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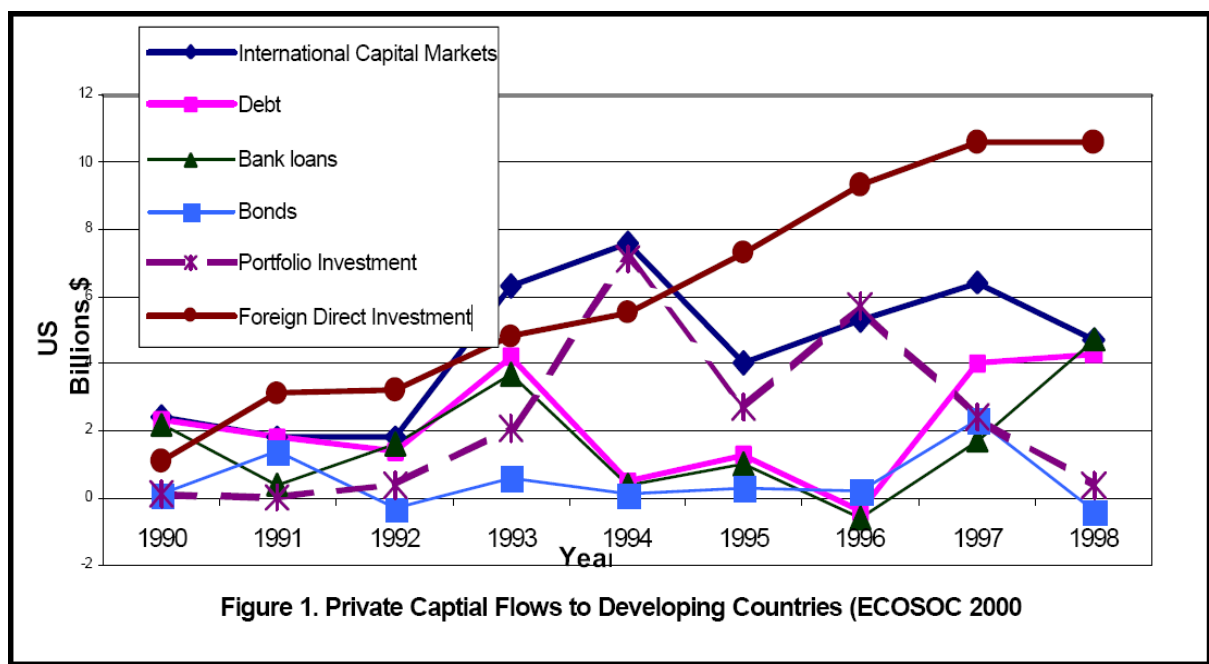
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What is the evidence on the role of foreign direct investment in economics growth, and on the determinants of foreign direct investment flows?

Niall Douglas

Firstly I shall investigate the determinants of FDI flows and why they have supplanted other forms of foreign investment in recent years. I shall then turn to their effects on GDP growth, examining the empirical evidence in the modern form and also that of during the British empire, where its FDI was far longer lasting and substantial (relative to world GDP) than at present. I shall then suggest a simple model to explain this behaviour, and finally extract a conclusion that FDI improves GDP growth in the short term, but has a negative effect in the long term.

One of the most significant changes since the Bretton Woods agreement¹ establishing our current international monetary system² has been globalisation and the resulting geographic diffusion of investment. This diffusion, already set in motion by Bretton Woods³, was significantly sped up by the adoption of the Washington Consensus⁴ and one can see commensurate changes in levels of foreign direct investment⁵ such that it is now the largest source of foreign private capital reaching developing countries:



¹ Signed in 1944, came into effect in 1946.

² While the gold pegging system is long gone, you can still find a majority of the Bretton Woods agreement in force in today's international economy.

³ Bretton Woods significantly opened up previously closed markets (mostly to permit the USA to enter them), but more importantly set in train a process of deregulation and removal of tariffs which continues to this day.

⁴ Williamson, J., 1993, 'Development and the "Washington Consensus"', *World Development*, Vol 21:1239-1336.

⁵ Source: *Briefing paper on Foreign Direct Investment: A lead driver for sustainable development*, Earth Summit 2002 (<http://www.earthsummit2002.org/es/issues/FDI/fdi.htm>)

Why should investors increasingly choose foreign direct investment instead of more traditional bond investment or via foreign portfolios? The main reason appears to be a more favourable legal environment⁶:

Item	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number of countries that introduced changes in their investment regimes	57	49	64	65	76	60	63	69	71	70	82	102
Number of regulatory changes	102	110	112	114	151	145	140	150	208	248	244	271
of which:												
More favourable to FDI ⁷	101	108	106	98	135	136	131	147	194	236	220	235
Less favourable to FDI ⁸	1	2	6	16	16	9	9	3	14	12	24	36

This misses the more obvious determinant which, like with any financial investment, is that there is a higher rate of return on FDI than other forms of foreign investment. Much of this return is financial, but some is intangible eg; increased diversification of production (and hence better hedging against risk), more direct control of foreign investment (and therefore higher potential for productivity increases) etc. but some of it is due to the current fashion of outsourcing, which in turn is part of a long term trend in moving less skilled work from developed economies into developing countries. There is significant evidence that recipient governments tax FDI to a far lower degree than other forms of investment⁹.

According to Borensztein's¹⁰ *How does foreign direct investment affect economic growth?*, probably the best known paper on FDI and GDP growth, governments tend to see FDI as a subsidy on their own investment as, according to the paper, FDI investment is usually matched locally by one for one or greater – hence the favourable regulatory changes. Also according to the same paper, this is beneficial for the recipient country as GDP growth is indeed increased through improved productivity, caused by transfer of advanced technology and improved working methods – but **only** where the recipient nation has a sufficient *existing* stock of human capital¹¹. This makes sense given that developing country workers cannot embody new knowledge without sufficient critical mass, and thus affect long-run Total Factor of Productivity.

⁶ Source: UNCTAD, *World Investment Report 2005: Transnational Corporations and the Internationalization of R&D*, table I.14.

⁷ Includes liberalizing changes or changes aimed at strengthening market functioning, as well as increased incentives.

⁸ Includes changes aimed at increasing control, as well as reducing incentives.

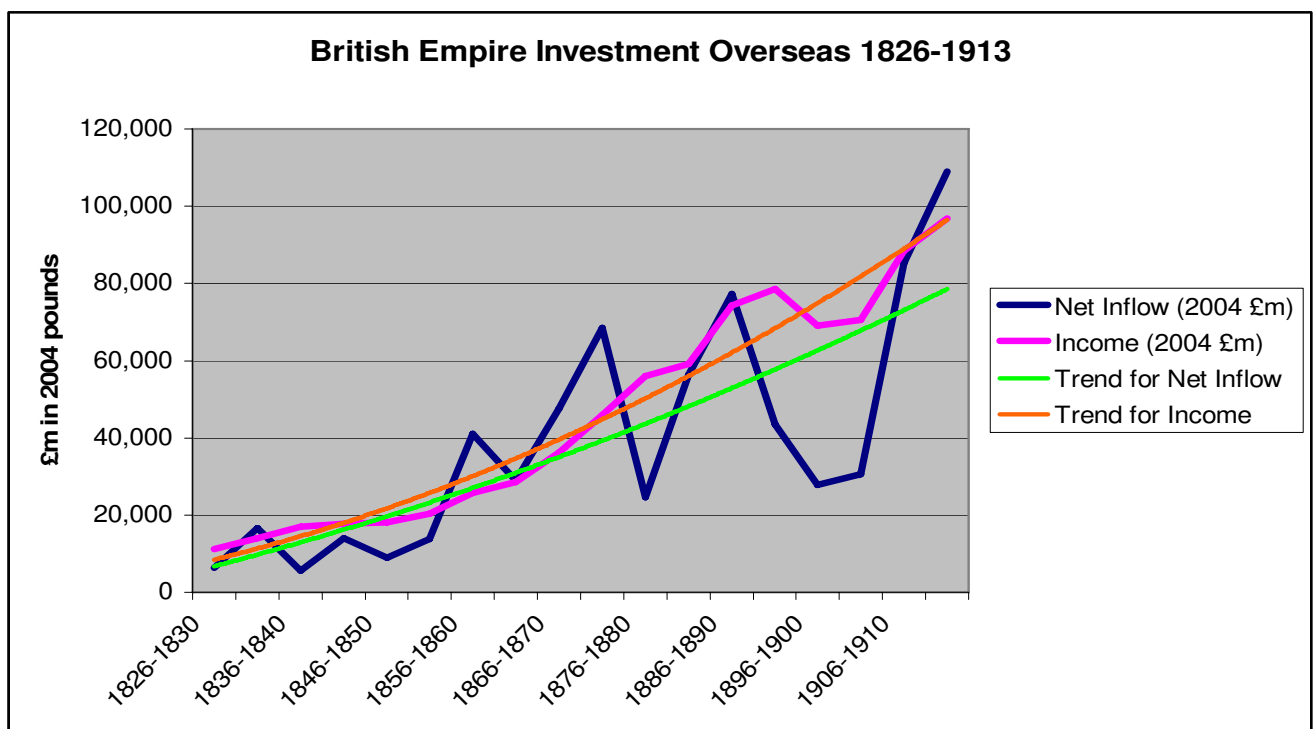
⁹ Indeed, the subsidies offered by recipient governments can be so generous as to be construed as an outright bribe. See http://en.wikipedia.org/wiki/Republic_of_Ireland_corporation_tax.

¹⁰ Borensztein, E., 1998, 'How does foreign direct investment affect economic growth?', *Journal of International Economics* 45, 115–135

¹¹ The required human capital stock is quite high – at least one year of post-primary education. Less than half of the countries surveyed in the paper possessed such a level of human capital.

This same conclusion is borne out in *Capital Inflows, Investment and Growth* by Bosworth & Collins¹², but by using a more complex methodology, they find that the correlation between FDI and GDP growth is much weaker¹³ – an additional 1% of GDP added to annual FDI yields 0.1% added to GDP growth. Furthermore they determine that in fact two thirds of FDI crowds out indigenous investment over time. This paints a far less rosy picture of FDI on long term GDP growth, as if the investment remained indigenous then all the profits would return to the recipient country instead of being sent overseas.

It seems to me that the primary point of investment is to extract wealth generated by the recipient, and indeed this is true in all financial markets where more money is taken out than invested¹⁴. Therefore, FDI should be extracting a very handsome return from recipient countries given the risk involved in investing abroad¹⁵. The problem with determining this rate of return in the modern case is that multinational corporations are primarily legal instruments for avoiding paying tax, and therefore obtaining realistic figures for overall earnings on FDI is extremely hard. I therefore turn to a previous age when multinational companies could not avoid paying tax so easily, namely that of the height of the British Empire¹⁶:



¹² Bosworth, B. and Collins, S.M., 1989, 'Capital Inflows, Investment and Growth', *Tokyo Club Papers 1999 Vol. 12*.

¹³ I have not provided a comparative figure for the Borensztein paper as I do not understand sufficiently the econometric figures provided. However the Bosworth and Collins paper itself says that their findings are much weaker than Borensztein's.

¹⁴ For example, the net outflow of wealth from the US stock market 1981-2001 has been £540 billion. See Kelly, M., 2001, *The Divine Right of Capital*, Berrett-Koehler, San Francisco.

¹⁵ This assumption is borne out by FDI flows to developed economies becoming much higher during booms as the ratio of return to risk becomes much higher. See: UNCTAD, *World Investment Report 2005: Transnational Corporations and the Internationalization of R&D*, table I.14.

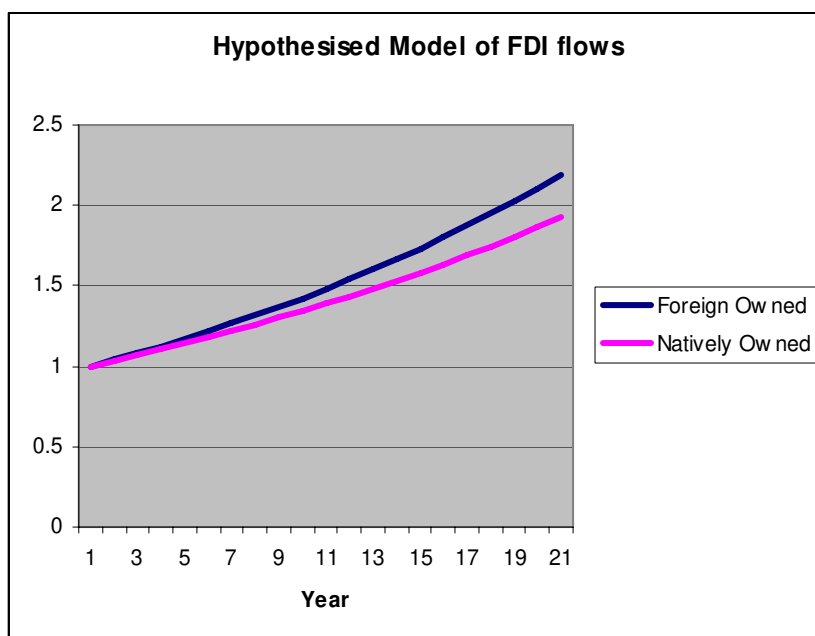
¹⁶ Source: Imlah, A.H., 1958, *Economic Elements in the Pax Britannica*, Harvard University Press, Cambridge Massachusetts. The values were adjusted for inflation using <http://eh.net/hmit/ukcompare/>

As one can see, annual income from foreign investments exceeds that of net annual foreign investment! Of course, this is a total foreign investment amount which differs significantly in meaning from direct investment; however, a large proportion of foreign investment during the British Empire was actually direct¹⁷.

There is no reason to presume that anything has changed in modern times – if anything the rate of return on investment should have increased as the trend lines above show. Another advantage of using such historical data is one can now investigate the long term effect of FDI on GDP growth.

A simple model

From this we can hypothesise that as absolute levels of FDI in a foreign economy grow, the extraction rate of foreign generated wealth increases because there is a stable percentage return on the absolute value. Or put symbolically, $FC' = FC + (r - \pi)FC$; $NC' = NC + (r - c)NC$ where FC is foreign capital, NC native capital, r is the rate of return, π the profit retained by the investing country and c the crowding out effect of foreign capital on native capital investment. If one assumes that foreign investment does indeed crowd out two thirds of native investment, and that the rate of return is 5%¹⁸ with profit take 1%, you get the following graph:



As one can see, the share of wealth generated in the recipient country is in favour of the investing country. Therefore, GDP per capita of developed and developing economies diverges over time in favour of the developed economy with relative GDP falling over time. This eventuality is dependent on the crowding out effect causing greater loss to the recipient country than the profits taken before reinvestment by the investing country.

We therefore should be able to observe a distinctive pattern in empirical data. So long as there is inflow of FDI, relative GDP should decline. If inflows change to outflows, relative GDP should

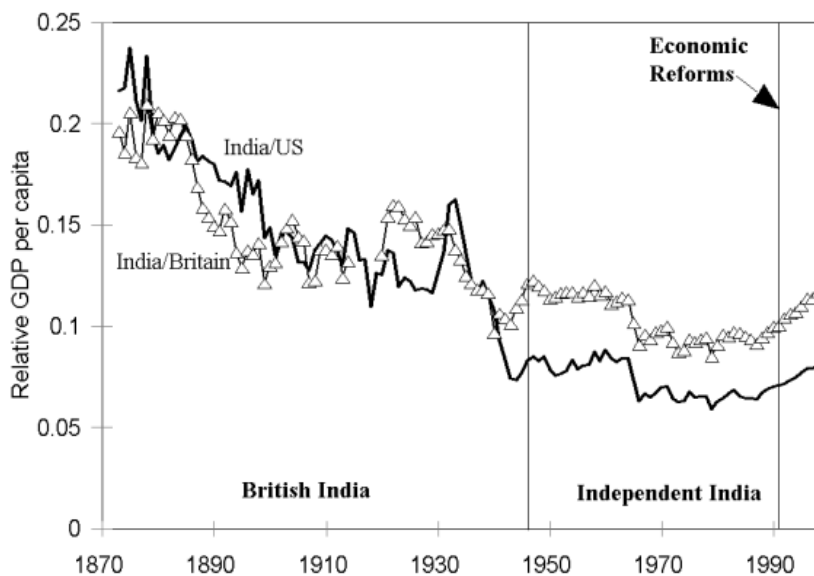
¹⁷ As an example, Imlah states that only 28% of British foreign investment was in bonds and loans – indeed, investment in railways **alone** amounted to 45% of foreign investment in 1907. The rate of return on foreign bonds was an average of 5.2% versus an overall average rate of return of 5.19% (in other words, the graph above is quite representative).

¹⁸ This is being generous in treating both as equally productive. In developing countries, foreign developed facilities will usually have a much higher Total Factor of Productivity than host country firms and therefore should have two additional advantages: (i) generating better return on capital invested and (ii) being able to compete against native industry with lower prices and higher quality. Therefore the rate of return should differ in favour of FDI.

decline very fast in the short term as productivity capacity is lost, but eventually bottom out and thereafter relative GDP should improve.

Empirical Comparison

For simplicity, I shall take the case of India¹⁹, formerly the jewel of the British Empire and an economy well capable of managing itself:

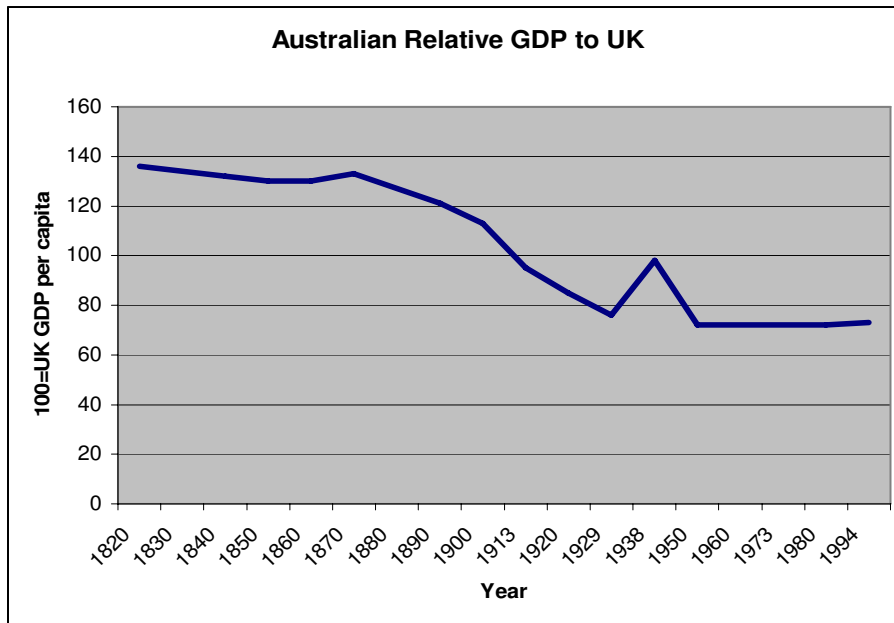


One can clearly see a decline in relative GDP before independence. Furthermore, the rate of relative decline increased very rapidly after independence (when British FDI would have been stopped) but led by 1950 to a decrease in the rate of decline as compared to when under British rule. This implies the rate of wealth extraction dropped after independence, and thus our model is supported.

Of course, the sharp decline at independence could have been entirely caused by the revolution substantially disturbing economic activity. We therefore turn to another well-managed former colony, Australia, which did not have a revolution²⁰:

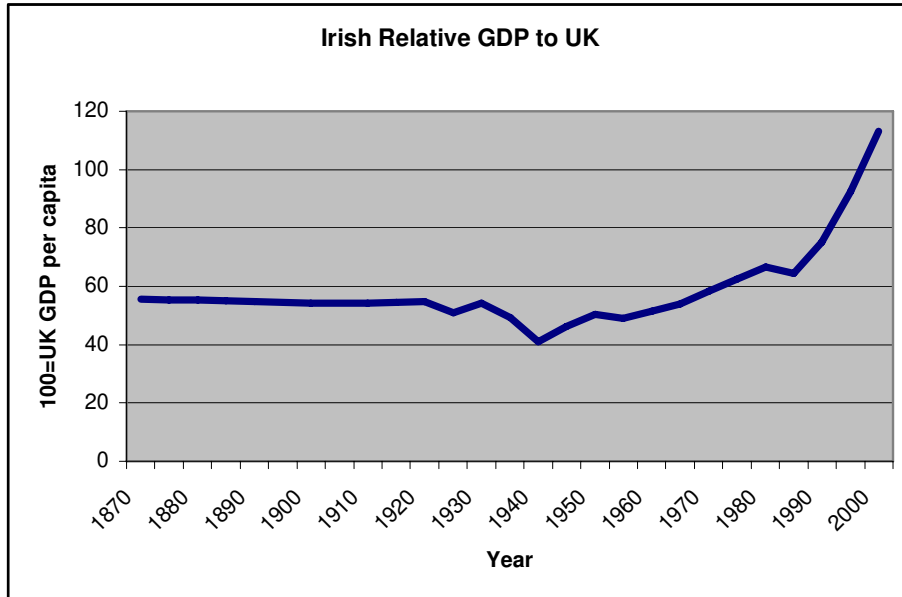
¹⁹ Source: Clark, G., and Wolcott, S., *One Polity, Many Countries: Economic Growth in India, 1873-2000*.

²⁰ Source: McLean, I., 2004, *Australian Economic Growth in Historical Perspective*, unpublished, School of Economics, Adelaide. Some of the values for decades were interpolated between other data.



Australia became Dominated²¹ in 1901, and once again we can see a declining relative GDP before emancipation, then a sharp drop off afterwards as FDI flows turned outward, then a flattening out thereafter.

Unfortunately Canada separated in 1871 when GDP estimates are too rough to be of any use, which is unfortunate given it also separated peacefully. However Ireland separated in 1922, though violently²²:

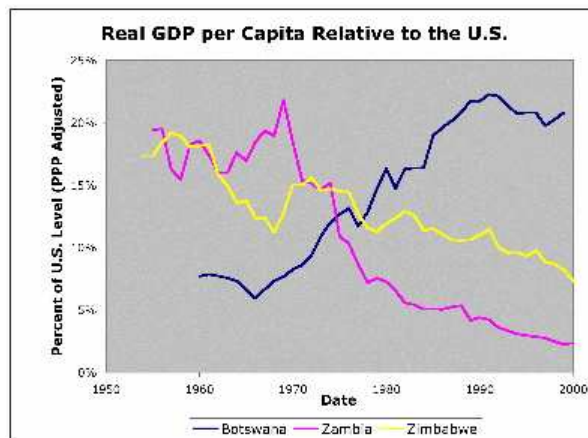


²¹ “Dominionated” is correct here because each of its six states were separately given Dominion status.

²² Source: Cullen, L. M., 1972, *An Economic History of Ireland since 1660*, Batsford, London. Note that figures before 1921 are sketchy at best due to the Irish economy being treated as part of the British economy and some interpolation between figures has been performed. One should especially note that more recent research based on worker pay 1820-1910 shows a more strongly declining GDP per capita than is shown here.

One again we see a declining relative GDP though there is only a slight drop in relative GDP after independence, but this is probably due to the British government funding one side in the subsequent Irish civil war. A far greater drop was seen by the 1940's when the losing side of the civil war won a general election, though of course World War II was also occurring. I think that this case example is mild evidence at best, but then the Irish economy until very recently was inextricably linked to the British economy²³.

The last remaining examples where the economy was of any size at all²⁴:



Botswana is regarded as a well-managed country²⁵ and was non-violently freed with British agreement in 1966. Zambia and Zimbabwe are not well-managed countries with Zimbabwe having a violent revolution in 1964-1965. Here the pattern is less clear, with a drop in GDP around 1965 in both Botswana and Zimbabwe, but only with Botswana showing improvement thereafter.

Conclusion

While other macroeconomic factors could be at play, there is a remarkable coincidence that while Britain and her investment abroad grew rapidly over a long period, her colonies declined while the income derived from those colonies grew. It is too soon to say if modern foreign investment inflows are the primary cause of the widening gap between rich and poor, but as investment is done to yield a return, it is very likely and a simple model to explain this behaviour was proposed which showed that this effect depends on the quantity of crowding out effect of foreign direct investment. It could well be this which explains the remarkable economic success of micro-credit schemes²⁶.

In short, FDI does appear to improve GDP growth in the short term where the recipient country is sufficiently well educated – but in the long term, decreases growth relative to the investing nation.

²³ Ireland's spectacular recent growth has been largely financed by inbound FDI flows, mostly from the US. It remains to be seen what the long term consequence of this shall be.

²⁴ Source: Alan Heston, Robert Summers and Bettina Aten (2002), "Penn World Table Version 6.1" Center for International Comparisons at the University of Pennsylvania (CICUP). Unfortunately I could find no useful figures for before the 1960's as British Empire records treated the whole of Africa as an aggregate.

²⁵ The CIA Handbook rates countries in this fashion. See <http://www.cia.gov/cia/publications/factbook/geos/bc.html>

²⁶ The famous Grameen Bank in Bangladesh is effectively a cooperative bank lending savings of small businesses out to start more small businesses. By the end of 2002, 68 million people were participating worldwide (Worldwatch Institute (2004) *State of the World 2004: Progress Towards a Sustainable Society*, Earthscan, London).

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