

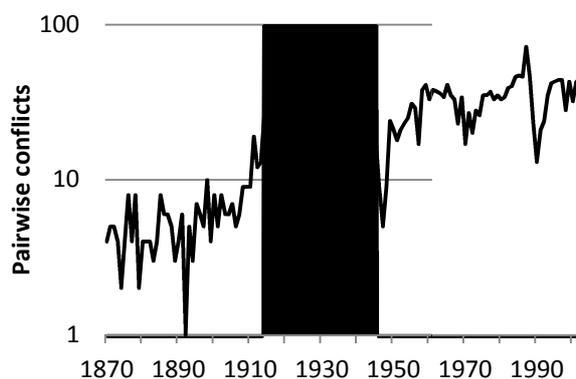
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The Cut-Price Wars

The number of military conflicts is increasing, and a key reason is that waging war has become cheaper than ever, according to research by **Mark Harrison** and **Nikolaus Wolf**.

In some respects the world is more peaceful today than it has been for many years. We tend to forget how much bloodier were the conflicts of the past. In World War II, for example, 300 U.S. troops were killed per day; this fell to 50 a day in Korea, 20 a day in Vietnam, and two a day in Iraq. Obviously, Americans are not the only people who die in wars, but American statistics vividly illustrate the trend.



Some other trends are less comforting. The end of the Cold War allowed hundreds of millions of people to dream more freely of national self-determination. But just at the moment when hundreds of millions of people believed that a more peaceful world was around the corner, wars and civil wars broke out in many parts of the world.

Our research was inspired by the discovery of a new and simple fact, illustrated in the chart at left. The number of conflicts between pairs of states around the world has been rising since 1870. “Pairwise conflicts” are measured by the number of pairs of countries in conflicts. Conflicts include everything from full-scale shooting wars and uses of military force to displays of force such as sending warships and closing borders. Because we look only at wars between states, civil wars are not counted.

Today, mass destruction can come out of a suitcase.

The number of conflicts has been rising on a stable trend; meaning there has been a significant tendency for the year-on-year increase of about 2 percent, a figure that has remained relatively constant over the whole period. Because of two world wars, the series is quite disturbed between 1914 and 1945. Remarkably, after 1945, the frequency of wars continued on the same upward path as before 1913.

Our research examines the causes of this 130-year trend. The number of pairwise conflicts is driven arithmetically by the probability that any one country will be drawn into conflict with another multiplied by the number of countries. Since 1945 the number of countries has risen dramatically – so much so that, over the whole period, the

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What Makes an Effective Teacher?

In the debate over whether traditional or modern teaching practices are better, research by **Victor Lavy** finds that effectiveness varies, depending on the gender, ability and background of the students.

The frantic effort to improve education ongoing in many countries often comes down to a quest to discover the essential characteristics of a good teacher. This has been an elusive pursuit to a degree, as research has delved into teacher characteristics and attributes that are difficult if not impossible to measure – among them, personality traits and personal beliefs.

My research aims to re-frame the debate over teacher quality by focusing strictly on what the teacher does in the classroom – that is, by evaluating teacher practices based on results as measured by student academic achievement. Of course, teaching styles and methods also are caught up in the education reform debate. Generally, advocates have veered between two opposing philosophies. In one camp are advocates of traditional teaching, a style that emphasizes an instilment of knowledge and memorization of facts. In the other camp are advocates of modern teaching, a style that emphasizes giving students improved analytical and critical-thinking skills.

This rivalry is playing itself out in the policy directives being issued to schools in various nations as they struggle to find ways to improve student achievement. In the United States, for example, the National Standards recommend modern teaching practices that engage students in self- and group-learning activities, and in

Israel, the Ministry of Education unveiled a reform in 2008 that shifted the emphasis of post-primary level schooling away from memorization and practice, and toward the development of critical thinking skills. By contrast, in 2010, UK Secretary of State for Education Michael Gove announced a reform to reintroduce an emphasis on traditional teaching and learning in schools.

Teachers should target their practices to benefit their customers.

My research examines these two broad methods, and some other aspects of the ways teachers conduct their classes, to see what was the most effective in improving student achievement. My insights are based on studies of students in Israel who were observed in 2002 while in fifth grade (primary school) and again in eighth grade (middle school). The students were tested in four subjects, English, Hebrew mathematics and science in both grades as a part of a national testing program.

Both traditional and modern teaching methods led to strong and impressive levels student achievement growth. At the same time, differing methods led to differing results, depending on the characteristics of the students.

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probability of any two countries being in conflict has not risen. That is, more pairs of countries have clashed because there have been more pairs.

This is not reassuring: it shows a close connection between wars and the creation of states and new borders. As the experiences of our two world wars suggest, you never know which little conflicts will suddenly snowball into much wider, more deadly struggles.

This somewhat alarming finding presents a puzzle. Much of what we think we know says this should not be happening. The countries of the world have tended to become richer, more democratic, and more interdependent. Much political science is built on the idea that the political leaders of richer, more democratic countries have fewer incentives to make war and are more constrained from doing so.

We do not think these ideas are wrong, but our findings suggest that they are incomplete. Without being certain of the answer, we think the focus has been too much on preferences for war (the “demand side”) and not enough on capabilities (the “supply side”).

Capabilities may be the missing factor in the story of the rising frequency of wars. We argue that the same factors that should have depressed the incentives for rulers to choose conflict are also increasing the capacity for war. Drawing on our own and others’ historical research, we reach four conclusions.

- First, productivity growth has cheapened destructive power to the point where mass destruction comes out of a suitcase. This process began in Europe and has been going on for more than half the past millennium.

- Second, the key to modern states’ acquisition of destructive power is the ability to tax and borrow more than ever before. Since the seventeenth century the growth of fiscal capacity has been revolutionized, first by the rule of law, and then by modern dictators.
- Third, war is disruptive of trade, but globalization has reduced the trade costs suffered by countries that wish to fight their neighbours.
- Fourth, globalization has reduced the fixed costs of statehood. As more ethnic minorities aspire to independence, they create more borders and more opportunities for conflict that in turn draw in more powerful trading partners and sponsors.

In other words, the very things that should make politicians less likely to want war – productivity growth, democracy, and trading opportunities – have also made war cheaper. We have more wars, not because we want them, but because we can.

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Traditional teaching’s effect was largest for two groups: girls and pupils from low socioeconomic backgrounds. The traditional emphasis on an instilment of knowledge was very effective for students who were below the median level of achievement, but its effects dropped sharply once this threshold had been surpassed.

Modern teaching also had a high payoff, with strong positive effects for both genders and students from both high and low socioeconomic backgrounds. The gains from emphasizing analytical skills were most pronounced among students from educated families. It was least effective for students in the lowest quartile of achievement.

Gender differences emerged in another respect. The practice of solving problems in class and teaching based on repetition of the material until most students attain comprehension improved the achievements of girls, but had no effect on boys.

Training teachers to use traditional and modern practices is a cost-effective way to improve teacher quality.

The findings of this study yield insights for the debate about the merit of traditional versus modern approaches to teaching, which are often discussed as rival classroom pedagogical approaches, but need not be. My findings may be the first to demonstrate that one approach need not crowd out the other, and that the two can coexist in the classroom. Indeed, the outcomes suggest that teachers would be best off learning to target styles to certain relevant customers and also to mix the two pedagogical techniques in the classroom.

The results of this research are strong and consistent. If the proportion of classroom teachers using traditional

methods increases from the mean to the maximum observed, the average test score in each subject increases by 4 points relative to the average of 63. For modern teaching the gain is 3.75 points.

These findings have important policy implications, with so many countries searching for ways to improve teacher quality, and, in turn, student achievement. Using a certain style of teaching is a relatively inexpensive way to enhance student achievement as compared with other interventions. The effects estimated from relying on these teaching styles are impressive, especially relative to the effect sizes of other, more costly interventions on the school reform menu, such as reducing class size and increasing school hours of instruction, or providing teachers with increased financial incentives.

Of course, teacher training would be required, but the cost ought to be minimal because education systems around the world routinely engage in on-the-job training of this kind. Therefore, re-directing the syllabus relating to enhancement of teachers’ human capital toward training in competent techniques emphasizing the “instilment of knowledge and enhancement of comprehension” and “instilment of analytical and critical skills” should be neither too difficult nor too costly. The potential gains seem enormous and worth the effort to sway away teachers from teaching practices that may not be effective.

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Roadblocks to Recovery

Poorly targeted aid and a lack of access to capital hinder the recovery of small businesses devastated by natural disasters in developing countries, a novel study by **Suresh de Mel**, **David McKenzie** and **Christopher Woodruff** finds.

A series of devastating natural disasters in recent years has drawn increased attention to the plight of people facing such catastrophes. The number of natural disasters is increasing, and climate change experts believe that the frequency is likely to grow with global warming.

Though some dispute these predictions, there is no disagreement that natural disasters take a disproportionate toll on low-income countries. Low-income countries typically face higher numbers of deaths in the wake of disasters. One reason the poor suffer disproportionately is because they lack access to financial tools, such as credit and formal insurance markets that speed recovery.

Informal risk-coping strategies that are commonplace in low-income countries often break down in the wake of catastrophic situations, when all members of a risk-sharing group are affected. As a result, disasters can have permanent effects on people in households already living on the margins. Such households may have to cut back on providing schooling or food for their children. They may not be able to purchase productive assets, such as livestock, which may be sold to help in a crisis.

Grants, playing the role of insurance checks, sped small businesses' recovery from Sri Lanka's tsunami by two years.

The same forces that hinder households' recovery from natural disasters play out in the recovery of small businesses in developing countries. Nevertheless, the prevailing wisdom long has been that the economy recovers quickly from natural disasters.

Our research, conducted in the wake of the devastating December 2004 tsunami in Sri Lanka, undercuts this prevailing view. For more than three years, we followed the progress of small businesses as they attempted to recover from the tsunami's aftermath.

Our project is the first detailed study of microenterprise recovery in a developing country following a major natural disaster, and it reveals several insights that ought to lead to a reassessment of relief flows that follow such disasters.

Overall, our data show that business recovery is much slower than commonly assumed. Our research underscores the crucial role capital has to play in hastening small businesses' return to profitability in the wake of such disasters.

Our insights stem from field experiments conducted over a three-year period. We provided grants to randomly selected businesses and compared them to a control group that did not receive the grants. The experiment allowed us to assess the importance of capital in the recovery process. In effect, the grants we provided served a purpose similar to that of the checks many firms receive from insurance companies in the wake of natural disasters in more advanced countries.

We found that firms receiving our grants recovered profit levels almost two years before other damaged firms. Indeed, the grants appear to have allowed an immediate recovery of the firms relative to the comparison firms. In addition, we found that access to capital proved significantly more effective in the retail sector.

While grants made a significant impact among retail enterprises, they had very little effect among those in manufacturing and services. This is consistent with the view that other constraints come into play. Thus, the role of capital in recovery for manufacturing and service sectors appears to be limited because disruptions in supply chains and other disaster-induced changes also wreak havoc on the business environment.

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International response to the tsunami was rapid and strong, with governments, international non-government organizations and international financial institutions committing more than \$2 billion in relief and recovery funds, an amount equivalent to roughly 10 percent of GDP.

However, our research found that aid was both uncorrelated with the extent of businesses losses, and insufficient to the needs of firms. Aid to businesses covered only about 10 percent of reported losses. At the same time, loans did not appear to be an option. Fewer than 4 percent of microenterprise owners reported receiving a loan in the tsunami's aftermath, and these covered less than 1 percent of losses.

When developed countries suffer a natural disaster, insurance often makes recovery possible. In the United States, for instance, firms with insurance quickly replace destroyed assets, while those without insurance do not, often because business records lost in the destruction are required to access federal aid. About half of the losses from Hurricane Andrew in Florida in 1992 and the Northridge earthquake in California 1994 were covered by insurance, for example.

Aid was uncorrelated with losses and covered only 10 percent of small businesses' losses.

In developing countries, by contrast, small business owners rarely have insurance. For example, less than 15 percent of the losses from the 2004 Asian tsunami were covered by insurance. In such situations, aid from governments and non-profit agencies may serve to replace insurance.

Overall, our research demonstrates the need to expand avenues that provide access to credit for small businesses and to improve the targeting of aid. Addressing these two issues should speed the recovery of small enterprises facing the devastating aftermath of natural disasters.

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The Final Word

Director **Abhinay Muthoo** reflects on the importance of improving teaching in the developing world.

Recently, I found myself exposed to a spreading contagion. The person who started this epidemic, one that infected me and so many others, was Kiran Bir Sethi, the founder of Riverside School in Ahmedabad, India. Sethi, who spoke at a gathering sponsored by the non-profit organization TED, treats the passion for education as something that has the potential to go viral - a disease, if you will, with which you would like to be infected.

Her goal is to create curious, competent future citizens. Her method is to teach them to be self motivated, inspired to learn not because “teacher told me” but because “I can do it.”

One can only hope that her vision does indeed prove contagious, particularly in the developing world where teachers are the best hope for the economic prosperity and social development of both individuals and entire nations. Hearing Sethi’s impassioned speech led me to reflect upon teachers and teaching methods in poor nations, where improving education access and quality are matters of economic and moral urgency. (If you want to get similarly inspired, her talk can be viewed at: http://www.ted.com/talks/kiran_bir_sethi_teaches_kids_to_take_charge.html)

The needs of poor countries are many, but policy makers could do far worse than to focus on the singularly critical mission of training more and better teachers. An acute shortage of teachers represents one of the biggest hurdles to achieving the goal of universal primary education, according to UNESCO.

More than 100 million of the world’s children, including at least 60 million girls, have no access to primary schooling. The need for teachers – good teachers – is acute in the developing world, particularly in Africa where one of three children enrolled in school drops out during the primary grades.

The impediments in poor nations are many. Girls are kept home because of traditional gender roles. Schools in rural areas are too far away for children to make the journey easily and safely. In general, poor nations spend a smaller proportion of GDP on education than wealthier ones.

Effective teacher training needs to be at the heart of developing countries’ education policies. Poor countries often lack good teacher training, and, in turn, they lack good teachers. Many use ill-informed teaching methods that leave children unmotivated, uninspired, and, at the end of the day, alas, uneducated.

Many developing countries are realizing that a quality education is the linchpin for progress. Citizens who can read, can calculate, and can think for themselves have better economic opportunities. They and their families are healthier.

Providing the teacher training that can make a difference is not beyond the grasp of schools that are now failing their mission – whether they are in the developing or the developed world, as economic research shows. In fact, this edition of the Bulletin highlights recent relevant research conducted in Israel by Victor Lavy on teaching methods that increase achievement in a cost-effective way. Colombia, for one, has taken note, inviting Lavy to present his findings on these and other findings regarding educational attainment at a seminar in November.

The quality of education shapes the achievements of our children and the adults they become. A quality teacher gives you something to take home to think about besides homework. A teacher makes you feel you can achieve whatever you set your mind to do. A teacher nurtures confidence and encourages inquisitiveness.

As Sethi reminded me, this exposure to this kind of thing ought to reach epidemic proportions.

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The Director of ERI is Professor Abhinay Muthoo, (a.muthoo@warwick.ac.uk).

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