



# *WIDER Development Conference*

## Post-Conflict Returns to Education



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# Summary

- Education is a key post-conflict strategy
- Economic theory tells us that Education is an Investment and Returns to Education are the economic incentive for households to invest.
- This study is the first attempt to contribute to the theory on Returns to Education:
  - Effects of conflict on the returns to education produced by a post-conflict economy.

## **Consequences of conflict tested in this research:**

- Effect on Productivity: reduction in wages (due to reduced economic activity, enforced disabilities, weaker education...).
- Scarcity Effect: increase in wages (as an indirect effect of higher drop-outs and the need of the post-conflict economy to hire qualified local workers).
- This paper shows evidence of both effects, with dominance of the first.

# Outline

- Motivation
- Background
- Review
- Framework
- Data
- Strategy
- Results
- Conclusions

# Education in a Post-Conflict Setting

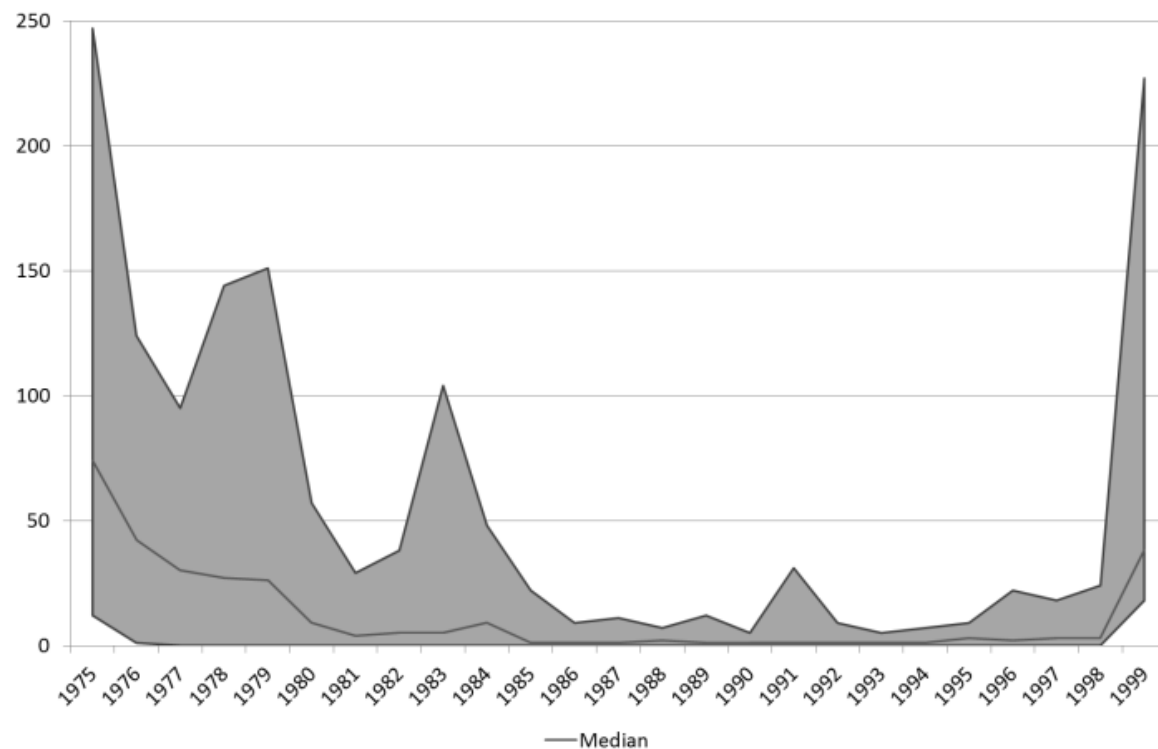
- Education is a key post-conflict strategy (UNESCO, Bensalah 2002):
  - It ‘helps meet the psychosocial needs of children and adolescents affected by conflict’,
  - It ‘provides a channel for conveying health and survival messages and for teaching new skills and values’
  - It ‘is vital to reconstruction of the economic basis of family, local and national life and for sustainable development and peace building’.

*“Timor-Leste also needs an aggressive program to develop jobs skills. Currently there is considerable unemployment among high-school graduates. Soon, however, there will be intense skill shortages, as government programs and investments expand in health, education, petroleum, agriculture, and other sectors”*

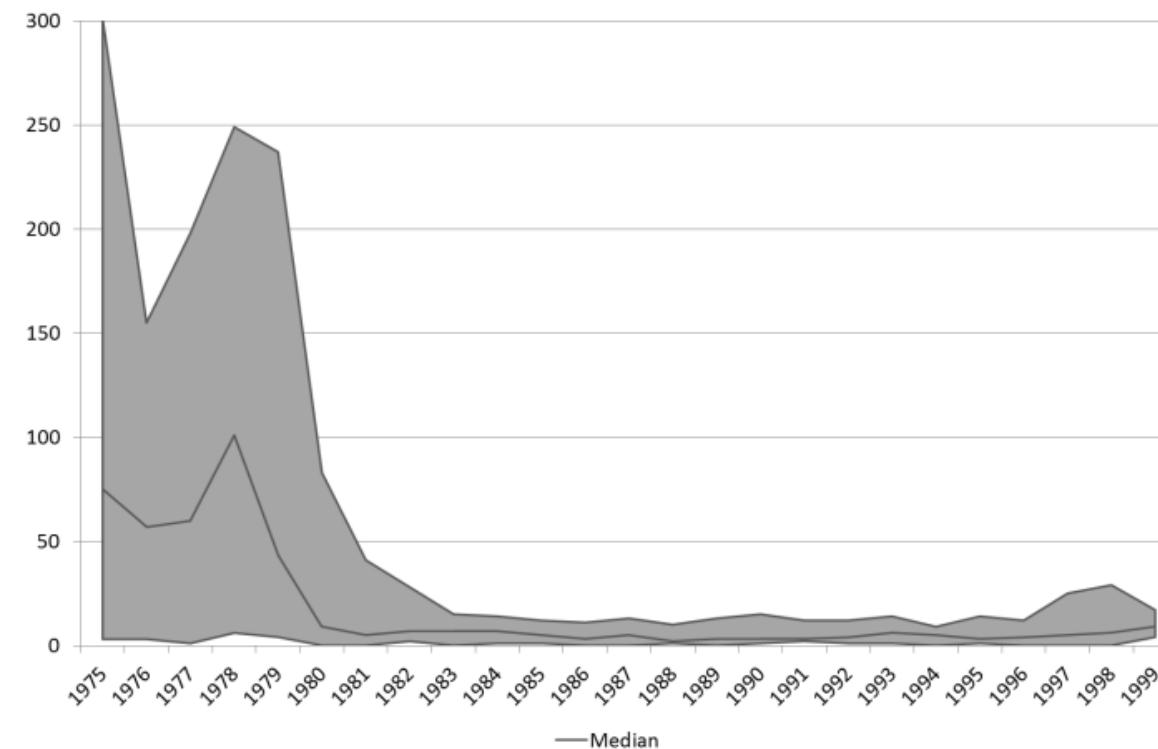
**Office of the Prime Minister (2010:14)**

# Violence during conflict

Timor-Leste in the World



Civilian killed in each district (maximum, median, minimum)  
in each year



Deaths due to hunger and illness in each district (maximum, median, minimum)  
in each year

Source: Author's calculations using CAVR (2006) data.

# Violence during conflict

	Gradient of the number of killings per district and year																															
	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03
Aileu																																
Ainaro																																
Baucau																																
Bobonaro																																
Covalima																																
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Manatuto																																
Manufahi																																
Oecussi																																
Viqueque																																

Source: Author's calculations using CAVR (2006) data.

# Returns to Education

- Originated from the works of Becker (1962) and Mincer (1958).
- The general notion is that Education gives a wage premium to those that enter the labour market with higher studies, when compared to those with less education.
- They allowed to demonstrate that individuals can take economic benefit from education and present a measurement of this benefit.
- They reinforce the narrative of education as an investment, the notion of human capital and of education as a necessary component of Human Development.

# Violence and Returns to Education

- Violence in conflict may impact the earnings :
  - Directly
  - Indirectly, via the Returns to Education
- Effects on In-conflict Decisions:
  - **Reduction of School Enrolment:** FitzGerald et al. (2001), Stewart et al. (2001), Blattman and Annan (2007), on Uganda, Shemyakina, (2006) on Tajikistan, Akresh and De Walque (2008), on Rwanda, Swee, (2009) on Bosnia and Verwimp and Van Bavel (2011:2–3) on Burundi, Leon (2012) on Peru, Justino, Leone and Salardi (2013) on Timor-Leste, Justino (2011) on secondary schooling.
  - **School Drop-out:** Evans and Miguel (2007) on Kenya – to replace adults, Ibáñez and Moya, (2006) – to contribute for household income, Rodriguez and Sanchez, (2009) – the reduction in life expectancy as a disincentive, Blattman and Annan (2007) and Annan et al. (2010) on Uganda – recruitment, Justino and Verwimp (2006) - targeting of highly educated.
  - **Disruption of Education Quality:** Cranna (1994).
- **Displacement** (with forced abandonment of assets): Chamarbagwala & Morán (2011), Ibáñez and Moya (2009).
- Effects on Post-conflict Settings:
  - **Economic Activity:** Bellows & Miguel (2009) – rebound, Bisogno & Chong (2002) and Stewart & Brown (2009:17) – negative, Cerra & Saxena (2008) – partial rebound, Addison & Murshed (2005) – favoured sectors, Justino & Verwimp (2006) – negative convergence.
  - **Productivity:** Collier & Duponche (2010) – forgotten skills, Ibáñez & Moya (2009) and Kondylis (2010) – devalued skills in new settings.



## Returns to Education and Education Demand

- Rodriguez and Sanches (2009) show that reduced demand for education in Colombia is caused by a ***reduction in the expected school premium*** caused by the conflict.
- Chamarbagwala and Morán (2011), looking at Mayan communities in Guatemala, suggest that, among other factors, ***decreased expectations of returns to education*** due to the conflict may have led households to reduce investment in education.
- Shemyakina (2006), finding that the school enrolment of girls was strongly reduced for those exposed to conflict, suggests one possible explanation to be a ***lower expected return on investment in education*** of girls residing in areas affected by conflict.

# Theoretical Hypothesis

- The study considers the impact of conflict-related violence as: the difference between the existing returns to education and those that might have prevailed if conflict had not occurred or particular forms of it hadn't manifested.

[For more details click here](#)

# Data used

## Datasets used:

- *World Bank Timor-Leste Survey of Living Standards 2006* : 4,477 households, 25,000 observations
- *Benetech-CAVR (2006)* data on Human Rights Violations: death (violent and by deprivation) and alleged disappearances, fatal violations and graveyard census

## Historical sources:

- CAVR (2005), Taylor (1990,1999), Mattoso (2005)

# Empirical Strategy

- The main model is a mincerian earnings/wage equation. Vars Model
- The empirical approach accounts for selection bias, using a Heckman selection model. Selection Other sources of bias
- The impacts of conflict are tested assuming the multidimensional expression of violence endured during the time of conflict:

Forms of Violence	Measure	When it was experienced
<ul style="list-style-type: none"> <li>• Killings</li> <li>• Hunger and Illness</li> <li>• Political dimensions</li> </ul>	<ul style="list-style-type: none"> <li>• Yearly exposure</li> <li>• Years of exposure to extreme violence</li> </ul>	<ul style="list-style-type: none"> <li>• During the lifetime</li> <li>• During school age</li> </ul>

- The robustness of the results is tested, confirming them. Robustness

# Results – Main Insights

- Average returns to education in Timor was estimated to be below 4% (at the lower bound of neighbouring countries).
- There are evidences of eventual credentialism (gains from having proof of finishing Graduate School or formal Vocational School).
- Decomposition of returns to education indicate that they only exist in particular sectors and employers: NGOs and Rural Project Works. They are not significant in Government jobs.
- There is evidence of the two channels of conflict at work:
  - Through (expected) productivity:  
*Direct reduction of returns to education for people that went to school in violence afflicted district.*
  - Through a scarcity effect:  
*A lump sum increase of earnings, independent of the years of education for people that went to school in violence afflicted districts.*
- These results are confirmed through a battery of robustness tests

# Key Conclusions

- The empirical evidence confirms the theoretical hypothesis
- The experience of conflict affects the economic incentives behind the investment in education, reducing them.

But...

- It is not all about the conflict.
- It is a lot about what happens in the post-conflict stage.
  - It is likely to change education choices.
  - Aid actors have an important role.



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Thank You!  
Obrigadu Barak!

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