The Impact of Social Inequality on Economic Development

An International Macroeconomic Panel Data Analysis

Felix Bader, Diploma Thesis, Prof. Norman Braun, PhD, Ludwig-Maximilians-Universität (LMU) Munich

Does greater social inequality within a country promote or hinder its economic development?

Within the extensive debate on the impact of intra-national income inequality on economic growth a conclusion could not be reached. This is due to the broad range of samples and datasets, explanatory variables and – most importantly – statistical methods used in different studies.

Variables

- *Social inequality* in a country is approximated by the *income Gini* coefficient. Babones (2008) provides a standardized international dataset that is adjusted for differences in scope of coverage, income definition, and reference unit to a *nationally representative, gross income, household per capita* standard.
- *Economic development* as growth of the *real gross domestic product per capita* (GDP, chain index, from the Penn World Tables 6.3)

Adding inequality to a theoretical model of economic growth

Neoclassical growth model:	conditional convergence	level of economic development
New growth theory:	endogenous technology and productivity	stock of human capital
	imperfect competition, market distortions	relative price level of investments

Basic considerations

- The greater the inequality within a society, the smaller the middle class, the larger the numbers of relatively poor and relatively rich individuals.
- Credit markets are (more or less) imperfect everywhere.

Conclusion

There is no robust relationship – neither negative nor positive – between inequality and economic development. The widening of the income gap in many countries during the last decades might hurt the poor but most likely not economic performance in general. Arrangements intended to influence inequality often have economically and politically negative consequences. The result of this study does not support plans to boost economic performance by either reducing or sharpening income inequality.

Greater inequality could promote the economy by…

…increasing *incentives* to maximize one's productivity and invest in education.

- Hard to measure, *no data* in international context.

…giving (under imperfect credit markets) at least the rich the opportunity to *invest* in physical capital.

- Ratio to GDP of gross domestic investment

Greater inequality could hinder economic growth by…

…raising *public expenditure*: the economically underprivileged *median voter* democratically elects redistribution or special interest *pressure groups* in a less integrated society establish themselves.

- Ratio to GDP of public expenditure

…reducing private *consumption*: a solvent *middle class* is needed to unfold mass purchasing power.

- Ratio to GDP of private consumption

…diminishing under *imperfect credit markets* and/or *social barriers* to education the average individual's capacity to invest in *human capital*.

- Flow of human capital *investments* as the educational level (average years of secondary schooling) of the present cohort of young adults compared to the previous cohort

…accelerated *population growth*: The greater the inequality in a society, the higher the rate of relatively poor individuals. Individual poverty raises the relative usefulness of *child labor* and *old-age support* by one's offspring and reduces the *opportunity costs* of rising (many) children.

- Rate of population growth
- Quantity versus quality of children: strengthens the human capital channel.

…bringing *instability* and *market distortions*: Exclusion from opportunities in the official markets increases the individual's expected relative return of *criminal activities*, criminality reduces trust and the expected returns of legal investments; social polarization carries *social conflicts, unrests, revolutions, coups* or costly public actions to *prevent* or *suppress* uprisings; a less integrated society suffers from *corruption, lobbying, rent-seeking*: unprotected *property rights* and *distrust*.

- Number of revolutions and coups per year
- Relative price level of investments and black market premium as indicators of different forms of market distortions and instability
- Fortifies other channels that argue by (credit) market failure (investments, human capital, population growth): inequality *worsens* market distortions

The assumption of rationally deciding individuals is consistent with a positive, a negative or no relation between inequality and economic performance.

 For more information contact: felix_bader@gmx.de

Results

Testing these hypotheses with an international panel dataset of 95 countries from 1970 to 2007 shows:

In *cross section* (OLS, similar with Random Effects) the summed arguments on *negative* effects of inequality seem to be valid.

- Over the last 40 years countries with a lower (initial or mean) *level* of economic inequality were more stable, their inhabitants accumulated more human capital, their population grew slower and their economy tended to flourish.
- But the significance is *not robust* to the inclusion of *continent dummies*.

When instead focusing on the effect of *changes* in a country's inequality on that country's economic development in the periods after the change (first-difference GMM), all the evidence vanishes.

- 5-10 years after an *accentuation* of inequality that country's economy grows *faster* than before. Middle-income countries and countries with a minor initial inequality benefit significantly higher from a rise of inequality.
    - This makes a good case for assuming *unobserved country specific heterogeneity* as the source of the cross section result.
    - The result of a significantly negative economic effect of inequality presented by many studies using system GMM (e.g. Halter et al. 2010) can only be reproduced with unreliable data on inequality *and* way too many instruments.
    - The positive relation is *not* an effect of increased investments.
    - Controlling the other moderator variables does not effect that relation either; *none of these hypotheses has explanatory power*. These results make initial deliberations about motivation and incentives, which could not be tested empirically, attractive.

But the result of an economically *positive* impact of inequality is *not robust*, too:

- Instability and market distortions reduce growth, but are not systematically related to changes in inequality. A black market premium appears to be a strong indicator of various forms of instability. Controlling for *black market premium* the positive inequality effect on growth vanishes while the theoretical argument expected the opposite.
- The statistical significance also disappears when the states with the smallest population – *micro states* and *tax havens* may have special conditions of economic success – are excluded from the analysis.
- Halter et al. (2010) argue that the economically *negativ*e impact of inequality in the *long term* outbalances the *short term positive* effect. I could not find any support for that supposition and find it more likely to suspect unobserved heterogeneity. Longer time span effects of changes in inequality are hard to test because the tests rely on the assumption of *time-constant unobserved relevant country characteristics*. Institutional changes are one major problem of this analysis because larger changes in inequality presumably always happen in the context of *institutional changes* that also affect economic performance apart from an inequality effect. This can lead to artifacts, too. Correspondingly, when states that experienced major institutional changes like the countries of *Central and Eastern Europe* are excluded, the inequality effect in the remaining sample is not significant anymore.

Important Sources of Data:

Inequality:

Babones, Salvatore J. (2008): Standardized Income Inequality Data for Use in Cross-National Research. Sydney: University of Sydney, Department of Sociology & Social Policy. http://salvatorebabones.com/data-downloads.

Macroeconomic Data:

Heston, Alan; Summers, Robert and Aten, Bettina (2009): Penn World Table, Version 6.3. Philadelphia: University of Pennsylvania, Center for International Comparisons of Production, Income and Prices. http://pwt.econ.upenn.edu/php_site/pwt_index.php.

Education:

Barro, Robert J. and Lee, Jong-Wha (2010): A New Data Set of Educational Attainment in the World, 1950-2010. NBER Working Paper No. 15902. Cambridge, MA: National Bureau of Economic Research. http://www.barrolee.com/.

Important Literature:

Theoretical Overview:

Perotti, Roberto (1996): Growth, Income Distribution, and Democracy. What the Data Say. In: Journal of Economic Growth 1 (2): 149-187. (*One of the few other attempts to compare the validities of possible causal mechanisms.*)

Iradian, Garbis (2005): Inequality, Poverty, and Growth. Cross-Country Evidence. IMF Working Paper No. WP/05/28. Washington, DC: International Monetary Fund.

Voichovsky, Sarah (2009): Inequality and economic growth. In: Salverda, Wiemer; Nolan, Brian and Smeeding, Timothy M. (eds.): The Oxford Handbook of Economic Inequality. Oxford: Oxford University Press: 549-574. (*Besides a very systematic overview, her approach is to distinguish the effects of different parts of the inequality curve.*)

Statistical Methods:

Roodman, David (2006): How to Do xtabond2. An Introduction to "Difference" and "System" GMM in Stata. CGD Working Paper No. 103. Washington, DC: Center for Global Development. (*Methodical background and stata implementation of GMM-estimation*)

Halter, Daniel; Oechslin, Manuel and Zweimüller, Josef (2010): Inequality and Growth. The Neglected Time Dimension. Institute for Empirical Research in Economics Working Paper No. 507. Zurich: University of Zurich. (*An example study using system GMM*)

Forbes, Kristin J. (2000): A Reassessment of the Relationship between Inequality and Growth. In: American Economic Review 90 (4): 869-887. (*An example study using first-difference GMM and therefore focusing on the effects of changes*)

Other Projects of the Author:

Schichtspezifische Ungleichverteilung von und Folgen der Ausstattung mit Beziehungskapital bei Münchner Jugendlichen. Presentation at the 2nd Students' Sociology Conference, October 2009 in Munich. http://www.ssk2009.fachschaft.soziologie.uni-muenchen.de/ and http://videoonline.edu.lmu.de/node/384/. Edited volume forthcoming.

with Fischer, Daniel; Bonß, Wolfgang; Augustin, Thomas; Vogl, Dominikus and Pichlbauer, Michaela (2011 forthcoming, eds.): Uneindeutigkeit als Herausforderung. Risikokalkulation, Amtliche Statistik und die Modellierung des Sozialen. Munich: Universitätsverlag Neubiberg. http://www.unibw.de/soziologie/veranstaltungsreihe.