1 Introduction

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CONFLICT ECONOMICS AS A NEWLY EMERGING FIELD

Wars have a long history. Nations have been involved in conflicts since the origins of humankind. These have included tribal conflict and wars of conquest (for example, the Persian and Roman Empires, the First and Second World Wars). The end of the Cold War was expected to lead to peace, stability and security. Reality was different and the world continues its search for peace. Since 1990, there have been regional conflicts involving Afghanistan, Bosnia, Iraq, Israel and Kosovo. There have been numerous local and civil wars, some of which have involved ethnic cleansing, whilst new threats have emerged in the form of international terrorism and the proliferation of weapons of mass destruction (biological, chemical and nuclear).

The consequences of conflict are immediate and direct in terms of deaths, injuries and the destruction of property and infrastructures. But there are indirect and long-term effects in terms of impacts on future generations, land-use and the environment. For example, there were over 60 million military and civilian deaths in the Second World War, massive destruction of major cities in Europe, the USSR and Japan as well as enormous displacement of populations. Longer term, the death rate amongst males in military service has impacts on future population growth; the deployment of land mines affects agricultural use; and the use of nuclear weapons has health impacts on future generations. Inevitably, the horrendous costs of conflict have led to a focus on understanding its causes and consequences, and possible solutions to prevent wars. Traditionally, these topics have been studied by historians, political scientists, international relations and strategic studies experts as well as military staffs. But the analysis of conflict has now attracted a growing number of economists, mostly in the field of defence and peace economics (Anderton and Carter, 2009; Brauer and Van Tuyll, 2008; Hirshleifer, 2001; Sandler and Hartley, 2003; see also Chapter 2).

The economic analysis of conflict involves some of the basic foundations of economics. Conflict is costly and is a major user of scarce resources which have alternative uses. The military costs to the USA of the Second World War totalled some \$35 trillion (2010 prices) and the current Afghanistan and Iraq conflicts will cost over \$3 trillion (see Chapter 12). A comprehensive estimate of the costs of conflict needs to place a valuation on human life reflected in deaths and injuries (see Chapters 12 and 19). But the economics of conflict offers some valuable insights into explaining and understanding the causes of conflict. The economics of conflict requires a complete reversal of standard microeconomics which focuses on markets and equilibrium. Microeconomics stresses market transactions based on voluntary and mutually beneficial trade and exchange. Markets allocate resources on the basis of voluntary trading and the price mechanism which allocates and reallocates scarce resources between alternative uses. The focus is on private property, markets, their equilibrium and their creative power leading to a greater output of goods and services. In contrast to creative power, conflict is about destructive power (see Chapter 5).

Economic models of wars and conflict reverse completely the standard microeconomic analysis. In conflict, military force achieves a reallocation of resources within and between nations (that is, through civil wars, revolutions, international conflict). This reallocation is based on the military strength of the conflict participants: the nation with superior military forces usually wins the war. Nations invade other countries to capture or steal another nation's property rights over its resources (for example, theft of land, minerals, gold, diamonds, oil, population, water, access routes). Conflict destroys markets leading to disequilibrium and chaos. Conflict has a further distinctive feature: it destroys goods, factors of production and civilian infrastructure (for example, bridges, communications systems, railways, roads) and it is easier to destroy than to create. Civilian economies in peacetime aim to create more goods and services through economic growth and by expanding a nation's production possibility frontier. Wars and conflicts destroy the creative element of economies. Conflict uses military force and destructive power to enable a nation to acquire resources from another country, thereby expanding its production possibility frontier through military force. But the slave labour forces of occupied territories are not willing and cooperative suppliers of effort. This means that occupying powers incur substantial policing and enforcement costs in using slave labour. But conflict is not solely a microeconomic phenomenon: it has macroeconomic impacts on developed and developing countries (see Chapters 13 and 14).

Conflict provides opportunities for applying game theory involving strategic behaviour, interactions and interdependence between adversaries (see Chapters 3, 4, 7 and 11). Strategic interactions means that conflicts can be analysed as games of bluff, 'chicken' and 'tit-for-tat' with first-mover advantages and opportunities for one-shot or repeated games. For example, first-mover advantage might be attained by a pre-emptive strike (for example, Pearl Harbor in 1941; Iraq's invasion of Kuwait in 1990). The Allied bombing of Germany in the Second World War is a classic example of action–reaction as Germany's defences responded and adapted to the bombing (for example, German fighter aircraft tactics, dispersal of aircraft plants, use of decoys: see Chapter 19). In this context, economists also contributed to military strategy through their provision of advice on target selection during conflict. For example, during the Second World War, economic targets included aircraft and ball bearing factories, dams, submarine yards and oil fields.

Terrorism is another aspect of conflict and one where economists have made some valuable contributions to understanding its causes and policy solutions using both choice-theoretic and game theory models. Terrorism represents non-conventional conflict which is also costly in terms of its immediate impacts and its longer-term costs involved in policing and protecting homeland security (see Chapters 7, 15 and 16).

Preventing conflict is also costly but offers long-term benefits from peace and security. Nations aim to prevent conflict and terrorism by allocating resources to defence and national security. Economists can use their 'tool kit' to provide valuable advice on the efficiency implications of various military force structures (see Chapters 6, 17 and 20). Conflict can also be prevented and peace maintained through international peacekeeping forces. Again, such forces are not 'free lunches' and involve international collective action (see Chapters 10 and 11). In addition to international peacekeeping forces, the end of conflict raises an additional cost in the form of post-conflict reconstruction (see Chapter 18).

Conflict involves some relatively new dimensions which have attracted the attention of economists. These include ethnic cleansing and mass killing, and the impact of conflict on corruption (see Chapters 4 and 8). New technology is also a source of conflict and here, space is one dimension and area for future conflict (see Chapter 9).

THE CONTENTS OF THIS VOLUME

This volume presents a set of original contributions to the economic understanding of conflict. After the subject is placed into its historical context, the volume is divided into two broad sections, Part I dealing with theory (Chapters 3 to 13), and Part II with case studies (Chapters 14 to 20). The editors read and commented on each chapter, including each other's contributions.

Fanny Coulomb considers conflict in the context of the history of economic thought (Chapter 2). Two issues are addressed. First, the alternative interpretations of the causes of conflict reviewing liberal, mercantilist, Marxist and other schools of thought. Second, the methods of conflict analysis which outlines how economists have attempted to include conflict in their models.

Charles Anderton and John Carter present a bargaining theory perspective on war (Chapter 3). War is viewed as a bargaining process and situation. Rivals have a choice between war and peace. Some choices lead to advantages through violence whilst other choices avoid the costs of war though accommodation and peaceful agreement. The central problem addressed in this chapter is: why do wars occur; why are the potential gains from peace sacrificed and why is war and destructive power chosen instead?

Ethnic cleansing and mass killing are an aspect of conflict which has been all too prevalent but which has not attracted the attention of economists. Attiat Ott and Sang Hoo Bae present a model of the mass killing of civilians (see Chapter 4). They ask why some conflicts lead to the mass killing of non-combatant civilian populations; why do some rulers choose mass killings as their winning strategy? A game theory approach is used and the authors conclude that mass killing is undertaken for both gain and ethnic cleansing.

Mehrdad Vahabi deals with the economics of destructive power (Chapter 5). Destructive power has two dimensions, namely, economic or appropriative, and institutional or rule-producing. There are applications beyond war and conflict narrowly defined. Art and science as well as learning are forms of destruction (for example, of ideas, concepts and paradigms). Other examples of worker strikes and hostage-taking illustrate the institutional dimensions of coercive power.

The process by which a nation's defence budget is allocated inevitably has a major effect on national security. Itay Ringel and Asher Tishler set out a framework (and models) for the analysis of the process of allocating the government budget in a particular country to defence and civilian expenditures (see Chapter 6). They first identify the relevant key players in the process and their specific roles, and then develop models that define the interactions among these participants. The models are set within an arms race between that country and a rival. The analysis focuses on the effects of the decentralized budget allocation process, perceptions of security, and the effects of the arms race on the country's welfare, security and level of defence budget, employing stylized data based on the Arab–Israeli conflict.

Increasing numbers of economists have addressed terrorism. Karen Pittel and Dirk Rübbelke deal with the characteristics of terrorism (Chapter 7). They consider terrorist leaders and their followers as rational agents and they model terrorist interactions to derive conclusions for anti-terrorism policies. They consider how different characteristics of terrorism might influence the agents involved in terrorist actions. Their description of the incentive structures guiding the individual terrorist and the manipulation mechanisms which can be exploited by the leaders indicates possible counter-terrorist policies.

Corruption is another important but relatively neglected topic for economists. John Hudson addresses conflict and corruption (see Chapter 8). Conflict provides opportunities for corruption and corruption both provides a spur to conflict and reduces the ability of the state to resolve conflict. A model of corruption is presented and consideration is given to the determinants of corruption, its impacts on society and the economy, and the relationship between conflict and corruption. In general, the worst cases of corruption lie in developing and transition economies. But whilst the big opportunities for corrupt gains lie in these countries, it is the developed democracies which supply the firms with the potential and willingness to corrupt.

Outer space has been a source of fascination, with Hollywood features of *Star Wars* and *War of the Worlds*. This reflects technical progress in the aerospace industry in the form of rocket launchers, satellites and space exploration. Vasilis Zervos examines the potential for conflict in space (see Chapter 9). He considers the space industrial complex, its origins in the Second World War, the space race between the former Soviet Union and the USA, and the potential sources of conflict from commercial developments. The use of space to provide satellite communications and information for military forces provides nations with incentives to develop anti-satellite missiles and new technologies giving first-mover advantages.

Since the end of the Cold War, the incidence of Civil War has decreased and the use of peacekeeping has increased. Although there is a large literature on peacekeeping there is no consensus on how one should analytically characterize peacekeeping as an activity and how one should integrate a peacekeeping third party into traditional two-party models of conflict. There are also some gaps in the quantitative literature on peacekeeping, particularly on the interaction of the demand and supply of peacekeeping. Vincenzo Bove and Ron Smith set out to remedy these deficiencies in the literature (see Chapter 10). To understand the supply of military peacekeeping forces one has to understand the objectives, the choice set of available instruments and the constraints faced by those that intervene. This chapter discusses these issues, presenting some preliminary discussion of possible theoretical models.

Global peace is a public good but it also provides potential private country-specific benefits. Ugurhan Berkok and Binyam Solomon analyse peacekeeping, private benefits and common agency (see Chapter 11). The private, country-specific benefits include the reduction of conflict in their region, national status (prestige) and, for small states, there might be 'profits' from troop contributions to peacekeeping missions. Private benefits are modelled as a three-player game with a common agency involving side payments in a coalition game of peacekeeping. The model is applied to the various UN missions to

Haiti, showing how the USA and Canada used UN missions to achieve multiple private benefits.

The case studies section of this volume (Part II) presents various applied economics examples of conflict. A starting point is the costs of conflict. Economists recognise that conflict involves costs, but we lack authoritative studies of these costs. Linda Bilmes and Joseph Stiglitz explain the longer-term costs of conflict in the case of the Iraq War (see Chapter 12). They stress that wars are expensive and there is a need to know just how expensive. Politicians have incentives to underestimate and under-report the costs of war and this behaviour is made easier by the standard public sector accounting framework. Various sources of underestimates are reviewed and evaluated, including short-termism, poor accounting systems, neglect of future costs and a focus on budget rather than economic costs. They conclude that the total long-term costs of the conflicts in Iraq and Afghanistan will exceed their earlier estimate of 3 trillion dollars.

The macroeconomic aspects of violence are explored by Jurgen Brauer and Paul Dunne (see Chapter 13). The aim of this chapter is to argue the economic importance of all forms and aspects of armed and unarmed violence, where violence refers to acts of self-harm (including suicide), interpersonal violence (including organized criminal violence, domestic and workplace violence) and collective violence (including political entities facing the risk of – or actually engaged in – internal or external violence). Bringing together the analysis of the economic importance of all aspects of violence means that macroeconomic policy cannot be considered in isolation from microeconomic developments or from regional, sectoral, distributional and other economic policies, nor from the social contexts in which violence takes place.

Christos Kollias and Suzanna-Maria Paleologou consider the impact of interstate conflict and tension on economic progress as reflected in terms of per capita gross domestic product (GDP) (see Chapter 14). They include both the traditional variable commonly employed by most studies in this thematic area – that is, military expenditure – as well as an additional conflict and tension-capturing variable. The authors anticipate that any adverse macroeconomic effects on growth associated with conflict will be manifested through these variables, particularly in a post-Cold War world. Employing a case study framework, they use three pairs of states that have a well-documented history of tense bilateral relations, friction and even armed conflict: India and Pakistan; Greece and Turkey; Cyprus and Turkey. These conflict-prone dyads are the most widely known after the Arab–Israeli conflict. Consequently, they form a useful group of countries for which the economic impact of conflict can be explored via the two variables mentioned above.

Sennur and Selami Sezgin assess the determinants and economic costs of armed conflict in Turkey (see Chapter 15). They estimate the macroeconomic impacts on income, production, unemployment, investment and growth. The counterfactual is recognized as a major problem: what would have happened without conflict? They conclude that the non-economic consequences of armed conflict in Turkey are much more important than the economic consequences.

Terrorism is another aspect of conflict. Carlos Barros and Luis Gil-Alana provide a case study of ETA, the Basque terrorist group (see Chapter 16). The origin and aims of ETA are described. The chapter analyses the pattern of duration between terrorist events which are related to deterrence, political and violence variables. It is concluded that deterrence and political measures are most effective in reducing ETA activity.

What do economists employed by defence ministries do? Neil Davies, Tony Turner, Andrew Gibbons, Stuart Davies, David Jones and Nick Bennett explain defence resource management in the UK (see Chapter 17). They evaluate the economists' role in planning, programming and budgeting, in measuring defence output, productivity, defence inflation and unit cost escalation. Other contributions include manpower modelling, cost-effectiveness analysis, evaluating the effectiveness of peacekeeping activities, procurement and contracting, military outsourcing and UK defence industrial policy.

Derek Braddon, Jonathan Bradley and Paul Dowdall present a case study of the economic consequences for Serbia of its involvement in the 1990s Balkan conflict (see Chapter 18). The principal research issue addressed in this chapter is the impact of a long and bitter conflict on an economy in transition from state control to the market. The authors identify the factors responsible for the extreme decline of the Serbian economy following the break-up of Yugoslavia; how post-conflict economic reconstruction has been pursued in Serbia since the end of the Milosevic regime and with what success; and why a close relationship with – and perhaps eventual membership of – the European Union is perceived to be critical in driving both transition and the restoration of economic prosperity to Serbia in the future.

The strategic bombing of Germany in the Second World War remains controversial. Keith Hartley analyses bombing as an instrument of economic policy where air power was used to destroy the German economy (see Chapter 19). This is a field dominated by military historians, strategists and air power experts. The chapter shows how economic analysis can contribute to the evaluation of the Royal Air Force (RAF) bombing campaign. The focus is on cost–benefit analysis but there are applications of game theory and numerous examples of how the German economy adapted to the bombing. Quantitative estimates are presented of both the costs and benefits of the RAF strategic bombing of Germany.

State-controlled conflicts are a relatively new phenomenon; historically, most conflicts involved the establishment and deployment of private forces. Privatization in its many guises has recently returned to the arena of state-financed and organized military provision. Stefan Markowski and Peter Hall explore what determines the extent to which the conduct and pursuit of conflict-related activities is contracted out to private providers (see Chapter 20). The chapter draws on recent US war experience in Iraq and Afghanistan and its title, 'The reprivatisation of war', captures the essence of what the authors emphasize here: the scope for private sector involvement in military conflicts as opposed to peacetime support for the military.

CONCLUSION

Conflict economics is an under-researched field. There remain considerable opportunities for theoretical and empirical work on all aspects of the range of conflicts embracing world wars, regional conflict, civil wars, rebellions, ethnic cleansing and terrorism. Why do conflicts occur? Who gains and who loses? And if the losses exceed the gains, why do nations and groups continue to fight? Does economic analysis offer any guidelines for public policies to prevent conflict and maintain peace? Are there market failures, especially at the international level where there are gaps in the organizational arrangements for international collective action? Studies of the economic costs of conflicts are needed to show the true magnitudes of resource loss associated with wars and terrorism. Here, economic studies need to include valuations for the loss of human life and environmental damage as well as allowing for corruption associated with conflict. New technology might create new opportunities and incentives for conflict and peace (for example, offering first-mover advantages; providing deterrents to war). There is a rich research agenda which has the potential for contributing to the creation of a more peaceful world. This volume has shown the potential for further research in the field of conflict economics.

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