UNIVERSITY OF WUPPERTAL
BERGISCHE UNIVERSITÄT WUPPERTAL

EUROPÄISCHE WIRTSCHAFT
UND
INTERNATIONALE MAKROÖKONOMIK

20 Years 2015

EIIW

Paul J.J. Welfens/Vladimir Udalov

International Inequality Dynamics: Issues and Evidence of a Redistribution Kuznets Curve

Revised version

Discussion Paper 250
Presented at the UN, New York
September 12-13

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

Paul J.J. Welfens/Vladimir Udalov

International Inequality Dynamics: Issues and Evidence of a Redistribution Kuznets Curve

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: D60, D63, H55, P00
Key words: Inequality, World Value Survey, Kuznets Curve, Empirical Analysis, Social Market Economy

Acknowledgements:
The authors are grateful for research support by Tian Xiong and Fabian Baier (EIIW) as well as editing by Mara Lüdenbach and David Hanrahan (EIIW); discussion with colleagues and policymakers at the Expert Group Meeting (New research on inequality and its impacts, World Social Situation 2019), United Nations Headquarters, New York, September 12-13, 2018, is gratefully acknowledged. The usual caveat applies.

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

Vladimir Udalov M.Sc., EIIW and Schumpeter School of Business and Economics at the University of Wuppertal

udalov@eiiw.uni-wuppertal.de

Paul J.J. Welfens/Vladimir Udalov

International Inequality Dynamics: Issues and Evidence of a Redistribution Kuznets Curve

Summary: We consider the main international inequality dynamics and identify new challenges plus empirical findings for OECD countries and the world economy. The focus is on key elements of income inequality in rich and poor countries and the question is raised of whether there is an Income Redistribution Kuznets Curve; this question is important for the prospects of enhanced international cooperation in social policies and opportunities regarding the benchmarking of redistribution policies. The econometric results presented show crucial new insights about the role of individuals' redistribution preferences and the impact of other variables. The findings herein indeed suggest the existence of an Income Redistribution Kuznets Curve for a broad group of countries from the World Value Survey. Key conclusions concern the willingness of countries to cooperate: Countries with a positive experience vis-à-vis redistribution policy – where the population has also achieved a satisfactory financial situation – can be expected to reinforce income redistribution policy cooperation. The economic control variables suggest that education and postmaterialism weaken the interest in redistribution while other variables reinforce the support for redistribution policy. Grouping countries according to people's preferences could allow to create efficient policy cooperation clubs in the field of redistribution and social policy – as part of social policy itself often has strong elements of redistribution (e.g. in health care systems). The SPIAC approach of the UN and more recent G20 initiatives could benefit from these new insights.

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

Vladimir Udalov, EIIW and Schumpeter School of Business and Economics at the University of Wuppertal

udalov@eiiw.uni-wuppertal.de

EIIW 2015 = 20 years of award-winning research

International Inequality Dynamics: Issues and Evidence of a Redistribution Kuznets Curve

EIIW Discussion Paper 250 (Revised Version)
presented at the UN
Division for Inclusive Social Development (DISD)
United Nations Department of Economic and Social Affairs (UN-DESA)
Expert Group Meeting on "New Research on Inequality and Its Impacts"
United Nations Headquarters, New York, 12 -13 September 2018
12 September, Conference Room B, 13 September, Conference Room 9

Table of Contents

List of Figures

List of Tables

1. Introduction

The inequality of income across countries and within countries has received increasing attention in OECD (Organisation for Economic Cooperation and Development) countries particularly since the publication of the book of PIKETTY (2014) and of the many related publications which focus on the long run dynamics of inequality (e.g. ALVAREDO ET AL., 2018 – see Appendix 2). Inequality in the US, the UK, China, India and some other countries has strongly increased. Given the demographic changes in the North, there are many challenges in the field of social policies and pensions systems, respectively. As the median age in part of the developing economies is declining, the situation in the South is somewhat different and there some specific challenges in income redistribution could be relevant. The interaction between the dynamics in the South and in the North will be partly visible in global capital markets in the short run and in the medium term, while the more long-term challenges of capital accumulation are part of the long run globalization process (WELFENS, 2013).

Immigration pressure has increased in the EU and in ASEAN countries where the creation of a single market – EU in 1993, ASEAN in 2016 – brought not only freedom of trade and capital flows but the migration of workers as well; and certainly immigration has become a key political issue in the US under President Trump. The recent refugee waves in the EU (2015/2016) could also affect the debate about inequality and social policy/income redistribution in the near future. A refugee wave can raise fears of a lack of financial resources among the relatively poor domestic residents. One may also argue that income redistribution which narrows North-South post-tax per capita income differentials could have an impact on migrationary pressure towards the North. However, there is also a caveat as the summary analysis of CLEMENS/POSTEL (2017) shows: Rising international aid that raises the disposable real income in countries in the South could actually reinforce the emigration drive towards the North, since the improved income situation indeed enhances the ability to pay for legal or illegal passage to OECD countries; it is only once a critical per capita income is exceeded that the emigration pressure in countries of the South reduces. This study, however, does not take into account the individual attitudes that one finds in rich and poor countries as evidenced, for example, in the World Value Surveys.

The following analysis uses the results of the World Value Surveys to assess key questions raised above. In particular, we are interested in whether or not a critical per capita income value exists above which more income redistribution is desired – this is the question of the existence of an "Income Redistribution Kuznets Curve". For practical policy purposes, one may point out that there could be direct income redistribution policies via a progressive tax system plus a transfer system for families/individuals with special needs; or there can be indirect income redistribution effects through the public healthcare system where the contributions of low-income workers/employees are lower relative to their respective income when compared to high-income workers/employees while both groups are entitled to the same healthcare services.

The analytical focus of the subsequent analysis is to get a better understanding about the attitude of individuals for/against government income redistribution – and, in particular, to determine to what extent there is a change in this attitude along the dynamics of economic catching-up. Are individuals' preferences in the field of income redistribution a positive or negative function of per capita income?

The original Kuznets Curve shows a link between per capita income and inequality. When per capita income was rather low and started to increase, inequality would also increase; only beyond a certain critical per capita income, did the income inequality in the respective country decline - so that an inverted U-shaped Kuznets Curve could be identified for many countries in the course of economic development (Kuznets, 1955). One may also point out that part of the literature has been concerned with an "Environmental Kuznets Curve" which has tried to identify a critical per capita income above which individuals', and hence political, interest in investing in environmental quality improvement increased (ERDEM, 2015). Thus beyond that critical income more economic prosperity and a better environmental quality would be achieved in parallel.

In the subsequent analysis we are looking at first at the debate over a Social Market Economy from a normative and empirical perspective while taking into account open economy effects. Section 2 takes a look at the basics of a Social Market Economy. Section 3 deals with selected related literature on income redistribution. Section 4 puts the focus on the results of the World Value Survey, followed by an empirical analysis and discussion of evidence of an Income Redistribution Kuznets Curve. Section 5 looks at the policy implications and future research. There are two group of countries considered here, namely high-income countries and low-income countries. Among the industrialized countries covered in the subsequent analysis a particular interest is on the US, Germany and Spain, among the developing countries naturally China plays a crucial role. The findings presented indeed suggest, for a broad group of countries from the World Value Survey, the existence of an Income Redistribution Kuznets Curve. The economic control variables used in the ordered logit regression include gender, education, having children, age, trust and postmaterial attitudes.

International cooperation among countries in the field of social policies thus can be expected to become easier once a critical income threshold has been achieved – a finding that could be useful, for example, to organize consensus among relevant groups of UN member countries.

2. The Modern Social Market Economy: Normative Aspects and Selected Key Issues

The modern welfare systems can trace their origins to developments in Germany in the 1880s which introduced reforms to assuage the elite's fear of a socialist revolution – thus began the concept of a public pension system and a basic public health insurance system. Following World War I, unemployment insurance was introduced in the UK and other countries, and the Keynesian models that became popular in the 1950s suggested that full employment might be difficult to achieve in a market economy – long spells of unemployment in the 1930s in the US and parts of Europe were considered as relevant historical examples. With the expansion of the Soviet socialist system in the 1950s and 1960s - after many Eastern European countries had adopted the model of the Soviet command economy – the pressure on Western countries to create rather generous modern welfare systems increased. The share of social security expenditures in OECD countries increased considerably even before aging become a more pressing topic on the policy agenda in the early 21st century. As regards the Western social market economies in Europe, it was also emphasized that the rich countries of the North should redistribute a least about 0.7% of national income to developing countries. As regards income redistribution in developing countries, many states had hardly any redistribution in favor of the rather poor strata of society; in some countries there was a very modest public health service, but public pension systems played only a modest role – instead many countries, for example in Latin America, emphasized in the 1990s the creation of private pension funds as did Hungary and Poland, but later the nationalization of these funds was realized to reinforce the public revenue situation in the countries concerned.

As regards a normative view of income redistribution, an influential book was RAWLS' Theory of Justice (1971) which emphasized that justice could be defined as an institutional setting in which everybody could be a candidate for public offices and where – following the logic of a hypothetical natural state – there exists a "veil of ignorance" about the future real position of the respective individual in society. Rawls argued that in such a setting people would agree to accept income inequalities if it was made sure through some redistribution mechanism that the real income of each person, thus particularly also of poor strata, would increase over time.

As regards access to health care services and to pension payments, one may emphasize that EU countries have broad requirements for compulsory health insurance for workers/employees as well as entrepreneurs and the unemployed. In Europe, practically all gainfully employed persons are covered by some basic form of public health insurance – much in contrast to the United States where about 15% of the population are not covered by a health insurance system. The US spends almost twice as much as Germany and France on health care – relative to GDP – while life expectancy in these two EU countries is 2-3 years higher than in the US (and child mortality in Western European EU countries is also lower than in the US). A transatlantic comparison of per capita consumption corrected for health care expenditures (effective per capita consumption) suggests that the US lead in per capita income translates only into a small effective consumption per capita lead for the US and when lifetime effective per capita consumption is considered, Germany and France are roughly on par with the US. For the UK a similarly favorable assessment holds. As regards earnings and income mobility in OECD countries, the OECD (2018) study "A Broken Social Elevator? How to Promote Social Mobility" gives new insights and shows, for example, that earnings mobility in Germany, France and the UK is rather small. As regards the claim of OECD findings that inequality of per capita incomes (real GNP per capita: Z/L where Z is real GNP and L is the population) and output growth (g_Y where Y is real GDP) are negatively correlated, one should point out that this observation could be misleading as (with α denoting the share of foreign investors in the host country capital stock K, ß is the capital income share in Y, * for foreign variable; $q^*;=eP^*/P$ where e is the nominal exchange rate, P the price level) it holds $Z:=Y(1-\alpha^*ß) + \alpha^*ßY^*q^*$ and therefore (with $z:=Z/L$; $y:=Y/L$) we have $z = y(1-\alpha^*ß) + \alpha^*ßy^*q^*(L^*/L)$ so that aggregate per capita income development (change of z and variance of z) in a neoclassical growth model will be correlated with the level of the growth path of y and y^*, respectively, as well as with the exogenous knowledge growth rates a and a^*, respectively; for simplicity L and L^* are assumed to be given (u is the natural unemployment rate that could be positively correlated with poverty, u' and u'' are positive parameters), savings $S= s(1-\tau)(1-u'u)((1-\alpha^*ß)Y+\alpha ß^*Y^*q^*(1-u''u^*)) + s'(1-\tau)\alpha^*ßY$ – with $s>0$ as the purely domestic savings rate and $s'>0$ as the reinvestment ratio of foreign investors, τ is the income tax rate (savings abroad is $S^*=s^*(1-\tau^*)(1-u'^*u^*))((1-\alpha ß^*)Y^*+\alpha^*ßY(1-u''u)/q^*) + s'^*(1-\tau^*)\alpha ß^*Y^*)$ - and output $Y=K^{ß}(AL)^{1-ß}$ and $Y^*=K^{*ß^*}(A^*L^*)^{1-ß^*}$ – hence the covariance for y, y* has to be considered in a world with cumulated outward foreign direct investment (WELFENS, 2018). These are key aspects for a long run perspective which imply that both inequality at home and inequality abroad should be correlated with the level of the growth path and this was ignored in the OECD studies. The World Bank study "Fair Progress" (NARAYAN ET AL., 2018) provides a rich statistical and economic analysis for both developing countries and industrialized countries on poverty, inequality and economic mobility. Inequality aspects and poverty risks are related to wage and capital income, respectively, but also to the risk of pension reforms and pension cuts, respectively.

Whether or not the public pension systems are rather solid or not could be assessed on the basis of government bond rating results. The promised future pension payments have to be heavily discounted by future pensioners if there is a serious economic crisis and a high debt-GDP ratio – and in particular a high foreign indebtedness-GDP ratio; a country with a non-investor grade rating has uncertain future pension payments, simply because economic history tells us that countries with a serious crisis and facing the need for budget consolidation will often cut public pensions. Indeed a typical element of government consolidation in countries with high debt-GDP ratios is to cut government pension payments as could be seen in the Euro Crisis in Greece and Portugal.

BONESMO FREDRIKSEN (2012) highlighted key aspects of inequality in the European Union and it is obvious that there are systems with very limited income redistribution such as the UK and some other EU countries while the redistribution of income in others, for example in Ireland and the Scandinavian countries, is considerable; rather high VAT rates are used in Scandinavian countries to finance a large part of public pension payments. This amounts to a so-called fiscal devaluation in the sense that a higher VAT rate reduces domestic consumption demand and therefore stimulates exports of goods and services (in a small open economy, the domestic excess supply in the tradables market is equal to the trade balance position); one may also note that this way of financing pensions implies a low effective "gross wage cost" so that more labor intensive tradable products should be internationally competitive. FRIEDL ET AL. (2015) have pointed out that the willingness to accept government income redistribution differs considerably across countries as can be shown on the basis of income redistribution games made at university labs in many countries – with most game-based experimental insights obtained in industrialized countries.

A caveat is that experiments from university labs can hardly be expected to be representative of whole societies. This raises all the more the interest in international value surveys: With the World Value Survey being the best database available for such questions. In democratic societies, the redistribution preferences of the population should be visible in governments' economic and social policies.

Income redistribution is often part of the social policies in OECD countries; for example, health insurance benefits are rather equal for workers but as contribution rates are a percentage of income it is clear that there is some income redistribution effect in favor of poorer strata. This holds unless the health relevant behavior – for example, in terms of smoking or excessive alcohol consumption – of such strata would lead to a life expectancy so far below average that insurance equivalence ratios would be excessive. Direct income redistribution occurs through various government transfers in favor of relatively poor households (in the WVS language, the question posed often used wording relating to the "subsidization of households" - meaning transfers in favor of households).

3. Inequality and Attitudes in the World Value Survey

The seminal paper by Kuznets (1955) founded a rich theoretical and empirical body of literature aimed at documenting and explaining the relationship between income inequality and some measure of economic development, typically mean income or per capita Gross Domestic Product (GDP).

In particular, the Kuznets curve depicts an inverse U-shaped relationship between income inequality and development (economic growth). Kuznets hypothesized that low-income countries would tend to exhibit very low levels of inequality, which would begin to rise as those countries experienced increasing levels of average income. This increase in inequality would continue until countries reached middle-income status, at which point further increases in average incomes would be associated with declining inequality. By the time countries became fully industrialized, inequality would have returned to a low level. The main idea is that economic development - including shifts from agriculture to industry and services, and the adoption of new technologies – initially primarily benefits a minority of the population. As the new capital-intensive and knowledge-intensive methods of production become widespread, the benefits from economic development are shared more evenly, and in societies with higher per capita GDP there is some tendency to reduce inequality – this could happen endogenously as the relative demand for unskilled labor in full employment, high-income societies is rising so that the wage premium for skilled workers is falling; or government income redistribution activities are enhanced in such a way that post-redistribution disposable income per capita is less unequally distributed than before.

Given the new inequality debate following the expansion of the digital economy in the 1990s in OECD countries, one may raise the question of whether or not from a critical per capita income level in a digital economy (characterized, say, by a share of real information & communication technology value-added exceeding 1/5th of GDP which would make ICT the biggest sector in the economy) inequality rises once again. Here, empirical research is needed. The broader issues of inequality in the world economy will be highlighted briefly in the next section where the special aspect that foreign income sources are obviously less well taxed than national income sources (FÖLLMI/MARTINEZ, 2017) – an element of globalization and capital flow dynamics - will be ignored.

Looking at Selected Findings from the Literature

There are several remarkable features of income inequality dynamics in the world economy:

- The income share of capital in national income is rising in many countries – prior to the Banking Crisis 2007-09 the profit share of banks in particular had strongly increased; with some normalization after 2010.
- There is still a recent history of considerable redistribution from labor to banks and thus artificially increased banks' profitability in OECD countries: The key problem

is that loans to private households have been provided on the basis of artificial bundling, namely of loans and payment protection insurance (PPI); this strange and anti-competitive bundling which reduces the price elasticity of the demand for loans (and raises overall loan costs artificially) had been declared illegal in the UK in 2011 and clients of banks have reclaimed more than 30 billion pounds by 2018 (August) in the UK. Such anti-competitive bundling, which does not reflect the normal result of competitive market dynamics, is also a problem in Germany and many other EU countries. Nevertheless, a study of iff/ZEW (2012) argued in a strange report to the German government that the interest rates in Germany are in line with competition – the study, however, uses neither the analytical concepts of the relevant market in a meaningful way, nor does it critically focus on the anti-competitive bundling. The German and British case study is not only an example of redistribution of worker/household's income to profits of banks but it also is a bad precedent in the sense that such anti-competitive behaviour in loan markets can continue over decades and distorts both capital flows and resource allocation.

- In a world of liberalized capital markets, distortions in major national capital markets will have distorting international spillover effects. Therefore a key issue of income inequality dynamics and adequate redistribution policy naturally will put a critical focus on capital market distortions in both the North and in the South.
- In the North 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 a good example 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 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.
- An important aspect that has been recently studied for the US, Germany and China are the links between income distribution and current account imbalances: The worsening of the US current account after 1980 can be partially explained by overlapping forces of rising (top-end) household income inequality and institutional developments; as regards German and Chinese developments since the mid-1990s, current account imbalances seem to be related to considerable shifts in the respective functional income distribution at the expense of the household sector and workers, respectively (BELABED/THEOBALD/VAN TREECK, 2018).
- Economic inequalities have partially been shaped in many countries by new forces: There is the expanding role of Information and Communication Technologies (ICTs)/robotics – the ability of the supply-side in the digital economy to impose price differentiation in a very effective way (e.g. based on the mobile phone devices or the type of laptop used) brings redistribution effects in favour of profits and ICT firms, respectively (WELFENS, 2002). There is no reason for broad scepticism about robotics as the analysis of DAUTH ET AL. (2017) shows for the case of Germany:

Robots bring gross job losses but no net job loss; there is, however, a distributional challenge because of the decline of the wage income-GDP ratio; robots raise labor productivity but not wages (while jobs are lost in manufacturing employment, there will be new jobs created in the services sector).

- Empirical analysis has shown for OECD countries that import competition from China has brought about new labor market polarization (BREEMERSCH ET AL., 2017); with China's increasingly important import competition in so many countries worldwide, the phenomenon of labor income polarization should be carefully monitored. As much as China's integration into the world economy is certainly welcomed by economists, business people and politicians globally, it should be clear that the special case of China – representing a big economy entering world markets – has to be analysed and monitored carefully. If, for example, the losers in OECD countries would not be offered both some form of compensation and new retraining opportunities, the "new" globalization which includes China might not be sustainable.
- Fiscal devaluation has been considered as a new potentially useful option in regard to economic policy. Fiscal devaluation which is based on raising VAT tax rates in combination with reducing social security contribution rates (and therefore labor costs) can help to improve a country's current account position as empirical analysis from EU countries has shown (BURGERT/ROEGER, 2014); however, there is a redistribution effect in favor of profits and capital income, respectively, partially related to more competition in labor markets.
- A new global challenge is the apparent rise of immigration pressure – largely from the South to the North. Immigration in a regional context can, however, work as empirical evidence from the EU shows: The poverty risk of EU immigrants, for example in the UK, Germany and Poland in 2014, was lower for immigrants from EU partner countries than for population of the reporting country (EUROPEAN COMMISSION, 2016, p. 149). The OECD has shown for the UK that immigration has had a positive net effect on the government budget (OECD, 2013).
- The effects of aging in societies are important in many countries. The effects in individual countries are, however, partially related to adequate pension reforms: The benefits from regional capital integration combined with reforms is different than the same integration without reforms as has been shown in an overlapping generations model for EU countries by DAVOINE (2018).

Many challenges mentioned will indeed affect both the North and the South of the world economy. It is, however, not clear how the attitudes of people in many countries are in the field of income (and wealth) satisfaction and the willingness to support government redistribution policy. At least for some forty countries, the World Value Survey (WVS) gives statistics in this field. One should emphasize the caveat that in the WVS there is no question about different types of redistribution policies so that one should be careful with the conclusions drawn from survey analysis.

International Income Dispersion and National Income Inequality

As regards inequality of income, in the two decades after 1985 the observation has been made that there has been some convergence of per capita income across countries which largely reflects trade globalization effects, namely the fact that an increasing global trade network – which includes China and Russia as a member country of the World Trade Organization (WTO), those countries joining the WTO in 2001 and 2012, respectively – has contributed to a long run catching-up process in per capita income which is in line with the Heckscher-Ohlin-Samuelson model; at the same time, income inequality in many countries has increased since there is a biased technological progress in the context of the expansion of ICT which raises the relative demand for skilled workers (JAUMOTTE ET Al., 2008): Hence in both OECD countries and in Newly Industrialized Countries (NICs) an increasing wage premium in favor of skilled labor could be observed; and the authors show that financial globalization also reinforces inequality due to the finding that the poorer strata of society relatively rarely have access to cheaper priced loans as they have neither collateral (e.g. land) nor a high income which is the basis of credit worthiness in the view of banks. The inequality of income is typically measured by the Gini coefficient, the Theil index or decile income shares or some log income dispersion indicator.

As regards inequality in the US, there is also a considerable role played by capital income growth in the top strata of the income pyramid (US COUNCIL OF ECONOMIC ADVISERS, 2016). As regards the rising inequality of market income in many OECD countries, one may ask to what extent redistribution of income plays a significant role – many European countries are characterized by considerable redistribution of income through progressive taxation, government transfers to poor households and social security systems (ADDISON/WELFENS, 2003 (2nd ed.)). By contrast, income redistribution in the US is rather modest and in many poor countries - with low per capita income - one also does not find much income redistribution. In the US, rising female university education has brought an increase in household inequality as pointed out by DEATON (2015) – universities have many social functions and implicity they are also places where many couples are formed leading to later marriages; if this also would hold in developing countries, a temporary economic catching up with countries in the North, based on higher female university education, could also bring about higher household income inequality in developing countries.

These observations raise the question of to what extent more or less income redistribution through government is desired by individuals in rich and poor countries and which drivers of income redistribution can be identified. (RODRIK, 2007) has argued that some government income redistribution is required if globalization is to remain politically acceptable in countries that are open to trade and capital flows which in turn bring considerable potential and the actual exposition to international income and technology shocks. Government income redistribution is considered as a kind of insurance against adverse globalization shocks. Modern social security systems – if financed in a sustainable way – can not only support economic globalization through broad political support, but will also have side effects, for example by attracting high immigration figures from abroad. Immigration can have a positive effect on the government budget in many industrialized countries as has been shown by the OECD (2008): Only few industrialized countries face problems with a net effect of immigration on government budget, for example Germany. By contrast, immigration in the UK had a positive effect on the government budget – mainly due to the high labor participation ratio of immigrants in the UK. Nevertheless, a fear of immigration played a considerable role in the UK in the run-up to the EU referendum of 2016, although one may emphasize that one key issue in the immigration context had a strong link with identity aspects as well as with a perceived increased shortage of local public services by large strata of the British population (WELFENS, 2017).

Inequality in the world economy has increased over more than a century if one considers the broad picture analyzed by BOURGUIGNON/MORRISON (2002), while it seems to have reduced from 1950 to the end of the 20th century; not only was income convergence across countries observed for a broad group of countries over this period, but "composite inequality" based on the measurement of lifetime income per capita – at PPP – has also reduced, namely measuring per capita income as well as life expectancy. Life expectancy in developing countries has increased strongly since 1960. The role of life expectancy will be neglected subsequently, although it may be considered as a crucial aspect in a global perspective. The focus of the subsequent empirical analysis, however, will be rather on a group of about 50 countries, namely those covered by the World Value Survey. The idea is to get a better understanding about individuals' wish that government should organize income redistribution. Only if there is a broader wish of people and voters for such type of activity may one assume that government indeed will become active in long-term redistribution policies – whether or not government redistribution policies will ultimately be successful is a second question which, however, will be neglected here. Similarity of individuals' redistribution preferences in various countries could also be quite important when it comes to international initiatives in income redistribution or in social policies. As regards the latter, the United Nations (UN) has undertaken a new initiative SPIAC in 2010 which has been reinforced by the G20's request to establish a Social Protection Interagency Cooperation Board (SPIAC-B).

The UN's summary of SPIAC-B reads as follows: "The Board's establishment in July 2012 responds to a request from the G20 that called upon international organizations that provide social protection financing and technical advisory services to developing countries to improve coordination of their efforts. The Board is co-chaired by the ILO and the World Bank and includes in its membership several agencies, funds and programmes of the United Nations, international financial institutions and bilateral development agencies". Until 2017 a rather limited number of countries have participated in the new UN activities and the meetings of the SPIAC-B where Germany and France were countries participating in the 2012 meeting whose focus was mainly on data collection and getting information regarding the institutional settings in various countries. National policy preferences might differ considerably across countries as could individuals' attitudes concerning, for example, the role of governments' income redistribution.

There can be several driving forces of inequality and equality, respectively. JORDAHL (2009) shows for the second half of the 1990s that there is a negative correlation between trust in society and economic inequality for a large sample of countries from both the North and the South. There could be several reasons for a high degree of social trust: A rather homogenous society – for example in terms of religion – could have a high share of individuals who would be willing to support government redistribution activities politically (certain religions encourage a pro-redistribution attitude, however, in a society with different religious groups, trust might be smaller than in a religiously homogenous society which in turn could imply that immigration from foreigners with different religious backgrounds could weaken trust in society and thereby indirectly contribute to greater inequality – beyond the initial rise of inequality which is often associated with the immigration of unskilled workers; unskilled in early years of immigration is a relevant attribute as long as immigrants do not speak the language of the host country).

The analysis of income inequality has many aspects and several authors have made key contributions – with only a few papers selected subsequently:

- The World Development Report of the WORLD BANK (2006) has considered the transition of countries from low income to medium income, where the analysis has taken into account the role of wealth distribution: Countries with rather equal distribution of land in 1960 showed rather high growth rates in the following four decades; it was, however, not analyzed to what extent land ownership was not only generating income but also acting as the basis for taking loans for investment outside agriculture, for example for creating a non-agricultural firm or for investing in human capital formation (indeed land ownership is the basis for agricultural production as well as for obtaining loans in imperfect capital markets where banks require collateral for giving loans). In industrialized countries, education plays a crucial role for inequality.
- CORAK (2013) has shown evidence that countries with high inequality tend to have lower intergenerational mobility: The larger the Gini index in 1985, the higher the income correlation between children's income – children considered were born in the 1960s – and their parents' incomes.

The aim of the analysis is to empirically examine the Kuznets curve at the individual level. Although the empirical test for the Kuznets curve requires time-series or panel data, and not just a cross-section, it is common practice to look at the correlations between inequality and income from a cross sectional perspective (GLUZMANN/GASPARINI, 2018)

In order to measure individuals' perception of inequality and their income, we exploit the 2010-2014 wave of the WVS with 66,278 survey responses across 46 countries, 25 of which are classified by the IMF (2014) as low-income countries (see Appendix 1 for the breakdown of countries in the high-income and low-income sub-samples. The WVS is designed to be a representative survey carried out using consistent methodologies across numerous countries and focusing on changes in the beliefs, values and motivations of people throughout the world. The WVS employs a probabilistic sample method and uses minimum sample sizes of 1,000 respondents. (ISRAEL/LEVINSON, 2004).

Satisfaction with the personal financial situation is not much different from subjective well-being (SWB) – and on SWB and inequality there is a broad list of contributions in the literature; fortunately there is a meta-study available covering 1980-1917 (October) by NGAMABA/PANAGIOTI/ARMITAGE (2017) according to which most studies – covering different sets of countries and inequality measurements (mostly Gini coefficients) find a negatve link between inequality and subjective well-being. While this is not exactly the focus of our study the list of 39 paper covered by the authors is quite useful. No author has looked into the question of a Kuznets redistribution curve, namely a parabola-type link between subjective financial satisfaction – according to WVS data – and the willingness to support redistribution activities of government.
The authors write: "…income inequality is more likely to be a contributor to SWB in citizens of developing countries than in developed countries. Reducing income inequality could be a

potentially fruitful approach for governments and policy makers of developed countries as a means of improving the SWB of their citizens (INGLEHART, 1997; BEJA, 2014). The inverse association of SWB with income inequality in developing countries suggests that income inequality is more likely to be seen as job opportunities for innovation in these countries. However, this review was only based on cross-sectional studies and no causal inferences are allowed; longitudinal studies are needed prior to forming any causal links. The association between income inequality and SWB was not influenced by the measure used to assess SWB, geographic region or the way income inequality was operationalised. Our findings are in line with previous research conducted in OECD countries suggesting no association between income inequality and SWB (ZAGORSKI ET Al., 2014) “the best evidence that we have to date is that redistribution beyond the minimum for advanced societies does not enhance subjective well-being/quality of life” (ZAGORSKI ET AL., 2014 p. 1107). Nevertheless, further studies are needed to understand the circumstances in which income inequality reduces SWB (WILKINSON/PICKETT, 2010; OISHI/KESEBIR/DIENER, 2011; BJORNSTROM, 2011) versus the circumstances in which income inequality is not necessarily harmful to SWB (BERG/VEENHOVEN, 2010; BEJA, 2014). For example, extraordinary circumstances such as the Great Recession may affect how inequality is associated with subjective well-being. This gap in knowledge is critical because some government and policymakers still ask whether people care about income inequality and if income inequality affects SWB. At present, the evidence base is weak and cannot strongly support such decisions.”

4. Empirical Analysis of the WVS Results: Evidence for an Income Redistribution Kuznets Curve

4.1. Description of variables

Dependent variable

The corresponding dependent variable is constructed from individuals’ responses to the following statement:

Q. Governments taxing the rich, subsidizing the poor is an essential characteristic of democracy?

Responding to this question, individuals have ten alternatives to choose between, ranging from “strongly disagree” (1) up to “strongly agree” (10).

Table 1: Dependent Variable

Variable	Type	Frequency									
		1	2	3	4	5	6	7	8	9	10
		Full sample									
Equal	Ordinal 1-10	6,290	2,666	3,539	3,539	7,621	5,128	6,862	8,766	5,650	13,110
		High income									
Equal	Ordinal 1-10	2,556	1,018	1,614	1,645	4,046	2,714	3,785	4,389	2,147	5,467
		Low income									
Equal	Ordinal 1-10	3,734	1,648	1,925	1,894	3,575	2,414	3,077	4,377	3,503	7,643

Independent variables

Since our aim is to empirically examine the Kuznets curve at the individual level, our main dependent variable is constructed from individuals' responses to the following question:

Q. How satisfied are you with the financial situation of your household?

Responding to this question, individuals have ten alternatives to choose between, ranging from "completely dissatisfied" (1) up to "completely satisfied" (10). Effectively this is a question related to real income (and possibly individual wealth); this is dubbed quasi-income subsequently. The descriptive statistics are shown for the overall sample and the low income and the high income group of countries.

Table 2: Independent Variable

Variable	Type	Frequency									
		1	2	3	4	5	6	7	8	9	10
		Full Sample									
Income	Ordinal 1-10	4,427	2,445	4,741	5,299	10,405	8,825	10,205	9,556	4,150	5,687
		High incame									
Income	Ordinal 1-10	1,462	879	2,006	2,372	4,540	4,134	5,329	5,109	2,278	2,523
		Low income									
Income	Ordinal 1-10	2,965	1,566	2,735	2,927	5,865	4,691	4,876	4,447	1,872	3,156

A vector of economic and social control variables – see the subsequent list with descriptive information - includes several socio-economic and attitudinal characteristics which might also be relevant for individuals' perception of inequality. Because individual-level responses are pooled across countries, unobservable cultural or geographic differences are considered by including country dummies. The variables are self-explanatory, except for postmaterial attitude which can be understood as an attitude which favors environmental sustainability over economic growth in case a choice is to be made. Rich is indicative of a high wealth position of the respective individual. Frequencies from the WVS are indicated in Table 3.

Table 3: Control Variables

Variables	Type	Frequency									
		0	1	2	3	4	5	6	7	8	9
female		31,317	34,907								
education			3,784	3,312	7,000	4,413	12,891	5,024	11,067	5,508	12,552
postmat		7,135	15,565	19,280	13,434	4,341	941				
trust		47,609	16,836								
child_dummy		20,027	45,919								
age_code			4,664	15,166	13,086	11,865	9,765	7,053	3,691	834	30
rich			9,731	16,774	12,001	11,438	9,097	5,274			

4.2. Empirical strategy

Since our corresponding dependent variable is an ordered variable, we apply an ordered logit model on the pooled sample of individual responses. We consider the following baseline specification where quasi-income is entering the equation with ß1 and ß2 (income squared):

$$(1) \qquad Pr\,(Equality > 1) = \Phi\,(\beta_0 + \beta_1 Income + \beta_2\, Income^2 + \Sigma\beta c + \gamma + u)$$

where Equality are the responses regarding the question of whether governments taxing the rich and subsidizing the poor is an essential characteristic of democracy. Income denotes the individuals' satisfaction with their financial situation. In order to examine the Kuznets curve, we include Income squared ($Income^2$).

$\sum c$ are control variables at the individual and country level, γ are country dummy variables and u are error terms.

β_1 and β_2 are the corresponding coefficients of interest throughout the paper. Coefficients β_1 and β_2 measure the effect of Income and $Income^2$, respectively, on the probability that respondents agree with the statement that incomes should be made more equal. Kuznets hypothesis is accepted if β_1 is negative and β_2 positive.

4.3. Results

Table 4 reports the results of the ordered logit regressions. Before proceeding, it should be noted that the estimated coefficient does not reflect a marginal effect. However, its sign provides information about the direction of the effect on the end response categories. Thus, it is possible to interpret the sign and the significance but not the size of the coefficient.

The results obtained are fairly robust:

- The results across several regression approaches always clearly indicate empirical evidence for a Kuznets-type redistribution curve (recall the original Kuznets curve indicates a link with inequality on the vertical axis and per capita income on the horizontal axis where the graph is an inverse parabola).
- In the first model specification (1), we include only variables of interest (quasi-income and quasi-income squared) and country dummies; in the second specification (2), we additionally include all control variables - however, country dummies are excluded; and the third specification (3) differs from the second through the inclusion of country dummies and all control variables.
- The subsequent control variables have a rather uniform pattern across the regressions (1), (2), (3), however, the female variable is positively significant only in the low income countries, while the child dummy is only positively significant in the low income country group – where families have a higher number of children than in high income countries with a broad social policy pillar; the postmaterialist attitude has a negative significant impact in the low income country group, but in the high income country group the impact is positive (to what extent this stands for international empathy/"solidarity preferences" in the context, for example, of a preference to support the fight against global warming, is unclear).

The first estimation result reveals that, across all sub-samples, an increase in individuals' satisfaction with their financial situation significantly decreases the likelihood that respondents agree with the statement that governments taxing the rich and subsidizing the poor is an essential characteristic of democracy. However, the second estimation result, which captures the effect of the squared financial situation, shows that, across all sub-samples, there is a U-shaped relationship between individuals' satisfaction with their financial situation and agreement with the statement that governments taxing the rich and subsidizing the poor is an essential characteristic of democracy. Thus, individuals' critical perception of inequality begins to rise as respondents experience a higher level of financial satisfaction. The results provide supporting evidence for the Kuznets hypothesis from the behavioral point of view. According to the regression results, we get an U-shaped curve as can be seen from the coefficients for the income satisfaction variable (where one cannot know the exact form of the curve to the right of point F). One may expect that the critical point F will be more to the right in the group of high-income countries as compared to the low-income country group. How far to the right the critical point F is could also depend on cultural aspects and individual or family characteristics. The ordered logit regression gives key insights into many aspects where we look at the overall sample and sub-samples.

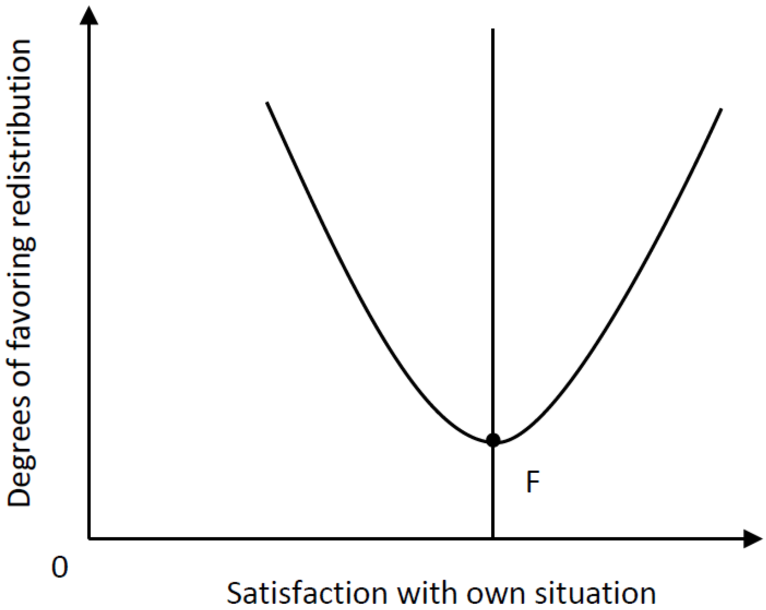
The finding of a Redistribution Kuznets Curve implies that as the satisfaction with one's own financial situation initially falls, support for political redistribution is also falling – perhaps as many people are afraid that redistribution would entail a squandering of taxpayers' money. Only beyond a certain minimum level of the degree of favoring redistribution by government – possibly reflecting some positive experience with results from income redistribution – will public support for income redistribution rise parallel to a rising satisfaction with one's own financial situation.

Thus the Redistribution Kuznets Curve could reflect several perspectives:

- The upward bending part of that curve indicates that there is some broad confidence both in the political system and income redistribution results as well as a modest fear that one's own improved financial situation would lead to excessive "unfair" taxation (which, of course, would in turn reduce satisfaction with one's own financial situation).
- There could also be a broader view that the social market economy – with a direct redistribution policy through transfers as well as some redistribution through social policies (e.g. health care policy - which in EU countries brings redistribution effects in favor of the poor) contributes to politico-economic stability; and hence also higher growth. Limited public redistribution policy thus is interpreted as an implicit insurance in society.
- Thus countries that develop a positive economic and political track record with limited and transparent redistribution policy could give politicians and the government, respectively, more room to maneuver in the field of redistribution and social policy, respectively. Countries whose societies are clearly beyond the right of point F possibly would possibly be more inclined to cooperate internationally in the field of social policy.

From this perspective, an international organization such as the UN/ILO/World Bank might try to nurture positive experiences with carefully designed redistribution programs and help with the diffusion of best practices. This does not rule out a positive complementary role for private insurance companies (but such insurance should not sold in anti-competitive product bundles as in the case of PPI).

Figure 1: Income Redistribution Kuznets Curve



Source: Own representation

Table 4: Results of the Ordered Logit Regression

	Full sample			High-income			Low-income		
Equality	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
income_new	-.1942577***	-.1572860***	-.1747475***	-.2545316***	-.2210209***	-.2490616***	-.1663751***	-.1319956***	-.1427976***
income2	.01527562***	.01063141***	.0137048***	.01779398***	.01330059***	.01722429***	.01482666***	.01063042***	.01281413***
Female		.02873528*	.02252703		.01440811	.02029872		.04005816**	.02208344
Education		-.0402645***	-.0232542***		-.0605419***	-.0370174***		-.0243559***	-.0161811***
age_code		.0160661***	.02333495***		.01339352*	.0376668***		.0260492***	.01323922*
child_dummy		.03918666**	-.02390114		.00724955	-.04290595		.05869561**	-.00791042
Trust		.06812464***	-.02245795		.00863334	.04301241*		.1404690***	-.0736198***
Postmat		-.0305833***	-.00288085		.0888481***	.0716341***		-.1124564***	-.0618136***
Rich		.00920653*	-.0273872***		.03951417***	-.0347069***		-.00711729	-.0216789***
Cut 1 _cons	-3.934451***	-2.861670***	-4.090820***	-2.766683***	-3.201380***	-2.658755***	-3.644522***	-2.619633***	-3.842466***
Cut 2 _cons	-3.520987***	-2.452456***	-3.669041***	-2.38338***	-2.817119***	-2.265958***	-3.207961***	-2.1918847***	-3.4002727***
Cut 3 _cons	-3.104116***	-2.053344***	-3.252089***	-1.935346***	-2.373546***	-1.809726***	-2.811301***	-1.8166813***	-3.0056019***
Cut 4 _cons	-2.764966***	-1.727899***	-2.908787***	-1.576806***	-2.017422***	-1.441781***	-2.485432***	-1.5085024***	-2.6770655***
Cut 5 _cons	-2.164341***	-1.168967***	-2.312991***	-.8875273***	-1.353783***	-.7492653***	-1.958986***	-1.0219233***	-2.1521975***
Cut 6 _cons	-1.803234***	-.8358066***	-1.954499***	-.4839073***	-.9696942***	-.3442288***	-1.636132***	-.72598472***	-1.8301287***
Cut 7 _cons	-1.330428***	-.38979676***	-1.4729383***	.06765808	-.4239141***	.2313272*	-1.233701***	-.35315353***	-1.422594***
Cut 8 _cons	-.6759124***	.23128108***	-.80341744***	.7863 8912***	.3017614***	.98967839***	-.6305030***	.20243761***	-.8149276***
Cut 9 _cons	-.16202746*	.72687902***	-.27541968***	1.2327015***	.7454122***	1.447869***	-.06248181	.73877743***	-.23550443**
Country dummies	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes
Pseudo R2	0.0236	0.0022	0.0250	0.0172	0.0045	0.0199	0.0281	0.0030	0.0289
Number of Observations	62,832	55,604	55,604	29,102	24,401	24,401	33,730	31,203	31,203

legend: * p<.1; ** p<.05; *** p<.01

The framework and key findings are as follows:

- As regards the control variables in the ordered logit regression, we include gender, education, having children, age, trust, the role of high wealth targets ("rich") and postmaterial attitudes (a rather opaque variable whose meaning for respondents might be different in rich countries and poor countries).
- Education and postmaterial attitude have a negative coefficient. As regards the education variable, this could reflect an increase of skepticism in the efficiency of government redistribution policy once people know more about the economic, social and political system in their respective countries; part of this aspect could be that better educated people find it easier to get information on the scope and effectiveness of income redistribution policy. More educated people are also likely to have relatively high income and therefore they might be hesitant to face a government with strong redistribution activities.
- The child variable has a negative impact on the support of redistribution in poor countries: Families with children indeed should have more trust in traditional family ties as a basis for solidarity and implicit insurance; also adults with children might fear that more redistribution will put a higher tax and social security burden on their own children. However, the child dummy and female dummy are not significant in the high-income group and in the overall sample (and postmaterial attitude is not significant in the overall sample).
- In all regressions with country dummies – that is for the overall sample group, the group of low-income countries and the group of high-income countries – the trust variable has a positive significant impact; nurturing and maintaining trust is crucial: The fact that trust reinforces the preference for redistribution is in line with the findings of JORDAHL (2009).
- Postmaterial attitudes could weaken redistributional preferences as respondents might fear a trade-off – if a bigger government budget share is devoted to government redistribution policies, one might be afraid, for example, that government is not investing sufficient funds in promoting climate mitigation policy or other postmaterial goals (on WVS analysis and sustainability see UDALOV (2018)).
- Individuals who emphasize the goal of becoming rich indicate that "rich" has a negative impact on support for redistribution policies; this is not surprising as many prospectively rich individuals will anticipate that more redistribution will imply higher corporate tax rates or higher income tax rates – one may, however, point out that the relatively small group of rich people in OECD and developing countries are fairly easy to organize, compared to the large group of workers. The ability of governments to effectively tax the rich strata of society seems to be rather limited as long as there is no cooperation among G20 countries in the field of corporate taxation and income taxation, respectively.
- The female variable has a positive sign in poor countries in the regression without country dummies (and in the overall sample). This could imply that a rising role of the South – with an increasing political influence of women - could reinforce redistributive policies; but as countries are catching-up, the impact of the female variable could become insignificant.

- Age has a positive effect on support for redistribution: It is not so surprising that the age variable reinforces redistribution preferences since many people will anticipate the risk of poverty at retirement age – more redistribution on the part of government could be perceived by many elderly individuals as an implicit insurance contract for better pensions (whether or not such expectations are consistent/rational would have to be analyzed in a separate study).

The fact that the aging of the workforce in many EU countries will accelerate after 2025 could bring stronger redistribution policies in the respective countries. However, EU countries can be divided in two groups where France, the UK and other countries face weaker/later aging pressure than for example Germany, Italy, Spain, Greece and Portugal (AIYAR/EBEKE/SHAO, 2016). This finding could make achieving political consensus much more difficult in the EU after 2025 so that it would be wise to achieve broader institutional reforms rather around 2020 when demographic divergence across EU countries is still rather weak.

Looking at the years until 2050 one may point out:

- aging could strongly reinforce a worldwide role of more redistribution and social policies, respectively;
- more global redistribution could be a starting point for more international benchmarking and hence efficiency gains in redistribution policy and social policy, respectively – at the same time, there is some risk that more such policies could slow-down global growth so that more political conflicts could become relevant at the national level which, in turn, could weaken the political willingness for international cooperation (if growth would mainly slow down in the South, increasing immigration pressure in the North could help to slow-down societal aging there, but possibly more importantly, this could also reinforce populist and xenophobic policies which in turn undermine international cooperation.

Here international organizations – such as the UN, the OECD, the ILO or the World Bank - have a role in organizing transparent benchmarking, in monitoring and contributing to more research in the field.

5. Economic Policy Conclusions

The findings presented indeed suggests for a broad group of countries from the World Value Survey the existence of an Income Redistribution Kuznets Curve – while the US is considered to be an outlier in the group of countries considered. Key conclusions concern the willingness of countries to cooperate: Countries with relatively high per capita income could be expected to engage in income redistribution in direct and indirect ways; those countries could develop cooperation in social security and income redistribution in order to develop optimal policies. One cannot rule out that EU countries could cooperate rather well with China in the field of social security policy and income redistribution in the long run. There is an existing cooperation through the OECD Development Center which, for example, has already organized conferences on social security policies jointly with China.

The findings presented herein provide evidence for an Income Redistribution Kuznets Curve such that beyond a critical financial satisfaction level most countries covered in the WVS will shift towards some government redistribution of income. Sustained global economic growth could help poor countries to achieve the critical per capita income level – and then international cooperation in income redistribution policies and social security could become easier. This is important not least for cooperation in income taxation and the willingness to impose minimum corporate taxation. From this perspective, one may point out that the aggressive trade policy under the Trump Administration which undermines global growth and stability, respectively, is a serious problem and actually contributes to weakening the Western world in particular.

There can be effective and efficient redistribution policy – including relevant pillars of social policies (e.g. health care financing in EU countries, some Newly Industrialized Countries and certain developing countries), but there are several critical questions:

- Is redistribution mainly financed by tax exemptions, untaxed benefits or taxed benefits paid to households; in the US there is a tendency to rely on untaxed benefits, possibly in order to let redistributions/social policies look to a be a rather small policy element while in EU countries most redistributions/social policies are based on taxed benefits – in the Scandinavian countries, the financing of the pension system via the VAT also plays a particular role, most notably in Denmark (where it also is a stimulus for a current account surplus along the logic of fiscal devaluation policy);
- Are current redistribution policies/social policies excessive, namely non-sustainable, so that government will go bankrupt and lose access to international capital markets (for example, as in the case of Greece, Ireland and Portugal in 2009/2010) – too generous government policies and excessive, unsustainable deficits have led to government policies under which tax increases and pension cuts in particular (mostly in Greece and Portugal) are part of the stabilization policy: This effectively is inefficient redistribution policy that possibly will weaken the trust of people amongst each other and vis-à-vis government and therefore will discourage political support for future redistribution policy. If government faces the risk of bankruptcy, it is clear that there will be strong expenditure cuts where the main burden often falls on pensioners whose ability to threaten the functioning of the economic or political system is very modest. While most public pensions systems in the Eurozone countries are based on defined contribution systems combined with some equivalence of pension payments and contributions, so that not much redistribution is occurring in pension systems (compared to health care in EU countries), a serious fiscal crisis could bring about a forced ex post redistribution of the older generation to the younger generation, namely when pensions for specific age groups are strongly cut by governments;
- if government is financing increased redistribution and more generous social policies in a way that the debt-GDP ratio is rising critically and hence the rating of government bonds – mostly held by banks in the country considered – falling strongly, then there is a risk of excessive redistribution coupled with an unsustainable government debt plus a national banking crisis. In this case government will have to raise taxation strongly at some point (or give up an existing exchange rate peg – and then devalue strongly which will lead to much higher inflation rates which effectively

also taxes people; namely, through an implicit seigniorage tax on holding money) and this will bring a forced redistribution of income and wealth. Rich individuals might not have to contribute much to the financing of the stabilization of government and the banking systems – with some banks possibly failing as high stocks of bonds in banks' balance sheets strongly lose value after a massive downgrading of government debt – as rich households might anticipate the government debt and banking problem and relocate the seat of companies abroad. At the same time there is the risk that partner countries in a regional integration system may have to bail out the respective country (this could be the case of Italy under the populist government in the medium term) so that international negative spillovers for foreign taxpayers also become relevant.

- Such international political free-rider behavior could be avoided by adequate institutional rules for regional integration clubs. One may emphasize that International Organizations, such as the IMF or the World Bank, could provide a kind of rational politico-economic insurance system for random negative shocks; but not for deliberate political shocks – those will be considered as an unfair burden in such international organizations (a difficult case, however, is if a country such as the US under the Trump Administration imposes partly arbitrary import taxes on the exports of WTO partner countries; this is a deliberate negative international political shock that might also have negative repercussion effects on the US economy).
- The risk of poverty in most OECD countries is strongly correlated with long-term unemployment rates; and with rising poverty levels, income redistribution becomes a more urgent political aspect on the political agenda – hence achieving full employment (e.g. through the creation of new firms, more public investment as a means to stimulate the investment-GDP ratio, labor market deregulation where an adequate (or more) retraining of workers) is a key challenge in all countries of the world economy.
- To the extent that workplace security is rather weak – as in many developing countries – many unskilled workers will indirectly pay a "lifetime tax", namely facing a reduced life expectancy compared to skilled workers; this is a perverse redistribution in kind where the rich strata in the country and in the world economy will obtain artificially cheap goods from rather poor countries with soft workplace safety standards. In a macroeconomic perspective, the higher accident rate at the workplace means that labor in efficiency units in the poor countries is reduced while adequate government investment in better workplace standards would easily help to avoid this unfair redistribution from the poor to the rich.
- It should also be noted that implementing the golden rule (PHELPS, 1961) from the neoclassical goal model typically represents a redistribution in favor of the poor provided that the consumption per capita of poor strata also is raised (for OECD countries ABEL ET AL. (1989) suggest that these countries were dynamically efficient – whether or not this also holds in the decade of very low real interest rates after the Banking Crisis 2008/09 is an open question): If the conditions for the golden age are realized (the output growth rate should be equal to the real interest rate and the national savings rate s should be equal to ß), per capita consumption is maximized; income redistribution has a goal and higher per capita consumption of

the poor strata is such a goal. A careful check for the fulfillment of the golden rule conditions should always be the first test of a rational economic and redistribution policy – and international organizations such as the UN or the World Bank or the IMF could be quite useful with regard to such a new field of monitoring in the future. The gap between ß and s determines in a simple neoclassical growth model together with ß/(1-ß) the percentage increase that is possible by switching from s=s# to s=ß# where # stands for the steady state and ß':=ß/(1-ß): $\ln(C/L)^{gold\#} - \ln(C/L)\# = ß'\ln(ß/s)$ where $(C/L)^{gold}$ is maximum per capita consumption in the steady state and consumption per capita $C/L=(1-s)(1-\tau)Y/L$ has been assumed; it holds that c:=1-s as usual (zero foreign direct investment is assumed here for the sake of simplicity). If ß=1/3 and ß/s is 1.5, the possible increase in per capita consumption from moving to the golden rule condition is 20.5%. Typically, a convergence to the golden rule conditions requires reforms in capital markets and competition policy, possibly also capital flow liberalization and a reduction of distortions in foreign exchange markets. Whether or not full capital flow liberalization is useful seems to be doubtful if distorted banking regulations abroad imply international negative spillover effects in a foreign banking crisis.

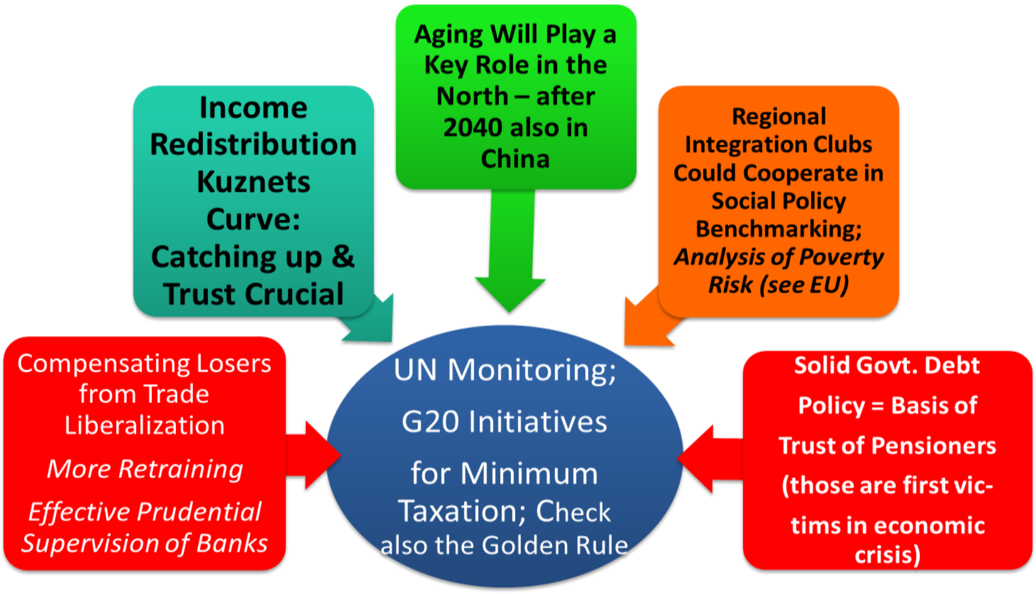
- For many OECD countries, plus China and some other Newly Industralizing Countries, a critical point in the future could be that aging will play an increasing role. However, a small group of OECD countries is actually facing rather slow aging; most developing countries have no society aging problem. Thus the world economy broadly consists of two groups of countries – international political cooperation will be rather easy among the aging group of countries which thus have a stronger interest in the redistribution of income.
- Taxing the rich is rather difficult in a world economy with high international capital mobility; EU Social Market Economies could indeed put the subject of minimum tax rates on the agenda of future G20 meetings which, in turn, could be a starting point for the UN to work on a consensus definition of fair taxation standards (it is rather unclear whether or not the OECD BEPS initiative (BEPS= base erosion and profit shifting) will be successful. Effective banking supervision on a broad scale, possibly within a new G20 framework – instead of the weak rules coming from the Bank for International Settlements – could also be useful as it seems that there is a trilemma of having simultaneously flexible exchange rates, free capital flows and the effective prudential supervision of banks worldwide (WELFENS, 2017b).
- Assuming that regional integration clubs represent – after a convergence process driven by economic integration – active policy clubs of countries where people have similar political preferences, it could be useful to identify fields of benchmarking and social policy cooperation; and the EU is indeed a good example in certain fields. There are so many important regional integration clubs that the UN could publish a comparative report – with some benchmarking - and might also raise the issue of the integration of regional integration areas.
- Compensation for the relative losers from trade liberalization could be a broad challenge in many countries – without such compensation payments (rarely made in reality) and more public support for retraining, the international acceptance of globalization will be rather limited.

- The Income Redistribution Kuznets Curve makes it important to carefully consider the level of per capita income/satisfaction of people with their own economic situation and the degree of support for redistribution policies.

Crucial points are summarized in the following figure which thus suggest a broader role for the UN – possibly coupled with G20 initiatives in the field of minimum tax rates (at first naturally a controversial issue, but the EU could bring the topic on the agenda) and comparative studies on the golden rule in countries in the North and in the South.

From a strategic perspective, the UN could not only consider best practice results in various regions of the world economy but could also raise the question of the sequencing of reforms and the right policy mix in various country groups; possibly building on the experience of the World Bank and regional international banks such as the ADB or the EBRD or others. International Organizations such as the ITU also could contribute valuable insights, for example in the prospects for digital economic modernization.

Figure 2: Conclusions for the UN and Partner Organizations



Source: Own representation

If redistribution is arranged in an excessive way – with high costs in terms of the efficiency of resource allocation – the rather young and poor countries could find it relatively easy to catch-up with the aging countries of the North. There could be a tendency for excessive redistribution to the extent that the older group of voters in aging countries could have a median voter position (in a two-party country model or equivalent coalition models) so that political majorities in certain OECD democracies will indeed bring about higher redistribution: Namely, for the elderly and more generous pensions systems, respectively. Aging could undermine the speed of learning at work, the dynamics of creating new firms as well as innovation dynamics so that "excessive" redistribution policy plus endogenous growth-slowing could bring lower growth of aging OECD countries. Moreover, one may assume that wealth concentration in an aging society – with a smaller number of children in subsequent cohorts – will endogenously increase which, in turn, also reinforces inequality.

It is unclear to what extent high inequality in countries in the North (say in Germany in the region of Bavaria or Hamburg) will stimulate immigration from the South; the assumption here is that poor people in the South will learn about such top income regions in the North and that migration is selective in the sense that emigrants from the South have a preference for high-income regions – unless previous groups of immigrants have settled mainly in other regions of the country (such historical immigration regions naturally are a bridge for immigrants from the same country/community since those immigrants seek to benefit from ethnic networking effects). With more immigration from poor countries, the rich aging countries can, of course, reduce the speed of aging and the neoclassical growth model suggests that a growing population – assuming that immigration is so strong that the working age population in the host country is rising – means a downward shift in the level of the growth path. If migrants send remittances to the home country this in turn could help the poor country group to catch-up. Taking a look at global UN population projections, one sees a global aging process in most countries around 2050 which then will be a rather new situation for the world economy.

Digital modernization of societies means better prospects for education in poor countries as the absolute and relative price of digital equipment has been falling over time. This could reduce the global pressure for more income redistribution as higher education weakens the preferences in favor of income redistribution. For the political competition process in OECD countries this means that a combination of aging and digital modernization policy could help to limit the pressure for more government income redistribution (as a case study, one might consider Switzerland which is facing aging but also strong in its digital modernization efforts). Postmaterialist attitudes also slow down the desire for income redistribution. One might consider that postmaterialists have a rather long-term perspective and typically support climate mitigation policy which could be considered as some form of global benefit share/benefit redistribution in favor of the poor countries in the South where many governments would face massive problems to finance adequate infrastructure investment in order to better cope with risk associated with global warming. Hence this might mean that some international redistribution is considered as a priority compared to possible national redistribution. From a long-term perspective, postmaterialists therefore could also consider broad income redistribution policies – often financed through high structural government deficits – as a risky strategy which would not be supported. This, however, is merely a hypothesis. More research is needed.

Further research should shed light on some of the aging issues raised. For a UN project considering a new approach towards broader social policies it would be quite important to analyze future World Value Surveys in a more specific way which, however, requires that more questions related to social policy will be raised in future survey waves.

Appendix 1: Breakdown of the Full Sample into High-Income and Low-Income Sub-samples

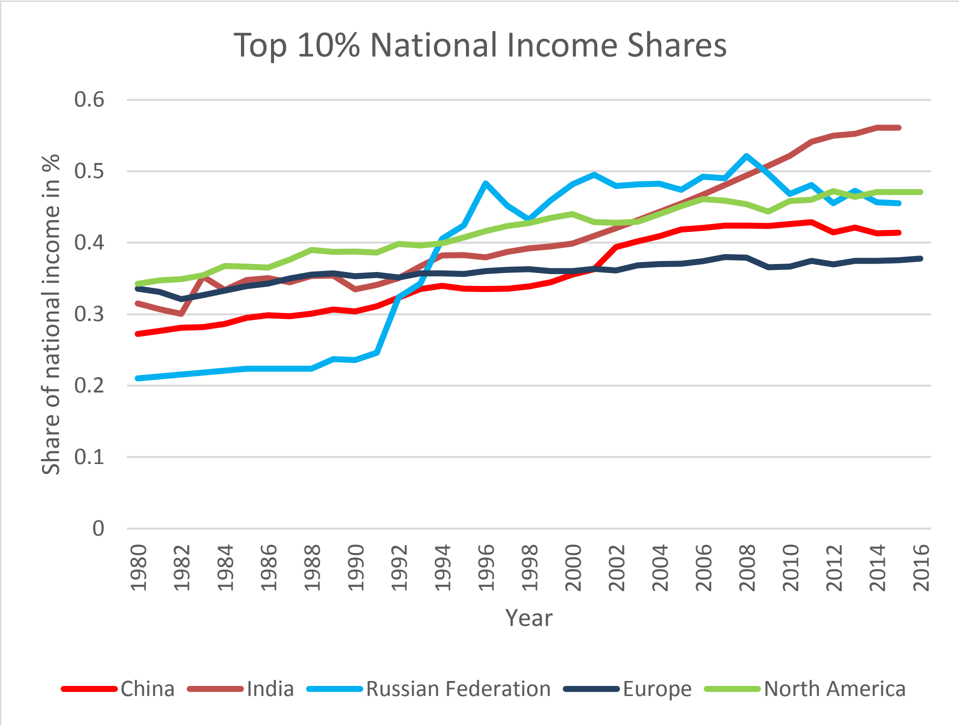
The full sample has been split into high-income and low-income sub-samples in accordance with IMF (2014). The sub-samples comprise of the following countries:

Low-income sub-sample: Algeria, Azerbaijan, Armenia, Belarus, China, Colombia, Egypt, Ecuador, Ghana, Iraq, Kazakhstan, Jordan, Lebanon, Libya, Malaysia, Mexico, Morocco, Nigeria, Pakistan, Peru, Philippines, Tunisia, Ukraine, Uzbekistan, Yemen.

High-income sub-sample: Australia, Chile, Cyprus, Estonia, Germany, Japan, South Korea, Kuwait, Netherlands, New Zealand, Poland, Qatar, Romania, Russia, Singapore, Slovenia, Spain, Sweden, Turkey, United States, Uruguay.

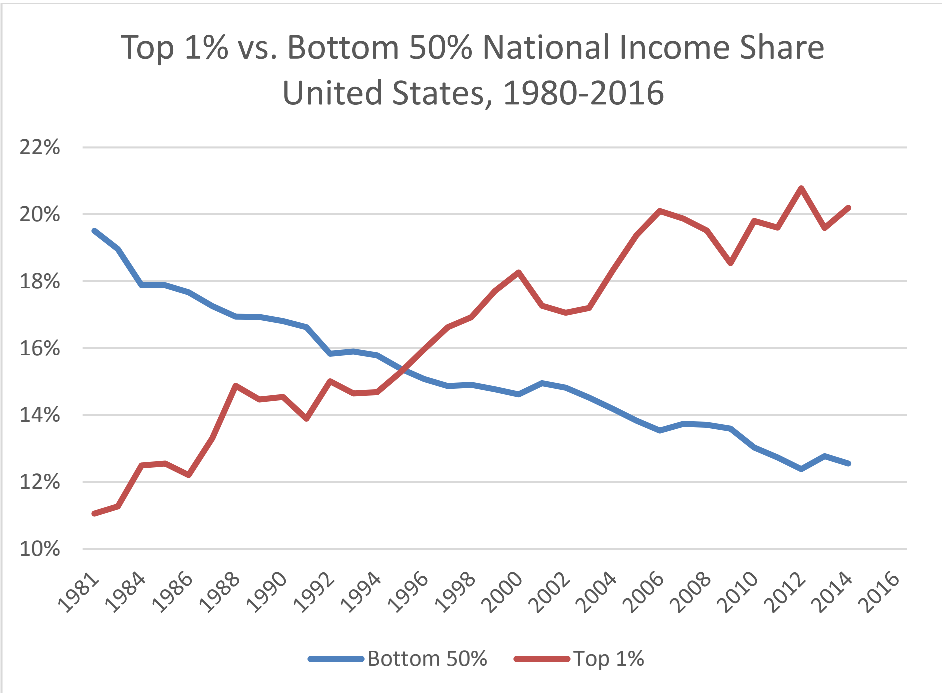
Appendix 2: Income Shares of Selected Countries (1980-2016)

Figure 3: Top 10% National Income Shares Across the World, 2016



Source: Own representation based on data available from the World Inequality Database, WID2018, and adapted from Alvaredo et al., (2018), World Inequality Report, p. 10 http://www.wir2018.wid.world

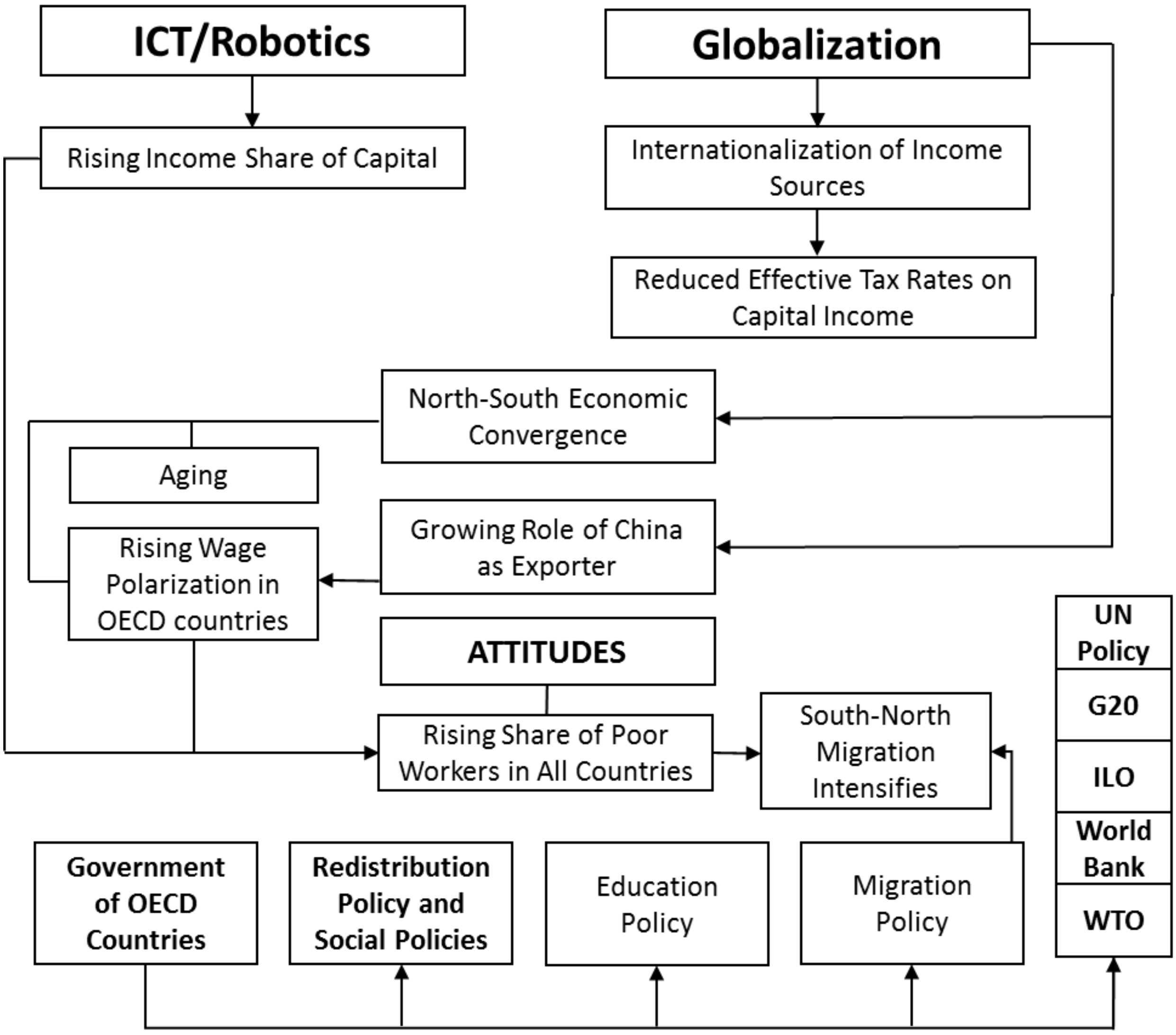
Figure 4: Top 1% vs. Bottom 50% National Income Shares US (1980-2016)



Source: Own representation based on data available from the World Inequality Database, WID2018, and adapted from Alvaredo et al, (2018), World Inequality Report, p. 12 http://www.wir2018.wid.world

Appendix 3: Inequality and Redistribution

Figure 5: Inequality and Redistribution



Source: Own representation

References

ABEL, A.; MANKIW, N.G.; SUMMERS, L.; ZECKHAUSER, R. (1989), Assessing Dynamic Efficiency: Theory and Evidence, Review of Economic Studies, 56, 1-20

ADDISON, J.; WELFENS, P.J.J. (Eds.) (2003) Labor markets and social security—issues and policy options in the U.S. and Europe, 2nd Ed., Heidelberg: Springer

AIYAR, S.; EBEKE, C.; SHAO, X. (2016), The Impact of Workforce Aging on European Productivity, IMF Working Paper, WP/16/238, December 2016, Washington DC

ALVAREDO F. ET AL. (2018), World Inequality Report 2018, World Inequality Report, https://wir2018.wid.world/

BELABED, C.A.; THEOBALD, T.; VAN TREECK, T. (2018), Income distribution and current account imbalances, Cambridge Journal of Economics, Vol. 42, 47-94

BONESMO FREDRIKSEN, K. (2012), Income Inequality in the European Union, OECD Economics Department Working Papers 952, Paris: OECD Publishing

BOURGUIGNON, F.; MORRISSON, C. (2002), Inequality among World Citizens: 1820-1992, The American Economic Review, Vol. 92, 727-744

BREEMERSCH, K.; DAMIJAN, J.; KONINGS, J. (2017), Labour Market Polarization in Advanced Countries: Impact of Global Value Chains, Technology, Import Competition from China and Labour Market Institutions, OECD Social, Employment and Migration Working Papers, WP No. 197, Paris: OECD Publishing

BURGERT, M.; ROEGER, W. (2014), Fiscal Devaluation: Efficiency and Equity, DG ECFIN Economic Papers, No, 542

CLEMENS, M.; POSTEL, H. (2017), Deterring Emigration with Foreign Aid: An Overview of Evidence from Low-Income Countries, Institute for Labor Economics, IZA Policy Paper No. 136

COUNCIL OF ECONOMIC ADVISERS (2016), Economic Report of the President https://obamawhitehouse.archives.gov/sites/default/files/docs/ERP_2016_Book_Complete%20JA.pdf

CORAK, M. (2013), Income Inequality, Equality of Opportunity, and Intergenerational Mobility, Journal of Economic Perspectives, Vol. 27, 79-102

DAVOINE, T. (2018), Population aging and cross-country redistribution in integrated capital markets, EconPol Working Paper, 09/2018, Vol. 2, April http://www.cesifo-group.de/DocDL/EconPol_Working_Paper_9_2018_capital_markets.pdf

DAUTH, W. ET AL. (2017), German Robots – The Impact of Industrial Robots on Workers, Institute for Employment Research/IAB Discussion Paper 30/2017 http://doku.iab.de/discussionpapers/2017/dp3017.pdf

DEATON, A. (2015), The Great Escape – Health, Wealth and the Origins of Inequality, Princeton: Princeton University Press

ERDEM, D. (2015), Foreign Direct Investments, Innovation Dynamics and Energy Efficiency, Hamburg: Verlag Dr. Kovac

EUROPEAN COMMISSION (2016), Smarter, greener, more inclusive? Indicators to support the Europe 2020 strategy, Eurostat Statistical Books, 2016 Edition, http://ec.europa.eu/eurostat/documents/3217494/7566774/KS-EZ-16-001-EN-N.pdf

FÖLLMI, R.; MARTINEZ, I. (2017), Volatile Top Income Shares in Switzerland? Reassessing the Evolution Between 1981 and 2010, Review of Economics and Statistics, Vol. 99 (5), pp.793-809 https://doi.org/10.1162/REST_a_00644

FRIEDL, A. ET AL. (2015), How to Deal with Inequality. Welfare System Challenges and European Responses, Kiel Policy Brief No. 85, Kiel Institute for World Economics

GLUZMANN, P.; GASPARINI, L. (2018), International Inequality in Subjective Well-Being: An Exploration with the Gallup World Poll, Review of Development Economics, Vol. 22, 610-631

IFF/ZEW (2012), Studie zu Dispozinsen/Ratenkrediten für das Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz, [A study on interest rates on overdrafts and installment loans for the German Federal Ministry for Food, Agriculture and Consumer Protection], Institute for Financial Services (iff) and Centre for European Economic Research (ZEW), 18 July 2018 http://ftp.zew.de/pub/zew-docs/gutachten/StudieDispoZinsRatenKredit2012.pdf

IMF (2014), Proposed new grouping in WEO country classifications: Low-income developing countries, IMF Policy Paper, Washington DC

ISRAEL, D.; LEVINSON, A. (2004), Willingness to Pay for Environmental Quality: Testable Empirical Implications of the Growth and Environmental Literature, The Berkeley Electronic Press

JAUMOTTE, F. ET AL. (2008), Rising Income Inequality: Technology, or Trade and Financial Globalization, IMF Working Paper WP/08/185, Washington DC

JORDAHL, H. (2009), Economic Inequality, in Svendsen G.T. and Svendsen G.L.H. (Eds.), Handbook of Social Capital, Cheltenham: Edward Elgar

KUZNETS, S. (1955), Economic Growth and Income Inequality, The American Economic Review, Vol. 45, 1-28

LANDERSØ, R.; HECKMAN, J. (2017), The Scandinavian Fantasy: The Sources of Intergenerational Mobility in Denmark and the US, The Scandinavian Journal of Economics, Vol. 119, 1, pp. 178-230

NGAMABA, K.H. ET AL. (2017), Income inequality and subjective well-being: a systematic review and meta-analysis, Quality of Life Research, Vol. 27, 577-596

NARAYAN, A. ET AL. (2018), Fair Progress?: Economic Mobility Across Generations Around the World, Equity and Development. The World Bank, Washington DC

OECD (2008), Growing unequal? Income distribution and poverty in OECD countries Paris: OECD Publishing

OECD (2013), International Migration Outlook, Paris: OECD Publishing

OECD (2018), A Broken Social Elevator? How to Promote Social Mobility, Paris: OECD Publishing http://dx.doi.org/10.1787/9789264301085-en

PHELPS, E.S. (1961), The Golden Rule of Accumulation: A Fable for Growthmen, American Economic Review, 51, 638-643

PIKETTY, T. (2014), Capital in the 21st Century, Cambridge, MA: Harvard University Press

RAWLS, J. (1971), A Theory of Justice, Cambridge, MA: Harvard University Press/Belknap

RODRIK, D. (2007), One Economics, Many Recipes: Globalization, Institutions, and Economic Growth, Princeton, NJ: Princeton University Press

UDALOV, V. (2018), Behavioral Economics of Climate Change: New Empirical Perspectives, Heidelberg and New York: Springer.

WELFENS, P.J.J. (2002), Interneteconomics.net, Heidelberg and Berlin: Springer

WELFENS, P.J.J. (2013), Social Security and Economic Globalization, Heidelberg and Berlin: Springer.

WELFENS, P.J.J. (2017), An Accidental BREXIT, London: Palgrave Macmillan; 2nd edition 2019.

WELFENS, P.J.J. (2017b), Foreign Financial Deregulation under Flexible and Fixed Exchange Rates: A New Trilemma, EIIW Discussion Paper No. 238 http://www.eiiw.eu/fileadmin/eiiw/Daten/Publikationen/Gelbe_Reihe/Jourderegulationdisbei238.pdf

WELFENS, P.J.J. (2018), ICT and Inequality: Analysis and International Perspectives, forthcoming as EIIW Discussion Paper

WORLD BANK (2006), World Development Report 2006, Equity and Development, World Bank/Oxford University Press, Washington DC

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.eiiw.eu

No. 100 **Gavrilenkov, 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 **Gavrilenkov, 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 **Borbèly, 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 **Borbèly, 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.; Borbèly, 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 **Pospiezna, P.:** The application of EU Common Trade Policy in new Memberstates after Enlargement – Consequences on Russia's Trade with Poland, March 2005

No. 130 **Pospiezna, 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 **Borbèly, 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, Septemper 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 if 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 $6^{th}/7^{th}$ 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. 231 **Welfens, P.J.J.:** Knowledge Creation and Enhanced Investment Dynamics in a Europe with New Institutions, March 2017

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, V.; Welfens, P.J.J.:** Digital and Competing Information Sources: Impact on Environmental Concern und 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, P.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

Weitere Beiträge von Interesse:
Titles of related interest:

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 Gavrilenkov; 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 Gavrilenkov (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