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Challenging Conventional Views on Mobile Telecommunications Investment: *Evidence from Conflict Zones*

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Abstract

Huge amounts are being invested in information and communication technologies such as mobile phones and their telecommunications infrastructure. Development agencies provide a conventional view on the "climate" needed to encourage such investment; particularly that good governance and security are required. We question this conventional view with a study of mobile telecommunications in three insecure states that score very badly in the Worldwide Governance Indicators. Data is limited but suggests insecurity and "bad governance" may not be the barriers to investment that are normally supposed. Indeed, it is possible – at least for this type of digital technology – that they may encourage investment.

Introduction

What do you need to facilitate investment in mobile telecommunications?

Mobile telecommunications has become a silver bullet *du jour* of international development. And, beyond the hype and alongside some exacerbation of inequities, it can be seen delivering both social and economic development outcomes (Heeks and Jagun 2007). Yet at least half the world's population lack access to this development tool.

Not surprisingly, then, there is significant interest in understanding those factors which can facilitate greater investment in mobile technology (and in information and communication technologies – ICTs – more broadly). Hence, the initial question. To which the standard answer has been that the "investment climate" – the factors that shape opportunities and incentives for investment – rests on a series of investment "pillars" (Mills and Fan 2006).

Those pillars are security and stability, finance and infrastructure, workers and labour markets, and the regulatory framework and tax. Overarching all of these, the view is that good, stable governance forms the crucial basis for investment. In its absence, investment will be curtailed. This conventional view, emanating from key international development agencies, is seen as similar whether considering developing countries generally (World Bank 2005) or those that have been conflict-affected (Mills and Fan 2006).

The governance and security investment climate in three conflict zones

We therefore decided to investigate further, picking out security and good governance as two key elements seen as necessary for facilitating investment, and looking at investment in mobile telecommunications in three countries that had neither during the initial years of the 21st century: Afghanistan, Democratic Republic of Congo, and Somalia.

Measures of governance were assessed for the period up to 2006 via the Worldwide Governance Indicators (Kaufman *et al.* 2007). All three countries were in the bottom 10th percentile rank (and, for most measures in the bottom 5% of countries worldwide) throughout the 2000s, and were listed as "governance crisis" countries. Their governance charts are shown in Figure 1 (developed from Kaufman *et al.* 2007).

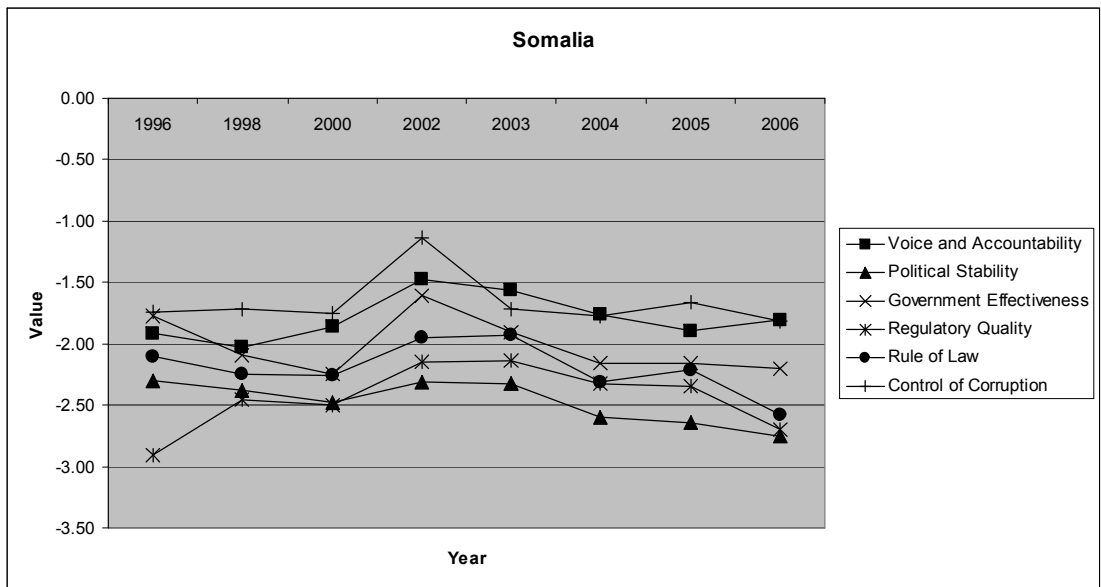
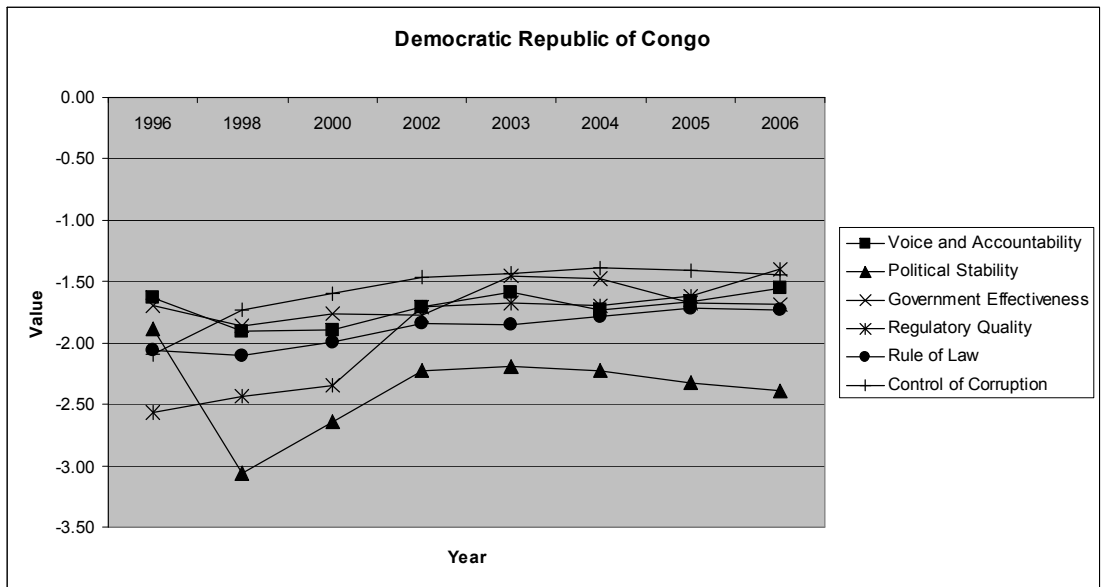
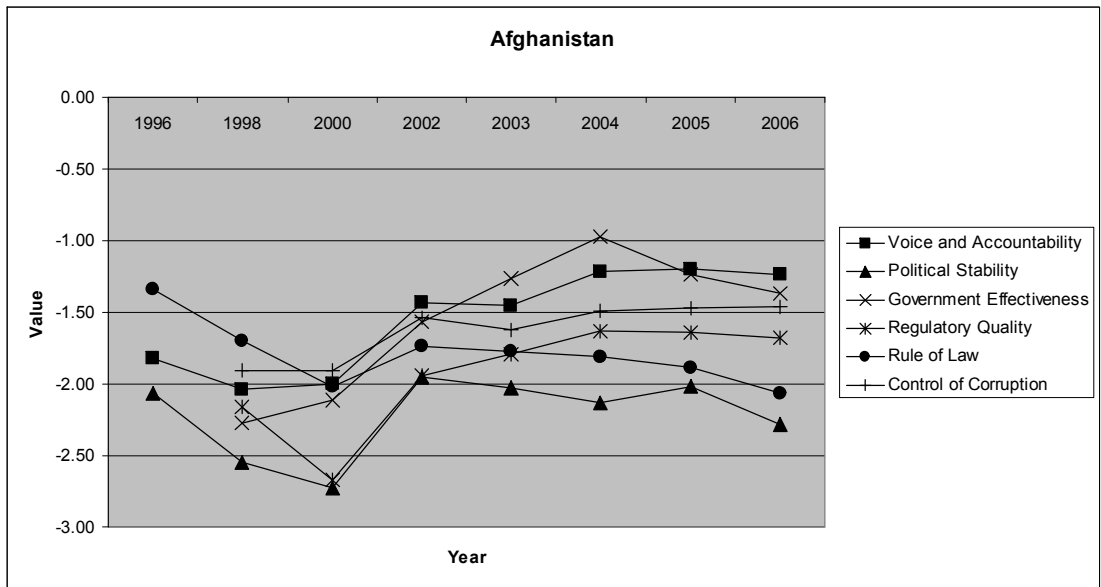


Figure 1 – Afghanistan, DRC and Somalia Governance Indicators

Indicators of security were a bit harder to identify. For all three countries, one could chart a continuing series of reports on armed conflict, killing of civilians and general insecurity throughout the 2000s (e.g. HRW 2000, MSF 2005). They were three of the five countries listed by the UN as violating children's rights in relation to armed conflict (HRW 2004). All three were sites of international peace-keeping interventions. And they were three of the six sites worldwide identified statistically as the most-violent and least-secure for aid operations (Stoddard *et al.* 2006). It therefore seems reasonable to conclude that – just as with governance – the three countries were among the bottom 5% (and possibly the bottom 2%) of countries worldwide in terms of security.

Given this, we may conclude that Afghanistan, Democratic Republic of Congo, and Somalia are investment "basket cases" according to conventional investment models. They were among the most insecure, violent, unstable, corrupt, unregulated, unlawful and generally ungoverned countries on earth. No-one in their right mind would ever invest in such places. Or would they?

Investment in mobile telecommunications

We have no direct figures for the level of investment. Therefore we have to rely on proxies. Looking at the period from the end of 2000, we find a plethora of mobile telecommunication company launches; all of which led on to investments that created active GSM networks as summarised in Table 1 (GSMA 2007):

Launch Date	Country	Company
December 2000	DRC	Celtel Congo
December 2000	DRC	Oasis SPRL (SAIT Telecom)
July 2001	Somalia	Nationlink
October 2001	Somalia	Telsom Mobile Somalia
December 2001	DRC	Congo Chine Telecom
December 2001	DRC	Vodacom Congo (RDC)
April 2002	Afghanistan	Afghan Wireless Communication Company (AWCC)
January 2003	Somalia	Hormud Telecom Somalia
June 2003	Afghanistan	Telecom Development Company Afghanistan (ROSHAN)
June 2003	DRC	Supercell SPRL
March 2005	Somalia	Somafone FZLLC
April 2005	Somalia	Golis Telecommunication Company
July 2006	Afghanistan	Areeba Afghanistan

Table 1 – Mobile Investments in Conflict Countries

Arising from this investment, we see a rapid growth in mobile phone penetration, as shown in Figure 2 (from ITU 2006 and ITU 2008):

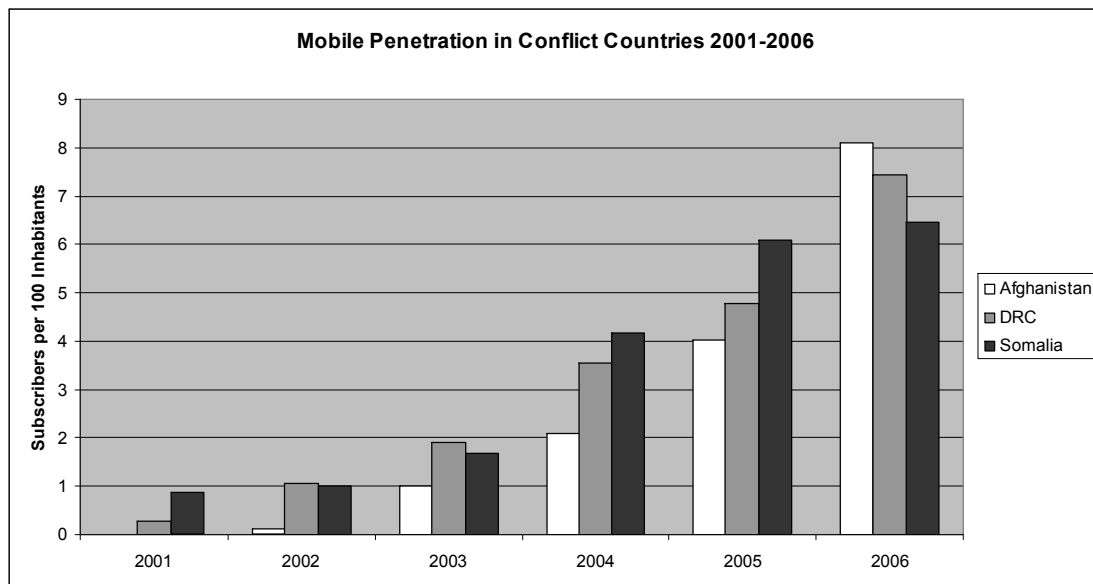


Figure 2 – Mobile Penetration in Conflict Countries

The average annual mobile penetration growth rate in the three countries from 2001-2006 was 111% (1). That compares to an average figure across Africa of 52% and across Asia of 28% (ITU 2008). These countries are therefore outperforming the average.

We can add a few more "outperforming the average" tidbits in terms of the individual countries:

- Afghanistan: mobile telephony is acclaimed as "the most impressive economic success" (*Middle East Times* 2006). It had the third-highest growth rate in the world, pipped only by two other conflict-affected countries – Iraq and Liberia.
- Democratic Republic of Congo: 70% of the country had mobile coverage by the end of the period; a figure well above the average for Africa (Conteh 2006).
- Somalia: seen as the market leader in East Africa (Davis 2007), with below-average call costs following a price fall of some 90% in less than a decade (CIA 2007).

Of course, high growth rates could be put down to the very low baseline figures, and also the absence of mainline telephony alternatives. That may be part of the story but even here there is some balancing evidence. Afghanistan's 2002 mobile telephony baseline figure is regionally and continentally very low (of countries providing data only Myanmar, Nepal and Iraq scored lower in Asia). But DRC and Somalia's 2001 baselines are not dissimilar to much of sub-Saharan Africa – for example, they are both higher than the figure for Nigeria (ITU 2008).

Mainline telephony was in a parlous state in Afghanistan and DRC in 2001 – both registered declines from levels in the mid-1990s; and each was the lowest recorded on its continent. On the other hand, mainline penetration in Somalia was very much on a par with other sub-Saharan countries including, again, Nigeria. And 2001-2006 mainline penetration growth rates for Afghanistan and Somalia were among the highest continent-wide (Afghanistan was second-highest in Asia; Somalia was third-highest in Africa) (*ibid.*).

Conclusions

What, then, can we conclude? First, that any conclusions must be tentative. We looked at only three countries; we have no direct figures on our key dependent variable – investment levels; and we have made use of only secondary, largely quantitative data. We also have limited evidence about the source of investment. Some is likely to come from aid flows; for example, the ITU had assistance programmes in all three countries during the 2000s. However, much more is likely to have come from foreign investment, particularly from non-resident citizens of the country (van Zant 2005).

The conventional wisdom says that insecurity deters investment. Our modest study finds no basis to support this statement in the case of mobile telecommunications investment. Investment has occurred despite significant insecurity and there are signs that it may have been higher than average in per capita terms. One might hypothesise why: insecure countries are places of great uncertainty, and uncertainty pushes up the value of information. Thus citizens will be willing to invest a greater-than-average amount of income on information and communication technologies; particularly those – like mobile phones – which can help provide just the kind of information (safe/unsafe locations, approaching dangers, places to find scarce commodities, etc) that addresses their main uncertainties.

This idea is supported by the finding that personal safety is a key driver behind diffusion of mobile telephony (Castells *et al.* 2007), and by other data: for example, the 2006 outbreak of violence in the Lebanon was associated with a 40% rise in mobile phone traffic (MTC 2006). We might also consider other drivers to mobile phone use in these countries: the military and quasi-military uses of mobile telephony; for example, to coordinate attacks; and uses to coordinate other illegal activities that tend to spring up in insecure situations (e.g. *The Economist* 2007). This partly explains why mobile telecommunications is much less likely to be targetted for attack than other parts of the infrastructure (Bray 2005).

The conventional wisdom says that "bad governance" deters investment. Again, our study finds no basis to support this in relation to mobile telecommunications investment. Investment has occurred despite a widespread breakdown in governance and there are signs that it may have been higher than average.

Three possible hypotheses come to mind. One is that the lure of high demand and profits may be sufficient to pull investors through the obstacles posed by bad governance (though some diaspora investors might also have been motivated by service-provision and nationalist purposes). The second is that, as with lack of security, lack of governance may create a premium for information and hence an investment premium for the tools – such as mobile phones – that handle information.

The third hypothesis is that "governance" presents more of a barrier to ICT investors than is normally supposed. Certainly, in Somalia – the least-governed of the three – investment has gone ahead in the almost total absence of governance. Instead, the investors/mobile operators have self-organised; for example, sorting out their own interconnection between networks in a way often argued will only happen through the

intervention of a government-appointed regulator (Vasquez 2005). They have therefore demonstrated that self-regulation can happen.

Finally, we note one other possible attraction for investment in insecure, barely-governed countries: the level of competition may be less than in other countries; partly because of the level of insecurity and risk. Investors may therefore be able to invest at their own pace rather than be driven by forces of a well-functioning competitive market (Hale 2002).

In conclusion, we have neither the breadth nor depth of data here to overturn the entire appletart of conventional wisdom about investment. At best, we have "scrumped" a few of those apples. We have shown that significant investment does still occur in insecure countries with bad governance; at least in relation to some ICTs. We have suggested reasons why ICT investment could be higher-than-average in such countries. And we have questioned whether security and governance are quite so important as they are often made out as factors facilitating investment in mobiles and, perhaps, in other information- and communication-related tools of development.

Notes

(1) 2002-2006 for Afghanistan to avoid producing an infinite percentage result.

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