What policies and interventions have been strongly associated with changes in in-country income inequality?

Edward Anderson
Maren Duvendack
Lucio Esposito
Maria Ana Jalles d'Orey

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Introduction

- Motivation:

  - Inequality key issue in development for several decades

  - Inequalities observed in various dimensions: e.g. income, wealth, health, education, access to employment, etc. - within and between countries

  - This SR focuses in particular on income inequalities within countries

- Evidence on extent of income inequality within low and middle income countries increasingly available since the 1970s – no high quality datasets until 1990s at least

- Currently, no clear overall trend:

  - there are almost as many countries where income inequality is increasing as there are countries where it is decreasing

- Thus, clear demand from policy-makers for accurate, reliable and up-to-date evidence to understand which policies and interventions shape income inequality

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How is this SR different from others?

- Many international development SRs focus on

  - specific policies/ interventions (e.g. microcredit programmes, conditional cash transfers, school-feeding programmes, etc.); or

  - focus on a narrowly-defined set of policies/interventions defined by the sector of the intervention and/or by the specific purpose of the interventions (e.g. land property rights interventions for increasing productivity, Water, Sanitation and Hygiene interventions to combat childhood diarrhoea, etc.)

- This SR does not fall into these categories as it includes ***any*** government policy or intervention which has been shown to have had an impact on income inequality

- The policies/interventions that may affect income inequality are broad:

  - They include land reform; social policy; trade, industrial and agricultural policy; macroeconomic policy; government spending on education, health and infrastructure; taxes and transfers; etc.

Challenge

- The broad nature of this review gives rise to two main dangers.

  1. The amount of literature relevant to this SR will be too large, and not possible to review and synthesise adequately within the time available

  2. The range of policies and interventions covered by this SR will be too diverse, preventing meaningful and interesting comparisons of the effects of similar types of policies and interventions across different countries and contexts

- Hence, we initially map the relevant literature to identify sub-groups of interest for synthesis.

Objectives

- In a nutshell:
    - map the available evidence that seeks to understand the effects of government policies/interventions on income inequality in low & middle income countries;
    - establish whether any particular types of policies/interventions tend to reduce or increase income inequality, i.e. are there any consistent and generalisable findings across contexts and methods;
    - explain heterogeneity in the estimated effect of such policies/interventions, across countries, regions or over time ('structural' heterogeneity) or research methods ('method' heterogeneity);
    - understand underlying processes and mechanisms through which government policies/interventions affect income inequality

Inclusion criteria I

- **Participants:**

  Poor, lower and upper-middle income countries as defined by the World Bank

- **Intervention:**

  All government policies/interventions by any level of government including local, state and national

  What do we mean by government policies /interventions?

  → Intervention/'policy reform' is defined as a change in a variable that is directly controlled by the government, called a 'policy variable'. Directly controlled means the variable is determined by the government's own decision-making

  Examples of policy variables:

Policy variables (broad types)	Policy variables (examples)	Policy reforms (examples)
Tax and subsidy rates	The rate of VAT	A reduction in VAT
Transfers	Government spending on transfers	A new cash transfer programme
The supply of publicly-provided goods and services	Government spending on roads	An expanded road building programme
The price charged for publicly-provided goods and services	School tuition fees	The removal of school tuition fees
Official price floors and price ceilings	Official minimum wage	An increase in the minimum wage
Quantity restrictions and prohibitions	Restrictions on the use of child labour; anti-discrimination legislation	New legislation which bans the use of child labour

Inclusion criteria II

- **Comparison group:** Constructed through

  - *ex-post quasi-experimental approach* (involving comparisons of inequality across countries and over time, using panel data), or

  - *ex-ante simulation-based approach* (involving comparisons of observed level of inequality in a country before a particular intervention and the simulated level after the intervention).

  Unit of analysis may be the country as a whole, or a region or state within.

- **Outcomes:**

- Include any measure of inequality in income or consumption expenditure including:

  - *global measures*, i.e. measures capturing dispersion across the whole distribution and utilize all values of the underlying indicator (e.g. income). E.g. coefficient of variation, relative mean deviation, variance, Gini coefficient, Atkinson family of measures and Generalized Entropy class of measures (e.g. Theil index, mean log deviation);

  - *partial measures*, e.g. i) percentile ratios; ii) income shares; iii) income share ratios.

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Inclusion criteria III

- **Study designs:**

  A. ex-post quasi-experimental studies, e.g. cross-country econometric analysis

  B. ex-ante simulation studies, e.g. CGE modelling

  C. quantitative case studies using decomposition analysis

  D. qualitative case studies, which draw on primary data, e.g. focus group discussions, semi-structured interviews.

  E. Mixed methods (two or more of the above)
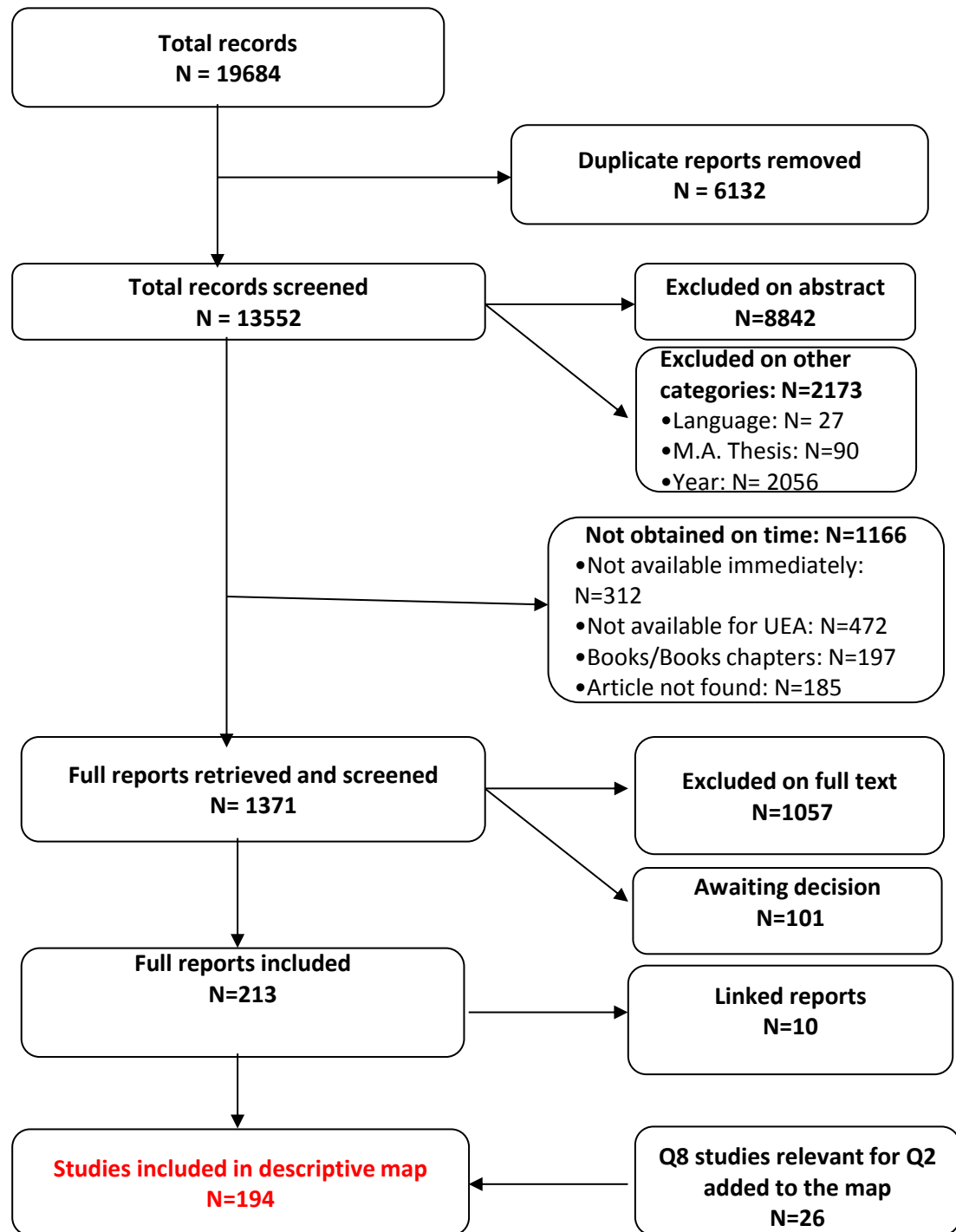
- **Timeframe:**

  – Restricted to studies published since 1990 because reliable, cross-country data on income inequality have only been available since the early 1990s. Thus any studies before this date would not meet basic requirements in terms of data quality.

- **Language:** English, Portuguese, and Spanish

- **Publication status:** Published and unpublished studies

Search results

- **19,684** records identified

- **13,552** records screened

- 8,842 records excluded based on title and abstract screening

- Further 2,173 records excluded due to language, year or MA thesis

- 1,166 records could not be obtained yet (ILLs required)

- This leaves **1,371** records which we screened by full text

- 1,057 excluded on full text screening: **213** left

- After further checking and screening, finally **194** papers included in mapping

Total records
N = 19684

Duplicate reports removed
N = 6132

Total records screened
N = 13552

Excluded on abstract
N=8842

Excluded on other categories: N=2173
- Language: N= 27
- M.A. Thesis: N=90
- Year: N= 2056

Not obtained on time: N=1166
- Not available immediately: N=312
- Not available for UEA: N=472
- Books/Books chapters: N=197
- Article not found: N=185

Full reports retrieved and screened
N= 1371

Excluded on full text
N=1057

Awaiting decision
N=101

Full reports included
N=213

Linked reports
N=10

Studies included in descriptive map
N=194

Q8 studies relevant for Q2 added to the map
N=26

Data extraction/mapping

- Mapping used to identify all of the evidence relevant to the review question and to identify sub-groups of interest for further synthesis

- Mapping based on key descriptive information:
  - the country (or countries) of focus
  - the type of policy/intervention
  - the method(s) used to assess the impact of the policy/intervention on income inequality

- 194 papers met our inclusion criteria and were included in the map

Mapping results

- Wide range of policies: fiscal policy (government tax and spending policies), trade policy (e.g. import tariffs, export quotas), macroeconomic policies (e.g. exchange rates, financial reforms, land reforms, labour market reforms, etc.)

Study design	Policy type Fiscal	Trade	Others	Total
A	61	14	16	**91**
B	57	20	8	**85**
C	26	0	0	**26**
D, E	0	0	1	**1**
Total	**144**	**34**	**25**	**203**

Nb: Adding up the number of studies for each policy type (144+34+25=203) exceeds the total number of studies (194) since some studies look at more than one type of policy.

Proposal: Restrict the synthesis to studies which focus on fiscal interventions across study design A and B

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Mapping: Study design A

- 79% are multi-country studies (remainder are single country studies)
- 92% report Gini coefficients as one of the outcome variables (multiple often reported)
- Largely panel data analysis and OLS adopted along with other econometric approaches

Included studies by analytical approach

Analytical approach	N
Dynamic panel: GMM estimations	16
Panel random or fixed effect estimations	27
Econometric approaches (IV/2SLS/3SLS/Heckman, PSM)	15
OLS/regression-based approaches	25
Others	8
Total	91

Mapping: Study design A

- 58% use government spending as a variable in their modelling approach

Included studies by type of policy:

	N
Fiscal policy	**61**
- Government spending welfare	28
- Government spending military	2
- Government spending any	23
- Tax related	8
Trade policy	**14**
- Import tariffs	2
- Sachs Warner Index	3
- Others	9
Others	**16**
- Financial reform	2
- Labour standards	2
- Others	12
TOTAL	**91**

Note: Some studies report a number of valid policy variables, the most prevalent one is reported here. Only one for each study is reported, we will provide more detail for the final report.

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Mapping: Study design B

- 85% are single-country studies

- 49% adopt CGE modelling, 49% fiscal incidence analysis

- 96% use the Gini coefficient as the main outcome variable, followed by the Theil index

- 63% use government spending as a variable in their modelling approach

- *Meta-analysis appears sensible for both study design A and B as a large enough sample of comparable studies is available*

- ***BUT:*** *We are not yet clear how to assess risk of bias of study design B studies or how to synthesise them through meta-analysis…. hence subsequent slides focus on study design A!*

Assessing methodological quality - Risk of bias tool I – Study design A

Potential risk of bias in quasi-experimental designs:

Research Design	Statistical Methods of Analysis		
	DID, PSM, IV, RDD	Multivariate (or bivariate with covariate means tests)	Tabulation
RCT	Low	Low	Low-Medium
Natural experiment	Low	Low	Low-Medium
Pipeline	Low- Medium	Medium-high	High
Panel	Low-Medium	Medium-high	High
Cross section	Low-Medium	High	High

Source: Adapted from Duvendack et al. (2011); requires further adaptation for this SR.

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Risk of bias tool II - Study design A

- Expectation based on mapping: Most study design A studies will be scored 4 for research design and 1 or 2 for analytical method, thus low-medium to medium-high risk of bias

- Some of study design A studies pursue cross-country regression approaches which have been criticised extensively, they are likely to be classified as medium to high risk of bias

- Jalilian and Kirkpatrick (2002:99) argue that such studies "cannot be used for causal inference"

- The Duvendack et al tool is not comprehensive, thus we complement it with the RoB tool developed by IDCG; it includes risks due selection bias and confounding, spill-overs/contamination, outcome and analysis reporting, etc.

Quantitative synthesis – Study design A

- We follow the meta-regression approach taken by Abdullah et al (2013) who examine the impact of education on income inequality

- We have a sufficient number of comparable studies, for them to be included in MRA they should:
  - have a comparable measure of income inequality as the dependent variable and government spending as well as tax related variables as explanatory variables (proxies for policies)
  - pursue a regression-based approach, we propose to estimate effect sizes using partial correlation measures following Aloe and Thompson (2013)
  - be published or unpublished

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Quantitative synthesis – Study design A

- Heterogeneity:

  - Explore quality aspect using subgroup analysis to tease out differential effects by risk of bias grouping

  - Explore potential heterogeneity among main explanatory variables (e.g. government spending and tax)

  - Explore heterogeneity in the estimated effect of policies/interventions across countries, regions or over time ('structural' heterogeneity)

- We intend to compare the synthesis results from the ex-post quasi-experimental studies (e.g. cross-country econometrics) with ex-ante simulation studies (e.g. CGE models)

  - E.g. Cicera et al (2011) include CGE models in their SR on the effects of trade liberalisation on employment and fiscal revenue. McCorriston et al (2013) and Hess and von Cramon-Taubadel (2008) are other relevant sources we will explore further (this is work in process!)

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Conclusion

- This SR is still very much work in process!

- We are keen to get feedback on:

  - Is a focus on fiscal policies and study design A and B sensible? – Still a discussion point with DFID.

  - Any thoughts on how best to deal with CGE models in terms of assessing their risk of bias and synthesising them?

  - Any comments on the RoB tool or MRA approach? Sensible?

  - Any other comments most welcome.

Thank you!

Contact:

Dr Maren Duvendack

School of International Development
University of East Anglia
Norwich NR4 7TJ

Email: m.duvendack@uea.ac.uk