

Uncorrected draft.
Copyright: World Scientific.
For "fair use" rights only.

International Journal of Development and Conflict
Vol. 1, No. 1 (2011) 1–17
© World Scientific Publishing Company
DOI: 10.1142/S2010037X11000093



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43

POLICIES FOR REDUCING FIREARM-RELATED VIOLENCE IN DEVELOPING COUNTRIES

PETER HALL*, STEFAN MARKOWSKI* and JURGEN BRAUER†

*School of Business, UNSW@ADFA, Canberra, Australia

†James M. Hull College of Business, Augusta State University, Augusta, USA

This paper considers the prospects for effective government policy to limit the proliferation of illicit firearm ownership and use in developing countries — given their potential for generating development — undermining violence. We focus specifically on small arms than the more broadly defined small arms and light weapons. After a brief review of the current evidence on global gun-ownership estimates and the international distribution of small arms, we consider the potential of small arms to generate violence and destabilize economic performance in developing countries. We, then, analyze policies available to disrupt or prevent unauthorized movements of small arms, among and within nations, with a view of identifying their potential for reducing gun-related violence and its effects.

Keywords: Small arms; SALW; illicit firearms; arms supply chains; arms control; developing countries.

1. Introduction

1.1. Global firearm ownership

Over the last 15 years, increasingly intensive and sophisticated research into small arms proliferation has led to repeated and substantial upward revisions in estimates of the total number — or stock — of small arms (firearms — we use these terms interchangeably) in existence.¹ Early work estimated a total of about 500 million (Singh, 1995). Since then, estimates of the total have risen to 594 million (Fetter, 2001), 639 million and, most recently, to 875 million — comprising at least 200 million official military firearms and 26 million law enforcement weapons and 650 million civilian small arms (SAS, 2002, ch. 2; SAS, 2006, p. 37); (SAS, 2007, p. 41). Thus, if firearms were evenly distributed throughout the world, there would have been by 2007: (a) *ownership-intensity* averaging about one firearm for every seven people in the world (SAS, 2007, p. 39); and (b) a *civilian ownership-share* of about 75% of the known total and hence, at least one firearm in civilian hands per nine people worldwide (SAS, 2007, pp. 42–43, 46).

This stock is supplemented each year by an estimated global production of about 7 million new small arms, of which, on average, about 0.7–0.9 million are military

¹ These include revolvers and pistols, rifles and carbines, sub-machine guns, assault rifles, and light machine guns together with their ammunition (SAS, 2010, p. 3).

2 P. Hall, S. Markowski & J. Brauer

1 weapons (SAS, 2006, ch. 1); (SAS, 2007, p. 43). While most small arms in civilian hands
2 are nonmilitary weapons used for hunting or sport, many are military-style firearms such
3 semi-automatic assault rifles. These weapons, in particular, pose the threat of lethal vio-
4 lence as they are specifically designed to be fired at human targets and take life.

5 Less is known about the rate of attrition of the stock as firearms are highly durable and
6 can remain lethal for many decades, if not centuries, and certainly long after innovation has
7 rendered their technology dated. It is, therefore, reasonable to assume that not only esti-
8 mates of the stock of small arms will continue to be revised upward but also that the actual
9 stock will most likely continue to grow, and with it will grow its potential for lethal
10 violence.

11 **1.2. Scope of analysis and paper structure**

12 In this paper, we focus on the scope for reducing lethal violence associated with the use of
13 illicit (see below) firearms in *developing countries*. Clearly, all countries are “developing”
14 in that even the richest countries are growing more prosperous over time and score more
15 highly on various statistical measures of socioeconomic attainment. We refer to developing
16 countries as those that are characterized by relatively low levels of income per capita, often
17 combined with low life expectancy, high levels of illiteracy, and limited opportunities for
18 the vast majority of population to access education and modern healthcare.² It is not our
19 intention to draw a precise line in the sand of economic and social development between
20 those nations that are still “developing” as opposed to those who are considered prosperous
21 enough to be deemed “developed.” For the purposes of this paper, standard classifications
22 provided by international agencies such as the United Nations are quite adequate.³

23 Lethal violence in developing countries may occur through the use of a wide variety
24 of illicit weapons. In this paper, we focus on small arms and ammunition. These are the
25 true weapons of mass destruction (WMDs) (SAS, 2001: 1), even though other lethal
26 technologies, such as mines, improvised explosive devices (IEDs), and light weapons
27
28

29
30 ²The United Nations allows each nation to self-designate whether it is to be described as “undeveloped” or “developing.”
31 However, the UN puts forth a compound indicator using these lists of statistics, to create, a “human development index”
32 which gives a sense of how developed countries are. In 2010, the category of least developed countries (LDCs) has been
33 applied by the UN to 49 countries (33 in Africa and 15 in Asia-Pacific). These countries “represent the poorest and weakest
34 segment of the international community. Extreme poverty, the structural weaknesses of their economies and the lack of
35 capacities related to growth, often compounded by structural handicaps, hamper efforts of these countries to improve the
36 quality of life of their people. These countries are also characterized by their acute susceptibility to external economic shocks,
37 natural and man-made disasters and communicable diseases.” (<http://www.unohrls.org/en/ldc/25/> — accessed October
38 2010).

39 ³For our purposes, countries such as United States, Canada, members of the European Union, Japan, Singapore, Taiwan,
40 South Korea, Australia, New Zealand, or Israel are clearly well developed. At the other end of the spectrum, countries that
41 combine large-scale breakdown of rule of law and order with very poor scores on other measures of “development,” such as
42 Somalia or Sudan are clearly among the world’s least developing nations. For the purposes of this paper, countries that have
43 grown fast enough over the past two decades — such as China, India, Brazil, South Africa, Thailand, Mexico, Argentina,
44 Venezuela, Egypt, Turkey, and some Gulf States — are closer to the developed than nondeveloped end of the spectrum, even
45 though some of these countries (e.g. Mexico) have experienced high levels of lawlessness and firearms-fuelled violence.
46 Many other countries (in Africa, Central America, the Caribbean and the Middle East in Asia) fall into the less but not least
47 developed category. It is the least and less developed nations that interest us most as it is these countries that often experience
48 lethal violence related to the ownership and use of illicit small arm.

1 (e.g., MANPADS), increasingly compete for this dubious distinction as major causes of
2 casualties in conflict areas such as Iraq or Afghanistan.⁴

3 Conducted by state agencies, *legally* authorized violence in developing countries
4 usually occurs in the context of armed conflicts within and between countries and in the
5 administration of justice. Unauthorized lethal violence may also occur in a wide variety of
6 conflict situations where nonstate actors use arms either in defiance of state authority or
7 because the state is too weak to have enough authority to impose, let alone to enforce, law
8 and order and where nonstate armed actors are left free to operate in the lawless, violent
9 environment. Thus, we regard arms owned by nonstate actors in defiance of state authority
10 or because of its ineffectiveness as *illicit*. Lethal violence associated with the use of illicit
11 firearms in developing countries not only impacts on those directly affected by it but also
12 retards economic growth and perpetuates poverty. But, the distinction between “legal” and
13 “illicit” activities involving the use of firearms in developing countries is often blurred,
14 particularly when we apply legal benchmarks drawn from prosperous and well-established
15 democracies. We briefly focus on these issues in the Sec. 5.

16 Global estimates of stocks and flows of firearms, alarming as they may appear, say
17 nothing in themselves, however, about the three issues of key importance for relating
18 firearm-related violence to economic development:

- 19
- 20 • To what extent are small arms found in poorer, developing nations as opposed to richer
 - 21 industrialized and post-industrial countries?
 - 22 • How is firearm-related violence, as opposed to small arm ownership, distributed between
 - 23 developing and developed countries?
 - 24 • How does the distribution of firearm-ownership relate to that of firearm-related violence?

25 These three questions are addressed in Sec. 3.

26 Section 6 draws on our earlier work on how small arms reach the hands of holders of
27 illicit stocks (Markowski *et al.*, 2009).

28 We are particularly interested in policies aimed at reducing the proliferation of illicit
29 small arms in developing countries. These policies might target *activities* and/or *agents’*
30 *behavior*. Given the range of activities that might be targeted, we can identify the spectrum
31 of policies relevant to each activity. In each case, an activity will be performed by ident-
32 ifiable agents — individual firearm users, producer firms, government stock-holders, and
33 so on. Policies will seek to alter or constrain the behavior of some or all these agents. We
34 should point to the future need to evaluate the policy set in terms of potential impact,
35 timeliness, effectiveness, and efficiency. Since, ultimately, the aim of the small arms policy
36 is to reduce the proliferation of illicit small arms and their use in pursuit of violence, we
37 should try to judge the potential impacts of proposed policies on agents’ behavior. These
38 issues are discussed below in Sec. 7.

41 _____
42 ⁴Each year, 50,000–100,000 people are killed directly by small arms and light weapons (SALW) in “low-level” conflicts,
43 particularly in poor countries. At least twice as many die indirectly as “collateral” victims of conflict driven by SALW (SAS,
2001, p. 1).

4 P. Hall, S. Markowski & J. Brauer

1 We conclude the paper with suggestions for further research that could help policy-
2 makers design more effective policies to reduce the proliferation and use of illicit firearms.

3 4 5 **2. The Legality of Firearm Ownership and Use⁵**

6 Firearms may be owned and used by state actors (militaries and law enforcement agencies)
7 and citizens, legally and illicitly. In democracies, we take it for granted that the monopoly
8 of application of lethal force, in particular the legal right to use such force against those
9 regarded as dysfunctional members of the polity, has been the sole prerogative of the state
10 as only the state may lawfully sanction the use of armed violence threatening human life.
11 This state monopoly of in-country application of lethal force has been broadened to include
12 the provision of national defence to protect citizens from hostile activities of foreign
13 nationals and threats and/or use of armed violence by other states. The modern democratic
14 state is also responsible for preventing its citizens from engaging in unauthorized armed
15 violence against other states, that is, for enforcing the so-called neutrality laws that are
16 aimed at deterring “private exports” of lethal force to other states (Markowski and Hall,
17 2010).

18 This notion of the state monopoly of lethal force is usually assumed to apply to all
19 states; democratic and nondemocratic, developing and developed. But, the idea of modern
20 state capable of acquiring and enforcing the monopoly of lethal violence is a relatively
21 recent phenomenon. The 1648 Peace of Westphalia, which ended the Thirty Years War,
22 marks the arrival of sovereign states in Europe that substituted “horizontal” loyalty to the
23 sovereign people (the “nation”) for “vertical” fealty to monarchs, thus transforming indi-
24 viduals from “subjects” to “citizens” (Franck, 1996, p. 372). The “Westphalian state”
25 consolidated the previously fragmented authority to apply lethal force into a state mon-
26 opoly of armed violence (Markowski and Hall, *op. cit.*). Under the Westphalian paradigm,
27 the citizen is entitled to collective protection, domestically and against external threats.
28 This protection is provided by the state as a public good through its executive and oper-
29 ational agencies (e.g., government, the military, lawmaking and law enforcement
30 agencies). In return, the citizen is obliged to maintain allegiance to the state and refrain
31 from violent actions against other citizens and other states (unless authorized and/or
32 directed to do so by the state). By implication, unless authorized by the state, “private”
33 application of lethal violence by nonstate actors is normally deemed “illegal” and the
34 ownership of weapons used in such illegal activities “illicit.”

35 Inevitably, the Westphalian paradigm has limited applicability in developing countries
36 as many of these nations resemble the pre-Westphalian Europe where the right to apply
37 lethal force was scattered among competing social interests. It is not only that the devel-
38 oping country may have no effective means of asserting and enforcing the monopoly of
39 lethal force. What often compounds the problem is the absence of a popular consensus as
40 to why such an authority should ever be vested in the state and why nonstate actors should
41

42
43 ⁵This section draws on Markowski and Hall (2010 forthcoming).

1 be deprived of their traditional right to bear and use firearms unencumbered by any
2 constraints imposed by a superior authority.

3 Thus, the conventional distinction between “legal” and “illicit” ownership and use of
4 firearms tends to be blurred in many developing countries. Traditional feudal hierarchies,
5 such as monarchies, are progressively replaced by governments and more contemporary
6 governmental structures. But, elected governments are often dismissed as “illegitimate”
7 and “illegal” by those whose preferred candidates failed to gain power through the ballot
8 box. They are certainly illegal when they are not elected and capture power by more direct
9 and violent means. Similarly, insurgents or warlords, who use lethal force in pursuit of their
10 parochial interests, are frequently seen as legitimate “traditional governments” or “gov-
11 ernments-in-waiting” with their members and affiliates entitled to bear arms and use them
12 in anger (often literally) at their discretion.

13 All such distinctions between “legal” and “illegal” violence get particularly blurred when
14 the broader international community appears to be unconcerned or ambivalent about the
15 legitimacy of different mechanisms for transferring political power between competing
16 social interests. The lack of transitivity and consistency of judgment over time sends
17 particularly confusing signals when today’s “illegal” insurgents, terrorists, or criminals
18 morph into the pillars of social respectability in tomorrow’s political establishments.
19 Armed violence that achieves its aims attracts further armed violence. Thus, some form of
20 Westphalian consolidation appears to be a precondition for the effective control of small
21 arms proliferation. The Westphalian state need not be democratic but it needs to be robust
22 enough to assert its control over the application of lethal force in country. But the West-
23 phalian consolidation in developing countries may bring with it its own moral hazard and
24 adverse selection challenges, in particular when an unelected, ruling kleptocracy applies its
25 consolidated monopoly of lethal power to suppress opposition and perpetuate its hold on
26 power.⁶

27 The Westphalian paradigm of the state monopoly of lethal power should not be taken to
28 imply that only state agencies are authorized to hold and use firearms. In most countries,
29 private citizens are allowed to own firearms for use in sport, hunting, and farming. Such
30 weapons, though not specifically designed to kill people, may nevertheless be used against
31 human targets. Some form of licensing of firearm ownership, access, and use is, therefore,
32 desirable. This may be hard to implement in countries with a long history of unimpeded
33 firearm use by private citizens, where the stock of licensed weapons in private hands is
34 combined with large holdings of illicit firearms. In developing countries, especially when a
35 weak state cannot maintain law and order, private citizens may also acquire illicit firearms
36 for self-defence, to engage in criminal activities, or as a means of maintaining their
37 traditional social status (SAS, 2010). As weak states cannot enforce compliance with
38 firearm licensing laws, they are even less able to apply bans and prohibitions on firearm
39 ownership: their monopoly of lethal power is effectively eroded by the lack of resources
40

41
42 ⁶ Arguably, the Iraqi Ba’thist regime of Saddam Hussein at the peak of its power in the 1980s provides a rich case study in
43 moral hazards of Westphalian consolidation of state power. Or, we need not go much further than the ultimate basket case of
state kleptocracy — North Korea.

6 P. Hall, S. Markowski & J. Brauer

1 needed to apply it. Similarly, the least developed countries are too poor to use incentives
2 such as firearm buyouts to effectively control the stock of arms in private hands. Porous
3 borders and corrupt machinery of state make any attempt to enforce monopoly of lethal
4 power even less effective.

5 However, what matters most is the state ability to control the ownership and use of
6 *military-style weapons* as these types of firearms are specifically designed to kill people
7 and they account for most of the casualties attributed to the use of small arms. The number
8 of such weapons in government hands usually depends on the size of the national military
9 and law enforcement agencies that are licensed to carry and use these weapons. In turn, it
10 depends on the perceptions of external and internal threats as well as the availability of
11 resources to fund their acquisition. But military-style firearms are also owned and used by
12 civilians. This is often the case when the ownership and use of military-style weapons is
13 legal and their possession is licensed by the state (e.g., USA); or when the state is too
14 weak to assert its authority to reduce the spread of illicit weapons (e.g., PNG); or because
15 such weapons have long (traditionally) been owned and used by private individuals (e.g.,
16 tribal areas of East Asia). Military-style firearms are also commonly used in criminal
17 activities.

18 In developed countries, private ownership of military-style weapons is the most con-
19 troversial aspect of private arm ownership. This is because most high-profile incidents
20 involving the illegal use of firearms against human targets have featured military-style
21 weapons such as semi-automatic assault rifles. Their availability is even more of a problem
22 in developing countries where they have become the true weapons of mass destruction
23 epitomized by the infamous Kalashnikov AK-47; an assault weapon of choice in the
24 developing world (SAS, 2001). Thus, the state failure to assert its monopoly of lethal
25 power may not only increase the incidence of illicit gun ownership but also encourage the
26 acquisition and use of military-style firearms by private individuals. Given the different
27 motivations and behaviors associated with firearm ownership and use, we would expect to
28 see a larger proportion of military-style weapons in the illicit stock of firearms in poorer
29 countries than rich ones.

30 International arms trade agreements are intended to provide the legal basis for deter-
31 mining when *any* firearms-related activity is legitimate or illicit. Without such a frame-
32 work, governments have no (international) legal basis for ruling any cross-border activity
33 involving small arms trafficking illicit and would, thus, lack the basis in law for pursuing
34 action to restrict such activity. However, different governments will draw the line between
35 legal and illicit activities in different ways (e.g., USA compared with UK or Australia, let
36 alone rich western democracies and poor developing nations). Worse still, some govern-
37 ments will not draw such lines at all or will not regard themselves as bound by inter-
38 nationally agreed lines, i.e., they may permit or encourage trade in arms either because they
39 choose not to legislate to restrict it or because they choose to turn a blind eye to such trade
40 which has been defined by other nations and governments as illegal. This means that
41 activities regarded as illicit in some places will be regarded as legal in others and that even
42 activities that are illicit in terms of the legal codes of the countries in which they take place
43 may not be discouraged in practice.

3. Firearms and Firearm-Related Violence in Developing Countries

3.1. *International distribution of firearm ownership*

For official military use, an informed estimate of small arms stocks (inventories) suggests that countries hold an average of 2.25 firearms for each member of the armed forces (SAS, 2001, p. 73). While this implies that international variations in stocks will vary with the size and determinants of countries' armed forces, many nations have small arms stockpiles which are larger or smaller than the rule of thumb (SAS, 2002, p. 75). However, it appears reasonable to assume as a first approximation that government firearms inventories are roughly proportional to the size of the military and, by extension, to military expenditure (MILEX). In this context, it becomes relevant to ask what causes international differences in MILEX. Evidence suggests that the MILEX share of national income is higher in countries that: (a) are or have been engaged in an international war; (b) are experiencing civil wars, rebellions, or military dictatorships; and (c) have military big-spenders as neighbors (Collier, 2009, pp. 105–108). In the case of civil and cross-border conflict in developing countries (especially poorer developing nations), many of the weapons acquired through MILEXs may be SALW. So the general results may well also apply to military spending on small arms. There is also evidence that aid received in poor countries has a tendency to “leak” into MILEX (op. cit., pp. 110–111) — and thus, it might be assumed, into government stocks of weapons, including small arms.

Normally, we would expect MILEX per soldier to be inversely related to the expenditure on small arms as a proportion of all expenditure on weapons systems, that is, it is the developing countries that are more dependent on the use of small arms in internal and external conflicts while richer countries then to use more capital- and technology-intensive weapons systems as force multipliers. But official military expenditure, by construction, cannot take account of illicit flows of arms (small or otherwise) nor does it say anything directly about the size and value of unauthorized stocks.

As for flows into the military stock, evidence on small arms procurement suggests broadly that the key determining factors are, again, MILEX and, more generally the ability financially to procure frequently in pursuit of modernization. However, while the significance of small arms in the totality of weapons procured decreases as MILEX per soldier increases, in absolute terms rich countries spend more on small arms per soldier than the poorer ones. Thus, the most “intensive” small arms procurers are found in Western Europe and North America, followed in the middle ranks by the larger South American countries and better-off S.E. Asian countries (e.g., Thailand and India), with the least intensive including Cambodia, Sierra Leone, and Sri Lanka (SAS, 2006, p. 27).

Civilian-owned firearms are also distributed quite unevenly around the world. Between 60% and 75% of all civilian firearms are held by the top 10 civilian gun-owning countries in the world and 70–90% by the top 30 (SAS, 2007, p. 46). Of the top ten, three nations are among those with the highest per capita incomes in the world (US [1], Germany [4], and France [5]) and six are among the most populous (India [2], China [3], Pakistan [6], Mexico [7], Brazil [8], and Russian Federation [9]) (*Ibid.*, p. 47).

8 P. Hall, S. Markowski & J. Brauer

1 If we focus on GDP/head alone, a crude but widely used first approximation to
2 assessing the level of economic development, we find a positive correlation between
3 international variations in the intensity of civilian small arm ownership (firearms per
4 person) and cross-country differences in per capita incomes, though many other factors
5 such as crime rate and the traditional gun culture also influence the ownership decision.
6 While civilian ownership-intensity rises (falls) with increasing (decreasing) GDP/head, the
7 relationship appears to become nonlinear at the high- and low-end extremes. Firearm-
8 ownership per person rises less quickly than expected once per capita incomes are above
9 USD 20,000 p.a. and falls more slowly than falling GDP/head might predict at per capita
10 income levels below USD1,000 p.a. (SAS, 2007, pp. 57–60). This suggests that firearms in
11 civilian ownership are relatively superior goods at low levels of economic development
12 (high income elasticity of demand for firearms), particularly noticeable in very poor
13 countries like Ethiopia, Liberia, and Somalia. At the rich end of the development spectrum,
14 civilian firearms are relatively inferior goods (low income elasticity of demand). Since
15 correlation says nothing about the presence or direction of cause, however, low levels of
16 economic development might either drive or be driven by *relatively* high levels of civilian
17 firearm ownership — and noneconomic factors might be influencing both.

19 **4. Firearm-Related Violence**

20
21 A look at firearm-related violence statistics reveals as much international variation as we
22 saw in small-arms stockholdings.

23 Firearm-related deaths occur in two sorts of general context: conflict and nonconflict
24 (homicides, suicides, and unintentional shootings). The overall numbers dying in conflict
25 were at the turn of the century estimated to be as high as 300,000 p.a. but estimates have
26 been adjusted downward since to perhaps conservative estimates of somewhere between
27 80,000 and 130,000 in 2003 (SAS, 2004, p. 175); SAS, 2005, p. 247). That said, the large
28 majority of violent conflicts occurring at any one time in recent decades have occurred
29 outside modern, industrialized nations and it is thus in poorer rather than richer countries
30 that conflict-related violence is concentrated. Of deaths occurring directly from conflict, it
31 is estimated that 60–90% are caused by SALW although it is unclear what proportion of
32 that figure is accounted for by small arms per se (SAS, 2005, p. 248).

33 In the nonconflict context, firearm-related fatalities per 100,000 head of population
34 show a disparate range both between and within groups of countries at different stages of
35 economic development. In industrialized countries, the rate ranged in the late 1990s from
36 fewer than 1 p.a. in Denmark, Japan, Netherlands, Spain, and UK to between 1 and 5 in
37 Australia, Belgium, Canada, New Zealand, and Norway, to 7 in Finland, and 13 in the
38 USA (SAS, 2001, p. 239). The disparity compared with at least some poorer countries,
39 however, was greater still. Adding together firearm-related homicides and suicides in a
40 comparable period, countries like Colombia at 56 deaths per 100,000, Brazil (26), and
41 Jamaica (19) far outstripped rates in the industrialized nations. On the other hand, the same
42 ratio in Singapore and South Korea was well below 1 p.a. and in Argentina and Zambia
43 only a little over 5 p.a. (*Ibid.*, p. 240).

1 Looking at homicide alone by geographical region, countries in Latin America and the
2 Caribbean account for 40% of the world's total and Africa for 20% (SAS, 2004, p. 177).
3 Annual firearms-related homicide figures run at 15.5 deaths per 100,000 people in the first
4 region and 5.9 in the second, while the corresponding rates in Western Europe are 0.4,
5 Asia-Pacific 0.5, and Southeast Asia 1.5 (*Ibid.*, p. 178). Equally telling are the international
6 differences in rates of firearm-related homicide *versus* suicide. While firearm-related
7 homicide was at least nine times more common than suicide in Latin America and the
8 Caribbean and in Africa, it was only a quarter as common in Western Europe and less than
9 two-thirds as common in North America (*Ibid.*).

11 **5. Firearm Ownership and Firearm-Related Violence**

12 As Collier (2009) notes, the relationship between the availability of firearms and the
13 intensity of violence in a society is an empirical matter. More and cheaper small arms may
14 lead to an increased risk of violence just because they are easy to operate and kill or maim.
15 This instrumentalist view yields the so-called accessibility thesis. On the other hand, it can
16 be argued that if people have a strong motivation to kill, they will find a weapon to perform
17 the act. If a “hot technology” such as firearm is not available, or too expensive to access,
18 they will simply use a different weapon, such as a “cold technology” machete or a baseball
19 bat. On this argument, the “substitution thesis,” firearms availability is irrelevant. (The
20 contrast is drawn in SAS, 2004, p. 186.) Another view suggests that more and cheaper
21 firearms may raise the risk of retaliatory violence to such a high level that violence itself
22 declines (Collier, *op. cit.*, p. 103). Thus, high levels of firearm ownership could become a
23 deterrent to firearm use. Finally, firearm-ownership intensity and the incidence of violence
24 may both be high “because in societies that are violent for whatever underlying reason,
25 people make sure they have guns around: the guns are a consequence not a cause” (*Ibid.*,
26 pp. 103–104). The competing hypotheses offered in this area underlie heated debate about
27 not only cause and effect but also, by extension, appropriate policy.

28
29 Killicoat (2007) examines worldwide price variations in sales of the Kalashnikov AK-
30 47 — the small arm of choice for a host of illicit users — and in an extension to his
31 analysis finds that the cheaper the firearm, the greater the risk of civil war. The
32 interpretation here is in line with the accessibility thesis. If firearms are relatively cheap,
33 rebel groups in developing countries are encouraged to buy more of them and follow
34 through with a higher level of violent activity (Collier, 2009, p. 116).⁷

35 AK-47s have proved popular because they are also easy to use and maintain. They also
36 require standard, cheap ammunition that is easy to source from international arms

37
38 ⁷Relative price differences are directly related to substitution effects. Lower prices may encourage rebels to buy more small
39 arms of a particular type given their restricted budgets. One might argue that this is because AK-47s are cheaper than other
40 weapons or now look more attractive than other types of good. But by observation, rebel groups are also using more
41 expensive light weapons such as MANPADS and increasingly resort in some arenas to IEDs. Although AK-47s may
42 sometimes be so cheap that they can be acquired and used in even the poorest countries, more expensive alternatives (more
43 lethal firearms or more powerful light weapons) appeal to insurgents or terrorists because of their greater effectiveness.
Whether such groups can obtain these more sophisticated weapons will depend on their budget constraints and ability to
source these weapons through illicit supply chains.

10 P. Hall, S. Markowski & J. Brauer

1 merchants. By implication, other weapons have been less popular because of the higher
2 order of complementary skills required to achieve effective operation. In developing
3 countries, this may now be changing, with potential consequences for violence. The
4 higher-level skills required to manufacture and successfully deploy an IED have to be
5 generated in users before IEDs can substitute for simple firearms. To some extent, per-
6 sistent insurgency may facilitate such training (*vide* Al-Qaeda). But, perhaps ironically,
7 the higher levels of education achieved through economic development may also con-
8 tribute to providing the basic skills required for operating more complex and costly
9 weapons.

11 6. The Mechanics of Illicit Firearm Proliferation⁸

12 In this section we present a description of a stylized, multichannel, multiechelon supply
13 chain that transfers, through a sequence of steps or stages, military-style small arms from
14 arms manufacturers into illicit stocks. As we noted elsewhere, “The proliferation of illicit
15 small arms has significant potential implications for mortality rates and injury in any
16 community, though it cannot always be assumed that non-state actors are more likely to
17 misuse weapons than those employed by national governments” (Markowski *et al.*, 2009,
18 p. 172). Information on illicit transfers is even more incomplete than that for small arms
19 generally (SAS, 2005) but (Stohl *et al.*, 2006, p. 12) suggest that, in the early 2000s,
20 annual global sales of illicit small arms totalled \$US1 billion, about a quarter of the annual
21 value of the legal trade.

22 Explanations of the proliferation of military-style firearms necessarily involve analyzing
23 stock-flow relationships. Thus, weapons flow in and out of stocks and each stockholding
24 along the path from an arms manufacturer, where a weapon enters the system, through
25 various “intermediate” stages where it may be held and used legally, to the final illicit
26 destination can be represented as an “echelon” or a node in the chain feeding the illicit
27 stock. To simplify, we assume that “illicit” weapons are held and used by nonstate armed
28 actors, who are not licensed or otherwise authorized by the state to own and use military-
29 style firearms. We refer to the owners and users of such weapons as “illicit arms holders” to
30 emphasize that such people, unlike government agencies, do not normally buy military-
31 style arms directly from legitimate sources of supply but must acquire them by other
32 means.

33 By definition, illicit arms lie outside the control of governments. In the Westphalian
34 paradigm, such holdings of military-style firearms, especially by insurgents or criminals,
35 present a major challenge for the state monopoly of lethal force. To avoid the problems
36 associated with the legitimacy of a state that attempts to assert its right to control lethal
37 force, we assume in our stylized representation that the state government is recognized by
38 the international community of nations as legitimate regardless of how it came to power.
39 Thus, firearm holdings by the military and law enforcement agencies in this representative
40 state are “legal” while those held by nonstate actors without the state explicit approval are
41

42
43 ⁸This section largely draws on Markowski *et al.* (2009).

1 “illicit.” This situation is typical of most developing countries where the provenance of
2 political power is often dubious, if we were to apply the standards of mature western
3 democracies, but where the states and their governments are nevertheless recognized and
4 accepted (in a sense of real politics) by the broad community of nations as represented, for
5 example, by the United Nations. Most of these states are Westphalian in that they aspire to
6 the monopoly of lethal power but are often too weak to effectively assert and implement it.
7 Such states in the developing world are frequently confronted with very diverse challenges
8 to their authority and power that involve the ownership and use of illicit firearms by groups
9 that vary from armed insurgents and political opponents, to traditional warlords, to armed
10 criminal interests.

11 In our stylized representation of the arms supply chain, we show that illicit supply
12 networks are often extensions of legal channels. Thus, most military-style arms in this
13 representation begin their existence as legally manufactured products that are sold by
14 weapons manufacturers to government and military purchasers, licensed military arms
15 brokers, and those members of the public who are legally entitled to own and use such
16 arms. Illicit weapons, by contrast, are often stolen from government stocks, traded illegally
17 or captured in battle. Some illicit weapons are manufactured by craftsmen operating on the
18 fringes of the global arms industry. Unlike their legal counterparts, flows of illicit arms tend
19 to be mediated by black markets or facilitated by clandestine nonmarket transactions.⁹ In
20 our stylized representation, we leave aside discussion of legal government acquisition
21 processes and focus instead on how illicit stocks of small arms are formed. We also
22 describe the mechanics of small arms supply chains and the challenges faced by agencies
23 seeking to disrupt or impede the flow of weapons to illicit arms holders.

24 Markowski *et al.* (2009, p. 173) offered a stylized analysis of the mechanisms for
25 “funneling” small arms to illicit users. Similar explanations are offered by Stohl and
26 Grillot (2009, pp. 100–102). Examples of how small arms were transferred from legal to
27 illicit stocks include:

- 28 • the illegal activities of government officials who take bribes to issue export licenses or
29 authorize purchases of military style weapons by nonstate actors;
- 30 • the looting of government arsenals and stockpiles, as in Albania in 1997 when half a
31 million weapons were stolen;
- 32 • the theft and loss of weapons from insecure and poorly managed government stockpiles
33 (e.g., the estimated 8,500 weapons annually stolen or lost from South African police and
34 military keeping);
- 35 • armed service personnel selling their weapons, as over 3,000 Russian soldiers did in
36 1993;

37
38
39 ⁹Markowski *et al.* (2009) also distinguish between *white* (legal), *black* (illicit), and *gray* (semi-legal) markets for small arms. In this representation: “white markets” operate subject to active or passive government involvement and in accordance with national and international laws; “black markets” operate without official government approval and in violation of national and international laws; and “gray markets” involve governments or their agents exploiting legal loopholes or circumventing national and/or international laws to arrange arms transfers (e.g. covert arms sales to insurgents or embargoed governments). In practice, the line between white and gray markets is often blurred (Stohl *et al.*, 2006, p. 13); (SAS, 2002).

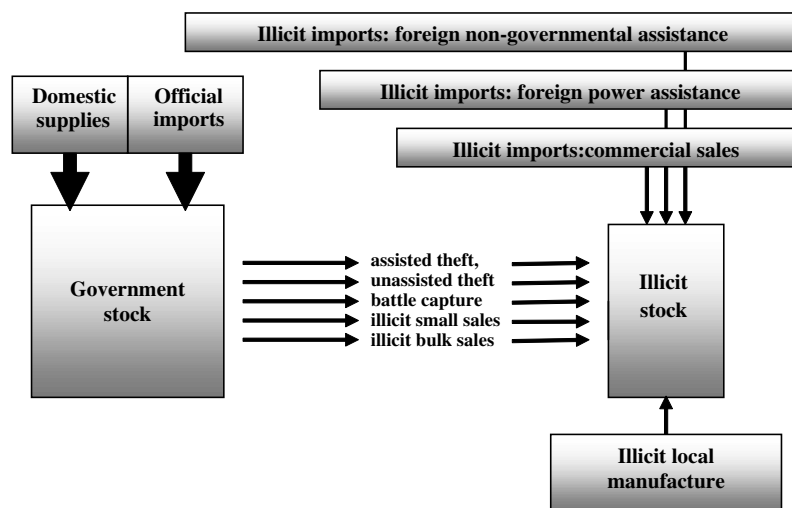
12 P. Hall, S. Markowski & J. Brauer

- 1 • leakages from legal civilian holdings (e.g., South African owners lost nearly 16,000
- 2 small arms to theft in 2004–2005, weapons later sold on the black market); and
- 3 • unlicensed craft production of guns for the black market (Stohl *et al.*, 2006, pp. 13–15).

4 With the exception of occasional mass looting of government stockpiles during national
 5 crises (e.g., Albania in 1997), or when military style weapons are made available to the
 6 newly formed military units and law enforcement agencies in countries such as Iraq and
 7 Afghanistan but are subsequently looted en-mass by deserters, most leakages from legal to
 8 illegal stocks are small: hundreds or thousands per annum relative to stocks that total
 9 hundreds of thousands or millions.

10 Figure 1 shows the stylized supply chain structure in a (Westphalian) developing
 11 country where most military-style small arms are initially purchased by the government for
 12 the armed forces, police, and other government agencies licensed to carry weapons (the
 13 national security sector). This may also include paramilitary organizations that are armed
 14 by the military to operate as militias or vigilantes and engage in activities that the gov-
 15 ernment (or the military) does not wish to be associated with directly. The total stock of
 16 arms held by the security sector is represented by a box labeled *government stock*. The
 17 figure does not show the stock of military-style firearms held legally by civilians and
 18 outflows from that stock to illegal destinations. Our aim here is to outline the basic
 19 mechanics of multichannel supply chains feeding stocks of illicit small arms and to
 20 highlight the challenges of illicit arms control. As Markowski *et al.* (2009, p. 176) argue,
 21 “Adding further elaborations would add to the realism of the model but only reinforce our
 22 key message that it is impossible, in practical terms, to ‘seal’ legal stocks of firearms to
 23 stop all leakages to illicit destinations.”

24 In the figure, the government stock of firearms is formed through two inflows: *official*
 25 *imports* (i.e., purchases from foreign arms suppliers and/or purchases and donations from
 26



42 Figure 1. Sources of illicit supplies.
 43 Source: Markowski *et al.* (2009), Figure 1, p. 176.

1 overseas governments) and *domestic supplies* sourced from in-country small arms manu-
2 facturers. Some countries rely mostly on imports; others may use local designs or obtain
3 technology and production licenses from abroad to make firearms locally. Most semi-
4 industrialized countries can produce simple, military-style firearms as product and process
5 technologies for simple weapons are mature and easy to access.

6 Figure 1 shows no depletions from the stock due to the aging or obsolescence of
7 weapons. Such outflows could be easily incorporated in the model but we wish to
8 emphasize that, given the inherent durability of firearms, in many countries there is a
9 tendency to retain old weapons in stock “just in case.” Older weapons can also be used to
10 arm paramilitary and other “client” groups, at home or abroad, so there is a “filtering
11 process” in which the older vintages of the stock are progressively diverted to lower
12 priority users within the government sector (transfers of weapons within the “government
13 box” in the figure). Thus, the government stock may grow over time even though a
14 proportion of it may be mothballed or kept in a state of disrepair as a source of spare parts
15 to be cannibalized when required. Also, the vintage structure of the stock makes it easier to
16 “leak” weapons out that are deemed obsolete.

17 In the figure, the *illicit stock of arms* arises either because there are *leakages* from the
18 government stock; or because of *illicit imports*; or in-country manufacture of illicit
19 weapons (shown in the figure as *illicit local manufacture*). Arms manufactured illicitly are
20 usually, but not always, of inferior quality relative to legally manufactured weapons.
21 Nevertheless, craft-industry weapons may compete on price and availability with other
22 sources of illicit supply.

23 *Illicit imports* may involve donations by friendly powers or nongovernmental “bene-
24 factors.” These are shown in the figure as *illicit imports: foreign power assistance* and
25 *illicit imports: foreign nongovernment, assistance*, respectively. While these shipments
26 from abroad may often be free donation to illicit causes, the recipient may have to collect
27 them from a particular drop-off point which may be difficult, risky and, thus, costly, to
28 arrange. As, by definition, all these imports are clandestine, the last leg of the delivery
29 process may also necessitate the recipient’s direct involvement. This may stretch the
30 recipient’s resource base and impose significant transaction costs. Commercial imports
31 arranged through black market arms dealers are shown in the figure as *commercial sales*.
32 These may also require a complementary in-kind effort from the recipient to secure them,
33 and must be paid for at prices set in the arms black market. In some cases, the commercial
34 arrangements take the form of countertrade with firearms paid for by reverse shipments of
35 narcotics or similar barter arrangements (see Markowski *et al.*, *op. cit.*, footnote 28,
36 p. 178).

37 It is illicit “leakages” from the government stock into the hands of people whom the
38 government *has no desire to arm* that are often the main source of arms inflow into the
39 illicit stock. Five such “leakage” channels are shown in the figure:

- 40
- 41 • *assisted theft*, which occurs when weapons are made available to insurgents or criminals
42 by people working within the government sector for family, tribal, ethnic, religious, or
43 ideological reasons. Sometimes, theft is assisted as a means of gaining favor with the

- 1 “opposition” (e.g., the provision of intelligence about military and police storage
2 facilities or details of arms shipments). Although this form of theft may not involve a
3 reciprocal payment, resources are nevertheless required to raid government armories and
4 intercept arms convoys;
- 5 • *unassisted theft*, which occurs when insurgents or criminals rely on their own resources
6 to rob armories or intercept arms shipments. Normally, these activities are more risky
7 and resource-intensive than assisted theft;
 - 8 • *battle capture*, which involves the capture of firearms in combat, shown in the figure to
9 be unidirectional with arms flowing from the government to illicit stocks but not vice
10 versa;
 - 11 • *illicit small sales*, which take place when soldiers or policemen sell ammunition or stolen
12 weapons to supplement their pay. These “retail” activities are often opportunistic, *ad hoc*
13 and small scale (in their totality though, they may be quite significant); and
 - 14 • *illicit bulk sales*, which tend to involve corrupt government officials and the military
15 stealing and re-selling larger quantities of weapons. Alternatively, they may sell intel-
16 ligence or “leave the gates open” to insurgents or criminals.

17
18 For more details and discussion of these parallel leakage channels, see Markowski
19 *et al.* (2009), who also demonstrate why the parallel, multichannel nature of the illicit arms
20 supply chain helps to ensure the success and dependability of the chain through channel
21 redundancy and, by implication, why such parallel and very diverse structures make it so
22 hard for government agencies to disrupt and reduce the flow of military-style small arms
23 into the illicit stock. Given, the sheer size of the stock of firearms and its international
24 portability between areas of conflict, our earlier thesis was close to stating the policy
25 “impossibility theorem”: it is practically impossible to reduce the availability of small arms
26 in developing countries. The odds are clearly in favor of illicit arms users and suppliers
27 who, given the scope for channel redundancy, can easily tie the sources of supplies to their
28 illicit destination.

29 To be effective, governments would have to cut/disable a large number of active and
30 dormant supply channels. As Markowski *et al.* (2009) argue, to achieve this would require
31 both superior intelligence and massive resources. Superior intelligence is usually un-
32 available to government agencies and the opportunity cost of resources needed to cut active
33 and remove dormant supply channels is likely to be high in developing countries. Also, as
34 the cost of human life is often deemed to be low in poor countries, it is not surprising that
35 relatively little government effort has been devoted to small arms control. It is only when
36 violence associated with the proliferation of small arms poses a major threat to government
37 survival, or seriously impedes economic growth that the marginal benefit of small arms
38 reduction increases and induces the government to devote more resources to the reduction
39 of illicit arm flows. But all such efforts are potentially very challenging since small arms
40 manufacturing technology is well established and developing countries often view local
41 manufacture as an enticing opportunity to form a manufacturing base, and there are eager
42 sellers in the international market. Even if the domestic flow of illicit weapons could be
43 staunched, it is hard to stop them seeping through porous borders.

7. Firearms Control Policies

The above discussion highlights the sheer complexity of multichannel supply chain formation. As we argued elsewhere, some of that complexity may be a matter of deliberate design on the demand side of arms trafficking, when those involved in illicit arms flows diversify sources of supply to enhance, through channel redundancy, the overall dependability of the supply chain. Some of it though may be intrinsic to the socioeconomic makeup of developing countries, where the combination of corruption, poverty, ethnic and religious tensions, political instability, and previous or ongoing conflict provide many opportunities for arms delivery initiatives to originate on the supply side of the arms flow, or where the state lacks the means of asserting and implementing any form of arms control to deter/reduce demand for illicit arms (Markowski *et al.*, *op. cit.*, p. 188).

The technological factors also make illicit small arms difficult to control. Old weapons tend to be both *durable* and *portable* so that regional surges in demand can be accommodated through shipments of old weapons from one conflict area to another. The high portability of weapons makes it possible to recycle arms used in earlier conflict zones to new conflict areas and each major conflict (e.g., the recent interventions in Iraq and Afghanistan) leaves behind a large stock of military-style firearms that are subsequently available for use elsewhere. In short,

illicit arms supply chains are even more difficult to deal with than supply chains for illegal drugs. While the supply chain for illegal drugs is driven almost entirely by black market forces, in the case of illicit arms flows there are additional political, ideological, financial, religious and ethnic factors that influence the direction, complexity and intensity of arms flows (*Ibid.*).

That said, there have been a number of international initiatives to restrict the proliferation of small arms. A global catalyst for change was the 2001 UN *Protocol against the Illicit Manufacturing of and Trafficking in Firearms, Their Parts and Components*, which came into force in 2005. This is the first “binding” global agreement on small arms and ratifying states are committed to: (i) make illegal manufacture or trafficking of firearms a criminal offence; (ii) establish a government arms licensing system; and (iii) create a system for marking and tracing firearms. Related UN initiatives include *Programme for Action to Prevent, Combat and Eradicate the Illicit Trade in SALW*, where ratifying states commit to take voluntary action on small arms at national, regional, global levels and the 2005 *International Instrument to Enable States to Identify and Trace Illicit SALW*.

Regional agreements include:

- Organization of American States (OAS), Inter-American Convention Against the Illicit Manufacturing of and Trafficking in Firearms, Ammunition, Explosives and Other Related Materials (CIFTA), which came into force in 1998 but is not binding and unevenly implemented;
- EU Joint Action on Small Arms (1998, updated in 2002 to include ammunition), which is legally binding for member states but applies only to military-style small arms;

16 P. Hall, S. Markowski & J. Brauer

- 1 • Organization for Security and Cooperation in Europe (OSCE): *OSCE Document on*
2 *Small Arms and Light Weapons* (2004), which seeks to combat illicit SALW trade
3 through marking/tracking weapons, national control over manufacture, export control
4 (and licensing), stockpile security enhancement;
5 • *OSCE Handbook of Best Practices on SALW*, which provides guidance on national
6 controls over small arms manufacture, marking, record-keeping and traceability, national
7 stockpile management and security, national control of arms brokering, export controls,
8 national procedures for destruction of small arms, disarmament, demobilization, and
9 reintegration.

10 National policies flowing from these international/regional agreements focus on:

- 11
- 12 • small arms trade legislation;
 - 13 • licensing procedures;
 - 14 • export criteria and control lists;
 - 15 • interagency coordination, including customs authority and border controls;
 - 16 • verification documentation;
 - 17 • penalties and enforcement;
 - 18 • transparency and oversight;
 - 19 • marking and tracing;
 - 20 • stockpile management; and
 - 21 • collection and destruction of firearms.
- 22

23 Some national policies are aimed specifically at the control of military-style firearms,
24 while others are broader to include SALW and trade in arms in general.

25 What is apparent from the above international, regional, and national initiatives is that
26 they are unlikely to make much difference to those developing countries which are too
27 weak to assert their monopoly of lethal force and too poor to divert scarce national
28 resources to small arms control. Our final comment reinforces the statement made by us
29 (Markowski *et al.*, *op. cit.*, p. 189) namely that the proliferation of illicit small arms is
30 more likely to be the symptom of deeper socioeconomic malaise than its cause. In the short
31 run, much-publicized initiatives to disable supply channels, such as arms buybacks, may
32 produce some useful demonstration effects but, given the complexity of multichannel
33 supply chains, they are unlikely to have much impact on the illicit stocks and flows.
34 However, as the experience of Southeast Asia shows, when countries succeed in engen-
35 dering the long-run economic growth and when its benefits are widely shared, the
36 incentives to supply and demand small arms change at both end of the supply chain. While
37 there are pockets of active insurgency and criminal activity, there appears less small arms-
38 fuelled violence in Southeast Asia than a decade or two ago. Thus, as we argued before, “a
39 key challenge for governments serious about small arms-fuelled violence is to address the
40 opportunity cost of holding and using illicit arms and this is a challenge for economic
41 policy makers rather than security agencies” (*Ibid.*).

42

43

References

- 1 **Collier, P.** 2009. *Wars, Guns and Votes: Democracy in Dangerous Places*. London: Bodley Head.
- 2 **Fetter, G.** 2001. "Again I Say — Good Luck", *Forecast International Weapons Group*, July 21,
- 3 Newtown: Forecast International.
- 4 **Franck, T. M.** 1996. "Clan and Superclan: Loyalty, Identity and Community in Law and Practice." *The American Journal of International Law*, 90: 359–383.
- 5 **Killicoat, P.** 2007. "What Price the Kalashnikov?: The Economics of Small Arms." In *Small Arms*
- 6 *Survey 2007: Guns and the City*. Cambridge: Cambridge University Press, ch. 8.
- 7 **Markowski, S., Koorey, S., Hall, P. and Brauer, J.** 2009. "Multi-channel Supply Chain for Illicit
- 8 Small Arms." *Defence and Peace Economics* 20(3): June: 171–191.
- 9 **Markowski, S. and Hall, P.** Forthcoming. "The Re-privatisation of War." Ch. 20. In *The Econ-*
- 10 *omics of Conflict*, eds. Braddon, D. and Hartley, K. Edward Elgar.
- 11 **Singh, J.** 1995. *Light Weapons and International Security*. New Delhi: Institute for Defence Studies
- 12 and Analyses.
- 13 **SAS.** 2001. *Small Arms Survey, 2001: Profiling the Problem*. Geneva: Geneva Institute of Inter-
- 14 national Studies, Switzerland.
- 15 **SAS.** 2002. *Small Arms Survey, 2002: Rights at Risk*. Geneva: Geneva Institute of International
- 16 Studies, Switzerland.
- 17 **SAS.** 2004. *Small Arms Survey, 2004: Counting the Human Cost*. Geneva: Geneva Institute of
- 18 International Studies, Switzerland.
- 19 **SAS.** 2006. *Small Arms Survey, 2006: Unfinished Business*. Geneva: Geneva Institute of Inter-
- 20 national Studies, Switzerland.
- 21 **SAS.** 2007. *Small Arms Survey, 2007: Guns and the City*. Geneva: Geneva Institute of International
- 22 Studies, Switzerland.
- 23 **SAS.** 2009. *Small Arms Survey, 2007: Shadows of War*. Cambridge: Cambridge University Press.
- 24 **SAS.** 2010. *Small Arms Survey, 2007: Gangs, Group, and Guns*. Cambridge: Cambridge University
- 25 Press.
- 26 **Stohl, R., Schroeder, M. and Smith, D.** 2006. *The Small Arm Trade*. Oxford: Oneworld.
- 27 **Stohl, R. and Grillot, S.** 2009. *The International Arm Trade*. Cambridge: Polity Press.
- 28
- 29
- 30
- 31
- 32
- 33
- 34
- 35
- 36
- 37
- 38
- 39
- 40
- 41
- 42
- 43