

The Colonial Secretary, the farmers and the growth of a country

Why did South African farmers in the 1840s suddenly decide to irrigate once barren land, invest in state-of-the-art ploughing equipment, and grow thousands of tonnes more crops? It may seem a dry question best left to agricultural historians, but CEPR Researcher **Liam Brunt** believes the answer is crucial to understanding which factors allow economic development to take off.

There is a long-running debate among economists about the best answer to the question of why some countries have been able to achieve economic development and rapidly expanding wealth, while others have remained poor and under-developed. Brunt believes South Africa, with its chequered colonial past, provides a perfect natural experiment for testing some of the competing theories.

Most studies of how economic development works compare the growth trajectories of different countries; but that leaves open the possibility of an 'omitted variable': a hidden difference between the more and less successful economies, which is the true explanation of differences in their performance.

Looking at the changes in a single country, over time, avoids this pitfall. It also excludes another popular set of explanations, connected with geography: South Africa's climate, and topography have not changed over the past two centuries; so its tendency to harbour diseases fatal to potential colonists, for example, cannot be a factor.

Some time in the nineteenth century, South Africa - the Cape colony, as it was then known - shifted from being a stopping-off point for ships en route to the Far East, where squatting farmers lived a hand-to-mouth existence, to a self-sufficient, rapidly-expanding frontier economy in its own right, laying the foundations of its status as one of the wealthiest nations in Africa.

Brunt uses the detailed data on population, acreage of

land in production, and output of various crops produced by the Dutch, and then the English colonists, to show the crucial 'break-points' in South Africa's development.

Some economists point to the identity of the colonising country as an important explanation of development. Brunt finds there is some truth in this: between 1701 and 1795, when the Cape was in the hands of the Dutch East India Company, output grew by an average of 1.9% a year; but it jumped to 4.5% a year from 1795 to 1813, after the British took charge. In the early years, there was a deliberate policy laid down by Westminster to run the colony according to the same rules established by the Dutch, so the jump in output at this stage suggests the identity of the colonists makes some difference.

However, there was then a long period of stasis, with growth between 1814 and 1842 slipping back to an average 0.9% per annum. This appears to rule out another explanation favoured by some economic historians: that the type of legal system makes a crucial difference to development.

The Dutch East India Company had imported a civil law system from the Netherlands but in 1827, the British instituted the more adversarial common-law system. The flexibility of a common-law approach allows it to develop and adapt to changing circumstances, instead of being set in stone, and some cross-sectional studies have suggested this encourages development; but Brunt finds there is no evidence that its introduction was a key moment in South Africa's economic story.

There is another clear break-point in the data analysed by Brunt, however: after 1842, output growth jumped significantly, for a second time. Between 1842 and 1875 the average growth rate was 3.5% a year, much stronger than the 0.9% recorded between 1814 and 1842.

IN THIS ISSUE

- The Colonial Secretary, the farmers and the growth of a country •
- Does increasing the time reduce the crime? •
- Offshoring and wages back home •
- 'One billion euros' sounds a lot, in any language •



The British were granted permanent control over the Cape colony in the Treaty of Vienna in 1815, after the defeat of Napoleonic France (which was allied to the Dutch). For the following two decades, the British struggled to reform South Africa's shifting system of land-ownership.

In 1842, the short-term, insecure approach of the 'loan-place' system established by the Dutch East India Company was replaced with permanent freehold tenure.

In the 1820s, Edward Wakefield, a British parliamentarian, had studied several of the so-called frontier colonies, and admired the system used in the western United States, under which fixed plots of land were sold, on a freehold basis, at public auction, encouraging settlers to 'go west,' and chance their hand on virgin territory.

From 1839, Lord John Russell, then Colonial Secretary, decided a similar approach should also be applied in South Africa.

Previously, tenant farmers had leased their land on a short-term basis, directly from the government, with no long-term guarantee of tenure. Much of the land wasn't mapped or surveyed, so it was almost impossible to keep a proper record of who owned what. Agreements were often verbal, and squatting was widespread.

Once plots of land were sold off permanently, and farmers no longer expected to be driven off their land

at short notice, they began to irrigate previously uncultivated areas - bringing new land into use - and to invest in more equipment, knowing that they would still be around to reap the benefits. The number of acres under cultivation expanded rapidly, so did output; and South Africa was launched on a trajectory of rapid economic expansion.

Security of ownership was identified by Adam Smith, in the *Wealth of Nations*, as one of the keys to unlocking the wealth-creating potential of the population. Brunt's examination of the history of South Africa vindicates Smith, but this tale of entrepreneurial farmers trying to scratch a living in the dry hinterland of the Cape more than 150 years ago also has relevance for governments trying to kick-start economic development today.

Contrary to the arguments of some economists, Brunt's analysis suggests that countries are not locked into a path of halting economic growth by their history of bad institutions, repressive colonial masters or a particular geographical endowment - creating better political and legal institutions can make a dramatic difference, and help to get stronger growth underway, whatever the problems of the past.

CEPR DP 6404 Property Rights and Economic Growth: Evidence from a Natural Experiment by Liam Brunt

Does increasing the time reduce the crime?

Economists and criminologists have often tried to measure the deterrent effect. However, they are normally only able to compare the harshness of sentencing in a particular country with the crime rate across the population as a whole. This approach struggles to capture the impact of the threat of punishment on individual wrongdoers. It also fails to take account of the 'incapacitation effect': the more criminals are imprisoned, the fewer are at liberty to commit crimes, so the crime rate might fall regardless of whether anyone is actually deterred by the threat of firmer punishment.

For these reasons, the authors believe that an Italian law passed in July 2006 creates a valuable opportunity for a natural experiment, tracking the behaviour of particular individuals.

In a new CEPR paper, **Francesco Drago, Roberto Galbiati and Pietro Vertova** use the event of a mass amnesty, instituted in Italy in 2006, to test just how strong that deterrent effect is for particular individuals;

and how it changes for offenders who have already served a long prison sentence.

Prison overcrowding had been a chronic problem in Italy for many years, and the plight of the prisoners had even attracted the attention of the Pope. Finally, in July 2006 the Italian parliament responded by passing the Collective Clemency Bill which instantly cut the sentences of all prisoners by three years (excluding those who had carried out the most serious crimes). Thus, all those criminals in Italy's prisons who had fewer than three years left to serve were set free immediately. Within two months, 37% of the entire prison population had been released.

However, the prisoners who were set free did not simply have their former crimes wiped off their records. The law says that if they re-offend within five years, whatever time was left of their original sentence - which could be anything up to three years - must be added on to any new prison term.

It is this element of the policy, the authors explain,

that makes it a perfect natural experiment. The number of months each prisoner had left to serve is essentially random: it depends only on how long before July 2006 they happened to have committed their original crime.

Using official records, it is therefore possible to test what impact the expectation of serving extra months or years of punishment for a given crime has had on the released prisoners' propensity to re-offend.

The authors analyse data from the Italian Department of Prison Administration, which covers more than 25,000 released prisoners, 81% of whom were released on the first day of the amnesty, 1 August 2006. The database shows how much longer the prisoners had originally been sentenced to serve, and reveals which of them had already committed another crime by February 2007.

Drago et al. find that the extra length of sentence the offenders would incur if they were punished for a new crime does indeed make a difference. For each extra month of imprisonment they were expecting to serve as a result of their early release, the likelihood that a released criminal would commit a new crime fell by 1.24%. This suggests that, as the theory of deterrence predicts, the worse the punishment an individual anticipates if they are caught, the less likely they are to commit a crime.

The authors are also able to match re-offending rates against the length of the criminals' original sentences.

It might seem that the longer a prisoner has already served, the less keen they will be to land themselves back in prison.

However, the reality turns out to be different. In fact, the analysis shows that prisoners who had served longer sentences in the first place were less sensitive to the prospect of serving extra time in prison if they were convicted of a new offence. In other words, the deterrent effect of extra punishment seems to become weaker, the longer a prisoner has already been locked up.

By using the unusual Italian clemency law of 2006 as an opportunity to study the deterrent effects of prison, this study does show that, to some extent at least, the threat of punishment works. Offenders who could expect to serve longer if they committed a new crime, were more likely to stay within the law.

As the authors' analysis shows, it does not necessarily follow that simply lengthening sentences across the board would instantly create a greater deterrent, at least for prisoners who have already been punished. The longer an individual has spent in prison, it seems, the more they become inured to the threat of further incarceration.

CEPR DP6401 The Deterrent Effects of Prison: Evidence from a Natural Experiment by Francesco Drago, Roberto Galbiati and Pietro Vertova

Offshoring and wages back home

Globalization often gets the blame for squeezing the wages of the lowest-paid, as unskilled jobs are 'offshored,' and increasing the rewards of the highly-skilled workers whose talents are in demand in the new hi-tech, interconnected global economy. According to a new paper by CEPR Researchers **Karolina Ekholm** and **Karen Helene Ulltveit-Moe**, however, the true influence of globalization on the make-up of the workforce is much more complex.

Ekholm and Ulltveit-Moe observe that in the US, something has changed in the past few years. From the early 1990s until around 1998, skilled workers were grabbing a growing share of the pie. More recently, however, a different pattern has taken over: skilled workers have begun to receive less of a premium. But globalization has proceeded apace, suggesting that a more sophisticated model of the way that globalization affects relative wages is needed.

The authors begin by distinguishing two reasons that manufacturing firms may decide to move some parts of their operation overseas. The most obvious is a fall in 'trade costs': the price of moving parts, or finished

products, from one part of the world to another, as trade liberalization brings down tariffs, and technological improvements make transport cheaper.

But falling trade costs alone are not enough to drive offshoring. Firms also incur 'fragmentation costs': the price of connecting and coordinating different parts of their business, across the world. Until these fragmentation costs fall to a low enough level, offshoring will not be profitable. The IT revolution of recent years, which has slashed the costs of computing, information processing and telephone calls, has helped to kick-start this process.

Both trade costs and fragmentation costs have fallen persistently in recent decades, so Ekholm and Ulltveit-Moe next use an economic model to trace how income inequality evolves as a result of these forces - offshoring because of falling trade costs; and offshoring because of falling fragmentation costs.

As trade costs decline, in what the authors call 'globalization I,' firms in industrialized countries exploit comparative advantage by offshoring less skill-intensive parts of their business to lower-cost economies, while

keeping the headquarter operations at home.

During the early stages of this process, the need for unskilled workers at home declines, while skilled staff are still needed to run the business – so the premium paid to skilled workers in the home country rises because they are very much in demand. As trade costs fall to even lower levels, and the process of offshoring continues, however, its impact changes.

Offshoring improves firms' productivity, increasing the supply of goods they can profitably produce, and thus reducing prices. This increased competitive pressure forces some firms out of business, and the skilled workers needed at headquarters find themselves out of a job.

So there are two opposing forces at work: specialization drives up the relative wages of skilled workers, and increases inequality; but as specialization increases, competition intensifies, jobs are lost, and the skills premium falls.

Taking this process to its logical conclusion, eventually all manufacturing firms will have offshored their low-cost functions. At that stage, changes in trade costs would no longer affect wage inequality in industrialised countries – because everyone would be working in the services sector.

At the same time as falling trade costs are pushing forward the process of 'globalization I', the decline in fragmentation costs creates a different set of forces acting on wage inequality: 'globalization II'. In its early stages, this looks very similar to 'globalization I' – specialization increases, less skill-intensive parts of the manufacturing process are relocated abroad and, as a result, skilled workers are more in demand back in the

headquarters country, and their relative wages rise. Then, as fragmentation costs fall further and more firms offshore, competition becomes more intense and firms begin to be driven out of business, causing the demand for skilled labour to decline.

Towards the end of the process of globalization II, however, the forces affecting wage inequality are different: even when there is no low-skilled manufacturing left at home, further falls in fragmentation costs improve productivity, and hence profitability.

As long as trade costs are high enough, new manufacturing firms have an incentive to enter the market, and take full advantage of the gains to be won from outsourcing. These new firms will need highly-skilled workers to staff their headquarters, so once the process reaches this stage, the skills premium – and wage inequality – may actually start to increase again.

It is not easy to unravel exactly which direction the US and other industrialized countries are being pulled in by this complex web of forces, but Ekholm and Ulltveit-Moe's study shows that 'globalization' is not a simple process – it involves both increasing specialization and increasing competition, and the outcome for wage inequality depends on which of these forces wins. Over time, the net impact of free trade on the average worker may change, and the instincts of protectionist politicians may prove to be deeply misguided.

CEPR DP6402 A New Look at Offshoring and Inequality: Specialization Versus Competition by Katrina Ekholm and Karen Helene Ulltveit-Moe

'One billion euros' sounds a lot, in any language

The European Union takes its citizens' attachment to their mother tongue so seriously that multilingualism was actually written into the Treaty of Rome. EU citizens have the right to communicate with its institutions in the language of their choice; and its regulations and decisions must be translated into all of the EU's official languages before they become valid. As the EU has expanded, that has become an increasingly cumbersome task. Brussels now spends more than €1bn a year on translation and interpretation.

As well as rising costs, there are serious practical implications. In 2003, an agreement to allow developing countries to bypass patent laws and import cheap generic medicines was delayed by more than a year,

because of the necessity of translating it. Translation also increases the time and the costs involved in filing a patent in Europe: it takes on average more than four years, and costs €129,000 in the EU, compared to just over two years, and €16,500 in the United States. Linguistic affairs are no laughing matter, as MEPs will attest: with their debates simultaneously translated into the European Union's official languages – of which there are now 23 – they have been asked to avoid making jokes, to avoid confusion. In a new CEPR paper, Researchers **Jan Fidrmuc** and **Shlomo Weber** and their co-author, **Victor Ginsburgh**, set aside fraught questions of national pride, and analyse data about the linguistic abilities of Europe's citizens, to identify the optimal set of official languages for the new EU.

In the hope of extricating the EU from this linguistic quagmire, Fidrmuc et al. set out to narrow down the current list of 23 languages, by asking which alternative, smaller set would leave the fewest EU citizens 'linguistically disenfranchised' – unable to participate in EU politics, because they don't speak or understand any of its official languages.

In order to answer this question, the authors analyse the results of an EU-wide Eurobarometer survey, carried out in 2005, which asked people which languages they spoke 'well enough to have a conversation,' allowing them to list up to three.

Using this data, the authors are able to quantify the citizens who would be genuinely excluded by a given list of languages.

How many languages would be optimal depends on the political question of what level of linguistic disenfranchisement is acceptable. English is the most widely-spoken language across the EU, for example – but making it the only official language would leave out as many as 63% of EU citizens, who cannot speak it. Moreover, in 20 of the 27 member states, more than half the population would be disenfranchised.

To identify a more politically acceptable solution, the authors build up a 'nested set' of languages: English must be in the optimal language-set, because it leaves the fewest citizens disenfranchised; the next option on the policy menu is a set including English, plus the language which, together with it, would leave the smallest group of non-speakers. This turns out (narrowly) to be German. The next set is English, plus German, plus the language which brings the largest number of non-English and non-German speakers into the fold – French – and so on.

If English, German and French were made the EU's three official languages, 38% of citizens would still be linguistically disenfranchised, because they speak none of these three. Increasing the set to six, by adding Italian, Spanish and Polish, leaves just 16% of the population disenfranchised; adding Romanian reduces that to 13%.

In order to get a better idea of the political constraints facing linguistic reformers, Fidrmuc et al. examine how far down the list of language sets it would be necessary to go to win support for a change through the decision-making system of Qualified Majority Voting.

The authors note, of course, that any changes to EU official languages currently require unanimity among member states (and as such are highly unlikely to win support); but they examine what would happen under the less onerous QMV system.

On this basis, as few as seven official languages could win support if each country were willing to vote for a proposal which disenfranchised 40% or less of its population. If that seemed too high a price, and

countries would only accept a proposal that disenfranchised 10% or less of their population, the list of official languages would have to expand to 11. In other words, the current system is one the member-states would be highly unlikely to agree themselves, under QMV. Even a list of 11 would slash the number of official languages in half.

Survey evidence suggests there may be considerable public support for greater linguistic conformity: a recent study carried out across the EU showed that 54% of respondents 'tend to agree' that European institutions should adopt a single language to communicate with EU citizens.

That support is likely to increase over time: the Eurobarometer survey of language abilities allows the authors to measure the proficiency of different generations in foreign languages. Among the younger respondents, there was a far greater tendency to speak foreign languages. Using English as the EU's one official language would only leave out 45% of young Europeans, compared to 63% of the population as a whole, for example. Considering only 15–29 year olds, something between three and seven languages would be needed to secure a majority under QMV, depending again on the levels of disenfranchisement each government was willing to accept among its own population.

How easy it is for non-speakers to master the chosen official languages may also be relevant. For that reason, the authors carry out another analysis taking into account the 'distance' between one language and another, i.e. how similar it is (Dutch speakers tend to be able to master German, for example, more easily than Latvian speakers can pick up French). If speakers of similar languages are counted among those who could understand the new list of official languages, again, no more than seven languages would be needed to win a vote under QMV.

Linguistic disputes can be an emotive cocktail of fierce national or ethnic pride and social identity. In this paper, however, Fidrmuc and his co-authors seek to cut through these emotive questions with a practical analysis, which shows that reform could gather broad political support – and if it were achieved, would cut the costs of translation, reduce the risks of misunderstanding and delay, and perhaps even allow MEPs to unleash once more their sense of humour.

CEPR DP6367 Ever Closer Union or Babylonian Discord? The Official-language Problem in the European Union by Jan Fidrmuc, Victor Ginsburgh and Shlomo Weber