. Audretsch; Paul J.J. Welfens** (2002), The New Economy and Economic Growth in Europe and the US, Springer Berlin Heidelberg

Paul J.J. Welfens (2001), *European Monetary Union and Exchange Rate Dynamics*, Springer Berlin Heidelberg

Paul J.J. Welfens (2001), *Internationalization of the Economy and Environmental Policy Options*, Springer Berlin Heidelberg

Paul J.J. Welfens (2001), *Stabilizing and Integrating the Balkans*, Springer Berlin Heidelberg

Richard Tilly; Paul J.J. Welfens (2000), *Economic Globalization, International Organizations and Crisis Management*, Springer Berlin Heidelberg

Paul J.J. Welfens; Evgeny Gavrilencov (2000), *Restructuring, Stabilizing and Modernizing the New Russia*, Springer Berlin Heidelberg

Paul J.J. Welfens; Klaus Gloede; Hans Gerhard Strohe; Dieter Wagner (1999), *Systemtransformation in Deutschland und Rußland*, Physica-Verlag Heidelberg

Paul J.J. Welfens; Cornelius Graack (1999), *Technologieorientierte Unternehmensgründungen und Mittelstandspolitik in Europa*, Physica-Verlag Heidelberg

Paul J.J. Welfens; George Yarrow; Ruslan Grinberg; Cornelius Graack (1999), *Towards Competition in Network Industries*, Springer Berlin Heidelberg

Paul J.J. Welfens (1999), *Globalization of the Economy, Unemployment and Innovation*, Springer Berlin Heidelberg

Paul J.J. Welfens (1999), *EU Eastern Enlargement and the Russian Transformation Crisis*, Springer Berlin Heidelberg

Paul J.J. Welfens; S. Jungbluth; H. Meyer; John T. Addison; David B. Audretsch; Thomas Gries; Hariolf Grupp (1999), *Globalization, Economic Growth and Innovation Dynamics*, Springer Berlin Heidelberg

Paul J.J. Welfens; David B. Audretsch; John T. Addison; Hariolf Grupp (1998), *Technological Competition, Employment and Innovation Policies in OECD Countries*, Springer Berlin Heidelberg

John T. Addison; Paul J.J. Welfens (1998), *Labor Markets and Social Security*, Springer Berlin Heidelberg

Axel Börsch-Supan; Jürgen von Hagen; Paul J.J. Welfens (1997), *Wirtschaftspolitik und Weltwirtschaft*, Springer Berlin Heidelberg

Paul J.J. Welfens; George Yarrow (1997), *Telecommunications and Energy in Systemic Transformation*, Springer Berlin Heidelberg

Jürgen v. Hagen; Paul J.J. Welfens; Axel Börsch-Supan (1997), *Springers Handbuch der Volkswirtschaftslehre 2*, Springer Berlin Heidelberg

Paul J.J. Welfens; Holger C. Wolf (1997), Banking, International Capital Flows and Growth in Europe, Springer Berlin Heidelberg

Paul J.J. Welfens (1997), European Monetary Union, Springer Berlin Heidelberg

Richard Tilly; Paul J.J. Welfens (1996), European Economic Integration as a Challenge to Industry and Government, Springer Berlin Heidelberg

Jürgen v. Hagen; Axel Börsch-Supan; Paul J.J. Welfens (1996), Springers Handbuch der Volkswirtschaftslehre 1, Springer Berlin Heidelberg

Paul J.J. Welfens (1996), Economic Aspects of German Unification, Springer Berlin Heidelberg

Paul J.J. Welfens; Cornelius Graack (1996), Telekommunikationswirtschaft, Springer Berlin Heidelberg

Paul J.J. Welfens (1996), European Monetary Integration , Springer Berlin Heidelberg

Michael W. Klein; Paul J.J. Welfens (1992), Multinationals in the New Europe and Global Trade, Springer Berlin Heidelberg

Paul J.J. Welfens (1992), Economic Aspects of German Unification, Springer Berlin Heidelberg

Paul J.J. Welfens (1992), Market-oriented Systemic Transformations in Eastern Europe, Springer Berlin Heidelberg

Paul J.J. Welfens (1990), Internationalisierung von Wirtschaft und Wirtschaftspolitik, Springer Berlin Heidelberg

Paul J.J. Welfens; Leszek Balcerowicz (1988), Innovationsdynamik im Systemvergleich, Physica-Verlag Heidelberg