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**Article**

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Heiko Peters and Maya Volwahren

# Rising Income Inequality: Do Not Draw the Obvious Conclusions

Inequality is dominating the political debate in various countries still characterised by sluggish economic recovery and high unemployment. The drivers of higher income inequality since 1995 have been globalisation, technological change and migration. At the same time, these factors have had an undeniably positive impact on aggregate income. While populist parties advocate more nationalistic-oriented approaches, we argue that the appropriate policy response to this dilemma is to alleviate the social costs of globalisation rather than rejecting the aggregate economic benefit.

Inequality is currently a hot topic that dominates the political agenda in various countries, many of which are still characterised by sluggish recoveries and continuing high unemployment rates, especially among the youth. Vast majorities of the populations in Germany, the EU and the US believe that income and wealth are unfairly distributed, that social fairness has diminished in recent years and that governments should work to substantially reduce the income gap between the rich and the poor.<sup>1</sup>

Globalisation and migration are blamed by the public and populist politicians alike as decisive factors explaining the rise in inequality. These factors played a large role in recent political events and help to explain the unexpected outcome of the UK referendum in favour of Brexit and the stunning US presidential election victory of Donald J. Trump.

Populist parties draw their strength by taking advantage of fears of social decline, placing the blame on globalisation and migration. They typically put forward wishful thinking that a more nationalist-oriented economy could increase living standards and turn their countries into lands of milk and honey. We clearly oppose this simplifi-

cation of arguments – one that neglects the huge benefits of a broader globalisation, including the freer movement of goods and workers across borders.

## Impact of globalisation, technological change and labour migration

There is a wealth of evidence showing that, on the whole, consumers and corporations of countries opening up to trade largely benefit via an increase in their living standards. The purchasing power of consumers shoots up due to lower prices, and they enjoy a broader range of quality goods and services. For corporations, trade diversifies risks, and they typically profit from lower prices thanks to available imports of intermediates. Higher openness to trade also facilitates competition and investment, and it increases productivity.<sup>2</sup>

On balance, labour migration has a positive effect on the labour market as well as on the fiscal position and economic growth of the host country. Migrants typically fill niches of the economy and contribute significantly to labour market flexibility, especially in host countries with relatively inflexible labour market regulations, such as many of the countries in Europe. Migrants' contributions to national social security systems is generally positive. Migration further boosts economic growth through increases in the share of the working-age population, since migrants are typically relatively young. They contribute to human capital formation and thereby to technological progress.<sup>3</sup>

1 Institut für Demoskopie Allensbach: Was ist gerecht? Gerechtigkeitsbegriff und -wahrnehmung der Bürger, 2013; R. Riffkin: In U.S., 67% Dissatisfied with Income, Wealth Distribution, Gallup, 20 January 2014; European Commission: Special Eurobarometer 370: Social Climate, 2011; European Commission: Special Eurobarometer 355: Poverty and Social Exclusion, 2010; CNN | ORC International Poll, 31 January – 2 February 2014.

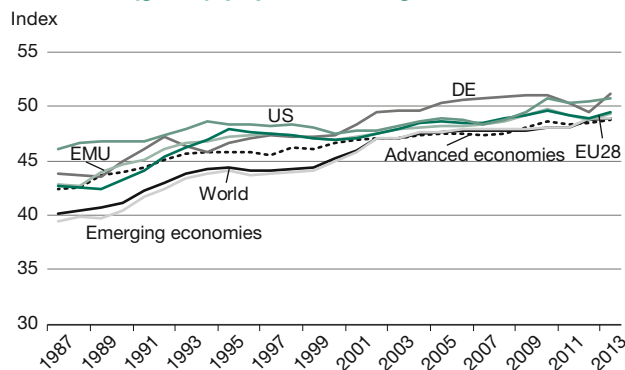
2 Corporations can also boost their competitiveness by outsourcing parts of the value chain to other countries (global value chains), either by establishing subsidiaries, acquiring stakes in foreign companies or contracting third parties. See H. Peters: Global value chains secure competitive advantages for German companies, Focus Germany, 1 July 2013, Deutsche Bank Research.

3 OECD: Is migration good for the economy?, Migration Policy Debates, May 2014.

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**Figure 1**  
Gini index (gross), population weighted



Sources: SWIID Version 5.1; IMF; Deutsche Bank Research.

Given the strong ageing dynamics that we expect to see in many countries – especially in advanced economies – over the next several decades, migration has the potential to significantly reduce the demographic challenges ahead, particularly in countries with a pay-as-you-go pension system.

Despite all these benefits at the country level, specific sectors, regions or group of workers may be negatively affected by the increased competition from trade and migrants. It could raise the inequality of household income by exerting a negative effect on the weakest group of the population. Additionally, technological progress could increase income inequality if it caused a preference for skilled over unskilled labour. However, as clearly highlighted in the literature, technological progress is also one of the major determinants of economic growth, due to its impact on increasing productivity and competitiveness.<sup>4</sup>

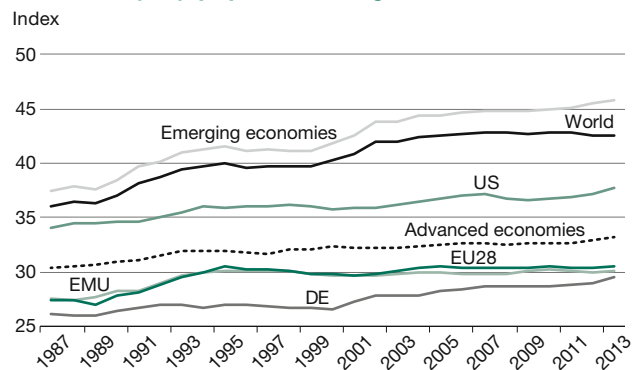
Since globalisation, technological change and migration have strong positive effects on the overall economy, economic policy measures have to ensure that the potential losers of these changes are compensated for their losses and given their share of the additionally created wealth. In the past, however, policymakers did not give enough attention to this issue.

In the following, we analyse in depth the development of global income inequality of both the gross and net incomes (i.e. gross incomes less taxes and transfers) of households using the Standardized World Income Inequality Database.<sup>5</sup> We also study the drivers of inequality, its effect on economic growth and ways to ensure that the weakest of the

4 See for example OECD: Innovation and growth: rationale for an innovation strategy, 2007.

5 For details see F. Solt: The Standardized World Income Inequality Database, SWIID Version 5.1, July 2016, in: Social Science Quarterly, Vol. 97, No. 5, 2016, pp. 1267-1281.

**Figure 2**  
Gini index (net), population weighted



Sources: SWIID Version 5.1; IMF; Deutsche Bank Research.

population are not left behind. As an inequality measure, we use the Gini coefficient, which ranges from 0 (perfect equality) to 1 (maximum inequality, i.e. all income is held by one household) and is commonly used to condense the inequality of income distribution into a single number.<sup>6</sup>

### Rising global inequality as emerging economies close the gap with advanced economies

The global inequality of gross incomes has greatly increased over the past three decades for both advanced economies and emerging economies (see Figure 1). While inequality in emerging economies was lower compared to advanced economies at the end of the 1980s (0.39 vs 0.42), it has since then increased more rapidly in emerging economies. Today gross income inequality in emerging and advanced economies is more or less the same, with a Gini coefficient of slightly less than 0.50.

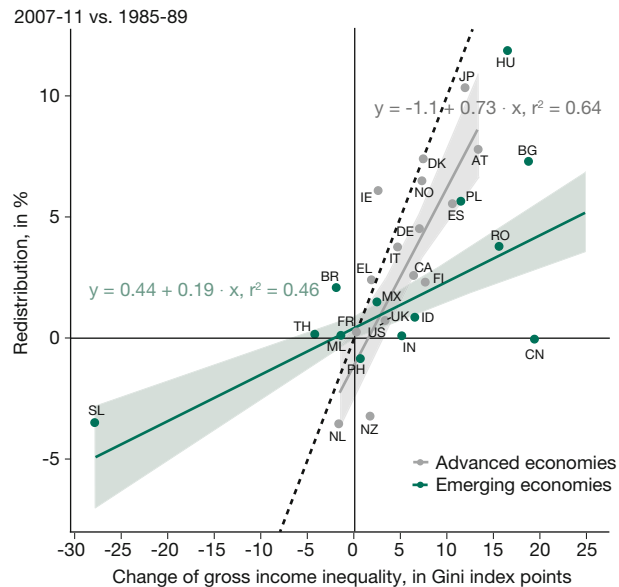
However, gross income inequality differs widely among countries. In 2013 the five countries with the highest levels of inequality were Latvia (0.60), Lithuania (0.56), Ireland, Cyprus and Portugal (all 0.55), and the five countries with the lowest levels of inequality were South Korea (0.32), Iceland (0.37), Venezuela (0.38), New Zealand (0.38) and Sri Lanka (0.41).<sup>7</sup>

As countries move up the income ladder, redistribution measures to finance, for example, social systems or public transfers are usually expanded. As a consequence, the gap between gross and net income inequality widens with a higher level of GDP per capita. In 2013 the gap was

6 M.O. Lorenz: Methods of Measuring the Concentration of Wealth, in: Publications of the American Statistical Association, Vol. 9, No. 70, 1905, pp. 209-219.

7 SWID Version 5.1 database.

**Figure 3**  
Effects of redistribution on gross income inequality



Sources: SWIID Version 5.1; IMF; Deutsche Bank Research.

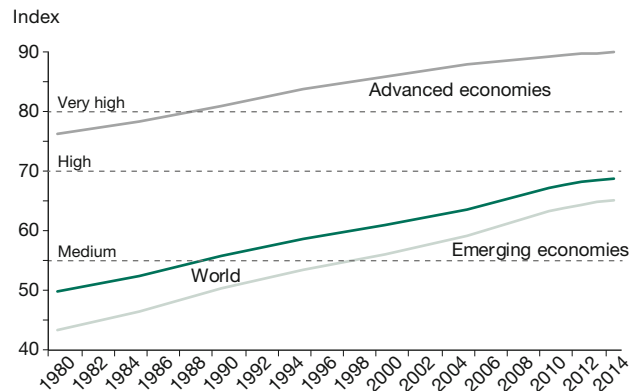
on average 16 index points for advanced economies and only three index points for emerging economies. Contrary to the development of gross income inequality, the dispersion of net income inequality between emerging economies and advanced economies increased further over the past few decades (see Figure 2).

In advanced economies, higher redistribution – approximated by the difference between gross and net income inequality – compensated to a large extent for the increase of gross income inequality between the periods 1985-89 and 2007-11. This can be seen by the higher slope of the simple linear regression line for advanced economies in Figure 3. This simple correlation for the sample of advanced economies indicates that a ten point increase in gross income inequality only increases net income inequality by about 2.5 index points. For emerging economies, on the other hand, a ten point increase in gross income inequality pushes up net income inequality by about eight index points. This indicates that redistribution in emerging economies has increased by far less than the increase in gross income inequality. Here China seems to be an extreme case, as gross income inequality increased by 20 index points to over 0.50, while redistribution remained unchanged, implying an equally large jump in net income inequality.

### Higher inequality in emerging economies, but a billion people lifted out of extreme poverty

As highlighted before, in emerging economies, which account for 83% of the world population and almost 40% of

**Figure 4**  
Human Development Index, population weighted



Sources: UNDP; IMF; Deutsche Bank Research.

global nominal GDP, income inequality increased strongly over the past few decades. However, thanks to the catching-up of several emerging economies – particularly China – and their integration into the global economy, millions have been lifted out of poverty. Despite continuing high poverty rates in Sub-Saharan Africa (41%) and South Asia (15%), global poverty has been declining for almost three decades. According to the World Bank, from 1990 to 2013, an estimated 1.1 billion people were lifted out of extreme poverty.<sup>8</sup> During that period, the global poverty rate and the poverty gap decreased markedly. The former measures the share of the population with earnings of less than \$1.90/day, and the latter measures the average income shortfall of people living below \$1.90/day as a percentage of the \$1.90/day poverty line. It therefore depicts the average extent to which people are falling below the poverty line. The Human Development Index, which summarises key dimensions of human development, also showed great improvement (see Figure 4).<sup>9</sup> The remarkable rise of China reduced the poverty rate in the East Asia and Pacific region from 60% in 1990 to four per cent in 2013 (China: 67% in 1990; two per cent in 2013). Nonetheless, the further reduction of poverty remains a major objective for many emerging economies.

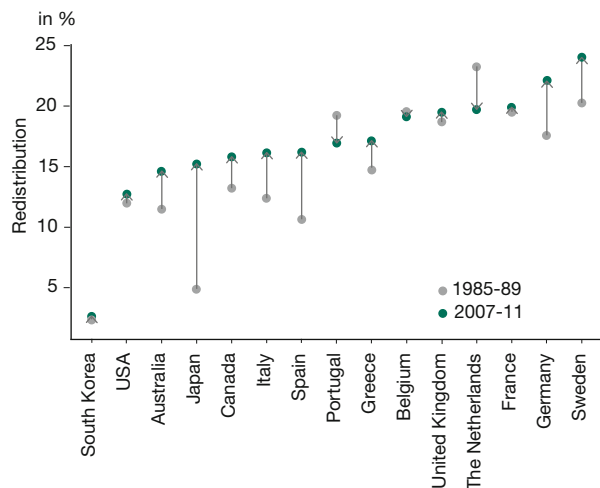
### Redistribution mostly in advanced economies

In contrast to emerging economies, in advanced economies essential goods – such as housing and food – are broadly available, which is why there is a greater focus on social participation and on social issues such as wealth and income inequality. Furthermore, social security sys-

<sup>8</sup> The World Bank: PovcalNet, Regional aggregation using 2011 PPP and \$1.90/day poverty line; The World Bank: Poverty and Shared Prosperity 2016: Taking on Inequality, Washington 2016, World Bank.

<sup>9</sup> UNDP: Human Development Report: Work for Human Development, New York 2015.

**Figure 5**  
**Dynamics in income redistribution, selected advanced economies**



Sources : SWIID Version 5.1; IMF; Deutsche Bank Research.

tems often provide housing, food, social protection and healthcare for the weakest groups of the society.

As shown in Figure 3, redistribution has reduced income inequality to a large extent in advanced economies, but only slightly in emerging economies. The ILO Social Security Inquiry shows that the level and growth of public social spending varies greatly between the two groups of countries.<sup>10</sup> While advanced economies increased their average total public social expenditures from 16% to 23% of GDP between 1990 and 2010-13,<sup>11</sup> emerging economies spent a significantly smaller share, with their expenditures rising from five to six per cent of GDP.

However, levels of inequality and redistribution differ significantly among advanced economies. Among the 15 most populous advanced economies, EU countries have a far higher degree of redistribution than non-EU countries, with Sweden, Germany and France having the highest levels (see Figure 5). The countries in this group with the highest levels of net income inequality in the period 2007-11 were the US and the UK, but the degree of redistribution was higher in the UK. Among the more populous EU countries, the countries with the highest levels of net inequality after the UK were Portugal, Greece, Italy and

10 The ILO Social Security Inquiry Database, available at <http://www.ilo.org/dyn/ilossi/ssimain.home>. See in particular indicator E-1c – Total public social expenditure as % of GDP. The variable “public social expenditure” includes employment-related social security schemes, public health, welfare and anti-poverty programmes, and non-public schemes of different types of transferring goods, services, or cash to poor and vulnerable households.

11 We use the latest available data between 2010 and 2013. Averages are population weighted.

Spain. In recent decades, Japan has strongly increased its levels of redistribution, reflecting the jump in social spending there as a response to the significant ageing of the population.<sup>12</sup> A similarly strong increase of age-related transfer payments will also be a major theme for other advanced economies going forward.

### Major drivers of income inequality in advanced economies

In the following, we estimate a panel model to gain insight into the driving forces of net income inequality in advanced economies, focusing on their transmission channel to inequality and not on the overall effect.<sup>13</sup> For the results, see the inequality regressions in column (d) of Table 1.<sup>14</sup> Note that globalisation, migration and technological change are clearly boosting overall the living standard, as highlighted above.

*Globalisation:* The integration of larger emerging economies over the past few decades has increased the supply of labour to the global economy. This has generated a negative effect on wages in most advanced economies, as they now tend to import labour-intensive products.<sup>15</sup> We use the share of Chinese imports in total imports as a proxy for the increased competition from emerging economies. The panel regression shows that an increase in Chinese imports by ten percentage points pushes up net income inequality in advanced economies by 1.6 percentage points.

*Technological change:* A shift in the production technology that benefits skilled labour by enhancing its relative productivity (skill-biased technical change) increases income inequality.<sup>16</sup> To substantiate the assumption, we present the fact that the share of the population in OECD countries with a tertiary degree rose on average from 27% to 35%

12 OECD: OECD Economic Surveys: Japan, April 2015.

13 See also F. Jaumotte, S. Lall, C. Papageorgiou: Rising Income Inequality: Technology, or Trade and Financial Globalization?, in: IMF Economic Review, Vol. 61, No. 2, 2013, pp. 271-309; E. Dabla-Norris, K. Kochhar, N. Suphaphiphat, F. Ricka, E. Tsounta: Causes and Consequences of Income Inequality: A Global Perspective, IMF Staff Discussion Note, SDN/15/13, 2015, IMF; D. Asteriou, S. Dimelis, A. Moudatsou: Globalization and income inequality: A panel data econometric approach for the EU27 countries, in: Economic Modelling, Vol. 36, Issue C, 2014, pp. 592-599.

14 Note that a multi-country panel data model has the advantage of fully using information from across countries. There are, however, also some limitations due to the possible presence of structural breaks, nonlinearities and issues with the interpretation of the residual, which could be due to policy distortions, uncaptured fundamentals or limitations of the empirical model (as measurement or sampling errors or possible misspecification). We are aware of these possible shortcomings and are interpreting the regression models as correlations and not causation.

15 P. Krugman: Trade and Wages, Reconsidered, in: Brookings Papers on Economic Activity, Vol. 39, No. 1, 2008, pp. 103-154.

16 D. Acemoglu: Technical Change, Inequality, and the Labor Market, in: Journal of Economic Literature, Vol. 40, No. 1, 2002, pp. 7-72.

Table 1  
Panel data regressions results

Variables	(a)	(b)	(c)	(d)
	Growth regressions		Inequality regressions	
	GDP growth	GDP growth	L+. Gini (net)	L+. Gini (net)
L-. GDP growth	0.403 ***	0.403 ***		
log(GDP per capita)	-0.282 ***	-0.28 ***		
L-. Gini (net) change	-0.185 **			
L-. Gini (market) change		-0.14 **		
Share of Chinese imports (% of total imports)			0.247 ***	0.162 **
ICT investment (% total capital formation)				0.229 ***
Financial openness (Chinn-Ito Index)			1.278	-0.327
Unemployment rate (%)				0.229 ***
Minimum wage relative to mean				-0.183 ***
Migrant stock (% of population)				0.235 ***
House price-to-income ratio			-0.004	0.017
Emerging economies dummy	0.443 *	0.436		
Time	1995-2013	1995-2013	1995-2013	1995-2013
Time fixed effects	yes	yes	yes	yes
Observations	2324	2324	396	156
Sample	full	full	only AE	only AE
Countries	150	150	22	11
Root MSE	3.696	3.697	4.038	2.296
R <sup>2</sup>	0.233	0.233	0.049	0.505

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%; L-: Lag by one year; L+: Lead by one year; AE: advanced economies.

Sources: SWIID Version 5.1; IMF; OECD; World Bank; M.D. Chinn, I. Hiro: What Matters for Financial Development? Capital Controls, Institutions, and Interactions, in: Journal of Development Economics, Vol. 81, No. 1, 2006, pp. 163-192; Deutsche Bank Research.

between 2005 and 2015, but the earnings gap between people holding a tertiary education and those with an upper secondary education widened from 52% (2007 or earlier) to 55% (2014), pointing to a far stronger demand for skilled workers and suggesting the presence of skill-biased technological change.<sup>17</sup> As a proxy for the level of technology, we use investments in information and communication technology (ICT), which we find to increase income inequality (a ten percentage point rise in the ICT investment share pushes up income inequality by 2.3 percentage points).

*Financial openness:* Higher financial openness is expected to increase income inequality. For example, higher FDI flows push up the skill premium. We use the Chinn-Ito in-

dex to measure the degree of capital account openness. However, this was not significant in our regressions.<sup>18</sup> This could be due to the continuing high level of openness in advanced economies over the entire observation period. The factor might play a larger role in emerging economies.

*Migration:* International migration augments the labour supply, especially in high-income countries, which hosted 71% of all global migrants in 2015. Most migrants originated from middle-income countries (65% of all global migrants). Because they often arrive in host countries without sufficient language skills and with little knowledge of the domestic labour market, migrants tend to take jobs at the lower end of the income scale, significantly increas-

17 OECD: Education at a Glance 2016, Paris 2016; OECD: Education at a Glance 2009, Paris 2009.

18 M.D. Chinn, I. Hiro: What Matters for Financial Development? Capital Controls, Institutions, and Interactions, in: Journal of Development Economics, Vol. 81, No. 1, 2006, pp. 163-192.

ing the labour supply in the low- to medium-skill segment.<sup>19</sup> Consequently, wages in these segments are dampened, which should increase inequality.<sup>20</sup> According to our panel regression, an increase of the migrant stock by ten percentage points yields a 2.4 percentage point increase in income inequality.

*Labour market regulation/institutions:* The regulation of the labour market heavily influences the wage distribution. In most advanced economies, collective bargaining parties set the wage distribution for a large share of the workforce, and minimum wage laws directly determine the lower bound of the wage distribution. Additionally, labour and social protection measures as well as taxes have a strong effect on the wage structure. Given the measurement problems and the lack of long-term time series that could potentially take into account institutional changes, we use the intensity of the impact of the minimum wage (i.e. the Kaitz index) and the unemployment rate as crude proxies. It is no surprise that, according to our regression results, a greater impact by the minimum wage indeed reduces inequality (coefficient: -0.18). However, a high minimum wage can be a drag on employment in the medium or long-term and would consequently push up the unemployment rate, especially for the problematic groups of the labour market.<sup>21</sup> According to our estimates, a higher unemployment rate increases net income inequality (coefficient: +0.23).

*Housing:* Depending on the structure of homeownership, changes in the valuation of house prices could be inequality reducing or enhancing. The house price-to-income ratio was not significant in our regression.

*Business cycle effects:* These are captured by time fixed effects.

Summing up, we find strong positive correlations between increases in net income inequality and more intense trade competition from emerging economies, technological change and migration. A higher minimum wage reduces income inequality in the short term, but in the medium term this is questionable, as a high minimum wage might push up the unemployment rate, which increases net income inequality.

19 See D. Bräuning, H. Peters: Temporary immigration boom: A wake-up call for politicians?, Standpunkt Deutschland, 28 July 2014, Deutsche Bank Research.

20 United Nations: International Migration Report 2015, 2016.

21 See D. Neumark, W.L. Wascher: Minimum Wages and Employment, in: Foundations and Trends in Microeconomics, Vol. 3, Nos. 1-2, 2007, pp. 1-182 and the cited literature in H. Peters: Minimum wage of EUR 8.50 per hour: Grand Coalition on the wrong track, Focus Germany, 4 June 2014, Deutsche Bank Research.

## Higher income inequality dampens GDP growth

We now focus on the effects of income inequality on GDP growth. There are several channels through which inequality might negatively affect economic growth.

First, poor people often lack access to appropriate health care, through which they could safeguard their human capital, which in turn would enhance growth. Consequently, if a society is rather unequal, a larger share of the population cannot contribute to economic growth.<sup>22</sup> This factor seems to be more relevant for emerging economies than for advanced economies.

Second, higher inequality might prevent children in poorer households from receiving sufficient education (in terms of both quality and quantity), thereby lowering labour productivity compared to more equal countries.<sup>23</sup> As can be seen in Figure 6, higher income inequality is associated with lower intergenerational income mobility. There are several potential causes for this high correlation, including diverging early childhood developments, limited access to higher education, children's early entry into the labour market to supplement household income or barriers to enter highly paid jobs on grounds of discrimination.<sup>24</sup>

Third, in a more equal society, there is less incentive to stand up against the political or economic order, and the resulting stability attracts investment, subsequently boosting growth.<sup>25</sup>

Fourth, countries with higher social stability are more capable of counterbalancing economic shocks, which again enhances their economic performance.<sup>26</sup>

However, higher inequality can also have positive effects on economic growth. An unequal concentration of income might provide higher incentives for people to innovate or to accumulate capital, thereby driving up growth.<sup>27</sup> Furthermore, the rich save relatively more of their incomes,

22 R. Perotti: Growth, Income Distribution, and Democracy: What the Data Say, in: Journal of Economic Growth, Vol. 1, No. 2, 1996, pp. 149-187.

23 J. Stiglitz: The Price of Inequality: How Today's Divided Society Endangers Our Future, New York 2012, W.W. Norton.

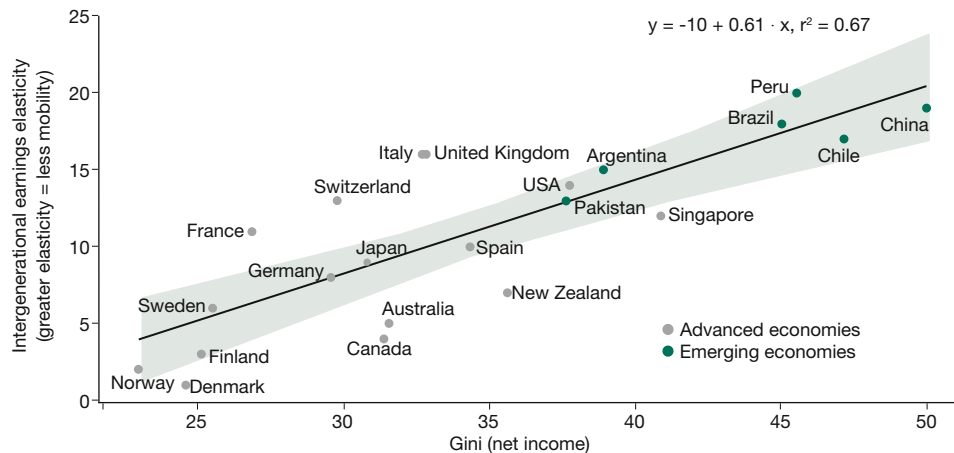
24 M. Corak: Inequality from Generation to Generation: The United States in Comparison, IZA Discussion Papers No. 9929, 2016.

25 A. Alesina, R. Perotti: Income Distribution, Political Instability and Investment, in: European Economic Review, Vol. 40, No. 6, 1996, pp. 1203-1228.

26 D. Rodrik: Where Did All the Growth Go? External Shocks, Social Conflict, and Growth Collapses, in: Journal of Economic Growth, Vol. 4, No. 4, 1996, pp. 358-412.

27 O. Galor: Inequality and Economic Development: The Modern Perspective, 2009, Edward Elgar Publishing; J. Mirrlees: An exploration in the theory of optimum income taxation, in: Review of Economic Studies, Vol. 38, No. 2, 1971, pp. 175-208.

Figure 6

**Higher net income inequality associates with lower intergenerational earnings mobility**

Sources: M. Corak: Inequality from Generation to Generation: The United States in Comparison, IZA Discussion Papers No. 9929, 2016; SWIID Version 5.1; Deutsche Bank Research.

which leads to higher aggregate savings and possibly larger investments in the real economy.<sup>28</sup>

To gain insights on whether the total effect of higher income inequality on growth is positive or negative, we estimate a simple growth regression using our full global panel data set. We correlate GDP growth with lagged changes of income inequality as our main variable of interest, lagged GDP growth to capture path dependencies, GDP per capita as a proxy for the catching-up effect and an indicator variable for emerging economies, accounting for the different economic structures between emerging economies and advanced economies.

The panel regressions show that GDP growth and changes in net and gross income inequality are negatively correlated (see growth regressions in Table 1). The other variables have the expected sign, signalling the presence of a catching-up effect of poorer countries, that there are path dependencies of GDP growth and that emerging economies are growing faster than advanced economies.

### Central bank policy has boosted wealth inequality, but the effect on income inequality is unclear

A possible further driver of inequality has been the extreme expansionary monetary policy of the major central banks since the start of the financial crisis. While it is relatively clear that the expansionary central bank policy in-

creases wealth inequality by pushing up asset prices, the effect on income inequality is unclear. The central bank's quantitative easing programmes (QE) have the objective of boosting consumption and investment via the interest rate channel and the portfolio rebalancing channel (as well as the exchange rate channel). This pushes up wealth inequality in two ways. First, lower interest rates also reduce interest income, which especially hits small-scale savers and those saving for retirement. Second, since richer households typically invest a larger share of their wealth in riskier assets, they benefit more from the portfolio rebalancing channel of QE. Additionally, these households are less affected by the inflation-enhancing effect of an accommodative monetary policy, as they hold a lower fraction of their wealth in cash or near-cash holdings.

Simulations by the Bank for International Settlements suggest that monetary policy has increased wealth inequality in advanced economies since the financial crisis mainly by boosting equity prices.<sup>29</sup> However, due to a lack of comparable global data, it is difficult to assess recent developments in actual wealth inequality. Looking at a few selected countries, the dynamics of wealth inequality do not look uniform. For example, in Italy, France and the US, wealth seems to have been less equally distributed in 2014 than it was at the beginning of the 2000s. In Germany and the UK, the level of wealth inequality stayed approximately the same, while it decreased in Sweden.<sup>30</sup>

28 N. Kaldor: A Model of Economic Growth, in: The Economic Journal, Vol. 67, No. 268, 1957, pp. 591-624; J. Ostry et al.: Redistribution, Inequality, and Growth, IMF Staff Discussion Note, SDN/14/02, 2014.

29 D. Domanski et al.: Wealth inequality and monetary policy, BIS Quarterly Review, March 2016.

30 Deutsche Bundesbank: Distributional effects of monetary policy, Monthly Report, September 2016.



Going one step further, higher wealth inequality can cause income inequality to rise as the wealthy – who are typically located at the upper end of the income scale – are able to increase their income disproportionately through higher capital gains (income composition channel). However, monetary policy expansion has beneficial direct effects towards a more even income distribution by boosting GDP growth, thereby lowering unemployment and consequently increasing earnings, especially at the lower end of the income scale (earnings heterogeneity channel), as well as by lowering the interest payments of borrowers, who tend to be poorer.<sup>31</sup>

### Alleviating the cost of globalisation rather than cutting off the benefits

Our analysis shows that rising levels of inequality in advanced economies are correlated with increased globalisation, technical change and migration. However, given the strong positive effects of these three factors on overall living standards described above, it would be extremely deleterious to draw the obvious conclusion of turning back globalisation or closing borders to labour migration, as strongly advocated by populist parties across Europe. All would lose in a more closed, less dynamic economy. On the contrary, a strong response to rising inequality would be a combination of advancing globalisation via comprehensive trade agreements, creating a more business-friendly environment which would foster technological change, and opening national borders to qualified labour migrants, while taking actions to ensure that the weakest segments of the population share in the additionally created wealth. This would not only boost overall living standards but would also increase popular support for open borders and technological progress.

### How to generate socially fairer economic growth

Given the complexity of national economies, it is extremely difficult to clearly identify which groups have been hardest hit by the negative aspects of globalisation and migration. Thus, a policy mix of enhancing the skills of natives, increasing labour market flexibility and controlling migration via a points system would be suitable to reduce inequality while still enabling the macroeconomy to benefit from globalisation's otherwise welfare-enhancing effects.

More ambitious and forward-looking education and labour market policies are probably one of the most pow-

erful tools to enhance the skills of natives, making them more competitive. Active labour market policies can soften the negative effects of a job loss and support a sectoral change via training measures or temporary wage subsidies. Higher flexibility in the labour market and atypical employment forms also help. Measures in the education system such as the implementation of post-secondary vocational education and training should become a priority, as they provide a better transition into the labour market. Likewise, lifelong learning initiatives need to be implemented more broadly, which will encourage people to acquire additional skills and allow them to better match their skills to labour demand. Furthermore, subsequent training allows for increased mobility between professions, which – given a flexible labour market – eases potential transitions from one sector to another.<sup>32</sup>

Additionally, an increase in intergenerational mobility made possible through higher investments into early childhood education would clearly pay off. Empirical educational research shows that higher investments in young children yield greater returns in education, health and productivity.<sup>33</sup>

While a higher minimum wage would alleviate income inequality in the short term, the impact over the medium term could be questioned, as a high minimum wage could lead to a rise in unemployment, which would increase net income inequality.

Migration is a straightforward way to reduce future labour shortages associated with the coming demographical challenges. To avoid overly harsh direct competition in labour market segments that are already experiencing very high unemployment rates, labour migration could be controlled, for example, via a point system. This would ensure that migrants have the opportunity to integrate quickly into the labour market and that popular support for migration does not deteriorate.

Reducing net inequality through more ambitious and forward-looking education and labour market policies would probably also have a positive effect on economic growth, as we have shown that higher inequality is associated with lower economic growth. As these policies are also positive for potential growth, the ongoing pressure on central banks to continue monetary stimulus efforts would probably ease.

31 Ibid.; A. Saiki, J. Frost: How does Unconventional Monetary Policy Affect Inequality? Evidence from Japan, DNB Working Paper, No. 423, 2014; O. Coibion et al.: Innocent Bystanders? Monetary Policy and Inequality in the U.S., NBER Working Paper No. 18170, 2012.

32 OECD: OECD Observer 225, 2001; OECD: Skills Beyond School: Synthesis Report, OECD Reviews of Vocational Education and Training, 2014; OECD: Education Policy Outlook 2015: Making Reforms Happen, 2015.

33 J.J. Heckman: Schools, Skills, Synapses, in: Economic Inquiry, Vol. 46, No. 3, 2008, pp. 289-324; J.J. Heckman: Invest in early childhood development: Reduce deficits, strengthen the economy, 2012.