education provision is expensive, and enrolment is expanding. Governments are unable, unwilling or a combination of the two, to make those investments.”

The impact of fee increases will vary from country to country, but one likely change will be a drive towards greater transparency, Altbach contends. “There’s much greater demand for accountability. The whole movement in the US and globally to provide outcome measures, I think, is driven at least in part by the fact that students are being asked to pay themselves – and they want to know [more about] what they’re getting” in return for their money.

As has already been seen in the US, with students increasingly taking time out of college for paid work, longer graduation times and higher dropout rates are also likely consequences of increased fees, says Altbach.

Equality in access to higher education is likely to remain a concern for voters – and therefore politicians – and will drive efforts to develop student loan schemes that are funded or at least guaranteed by governments.

In Australia and the UK, student loan repayment levels are already based on income. Discussion in the US is under way about whether income-based repayments would help to avoid the situation where, according to the most recent Department of Education figures, some 13.4 per cent of borrowers default on their loan repayments within three years.

Of course, private education can still carry a cost for the state. By giving state-backed loans and scholarships to students who attend private institutions, as happens in the US and the UK, the government may take on the very costs that it is trying to avoid, says Fielden. Rarely do students end up paying back more than 50 per cent of their loan, he says, and he believes that in some African nations the figure is as low as 5 per cent. “If private funding is bolstered with [state] funding” in this way and this is the result, “it’s not much of a saving”, he says.

The desire to expand enrolment on the one hand and to limit costs to the public purse on the other can result in policies that conflict with efforts to boost the “knowledge economy” – government caps on total student numbers, for example. According to Altbach, in countries with free tuition or low fees, ways will often be found around such limits, such as allowing universities to take in fee-paying students on top of their state allocation.

4. New regions driving global competition in research

The number of scientific papers being produced across the world is rapidly increasing, particularly in developing countries. It is no coincidence that this is happening alongside some enormous hikes in spending on research and development and government drives to build world-class research universities.

Asia in particular is ploughing more resources into research and development. China, which already spends $179 billion (£112 billion) in this area, aims to increase spending from 1.8 per cent of gross domestic product to 2.5 per cent by 2020, which would put it almost on a par with the US. South Korea aimed to raise its figure to 5 per cent by the end of 2012.

High-spending nations such as China, Singapore, South Korea, Taiwan and, more recently, Brazil are starting to see this investment bear fruit. According to Thomson Reuters, in China alone there has been an 80 per cent increase in scientific literature in terms of annual output over the past five years. The Royal Society’s 2011 report Knowledge, Networks and Nations predicts that China will overtake the US as the world’s top producer of research by 2020, and potentially as early as this year.

According to Fielden, if excellence is based on research quality, as it is in many international university rankings, China might have as many excellent higher education institutions as the US within just two decades. “In the [government-led] Project 211 and Project 985 schemes, China is aiming at having 100 or so excellent institutions, so [the system will look] very similar to the US with different tiers and the same number in the top elite tier.”

Although developing countries are yet to match the established scientific nations in terms of quality – at least as measured through the number of citations by other researchers – this is likely to change, suggests Jonathan Adams, director of research evaluation for Thomson Reuters.

“If you look at the average citation rate coming out of China, for instance, it’s still below the world average – but if you start disaggregating [the results by subject], there are a lot of papers that are highly cited. The sheer volume of research means [quality is] diluted,” he says. “What we’re looking for and expecting to see is growth in the new areas that they’ve identified as priorities – in biotech, nanotech, energy and clean energy.”

In a New Year’s speech, India’s president, Shri Pranab Mukherjee, pledged to position India among the top five global scientific producers by 2020. Like China, the country has the talent and potential to be a research power, but it’s a question of getting the democratic – and bureaucratic – “juggernaut” moving, says Adams. Both countries are likely to see efforts to move the research base from