

# Scientists: ignored gold

There was a time when rumours that “there’s gold in them thar hills” started a mass movement of people eager to make a fortune in the West. Word that there were diamonds lying in some distant mountains led to a sudden interest in remote parts of the globe. The discovery of salt and spices led to exploratory journeys and wars that recoloured the political map. In those days of colonialism and imperialism, nations and individuals fought to gain control over limited and valuable assets. Their exploitation fuelled the rise of empires—Western nations as well as companies—and paid for the enormous increase in living standards now enjoyed by the citizens of developed countries. Today, the world’s natural resources are for the most part under solid control, thus new wealth is unlikely to come from geological surveys. Instead, further economic progress and the improvement of living standards will largely depend on the latest high-value commodity: scientific skills.

Economic analysts have come to the same conclusion: the countries that make best use of knowledge will come out ahead. How to mine this resource is quite obvious. Skilled scientists are the new prospectors who will uncover the gems of understanding. It should inevitably follow that a new gold rush should lure the best brains to this new frontier. Strangely, that is not happening. The USA, which has attracted generations of bright minds from all over the world who contribute to the intellectual and economic strength of the country, is now erecting barriers that stem the flow of this talent. Work permits can no longer be taken for granted; restrictions, including a requirement to leave after a determined period, are commonplace; arbitrary rejections and indeterminable delays are now routine. The message is that those from some areas of the world or with specific cultural or religious backgrounds are no longer welcome. This will ultimately

work against the future aspirations of the USA to stay on top scientifically and economically. Interestingly, we also see in the applications for EMBO postdoctoral fellowships a clear signal that the attractiveness of the USA has diminished; whereas in the past about 40% of applicants wanted to go to the USA, this figure has fallen to 20% over the past two years.

This should provide an opportunity for European countries, individually or collectively, to attract the people whom the USA rejects. This is quite important, as all analyses predict that any expansion of the knowledge-based economy will eventually be stunted by a lack of trained scientists and engineers. At the same time, there is a large pool of well-trained scientists all over the world who wish to advance their careers by moving to a good laboratory—of which there are plenty in Europe. The labour problem therefore has a ready solution, but there is a strange reluctance to combine these two factors. The main reason is that many domestic scientists are unemployed, and bringing in extra labour from abroad under such conditions is likely to evoke criticism. But all the projections that identify science as the source of a new bonanza of industries cannot be incorrect. The logical conclusion would be to invest now, but our political leadership favours short-term solutions and has left the problem for future politicians to solve.

There is also concern that it would be unethical to stimulate more brain drain from developing and Eastern countries to Western Europe. But science is a global enterprise, and there is a long tradition among scientists to move to other laboratories to improve their skills. Some will stay, but others will return to their home countries and enrich their own universities; in general, the brain drain is an inevitable dribble, but a necessary part of global skill-sharing. I doubt if ethical concerns are convincing enough to block ‘progress’—historically, they have not. In any case,

policy makers do not seem to understand what is happening.

There is another barrier that keeps fledgling scientific communities away from Europe. Whereas the USA is building on a tradition of a foreign scientific workforce that provides a source of new post-docs, this has been less common in Europe. Fewer scientists from Asia or South America see Europe as an alternative to a career in the USA, and even European scientists are not encouraged to contact laboratories elsewhere in Europe as funding agencies cut back on such grants. The proposed funding for the European Commission’s Seventh Framework Programme will reduce the international programme to support scientists from non-EU countries. The British Wellcome Trust has similarly ‘mainstreamed’ its excellent international grant programme. EMBO also had to downsize its international programme after its member states argued against it. The result is that scientists from Asia, South America and Africa do not receive a welcoming message from Europe as a whole—the gold rush can obviously wait.

Under these circumstances, others will step in to attract the best and brightest scientists from these regions. China, India, Korea, Singapore and Brazil are making enormous investments into their research capacities and have begun to challenge the prevailing wisdom that to pursue a scientific career you have to move to the USA or Europe. If brainpower is the limiting factor for future economic developments and wealth, then these countries are obviously ready to compete for this resource. And if the developed countries are too comfortable to engage likewise, they should not be surprised if economic and political power eventually shifts elsewhere in the world.

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