UNIVERSITY OF WUPPERTAL BERGISCHE UNIVERSITÄT WUPPERTAL

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<u>Council of Economic Advisers: Biased Per Capita Consumption</u> <u>Comparison of the US with Europe</u>

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Europäische Wirtschaft und Internationale Wirtschaftsbeziehungen European Economy and International Economic Relations ISSN 1430-5445

Paul J.J. Welfens

Council of Economic Advisers: Biased Per Capita Consumption Comparison of the US with Europe

March 2019



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

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JEL classification: N10, D4, I3, P46 **Key words:** US, EU, Comparative Economics, Market Economy, Welfare Analysis

Summary:

In October 2018, the US Council of Economic Advisers has published a study entitled the Opportunity Costs of Socialism. That study, with an obvious focus on which reform options should not be considered for the US, looks at per capita consumption levels in 2016 and compares the US with Nordic European countries. The CEA's conjecture that the US has a 30% lead vis-à-vis most of the Nordic Countries is as misleading as the alleged 18% lead vis-à-vis Norway: If one considers not just the year 2016 in isolation but the concept of an effective lifetime per capita consumption which takes into account the value of leisure time and expected life expectancy plus the transatlantic gap in out-of-pocket health care expenditures relative to income – about 1 point higher in the US than in Western and Northern European countries – the key finding is: Nordic countries (except Norway) face an effective lifetime consumption gap of 12%, not of 30% as claimed by the CEA. Meanwhile, Norway's effective lifetime consumption actually exceeds that of the US by 2%. While the CEA publication apparently argues that the US should not consider Europe as a point of reference for systemic reforms, the effective lifetime figures for consumption per capita and income per capita suggest just this. The EU should export its Social Market Economy, whereby Asian countries in particular would be wise to study some of the leading EU countries.

Acknowledgements: I am very grateful to comments by Hans Wijkander, Stockholm University. I also gratefully acknowledge editorial support from Samir Kadiric, and David Hanrahan (EIIW); Tobias Zander has provided valuable research assistance. The usual caveat applies.

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1. Introduction

- The following analysis is based on CEA (2018): The Opportunity Costs of Socialism, Washington DC
- "The Council of Economic Advisers, an agency within the Executive Office of the President, is charged with offering the President objective economic advice on the formulation of both domestic and international economic policy. The Council bases its recommendations and analysis on economic research and empirical evidence, using the best data available to support the President in setting our nation's economic policy." (*website whitehouse.gov*)

Countries often look for comparative orientation and hence international comparisons of real per capita income, per capita consumption or other variables can be useful; this holds for both leading OECD countries as well as countries with relatively weaker economic performance. In October 2018, the US Council of Economic Advisers published a study titled The Opportunity Costs of Socialism in which the CEA presents some comparisons with Venezuela (which thus bizarrely becomes a point of reference in the political debate in the US, despite the fact that no candidate in the 2016 primaries recommended the US to follow Venezuela's irresponsible policy and politics). Moreover, there are broader comparisons made between the US and the Nordic European countries which, strangely, are classified as quasi-socialist countries although European economists would apply this term only to North Korea, Cuba, Venezuela, the former Soviet Union and its eastern European satellite countries which had centralized planning, a monopoly export sector within a government-owned special system with a state-administered foreign exchange rate, government-owned firms - with some exceptions, for example in Poland in part of the agricultural sector - and fully state-administered prices (outside the socialist shadow economy).

Comparing the US to Cuba and Venezuela as the CEA does looks like an anomalous ideological exercise or would any candidate for Congress or the presidential primaries really favor the introduction of a socialist dictatorship? Obviously not. The comparative analysis of the CEA – under Chairman Hassett – with Northern European countries is analyzed subsequently; the main finding of the analysis is that the CEA study is biased and inadequate: misleading for the President and the US public.

If one wants to compare per capita consumption and economic welfare, respectively, there are several critical points to consider:

- Should one only consider private consumption or also add part of public services as has been suggested e.g. by a Canadian approach (WOLFF ET AL., 2012)?
- If one emphasizes only private consumption, it would obviously be appropriate to include the quasi-consumption value of leisure; if countries *i* and *j* differ in this respect, the international comparison only makes sense if one includes the opportunity cost of leisure hours which, in turn, can be approximated by the figure of consumption per hour (or per capita value-added). Only if there is involuntary unemployment one would have to make the modification that only part of the leisure advantage of Northern European or Western EU countries would be included into an enhanced per capita consumption figure. It is clear that political preferences for public goods and the type of social welfare system desired will affect the average and

marginal income tax rates, respectively – countries with a population that has a high preference for public goods/social welfare will have relatively high taxes and therefore are likely to also have lower working hours in the official economy (higher tax rates are observed in many European countries compared to the US).

- International differences in health care expenditures should be taken into account so that, for example, high out-of-pocket health care expenditures in the US and the lower private health care expenditure of households in Nordic countries or Germany and France should be considered. With 11.1% of out-of-pocket expenditures relative to total US health care expenditures itself standing for about 17% of GDP effective consumption per capita is reduced in the US by 1.87% while a 9.7% out-of-pocket health care expenditure ratio in France means that (with 11% overall health care expenditures relative to GDP in France) effective disposable income and therefore consumption in France is reduced by 0.76% (on healthcare expenditures, see selected statistics in Appendix 2); with consumption being proportionate to income, one may argue that France effectively has almost a 1 percentage point health care related advantage in transatlantic per capita comparisons. For Germany, the advantage vis-à-vis the US is smaller as Germany's out-of-pocket health care ratio is higher than in France while the overall health care expenditure-GDP ratio for Germany was the same in Germany as in France in 2016/2017.
- The size of the economy matters, not just the type of economic (and political) system. A big economy such as the US or the Eurozone – with both the \$ and the € representing leading global reserve currencies – should naturally have a higher per capita consumption than a small country which usually do not enjoy reserve currency status (with Switzerland being a notable exception). The advantage of having a global reserve currency effectively amounts to a certain amount of free imports of goods; the effectively free import of consumption goods in the US is about 1% of GDP, in the Eurozone about 0.5% of GDP. This implies, for example, that one should anticipate that countries such as Sweden, Denmark or Norway - which are not part of the Eurozone - would naturally face a transatlantic consumption per capita gap of about 0.5%. Hence, if the US per capita income position were 100 and that of Sweden, Denmark or Norway would be 99.5, one could not argue that the economic system of the US is better than that of these Nordic countries.
- A specific aspect of comparing per capita income (or per capita consumption) across countries concerns total income in the sense that both official income and unofficial income have to be considered. While in the US the share of the shadow income relative to official income as measured by the System of National Accounts was 9% in early 21st century, that share in France and Germany was 16% and in the high tax Nordic European countries the relevant figure was close to 20% according to the research of MEDINA/SCHNEIDER (2017) for more see Appendix 5. It is clear that a serious international comparison of income or per capita consumption should consider at least basic aspects of the shadow economy across market economies; and if one compares Western market economies and socialist Eastern European countries, relevant findings from the capitalist and socialist shadow economies should also be taken into account.

Subsequently, it will be assumed that the transatlantic difference in out-of-pocket health care expenditures is (on average) 1% of income in favor of Northern and Western European countries.

International per capita differences can have many explanations where productivity differentials typically play a major role. The productivity advantage in certain fields in favor of the US could be explained, for example, by such factors as capital intensity, land intensity, human capital intensity, endowment with infrastructure and weak labor market regulations (making people work harder in the US) as well as strong entrepreneurship.

2. CEA Conjenctures an a Comparison of Per Capita Income between US and Nordic Countries

As regards the CEA's comparisons made with Norway, Sweden, Finland and Denmark, these are biased when the CEA writes about the health care system and the relative per capita consumption (at purchasing power parity). The CEA presents the following table on per capita consumption for the US and the Nordic Countries (Table 1).

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Countries	2016					
Denmark	69					
Finland	70					
Iceland	69					
Norway	82					
Sweden	68					
United States	100					

Table 1:Actual Individual Per Capita Consumption at Current Price and
Purchasing Power Parity. United States = 100

Source: Organization for Economic Cooperation and Development, National Accounts.

Note: Actual Individual Consumption (AIC) consists of the consumption goods and services acquired by individual households. According to the Organization for Economic Cooperation and Development, AIC is the sum of three components: 1) "The value of households' expenditures on consumption goods or services including expenditures on nonmarket goods or services sold at prices that are not economically significant"; 2) "The value of the expenditures incurred by government units on individual consumption goods or services provided to households as social transfers in kind"; and 3) "The value of the expenditures incurred by NPISHs on individual consumption goods or services provided to households as social transfers in kind."

Source: CEA (2018): The Opportunity Costs of Socialism, Washington DC, p. 36

The CEA does not consider several key points:

- Life expectancy in the Nordic countries is higher and infant mortality is lower than in the US which is obviously partly related to a better health care system – e.g. pregnant women, including those from low income strata, have regular precautionary checkups with physicians which helps to achieve a lower infant mortality in the Nordic countries compared to the US.
- Working hours per year in the Nordic countries are shorter than in the US so that Nordic countries have an extra quasi-income from more leisure time which is roughly

the equivalent of 1/20th of annual income; and as consumption is proportionate to income it is adequate to correct OECD per capita consumption figures in line with the leisure volume – unless higher leisure figures largely reflect involuntary unemployment; this caveat plays a role in France, but not in Germany and also not in the Nordic countries (with a minor caveat vis-à-vis Finland).

Health care expenditures relative to GDP in Nordic countries is about 6 percentage points lower than in the United States. Transatlantic welfare comparisons naturally have to take this into account, particularly since life expectancy in Norther Europe and Western Europe is higher than in the US. Out-of-pocket health care expenditures in the US - relative to income - are often higher than in Western and Northern European countries. The near monopsonist wage-setting in the EU health sector tends to undervalue health care consumption in Europe relative to the US (studies on this issue are missing in the literature). There are also big transatlantic differences in daycare services for children in the US and for instance Sweden: Swedish day-care services are almost free for private households, while in the US one would have to pay market prices which in turn makes transatlantic effective per capita consumption comparisons rather difficult; as most EU countries provide partially tax-financed day-care services for children, there is a relative over-estimation of per capita consumption in favor of the US if one considers OECD consumption data. Sweden is also interesting for transatlantic comparisons in other fields, including both the pension system, which represents a fairly large partially private pillar of social security and in Sweden there are many schools which are run by private companies but financed by government, and these firms are not allowed to charge students.

The following Table 2 presents some key findings for the USA and Northern European countries (without Iceland) plus Germany, France and the UK. As regards the unemployment rates figures were relatively high in both Finland (8.8 percent) and France (10 percent) so that the lower figure for hours worked in both countries – relative to the US – cannot be taken to fully represent desired leisure in 2016. In France, a uniform national high minimum wage which has no differentiation across regions seems to be one explanation for the high unemployment rate. Price levels differ across regions so that $10 \notin$ per hour might be adequate in Paris and Nice (with high regional price levels) but is 20% too high in regions with a price level that is 20% below that of these two cities.

countries, the city commung and riance, 1990, 2000, 2010, 2010, 2010									
		US	NOR	SWE	FIN	DNK	UK	GE	FR
1995	Life Expectancy	75.7	76.7	77.9	76.6	75.3	76.7	76.6	78.1
	Infant Mortality	7.6	4	4.1	3.9	5.1	6.2	5.3	5
	Hours Worked	1840	1488	1481	1668	1419	1563	1528	1590.67
2000	Life Expectancy	76.7	77.9	78.8	77.7	76.9	77.9	78.2	79.2
	Infant Mortality	6.9	3.8	3.4	3.8	5.3	5.6	4.4	4.5
	Hours Worked	1832	1455	1483	1636	1466	1539	1452	1549.98

Table 2:Life Expectancy, Infant Mortality, Hours Worked in the US, Nordic
Countries, the UK, Germany and France, 1995, 2000, 2005, 2010, 2015, 2016

2005	Life Expectancy	77.6	79.2	80.3	79.1	78.3	79.2	79.4	80.4
	Infant Mortality	6.9	3.1	2.4	3	4.4	5.1	3.9	3.8
	Hours Worked	1794	1422.8	1449	1594	1451	1515	1411.3	1527.35
2010	Life Expectancy	78.6	80.6	81.2	80.2	79.3	80.6	80.5	81.8
	Infant Mortality	6.1	2.8	2.5	2.3	3.4	4.2	3.4	3.6
	Hours Worked	1773	1415.3	1476	1566	1422	1476	1389.9	1527.96
2015	Life Expectancy	78.7	81	82.4	81.6	80.8	81	80.7	82.4
	Infant Mortality	5.9	2.3	2.5	1.7	3.7	3.9	3.3	3.7
	Hours Worked	1785	1423.9	1454	1537	1407	1501	1367.8	1509.43
2016	Life Expectancy	78.6	81.2	82.5	81.5	80.9	81.2	81.1	82.3*
	LE as percent of US (=100)	100	103.31	104.96	103.69	102.93	103.31	103.18	104.71
	Infant Mortality	5.7*	2.2	2.5	1.9	3.1	3.8	3.4	3.7
	Hours Worked	1781	1424.4	1465	1535	1414	1515	1363.4	1502.73
	HW as percent of US (=100)	100	79.98	82.26	86.19	79.39	85.06	76.55	84.38
	Unemploy- ment rate in percent	4.87	4.68	6.99	8.81	6.18	4.81	4.12	10.06

Source: Based on OECD Data indicators, *World Bank, EIIW calculations

All three points mentioned here are in line with the arguments presented for the comparison between the US and Germany plus France where the US effective per capita life-time income is the same as in Germany and France - where, however, the transatlantic income comparison takes fully into account the difference in national health care expenditure-GDP ratios (WELFENS, 2019; see also Table 5 in Appendix 3). The CEA's conjecture that the per capita consumption in the Nordic countries is 30% lower than in the United States is wrong if one considers a meaningful comparison that goes beyond a single year. The CEA (2018, p. 36) writes: "The only Nordic economy in which average consumption is within 20 percent of the U.S. level is Norway, where average consumption per head is 82 percent of the U.S. level in 2016 as the above table shows.

An adequate economic analysis for international comparison of consumption is not to take a look at a single year but to consider life-time consumption. Considering life-time consumption net of health care expenditures – to account for the considerable transatlantic differences in health care expenditures relative to gross domestic product (or GNP) - shows

that the figures for the US and the Nordic European countries are roughly the same where higher leisure time in Nordic countries is assumed to be equivalent to $1/10^{\text{th}}$ of annual income and the Nordic countries' life expectancy leadership is equivalent to 4% (see Table above) so that for effective life time consumption in Nordic Countries C' – disregarding Norway - relative to that of the US we get: C'/C'* (* for the US): C'/C'*=(C/L)(1.2)(1.04)/C'* = $0.7(C^*/L^*)(1.2)(1.04)/C'^*=0.8736/C'^*$; the Northern European leisure lead is reflected in the factor 1.2, the higher life expectancy in Northern Europe is reflected in the factor 1.04. Correcting for the transatlantic health care out of pocket expenditure ratio the corrected US figure (initial level of per capita income C*/L*= 100) is C'*=0.99. The implication is that based on life-time consumption, the difference of effective per capita consumption of the US vis-à-vis Denmark, Finland, Iceland, Sweden is not 30% but 12%, while the effective per capita life time consumption in Norway is indeed higher than in the US:

- The level of 0.82 (figure indicated by CEA) times 1.2 x 1.03 yields 1.0135 while the figure for life time consumption in the US is 0.996 (out of pocket-disadvantage of the US is 0.4 points).
- The effective Norwegian lifetime per capita consumption thus is 1.8% higher than that of the US, the CEA's claim of an 18% lead of the US vis-à-vis Norway is extremely misleading; the order of error margin is 20% and this is not a small haphazard difference there is a sizable mistake.

If one would apply discounting for the additional life expectancy of people in Norway, the figures for the US for any reasonable discounting rate would still be lower than in Norway. Moreover, in Nordic countries (and Western EU countries) pregnant women and their husbands/partners will have a better quasi-consumption benefit – read lower family risk - exceeding that in the US since parents face a lower infant mortality risk for their expected offspring. The economic welfare of the average Norwegian exceeds that of the average American if utility functions in both countries are assumed to be the same; and if there is a form of altruism in the family, so that children's well-being has a positive impact on parent's income, the lower Nordic European (and Western European) infant mortality means an even bigger lead of Norway vis-à-vis the US and could indeed be considered as an argument that Northern European and Western EU countries have a lead in economic welfare over the US. One conclusion could be summarized as follows: Asian countries should carefully consider the model of the EU Social Market Economy and not just focus on the alleged lead of the US; this suggestion does not mean to ignore important reform requirements in many EU countries.

As the CEA apparently wants to use the comparison of the US to the Nordic European countries to fend off possible future policy reforms towards a Social Market Economy – as found in Nordic countries/Western EU countries (e.g. Germany and France) – one may state that the careful recalculation of figures for an adequate comparative analysis indeed suggests that there are no reasons not to move towards a variant of a modern European-style market economy. The CEA's below par study backfires on the Trump Administration.

Obviously, the US needs its own type of a social market economy, hopefully with a competitive system of health insurance companies and adequate competition in the US hospital system. However, it would be wise to study the European social market economies, not to try pre-empting an otherwise useful transatlantic discussion of systemic reforms in which both sides, the US and Europe, could learn from the other.

The Council of Economic Advisors shows standard inequality statistics, namely Gini coefficients, post taxes and transfers, in the Nordic Countries to be around 0.26 while the Gini coefficient for the US is much higher, namely 0.39 in 2015; and the Palma ratio (P90/P50 disposable income decile ratio) is also higher in the US, namely 2.3 compared to 1.7 in the Nordic European countries. One may argue about all kind of problems which may exist in Nordic countries but the analysis of the CEA is shockingly biased, a rather poor piece of economic analysis which is misleading Congress, the President and the US public. Whether or not the American public generally has less of a preference for equality than the population in Northern European countries or the EU is at first a question for researchers. Figures from the World Value Survey (WVS, 2014) suggest that the US population indeed has weaker preferences for equality than societies in EU countries. However, there is no doubt that US voters' concern about inequality in the US has increased considerably after 2008 (LINDH/McCALL, 2018). A paradoxical finding of Lindh/McCall is that a majority of US respondents holds the view that inequality is too high in the US, while a relative majority expects that this problem should be remedied by big firms and US multinationals, respectively – this, however, is wishful thinking in a shareholder economy and stands for a surprising misperception on the part of the US public.

Gini coefficient (disposable income, post taxes and transfers)	Palma ratio (P90/P50 disposable income decile ratio)
0.26	1.7
0.26	1.7
0.25	1.7
0.26	1.7
0.27	1.7
es 0.39	2.3
	Gini coefficient (disposable income, post taxes and transfers) 0.26 0.26 0.25 0.26 0.26 0.27 es

Table 3:Relative Income Inequality, 2015

Note: Data for Iceland are for 2014.

Source: OECD, National Accounts; CEA (2018): The Opportunity Costs of Socialism, Washington DC, p. 37.

The Council of Economic Advisors also suggests that the US university system is much better than that in Nordic countries where students typically do not have to pay tuition fees. Additionally, there are links between the access of various strata to higher education and inequality. Moreover, in this respect one can find, for example, interesting comparisons between Denmark and the US, but the CEA (2018) does not quote the relevant literature. In a broader view, this debate is also related to preferences for income redistribution and such preferences are partly related to per capita income and other personal or household characteristics - the reader is referred here to WELFENS/UDALOV (2018) and the related literature (e.g. special issue of the Scandinavian Journal of Economics, 2018). In the Northern European countries there is often a view that income redistribution policies combined with "active" education policy will help to bring about more efficiency as well as a more equitable society; Scandinavian countries are often considered as being good

examples of this. However, LANDERSØ/HECKMAN (2017) in their comparison between social mobility in the US and Denmark have shown a differentiated view: Denmark is a rather mobile society in terms of income mobility, but not when measured by indicators for effective educational mobility.

High Danish income mobility is largely due to redistributional tax, generous transfers and wage compression policy. Social policies for children generate more favorable cognitive test scores for disadvantaged children in Denmark but they do not result in more favourable educational outcomes – this to some extent is due to disincentives to acquire sufficient education, as Danish redistributional policies undermine incentives for income mobility. Thus, the comparison between Denmark and the US indeed suggests some advantages of the US system and certain limitations of the Danish system to the extent that university education is considered to be an element for achieving less inequality. It seems that the US system is largely open to all strata of society and in any case provides stronger incentives for endogenous human capital formation than Denmark. It is not clear how the situation is in comparison to other Scandinavian countries or Germany/France/Netherlands and the US.

3. Conslusion and Research Perspectives

At the bottom line, one may conclude that the CEA study on the Opportunity Costs of Socialism is a rather ideological piece of work. It is not very related to the relevant literature and certainly not very convincing when it comes to making a meaningful transatlantic comparison of per capita consumption and economic welfare, respectively. As a reader, one can get the main impression that this institution, which is part of the Administration, gives confusing advice to the president and the US public and seems to suggest with very poor arguments that the US government should not consider Northern European countries as a model for systemic reform. Comparing the US and these countries in a meaningful longterm perspective, the statistics presented by the CEA partly suggest the opposite of what the CEA has written. Critical aspects of the shadow economy also are not included (see Appendix 1).

As regards the Trump Administration's orientation for systemic reform, it seems that the US wants a protectionist and more nationalist policy on the one hand, on the other hand the Administration refuses to consider European countries with high per capita income as a model: It is obvious that the Council of Economic Advisers' (CEA, 2018) per capita consumption comparisons US versus Nordic European countries are biased – the CEA claims, for example, an 18% US lead, while the effective lifetime consumption of people in Norway is actually slightly higher than in the US; moreover, the infant mortality rate in Norway and indeed in Northern European countries and in Western EU countries is lower than in the US so that "utility spillovers" within young family suggests further advantages of European economic systems.

As regards comparisons between effective lifetime income for the US and Germany plus France the results show that the two western EU countries are on par with the US (WELFENS, 2019). In this comparison, income has been corrected for the transatlantic health care differential as well as differences in leisure.

A serious problem in many OECD countries concerns gaps in the coverage of real national income (Z). Z is the sum of real GDP (Y) and net factor income from abroad. It seems that statistics for the case of Spain clearly indicate that the wealth of rich Spanish citizens is partially held abroad and concealed (MARTINEZ-TOLEDANO, 2017) which in turn implies hidden profit income from abroad to be a problem for the accuracy of GNP statistics and foreign direct investment statistics; the implication is that for 2012, official Spanish outward FDI figures are underestimated; the hidden outward FDI flows can be calculated to be € 2.4 billion or 0.2% of Spain's GDP; this in turn is more than 1/6th of Spain's official FDI outflow (WELFENS, 2019). Such statistical problems regarding the outward FDI figures of Spain – and possibly also other OECD countries – could also explain the global and national mismatches in terms of FDI outward flows and FDI inward flows; thus, cumulated FDI outflows are not accurate for Spain and possibly for other OECD countries and for Newly Industrialized Countries to the extent that tax evasion problems play a similar role as in OECD countries as well. For an international comparison of both per capita wealth and per capita income data, such problems require further research. This in turn means that globalization is not assessed correctly. One also has to consider that global outward FDI flows (according to UNCTAD figures) were US\$ 1,369.508 billion so that an underestimation of 17% - assuming the Spanish figures to apply to all countries – implies an underestimation of \$232.9 billion; since global outward FDI stock was \$20,786.2 billion in 2012, the same underestimation of 17% implies an underestimation of the global stock of \$3,873.6 billion. Since corporate tax revenues in OECD countries are about 3% of GDP (see Appendix 4), there is an implied gap in corporate income revenues of about 0.5% of GDP. The assumption here is that the concealed outward FDI stock would normally translate only into higher corporate tax revenues – but in reality the tax revenue gap could well concern mainly income tax revenues.

Moreover, it has been shown for the case of Switzerland that the main driver of the recent increase of the top 1% of Swiss income earners is related to cases where individuals have income from abroad (FOELLMI/MARTINEZ, 2017). One may state the hypothesis that income from abroad in a world of sharp international tax competition is very often taxed at lower effective rates than income from domestic sources. If these income streams from abroad are mainly capital income, the on-going rise of foreign direct investment – relative to domestic capital formation – implies that modern globalization goes along with increasing functional income inequality in the main source countries of foreign direct investment. Finally one should not ignore the role of the shadow economy in a comparison of capitalist and socialist systems. Some basic points are covered in Appendix 1. There is a need for further research; one may also emphasize that the CEA (2018) report partly is very much flawed.

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Appendix 1: Role of the Shadow Economy in Socialist Countries and Capitalist Countries

A broad comparison of consumption in the socialist systems of Eastern Europe (say Poland, German Democratic Republic, Hungary etc.) would not only have to look at the official economy, but also at the unofficial shadow economy. There are also additional insights with respect to the capitalist shadow economy whose size differs across OECD countries (on estimates of the size of the capitalist shadow economy in OECD countries see F. SCHNEIDER, 2006); "effective full per capita consumption" would have to also account for the size of the shadow economy and the implied additional consumption related to this and it could possibly also look into the role of the self-service economy.

A basic theoretical partial equilibrium approach for both the socialist shadow economy (in Eastern Europe) and the capitalist shadow economy is offered here which shows that the price in the "tax-free" capitalist shadow economy is lower than in the official economy while the equilibrium price in the socialist shadow economy is higher than in the official economy. The subsequent graph shows the official economy in the capitalist economy in a) and the capitalist shadow economy in b) where goods are offered with the burden of taxation, social security and regulations relevant in the official economy (marginal costs k' which are assumed to be positive are rather low therefore); and also the socialist system is summarized, namely by pointing to the official economy where a certain amount of goods is produced and allocated to a certain group of demanders at a state-administered price P^0 (P^0 in turn could reflect marginal cost; assumption here for simplicity: no fixed costs); the demand in the shadow economy is the unsatisfied demand in the official economy and goods are sold at the price P^S; this price in the market economy is lower than in the official economy, in the socialist system it is higher than in the official system so that – other things equal – the effective price level $P = (P^0)^b (P^S)^{1-b}$ (here b is the share of goods consumed in the official economy) in a market economy is lower than in a socialist economy. In a market economy, the demand is satisfied from above since those with the highest willingness to pay will get the respective good (everybody on the arch A to point E on the demand curve in a)). In a socialist economy, on the other hand, there is a government-organized allocation of inputs and of goods produced; they are offered/sold to some targeted group: say the military and those working in the export sector – this is the arch C to E in the subsequent graph for the socialist economy (the state-administered official price p^0 is rather low and contains an element of subsidization in many sectors). Thus the shadow economy's demand curve is a kinked demand curve (DD_{0}^{S}) . The supply in the socialist shadow economy is based on input diverted from the official sector and there is also a risk premium in the supply curve; plus corruption payments, for example to official bureaucrats or police officers. This leads to an equilibrium point in the shadow economy which typically will bring a shadow economy price that is above that of the official economy.

Figure 1: Socialist Economy: (a) Official economy; b) Shadow Economy



Source: EIIW representation.





Source: EIIW representation.

Appendix 2: Health Care Expenditures Statistics for Selected

Countries

Table 4:Health Care Expenditures Relative and Out of Pocket Expenditures
(rel. to GDP) in the US, Nordic Countries, the UK, Germany, France, and Japan
(2016)

Country	Health Care Expenditures (rel. to GDP)	Out of Pocket Expenditures (rel. to GDP)	Difference vis-à- vis the US in Percentage Points	Out of Pocket Expenditures (rel. to Total Health Care Expenditures)
United States	17.07	1.89	-	11.07
Norway	10.50	1.53	-0.36	14.57
Sweden	10.94	1.67	-0.22	15.27
Finland	9.49	1.93	0.04	20.34
Denmark	10.35	1.42	-0.47	13.72
Germany	11.14	1.38	-0.51	12.39
France	11.54	1.13	-0.76	9.79
Japan	10.84	n.a.	n.a.	n.a.
United Kingdom	9.76	1.48	-0.41	15.16

Source: OECD, EIIW own calculations.

Appendix 3: Relative Effective* Disposable Nominal Income of

Germany+France and the US, 1995-2015

Table 5:Relative Effective* Disposable Nominal Income (y'; yearly data) of
Germany + France Relative to the US, 1995-2015, ('000 US \$ Purchasing Power
Parity (PPP))

Country	1995	2000	2005	2010	2015	Life Expectancy (L')	L'xy'
France	14,244	16,741	19,549	22,909	24,576	82.4	2,025,056
Germany	15,221	17,894	19,643	23,580	25,855	81.1	2,096,881
United States	15,706	19,639	22,154	23,826	26,302	78.6	2,067,298
Average Difference; in percent (FR+DE)/US	6	12	12	2	4		

*Note: Here, "effective" means corrected for transatlantic differences in holiday time and health care expenditures: For Germany and France, annual nominal income has been multiplied by 1.1 to reflect a month of extra holiday in these countries, compared to the US; the official US figures have been reduced by 18 percent (expected US health care expenditures relative to GDP) and those of Germany and France by 11 percent (health care expenditures relative to GDP in France and Germany in 2017). The last column multiplies the 2015 annual effective income with life expectancy; this overestimates somewhat the EU advantage and the lead of Germany and France, respectively, since future income should in normal circumstances be discounted by some adequate discount factor. Source: WELFENS (2019), The Global Trump, London: Palgrave Macmillan.

Appendix 4: Corporate Tax Revenues as a Percentage of GDP, Selected OECD Countries 2010-2017

Table 6:Corporate Tax Revenues as a Percentage of GDP of Respective
Country, Selected OECD Countries (2010-2017)

Country / Year	2010	2011	2012	2013	2014	2015	2016	2017
France	2.3	2.6	2.6	2.6	2.3	2.1	2.0	2.3
Germany	1.5	1.7	1.7	1.8	1.7	1.7	2.0	2.0
Italy	2.3	2.2	2.4	2.6	2.2	2.0	2.1	2.1
Japan	3.1	3.2	3.5	3.8	3.9	3.8	3.7	4.0
Korea	3.2	3.7	3.7	3.4	3.2	3.3	3.6	3.8
Luxembourg	5.8	5.0	5.1	4.8	4.3	4.4	4.6	5.2
Switzerland	2.7	2.8	2.8	2.8	2.8	3.0	3.1	3.3
United Kingdom	2.9	2.9	2.7	2.6	2.5	2.4	2.7	2.8
United States	1.8	1.8	2.0	2.1	2.3	2.1	2.0	1.9

Source: Own representation of OECD Revenue Statistics Database, 1200 Taxes on Income, Profits and Capital Gains of Corporates.

Appendix 5: Shadow Economy Estimates for Selected

Countries

Table 7:Average Size of the Shadow Economy over 1991 – 2015 for the US,
Nordic Countries, Germany, France, Italy and the UK

Country	Estimated average size of the shadow economy in % of GDP
United States	9.4
Denmark	18.6
Finland	19.1
Norway	20.5
Sweden	19.9
Germany	15.6
France	16.0
Italy	29.6
United Kingdom	13.3

Source: Shadow Economies around the World: New Results for 158 Countries over 1991-2015, Medina and Schneider (2017), CESIFO WORKING PAPER NO. 6430.

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