

Gylfason, Thorvaldur

Working Paper

Inequality Undermines Democracy and Growth

CESifo Working Paper, No. 7486

Provided in Cooperation with:

Ifo Institute – Leibniz Institute for Economic Research at the University of Munich

Suggested Citation: Gylfason, Thorvaldur (2019) : Inequality Undermines Democracy and Growth, CESifo Working Paper, No. 7486, Center for Economic Studies and ifo Institute (CESifo), Munich

This Version is available at:

<https://hdl.handle.net/10419/198846>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Inequality Undermines Democracy and Growth

Thorvaldur Gylfason

Impressum:

CESifo Working Papers

ISSN 2364-1428 (electronic version)

Publisher and distributor: Munich Society for the Promotion of Economic Research - CESifo GmbH

The international platform of Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute

Poschingerstr. 5, 81679 Munich, Germany

Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de

Editor: Clemens Fuest

www.cesifo-group.org/wp

An electronic version of the paper may be downloaded

- from the SSRN website: www.SSRN.com
- from the RePEc website: www.RePEc.org
- from the CESifo website: www.CESifo-group.org/wp

Inequality Undermines Democracy and Growth

Abstract

Income equality and trust seem to go along with several other ingredients of social capital as determinants of economic growth across the globe. In a large sample of countries, equality in the distribution of income as measured by the World Bank and by The Standardized World Income Inequality Database are seen to be correlated with economic diversification, the rule of law, transparency as measured by the corruption perceptions index from Transparency International, trust as measured in the World Values Survey, and democracy, all of which are good for growth as reflected in the purchasing power of per capita national income.

JEL-Codes: O430, O150.

Keywords: inequality, social capital, democracy, growth.

Thorvaldur Gylfason
Department of Economics
University of Iceland
Iceland - 101 Reykyavik
gylfason@hi.is

Final version 21 January 2019

This work was presented at the 30th Villa Mondragone International Economic Seminar, Rome, 25-26 June 2018. I wish to thank Gylfi Zoega and other seminar participants for their helpful reactions to an earlier version of this material.

1. Introduction

There was a time, not long ago, when inequality in the distribution of income and wealth was widely considered inconsequential to mainstream macroeconomics. Distribution and related topics in welfare economics were seen as normative in nature, and were relegated to microeconomic study. Many economists envisaged a dichotomy separating distribution and such from real macroeconomic issues, doubting that distribution could matter much for macroeconomic outcomes. The idea that rich and poor households have different propensities to consume and save as Kaldor (1961) argued, with potentially important consequences for short-term macroeconomic analysis as well as for medium-to-long-term growth, did not leave a lasting imprint on mainstream macroeconomics. Also, the notion that consumers and workers care about relative incomes and wages as argued by Duesenberry (1949) and later also by Gylfason and Lindbeck (1984a, b), Acocella *et al.* (2009), Card *et al.* (2012), and others makes only occasional appearances in macroeconomic models.

This may change. Inequality of income and wealth has quite suddenly captured the attention of economists. Piketty's *Capital* (2014) became an overnight sensation, following several other noteworthy books dealing with distribution, including Deaton's *Great Escape* (2013), Stiglitz's *Price of Inequality* (2013),¹ Galbraith's *Inequality and Instability* (2012), Rajan's *Fault Lines* (2011), Milanovic's *Worlds Apart* (2005),² and Campano and Salvatore's *Income Distribution*, a textbook (2006). The works of Atkinson, Piketty, Saez, and others prepared the ground for the sudden flare-up of interest in distribution, not only among economists but also politicians.

The steady progress in the standard of life since 1960 is evidenced by rising per capita incomes and also by the rise in average global life expectancy by 19 years since 1960, or from 53 years in 1960 to 72 years in 2016. Meanwhile, with the ascent of China and India, inequality among nations has decreased as inequality within nations has increased since 1980 (Milanovic 2016). From the 1980s to 2015, the top 1% of households increased its share of pre-tax national income from 8% to 12% in Europe and from 8% to 20% in United States. Over the same period, the top 1% of households increased its share of net national wealth from 20% to 40% in both Europe and United States (World Inequality Database 2018). In 2017, it took ordinary workers the whole

¹ See also Stiglitz (2015).

² See also Milanovic (2016).

year – 364 days! – to earn the average daily compensation of J. P. Morgan’s Chief Executive Officer.³ We could go on.

These indications of increased inequality have transformed politics. A self-described socialist, Senator Bernie Sanders, suddenly became a mainstream politician without changing his message, and came close to winning U. S. presidency in 2016. Taking almost everyone by surprise, Donald Trump won the presidency by appealing to those who felt left behind by globalization. In another 2016 surprise, also feeling left behind, British voters chose to leave the European Union. The election of Trump and Brexit threw the United States and the United Kingdom into political turmoil.

In the United States, the problem became apparent before 2016. Signs of social capital decay include declining interpersonal trust as documented in Putnam’s *Bowling Alone* (2000). Transparency International (2018) has lowered the U. S. corruption perceptions index, ranking the United States 16th in a group of 180 countries, well below Canada’s rank of 8. In 2012, 73% of Gallup (2013) respondents in the United States considered corruption to be “widespread throughout the government” compared with 46% in Canada. Gallup (2018) reports that the proportion of its U. S. respondents expressing a great deal or quite a lot of confidence in the Supreme Court declined from 49% in 1975 to 37% in 2018 while confidence in Congress dropped from 42% to 11%. Life expectancy in the United States declined in 2015, 2016, and 2017, the first time since the First World War that U. S. life expectancy has fallen three years in a row (Case and Deaton 2017). Freedom House (2018) lowered the democracy score of the United States little by little from 94 in 2010 to 86 in 2017. Canada’s score is 99. Even democracy is under stress as evidenced by a string of striking titles of recent books published by American political scientists and historians, including Page and Gilens’s *Democracy in America?* (2017), Levitsky and Ziblatt’s *How Democracies Die* (2018), Mounk’s *People vs. Democracy* (2018), and Snyder’s *Road to Unfreedom* (2018).

The decay of social capital can be contagious across borders. Misbehavior by U. S. elites provides cover for similar misconduct in other countries. Some other liberal democracies show disquieting signs of decaying social capital.

This study is intended to chart cross-country relationships among various aspects of social capital, including income distribution and democracy, and economic growth as

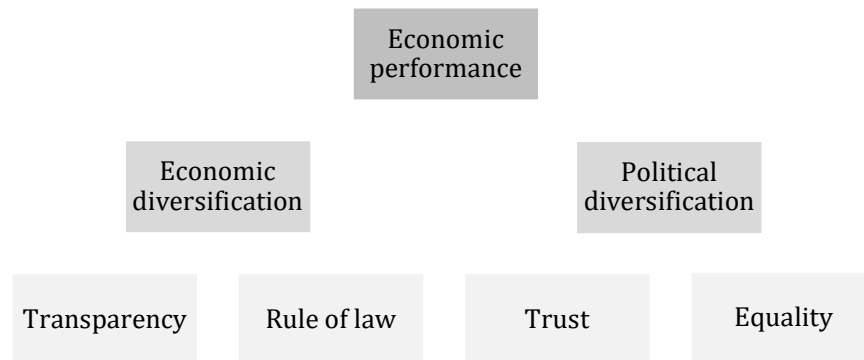
³ See Mishel and Schieder (2018).

reflected in the purchasing power of per capita Gross National Income (GNI). The point of departure is that long-run economic growth is driven by the buildup and use of four kinds of capital: Physical capital, Human capital, Natural capital, and Social capital. Five pillars of social capital will be stressed: Democracy, Equality, Rule of Law, Transparency, and Trust. The accumulation of physical capital boosts growth directly while human capital, social capital, and natural capital, if well managed, encourage growth indirectly by promoting efficiency and technology.

The strategy of the study is to explore the bivariate cross-country relationships between the purchasing power of the level of current (i.e., most recent) per capita income and each of the various potential determinants of growth shown in Figure 1 as well as bivariate relationships among those variables.

The main questions posed in what follows will be:

Figure 1. Web of linkages



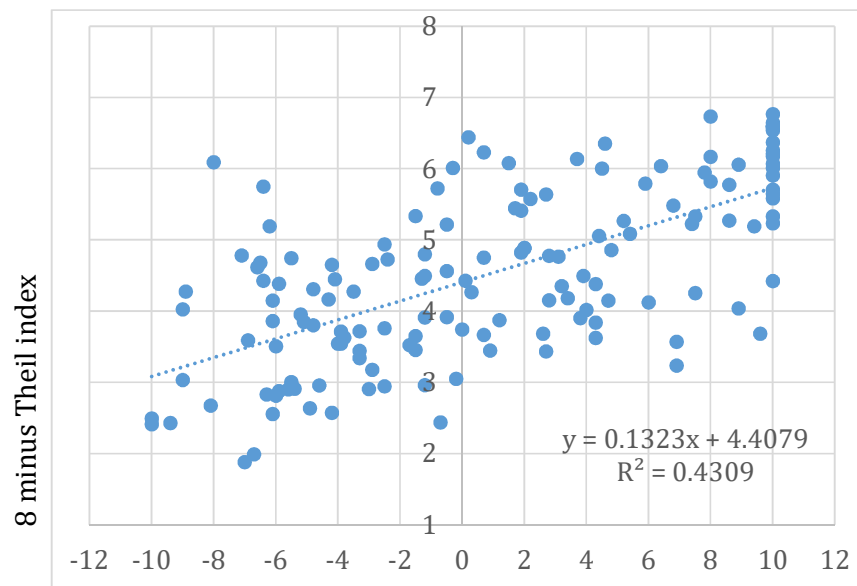
1. Does economic diversification – i.e., the distribution of GNI across industries – matter for the level of per capita GNI? If diversification boosts output, this may help to explain why heavy reliance on natural resources, if not well managed, may stunt output.
2. Does political diversification through the fortification of democracy matter for economic diversification and per capita GNI? If economic and political diversification can be viewed as parallel ways to avoid having too many eggs in one basket, both types of diversification can help to avert excessive concentration and associated risk.

- Do different pillars of social capital – democracy, transparency, rule of law, trust, and equality – support one another? And do they matter for diversification and per capita GNI?

2. From double diversification to growth

Economic diversification and democracy can be seen as two sides of the same coin. Economic diversification means diversification of exports and output away from excessive dependence on natural resources. Political diversification means increased democracy, i.e., diversification away from excessive dependence on a narrow political base toward political pluralism. Both types of diversification aim to avert national risk. Most countries, especially those that rely on a few industries or resources for much of their incomes, seek to diversify their economies because they view diversification as an essential aspect of national risk management. Some may suspect that, by reducing risk, diversification may also encourage economic efficiency and growth as argued in Gylfason and Wijkman (2016).

Figure 2. Polity2 index of democracy 1960-2012 and Theil index of export diversification 1962-2010 (148 countries)



Note: Vertical axis shows 8 minus Theil index so economic diversification increases upward along the vertical axis. Horizontal axis shows Polity2 index of democracy that increases from left to right.

The modest aim here is merely to erect some statistical scaffolding by reviewing simple bivariate correlations among different aspects of social capital, diversification, and growth in preparation for more comprehensive multivariate econometric work.

Figure 2 shows that economic and political diversification are closely correlated across countries.

Economic diversification is measured by the Theil index of export diversification developed recently at the International Monetary Fund (IMF). The Theil index is a suitable measure of inequality, segregation, and other forms of diversity, designed to reflect diversity within as well as among sectors and groups. Specifically, the Theil index adds measures of diversity across sectors (vertical diversity or extensive margin, meaning new export products or new export destinations) and diversity within sectors (horizontal diversity or intensive margin, meaning a larger volume of exports of old products). The index covers merchandise exports only, not services, from 1962 to 2010. The more diversified a country's exports, the lower the Theil index that reaches from 8 to 1. Like other trade statistics such as export ratios, the Theil index may reflect country size as well as export diversification because large, i.e., populous, countries are more likely than smaller ones to have diversified their exports.

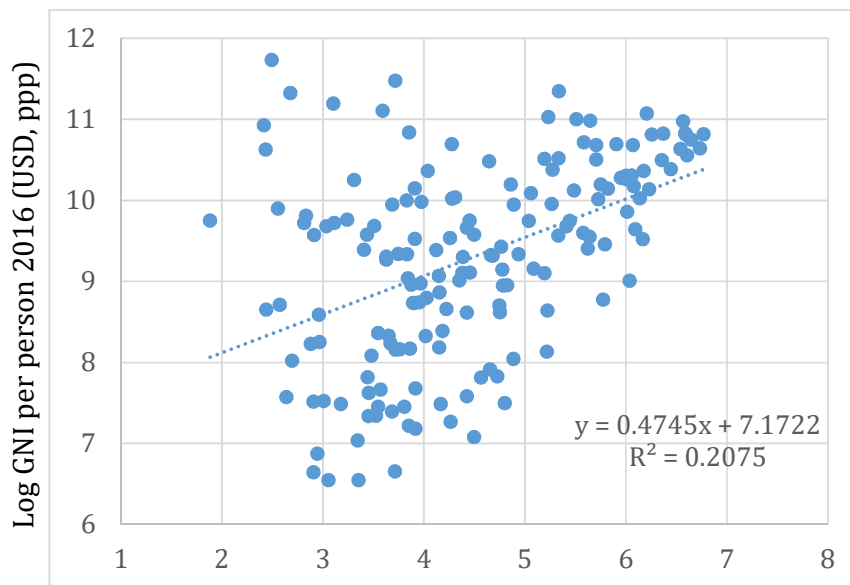
Political diversification is measured by the Polity IV Project's Polity2 variable, which reflects several characteristics of democratic vs. autocratic authority in governance. The index spans a spectrum from fully institutionalized autocracies through mixed authority regimes ("anocracies") to fully institutionalized democracies on a 21-point scale ranging from minus ten (hereditary monarchy) to plus ten (consolidated democracy).

In Figure 2, the coordinates of each observation represent average values of the two indices for a given country in a sample of 148 countries. The correlation between the two series is 0.66.⁴

⁴ Gylfason (2018) reports results for three different measures of economic diversification – i.e., the Theil index used here, the IMF's product quality index, and the economic complexity index developed by Hidalgo and Hausmann (2009) – and also for three different measures of political diversification – i.e., the Polity2 index used here as well as the civil liberties and political rights indices compiled by Freedom House (2018).

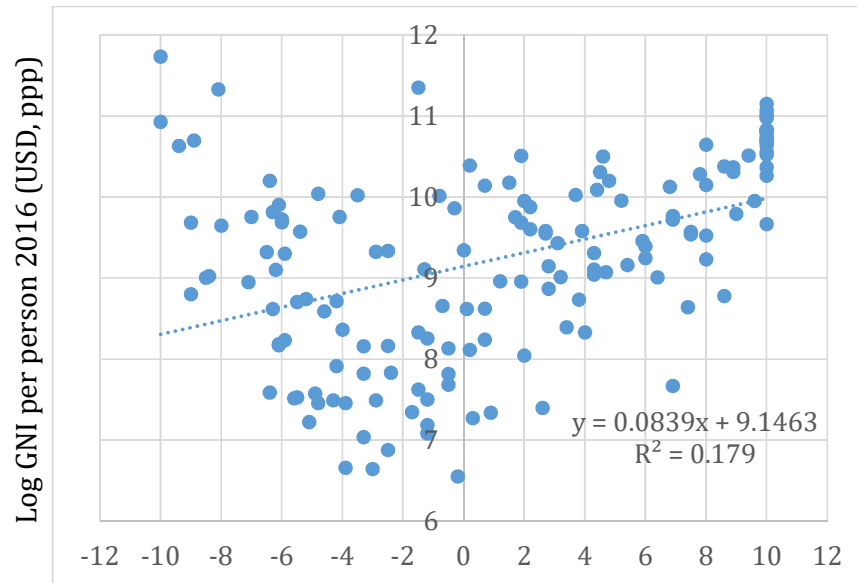
Figures 3 and 4 show the relationship between each type of diversification and per capita GNI. In both figures, the variable on the vertical axis is the natural log of the purchasing power of per capita GNI in 2016 on the grounds that the level of current income reflects past rates of growth. The use of only the end-of-period value of per capita GNI for each country rules out reverse causation from income to diversification. In Figure 3, with a correlation of 0.46 between economic diversification and income, the relationship shown is significant in a statistical sense. It is also significant in an economic sense because the slope of the regression line through the scatter (0.47) suggests that an increase in economic diversification by 20% of the scale of the diversification index along the horizontal axis (i.e., by 1 which is one-fifth of the scale from 2 to 7) is accompanied across countries by a nearly 50% increase in per capita GNI along the vertical axis. A similar result emerges from Figure 4 where an increase in political diversification (democracy) by 20% of the scale of the democracy index (i.e., by 4 out of 20) along horizontal axis is accompanied by a 33% increase in per capita GNI along vertical axis. The correlation is 0.42.

Figure 3. Theil index of export diversification 1962-2010 and log per capita GNI 2016 (167 countries)



Note: Horizontal axis shows 8 minus Theil index so diversification increases from left to right.

**Figure 4. Polity2 index of democracy 1960-2012 and log per capita GNI 2016
(154 countries)**



Note: Horizontal axis shows Polity2 index of democracy.

In sum, economic diversification and democracy are both seen to be positively correlated with per capita GNI across countries. Other measures of economic and political diversification have been shown to produce similar results as those reported in Figures 3 and 4 (Gylfason 2017, 2018). These results suggest that an index of economic diversification may belong in cross-country growth regressions as a more broadly based replacement for various indicators of natural resource intensity currently in use. If so, we may have here a new reason to think that excessive dependence on natural resources, by reducing diversification and exposing the economic system to risk, can slow down economic growth over time as suggested by Sachs and Warner (1995) and others. If not well managed, i.e., if allowed to result in rampant rent seeking, repeated bouts of Dutch disease, and such, natural capital may, unlike other types of capital, undermine long-run economic growth. The same does not apply to human capital and social capital to which we now turn.

3. Transparency, rule of law, and trust

Transparency is an important ingredient of social capital, understood here to constitute the adhesive that holds society together and enables it to prosper through solid arrangements and institutions that are governed by the rule of law and enjoy well-

earned popular trust. By weakening social capital, a lack of transparency can undermine social cohesion, democracy, and growth. Louis Brandeis, U. S. Supreme Court Justice 1916-1939, understood this. He said: “Publicity is justly commended as a remedy for social and industrial diseases. Sunlight is said to be the best of disinfectants; electric light the most efficient policeman.”

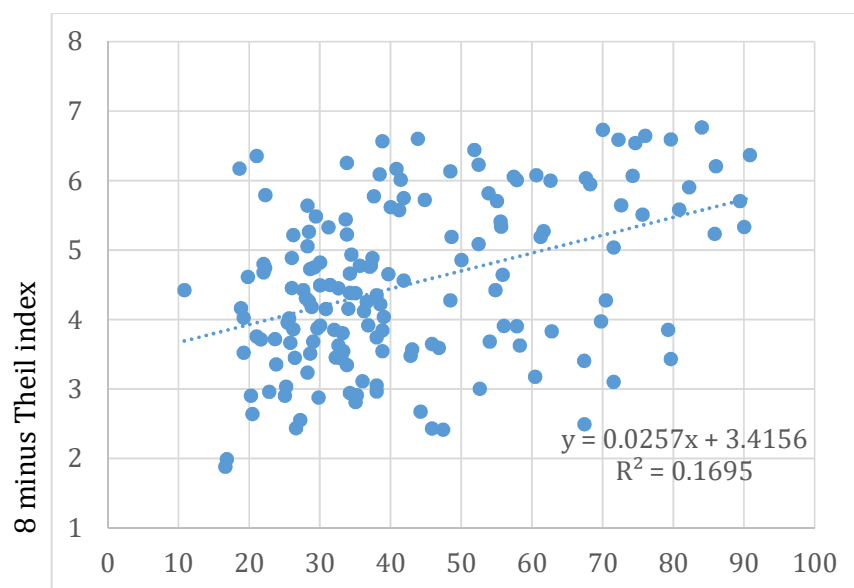
No independent statistical measure of transparency exists yet. Even so, the Corruption Perceptions Index (CPI) from Transparency International may come close. By construction, the CPI varies inversely with corruption. We can, therefore, as a first approximation, define transparency as

$$\text{Transparency} = \text{Corruption Perceptions Index.}$$

How does transparency, thus assessed, vary with economic and political diversification? Figures 5 and 6 show how.

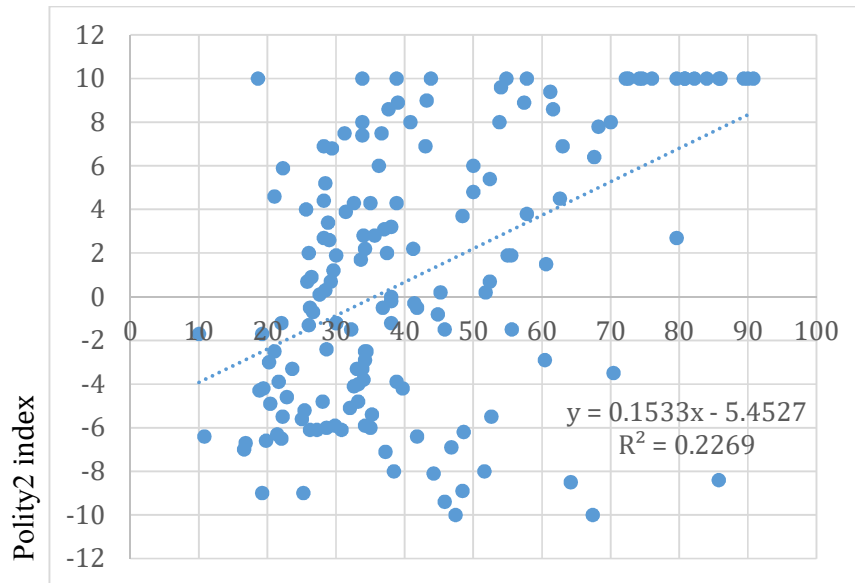
Figure 5 shows how average transparency for the years 2012-2016 and economic diversification as measured in Figures 2 and 3 go together across countries. The correlation between the two is 0.41. The estimated slope of the regression line suggests that an increase in the CPI by 20 points goes along with an increase in economic diversification equivalent to 0.5 points or 10% of the scale from 2 to 7 in the figure.

Figure 5. Transparency index 2012-2016 and Theil index of export diversification 1962-2010 (159 countries)



Note: Horizontal axis shows Transparency index.

Figure 6. Transparency index 2012-2016 and Polity2 index of democracy 1960-2012 (158 countries)



Note: Horizontal axis shows Transparency index.

Figure 6 shows how transparency and democracy go together. The correlation between the two is 0.48. The estimated slope of the regression line suggests that an increase in the CPI by 20 points goes along with an increase in political diversification equivalent to 3 points or 15% of the scale from -10 to +10 in the figure.

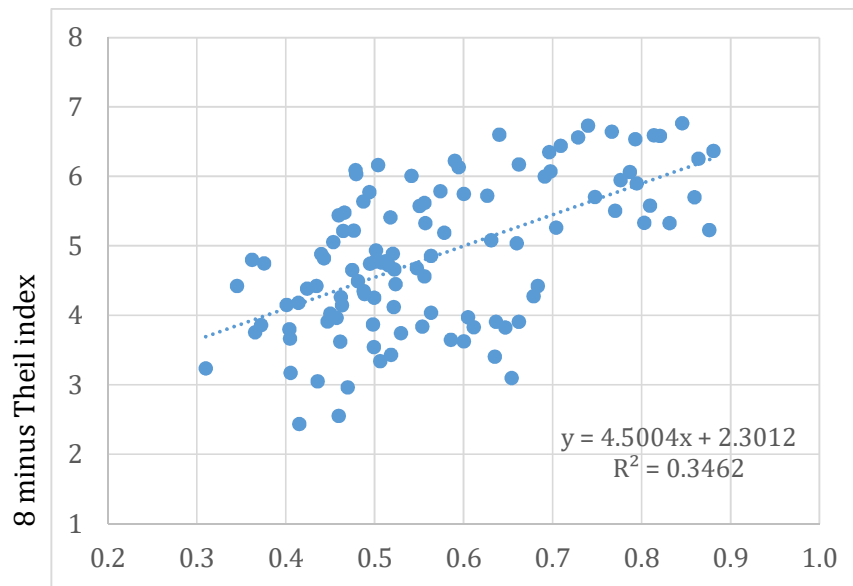
In sum, Figures 5 and 6 can be taken to give an indication that transparency stands in the way of political forces that pursue economic power concentration at the expense of diversified economic activity and pluralistic politics as suggested by Louis Brandeis.

The rule of law, like transparency, is an integral part of social capital. Weak rule of law can undermine democracy and growth as implied by the United National General Assembly in its Declaration adopted on 24 September 2012: "... human rights, the rule of law and democracy are interlinked and mutually reinforcing and ... they belong to the universal and indivisible core values and principles of the United Nations."

A new statistical measure of the rule of law has recently become available thanks to the World Justice Project (2018). The measure is based on expert opinion as well as public opinion. It is a composite index, reflecting various aspects of the rule of law, but it covers at this stage only the years from 2012 to date.

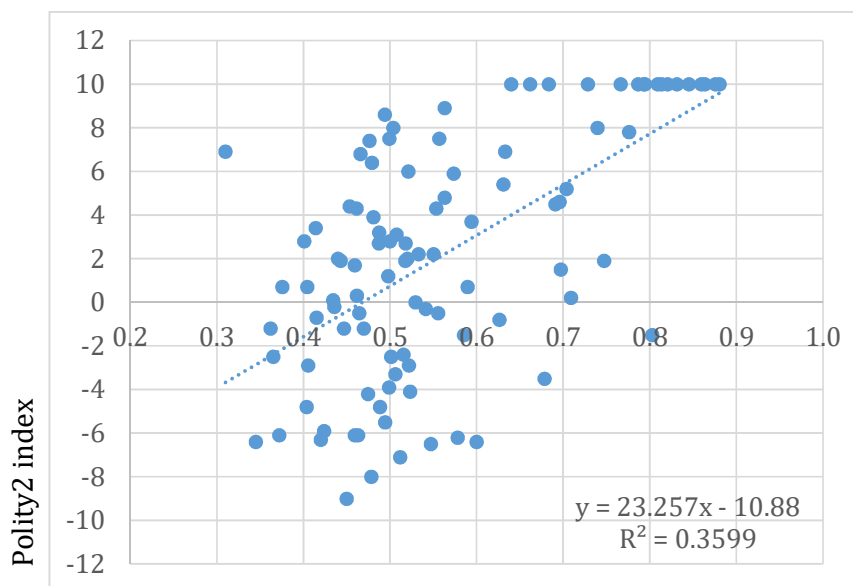
Figures 7 and 8 show the relationship between each type of diversification and the rule of law. In both figures, there is a clear tendency for the rule of law to go along with diversification. The correlations are 0.59 and 0.60.

Figure 7. Rule of law index 2012-2018 and Theil index of export diversification 1962-2010 (110 countries)



Note: Horizontal axis shows Rule of law index.

Figure 8. Rule of law index 2012-2018 and Polity2 index of democracy 1960-2012 (151 countries)

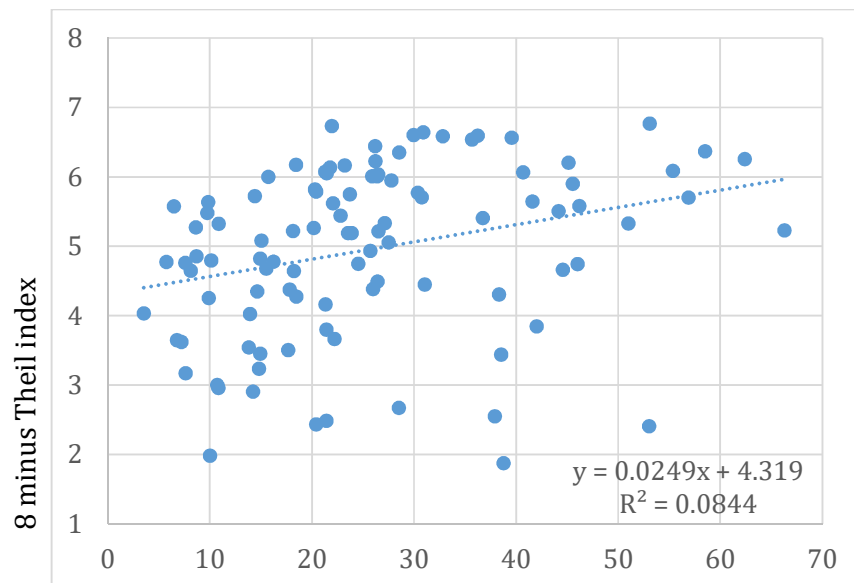


Note: Horizontal axis shows Rule of law index.

Trust is yet another part of social capital. Lack of trust can undermine social cohesion, democracy, and growth. Putnam (2000) documents many different signs of declining trust in the United States and so does the World Values Survey (2014) as do regular reports from various management consulting firms. Gallup’s (2018) opinion polls have charted the erosion of public confidence in societal institutions in the United States and elsewhere. For example, the polls show that

- Trust in the U. S. Congress decreased from 42% in 1972 to 12% in 2017.
- Trust in the U. S. presidency decreased from 52% in 1975 to 32% in 2017.
- Trust in OECD banks decreased from 55% in 2007 to 46% in 2015.

Figure 9. Trust index 1981-2014 and Theil index of export diversification 1962-2010 (100 countries)

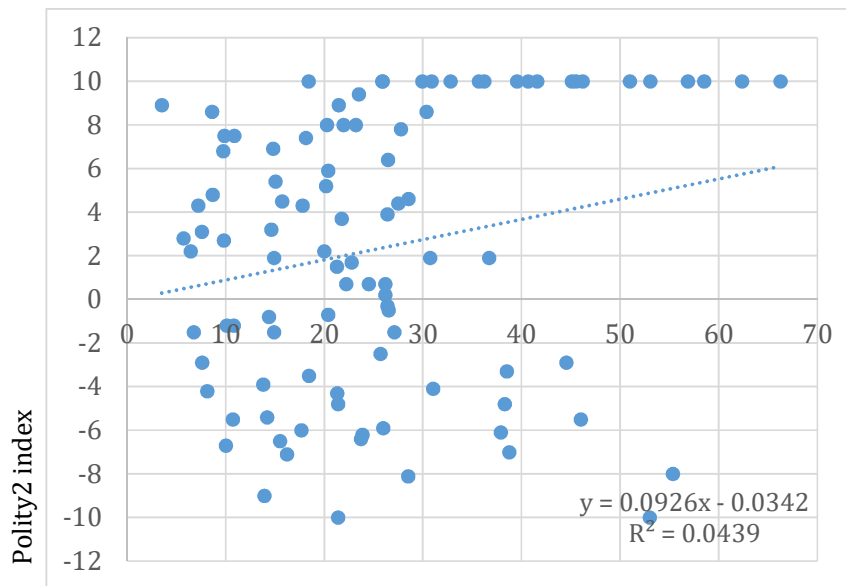


Note: Horizontal axis shows Trust index.

Figures 9 and 10 show the relationship between economic and political diversification on the one hand and trust on the other. The trust index is taken from the World Values Survey (2014) that has gauged various aspects of trust in six waves 1981-2014, both trust in institutions (see examples above) and interpersonal trust, which is assessed on the basis of how respondents report their interaction with other people. Some express the sentiment that “Most people can be trusted.” Others are more apprehensive, figuring that they “Need to be very careful” in their dealings with other people. Figures 9 and 10 show that while trust varies directly with both types of diversification, the correlations

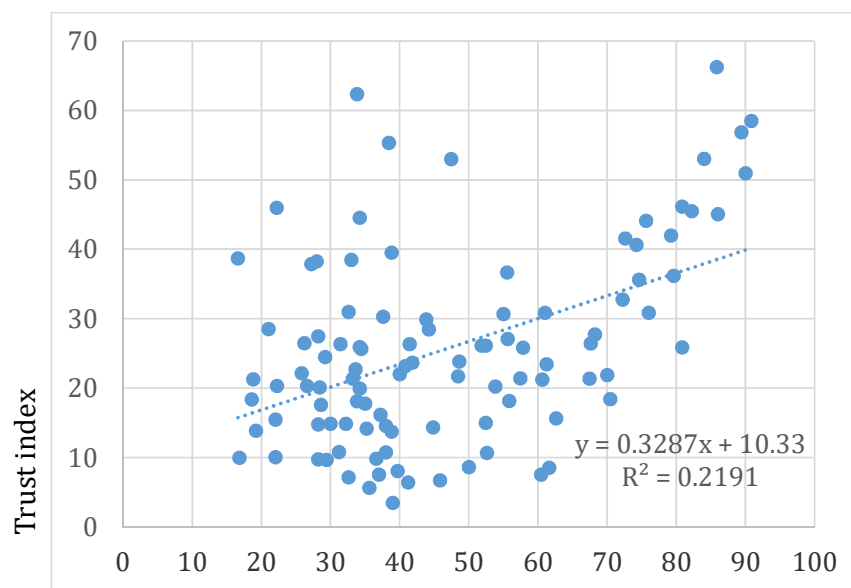
are weaker than before, 0.29 in Figure 9 and 0.21 in Figure 10. Even so, the slopes of both regression lines are statistically significant with $t = 3.0$ and $t = 2.1$ in Figures 9 and 10, respectively.

Figure 10. Trust index 1981-2014 and Polity2 index of democracy 1960-2012 (98 countries)



Note: Horizontal axis shows Trust index.

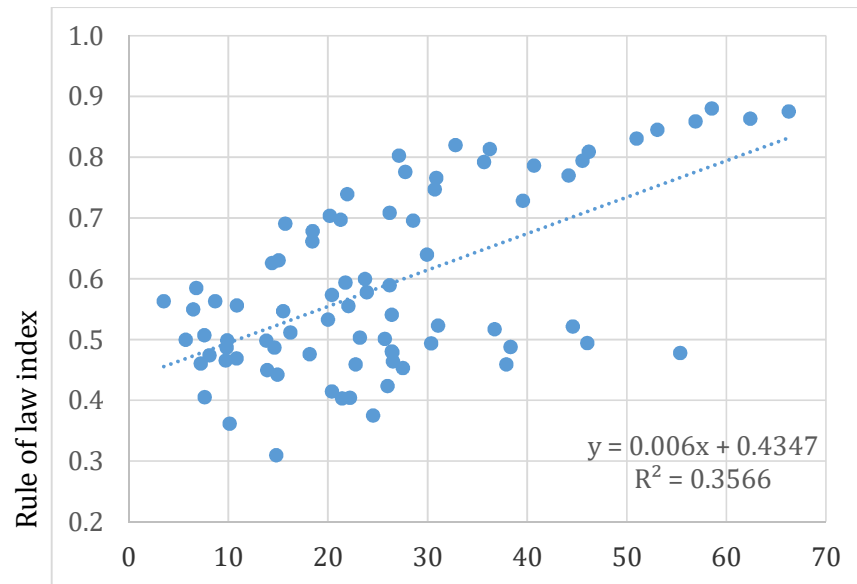
Figure 11. Transparency index 2012-2016 and Trust index 1981-2014 (98 countries)



Note: Horizontal axis shows Transparency index.

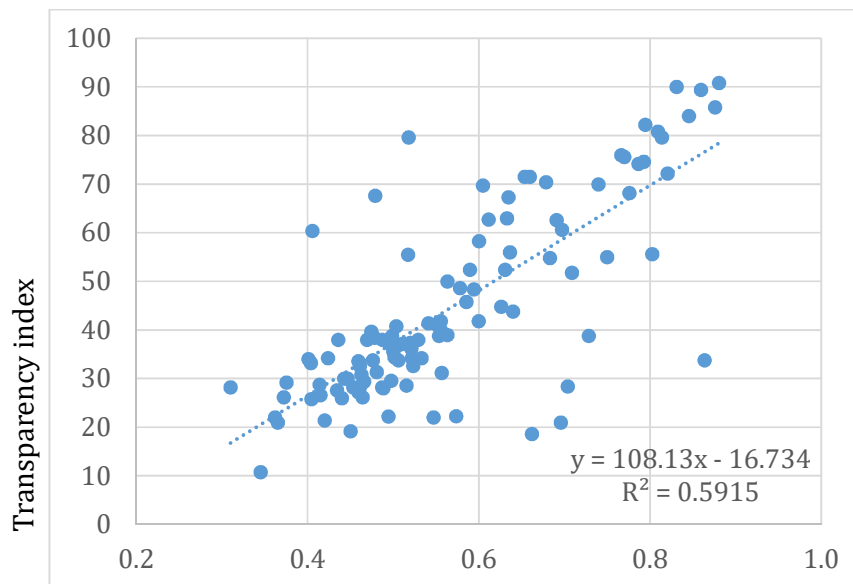
Are transparency, trust, and the rule of law related? Figure 11 suggests that trust inspires transparency, and vice versa. The cross-country correlation is 0.47.

Figure 12. Trust index 1981-2014 and Rule of law index 1981-2014 (80 countries)



Note: Horizontal axis shows Trust index.

Figure 13. Rule of law index 2012-2018 and Transparency index 2012-2016 (80 countries)



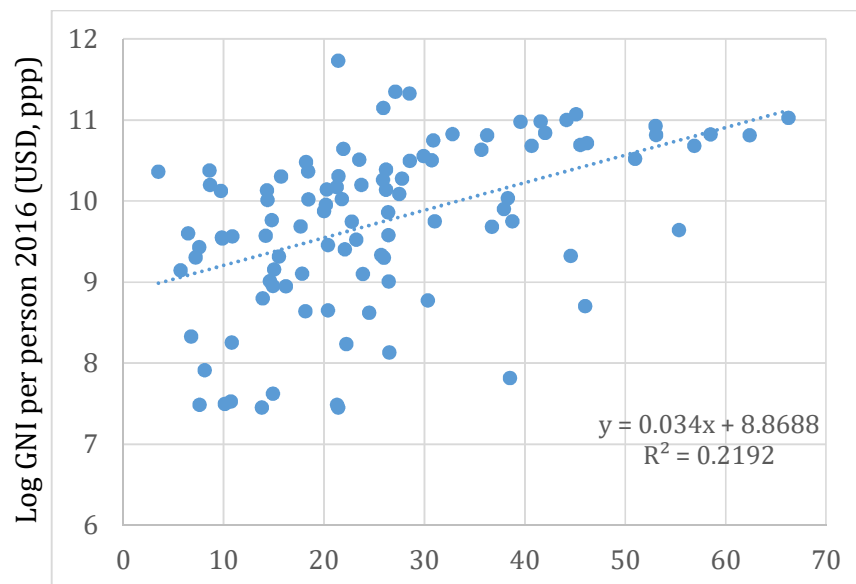
Note: Horizontal axis shows Rule of law index.

Figure 12 suggests a correlation of 0.60 between trust and the rule of law. A strong rule of law inspires trust. A lack of trust corrodes the rule of law. Similarly, Figure 13 suggests a correlation of 0.77 between the rule of law and transparency.

To summarize, we have seen in this section that three important pillars of social capital – transparency, rule of law, and trust – vary directly with export diversification and democracy across countries as well as with one another. The next question is whether each of these three variables – transparency, rule of law, and trust – can be seen to vary systematically also with per capita GNI across countries. Figures 14, 15, and 16 suggest that they do. Figure 14 shows how trust and per capita income go together across countries. The correlation is 0.47. In Figure 15, the correlation between the rule of law index and per capita income is 0.73. In Figure 16, the correlation between transparency and per capita GNI is 0.60. Each of these pillars of social capital varies strongly with per capita income across countries just as each of them was earlier seen to vary directly with export diversification and democracy. Thus far, everything hangs together.

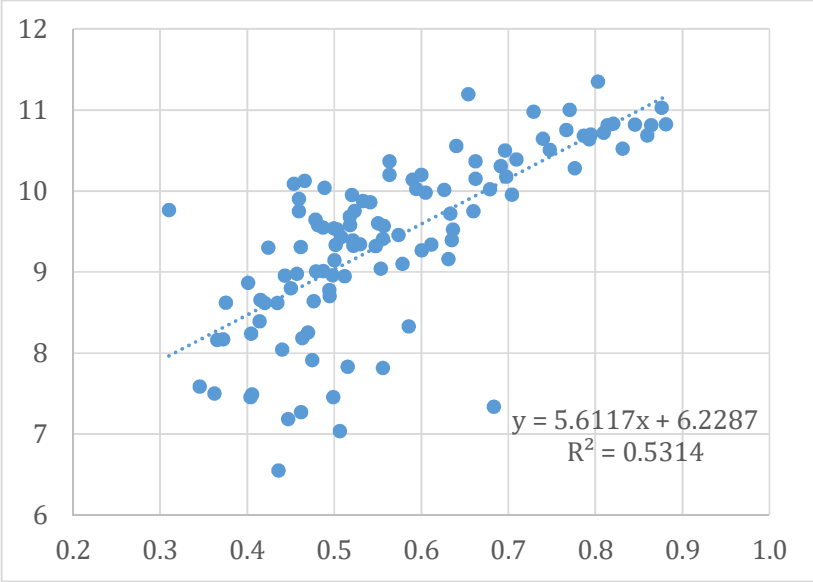
In the next section we ask whether yet another pillar of social capital, equality, fits the general pattern described here.

**Figure 14. Trust index 1981-2014 and log per capita GNI 2016
(102 countries)**



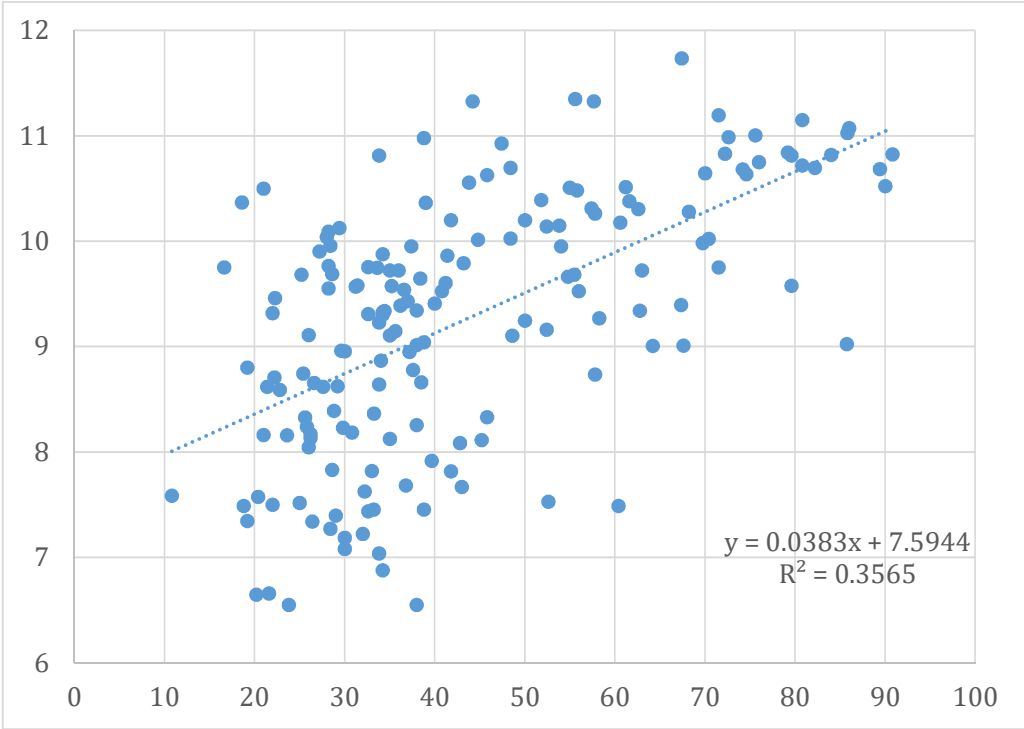
Note: Horizontal axis shows Trust index.

**Figure 15. Rule of law index 1981-2014 and log per capita GNI 2016
(111 countries)**



Note: Horizontal axis shows Rule of law index.

**Figure 16. Transparency index 1981-2014 and log per capita GNI 2016
(169 countries)**



Note: Horizontal axis shows Transparency index.

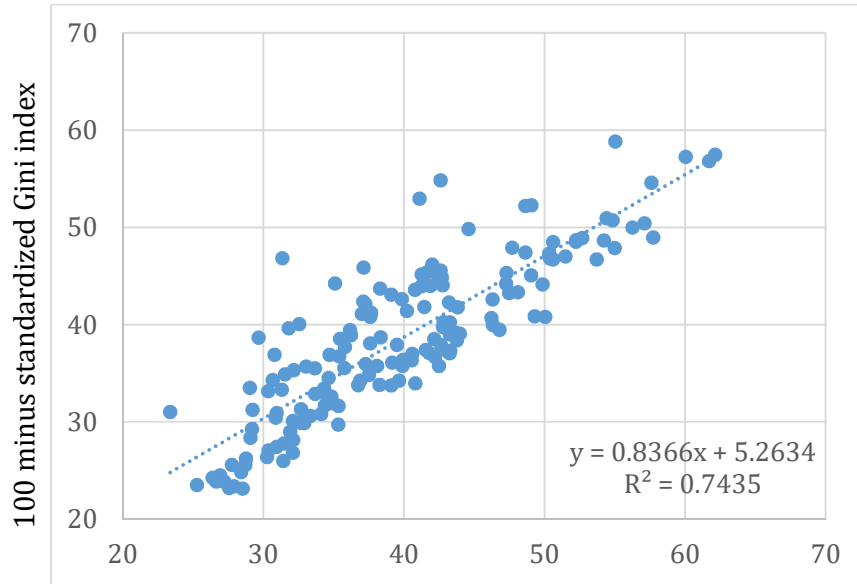
4. From equality to democracy and growth

To cite him again, U. S. Supreme Court Justice Louis Brandeis said: “We can have democracy in this country, or we can have great wealth concentrated in the hands of a few, but we can't have both.” In his time, inequality was a matter of public debate as it has now become again, since about 1980. As mentioned in Section 1, the top 1% of households saw its share in total pre-tax income rise from 8% in 1980 to 12% in Europe and to 20% in United States in 2015 as in Russia. Further, the top 1% of households saw its share of total net personal wealth rise from 20% in 1980-1990 to 40% in 2015 in both Europe and the United States as in Russia (World Inequality Database 2018).⁵ In Italy, the pre-tax share of the top 1% of households in national income rose from 6% in 1983 to 10% in 2008. Corresponding data on the distribution of wealth in Italy are not available. In France, for comparison, the pre-tax share of the top 1% of households in national income rose from 8% in 1983 to 12% in 2008 while the pre-tax share of the top 1% of households in total net personal wealth rose from 16% to 22%. English-speaking countries (United States, United Kingdom, Canada, Australia, and Ireland) have seen a greater resurgence of inequality since 1980 than continental European countries and Japan. The English-speaking countries have experienced a return to the inequality of the 1920s, with the top 1% receiving 10% (Australia, Ireland) to 20% (United States) of national income. By contrast, European countries and Japan have seen a reduction in the share of national income accruing to the top 1% of households from 15% to 25% in the 1920s to anywhere from 6% (Denmark, the Netherlands) to 11% (France, Japan) in recent years. Zucman (2013, 2015) explains why personal wealth hidden in tax havens, estimated at 6% of world output in 2008, throws doubt on the accuracy of official estimates of economic inequality.

Be that as it may, but how do such shifts in economic inequality interact with other ingredients of social capital? We measure income inequality in two ways: by the World Bank Gini index and by the Gini index taken from The Standardized World Income Inequality Database (SWIID). The World Bank data cover the years 1979-2016 at most, usually much shorter periods, and they offer only a few scattered data points for each country. The SWIID is more comprehensive, contains more countries and years, 1962-2017, and has fewer gaps. The correlation between the two series is 0.86 (Figure 17).

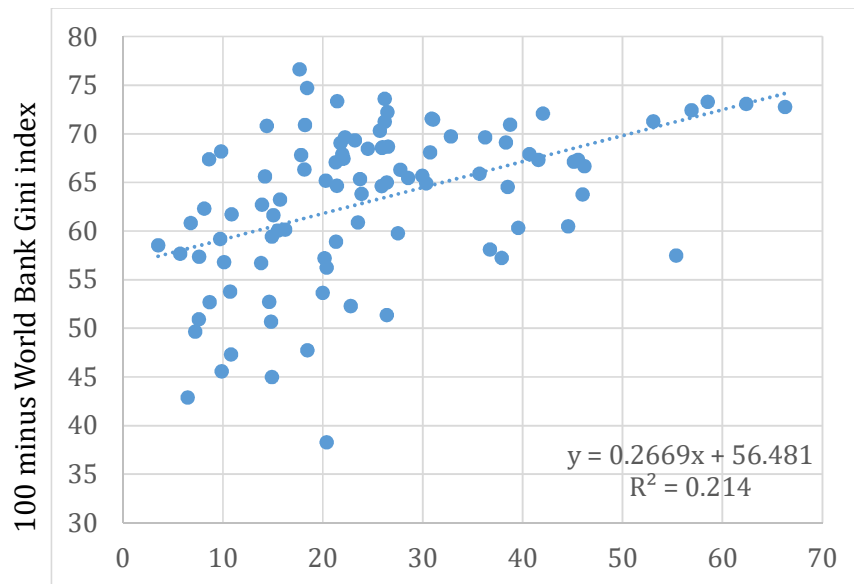
⁵ See also Global Wealth Report (2017).

Figure 17. Standardized Gini index 1962-2017 and World Bank Gini index 1979-2016 (163 countries)



Note: The variable on the horizontal axis is 100 minus World Bank Gini index. Equality rises upward along both axis.

Figure 18. Trust index 1981-2014 and World Bank Gini index of inequality 1979-2016 (95 countries)



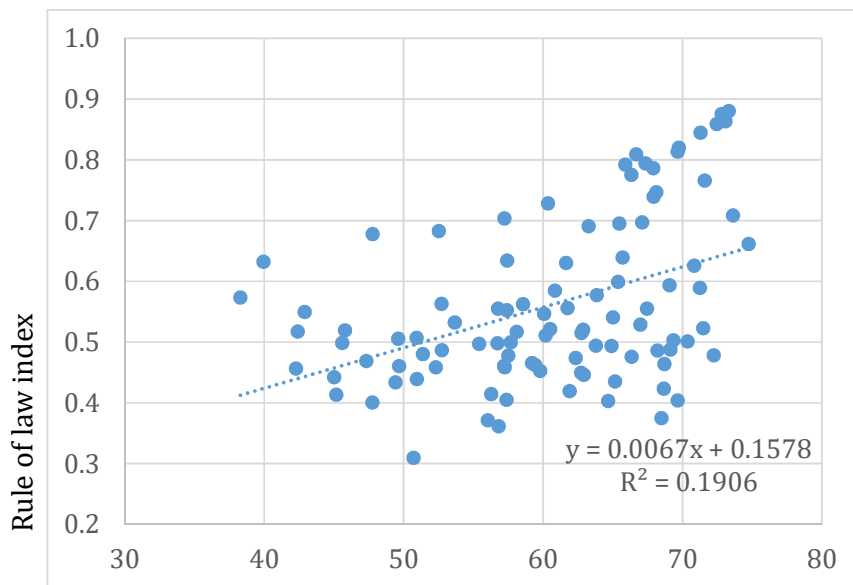
Note: Horizontal axis shows Trust index. Equality rises upward along vertical axis.

Let us begin by charting the cross-country relationship between trust as measured in Figures 9, 10, 12, and 14 and equality in the distribution of income as measured in

Figure 17 where the variable shown on both axes is 100 minus one or the other of the two Gini indices. This is done to have equality rise along the axes. In Figure 18, trust and equality are seen to go hand in hand from country to country. Equality inspires trust. Trust fosters equality. The correlation is 0.46. Essentially the same pattern emerges when Figure 18 is reproduced by using the standardized SWIID Gini index in lieu of the World Bank Gini index for a larger sample of 103 countries (not shown).

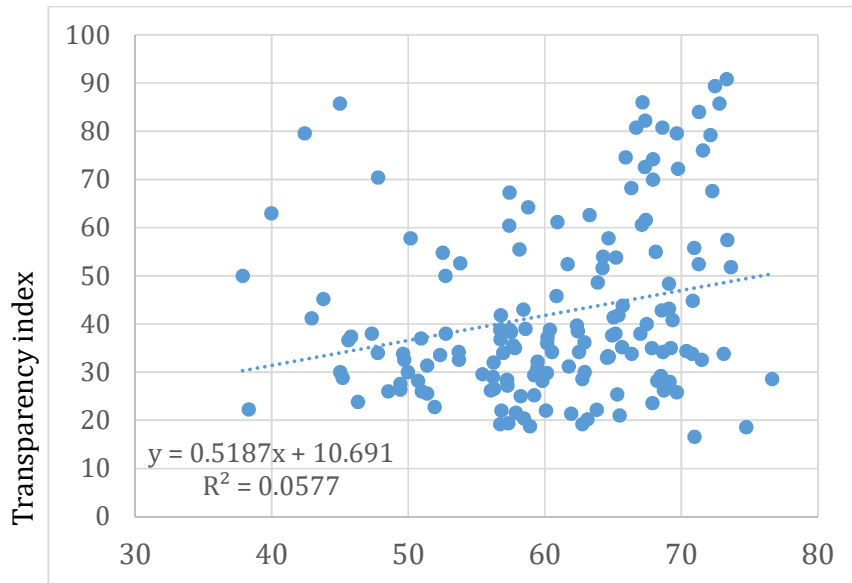
How does equality interact with the rule of law and transparency? Figure 19 shows the relationship between the rule of law as measured in Figures 7, 8, 12, 13, and 15 and equality as measured in Figure 18. The correlation between the two is 0.44. Figure 20 shows the relationship between transparency as measured in Figures 5, 6, 11, 13, and 16 and equality as measured in Figures 18 and 19. Even if the correlation between the two, 0.24, is weak, the slope of the regression line in Figure 20 is statistically significant ($t = 3.1$). Inequality undermines the rule of law as well as transparency, encouraging lawlessness and corruption, and vice versa. Weak rule of law empowers economic and political elites to expropriate privileges and wealth with impunity.

**Figure 19. World Bank Gini index 1979-2016 and Rule of law index 2012-2018
(100 countries)**



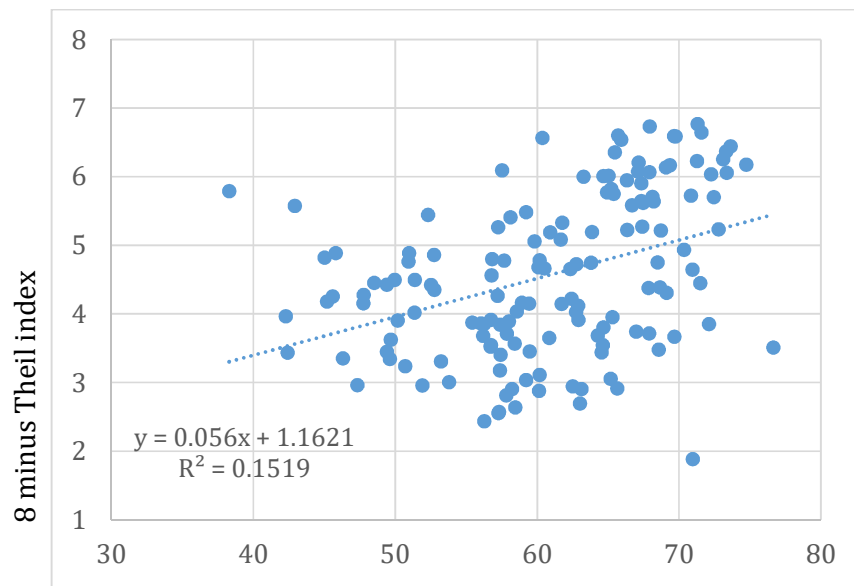
Note: Horizontal axes show 100 minus World Bank Gini. Equality rises from left to right.

**Figure 20. World Bank Gini index 1979-2016 and Transparency index 2012-2016
(155 countries)**



Note: Horizontal axes show 100 minus World Bank Gini. Equality rises from left to right.

**Figure 21. World Bank Gini index 1979-2016 and Theil index of export
diversification 1962-2010 (146 countries)**



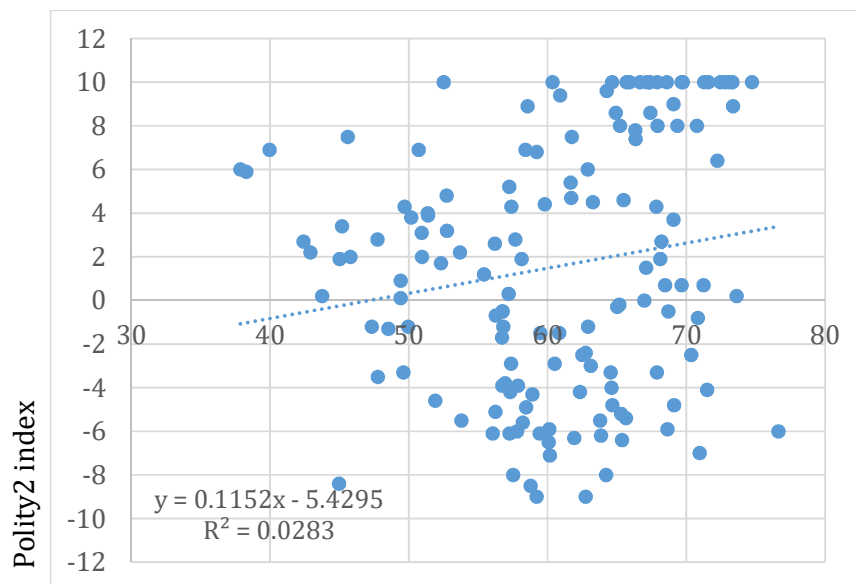
Note: Horizontal axis shows 100 minus World Bank Gini index. Equality rises from left to right.

Next we ask: How does equality interact with the two types of diversification? Figure 21 describes the cross-country relationship between equality and export diversification. Equality and economic diversification go together from country to country. The

correlation between the two is 0.39. Using the standardized SWIID index rather than the World Bank Gini index increases the sample size from 146 to 159 but leaves the cross-sectional pattern observed essentially unchanged (not shown).

The relationship between equality and democracy is weaker as shown in Figure 22 where the correlation between the two variables is 0.17. Using the standardized index rather than the World Bank index increases the sample size from 146 to 156 and the correlation from 0.17 to 0.22 but produces a similar pattern (not shown). Even if the correlation is weak, however, the slope of the regression line in Figure 22 is statistically significant ($t = 2.0$). In sum, the general pattern remains quite clear, by and large, even if some transmission channels appear more open than others. Several different components of social capital tend to move together in ways that reinforce its uplifting effect on economic growth.

Figure 22. World Bank Gini index 1979-2016 and Polity2 index of democracy 1960-2012 (146 countries)

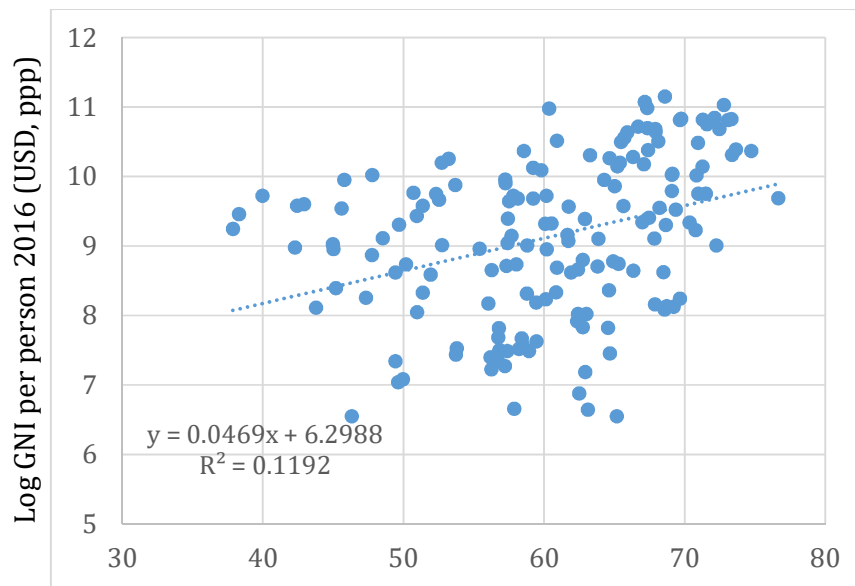


Note: Horizontal axis shows 100 minus World Bank Gini index. Equality rises from left to right.

At last we ask a key question: Does equality vary directly with economic growth? – taken to be represented here as before by the end-of-period level of per capita GNI. Figure 23 shows a positive relationship between income equality along the horizontal axis and the log of per capita GNI as in Figures 3, 4, and 14 along the vertical axis. The correlation between equality and income is 0.35. When the standardized SWIID Gini index is used in lieu of

the World Bank Gini index the sample size increases from 161 to 180 and the correlation decreases from 0.35 to 0.30 but the cross-sectional pattern observed remains essentially the same (not shown). This pattern accords broadly with the results of Berg and Ostry (2017) and Berg *et al.* (2018).⁶ Equality appears to be good for growth across the globe, partly perhaps because equality goes along with several other ingredients of social capital – democracy, transparency, trust, and the rule of law – that are also good for growth. Good things go together. Taken together, Figures 22 and 23 suggest that inequality undermines democracy and growth.

Figure 23. World Bank Gini index 1979-2016 and log per capita GNI 2016 (161 countries)



Note: Horizontal axis show 100 minus World Bank Gini index. Equality rises from left to right.

5. Conclusion

Where do we stand at the end of this brief bird’s-eye-type tour of international cross-sectional data on economic performance in conjunction with the interplay of different ingredients of social capital? We have seen statistically and economically significant bivariate cross-country relationships between the variables shown in Figure 1, pair by pair. Specifically, we have seen that

⁶ See also Alesina and Rodrik (1994), Persson and Tabellini (1994), and Gylfason and Zoega (2003). For a survey of the literature on inequality in macroeconomics, see Rios-Rull and Quadrini (2015).

- Economic diversification as measured by the IMF and political diversification through fortified democracy as measured by the Polity IV Project at the University of Maryland go together across countries (Figure 2);
- Both economic and political diversification are positively correlated with per capita GNI across countries (Figures 3 and 4);
- Transparency as measured by the Corruption Perceptions Index from Transparency International goes along with economic and political diversification (Figures 5 and 6);
- The rule of law as assessed by the World Justice Project also goes along with economic and political diversification (Figures 7 and 8);
- Trust as measured by the World Values Survey goes along with economic and political diversification (Figures 9 and 10);
- Transparency, trust, and the rule of law are closely connected with one another from country to country (Figures 11, 12, and 13) and also with per capita GNI across countries (Figures 14, 15 and 16);
- Two different measures of income equality, one from the World Bank and the other from The Standardized World Income Inequality Database, are closely correlated and can be used interchangeably (Figure 17);
- Income equality is positively correlated with trust, the rule of law, and transparency (Figures 18, 19, and 20) and also with export diversification, democracy, and per capita GNI across countries (Figures 21, 22, and 23).

In sum, various aspects of social capital – democracy, transparency, rule of law, trust, and equality – have been shown to vary systematically and significantly with one another and with economic diversification as well as with per capita income.

These relationships matter to the modern world. A burgeoning political science literature now describes the United States as an oligarchy that systematically disrespects the will of the people (Page and Gilens 2017). Many Europeans and others also worry about recent political developments within the European Union, especially in Hungary and Poland in view of their governments’ advocacy of “illiberal democracy.” The grim lessons from the early 20th century remind us that increased inequality has undermined democracy before (Snyder 2018). More could hardly be at stake. Reasonable equality in the distribution of income, wealth, and health, the rule of law, democracy, pluralism, transparency, trust, and economic welfare underpinned by rapid

growth are not only desirable in themselves, each in its own right, but they also appear to hang together across countries through an intricate web of bivariate linkages.

Weakening one risks weakening the others. All of these different aspects of social capital are good for growth, as are saving, investment, education, and health care while natural resources can cut both ways. When so many different determinants of growth are closely correlated, however, the usefulness of multiple cross-country growth regressions may suffer due to multicollinearity.

References

- Acocella, Nicola, Giovanni Di Bartolomeo, and Patrizio Tirelli (2009). "The Macroeconomics of Social Pacts." *Journal of Economic Behavior and Organization* 72(1), October, 202–213.
- Alesina, Alberto, and Dani Rodrik (1994). "Distributive Politics and Economic Growth." *Quarterly Journal of Economics* 109, May, 165–190.
- Berg, Andrew, and Jonathan D. Ostry (2017). "Inequality and Unsustainable Growth: Two Sides of the Same Coin?" *IMF Economic Review* 65 (4), 792–815.
- Berg, Andrew, Jonathan D. Ostry, Charalambos G. Tsangarides, and Yorbol Yakhshilikov (2018). "Redistribution, Inequality, and Growth: New Evidence." *Journal of Economic Growth* 23 (3), September, 259–305.
- Campano, Fred, and Dominick Salvatore (2006). *Income Distribution*. New York: Oxford University Press.
- Card, David, Mas, Enrico Moretti, and Emmanuel Saez (2012). "Inequality at Work: The Effect of Peer Salaries on Job Satisfaction," *American Economic Review* 102 (6), 2981–3003.
- Case, Anne, and Angus Deaton (2017). "Mortality and Morbidity in the 21st Century." *Brookings Papers on Economic Activity* 1, 397–467.
- Deaton, Angus (2013). *The Great Escape: Health, Wealth, and the Origins of Inequality*. Princeton, N. J., and Oxford, England: Princeton University Press.
- Duesenberry, James S. (1949). *Income, Saving and the Theory of Consumer Behavior*. Cambridge, Massachusetts: Harvard University Press.
- Freedom House (2018). "Freedom in the World 2018, United States Profile." <https://freedomhouse.org/report/freedom-world/2016/united-states> and <https://freedomhouse.org/report/freedom-world/2018/united-states>, accessed 8 October 2018.
- Galbraith, James K. (2012). *Inequality and Instability: A Study of the World Economy Just Before the Great Crisis*. Oxford and New York: Oxford University Press.
- Gallup (2013). "Government Corruption Viewed as Pervasive Worldwide" by Jan Sonnenschein and Julie Ray. <http://www.gallup.com/poll/165476/government-corruption-viewed-pervasive-worldwide.aspx>, accessed 1 October 2018.

- Gallup (2018). "Confidence in Institutions."
<https://news.gallup.com/poll/1597/confidence-institutions.aspx>, accessed 1 October 2018.
- Global Wealth Report (2017). Credit Suisse Research Institute. <https://www.credit-suisse.com/corporate/en/articles/news-and-expertise/global-wealth-report-2017-201711.html>, accessed 24 April 2018.
- Gylfason, Thorvaldur, and Assar Lindbeck (1984a). "Competing Wage Claims, Cost Inflation, and Capacity Utilization." *European Economic Review* 24(1), February, 1–21.
- Gylfason, Thorvaldur, and Assar Lindbeck (1984b). "Union Rivalry and Wages: An Oligopolistic Approach." *Economica* 51(2), May, 129–139.
- Gylfason, Thorvaldur, and Gylfi Zoega (2003). "Inequality and Economic Growth: Do Natural Resources Matter?" In Theo Eicher and Stephen Turnovsky (eds.), *Inequality and Growth: Theory and Policy Implications*. Cambridge, Massachusetts, and London: MIT Press.
- Gylfason, Thorvaldur, and Per M. Wijkman (2016). "Double Diversification with an Application to Iceland," in Mahroum, S., and Al-Saleh, Y. (eds.), *Economic Diversification Policies in Natural Resource Rich Economies*, Routledge, London and New York.
- Gylfason, Thorvaldur (2017). "From Double Diversification to Efficiency and Growth." *Comparative Economic Studies* 59, 149–168.
- Gylfason, Thorvaldur (2018). "Political Economy, Mr. Churchill, and Natural Resources." *Mineral Economics* 31, 23–34.
- Hidalgo, César A., and Ricardo Hausmann (2009). "The Building Blocks of Economic Complexity," in P. S. Dasgupta (ed.), *Proceedings of the National Academy of Sciences of the United States of America*, June 30, Vol. 106, No. 26, 10570–10575.
- Kaldor, Nicholas (1961). "Capital Accumulation and Economic Growth." In F. Lutz and D. C. Hague (eds.). *The Theory of Capital*, London: Macmillan.
- Levitsky, Steven, and Daniel Ziblatt (2018). *How Democracies Die*. New York: Crown.
- Milanovic, Branko (2005). *Worlds Apart: Measuring International and Global Inequality*. Princeton and Oxford: Princeton University Press.
- Milanovic, Branko (2016). *Global Inequality: A New Approach for the Age of Globalization*. Cambridge and London: Belknap Press of Harvard University Press.

- Mishel, Lawrence, and Jessica Schieder (2018). "CEO compensation surged in 2017." Economic Policy Institute, 16 August. <https://www.epi.org/publication/ceo-compensation-surged-in-2017/>
- Mounk, Yascha (2018), *The People V. Democracy: Why Our Freedom Is in Danger & How to Save It*. Cambridge, Massachusetts, and London, England: Harvard University Press.
- Page, Benjamin I., and Martin Gilens (2017). *Democracy in America? What Has Gone Wrong and What We Can Do About It*. Chicago, Ill., and London, England: University of Chicago Press.
- Persson, Torsten, and Guido Tabellini (1994). "Is Inequality Harmful for Growth?" *American Economic Review* 84 (3), June, 600–621.
- Piketty, Thomas (2014). *Capital in the Twenty-First Century*. Cambridge, Massachusetts: Harvard University Press.
- Polity IV Project, <http://www.systemicpeace.org/polityproject.html>, accessed 17 January 2019.
- Putnam, Robert D. (2000). *Bowling Alone*. New York: Simon and Schuster.
- Rajan, Raghuram G. (2011). *Fault Lines: How Hidden Fractures Still Threaten the World Economy*. Princeton, N. J., and Oxford, England: Princeton University Press.
- Rios-Rull, Victor, and Vincenzo Quadrini (2015). "Inequality in Macroeconomics." In Anthony B. Atkinson and François Bourguignon (eds.), *Handbook of Income Distribution* 2, 1229–1302. Amsterdam: Elsevier.
- Sachs, Jeffrey D., and Andrew M. Warner (1995, revised 1997, 1999). "Natural Resource Abundance and Economic Growth," NBER Working Paper 5398, Cambridge, Massachusetts.
- Snyder, Timothy (2018). *The Road to Unfreedom: Russia, Europe, America*. New York: Tim Duggan Books, Crown, Penguin Random House.
- Solt, Frederick. 2016. "The Standardized World Income Inequality Database." *Social Science Quarterly* 97(5):1267–1281. SWIID Version 6.2, March 2018. (2018-03-23)
- Stiglitz, Joseph E. (2013). *The Price of Inequality: How Today's Divided Society Endangers Our Future*. New York and London: W. W. Norton and Company.
- Stiglitz, Joseph E. (2015). *The Great Divide: Unequal Societies and What We Can Do About Them*. New York and London: W. W. Norton and Company.

- Transparency International (2018). "Corruption Perceptions Index 2017."
https://www.transparency.org/news/feature/corruption_perceptions_index_2017,
accessed 8 October 2018.
- World Inequality Database (2018). "World Inequality Database." <https://wid.world/>,
accessed 13 January 2019.
- World Justice Project (2018). <https://worldjusticeproject.org/>, accessed 17 January
2019.
- World Values Survey (2014). "Interpersonal Trust."
[http://www.jdsurvey.net/jds/jdsurveyMaps.jsp?Idioma=I&SeccionTexto=0404&NOI
D=104](http://www.jdsurvey.net/jds/jdsurveyMaps.jsp?Idioma=I&SeccionTexto=0404&NOI
D=104), accessed 4 October 2018.
- Zucman, Gabriel (2013). "The Missing Wealth of Nations: Are Europe and the U.S. net
Debtors or net Creditors?" *Quarterly Journal of Economics*, 128 (3), August, 1321–
1364.
- Zucman, Gabriel (2015). *The Hidden Wealth of Nations: The Scourge of Tax Havens*.
Chicago, Ill., and London, England: University of Chicago Press.