

Winners and Losers in the Credit Crunch

Across the world, different countries use different models to fund research in universities. (Please forgive me for ignoring mucosal immunology research in nonuniversity settings; it is too complex!) In the United States, if you want to have an active research career, you have to seek funding from either governmental sources, principally the National Institutes of Health (NIH), or charitable foundations to support both your time to do the research and all the costs associated with performing the research. In the United Kingdom, salaries for university staff are usually paid by the government, but funds for support staff, consumables, and equipment for research activities need to be sought from government research councils, such as the Medical Research Council, or charities (primarily the Wellcome Trust). In most other countries in Europe, the university system pays the lead researcher and support technical staff, so the soft funding is needed mostly for consumables, equipment, and salaries for postdocs.

Regardless of the precise details of the individual funding models, the universal feature of biomedical research in academia throughout the world is that money is needed from charities, wealthy donors, and government agencies. So what is going to happen to this merry-go-round when the global economy goes into recession? Charities and many nongovernmental foundations rely on the gains of a broad portfolio of investments both to maintain their capital and, skimming the top, to spend on research. What happens when interest rates

are 0% and the stock market has crashed? Governments typically also like to spend a small percentage of gross domestic product on research, but, again, what happens when \$800 billion in the United States and £500 billion in the United Kingdom has to be spent to shore up the toxic debt generated by the banks? It seems obvious: money available for biomedical research goes down.

The Wellcome Trust will see a cut in expenditure this year, having lost £1.5 billion when the markets collapsed. As it is the United Kingdom's biggest funder of research, including many projects involving mucosal immunology, there will be fewer successful applications in the next few years. So far, government agencies in the United Kingdom have been spared cuts because they are funded on a 5-year cycle and we are only halfway through the current 5-year period. In 2011–2012, however, given the amount of debt that the UK government has built up, which allegedly will take a generation to pay back, it is hard to see research funding showing anything near the increase seen in the early years of the century.

In the United States, the Juvenile Diabetes Research Foundation is reducing support on grants already awarded and has stopped giving new awards. Not all is gloomy, however; the Senate has amended the Obama administration's fiscal stimulus package to add another \$6.5 billion to the NIH budget. "Including funding for the NIH in the bill will provide needed economic stimulus, enable long-term economic growth, and save lives," cosponsor Senator Arlen Specter said. "The National Institutes of Health have been starved recently. This increase in funding will enable the [NIH] to continue to produce remarkable achievements in scientific advances." What

is interesting about this comment is not the "scientific advances" comment, but the perspective that funding from the NIH may provide an "economic stimulus." I wonder how many mucosal immunologists have previously considered themselves to be responsible for the economy?

The United States has plenty of examples of biomedical research discoveries stimulating the local economy. Vast wealth and employment have been generated by companies spun out of university laboratories. Boston, San Diego, and San Francisco are among many US cities dominated by biomedical research and the broader health economy. Although the United Kingdom is playing catch-up, biotech spinoffs in the Cambridge area northeast of London have been a great success. One outcome of this history of successful investment in research is that we are entering a new era in which many innovative therapies, including the new class of biological drugs, are being evaluated for efficacy in treating autoimmune and inflammatory disorders such as inflammatory bowel disease and asthma. As more of these novel therapies reach the clinic, our research activities are becoming an increasingly larger driver of the "global health economy."

But on a more mundane level, when we are awarded a research grant, the overhead payments go to the university, which then employs people, and we recruit postdocs and fellows, who add more to the local economy. And if we win a really *large* grant, we usually keep the bars and restaurants busy for a short time with celebrations!

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