Theme Papers

Is globalization good for your health?

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Abstract Four points are made about globalization and health. First, economic integration is a powerful force for raising the incomes of poor countries. In the past 20 years several large developing countries have opened up to trade and investment, and they are growing well — faster than the rich countries. Second, there is no tendency for income inequality to increase in countries that open up. The higher growth that accompanies globalization in developing countries generally benefits poor people. Since there is a large literature linking income of the poor to health status, we can be reasonably confident that globalization has indirect positive effects on nutrition, infant mortality and other health issues related to income. Third, economic integration can obviously have adverse health effects as well: the transmission of AIDS through migration and travel is a dramatic recent example. However, both relatively closed and relatively open developing countries have severe AIDS problems. The practical solution lies in health policies, not in policies on economic integration. Likewise, free trade in tobacco will lead to increased smoking unless health-motivated disincentives are put in place. Global integration requires supporting institutions and policies. Fourth, the international architecture can be improved so that it is more beneficial to poor countries. For example, with regard to intellectual property rights, it may be practical for pharmaceutical innovators to choose to have intellectual property rights in either rich country markets or poor country ones, but not both. In this way incentives could be strong for research on diseases in both rich and poor countries.

Keywords Commerce; International cooperation; Income; Economic development; Public health; Risk factors; Health policy; Acquired immunodeficiency syndrome/transmission/prevention and control; Pharmaceutical preparations/supply and distribution; Patents; Developing countries (*source: MeSH*).

Mots clés Commerce; Coopération internationale; Revenu; Développement économique; Santé publique; Facteur risque; Politique sanitaire; SIDA/transmission/prévention et contrôle; Préparations pharmaceutiques/ressources et distribution; Brevet; Pays en développement (*source: INSERM*).

Palabras clave Comercio; Cooperación internacional; Renta; Desarrollo económico; Salud pública; Factores de riesgo; Política de salud; Síndrome de inmunodeficiencia adquirida/transmisión/prevención y control; Preparaciones farmacéuticas/provisión y distribución; Patentes; Países en desarrollo (*fuente: BIREME*).

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Voir page 832 le résumé en français. En la página 832 figura un resumen en español.

Introduction

Global economic integration has been going on for a long time, but its pace has accelerated in the past decade. Trade and foreign asset ownership have hit new highs relative to world income. International travel is at unprecedented levels, while the Internet has facilitated low-cost communication around the globe. This integration has obvious economic benefits for the world as a whole, but it has also given rise to a wide range of anxieties; an important one concerns health. This is obviously a huge topic, and my objective here is the modest one of injecting four points into the debate about globalization and health. I am going to deal with globalization in the sense of increased integration of different economies and societies as a result of greater flows of goods, capital, people, and ideas.

Global integration and the income of poor countries

I start with the relationship between globalization and the income of the poor because firstly the issue is widely misunderstood in current debates about globalization, and secondly it is well established that there is a link between income of the poor and some

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important health outcomes. Rising income of the poor leads to better nutrition, lower child mortality, better maternal health, and also to better female education, which contributes further to these health outcomes (*1, 2*). Thus, one important link from globalization to health is through income.

That openness to international trade and investment accelerates the development of poor countries is one of the most widely held beliefs in the economics profession. There is considerable evidence to support this idea. Srinivasan & Bhagwati argue that the best evidence in support of the openness–growth link is that "nuanced, in-depth analyses of country experiences in major OECD, NBER and IBRD projects during the 1960s and 1970s have shown plausibly, and taking into account numerous country-specific factors, that trade does seem to create, even sustain, higher growth" (*3*). They note that cross-country growth regressions also contain useful information on the openness–growth link, but they need to be interpreted carefully.

The recent wave of globalization provides some important cases. The largest developing country, China, had an extremely closed economy until the end of the mid-1970s. While China's initial economic reform focused on agriculture, since the 1980s opening up to foreign trade and investment has been a key part of its strategy:

> Though it was not done without controversy, the argument that opening of the economy to foreign trade was necessary to obtain new capital equipment and new technology was made official policy. ... The expansion of China's participation in international trade since the beginning of the reform movement in 1978, has been one of the most remarkable features of its remarkable transformation (*4*).

This opening up has led to unprecedented growth rates in the country's coastal provinces, and higher, though less spectacular, growth in interior locations. India, too, has liberalized foreign trade and investment in the 1990s and has obtained good results, with growth of per capita income accelerating to above 4% (*5*). Among the very low-income countries, Uganda and Viet Nam are the best examples of countries that have increased their participation in trade and investment, and both have grown well in the 1990s.

These cases indicate that openness to foreign trade and investment, coupled with complementary reforms, can lead to faster growth in developing countries. The experiences of China, India, and Viet Nam are not isolated examples. Across countries, growth is highly correlated with measures of trade openness, trade volumes and amounts of direct foreign investment (*6–9*). Both Srinivasan & Bhagwati and Rodriguez & Rodrik warn us to be careful about drawing conclusions from cross-country correlations (*3, 10*). Still, I agree with the assessment of the economic historians Peter Lindert & Jeff Williamson that: "The doubts that one can retain about each individual study threaten to block our view of the overall forest of evidence. Even though no one study can establish that openness to trade has unambiguously helped the representative Third World economy, the preponderance of evidence supports this conclusion". They go on to note the "empty set" of countries that chose to be less open to trade and factor flows in the 1990s than in the 1960s and rose in the global living-standard ranks at the same time. "As far as we can tell," they conclude, "there are no anti-global victories to report for the postwar Third World. We infer that this is because freer trade stimulates growth in Third World economies today, regardless of its effects before 1940" (*11*).

A visual way to document the correlation between increased trade and faster growth is to compare the top one-third of developing countries in terms of increases in the ratio of trade to GDP over the past 20 years, with the rest of the developing world. This group of post-1980 globalizers has experienced a particularly large increase in trade relative to income: 104%, compared to 71% for the rich countries. What is striking is that the remaining two-thirds of developing countries actually trade less today than they did 20 years ago (Fig. 1). The globalizing group has also cut import tariffs significantly — 34 points on average — compared with 11 points for the non-globalizers. The list of post-1980 globalizers includes some well-known reformers (Argentina, China, Hungary, India, Malaysia, Mexico, the Philippines and Thailand). The recent globalizers have experienced an acceleration in their growth rates, decade by decade, from 1.4% per year in the 1960s to 5.0% in the 1990s (Fig. 2), while growth rates in rich countries have slowed down over this period. By contrast, developing countries not in the "globalizing" group have experienced a decline in their average growth rate from 3.3% per year in the 1970s to 0.8% in the 1980s and 1.4% in the 1990s. Alternatively, if one were to consider the top developing countries in terms of increased direct foreign investment, the group of countries would be virtually the same. As with trade, there is evidence that direct foreign investment accelerates the growth of the recipient country (*9*). Taken together, the evidence is supportive of models in which innovation plays a key role in growth, and integration with the global economy accelerates innovation in developing countries.

While migration is the most restricted of global flows, I would also like to say a word about its role in poverty reduction. Hatton & Williamson estimate the effect of out-migration on wages in African countries with the intuitive result that out-migration of unskilled workers raises wages for those who remain behind (not to mention the return flow of remittances, which is very significant for some countries) (*12*).

Thus, there is evidence that trade, direct foreign investment and out-migration can all increase incomes in developing countries.

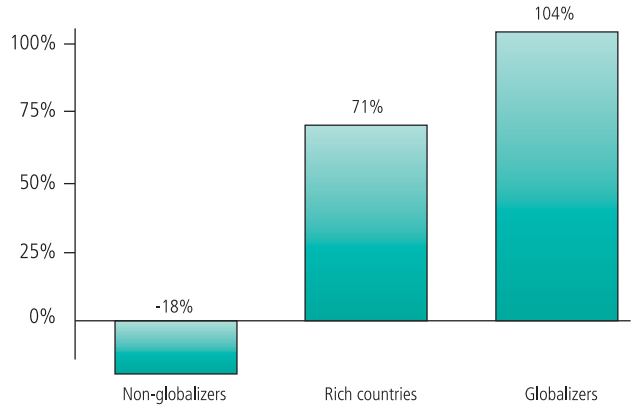
Global integration and the income of poor people

One commonly held view of growing international economic integration is that it leads to growing inequality between rich and poor countries, as well as within the same countries, benefiting richer households more than poorer ones. For example, according to Jay Mazur, "Globalization has dramatically increased inequality between and within nations" (*13*). The previous section showed how greater openness to international trade has, in fact, contributed to narrowing the gap between rich and poor countries as the globalizers, as a group, have grown faster than the rich countries as a group. But what about the effects of globalization on inequality within countries?

In order to examine this issue, Dollar & Kraay put together a large data set on income inequality, compiled from a variety of existing sources (primarily the data set constructed by Deininger & Squire with several updates using more recently available data) (*14, 15*). Dollar & Kraay use these data, covering 137 countries, to try to understand what is happening to the income of the bottom 20% of the income distribution, as globalization proceeds. There is on average a one-to-one relationship between the growth rate of income of the poor and the growth rate of per capita income, but also quite a lot of variation around that average relationship (Fig. 3). In other words, percentage changes in incomes of the poor, on average, are equal to percentage changes in average incomes. These results are equivalent to the finding that changes in the distribution of income are not systematically associated with the growth rate.

How can we explain deviations around the one-to-one relationship, which reflect changes in inequality? The hypothesis that greater trade openness leads to growing household inequality is the hypothesis that growing openness leads to points "below the line" in Fig. 3: growth of income of the poor less than proportionate to per capita GDP growth. Dollar & Kraay considered a variety of possible variables that might explain cross-country differences in the extent to which growth accrues to those in the bottom quintile, with little success. One of the variables considered was trade volumes, where they found no evidence whatsoever of a systematic relationship between changes in trade and changes in inequality. Fig. 4 shows the relationship between changes in trade to GDP and changes in the Gini measure of inequality, not controlling for other variables. Dollar & Kraay show that the non-relationship is quite robust when many other variables are added to the analysis. No doubt trade and investment liberalization has distributional consequences, that is, there are "winners" and "losers" in the short run. However, their finding is that the losers do not come disproportionately from among the poor. While such a finding is heartening, nevertheless, it has to be a concern that some poor households are hurt in the short run by trade liberalization. Thus, it is important

Fig. 1. **Increase in trade/GDP: 1970s to 1990s**



Source: Dollar & Kraay (9).

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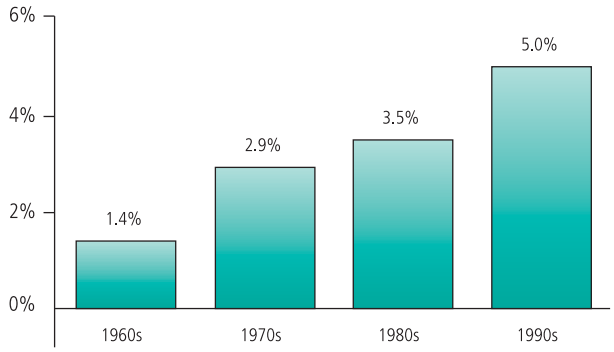
Fig. 2. **Per capita GDP growth rates: post-1980 globalizers**



Source: Dollar & Kraay (9).

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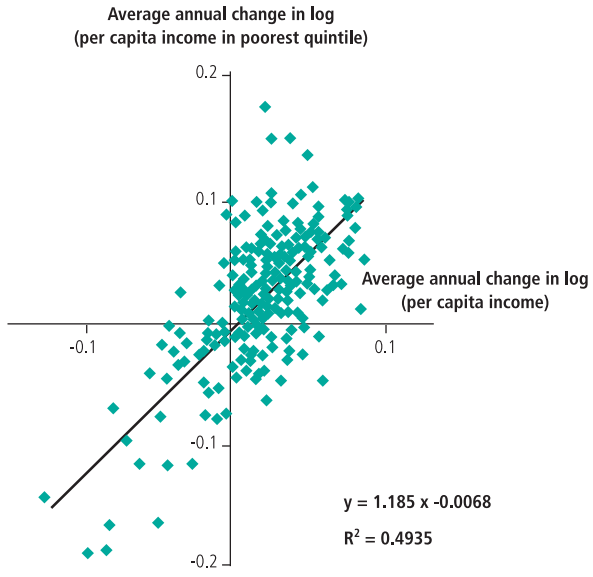
Fig. 3. **Growth is good for the poor**



Source: Dollar & Kraay (*14*).

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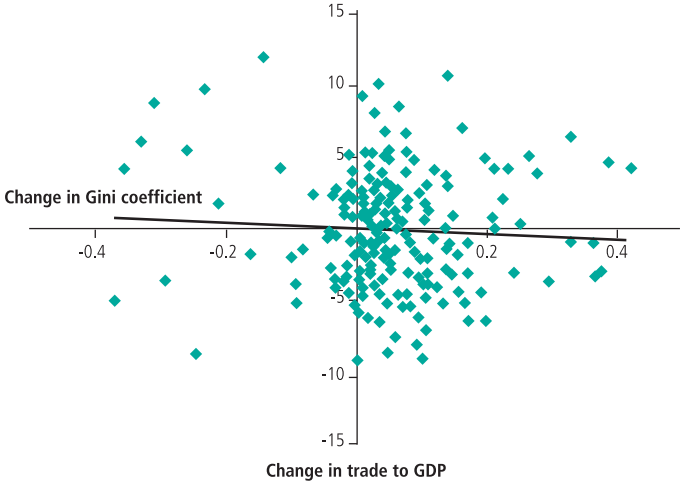
Fig. 4. **Increased trade has no correlation with changes in inequality**



Source: Dollar & Kraay (*14*).

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to complement open trade policies with effective social protection measures, such as unemployment insurance and food-for-work schemes.

The fact that increased trade generally goes hand-in-hand with more rapid growth and no systematic change in household income distribution means that increased trade generally goes hand in hand with improvements in well-being of the poor. Looking at individual "globalizers", some have experienced increases in inequality. China is a notable example, where the increase in inequality was quite large. Still, income of the poor has grown rapidly, and China has had the most rapid reduction in poverty in world history: rural poverty declined from 250 million people in 1978 to 34 million in 1999. In other globalizing developing countries there has been virtually no change in household inequality (Uganda, Viet Nam) or even modest declines in inequality (Malaysia, the Philippines).

Viet Nam nicely illustrates my main point about global integration and poverty. As Viet Nam has opened up, it has had a large increase in per capita income and no significant change in inequality. Thus, income of the poor has risen dramatically, and the level of absolute poverty has dropped sharply, from 75% of the population in 1988 to 37% in 1998 (Fig. 5). Poverty was cut in half in 10 years! In the case of Viet Nam we have particularly good data because a representative household survey was conducted early on in the reform process (1992–93) and the same 5000 households were visited again six years later. Of the poorest 5% of households in 1992, 98% had higher income six years later. Since Viet Nam's opening has resulted in exports of rice (produced by most of the poor farmers) and labour-intensive products such as footwear, it should be no surprise that the vast majority of poor households benefited immediately from a more open trading system. And the benefits go beyond income to health status as well. Between 1992 and 1998 the percentage share of children stunted through malnutrition in Viet Nam declined from 51% to 34% (*16*)!

Adverse health effects of globalization

To the extent that global integration helps reduce poverty, it will indirectly lead to health improvements through income. But clearly globalization can have adverse effects on health as well. The adverse effects originate most clearly as side-effects of travel and migration, though trade in food and other products can spread disease as well.

The AIDS epidemic is the most dramatic example in recent times of a deadly disease spread through travel and migration. Obviously, if there is an AIDS-free community somewhere on earth that can completely cut itself off from contact with any other humans, it can be reasonably certain that it will be spared this health disaster. It will clearly pay a high price for this isolation in terms of poverty and quality of life. The Democratic People's Republic of Korea probably comes closest to achieving this kind of isolation. Almost all other societies choose to have some interaction — trade, travel, investment — with the world, all or any of which will increase the spread of disease. In the case of AIDS, for example, Over finds a positive relationship between the presence of immigrants in the population and the HIV prevalence rate (*17*). The issue of integration is not just international. As China has reformed and there has been more economic integration (including migration) within the country, sexually transmitted diseases that were nearly eliminated in the 1960s have spread rapidly (*18*).

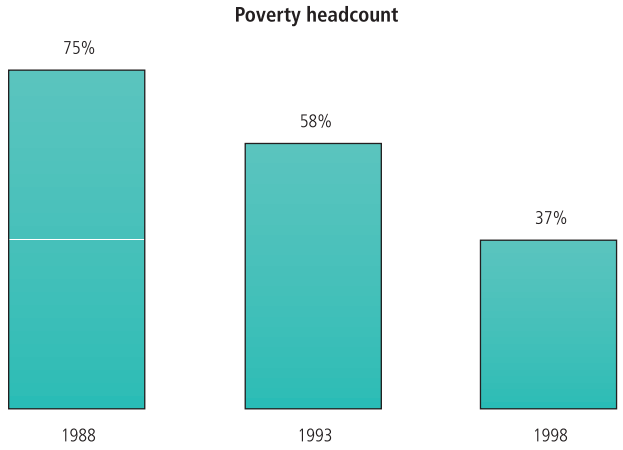
So, integration clearly exposes communities to various health risks. The point that I want to make here is that — leaving aside extreme cases such as the Democratic People's Republic of Korea — both weak globalizers and strong globalizers in the developing world face these health risks. Countries that are relatively closed to trade and investment, such as Burma and Zimbabwe, nevertheless have severe AIDS problems. In fact, the relatively closed developing countries tend to have a lot of out-migration because they have poor environments for investment and production. As their labour force flows in and out, these societies are highly exposed to international transmission of disease.

This evidence suggests to me that the sensible approach to controlling AIDS is not to isolate the economy from the rest of the world, but rather to address the issue directly through health policies. Thailand is a good example of a highly open economy that is getting its AIDS problem under control. The World Bank report, *Confronting AIDS*, recommends an approach combining public education with targeted interventions (such as condom distribution), focused on high-risk groups such as sex workers and drug users (*18*). This, in fact, is the approach that has proved effective in Thailand.

Another good example of potential negative health effects of globalization is trade in tobacco products. Tobacco products are made very efficiently in a number of countries, such as the United States. For other countries, freer trade leads to lower prices of tobacco products, more smoking, and more tobacco-related illness (*19*). Again, the obvious solution is health policy, not trade policy. There is nothing in the international trade regime that prevents a country from banning smoking or taxing it very steeply, provided it taxes both imports and domestic tobacco products, which would be the sensible health policy.

The general point here is that openness conveys economic benefits, but also exposes societies to various risks. Hence open policies need to be complemented with good health policies.

Fig. 5. **Poverty declined rapidly in Viet Nam ... as the economy opened**



Source: World Bank (*16*).

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Globalization and life-saving drugs

While there are reasons for believing that greater trade and integration of markets will produce net benefits of poverty reduction and improvements in global health, a separate issue is whether existing global institutions are adequate in terms of ensuring that the health care needs of the poorest people and the poorest countries are addressed. A case in point is the need for better and cheaper drugs for health problems in developing countries. One of the hot-button issues in the globalization debate concerns intellectual property rights (IPRs), especially with regard to pharmaceuticals. The controversy over AIDS drugs for developing countries epitomizes what is both good and bad about globalization.

Innovation is spurred by the combination of a large market and IPRs that ensure that innovations are rewarded. As the global economy has become more integrated, the pace of technological advance has accelerated. The development of the highly active antiretroviral therapy (HAART) which slows the onset of AIDS in HIV patients is a good example of this productivity. In wealthy countries, the price of this treatment is more than US$ 10 000 per year. I do not want to discuss, here, whether or not the specific price is "fair" in rich countries. The OECD system of innovation is based on public funding of basic science and private funding of commercially viable research. This system, which has been phenomenally productive, depends on a framework of IPRs that allows a return well above manufacturing costs so that innovators get rewarded for their investment in ideas.

At the same time, it strikes almost everyone as immoral that people in the developing world infected with HIV cannot get access to these drugs whose manufacturing cost is only several hundred dollars for a year's supply. Because of the outcry over this issue, several pharmaceutical companies have chosen not to defend their patents over these drugs in poor African countries.

The main thing I want to do in this section is highlight an interesting critique by Jean Lanjouw of the IPRs regime for pharmaceuticals (*20*). I am not sure if her proposal is politically viable, but it nicely illustrates the complexity of the IPRs issue and the shallowness of extreme views on either side of the debate (defend IPRs everywhere and always, or eliminate such rights completely).

Lanjouw's proposal is that for drugs which combat global diseases, pharmaceutical innovators can choose to have IPRs in either rich country markets or poor country markets, but not in both. So, in the case of the AIDS drugs, such a system would bring us to exactly where we have ended up: the pharmaceutical companies carried out their research and development primarily with rich country markets in mind and they will earn their return from those markets. Poor countries in Africa will have access to these technologies free of charge. This is a very minor disincentive to innovation because most of the potential profits are in OECD markets. But that is not true for all potential health innovations. Even if a disease is global, it may have a concentration in developing countries (a particular form of cancer, for example). Where there is little demand in OECD markets for an innovation, IPRs in developing countries can be an important incentive for firms (based anywhere) to research and develop products to deal with the problem.

Lanjouw's regime illustrates that IPRs are important in stimulating innovation and that it is in the interests of developing countries to protect rights that will lead to more innovation in response to their problems. On the other hand, developing countries will gain nothing by protecting IPRs on treatments for AIDS or cancers that are common in rich countries, because that research is going to go ahead anyway on the strength of returns in OECD markets.

I cannot say how realistic this proposal is. To implement it would require that firms producing pharmaceuticals in developing countries based on

others' discoveries could not sell these products back into rich country markets. Inevitably, there would be a black market, but it could probably be kept fairly small. Lanjouw's proposal nicely illustrates how developing countries can gain from protecting IPRs in health fields in some cases, while, at the same time, recognizing that there is little justification for protecting IPRs in all cases. There have been other recent proposals to strengthen incentives for research on health technologies through subsidies, including guarantees of markets if successful drugs can be developed, for example, for antimalarials (*21*). The general point here is that the international architecture to encourage innovation in health technologies could be vastly improved.

Conclusions

The bottom line is that global economic integration can be a powerful force for increasing incomes and hence improving health and other aspects of welfare, but for that potential to be fulfilled, complementary policies within developing countries and further improvements in the international architecture, for example, in intellectual property rights, are required. ■

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Résumé

La mondialisation est-elle favorable à la santé ?

Dans le présent article, l'auteur examine quatre points concernant le rapport entre mondialisation et santé. Tout d'abord, l'intégration économique est un moteur puissant d'accroissement des revenus dans les pays pauvres. Ces vingt dernières années, plusieurs grands pays en développement se sont ouverts au commerce et à l'investissement et progressent rapidement, plus vite même que les pays riches. Ensuite, l'inégalité des revenus ne tend pas à s'aggraver dans les pays qui adoptent une politique d'ouverture. La croissance rapide qui accompagne la mondialisation dans les pays en développement profite en général aux pauvres. Comme le lien entre le revenu des pauvres et leur état de santé est abondamment documenté, nous pouvons raisonnablement penser que la mondialisation a des effets positifs indirects sur la nutrition, la mortalité infantile et d'autres aspects de la santé liés au revenu. Troisièmement, il est évident que l'intégration économique peut aussi avoir des effets négatifs sur la santé : la transmission du SIDA par le biais des migrations et des voyages en est un exemple frappant. Cependant, le problème du SIDA touche gravement aussi bien les pays en développement relativement ouverts que ceux qui sont relativement fermés. La solution pratique réside dans les politiques sanitaires et non dans les politiques d'intégration économique. De même, la libéralisation du commerce du tabac conduira à une augmentation du tabagisme si l'on ne met pas en place des politiques de dissuasion reposant sur des arguments sanitaires. L'intégration mondiale exige des institutions et des politiques de soutien. Enfin, il est possible d'améliorer l'architecture internationale de façon qu'elle profite davantage aux pays pauvres. Par exemple, en ce qui concerne les droits de propriété intellectuelle, il pourrait être envisageable que les laboratoires pharmaceutiques innovants choisissent de détenir des droits de propriété intellectuelle sur les marchés de pays riches ou de pays pauvres, mais non sur les deux. Cette façon de faire pourrait constituer un encouragement puissant à la recherche sur les maladies aussi bien dans les pays riches que dans les pays pauvres.

Resumen

¿Es la globalización buena para la salud?

En este artículo se destacan cuatro puntos sobre la globalización y la salud. En primer lugar, la integración económica es un medio muy eficaz para aumentar los ingresos de los países pobres. En los últimos veinte años, varios países en desarrollo de grandes dimensiones que se han abierto al comercio y la inversión están creciendo satisfactoriamente, más que los países ricos. En segundo lugar, la desigualdad de ingresos no tiende a aumentar en los países que abren sus fronteras. El aumento del crecimiento asociado a la globalización en los países en desarrollo suele beneficiar a los pobres. El abundante número de estudios que han relacionado los ingresos de los pobres y la situación sanitaria nos autoriza a pensar que la globalización tiene efectos positivos indirectos en la nutrición, la mortalidad de lactantes y otros aspectos de la salud relacionados con los ingresos. En tercer lugar, es evidente que la integración económica también puede tener efectos perjudiciales para la salud: la propagación del SIDA propiciada por las migraciones y los viajes es un ejemplo reciente y trágico de ello. No obstante, el SIDA constituye un problema grave tanto en los países en desarrollo relativamente cerrados como en los relativamente abiertos. La solución práctica radica en las políticas sanitarias, no en políticas de integración económica. Del mismo modo, el libre comercio del tabaco provocará un aumento del consumo, salvo que se establezcan mecanismos de disuasión relacionados con la salud. La integración mundial requiere que se respalden las instituciones y las políticas. En cuarto lugar, cabe mejorar el marco internacional de modo que resulte más beneficioso para los países pobres. Por

ejemplo, en lo que respecta a los derechos de propiedad intelectual, a las empresas farmacéuticas innovadoras les podría resultar práctico elegir entre asegurarse esos derechos en mercados de países ricos o en mercados de países pobres, pero no en ambos. De este modo, tanto en los países ricos como en los pobres podría haber fuertes incentivos para investigar enfermedades.

References

1. **Pritchett L, Summers L.** Wealthier is healthier. *Journal of Human Resources*, 1996, **31**: 841–868.
2. **Filmer D, Pritchett L.** The impact of public spending on health: does money matter? *Social Science & Medicine*, 1999, **49**: 1309–1323.
3. **Srinivasan TN, Bhagwati J.** *Outward-orientation and development: are revisionists right?* New Haven, CT, Yale University mimeo, 1999: 9.
4. **Eckaus R.** China. In: Desai P, ed. *Going global: transition from plan to market in the world economy*. Boston, MA, MIT Press, 1997.
5. **Srinivasan TN.** *Indian economic reforms: background, rationale, achievements, and future prospects*. Mimeo, 1996.
6. **Frankel JA, Romer D.** Does trade cause growth? *The American Economic Review*, 1999 **89** (3): 379–399.
7. **Sachs JD, Warner A.** Economic reform and the process of global integration. *Brookings Papers on Economic Activity*, 1995, **1**: 1–118.
8. **Ades A, Glaeser E.** Evidence on growth, increasing returns, and the extent of the market. *Quarterly Journal of Economics*, 1999, **114**: 1025–1046.
9. **Dollar D, Kraay A.** *Trade, growth, and poverty*. Washington, DC, The World Bank, 2001 (Policy Research Working Paper No. 2199).
10. **Rodriguez F, Rodrik D.** Trade policy and economic growth: a skeptic's guide to the cross-national evidence. In: Bernanke B, Rogoff K, eds. *Macroeconomics annual 2000*. Boston, MA, MIT Press for National Bureau of Economic Research, 2000.
11. **Lindert P, Williamson J.** *Does globalization make the world more unequal?* Paper presented at: Conference on Globalization in Historical Perspective, 2000: 29–30.
12. **Hatton T, Williamson JG.** *Demographic and economic pressure on emigration out of Africa*. National Bureau of Economic Research, Cambridge, MA, 2001 (NBER Working Paper Series No. 8124).
13. **Mazur J.** Labor's new internationalism. *Foreign Affairs,* 2000, **79**: 79–93.
14. **Dollar D, Kraay A.** *Growth is good for the poor*. Washington, DC, The World Bank, 2001 (Policy Research Working Paper No. 2587).
15. **Deininger K, Squire L.** A new data set measuring income inequality. *The World Bank Economic Review*, 1996, **10**: 565–591.
16. **World Bank.** *Vietnam: attacking poverty*. Washington, DC, The World Bank, 1999.
17. **Over M.** The effects of societal variables on urban rates of HIV infection in developing countries: an exploratory analysis. In: Ainsworth M, Fransen L, Over M, eds. *Confronting AIDS: evidence of the developing world*. Brussels, The European Commission, and Washington, DC, The World Bank, 1998.
18. **World Bank**. *Confronting AIDS: public priorities in a global epidemic*. New York, Oxford University Press, 1997.
19. **Chaloupka FJ, Laixuthia A.** *US trade policy and cigarette smoking*. Asia National Bureau of Economic Research, 1996 (Working Paper No. 5543).
20. **Lanjouw J.** *A patent policy proposal for global diseases*. Paper presented at: Annual Bank Conference on Development Economics, The World Bank, Washington, DC, May 2001.
21. **Kremer M.** *Creating markets for new vaccines*. Boston, MA, Harvard University mimeo, 2000.