Executive Summary

We construct a dataset of violent conflict “remission” episodes (i.e. countries that were once in violent conflict and have a prolonged non-violent period) and examine the macroeconomic patterns for these countries in the period prior to and following the most recent case of violent conflict. We find:

- The period preceding violent conflict resembles the onset of an economic crisis, particularly with respect to inflation and external developments.
- But the pattern of recovery is different from an economic crisis: whereas a policy-or shock-induced downturn can be followed by a rapid recovery once financing flows are restored, even sustained remission countries see a very rapid deceleration in GDP growth, with the post-conflict growth boom often lasting as little as one year.
- However, although remission growth declines quickly, it declines to a “normal” level more typical of non-conflict countries. Growth is not negative, and tends to stay above 2 percent a year per capita (the long-run average growth rate for all countries estimated by Pritchett and Summers).
- The implication is that remission countries are “catching up” to the level GDP path of non-conflict countries, but slowly – done through modestly above-average growth for a sustained period rather than a long-lasting post-conflict boom.
- Inflation declines measurably, as stability of nominal variables is regained.
- There is a slight rise in education and health spending as a share of GDP, but similar to the growth pattern discussed above, this happens on a slow-moving basis rather than rapid change in priorities; spending on military does decline more sharply (2-3 percent of GDP), but the associated “peace dividend” is spread across various sectors, especially as there are no major revenue gains (as a share of GDP).
- The terms of trade tend to improve; this is not under the control of the country, but associated with a more enabling external environment for recovery.
- Investment as a share of GDP rises, but in a very back-loaded fashion – this is consistent with the absence of a prolonged post-conflict boom.
- Consumption as a share of GDP declines, presumably associated with slow reduction in aid dependence and return of domestic productive sectors which is associated with more investment and exports.

1 Both authors are staff in the World Bank Macroeconomics and Fiscal Management Global Practice, East Africa and Middle East respectively. The authors would like to acknowledge Naji Abu Hamde, Short-Term Consultant in the Lebanon Country Office, for his valuable assistance.
• Interest payments as a share of GDP are strikingly stable – indicating a link between avoidance of increased debt burden and remission of conflict.
• Compensation of public employees, stable at around 7 percent of GDP or under.
• The fiscal balance does not decline – consistent with the findings that revenue doesn’t increase, military spending declines, and spending in social sectors increases.

This leads to the tentative conclusion that the post-conflict prevention challenge is not about sustaining a boom, but instead preventing a collapse in growth once the initial burst of activity is exhausted. What does help generate some “economic” space that can be used for prevention is reduced military spending, and aid to underpin consumption in the initial phases and help avoid rapid accumulation of debt. Keeping the public sector payroll under control is also important. For low income countries, HIPC debt relief was also an important source of fiscal space in post-conflict periods (IMF 2015).

The key policy implication is that the prevention approach to economic policy design for FCV countries calls for (1) design of “slow and steady” policy adjustments towards sustainability which (2) get a head-start on potential crisis through earlier interventions than is normally the case, and (3) if acceleration in adjustment is needed, will require substantial financing to smooth the negative impact.
Joint WB-UN Report on Prevention of Violent Conflict: Macroeconomic Factors

I. Introduction

A premise of this report is that many societies are prone to conflict in the form of various social and economic tensions which take the form of group-based societal dynamics. The focus of the report is thus not on conflict per se, but the mechanisms which influence whether or not conflict escalates to violence. In general, the occurrence of violence indicates an inability to mediate group-based tensions, and a vast literature exists on the factors which result in a resort to violence (e.g. WDR 2011). This chapter looks at one subset of these channels, namely the macroeconomic outcomes and economic policy environment associated with this potential escalation phase. It is important to emphasize that there is no presumption about macroeconomic causality of violent conflict in this approach; rather the focus is on how the macroeconomic environment may enhance our understanding of conflict risks.

Ultimately our interest is in prevention of violent conflict, or more precisely mitigating the risk of escalation. The clearest category of countries susceptible to risk of escalation is countries that once experienced violent conflict and then had a sustained spell without such conflict ("remission"). This suggests one informative framing of prevention of violent conflict as prevention of relapse. An empirical approach corresponding to this framing is to examine the macroeconomic trajectories of violent conflict episodes where such conflict was followed by a sustained period of remission. Remission here is simply an empirical event, of violence below a threshold, and it could vary widely in its character, including as negative peace. This chapter therefore presents, in a non-technical manner (charts rather regressions), macroeconomic developments for a particular sample of countries which are potentially informative because of their remission behavior.

Methodology

In common with many conflict researchers, the investigation starts with the UCDP/PRIO Armed Conflict Dataset (Gleditsch et al., 2002), hereafter referred to as the dataset, in which each row, which corresponds to a year, is hereafter referred to as an observation. As such, a missing year in the dataset is referred to as a non-observation. The objective of this section is to elucidate criteria that can identify the conflict years from the sequence of observations for the purpose of our study.

We begin by setting out filter criteria for the observations, including only the following types of conflict in the dataset:

- Internal armed conflict occurring between the government of a state and one or more internal opposition group(s) without intervention from other states.

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2 https://www.prio.org/Data/Armed-Conflict/UCDP-PRIO/
Internationalized internal armed conflict occurring between the government of a state and one or more internal opposition group(s) with intervention from other states (secondary parties) on one or both sides.\(^3\)

We then sort the observations based in the following hierarchy: Region \(\rightarrow\) Location \(\rightarrow\) Year \(\rightarrow\) Conflict ID. That is, we first sort out the regions (i.e. in increasing order of the unique numerical code assigned to each region). This bundles all observations of a region together. Within each region, we sort out the location (countries), bundling together all observations for a single country. Within each location we sorted the year, and then the conflict ID.

We proceed to construct a conflict dummy variable, D, in which we assign each remaining observation a 0 to identify it as a non-conflict year or a 1 as a conflict year. To identify conflict years, we consider the intensity level, for which the dataset offers two options:

- Option 1: Minor: between 25 and 999 battle-related deaths in a given year.
- Option 2: War: at least 1,000 battle-related deaths in a given year.

Option 2 is of most interest, therefore we assign D=1 to all observations with option 2. However, (i) not all years of the same conflict might be intense enough to qualify as a war (i.e. option 1 level of intensity for some observations); or (ii) the conflict might even briefly experience non-intense years, precluding those years from the dataset altogether (non-observations). To account for these cases we do the following: in a specific location (country), for any specific Side B party that has option 2 level of intensity in at least one observation, we assign D=1

- for all observations for that Side B in that location.
- for the few non-observations within a sequence of observations involving the above-specified Side B party, such that the last observation preceding the non-observations does not indicate an end to the conflict (EpEnd is not 1).\(^4\)

**Box 1: Special Adjustments**

i. Ex-Yugoslav republics—Croatia, Bosnia-Herzegovina and Serbia—are assigned conflict status for years 1991-95.

ii. For Iraq, KDP disappears as a Side B in the conflict after 1991 without EpEnd=1. Hence, we stop considering KDP conflicts as relevant to our selectivity methodology after 1991.

iii. We assign conflict status to Lebanon for all years from 1975-1990.

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\(^3\) We exclude two types of conflict: (i) extra-systemic armed conflict occurring between a state and a non-state group outside its own territory. These conflicts are by definition territorial, since the government side is fighting to retain control of a territory outside the state system; and (ii) interstate armed conflict occurring between two or more states.

\(^4\) In the dataset, each observation is assigned an EpEnd equal to 1 (0) if it is (not) the last year of conflict activity involving a particular Side B party.
iv. For Myanmar, from 1984, we only consider Side B conflicts CPB, KIO, KNU and God’s Army in our methodology since all other Side Bs disappear.

v. We assign conflict status to Libya for all years from 2011-2015.

For each country, we define a conflict episode, C, as that which begins in the year where D=1 first appears and ends in the year that precedes 8 consecutive years where D=0. Hence, a country can have successive conflict episodes that, for our purposes, are treated independently. The reason for this is that, when it comes to macroeconomic drivers of conflict, the literature identifies the first 8 years following the end of a conflict as the most relevant for whether the country reverts back into conflict or not. So, we assume that if the 8 years pass without any such reversion, then any subsequent conflict (D=1) would be macro-economically independent. Hence, for or our purposes, it matters not whether such a subsequent conflict is linked via other factors (political) to previous episodes, instead, since we are examining macroeconomic factors, this subsequent conflict would be treated as an independent episode.

We define a conflict relapse episode as that within a conflict episode, where D=0 for less than 8 years and more than 3 years (so as to eliminate 1,2 or 3 years of clam with no macroeconomic implications). Hence, the conflict relapse involves a period of no-conflict (within a conflict episode) that is not long enough to make the subsequent breakout of hostilities macro-economically independent from the previous bout.\(^5\)

To examine the evolution of a certain macroeconomic indicator leading up to C, we consider the 5 preceding years of each C, which we term the prior period.

To examine the evolution of a certain macroeconomic indicator in the aftermath of C, we consider the 10 proceeding years of each C, which we term the remission period.

To examine the evolution of a certain macroeconomic indicator leading up to a relapse episode, we consider the non-conflict years preceding it.

**The Prior Period**

We present charts plotting each indicator (vertical axis) against a time period countdown to the crisis (-5, -4, etc., on the horizontal axis). The value of each indicator is the average across all crises episodes for that specific year. Since not all crises episodes have a complete data set for all 10 years for all indicators, we plot the following varying samples:

a. Only 5-year sample: which includes episodes with observations for all 5 prior years
b. Only 4 & 5-year sample: which includes episodes with observations for 4 or more prior years
c. Only 3, 4 & 5-year sample: which includes episodes with observations for 3 or more prior years
d. Complete set: which includes episodes with observations for 2 or more prior years

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\(^5\) Remission episodes: Croatia, Serbia, Bosnia, Greece, Moldova, Russia, Georgia, Iran, Lebanon, Tajikistan, China, Nepal, Cambodia, Laos, Viet Nam, Indonesia, Liberia, Sierra Leone, Cameroon, Chad, Congo, Angola, Zimbabwe, South Africa, Morocco, Bolivia, Paraguay, Cuba, El Salvador, Nicaragua, and Costa Rica.
The Post Period

We present charts plotting each indicator (vertical axis) against time period of years after crisis (1, 2, to 10, on the horizontal axis), such that the value of each indicator is the average across all crises episodes for that specific year. Since not all crises episodes have a complete data set for all 5 years for all indicators, we plot the following varying samples:

a. Countries with at least first 7 years of data: which includes episodes with observations for the first 7 years after the crisis episode.
b. Complete set: which includes episodes with observations for 5 or more post years

Conflict Relapse

We present charts plotting each indicator (vertical axis) against a time period countdown to the relapse episode (-7, -6, -5, -4, etc., on the horizontal axis). The value of each indicator is the average across all relapse crises episodes for that specific year. Note, however, that preceding non-conflict periods differ in length from one relapse episode to another. Hence, a relapse episode preceded by 5 non-conflict years does not require indicator values for years -7 and -6, while that preceded by 4 non-conflict years, does not require indicator values for years -7, -6 and -5. So when averaging out the indicator across all relapse episodes, there will be an increasing number of values as the countdown proceeds.

For all charts:
• We remove outlier (conflict and relapse) episodes that significantly distort the average.
• We preclude indicators with less than 5 episodes.

II: The Pre-Conflict Period

This section illustrates a striking macroeconomic dynamic that, when set in context with the more understood and observed vulnerabilities (e.g. institutional and political factors as discussed in WDR 2011), can increase the likelihood of a country entering into violent conflict mode. Specifically, a balance of payments shock amid macroeconomic vulnerabilities can act as a stress factor for violent conflict.

Beginning with real activity (Figures 1-3), not surprisingly, this period shows signs of a slowdown in real economic indicators, which peaked at t=-3. This possibly reflects business cycle behavior beginning to exacerbate tensions:

- Growth in real GDP and real GDP per capita peaks in t=-3.
- Gross capital formation also reaches a peak at t=-3.
Moreover, despite slowing economic activity, price inflation (Figure 4) is elevated at double digits for all years, indicating macroeconomic mismanagement and/or import inflation due to exchange rate depreciation and/or commodity price shocks:

On public finance, business cycle conditions are overlaid with the context of unstable political and security conditions:

- The tax burden rises across categories (Figures 6-9) to compensate for a decline in non-tax revenue (likely due to slowing economic activity), leaving total revenues largely unaffected.
Total revenues (Figure 5) are stable for the most part despite slowing growth, when in more typical business cycles total revenues might decline in a recession. This could indicate “populist” pressure to raise public finances to fund political and security related measures, such as:

- Military spending (Figure 10), which is shown to be largely unvarying;
- Wages and salaries (Figure 11), where cuts in t=-3 and -2 (due to possibly fiscal pressures) are quickly reversed in t=-1 (possibly in an attempt to buy political loyalty);
- Higher interest payments (Figure 12).

Savings are also sourced from cuts in social spending, as proxied by spending on health (Figure 13) and government consumption (Figure 14), both of which peak at t=-3, declining thereafter.

Expanding debt results in a tighter fiscal space (Figures 16-18):

- Fiscal balance, which improve in t=-3 and -4 (likely reflecting brisk GDP growth), deteriorate measurably in t=-1 (Figure 15).
- Central government debt, which reach a trough in t=-3 (likely reflecting brisk GDP growth), also deteriorate in -2 and -1 (Figure 16).
- External debt surges, especially in t=-2 and -1, (likely to fund rising security and political spending) (Figure 17).

![Figure 5](image-url)
Figure 6. Tax Revenue

Figure 7. Taxes on G&S

Figure 8. Taxes on Income Profits & Capital Gains

Figure 9. Taxes on International Trade

Figure 10. Spending on Military

Figure 11. Compensation of Employees

Figure 12. Interest Payments

Figure 13. Spending on Health
Crucially, and with the context of the above-illustrated macroeconomic stresses, evidence suggests external balance of payments shocks (Figures 18-22):

- A sharp deterioration in the terms of trade in t=-1;
- Deterioration in the current account balance, especially in t=-2 and -1;
- FDI also falls sharply, especially t=-2 and -1.
- Exchange rate pressure
Summary Hypothesis:

The macroeconomic dynamics preceding a violent conflict episode bear similarities to those leading to a financial crisis, with added security and political pressures: a turn in the business cycle toward a slowdown in economic activity within the context of macroeconomic vulnerabilities and political and security pressures that motivate official external borrowing and rising public debt, is followed by a balance of payments shock that quickly draws down available financing buffers and exposes the country to a
“Minsky Moment” (Eggertsson and Krugman, 2012). The outcomes during this period resemble those associated with “Macroeconomic Populism” (Dornbusch and Edwards, 1991), in that the external sector and financing provide sharper signals of imminent problems due to an inconsistent policy mix than real sector variables.

III: Macroeconomic Outcomes During Remission

In the previous section, we saw the buildup of macroeconomic problems prior to conflict that resembles an economic crisis. After conflict has ended, does the economy experience a rapid recovery as it might from a balance of payments crisis? Perhaps the most salient result from this chapter – which is consistent with findings of other studies – is that there is no sustained post-conflict boom even if countries successfully avoid relapsing back into conflict. Remission countries are “catching up” to the growth path of non-conflict countries, but slowly – done through modestly above-average growth for a sustained period rather than a long-lasting post-conflict boom. Specifically:

- A very rapid decline in GDP growth, with the post-conflict growth boom often lasting as little as one year (Figures 23 and 24). However, although growth declines quickly, it declines to a "normal" level more typical of non-conflict developing countries. As a result, catch-up in levels takes a long time; Mueller et al (2017) find that there is a strong negative level effect on output arising from the intensity of conflict, which, contrary to perceptions of post-conflict booms, on average is not reversed by subsequent more rapid growth.

- Growth is not negative (as it would be during crisis), and tends to stay above 2 percent a year per capita; this is the long-run average growth rate for all countries estimated by Pritchett and Summers (2013). The implication of this finding is that catch-up happens through avoidance of collapse – a feature of long-run growth emphasized by Broadberry and Wallis (2017) and reflected in the 2017 World Development Report (Governance and the Law). Loayza et al (2007) also highlight the harmful impact of crisis-induced macroeconomic volatility on development outcomes.

- An economy adapted to war is not without drivers of growth such as arms and illegal trade, capital inflows due to foreign financing of armed conflict, and informal private sector activity which might have been previously suppressed by a predatory state. The transition from war to non-war involves substitution of drivers to those of a more typical economy and this transition might not occur smoothly. This can help explain the sharp fall in growth from t=1 to t=2, after which growth recovers somewhat (possibly reflecting non-war drivers kicking in).

- Despite slowing GDP growth, gross capital formation grows gradually reaching brisk rates toward the end of the observed time period (Figure 25). Hence, investment as a share of GDP rises, but in a very back-loaded fashion – this is consistent with the absence of a prolonged post-conflict boom. The diverging dynamics between GDP growth and capital formation is due to the fact that, for the former, the post-conflict growth dividend is sharp and short-term, reflecting low-threshold effects, while for the latter, investment is more structural and grows
more gradually, reflecting a gradual shift toward a more complex economy. This
delayed capital accumulation means that there is a period where the cost of
reverting to violence is relatively low (compared to what it would be when capital
deepening occurs) – thus the economy will take some time to escape the
violence trap (Cox et al, 2015).

**Figure 23.**
Real GDP growth

**Figure 24.**
Real GDP per capita growth

**Figure 25**
Gross capital Formation

Inflation declines very rapidly (Figure 26), reflecting mainly stability gains in a few
conflict episodes which had seen hyperinflation in the violent phase (e.g. DRC).
While main fiscal aggregates vary little over the observed period, there is significant shifts between revenues and expenditures subcategories.

- **Deepening of revenue-generating capacity (Figures 27-32):**
  - During conflict periods, the central authority's loss of revenue collection capacity and (relatedly) geographical sovereignty renders custom taxes from ports and airports a more significant source of revenue due to the relative ease of administration involving a limited and strategic geography. In the post-conflict period, we see non-customs taxes assuming a larger share at the expense of those from customs. This is related to a common dilemma for many post-conflict countries: customs are relatively easy to administer centrally in fragile situations, but over time the distortions associated with excessive reliance on customs necessitate a diversification in revenue sources.

- **A rearrangement of spending priorities toward social objectives (Figures 33-38):**
  - There is a slight rise in education and health spending as a share of GDP, but similar to the growth pattern discussed above, this happens on a slow-moving basis rather than rapid change in priorities.
  - Spending on military does decline more sharply (2-3 percent of GDP), but the associated “peace dividend” is spread across various sectors, especially as there are no major revenue gains (as a share of GDP).
  - Compensation of public employees, stable at around 7 percent of GDP or under.
  - Interest payments as a share of GDP are strikingly stable, indicating a link between avoidance of increased debt burden and remission of conflict. Identifying causality directionality would be telling: (i) lack of political and security tensions can alleviate additional borrowing intended to fund political and security measures; or (ii) less borrowing, due to better macro management, can lessen the chances of another policy-induced economic crisis.
  - Government consumption falls as private sector activity grows becoming an increasing determinant of overall growth.
Figure 27.
Revenues, excl. Grants
- Complete Set
- Countries with at least first 7 years of Data

Figure 28.
Grants & Other Revenues
- Complete Set
- Countries with at least first 7 years of Data

Figure 29.
Tax Revenue
- Complete Set
- Countries with at least first 7 years of Data

Figure 30.
Taxes on G&S
- Complete Set
- Countries with at least first 7 years of Data
Figure 31. Taxes on Income Profits & Capital Gains

Figure 32. Taxes on International Trade

Figure 33. Spending on Health

Figure 34. Spending on Education
The fiscal balance does not decline (Figures 39) – consistent with the findings that revenue doesn’t increase, military spending declines, and spending in social sectors increases.

Central government accumulates debt during the first 5-6 years following the end of conflict, likely in order to fund the reconstruction effort and avoid increasing the tax burden despite rising expenditure needs (Figure 40).

External debt declines sharply (Figure 41): this is an important difference with the pre-conflict period where external debt is built up. Again causality directionality would be telling: (i) lack of political and security tensions can alleviate additional external borrowing intended to fund political and security measures; or (ii) less external borrowing, due to aid inflows, helps reduce the risk of a balance of payments shock.
The terms of trade tend to improve (Figure 42); this is not under the control of the country, but associated with a more enabling external environment for recovery.

Balance of payments strengthens during the first half of the observed period, only to deteriorate during the second half, likely associated with the increased investment that is taken place as confidence in recovery has firmed up (Figures 43-44).
Hypothesis for Remission

Locking in a remission from conflict to sustained peace is a slow process. Certain dimensions of stability can be restored quickly (notably inflation), but there is no prolonged growth dividend right after the conflict ends. The challenge is not sustaining a boom, but instead preventing a collapse in growth once the initial burst of activity is exhausted. Investment seems to take some time to respond to remission, perhaps indicating a slow updating process for confidence in the durability of peace. What does help generate some “economic” space is reduced spending on military, and aid to underpin consumption in the initial phases and help avoid rapid accumulation of debt. Keeping the public sector payroll under control is also important.
IV: Conflict Relapse

To complement the study of remission, the methodology also identified conflict relapse episodes—those which were able to achieve a few years (>3) of non-conflict, but failed to sustain it beyond 7. This section reinforces findings from Section II, highlighting the impact of a balance of payments shock during periods of structural vulnerability.

There is evidence to suggest that real activity is subject to a shock the year prior to the re-eruption of conflict; a sharp slowdown in real GDP and real GDP per capita growth at \( t=-1 \), resembling shock rather than cyclical behavior (Figures 45-46). This occurs during a period of macroeconomic vulnerability as indicated by high (double digit) inflation rate (Figure 47).

![Figure 45. Real GDP growth](image1)

![Figure 46. Real GDP per capita growth](image2)

![Figure 47. Inflation Rate](image3)

Similar to the case of the pre-conflict period, there is evidence to suggest that external balance of payments shocks might act as a trigger to conflict:

- A sharp deterioration in the terms of trade in \( t=-1 \) (Figure 48);
- Deterioration in the current account balance, especially in \( t=-2 \) and \(-1 \) (Figure 49);
- FDI also falls sharply, especially \( t=-2 \) and \(-1 \) (Figure 50).
- Exchange rate appreciates suddenly, putting pressure on exports (Figure 51).
Overall, as the country struggles with the immediate post-conflict fragility of political and security conditions, an external balance of payments shock can aggravate conflict risk.

V: Conclusion

Transitioning from a cessation of violent conflict to sustained peace is associated with a slow economic process – just as it is a slow institutional transformation process (WDR 2011, Chapter 3). Certain dimensions of stability can be restored quickly (notably inflation and the exchange rate), but there is no large growth dividend right after conflict ends. In the terminology of WDR 2017, the challenge is to avoid a shrinking period once the initial burst of activity is exhausted. Investment seems to take some time to respond to remission, perhaps indicating a slow updating process for confidence in the durability of peace. What does help generate some “economic” space is reduced military spending, and aid to underpin consumption in the initial phases and help avoid rapid accumulation of debt. Keeping the public sector payroll under control is also important. Given that these beneficial effects take time to materialize, high aid flows may have to maintained for a long time, beyond the usual horizon of aid flows into post-conflict contexts (Hoeffler, 2012).

While careful not to assign an exaggerated causality to the role of macroeconomics in conflicts, this chapter illustrates a macroeconomic dynamic that, when combined with
the more understood and observed vulnerabilities (institutional, political, etc.), can increase the risk of a country entering or re-entering into conflict mode. This dynamic, which is especially evident in the pre-conflict period, but signs of which are also present in the years leading to relapse, strikingly resembles pre-financial crises risks. Specifically, within the context of political and security pressures, macroeconomic vulnerabilities followed by a balance of payments shock, an environment known to be fertile grounds for financial crises, can lead to rapid depletion of buffers – plausibly due to a reluctance to make economic adjustments in the face of external shocks due to pre-existing social conflict.

As with a financial crisis, the reluctance to adjust in the face of external shocks may accelerate the onset of the fiscal and financial dimensions of the crisis, or raise its eventual cost. This suggests a particular focus of prevention on before-the-crisis-happens interventions in fragile countries, which combine credible policy adjustment with financing to smooth the social impact of that adjustment. In practice, interventions tend to be around the time of crisis, forcing more abrupt and concentrated adjustment.
References


