Do internal conflicts impede shifts to manufacturing and technology transfer?

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Introduction

In the past few decades, many developing countries have become more open to international trade and financial markets, see **figure 1**. During this same period, internal conflicts in developing countries have become far more prevalent (Collier et al., 2003), see **figure 2**. Trade is an important avenue for growth:

- Jones and Romer (2010) explain that increased flows of goods, ideas, people and finance have increased the size of, and access to, the market for all consumers and producers.
- The belief that openness to international trade fosters growth is one of the most widely held in economics (Dollar and Kraay, 2004)
- Globalization has enhanced, rather than inhibited, the ability of developing countries integrate into the world economy and export performance is more important than ever in this increasingly integrated world (Lall, 2000).

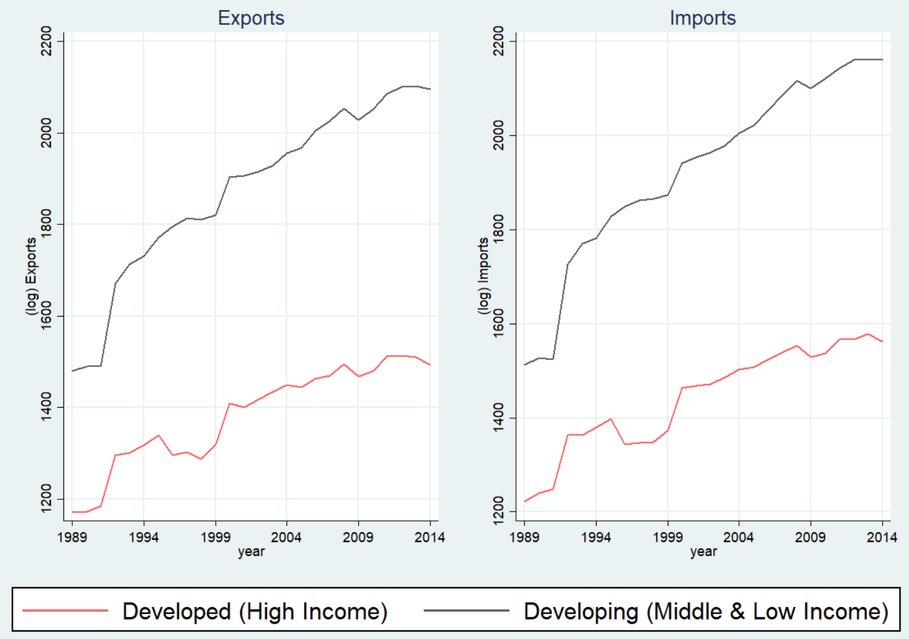
A shift to manufacturing, and access to higher technology imports, would reduce resource dependence, provide more jobs, improve human capital and enable higher growth for developing countries(Lall, 2000). These factors would also reduce the risk of conflict, but to what extent is conflict itself impeding this process?

The paper tests two hypotheses on the effect of conflicts on developing countries' export and import structures:

- H_1: *Internal conflicts impede a shift to manufacturing*
- H_2: *Internal conflicts reduce the willingness to send complex goods to the countries experiencing conflict.*

Trade

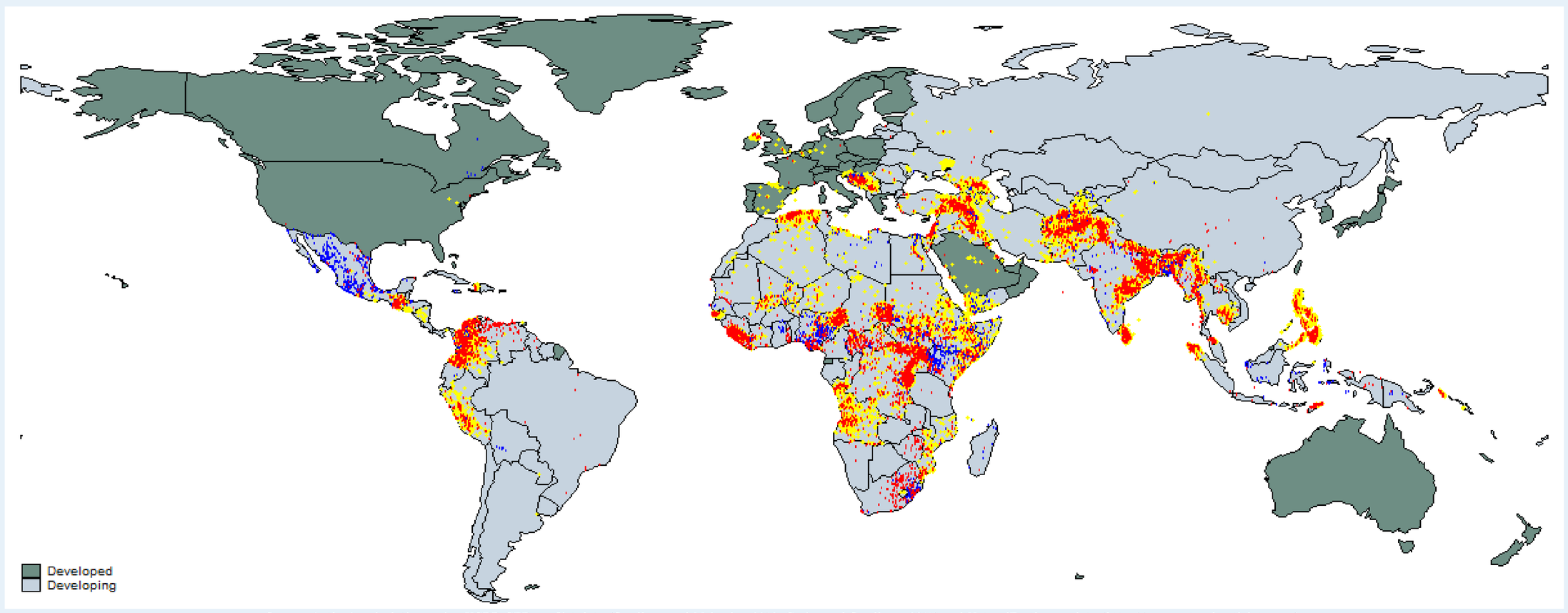
Figure 2: Exports and Imports 1989-2014



Source: Author's calculations using UN COMTRADE trade data (https://comtrade.un.org) and World Bank income classifications).

Conflict

Figure 1: Internal Conflicts 1989-2014, state conflict (yellow), non-state conflict (blue) and one-sided violence (red)



Source: Author's calculations using UCDP GED conflict data (Sundberg and Melander, 2013; Croicu and Sundberg, 2017) and NaturalEarth map data (http://www.naturalearthdata.com).

Data & Methodology

Two equations are estimated:

$$exports_{kit+1} = f(conflict_{jit}, X_{it}, openness_{t-1}) \quad (1)$$

$$imports_{kit+1} = f(conflict_{jit}, X_{it}, openness_{t-1}) \quad (2)$$

The equations express exports and imports as functions of conflict, openness and a vector of standard control variables, X. $k = 0, 1, ..., 5$ is the technological category of exports/imports, from Lall (2000). $j = 0, 1, 2, 3$ is the type of conflict.

- Data were assembled into a 25-year panel, from 1989-2014 and the equations were estimated for middle-, or low-income countries using both Ordinary Least Squares (OLS) with fixed effects and quantile regressions at the median.
- To help account for the endogeneity between trade and conflict, variables on the right-hand side are lagged by one period as is standard in the literature (Barbieri and Reuveny, 2005; Bayer and Rupert, 2004).

Results

Table 1: Effect of Conflict on Trade Structure

	Exports	Primary	RB Manu.	Low Tech.	Med. & High Tech.
Conflict (OLS)	-0.0387***	-0.0266**	0.0010	-0.0245	-0.0092
	(0.0114)	(0.0133)	(0.0171)	(0.0174)	(0.0187)
Conflicts (Quantile)	-0.0126	0.0539	-0.0702*	-0.0793	-0.0970*
	(0.0109)	(0.0816)	(0.0399)	(0.0725)	(0.0518)
	Imports	**Primary**	**RB Manu.**	**Low Tech.**	**Med. Tech.**	**High Tech.**
Conflict (OLS)	-0.0554***	-0.0410***	-0.0428***	-0.0619***	-0.0557***	-0.0534***
	(0.0103)	(0.0135)	(0.0117)	(0.0122)	(0.0114)	(0.0114)
Conflict (Quantile)	-0.0477***	-0.0898**	-0.0584***	-0.0950***	-0.0526***	-0.0454*
	(0.0154)	(0.0433)	(0.0179)	(0.0282)	(0.0123)	(0.0265)

All variables are in logarithmic form. Robust standard errors in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$.
All regressions employ Country and Year Fixed Effects. Other controls: GDP pc, population, education, polity & openness

Conclusion

The top half of **table 1** shows the results for the effect of internal conflicts on exports.

- Conflict has the expected negative sign and is significant.
- The effect is negative for all categories except for resource-based manufactures, but the effects tend to be insignificant.
- The quantile regressions show the effect is stronger for higher technology exports and the effects are (marginally) significant for resource-based and medium and high technology exports.

The bottom half of **table 1** shows the results for the effect of internal conflicts on imports.

- Conflict has a negative and highly significant effect for overall trade and all technological categories.
- This effect tends to increase with increasing levels of technology.
- The quantile regressions tell a similar story, although with slightly less significance overall.

In conclusion, the empirical results found support for both of the hypotheses, but in particular for the second. This suggests that conflicts are blocking two important avenues for development: industrialization and technology transfer. From a policy perspective, countries should prioritise achieving stability; a stable environment would then enable a shift to manufacturing and foster openness and growth Magee and Massoud (2011).