Civil War and the Economics of the Peace Dividend

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Abstract: Civil wars dramatically reduce income. Peace might therefore be expected to generate a dividend which both the government and the private sector can spend. Paradoxically, those civil wars which are prolonged and therefore do most damage create only small instant peace dividends. Income has fallen because capital has been lost and so cannot recover until capital has been reaccumulated. However, some of the capital losses are reverable. Once confidence in a secure environment is restored there is a *delayed* peace dividend as private capital is repatriated and `social capital' is rebuilt. Post-war governments should therefore focus not upon how to spend an illusory early dividend, but on how to restore private confidence.

This article attempts to draw some general economic inferences about economic policy in the aftermath of civil war.[1] The recovery from civil war depends upon how it has reduced income, and it is useful to distinguish between two effects. Warfare directly reduces income through the diversion of resources into military activity and the disruption which that activity causes. It also reduces income indirectly because it reduces the capital stock. The onset of peace is generally expected to give rise to a `peace dividend'. However, peace can generate a quick windfall only through reversing the first of these income losses. The decline in income due to the loss of capital persists after the war until the capital is reaccumulated. During brief civil wars the capital stock does not have much time to decline so that most of the income losses are direct. With peace the economy almost reverts to its initial income so that the peace dividend is large. However, when civil wars are prolonged the capital stock declines continuously whereas private agents substitute between activities so as to reduce the direct costs of disruption. Hence, whereas the overall costs of war mount with its duration, the immediate gains from peace are smaller. Recovery depends upon the restoration of the capital stock. Nevertheless, public policy can accelerate the recovery because the losses in capital during civil war are due to processes which are to an extent reversible.

An economy loses capital during a civil war through four processes. First, because war is a temporary negative shock, private agents rationally dissave on the anticipation of peace. Secondly, the government and its opponent are liable to drive each other into a war of attrition in which there is an unsustainable depletion of public wealth. Neither of these losses is reversible except by the long process of savings supplemented by aid. However, the two other processes have the potential for a delayed peace dividend. The third is the decay in what has been termed *social* capital. International wars strengthen the state: indeed, Herbst (1990) has argued that the absence of external threat accounts for the weakness of the state in Africa. By contrast, civil wars can erode both the state and other institutions of civil society. Many of these institutions are economically useful, lowering transactions costs, securing property rights and containing opportunistic behaviour. Once they have been eroded by social disruption, opportunism can persist even once peace is restored: the society has flipped from a trust equilibrium to an opportunism equilibrium. If public policy can be designed to flip the society back to the trust equilibrium then the `social capital' is restored. Fourthly, during civil wars private agents transfer assets abroad. This loss of capital can be restored if private agents are induced to reverse this portfolio shift. A variety of public policies can assist in these two potential sources of a delayed peace dividend, but fundamental to them is the recovery of a sense of security.

This paper is organised into five substantive parts. Section 1 compares the losses and the extent of recovery, measured in terms of aggregate output, from brief and prolonged civil wars. It shows that whereas both types of civil war are costly, the recovery patterns seem radically different. Section 2 extends the analysis of the effects of prolonged civil war from aggregate output to the composition of activity. Introducing an *index of activity substitution*, it shows that during war agents make substantial switches between activities. The next two sections attempt to explain the output losses and activity switches caused by prolonged civil war and the policies which might accelerate recovery. Section 3 focuses upon the loss of `social capital' and Section 4 on the loss of private capital. Section 5 brings the arguments together and concludes.

[1] The paper draws upon a research project `Some Economic Consequences of the Transition from Civil War to Peace' (Azam et al. (1994)), co-funded by the World Bank (RPO 677-31) and the Centre for the Study of African Economies, Oxford University.

1. Aggregate Output and the Peace Dividend

The concept of the `peace dividend' is that the end of warfare brings a rapid gain in income. There was a peace dividend as a result of the end of the cold war because substantial resources previously devoted to military expenditure became releasable for productive activities. Superficially, the peace dividend from the ending of a civil war might appear to be much larger than that from the ending of the cold war. In both there is a gain from the redeployment of the military into productive activities. However, whereas in the cold war the military was merely unproductive, in a civil war it is actively destructive. Hence, there are two gains from the ending of a civil war, that from the redeployment of the military and that from the ending of destruction. The gain from the ending of destruction depends upon what the war was destroying. To the extent that war directly disrupts production, peace will directly raise output. However, to the extent that war reduces output by destroying capital, the onset of peace will simply stop output declining further: there will be no immediate dividend.

The first of the potential sources of the peace dividend, the gain from the redeployment of resources, is much smaller after a civil war than after the cold war. This is partly because the military in developing countries is usually financially very labour-intensive. Either little military hardware is used, or it is externally financed. Further, demobilisation is usually fairly gradual and constitutes only a small percentage addition to the labourforce. Hence, the existence of a significant peace dividend depends upon the second potential source of gains, the ending of the disruption caused by military activity.

Even relatively brief civil wars can reduce output substantially. During the three year Nigerian civil war output declined by 24% and during the most active five years of the Zimbabwean civil war it declined by 13%. However, a sustained period of social disturbance, in which open warfare may only be intermittent, is even more costly, lowering the growth rate over the whole period. The effect of prolonged social disturbance on growth can be assessed using two approaches depending upon the comparator against which growth during the disturbance is measured. One approach it to use the growth of the economy prior to that period. The other is to use the growth of otherwise similar but peaceful economies during the disturbance. Here both approaches are followed and then combined. Six African agricultural export economies are considered, three of which suffered prolonged periods of social disturbance. As shown in Table 1, the three war-torn economies, Uganda, Ethiopia and Mozambique, on average during the period of warfare had an annual growth rate which was 5% lower than during the prior period of peace. None of the three economies with which they are compared, namely Tanzania, Kenya and Malawi, had particularly growth-oriented policies during the periods considered, but they were all war-free. Measured over the periods of social disturbance, the civil war economies had an annual growth rate 4.4% lower than the average over the same periods in the war-free economies. Although these independent approaches to specifying a counterfactual thus give similar estimates of the growth reduction due to war, they are exaggerated. The periods of social disturbance were times of slow growth even for the war-free economies so that some of the reduction in growth in the war economies is likely to be unrelated to warfare. Further, there was a tendency for the war economies to grow more slowly than the other economies even prior to the period of war so that some of the superior growth of the war-free economies during the periods of disturbance is again likely to be unrelated to warfare. An approach which corrects for these biases is to compare the change in the growth rate for the war economies with the change in the growth rate for the war-free economies. This yields the smaller but still substantial estimate of the costs of prolonged war of a 3.2% reduction in the annual growth rate.

Such growth effects cumulate into huge losses. For example, disturbance was fairly continuous in Uganda between 1972 when President Amin declared `economic warfare' against the Asian community, and 1986 when President Museveni gained power through a rural insurgency

movement. Applying the same approach as above, the decline in the Ugandan growth rate exceeded that for the three war-free economies by 4.2%. By the end of the fifteen years of social disturbance GDP was almost halved as a result of the war.

Table 1:
Economic Performance during Prolonged Civil War

	(growth rates of GDP per cent per annum)		
	pre-war	**war**	**difference**
Uganda	4.8	-0.5	-5.3
Mozambique	5.3	-1.6	-6.9
Ethiopia	3.6	1.0	-2.6
3 war economies	4.6	-0.4	**-5.0**
3 similar economies	5.8	4.0	**-1.8**
difference	**-1.2**	**-4.4**	**3.2**

Notes: Uganda, civil war period 1971-86, pre-war 1967-71.
Mozambique, civil war period 1976-91, pre-war 1970-74.
Ethiopia, pre-war 1963-81, war 1981-91
GDP from *IFS Yearbook, 1994* and *World Tables.*
The growth of GDP is compared with that of the average of the growth rates for Kenya, Malawi and Tanzania over the same periods.

Given that the losses are so large the potential for a peace dividend may appear to be correspondingly large. However, this depends upon whether war disrupts production directly or does so via a destruction of capital. There is little direct data on the destruction of capital during periods of social disturbance. Even in developed economies the collection of economic statistics largely omits capital depreciation and in the context of civil war all data collection deteriorates. However, one indirect indication of whether capital has been destroyed is the pace of post-war recovery. In the two brief civil wars, Nigeria and Zimbabwe, although there was a large decline in output during the war the recovery was very rapid. Within two years of peace output had exceeded its previous peak. Hence, in these cases it can be concluded that the predominant effect of the war was directly to disrupt output, enabling peace to generate a large dividend. However, recovery from prolonged social disturbance is much more gradual. In Uganda, after seven years of peace the economy had grown cumulatively only 10% relative to the average for the three war-free economies over the same period[2]. This indeed shows some catch-up: had Uganda reverted to its pre-disturbance slower growth rate than the average for the three war-free economies, over the seven years it would have fallen cumulatively a further 2% behind. However, for the economy fully to have recovered the losses of war over the course of the first seven years of peace, it would have needed almost to double relative to the other economies. Hence, during the first seven post-war years the economy recovered only a small proportion of its wartime loss. To summarise, although both brief civil wars and prolonged social disturbance are enormously costly at the time, economies recover very rapidly from

[2] Because in 1992 the severe Southern African drought drastically reduced Malawian GDP, the growth period for Malawi is taken through to 1993. At the time of writing this could not be done generally because of delays in National Accounts data.

the former but very slowly from the latter. The implication of this is that brief periods of military activity directly interrupt production, whereas prolonged social disturbance also destroys capital. Because of the destruction of capital there is little immediate peace dividend.

So far the peace dividend has been discussed in terms of the economy as a whole. However, it is sometimes more narrowly conceived in terms of the government budget: reduced military expenditure will permit other expenditures to increase.[3] Even when so focused the peace dividend may be illusory. First, because the ending of civil wars is often less decisive than the end of international wars there is a perceived lingering threat and so no sharp reduction in the size of the military. Indeed, in some instances the military expands as the rebel army is integrated into the government army. In Uganda military expenditure rose by 40% in the first two years of peace. Secondly, even when the size of the military is reduced, the savings are often used to increase the salaries of the remaining army. The result, as after the Ugandan demobilisation, may be a more effective but not a cheaper army. Thirdly, even if military expenditure is reduced, the return to peace may not improve the fiscal position because it also reduces revenue. For example, in Ethiopia during wartime the state exacted revenues using highly coercive techniques such as confiscation which could not be used during peace. As a result revenue fell as a share of GDP from 25% in the last full year of the war to 16% in the first full year of peace. Finally, even if military expenditure falls more than revenue the government may not be able to increase its expenditure because the wartime fiscal position was unsustainable. As a prolonged civil war draws towards its final stages both sides have an incentive to increase expenditure unsustainably. Indeed the conflict may be resolved by a financial war of attrition, the winning side being that which has forced its enemy into bankruptcy. For example, in Ethiopia during the last year of the war the beleaguered government increased the domestically financed fiscal deficit from 3% of GDP to 11%. Any fiscal peace dividend may have been fully mortgaged.

Thus, both for the economy as a whole and for the government budget, the ending of a prolonged civil war may not produce a rapid peace dividend. While the slow pace of recovery is one indication of the destruction of capital, further evidence comes from the change in the composition of economic activity during periods of disturbance.

2. Prolonged Civil War and the Composition of Economic Activity

Now consider the sectoral implications of prolonged civil war and the social disorder to which it gives rise. In this section it is postulated that disorder has two economic effects: it raises the cost of transactions and it makes visible and mobile assets more vulnerable. Discussion as to why disorder has these effects is deferred until evidence of their consequences has been presented.

Since activities differ as to the intensity with which they rely upon transactions and war-vulnerable assets, disorder will have predictable consequences for the composition of economic activity. First, consider differences in the transactions intensity of activities. The least transactions-intensive activity is clearly subsistence production. However, although subsistence production does not, by definition, involve the marketing of output, it will still usually involve the purchase of some inputs. Hence, it is not immune from a rise in the cost of transactions. An intermediate stage in the hierarchy of transactions intensity are activities which depend upon the market for the sale of output, but are not very dependent upon it for inputs. Marketed agricultural produce has this characteristic.

[3] The following discussion of the fiscal implications of the transition to peace is based on Bevan and Pradhan (1994).

The most vulnerable activities are those which depend upon the market for both inputs and outputs. Formal sector manufacturing is the main instance of such an activity.

Just as activities vary in their transactions intensity, so they vary in their intensity in visible and mobile assets. Manufacturing is again highly vulnerable since both its inputs and its outputs must be stored at the site of production and are by their nature mobile. The vulnerability of arable agriculture depends upon the storage and value-weight ratios of crops. Livestock is a highly asset-vulnerable activity in that it is capital-intensive and the entire capital is visible and highly mobile. Sectors intensive in transactions and vulnerable assets suffer a cost-shock. Additionally, some sectors produce either transactions or assets. These suffer a demand collapse: war operates like a tax on their output. The transactions producing activities are transport, trade, and financial services. The asset-producing activities are construction and livestock.

To summarise, sectors have been distinguished according to whether they are transactions-intensive, asset-intensive, transaction-providing, or asset-providing. To illustrate, the dairy industry would be among the worst possible activities in which to be engaged during a civil war. Milk production is vulnerable because it uses mobile assets and has a high ratio of transactions to value-added. The demand for cows collapses because animals are visible and mobile assets. At the other end of the spectrum, a little-affected activity would be the cultivation of cassava for own-consumption since it can be stored by being left unharvested. The analysis is now applied to the composition of Ugandan GDP during and after the period of war.

In 1972 President Amin declared `economic war' against the Asian community. Although violence did not erupt until later, from this date the state was not a neutral provider of services and the economic manifestations associated with civil war appeared: an exodus of human and physical capital and falling aggregate output. The subsequent periodic warfare was substantially resolved in 1986 when the NRA forces took Kampala, though low-intensity fighting continued until 1990. On economic criteria it seems reasonable to date the commencement of social disruption from 1972 and the ending around 1986.

A measure of the relative performance of a sector is how the quantity of its value-added changes relative to GDP. This is measured by the composition of GDP *at constant relative prices*. The Ugandan economy makes a good case study in that National Accounts are unusually reliable for an economy which has suffered a prolonged civil war. Prior to the war the National Accounts were fairly well-developed. Although they deteriorated during the war they have now been rehabilitated and consistent data is available for the end of the war, 1986. Hence, we can be reasonably confident that the structure of economic activity changed during and after the war as set out in Table 2.

Three types of activity are predicted to suffer disproportionately from civil war, those which are intensive in transactions and vulnerable assets, those which supply transactions services, and those which supply vulnerable assets. The major identifiable activity which fits the category of transactions-intensive and asset-vulnerable is manufacturing. Two activities supply transactions services, transport and commerce. Two activities which supply vulnerable assets are construction and livestock rearing. The National Accounts only provides consistent data on the former, but Kafir (1993) provides a revealing discussion of the fate of dairy farmers during the war based on survey evidence. As shown in Table 2, each of these three groups of activities contracted during the war and expanded thereafter as a share of GDP. In aggregate these war-vulnerable activities nearly halved relative to GDP during the period of the war and gradually increased again thereafter.

The activities which are predicted to benefit relatively from the war are those which are extensive in transactions and vulnerable assets. The identifiable activity which most clearly has these characteristics is subsistence agriculture. As shown in Table 2 this war-invulnerable activity nearly doubled relative to GDP during the war and gradually diminished thereafter. However, even subsistence output grew only slowly between 1971 and 1986: its performance is only good in relative terms. In effect, the substitution of resources into subsistence as they became less productive in other

sectors was offset by the negative effects of the war through the disruption of inputs and assets such as stored grain.

Table 2:
The Composition of GDP by War-Vulnerability

(% share of GDP at 1991 constant prices)

	1971	1986	1993/94
War-Vulnerable Sectors			
High transaction and asset intensity	8.8	4.4	6.0
transaction-providing	21.2	16.1	17.2
asset-providing	12.5	3.5	5.5
Total	42.5	24.0	28.7
War-Invulnerable Sector			
low transaction and asset intensity	**20.5**	**36.0**	**32.1**
Ratio invulnerable/vulnerable	**2.07**	**0.66**	**0.89**
index of activity substitution	*100*	*312*	*233*
unassigned activities	37.0	40.0	39.2

Note: The National Accounts provide data at 1966 prices for 1963-85 and at 1991 prices from 1982-93/94. 1982 was selected as the year to be used for conversion from 1966 to 1991 prices. Since output changes 1971-82 are only measured at 1966 prices, the conversion of 1971 output to 1991 prices is only approximate. Sector i in 1971 at 1991 prices is approximated as:[(sector i in 1971 at 1966 prices)/(sector i in 1982 at 1966 prices)].[sector i in 1982 at 1991 prices}. This has the advantage that since 1982-91 GDP was calculated upon a consistent set of definitions of sectors, changes in definitions between the 1966 series and the 1991 series only lead to a mis-estimate to the extent that they alter the growth rate of the sector between 1971-82. Total GDP in 1971 at 1991 prices was then calculated as the sum of the sectoral outputs so revalued. Note that this will differ from a direct adjustment of total GDP in 1971 by the factor [(total GDP in 1982 at 1991 prices)/(total GDP in 1982 at 1966 prices)]. Sector shares in 1971 at 1991 prices are then sector output/GDP.

In Table 2 no attempt has been made to force all the activities identifiable in the National Accounts into one of the four categories which determine high or low war vulnerability. Activities constituting nearly 40% of GDP in 1971 are unassigned. However, since these unassigned activities in aggregate maintained a near constant share of GDP throughout the subsequent period they indeed behave as an intermediate group, broadly neutral with respect to warfare. By contrast, the change in the composition of GDP as between war-vulnerable and war-invulnerable activities was very large. Prior to the war the war-vulnerable group was more than twice the size of the war invulnerable. By the end of the war the war-invulnerable group was 50% larger than the war-vulnerable.

The change in the ratio of war-invulnerable to war-vulnerable activities therefore makes a useful summary measure of how agents substitute between activities as a result of warfare. Transforming this ratio into an index with 1971 as 100, which might be termed the *activity substitution index*, by 1986 it had risen to 312 and by 1993/94 had recovered to 233. Thus the return to the structure of the economy in 1971 was still largely incomplete, not allowing for any evolution in that structure which might have been expected with continued peacetime growth. Table 2 shows that activity substitution is substantial. It is presumably an efficient response to a change in incentives and therefore mitigates the decline in aggregate output noted in the previous Section. It also presumably takes time. Hence, a given change in incentives caused by social disruption would induce a gradual increase in activity substitution and this would tend to moderate the scale of the loss in aggregate output.

3. Transactions Costs, Assets and the Destruction of Social Capital

Section 1 showed that whereas both brief civil wars and prolonged social disturbance massively reduce output, the recovery from the former is rapid whereas that from the latter is very slow. This was explained as being due to an underlying but not directly observable difference, namely that prolonged social disturbance destroys capital. Section 2 postulated that prolonged social disturbance raised transactions costs and reduced holdings of visible, mobile assets. It then showed that there were large substitutions between activities which were consistent with the postulate. This section links the two preceding ones, arguing that transactions costs are raised and visible, mobile assets are shed because of the loss of a particular type of capital, namely `social' capital.

Well functioning societies are able to organise themselves in such a way as to make short term opportunistic behaviour unprofitable. Many institutions are coming to be seen as mechanisms by which a society can make long term commitments (Soskice et al. (1992)). Putnam (1993) argues that even directly non-economic social organisations may, by means of the social interaction they involve, build a presumption of trust which carries over into economic relations. He explains the more rapid development of Northern than of Southern Italy in terms of its greater density of trust-building social organisations. The presumption of trust is a public good: because all past individual behaviour is not known to everyone, the expectation of behaviour is in part inferred from what is normal in the society. Tirole (1992) shows that because of this the individual incentive to be opportunistic is reduced in societies where there is a generalised presumption of trust. In effect, everyone starts with the asset of a good reputation which bad behaviour would destroy.

Prolonged social disturbance undermines the defences against opportunism through increased insecurity. There is a greater risk of violence against the person and property, which can be thought of as *micro*insecurity. The threat comes partly from rebels, partly from the increase in unorganised crime which follows the decline in policing, and partly in some civil wars such as Uganda in the 1970s and Sierra Leone in the 1990s, from elements of the army itself.[4] There is also a dissolution of many of the organisations of civil society and the state, which can be thought of as *macro*insecurity. These insecurities shorten time horizons and thereby reduce the incentive to build and maintain reputation. This process can even undermine the publicly provided defence mechanisms against opportunism such as the civil legal system and standardised weights and

[4] On predation by the Ugandan army see Kafir (1993), on predation by the army in Sierra Leone see McGreal (1995).

measures.[5] Together with the shortening of time horizons this can flip the most profitable form of behaviour from honesty to opportunism.

Opportunism raises the risks involved in transactions and particularly jeopardises assets. For example, in Uganda when Asian property was reassigned the new owners lacked enforceable rights. Lacking clear title, they could neither sell not borrow against the asset and risked having it reassigned to some other `owner' through the same arbitrary process by which they themselves had acquired it. The illegitimate possession of an asset creates an incentive to convert it into a less visible, and therefore more secure form such as one held abroad, even if the conversion is otherwise inefficient. Where this is not feasible, immobility is desirable: crops which can be kept in the ground (tubers) are safer than those which must be stored above ground (grains). Among the assets which are both mobile and visible are vehicles, the reduction in which compounds the increase in transactions costs.

Recall that the pace of recovery depends upon whether war directly reduces output or does so via reducing capital. Putnam terms the institutions and organisations which enhance economic activity by increasing trust social *capital*. Implicit in this designation is the notion that social organisations take time to build or to rebuild so that the recovery of trust is a slow process. Tirole (1992) provides a more formal analysis of the dynamics of trust which yields an equivalent conclusion. He shows that once a society has flipped into an equilibrium in which opportunistic behaviour is profitable, the behaviour can persist even after the underlying causes of the collapse into opportunism are removed. Civil war is not the only reason for a society to collapse into opportunism, and societies may survive brief civil wars without doing so. However, prolonged civil wars in which the organisations of civil society are largely destroyed as in Uganda, Liberia, Angola and Mozambique, are likely to cause this transition. Whereas war can be sufficient to flip the society from trust to opportunism, the re-establishment of peace can fail to restore trust. Thus, to the extent that the economic decline during civil war is caused by a collapse in social capital, there is no peace dividend. Part of the task of reconstruction is then the rebuilding of trust. This determines the pace of the recovery in economic structure, namely a return to the market and the reaccumulation of visible, mobile assets.

The hypothesised relationships from insecurity to opportunism and from that to a retreat from transactions and assets are difficult to test, although Section 2 showed that they are at least consistent with observed substitutions between activities. More direct evidence on the economic costs of a macroinsecurity comes from analysis of the determinants of growth. Barro (1991) establishes that even relatively minor political violence, namely the frequency of assassinations, significantly reduces the long term growth rate. The likely causal mechanism is through reduced investor confidence. One measure of such confidence is the risk rating of a country in *Institutional Investor International*. While by 1994 Uganda was seen as a star African performer in terms of policy reform, it was still rated as much riskier than the African average. Hence, fear of macroinsecurity is a significant depressant of an economy which may persist after peace has been restored.

Although there are limits to what a post-war government can do increase trust, it is not impotent. Four policies are now considered: the direct encouragement of the return to the market, the reduction in microinsecurity through demobilisation, the reduction in macroinsecurity through democratisation, and the reduction in opportunism through the creation of professional elites.

[5] Ensminger (1992) discusses how informal agricultural marketing in East Africa was greatly eased by the introduction of standardised weights and measures in the early twentieth century.

3.1 Encouraging the Return to the Market

There is a public interest in the return to the market because transactions themselves generate trust. Hence, the uncoordinated return to the market will be slower than is socially optimal. One way in which the government can accelerate the return is by setting both explicit and implicit taxation of transactions low in the early post-war years. Explicit taxation rates are commonly high in war economies as the government searches for revenue and uses coercion to offset the disincentive problems which this would normally induce. Implicit taxation of transactions occurs through the inflation tax since domestic currency is held for market-derived income but not for subsistence income. The government should therefore set a low inflation rate.

A second means of accelerating the return to the market is by restoring the public capital which is an input into transactions. The most obvious such components of public expenditure are the communications network, which reduces the costs of information, and the road network, which reduces the costs of movement. Collier and Pradhan (1995) review all the road transport projects undertaken in Uganda since 1986 and find an average rate of return of 39%, clearly a very high return by the standards of public expenditure. This is supported by a rural household survey conducted in 1990 which asked households which government actions had been most appreciated since 1986 (Bigsten and Kayizzi-Mugerwa (1995)). Road improvements were the most popular choice.

3.2 Microinsecurity and Demobilisation

During civil wars the government agency for maintaining *micro*security, namely the police, is run down, while that responsible for *macro*secrurity, the army, is expanded. With peace there priorities should be reversed. After a civil war the government acquires two armies excessive for normal peacetime conditions. However, demobilisation is delayed in part because of the fear that the demobilised will accentuate the microinsecurity problem. Microinsecurity is present in any society but is heightened after civil war by the proliferation of guns and people who are trained in using them. It is often suggested that criminality may increase post-war due to demobilisation. This is more likely than after an international war both because the numbers are larger, since there are two armies, and because soldiers have fewer other skills. For example, in Uganda much of the army had been recruited in the bush as a guerilla force at very young ages and so had little work experience and very little education, and this also characterises the Renamo forces in Mozambique and the SWAPO forces in Namibia. Moreover, soldiers lack social networks in civilian life, a resource which most new small enterprises require. Special training schemes are common as part of demobilisation processes. However, since the skill base is very low and the numbers to be demobilised are large, neither the labour market nor entrepreneurship offer many opportunities. Without costly training schemes most demobilised soldiers have few legal options other than to earn their livelihoods in peasant agriculture. If demobilisation in such circumstances seriously increases crime then either the inflated army should be retained or the costs of training incurred.

Crime by its nature breeds anecdotes, and so it is easy for the presumption that demobilisation will increase crime to appear to be confirmed by events: some demobilised soldiers will commit crimes. However, since both civilians and enlisted soldiers also commit crimes the issue is whether the incidence of crime among demobilised soldiers is significantly higher than for other groups. Collier (1994) investigated the links between demobilisation and crime using data on the demobilisation of 20,000 Ugandan soldiers in late 1992. The approach was to determine whether changes in crime in the 38 districts of Uganda could be related to the district-level incidence of demobilisation. The results showed a significant and distinctive impact effect in the three months

following the demobilisation: soldiers who had reported no access to land were one hundred times more likely than the Ugandan average to commit crime, while those with access to land significantly reduced crime. The latter effect was substantiated by interview evidence from community leaders who claimed that the presence of men with military training had discouraged existing criminals. Veterans often volunteered for the unpaid militias which assisted rural policing. In Uganda most soldiers had access to land and so the latter effect outweighed the former: crime fell by 7% following demobilisation. Neither of these effects was sustained in the following nine months: in the longer term there was no relationship between demobilisation and the level of criminality. Both types of former soldier rapidly civilianised. However, the demobilisation enabled the remaining army to be better paid and disciplined, and this probably reduced the incidence of crime by serving soldiers.

These results have implications both for Ugandan policy and for demobilisations elsewhere. The Ugandan demobilisation could probably have been improved upon. First, the Ugandan demobilisation did not occur until seven years after the end of the war. To the extent that this delay was because of fears of the absorption of soldiers in the civilian economy it was probably excessive: the demobilisation could have been earlier. Secondly, given the high propensity of the landless to commit crime and that only 12% of the army described themselves as landless, access to land could have been used as a criterion for selecting those to be demobilised: the landless might have been given the option of staying in the army. With these qualifications the Ugandan model is appropriate for other large scale demobilisations. Resources were concentrated not in training but in transporting the demobilised back to their home areas, and in providing them with small cash and in-kind pay-offs over the four months following their discharge which could only be claimed in the home area.

3.3 Macroinsecurity, Redistribution and Democratisation

Now consider the security of the state. Civil wars which end in secession may produce a strong secessionist state in which there are no fears of macroinsecurity. Such a state is analogous to the victor in an international war and can demobilise without risk. For example, a recent survey of foreign investor confidence found that Eritrea was rated the least risky environment in East Africa (World Bank (1994). However, many civil wars either are not fought with the objective of secession or end with the secessionist group not fully realising its objective. It is in these cases that the post-war state faces a potential problem of macroinsecurity. Civil war starts in societies with underlying causes for conflict, and the war itself increases bitterness. Hence, there is a significant risk that war will resume, as happened in Angola.

A high level of military expenditure need not be an effective means of reducing this fear; rather, the underlying factors which have generated the conflict need to be addressed. Two mechanisms for resolution are considered by Azam (1995) and Bates and Collier (1995). Azam (1995) sets out a simple game-theoretic framework in which the impetus for rebellion is to capture the resources controlled by the state. For example, the civil war in Angola might be thought to be partly motivated by a contest for the control of oil revenues. The incentive for rebellion is determined by the amount to be won and by the probability of victory which is increasing in the relative size of the rebel forces. Azam then contrasts a naïve and a far-sighted government. The naïve government does not take rebel behaviour into account and attempts to minimise the probability of rebel victory by increasing its military expenditure in response to rebel military expenditure. The far-sighted government anticipates rebel behaviour and devotes some of its resources to transfers to the rebel community. This sharing of the revenue base reduces rebel military expenditure since it reduces the amount which the rebels stand to gain from victory. The naïve and farsighted types of behaviour have different implications for the relationship between aid and military expenditure. With the former, aid to the government unavoidably increases government military spending and, unless this is

sufficient to crush the rebellion, also raises military expenditures by the rebels. By contrast, with a farsighted government aid may reduce the military expenditures of both parties.

Whereas in Azam the objective of rebellion is to take over the government, in Bates and Collier (1995) it is secession by groups which are geographically, culturally, or economically remote from the governing elite. Such groups resent taxation because they benefit little from public expenditure. Secession may be unavoidable if the state comprises groups which are too disparate in their interests, but a widening of the elite through democratisation will reduce and may eliminate pressure for secession. It may therefore be in the self-interest of a narrow elite to concede a broadening of the government rather than incur the costs of civil war and potential secession.

In both these models military expenditure directly enhances government security but indirectly reduces it so that the net effect of demobilisation is ambiguous. In Azam military spending competes with redistributive spending. In Bates and Collier, the taxation needed to finance military expenditure would alienate marginal groups and so must be compensated by larger reductions in other public expenditures which disproportionately benefit the elite. On Azam's analysis, the Angolan government made the mistake of reducing military expenditures without pre-committing to high redistributive expenditures. On that of Bates and Collier the Ethiopian government of Mengistu made the constitutional mistake of being too narrowly based with respect to ethnicity, and the economic mistake of choosing a high rural taxation strategy. Despite the enormous army which this taxation financed, peripheral groups were sufficiently alienated to overthrow the government.

The fate of the Mengistu government is a warning that narrowly based governments which attempt to protect themselves by high military expenditure are liable to lose. Some combination of regional revenue sharing from natural resource income, an ethnic broadening of the government, and low rural taxation may be a more viable means of holding disparate states together. Post-war governments inherit a level of military expenditure appropriate for the Mengistu strategy and need to demobilise in order to strengthen the state. The evidence from Uganda suggests that such demobilisation need not give rise to the criminality which is commonly feared. Demobilisation can thus enhance both micro and macrosecurity.

3.4 Opportunism and the Creation of Professional Elites

Tirole (1992) argues that the incentive to be opportunistic increases once trust has broken down because people cannot fully observe the past behaviour of those they deal with and so form expectations in part based on the behaviour prevalent in the society. Hence, for example, if most lawyers can be bribed to lose a case, this will be presumed of all lawyers and so honesty does not pay. One way out of this impasse (Collier (1995)) is for the government to create visibly elite groups within the professions which are given a greater incentive not to be opportunistic and so are less likely to be tarnished by the presumption of behaviour inferred from the wider society. In Uganda this ringfencing of professional elites has been tried with some success among the judiciary, with the appointment of `ODA judges', and with the creation of a `Revenue Authority', both on much higher salaries than other public employees. The important point is not that higher salaries reduce the incentive to be corrupt, but that a visible elite may escape from the burden of reputation imposed by general social decay.

4. The Loss of Private Capital

During periods of social disruption private investment collapses. This is not surprising, but an understanding of why it happens has implications for the post-war recovery. A civil war is a particular type of temporary negative shock. Even though the duration may not be known *ex ante* with any

certainty, it is reasonable to anticipate a return to peace. As with any such shock the appropriate response is to dissave.[6] Although this may initially be financed through external borrowing, as agents encounter borrowing constraints the capital stock must be reduced. However, the collapse in investment is not necessarily driven entirely or even predominantly by a collapse in savings. During civil war private profits can be high. As markets become disrupted they become less competitive and so marketing margins widen. Taken to the limit, disruption eliminates trade and so eliminates profits, but at less severe levels profits might be sustained or even enhanced as reduced volumes of trade are offset by wider margins. Collier and Gunning (1995) site evidence from Mozambique and Somalia and Keen (1994) provides evidence for the Sudan, showing that wartime conditions generated high profits. There are also opportunities to acquire assets by means that would normally be illegitimate but which become feasible once the state has abandoned its role of impartial defender of property rights. Those who make substantial trading profits or acquire assets in questionable ways have an incentive to have a high savings rate: the circumstances which have generated these opportunities are unlikely to persist, and luxury consumption is generally difficult and even dangerous in civil war conditions. Hence, those who do well out of civil war face portfolio choices. Civil war is not an environment conducive to investment (see Sen (1991)): there is too much uncertainty and, as discussed above, physical assets are vulnerable. By contrast, because they are periods of temporary uncertainty, *liquid* assets carry a premium in the form of an option value (Dixit and Pindyck (1994)). The corollary of the fact that during civil war physical assets have abnormal disadvantages while liquid assets have abnormal advantages is that even if savings do not collapse they are held in liquid form. Normally, during civil war domestic financial assets are subject to a high and variable inflation tax so that the only liquid financial assets available are foreign. Capital flight during a civil war might therefore in part be a reflection of increased demand for liquidity. An indication of this is that in Ethiopia, where unusually civil war did not jeopardise price stability, there was a substantial increase in domestic liquidity. During the pre-war period for which data is available, 1963-81, currency outside banks relative to GDP rose slowly from 7% to 12%. Had this trend continued, by the end of the civil war period it would have been 16% whereas it was actually 30%. Hence, by the onset of peace, private agents were in aggregate highly liquid. While in Ethiopia this in part took the form of domestic currency, more usually it would be in foreign assets and therefore less observable.

Capital flight is not confined to the switch from domestic real to foreign financial assets. During prolonged civil wars there is an exodus of the skilled labourforce. This is partly due to the decline in the returns on skill consequent upon the change in the sectoral composition of activity. The three types of activity which are most vulnerable to war all happen to be skill intensive. An indication of the decline in the return to skill comes from an analysis of urban and rural surveys conducted in 1990. Bigsten and Kayizzi-Mugerwa (1995) found zero returns to education in both peasant agriculture and self-employment, and low returns in the wage labour market. This low return to skill was despite a large decline in the skilled population and therefore may be presumed to have contributed to it.

The decline in the private capital stock, both physical and human, is thus partly a dissaving response to a temporary negative shock and partly a portfolio switch into liquid assets. The balance between these responses has important implications for the peace dividend. To the extent that the decline is due to dissaving private agents have already anticipated a peace dividend: saving has to increase with the onset of peace simply to sustain consumption. However, to the extent that the decline is due to a portfolio shift, if the shift can be reversed it delivers a dividend. Unlike the

[6] Collier and Gunning (forthcoming) review twenty-nine shock episodes in developing countries. They find that almost all of them gave rise to large dissaving or saving responses, so that they were treated as if they were regarded as likely to be temporary.

dividend which results from the termination of the direct destruction of output, it is slow to be realised. In Uganda for the first four years after the war private transfers were small and there was continued substantial net emigration of citizens. In the next four years private transfers are estimated to have grown at 35% per annum, and return migration grew to equal emigration. Repatriation of financial and human capital is delayed because the insecurities which give rise to their flight during prolonged social disturbance are not automatically removed by the end of civil war. Realisation of a peace dividend is contingent upon the recovery of private sector confidence. The policy problem is therefore to allow for the initial lack of confidence and to assist in its restoration. Collier and Gunning (1995) explore the implications of a highly liquid private sector which is too fearful to make irreversible investments. They propose five policy prescriptions, three of which have as the objective the recovery of private investment and two of which are concerned with government macroeconomic management during the transition to confidence.

4.1 Reassurance through Sequenced Reform

They argue that the recovery of private investment can be encouraged by a combination of reassurance and subsidy. A post-civil war government lacks reputation and so its promises lack value. Yet typically, during wartime the economy will have become heavily regulated and so one of the post-war tasks is policy liberalisation. The most reassuring action that such a government can do with respect to economic reform is to implement it. Since not all reforms can be implemented at once due to bottlenecks in the legislative and policy formulation processes, prospective reforms should be sequenced according to their impact upon investment. The most urgent reforms concern those which impact directly upon the capital values of prospective investment. For example, civil wars leave a legacy of contested property rights, and it is important that these should be resolved rapidly.

4.2 Subsidising Early Commitment

Even with efficient sequencing of reforms, there is a high irreducible element of investor risk. Since pioneering private investment is likely to have substantial externalities whereas much of the risk which private investors consider should not be taken into account by society, there is a case for the government to subsidise the act of commitment. One policy instrument which can be used for subsidising investment is the exchange rate. Typically exchange rates have been overvalued, and this has subsidised imported capital goods purchased with domestic currency. By contrast, in post-war conditions liquid assets are in foreign currency, while the least reversible, and hence most risky investments are non-tradable capital goods such as buildings. Such capital goods are location-specific and depreciate slowly, and so are more sensitive to uncertainty. An *under*-valued exchange rate subsidises the transfer of foreign currency assets into non-tradable assets. Further, since the exchange rate directly affects the asset value of investment, it is on the previous argument an urgent reform.

Undervaluation is not the only policy instrument which can encourage repatriation into irreversible investment, but it has the advantage of being unsustainable. A manifestly temporary subsidy is more effective in bringing forward the act of commitment. Tax benefits are an alternative to undervaluation and have the advantage that they can be confined to productive investment whereas undervaluation also subsidises the purchase of residential property.

4.3 Low Taxation

In a post-civil war environment the private sector is not only suspicious of the state, it is afraid of it. The power of the state has been used in a partisan manner. This provides an argument for restoring the tax base only gradually. Due to the decay of the institutions and conventions of civil society the state has lost most of the mechanisms needed for compliance with tax-gathering systems. The private sector has learned how to evade the state by corruption and a failure to keep records, and these practices can only be changed slowly. For example, in the absence of audited business records the tax authorities essentially bargain with enterprises over lump sums rather than tax in proportion to activity. In this situation a rapid attempt to increase revenue requires the state to intensify just those arbitrary actions which have contributed to the decay of civil institutions and procedures. In Uganda government expenditure has recovered its pre-war share of GDP long before other components of GDP have recovered. It is arguable that at the margin, the discouragement to the return to the market-sector involved in fairly arbitrary taxation slows recovery by more that the extra government expenditure induces it. In rural Uganda the same survey that found road infrastructure had been most appreciated found a high future priority was the reform of the authority of local government, since the institutions did not have clearly defined and well-understood powers. In Ethiopia, one of the first post-war actions was the grass-roots dismantling of the institutions of government rural authority. A period of low government revenue might thus be an investment in the revival of private sector confidence.

4.4 Price Level Targeting

The high level of private liquidity has implications for macroeconomic management: the demand for domestic currency might alter substantially. In Ethiopia part of the excess liquidity is in domestic currency, whereas in Uganda, which is probably more typical of war-peace transitions in this respect, it has been in foreign currency. Thus, in Ethiopia a recovery of confidence would induce a switch out of money into real assets and so be inflationary, whereas in Uganda a recovery of confidence would include a switch into domestic currency and so be counter-inflationary. Since changes in confidence are unpredictable, the high liquidity makes the demand for domestic currency unusually volatile so that monetary targeting would produce price volatility. The transfers to which such shocks give rise can be disruptive, provoking bankruptcy, and will accentuate the already severe problem of low confidence. Since the stability of the price level is a legitimate objective which monetary targeting will not achieve, the CPI must be directly targeted, with some combination of the fiscal deficit and the reserves as control variables.

4.5 Selling Assets Rather than Debt

The liquidity of the private sector and its lack of confidence in the government has implications for the government's scope for domestic funding of its deficit. Government liabilities, such as bonds and treasury bills, have the wrong risk properties, whereas the large stock of fairly safe real assets such as residential property held by the government in Ethiopia, Uganda and Angola might be purchased by private agents without being so heavily discounted. In Uganda the government borrowed through three month Treasury Bills at a real interest rate in excess of 20%. In 1992 it attempted to sell longer, nine month maturities but could find no purchasers. In 1993 it was able to find takers, but only at real interest rates of around 40% which it was not prepared to pay. Clearly, the act of borrowing at such high interest rates would itself have signalled that the government had little confidence in its continued existence. In 1994, shortly after the elections for the Constituent Assembly, which were

successful for the government in both their conduct and their result, real interest rates fell swiftly to single figures and longer term borrowing became a possibility. That the government faces a steep yield curve may be a common feature of the post-civil war legacy, and the gradual flattening of the curve is a way of conceptualising and measuring the return to peacetime levels of confidence.

5. Conclusion

A civil war is a temporary negative shock which directly lowers output. Since private agents will anticipate peace they will dissave through decumulation of the capital stock. Governments and rebels are liable to be driven into a war of financial attrition, thus also dissaving. When civil war involves prolonged social disruption it destroys social capital: the breakdown of the institutions of civil society and pervasive insecurity encourage the growth of opportunistic behaviour. This raises transactions costs, gives rise to disinvestment in mobile, visible assets, and induces capital flight. These in turn induce a change in the composition of output towards subsistence and away from sectors which either provide transactions and assets, or are intensive in them.

The economy thus loses capital four times over. Private agents dissave anticipating peace, the government and its opponents dissave in a war of attrition, social capital is depleted, and private portfolios are switched out of domestic assets. These losses of capital cause a further decline in output over and above the decline directly caused by the war. Whether there is a peace dividend at the end of a civil war depends upon the balance between these two types of loss: peace will end the direct loss of output but not that due to the fall in the capital stock. As the war is prolonged the output loss caused by the decline in the capital stock increases. By contrast, the output loss caused by the direct effect of warfare diminishes as agents learn to protect their incomes through activity substitution. Hence, as the war is prolonged, although the total output loss attributable to the war increases, that component which carries a rapid peace dividend diminishes both relatively and absolutely. Hence, *the larger is the output loss, the smaller is the immediate peace dividend.*

However, there is the potential for a delayed peace dividend from two sources. First, if the switch in private portfolios towards foreign assets and foreign residence can be reversed there is a real resource gain to the economy. Secondly, if civil institutions can be sufficiently restored, the society can flip back from the opportunistic to the trust-based equilibrium, restoring social capital. Public policy should therefore be focused not upon trying to spend an immediate peace dividend which is illusory but in trying to induce this delayed peace dividend of private and social capital restoration.

Policy can accelerate the dividend. The return to the market can be encouraged by public expenditure on transport and communications rehabilitation, by low indirect taxation and by low inflation. The latter may require direct targeting of the price level rather than monetary targeting since the reversal of capital flight is liable to make the demand for real money balances volatile. Policies should focus on reducing insecurity. *Micro*insecurity can be reduced by the demobilisation of those with access to land. *Macro*insecurity can be reduced by broadening the government to include the interests of actual and potential rebels. An increased sense of security will encourage private agents to consider longer horizons and this will help to reduce opportunistic behaviour. However, the prevalence of such behaviour directly contributes to its persistence. To break out of this syndrome the incentive to behave opportunistically can be reduced by creating overtly elite groups within the professions whose reputation is thereby ringfenced from contamination by wider social behaviour. Private financial and human capital repatriation can be encouraged by assigning a high priority to the clarification of property rights. Thereafter, a period of undervaluation of the exchange rate or tax benefits for fixed investment may compensate for the high risks individual private agents face in

pioneering commitment to the economy. Finally, low taxation may enable the state to live down a reputation for arbitrary predation which it is likely to have acquired during the time of war.

To conclude, in the aftermath of a prolonged civil war private agents are fearful both of each other and of the government. This, perhaps even more than physical damage to infrastructure, is the obstacle to a private-led recovery as irreversible investment is delayed despite being financable. The peace dividend comes not from a swift resumption of activities directly disrupted by the war, such an affect being modest, but rather from a gradual recovery of confidence which induces repatriation of financial and human capital and the replacement of opportunism by trust.

References

Azam J-P. (1995) `How to Pay for the Peace', *Public Choice*.

Azam J-P, D.L. Bevan, P. Collier, S. Dercon, J.W. Gunning and S. Pradhan (1994) `Some Economic Consequences of the Transition from Civil War to Peace', Policy Research Working Paper 1392, World Bank, Washington DC.

Bates R. and P. Collier (1995) `Wars of Secession', mimeo, CSAE, Oxford.

Bevan D.L. and S. Pradhan (1994) `Fiscal Aspects of the Transition to Peace', in Azam et al. (1994).

Bigsten A. and S. Kayizzi-Mugerwa (1995) `Adaption and Distress in the African Economy: A Study of Retrenchment and Reform in Uganda', mimeo, Unit for Development Economics, Department of Economics, University of Gothenberg.

Barro R.J. (1991) `Economic Growth in a Cross Section of Countries', *Quarterly Journal of Economics*, Vol.106, pp.407-444.

Collier P. (1994) `Demobilisation and Insecurity: a Study in the Economics of the Transition from War to Peace', *Journal of International Development*, 1994(3).

— (1995) `The Role of the African State in Building Agencies of Restraint', in M.Lundhal and B. Ndulu (eds.) *New Directions in Development Economics*, Praeger, New York.

Collier P. and J.W. Gunning (1995) `War, Peace and Private Portfolios', *World Development*, Vol.23 (2).

— (1994) `Policy Uncertainty, Repatriation and Investment', in Azam et al. (1994).

— (forthcoming) *Trade Shocks in Developing Countries*, Clarendon Press, Oxford.

Collier P. and S. Pradhan (1995) `Economic Aspects of the Ugandan Transition to Peace' in H.B. Hansen and M. Twaddle (eds.) *Developing Uganda*, James Currey, London.

Dercon S. (1994) `The Consequences of Liberalisation and Peace for Food Markets in Ethiopia', in Azam et al. (1994).

Dixit A.K. and R.S. Pindyck (1994) *Investment under Uncertainty*, Princeton University Press, Princeton.

Ensminger J. (1992) *Making a Market*, Cambridge University Press, Cambridge.

Herbst J. (1990) `War and the State in Africa', *International Security*, Vol.14(4), pp.117-39.

Kafir N. (1993) `Strategies of Accumulation and Civil Society in Bushenyi, Uganda: How Dairy Farmers Responded to a Weakened State', in J. Harbeson, D. Rothschild and N.Chazam (eds.) *Civil Society and the State in Africa*, pp. 103-24, Lynne Reinner Publishers, Boulder, Colorado.

Keen D. (1994) *The Benefits of Famine: a Political Economy of Famine and Relief in Southwestern Sudan, 1983-89*, Princeton University Press, Princeton.

McGreal C. `Troops take Liberties in Freetown', *The Guardian*, March 4th, p16., London.

Putnam R. (1993) *Making Democracy Work*, Princeton University Press, Princeton.

Sen A. (1991) `War and Famine', Centre for Development Economics, Discussion Paper, LSE.

Soskice D., R.H. Bates and D. Epstein (1992) `Ambition and Constraint: the Stabilizing Role of Institutions' *Journal of Law, Economics and Organisation*, Vol.8, pp. 547-560.

Tirole J. (1992) `Persistence of Corruption', Institute of Policy Reform Working Paper 55, Washington D.C.

World Bank (1994) `Survey of Investor Attitudes to East Africa', mimeo, East Africa Department, World Bank, Washington D.C.