# small arms survey 2007

guns and the city



A Project of the Graduate Institute of International Studies, Geneva

### CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo

Cambridge University Press The Edinburgh Building, Cambridge CB2 8RU, UK

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org Information on this title: www.cambridge.org/9780521706544

© Small Arms Survey, Graduate Institute of International Studies, Geneva 2007

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 2007

Printed in the United Kingdom at the University Press, Cambridge

A catalogue record for this publication is available from the British Library

Library of Congress Cataloguing in Publication data

ISBN 978-0-521-88039-8 hardback ISBN 978-0-521-70654-4 paperback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this book, and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

# FOREWORD

Every year gun crime kills about 250,000 people and injures many more. The resources needed to tackle armed violence and deal with its aftermath divert funding from education, health care, and job creation. The fear of being assaulted with a firearm or being caught in crossfire confines people to living behind high walls and locked doors. Gun violence, in short, hurts all of us.

The problem is especially acute in cities, where violent criminal activity is most often concentrated. But cities also provide opportunities for addressing gun violence, especially when the resolve of residents is harnessed.

When I took office in Bogotá in the mid-1990s, armed violence was spiralling out of control and levels of confidence in public security provision had reached record lows. We introduced a programme called 'security for everyone' and, with the support of the Catholic Church and the police, we reduced the number of licences to carry firearms in the evening and at weekends throughout the city. We also searched for guns at police roadblocks and drew on individual support and private funding to launch a weapons buy-back programme in 1995 and 1996.

These efforts—aided by media coverage—achieved striking results: a 26 per cent decline in Bogotá's homicide rate over two years (1995 to 1996) and a gradual shift in the mindset of people who had previously thought it was important to carry a firearm for protection.

Bogotá was not alone in facing high levels of gun violence. During the same period the mayor of Cali introduced temporary restrictions on carrying firearms and other security guarantees such as road checks and an increased police presence. The homicide rate declined notably as a result.

With the support of national and international actors, such interventions can be usefully replicated elsewhere. In Bogotá we relied on individual and private-sector support because we lacked strong national backing. To be even more effective in confronting the perpetrators and facilitators of gun violence, politicians, justice departments, and law enforcement agencies at all levels must work together.

The *Small Arms Survey 2007: Guns and the City* connects the dots between the individuals and organizations whose inaction or actions affect levels of armed violence at the municipal, national, regional, and international levels. In so doing, and in reminding us that we have the means to improve security, this book is essential reading for any-one concerned with mitigating the suffering armed violence causes families and communities around the world.

# **Antanas Mockus**

Former Mayor of Bogotá, Colombia (1995–97 and 2000–03) June 2007

# CONTENTS

About the Small Arms Survey	vi
Notes to readers	vi
Acknowledgements	vii
Introduction	1

# Chapter 1. Multiplying the Sources: Licensed and Unlicensed Military Production

Introduction	7
Licensed production: a primer	
The scope of licensed production	
Curbing proliferation: problems and solutions	
Conclusion	32

# **Chapter 2. Completing the Count: Civilian Firearms**

Introduction	
A brief history of gun numbers	
No neutral numbers	
Invisible giant: the well-armed civilian	
Ways of knowing: registering, estimating, and correlative modelling	
National registration data: solid but partial	
Independent estimates: adding available figures	
Extrapolation from registration data	
Correlating civilian gun ownership from basic national indicators	
The cross-over effect: the movement of military firearms	
to civilians and civilian firearms to combatants	
The post-modern arms race	
From hunting to security: the changing nature of civilian gun ownership	
Firearm destruction: reinforcing civilian dominance	
Conclusion	

# Chapter 3. Probing the Grey Area: Irresponsible Small Arms Transfers

Introduction	73
Irresponsible transfers I: human rights violations and armed conflict	75
Irresponsible transfers II: stockpile (in)security and risk of diversion	81
Transparency	86
Conclusion	97

# Chapter 4. Back to Basics: Transfer Controls in Global Perspective

Introduction1	17
Global update1	18
Spotlight on transfer controls1	28
Conclusion1	137

# Photo Essay. Guns in the Frame: Urban Violence in the Philippines

# Chapter 5. Guns in the City: Urban Landscapes of Armed Violence

Introduction	
Understanding urban armed violence in the 21st century162	

Urban political and criminal violence	
Urban responses to armed violence	178
Conclusion	

# Chapter 6. Armed Violence in Burundi: Conflict and Post-Conflict Bujumbura

Introduction	197
Armed violence in Burundi: the social and historical context	
Armed actors in Burundi	
Burundi's urban landscape	
Armed violence in post-conflict Burundi	
Civilian gun possession: a city trademark?	
Ex-combatants in the city	
Conclusion	

# Chapter 7. Mapping the Divide: Firearm Violence and Urbanization in Brazil

Introduction	
Firearm violence by municipality type: gathering the data	
Homicides and firearm homicides: urban v. rural	
Social determinants of urban and rural firearm homicides	
Youth and firearm violence in Brazil	
Outlying cases	
Urban and rural firearm suicide rates	
Conclusion	

# Chapter 8. What Price the Kalashnikov: The Economics of Small Arms

Introduction	
Collecting weapons price data	
Demand and supply in the small arms market	
Cheap guns, more war?	
Conclusions and future directions	

# Chapter 9. Enemy Within: Ammunition Diversion in Uganda and Brazil

Introduction	
The usual suspects? The case for leakage from	
state stocks in Karamoja, northern Uganda	
Wholesaling death: the cycle of ammunition diversion from	
state actors to organized crime in Rio de Janeiro, Brazil	
Conclusion	

# Chapter 10. Persistent Insecurity: Armed Violence and Insecurity in South Sudan

Introduction	
'Post-conflict' political transition	
Armed groups in South Sudan	
Human insecurity in South Sudan	
Future challenges in South Sudan:	
An emerging framework for improving human security	
Conclusion	
Index	

# ABOUT THE SMALL ARMS SURVEY

The Small Arms Survey is an independent research project located at the Graduate Institute of International Studies in Geneva, Switzerland. Established in 1999, the project is supported by the Swiss Federal Department of Foreign Affairs, and by sustained contributions from the governments of Belgium, Canada, Finland, the Netherlands, Norway, Sweden, and the United Kingdom. The Survey is also grateful for past and current project support received from the Governments of Australia, Denmark, France, Germany, New Zealand, and the United States, as well as from different United Nations agencies, programmes, and institutes.

The objectives of the Small Arms Survey are: to be the principal source of public information on all aspects of small arms and armed violence; to serve as a resource centre for governments, policy-makers, researchers, and activists; to monitor national and international initiatives (governmental and non-governmental) on small arms; to support efforts to address the effects of small arms proliferation and misuse; and to act as a clearinghouse for the sharing of information and the dissemination of best practices. The Survey also sponsors field research and information-gathering efforts, especially in affected states and regions. The project has an international staff with expertise in security studies, political science, law, economics, development studies, and sociology, and collaborates with a network of researchers, partner institutions, non-governmental organizations, and governments in more than 50 countries.

# **NOTES TO READERS**

Abbreviations: Lists of abbreviations can be found at the end of each chapter.

**Chapter cross-referencing:** Chapter cross-references appear capitalized in brackets throughout the text. For example, in Chapter 5 on Urban Landscapes of Armed Violence: 'Conflict and post-conflict urban armed violence also heavily affects cities ranging from Bujumbura (BURUNDI) to Mogadishu and Kabul.'

**Exchange rates:** All monetary values are expressed in current US dollars (USD). When other currencies are also cited, unless otherwise indicated, they are converted to USD using the 365-day average exchange rate for the period 1 September 2005 to 31 August 2006.

**Small Arms Survey:** The plain text—Small Arms Survey—is used to indicate the overall project and its activities, while the italicized version—*Small Arms Survey*—refers to the publication. The *Survey*, appearing italicized, refers generally to past and future editions.

**Web site:** For more detailed information and current developments on small arms issues, readers are invited to visit the Small Arms Survey Web site at www.smallarmssurvey.org.

Small Arms Survey Graduate Institute of International Studies 47, Avenue Blanc, 1202 Geneva, Switzerland

Tel.: +41 22 908 5777 Fax: +41 22 732 2738 Email: smallarm@hei.unige.ch Web site: www.smallarmssurvey.org

# ACKNOWLEDGEMENTS

In keeping with our tradition, the seventh edition of the *Small Arms Survey* is a collective product of the staff of the Small Arms Survey project, based at the Graduate Institute of International Studies in Geneva, Switzerland. A large number of researchers in Geneva and around the world have contributed to this volume, and it has benefited from the input and advice of numerous government officials, advocates, experts, and colleagues from the small arms research community and beyond.

The principal chapter authors were assisted by in-house and external contributors who are acknowledged in the relevant chapters. Special thanks go out to those individuals who generously shared their time and insights for our study of the 2006 UN Programme of Action Review Conference (TRANSFER CONTROLS).

In addition, detailed reviews on the chapters were provided by: Pete Abel, Philip Alpers, Holger Anders, Frida Berrigan, Jurgen Brauer, Jeremy Brickhill, Philip Cook, Ken Epps, William Godnick, Keith Hartley, William Hartung, Håvard Hegre, Mariam Jooma, Roger Keil, Nicholas Marsh, Jimmy McLure, Lisa Misol, Janvier Nkurunziza, Enrique Perez, Jorge Restrepo, Matt Schroeder, Luiz Eduardo Soares, Hilde Wallacher, Susan Waltz, Camilla Waszink, Siemon Wezeman, and Adrian Wilkinson.

Eric G. Berman, Keith Krause, and Glenn McDonald were responsible for the overall planning and organization of this edition. Tania Inowlocki managed the editing and production

### Small Arms Survey 2007

Editors

Eric G. Berman, Keith Krause, Emile LeBrun, and Glenn McDonald

Publications Manager Tania Inowlocki

Design and layout

Richard Jones, Exile: Design & Editorial Services Cartography

Jillian Luff, MAPgrafix

**Copy-editors** Alex Potter with Tania Inowlocki

**Proofreader** John Linnegar with Donald Strachan

### **Principal chapter authors**

Introduction	Keith Krause
Chapter 1	Barbara Gimelli Sulashvili
Chapter 2	Aaron Karp
Chapter 3	Anne-Kathrin Glatz and Lora Lumpe
Chapter 4	Glenn McDonald, Sahar Hasan, and Chris Stevenson
Photo essay	Lucian Read
Chapter 5	Oliver Jütersonke, Keith Krause, and Robert Muggah
Chapter 6	Nicolas Florquin and Stéphanie Pézard
Chapter 7	Rubem César Fernandes and Marcelo de Sousa Nascimento
Chapter 8	Phillip Killicoat
Chapter 9	James Bevan and Pablo Dreyfus
Chapter 10	Claire Mc Evoy

of the *Survey* with the help of Diana Rodriguez. Alex Potter copy-edited the book with Tania Inowlocki; Jillie Luff produced the maps; Rick Jones provided the layout and design; John Linnegar proofread the *Survey* with Donald Strachan; and Lisa Kenwright of Indexing Specialists (UK) compiled the index. Ceri Thomas of Daly Design created the illustrations on page 121.

John Haslam and Carrie Cheek of Cambridge University Press provided support throughout the production of the *Survey*. Barbara Gimelli Sulashvili, Anne-Kathrin Glatz, Sahar Hasan, Jonah Leff, Tom O'Connell, Sarah Petrino, Chris Stevenson, and Savannah de Tessières assisted with fact-checking. David Olivier, Fridrich Štrba, Carole Touraine, and Guillemette Carlucci provided administrative support.

The project also benefited from the support of the Graduate Institute of International Studies, in particular Philippe Burrin, Andrea Bianchi, Andrew Clapham, Oliver Jütersonke, and Monique Nathoo.

We are extremely grateful to the Swiss government for its generous financial and overall support of the Small Arms Survey project, in particular Erwin Bollinger, Sascha Fuls, Thomas Greminger, Cristina Hoyos, Roman Hunger, Anna Ifkovits, Peter Maurer, Jürg Streuli, Anton Thalmann, and Othmar Wyss. Financial support for the project was also provided by the Governments of Belgium, Canada, Finland, Germany, the Netherlands, Norway, Sweden, the United Kingdom, and the United States. In addition, the project has received financial support for various projects from the Geneva International Academic Network, the Organisation for Economic Co-operation and Development, the UN Development Programme, the UN Institute for Disarmament Research, and the World Health Organization. The project further benefits from the support of international agencies. including the International Committee of the Red Cross, the UN Office for Disarmament Affairs, the UN High Commissioner for Refugees, and the UN Office on Drugs and Crime.

In Geneva, the project has received support and expert advice from: David Atwood, Peter Batchelor, Nicolas Florquin, Magnus Hellgren, Peter Herby, Kari Kahiluoto, Patricia Lewis, Merete Lundemo, Patrick McCarthy, David Meddings, Marc-Antoine Morel, Jennifer Milliken, and Daniël Prins.

Beyond Geneva, we also received support from a number of colleagues. In addition to those mentioned above, and in specific chapters, we would like to thank: Michael Ashkenazi, Michael Cassandra, Barbara Frey, Thomas Jackson, Guy Lamb, Edward Laurance, Yeshua Moser-Puangsuwan, and Alex Vines.

This year we lost a close friend and collaborator, Sarah Meek, who died in a car accident. She was present at the creation of the Small Arms Survey, served on our International Programme Council, and contributed to many projects and reports over the years. She remains an inspiration to those who had the privilege to know and work with her, and we dedicate this volume to her.

Our sincere thanks go out to many other individuals (who remain unnamed) for their continuing support of the project. Our apologies to anyone we have failed to mention.

Keith Krause, Programme Director Eric G. Berman, Managing Director A French policeman holds a shotgun shell recovered after his unit was shot upon in Grigny, south of Paris, on the 11th night of urban riots in November 2005. © Franck Prevel/Reuters

# Introduction

The global small arms process spawned one disappointment, but also some good news, in 2006. The failure of the UN Programme of Action Review Conference to reach a substantive outcome was followed, within months, by agreement on initial steps towards the negotiation of a legally binding Arms Trade Treaty (ATT). The Review Conference undoubtedly represented a missed opportunity to examine the successes and failures of recent years, consolidate various strands of work, and chart a path forward. Nevertheless, it appears to have had little impact (positive or negative) on national, regional, or international efforts to stem the proliferation and misuse of small arms and light weapons.

Since 2001, an estimated USD 660 million has been invested in about 600 different activities in at least 94 states (Maze and Parker, 2006). These range from national capacity-building to stockpile management, post-conflict disarmament, surplus weapons destruction, and research and awareness-raising. In addition to the ATT resolution, significant initiatives of the past year included the following:

- a UN Group of Governmental Experts examined the prospects for enhanced regulation of international arms brokering to stem the illicit trafficking in arms;
- the Swiss government, together with the UN Development Programme, hosted a ministerial-level summit that saw
  42 states endorse the Geneva Declaration on Armed Violence and Development, committing them to achieving measurable reductions in armed violence by 2015;
- large-scale post-conflict disarmament, demobilization, and reintegration (DDR) efforts involving more than 1.25 million ex-combatants in more than 22 countries were conducted in places as diverse as Angola, Colombia, Eritrea, and Indonesia (Caramés, Fisas, and Sanz, 2007);
- a large-scale NATO- and European-led programme was launched to destroy surplus weapons and ammunition stocks in Ukraine, estimated to have the world's third-largest arsenal (Griffiths, 2007);
- the Economic Community of West African States (ECOWAS) negotiated and signed a legally binding convention designed to strengthen regional initiatives to stem illicit weapons trafficking and misuse (Berkol, 2007).

These diverse initiatives, some diplomatic, some programmatic, testify to the continued high level of engagement with the issue of small arms and armed violence, and the recognition, at least in some regions, of the need for broadbased multilateral action, whether within or alongside the UN system.

## **New perspectives**

Since 2007 has been declared (somewhat arbitrarily) the first year to see more than half of the world's population living in cities, it seems appropriate to focus on urban armed violence as a distinct problem requiring policies and programmes that engage local governments and actors around the world. A range of innovative initiatives have been launched by urban leaders in such places as Bogotá, Boston, Johannesburg, Rio de Janeiro, and St. Louis. Programmes

### 2 SMALL ARMS SURVEY 2007

tackling small arms and violence have also been initiated by networks of urban leaders, such as the anti-gang initiative led by Los Angeles officials or the bi-partisan Mayors Against Illegal Guns initiative that involves more than 200 mayors in more than 40 US states.

Urban settings pose particular challenges to armed violence prevention and reduction. They are sites of large-scale violent criminal activity, principally because of the opportunities and anonymity offered by modern cities. They are also zones of political unrest and instability, where violence is mobilized and manipulated for political ends. Even so, cities are often densely regulated and effectively governed spaces, providing many opportunities for policies and programmes that address the different risks and vulnerabilities to armed violence, beyond a focus on weapons alone.

## **Chapter highlights**

The *Small Arms Survey 2007* follows the traditional structure, with the first section comprising chapters that update or extend our knowledge on the production, transfer, stockpiles and holdings of weapons, and measures to regulate or control them. The highlights in this section include a relatively comprehensive—if still tentative—map of the global distribution of weapons in civilian hands, a review of new initiatives and continuing debates relating to arms transfer controls, and an in-depth look at licensed (and unlicensed) production as a vector of proliferation.

The thematic section opens with a photo essay by award-winning combat photographer Lucian Read on the impact of small arms in the Philippines. It is followed by the lead chapter, 'Guns in the City', and two case studies: one on urban armed violence in Brazil, the other on armed violence in Bujumbura, Burundi.

The last section offers a study of the link between conflict and the cost of firearms, using a global database of Kalashnikov prices, and a chapter that draws on field research in Brazil and Uganda to document the diversion of ammunition to non-state actors. The final chapter presents initial findings from our large-scale project mapping arms, armed violence, and insecurity in South Sudan following the signing of the Comprehensive Peace Agreement in 2005. The full range of publications from this project can be found at: www.smallarmssurvey.org/sudan.

### Update chapters

**Chapter 1 (Production):** Licensed and unlicensed production of small arms, light weapons, and their ammunition is the focus of this year's production chapter. It highlights the importance of this neglected, but quantitatively significant, aspect of the industry. Based on new research, it shows that 60–80 per cent of all current military small arms production is undertaken by firms that have acquired the production know-how from others.

Since this involves the transfer of technology from a restricted number of original owners to a larger number of producers, licensed and unlicensed production multiplies the sources of small arms. As small arms technology proliferates, the risk of irresponsible transfer and misuse also increases. This chapter presents major problem scenarios and the best practices that can remedy them. It concludes that the most effective counter-proliferation strategies target the initial export of production know-how.

**Chapter 2 (Civilian firearms):** Providing the most comprehensive portrait of civilian firearms distribution to date, this chapter analyses official registration data and various estimates and uses statistical modelling to estimate that there are about 650 million weapons in civilian hands worldwide, or roughly one gun for every seven people in the world. This implies that the previous Small Arms Survey estimate of 640 million total weapons will have to be revised upwards (to an estimated 875 million firearms worldwide), and further that civilians own roughly 75 per cent of all firearms, easily outnumbering military and law enforcement small arms.

# Definition of small arms and light weapons

The Small Arms Survey uses the term 'small arms and light weapons' broadly to cover both military-style small arms and light weapons as well as commercial firearms (handguns and long guns). When possible, it follows the definition used in the United Nations' Report of the Panel of Governmental Experts on Small Arms (United Nations, 1997):

Small arms: revolvers and self-loading pistols, rifles and carbines, assault rifles, sub-machine guns, and light machine guns.

Light weapons: heavy machine guns, hand-held under-barrel and mounted grenade launchers, portable anti-tank and antiaircraft guns, recoilless rifles, portable launchers of anti-tank and anti-aircraft missile systems, and mortars of less than 100 mm calibre.

The Survey uses the terms 'firearm' and 'gun' to mean hand-held weapons that fire a projectile through a tube by explosive charge. The terms 'small arms' and 'light weapons' are used more comprehensively to refer to all hand-held, man-portable, explosively or chemically propelled or detonated devices. Unless the context dictates otherwise, no distinction is intended between commercial firearms (such as hunting rifles) and small arms and light weapons designed for military use (such as assault rifles).

The UN definition was agreed through consensus by government officials. It was negotiated, in other words, to serve practical political goals that differ from the needs of research and analysis. While the UN definition is used in the *Survey* as a baseline, the analysis in this and subsequent chapters is broader, allowing consideration of weapons such as home-made (craft) firearms that might be overlooked using the UN definition. The term small arm is used in this chapter to refer both to small arms and light weapons (i.e. the small arms industry) unless otherwise stated, whereas light weapon refers specifically to light weapons.

The chapter also reveals changing patterns of civilian ownership. Civilians are acquiring more powerful firearms and in poorer areas sales of automatic rifles are increasing. There also appears to be a general link between per capita wealth and gun ownership: where gun ownership laws remain unchanged, greater national wealth leads to higher levels of gun ownership.

**Chapter 3 (Transfers):** Transfers of small arms, light weapons, and ammunition that are authorized by governments are not always legal or responsible. Some authorized transfers contravene international law, including norms relating to human rights and armed conflict. Other transfers can be considered irresponsible because they entail a high risk of diversion to unauthorized recipients. Building on analysis presented in the *Small Arms Survey 2004*, this chapter provides numerous examples of governments transferring weapons even though they knew, or should have known, of circumstances creating a significant risk of misuse.

The chapter also updates and fine-tunes the annual Small Arms Trade Transparency Barometer, revealing that transparency remains poor in many countries.

**Chapter 4 (Transfer controls):** This chapter takes stock of the latest developments in the global small arms process, with a specific focus on the issue of transfer controls. Key challenges in the area of transfer controls include unpacking relevant *Programme of Action* commitments, deciding whether and how to address the question of transfers to non-state actors, and developing means of effectively implementing transfer licensing criteria.

States have extensive existing responsibilities in relation to the transfer of weapons. Relevant legally binding norms include direct limitations on certain arms transfers, as well as the rule holding states 'complicit' in violations of international law committed with arms they transfer to others despite a known (or knowable) risk of misuse. Guidelines identifying factors to be considered when deciding whether to authorize a particular transfer can help states take a more systematic, rigorous, and objective approach to these decisions.

### **Urban violence section**

**Photo essay (Philippines):** This year the *Small Arms Survey* showcases award-winning photographer Lucian Read's coverage of the impact of small arms in the Philippines. The photos reveal complex relationships between the firearms and the people who make, want, use, suffer from, and confront them. They capture the gunsmiths who depend on the arms trade for their livelihood, as well as those who buy the finished product. They show the coffined bodies and mourners of victims of gun violence, and the attempts to prosecute perpetrators. They also portray efforts to impose a firearm ban in the run-up to the May 2007 elections, while offering a glimpse of opponents of gun control.

**Chapter 5 (Urban violence):** For the first time in human history, most of the world's inhabitants live in cities rather than rural areas. In recognition of this global shift, the 2007 edition of the *Small Arms Survey* contributes to a growing literature that seeks to identify and develop responses to the particular dynamics of urban armed violence. This chapter observes that rapid and large-scale urbanization is strongly associated with escalating rates of armed violence, whether political or criminal in nature.

Individual and collective reactions are based on perceived as well as real insecurities, often involving strategies to contain violence or export it to the urban periphery. The chapter documents a host of municipal approaches to the prevention and reduction of urban armed violence. Ranging from coercive and top-down to compliance-oriented and voluntary approaches, they vary in effectiveness. Successful programmes often combine a variety of strategies.

**Chapter 6 (Burundi):** This chapter looks at conflict and post-conflict armed violence in Bujumbura, the capital of Burundi. During a drawn-out civil war, Bujumbura was a theatre of armed violence between increasingly segregated and heavily armed neighbourhoods. Since the 2003 ceasefire armed violence rates have declined, though at a slower pace in Bujumbura than in other regions of Burundi.

Recent field research in six of Burundi's 17 provinces finds that the DDR process and civilian disarmament initiatives have produced mixed results. Small arms that were previously used during the conflict are weapons of choice for those perpetrating post-conflict violence in Burundi. In Bujumbura pistols and revolvers are also commonly carried for protection. The persistence of armed violence in Bujumbura—both criminal and politically motivated—suggests that measures targeting small arms proliferation have been inadequate.

**Chapter 7 (Brazil):** The rate of armed violence in Brazil grew threefold from 1982 to 2002, from 7 to 21 deaths per 100,000. It continued to increase until 2004, when the first signs of a potential decline were noted.

This chapter analyses data on social demographics, public health, and firearms availability from 5,507 municipalities across Brazil. It identifies the risk and protection factors conditioning armed violence across the country. Being male, black, young, and out of school and work are among the variables associated with victimization by armed violence, while suicide is more common among higher-income groups. The chapter finds that social inequality is correlated with armed violence, while poverty is not.

# **Other topics**

**Chapter 8 (Economics):** Using available information on global prices of various Kalashnikov assault rifles, the chapter examines whether a set of factors influences demand and supply in the small arms market and analyses the relationship between gun prices and civil war. In assessing the role of firearms demand, the chapter tests factors associated with the income and motivation of buyers, concluding that weapons prices do not appear to be associated with homicide rates, economic downturns, or young male demographics. Supply-side factors that affect gun

prices include the effectiveness of a country's regulations, porosity of borders, the level of military spending in neighbouring countries, and recent experience of conflict. A critical finding is that cheaper weapons prices lead to an increased risk of civil war, independently of other conflict risk factors.

**Chapter 9 (Ammunition diversion):** This chapter presents findings from two pilot studies that are part of the Survey's Ammunition Tracing Project. Employing new methodologies and extensive field research, the chapter charts illicit flows of ammunition in Karamoja, northern Uganda, and Rio de Janeiro, Brazil. The chapter reveals evidence that much of the ammunition circulating among non-state actors in the two regions has been illicitly diverted from state security forces. By mapping and quantifying ammunition flows, the chapter provides solid evidence of the critical role that diverted arms and ammunition play in sustaining armed violence. It also provides further inputs for the expanding ammunition debate.

**Chapter 10 (South Sudan):** Drawing on field research undertaken as part of the Survey's Sudan Human Security Baseline Assessment project, this chapter maps out the numerous security threats facing South Sudan in the aftermath of the January 2005 Comprehensive Peace Agreement (CPA). It underscores the fragility of the peace deal and points to the need for sustained international attention to the region. Conflicts between those supporting the fledgling security framework provided by South Sudanese authorities pursuant to the CPA and various actors seeking to undermine the peace, combined with points of contention among the parties, raise the spectre of renewed North–South conflict.

# Conclusion

This edition of the *Small Arms Survey* expands the potential scope of our policy interventions—from a narrow focus on supply-side control measures to a broader menu of instruments rooted in development, humanitarian, criminal justice, and (this year) urban planning perspectives. This does *not* mean that the problem of small arms proliferation and misuse is necessarily also expanding, but rather that our understanding of the different aspects of arms and armed violence—including the means to address their human, social, and economic costs—is deepening. In the long run, this will improve our ability to develop and deploy policies and programmes appropriate to the widely varied contexts associated with small arms proliferation and misuse.

Future editions of the *Survey* will tackle such themes as the public health approach to armed violence; post-conflict DDR; and the importance of small arms to security sector governance. In collaboration with old and new partners, we will continue to work to provide information and analysis that can underpin policies and programmes aimed at reducing and preventing armed violence.

# **Keith Krause**

Programme Director, Small Arms Survey

# **Bibliography**

- Berkol, Ilhan. 2007. Analysis of the ECOWAS Convention on Small Arms and Light Weapons and recommendations for the development of a Plan of Action. GRIP Analytical Note. Brussels: Groupe de recherche et d'information sur la paix et la sécurité.
- Caramés, Albert, Vicenç Fisas, and Eneko Sanz. 2007. Análisis de los programas de desarme, desmovilización y reintegración (DDR) existentes en el mundo durante 2006. Barcelona: Escola de Cultura de Pau de la Universidad Autónoma de Barcelona.
- Griffiths, Hugh. 2007. 'In the Interests of All: Negotiated Surplus Decision-Making in Ukraine.' Unpublished background paper. Geneva: Small Arms Survey. February.
- Maze, Kerry and Sarah Parker. 2006. International Assistance for Implementing the Programme of Action to Prevent, Combat and Eradicate the Illicit Trade in Small Arms and Light Weapons in All its Aspects: Findings of a Global Survey. Geneva: UN Institute for Disarmament Research.