

Perspective

The Effects of International Monetary Fund Loans on Health Outcomes

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Founded in the wake of the Great Depression of the 1930s, the International Monetary Fund (IMF) was established in 1945 when government representatives met and agreed on a “framework of international economic cooperation” (<http://www.imf.org/external/index.htm>) designed to prevent future economic crises. Its mission was threefold: to ensure the stability of the exchange rate, to promote economic growth, and to provide financial assistance in the form of short-term loans to countries experiencing balance-of-payments difficulties. When countries borrow from the Fund, they are required to agree to conditions set by the organization, a process that the IMF refers to as “conditionality.” These conditions entail the adoption of economic policies or “structural adjustment programs” that are meant to redress the problems that led to the need for the loan and therefore to enable prompt repayment. While the conditions vary for different loans, most impose some regimen of fiscal austerity through reduced government spending, removing barriers to international trade, cutting government subsidies, and privatization.

IMF Conditionalities and Health

What kind of impact might IMF loans, and their conditionalities, have upon health outcomes? A new study in this issue of *PLoS Medicine* attempts to address this question by examining IMF programs and tuberculosis (TB) outcomes in post-communist countries [1].

Critics of the IMF charge that IMF conditionalities have helped undermine the health of some of the world’s most vulnerable populations.

The Perspective section is for experts to discuss the clinical practice or public health implications of a published article that is freely available online.

Linked Research Article

This Perspective discusses the following new study published in *PLoS Medicine*:

Stuckler D, King LP, Basu S (2008) International Monetary Fund programs and tuberculosis outcomes in post-communist countries. *PLoS Med* 5(7): e143. doi:10.1371/journal.pmed.0050143

David Stuckler and colleagues show that, in Eastern European and former Soviet Union countries, participation in International Monetary Fund economic programs have been associated with higher mortality rates from tuberculosis.

They argue that health outcomes suffer from reduced government spending on health care and on other inputs to health, such as food, as well as from the capping of public sector wages. IMF policies are also cited as having led to the diversion of foreign aid intended for health to the repayment of domestic debt. Such an outcome could serve as a strong disincentive for external funders to increase future health financing [2].

Other critics point to the indirect effects of macroeconomic changes that reduce income and increase prices. Rural poverty leads to urban migration and an attendant rise in prostitution, which may fuel the transmission of HIV, and rising urban poverty increases crime and incarceration, which in turn promotes the transmission of infectious diseases [3].

Gathering Evidence on the Health Impacts of IMF Loans

Given the often vituperative debate between the IMF and its critics about the health impacts of IMF loans, the need for evidence in support of charges and counter-charges becomes ever more apparent. But what kind of

evidence would shed light on these health impacts?

Much of the current debate focuses on the effect of conditionalities on health *spending*, rather than on specific health outcomes. A recent report from the Center for Global Development asks, “Does the IMF constrain health spending in poor countries?” [4]. Although the report found that broad trends in government health spending were similar in countries with and without IMF involvement, it also recognized that little could be inferred from the small differences found. Nonetheless, the authors noted that “the nature of many health interventions makes them especially sensitive to fiscal decisions...Because of the imperative of ensuring continuity in services and drug supply for HIV/AIDS [and] tuberculosis...any temporary interruptions in funding can have very serious consequences for health outcomes” [4]. These findings suggest

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Abbreviations: IMF, International Monetary Fund; RCT, randomized clinical trial; TB, tuberculosis

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the need to directly compare actual health *outcomes* in countries with and without the intervention.

Such measurements are complicated by a number of daunting methodological problems. IMF loans are not randomly assigned by an investigator, as are medical treatments in clinical studies. Instead, countries receive IMF loans because of pressing financial problems that may affect both short- and long-term health status, quite apart from the conditionality imposed by the IMF. If the indication for an intervention is itself associated with an outcome, the results of a study assessing that intervention may be biased, leading to what is termed “confounding by indication” in epidemiological studies. Furthermore, IMF loans and conditions come in different sizes and shapes, and the short-term outcomes of these programs often provoke mid-course policy corrections that make it hard to detect consistent effects. Finally, the effect of broad reductions in health care may lag many years behind the actual intervention and may therefore be missed in an analysis that does not capture late events. And, although an observational study is of course necessary, a valid control group—such as countries that qualify for IMF loans but do not receive them—may not exist.

The New Study

In the new study, David Stuckler and colleagues delve into this difficult methodological terrain [1]. They provide new evidence linking IMF loans to the enormous increases in TB incidence, prevalence, and mortality that occurred in some former Soviet Union and Eastern European countries during the post-communist period of the early to mid-1990s. After controlling for a host of variables, they find that IMF loans are associated with a 16.6% rise in annual TB mortality. This estimate did not change after adjusting for factors expected to mediate the impact of the loans, such as HIV prevalence, incarceration rates, and variables reflecting macroeconomic policy changes. Although IMF loans were associated with a fall in directly observed therapy (DOTS) population coverage levels, controlling for this variable had no effect on the strength

of the association between loans and TB deaths. This result emphasizes the complex and confusing pathways by which macroeconomic policies lead to specific health effects.

Study Limitations

The new study raises many important issues, particularly related to the policy implications of the conclusions. But are the study findings correct? Should we regard them as meeting the evidence-based standards of the best clinical research?

The study has at least five limitations. First, the IMF loans were not randomly assigned. In addition to this lack of randomization, the investigators included all of the Eastern European and former Soviet Union countries in their study, rather than comparing countries that received an IMF loan with, say, otherwise similar countries that just missed the threshold to qualify for a loan. Second, IMF loans are highly heterogeneous, and each type of loan may have massively different effects across countries and time periods. Third, the size of these loans is at best an imperfect proxy for conditionalities, and so the link to the extent of macroeconomic policy change that might have led to health changes is undocumented and likely variable. Fourth, the authors use special “robust standard errors”; however, if this approach makes a difference, it also indicates that an aspect of their model was misspecified, in which case we should probably have less confidence in the rest of their model, which was not similarly tested. Fifth, the similarity and dependence in their data measured over time means that they have many fewer independent pieces of information than the raw number of observations reported.

Observational Studies Versus Randomized Trials

Although these limitations seem stark by the standards of a randomized clinical trial (RCT), we should not necessarily discount the study’s policy implications. If the assumptions underlying this work are correct, the authors are estimating a causal effect among all “subjects” (i.e., countries) and time periods of interest. In contrast, the patients included in RCTs are typically not representative of, and certainly not randomly selected

from, the populations to which the treatment would be applied. This leaves us with a key question: is the potential for bias larger when random assignment to treatment is impossible, as in Stuckler and colleagues’ study and other observational studies, or when random selection of trial participants from the target population is impossible, as with most RCTs? Failure to *either* randomly assign *or* randomly treat can lead to biases of any size. As a result, one type of study should not be automatically favored over the other [5,6]. RCTs themselves are prone to many weaknesses, such as problems of compliance, missing data, measurement error, and post-treatment bias, all of which require modeling assumptions of their own and lead to substantial uncertainties of other kinds.

Moreover, many RCTs produce valuable scientific knowledge about a subset of potential patients, but do not speak to the effect of a public policy that might be constructed with this knowledge. Knowing the biological effect of a drug or risk factor is one thing; designing and evaluating a large-scale public policy program involves a whole range of different issues [7]. One cannot infer the effects of a public policy on the basis of a drug trial or even solid biological knowledge of a problem; otherwise, we should now regard obesity, diabetes, alcoholism, and lung cancer as solved problems. Indeed, most large-scale public policy evaluations entail uncertainties of similar types and sizes as those that attend Stuckler and colleagues’ study. It is true that the conclusions of this observational study required many statistical assumptions, any one of which could lead to substantial inferential biases, and so the scientific status of the authors’ conclusions necessarily remains uncertain. But we are convinced that at least the authors went very far in testing assumptions and mitigating uncertainties, and so the study and its conclusions should be taken seriously. ■

References

1. Stuckler D, King LP, Basu S (2008) International Monetary Fund programs and tuberculosis outcomes in post-communist countries. *PLoS Med* 5: e143. doi:10.1371/journal.pmed.0050143
2. Ooms G, Schrecker T (2005) Expenditure ceilings, multilateral financial institutions, and the health of poor populations. *Lancet* 365: 1821–1823
3. Peabody JW (1996) Economic reform and health sector policy: Lessons from structural adjustment programs. *Soc Sci Med* 43: 823–835

4. Center for Global Development (2007) Does the IMF constrain health spending in poor countries? Evidence and an agenda for action. Available: http://www.cgdev.org/doc/IMF/IMF_Report.pdf. Accessed 20 June 2008.
5. Imai K, King G, Stuart E (2008) Misunderstandings among experimentalists and observationalists about causal inference. *J R Stat Soc [Ser A]* 171: 481-502. Available: <http://gking.harvard.edu/files/abs/matchse-abs.shtml>. Accessed 20 June 2008.
6. Vandembroucke JP (2008) Observational research, randomised trials, and two views of medical science. *PLoS Med* 5: e67. doi:10.1371/journal.pmed.0050067
7. King G, Gakidou E, Ravishankar N, Moore RT, Lakin J, et al. (2007) A 'politically robust' experimental design for public policy evaluation, with application to the Mexican universal health insurance program. *J Policy Anal Manage* 26: 479-506. Available: <http://gking.harvard.edu/files/abs/spd-abs.shtml>. Accessed 20 June 2008.