

**Report to the Parliament of Australia on “The ability of  
Australian law enforcement authorities to eliminate gun-related  
violence in the community”**

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“[T]here is a wide consensus that our 1996 reforms not only reduced the gun-related homicide rate, but also the suicide rate. The Australian Institute of Criminology found that gun-related murders and suicides fell sharply after 1996.”

-- Former Prime Minister John Howard in the New York Times, January 16, 2013<sup>1</sup>

## **Introduction**

What can we do to save lives and reduce the threats that Australians face? Violent crime imposes massive social costs. Unfortunately, many laws are more likely to be obeyed by law-abiding citizens, not criminals, and by disarming law-abiding citizens relative to criminals many gun controls laws actually make it easier for criminals to commit crime.

## **How the number of guns in Australia has changed over time**

The impact of Australia’s gun buyback in 1996-97 is a lot less obvious than most might think. The buyback resulted in more than 1 million firearms

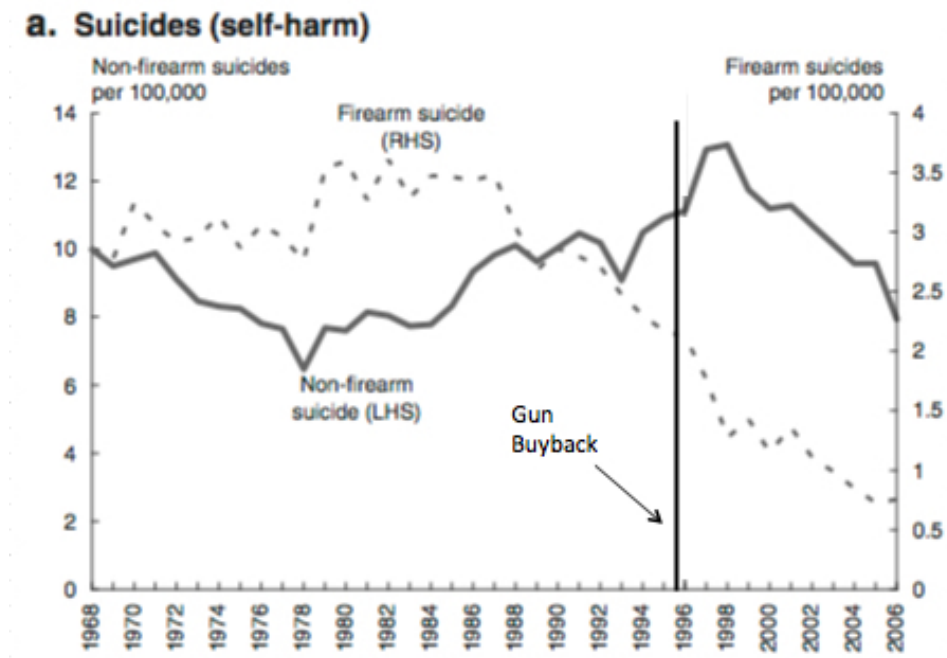
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<sup>1</sup> John Howard, “I Went After Guns. Obama can, Too,” New York Times, January 16, 2013 ([http://www.nytimes.com/2013/01/17/opinion/australia-banned-assault-weapons-america-can-too.html?\\_r=0](http://www.nytimes.com/2013/01/17/opinion/australia-banned-assault-weapons-america-can-too.html?_r=0)).

<sup>2</sup> Figures A and B are from Andrew Leigh and Christine Neill, “Do Gun Buybacks Save

being handed in and destroyed, reducing gun ownership from 3.2 to 2.2 million guns. But since then there has been a steady increase in the number of privately owned guns. By 2010, the total number of privately owned guns was back to the level in 1996.

While Australia's population grew by 19 percent between 1997 and 2010, the total number of guns soared by 45 percent. If gun control advocates are correct, gun crimes or suicides should have plunged in 1997 but gradually increased after that. But that is not the pattern that we observe.



The pattern from firearm suicides can be seen in Figure A.<sup>2</sup> While it is true that firearm suicides did fall after the buyback, they were falling for an entire decade prior to the buyback. Indeed the rate of firearm suicides was falling at about the same rate after the buyback as they were before hand. After the buyback, there was no sudden drop and then an increase.

But it isn't just firearm suicides that fell after the buyback -- non-firearm suicides fell by virtually the same amount as firearm suicides. That fits in with

<sup>2</sup> Figures A and B are from Andrew Leigh and Christine Neill, "Do Gun Buybacks Save Lives? Evidence from Panel Data," *American Law and Economics Review*, 2010 ([http://andrewleigh.org/pdf/GunBuyback\\_Panel.pdf](http://andrewleigh.org/pdf/GunBuyback_Panel.pdf)).

exist research and implies that something else is driving down suicides.<sup>3</sup> Indeed, if anything, removing guns as a way of committing suicide would likely be associated with an increase in the alternative methods of committing suicide as some of the people who would have used guns to commit suicide use other methods.

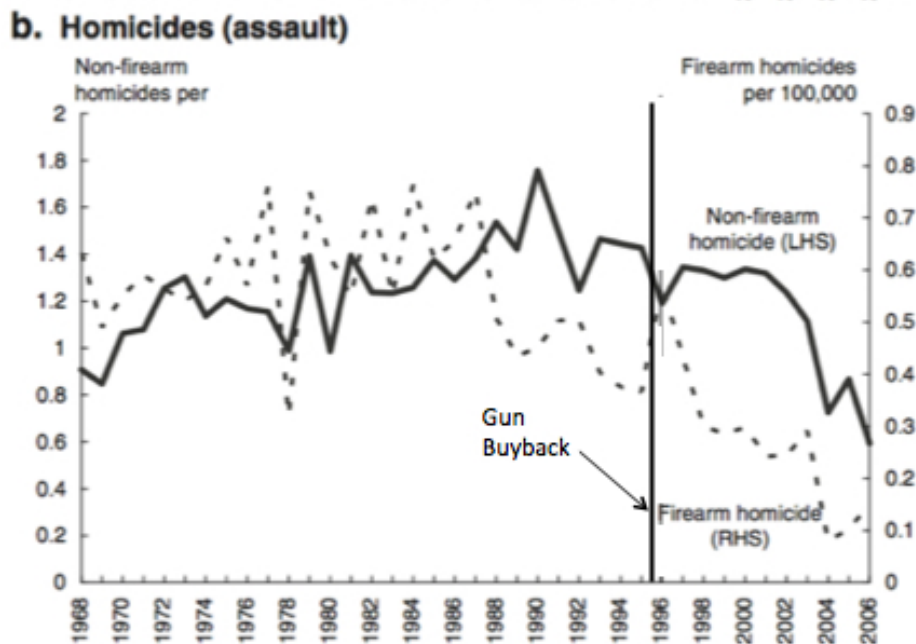


Figure B shows how homicides have varied over time. This pattern is again inconsistent with what gun control advocates would predict. There is more variability year to year than for suicides. Nonetheless, we can still make out the trend lines. Prior to 1996, there was already a clear downward in firearm homicides, and this pattern continued after the buyback. It is hence difficult to link the decline to the buyback.

Again, as with suicides, both non-firearm and firearm homicides fell by similar amounts. In fact, the trend in non-firearms homicides shows a much larger decline between the pre- and post-buyback periods. This suggests that

<sup>3</sup> D. M. Cutler, E. L. Glaeser, and K. E. Norberg, "Explaining the Rise in Youth Suicide," in *Risky Behavior Among Youths: An Economic Analysis*, ed. J. Gruber (Chicago: University of Chicago Press, 2001), pp. 219–69. See also John R. Lott, Jr., "More Guns, Less Crime" (University of Chicago Press, 3<sup>rd</sup> edition, 2010).

crime has been falling for other reasons. Note that the change in homicides doesn't follow the change in gun ownership – there is no increase in homicides as gun ownership gradually increased.

The reason that some people who look at this data for firearm suicides and homicides conclude that the buyback was beneficial comes from a simple specification error. They look at the average firearm suicide and homicide rates before and after the buyback, but don't look carefully at the how these rates were declining before the buyback occurred.

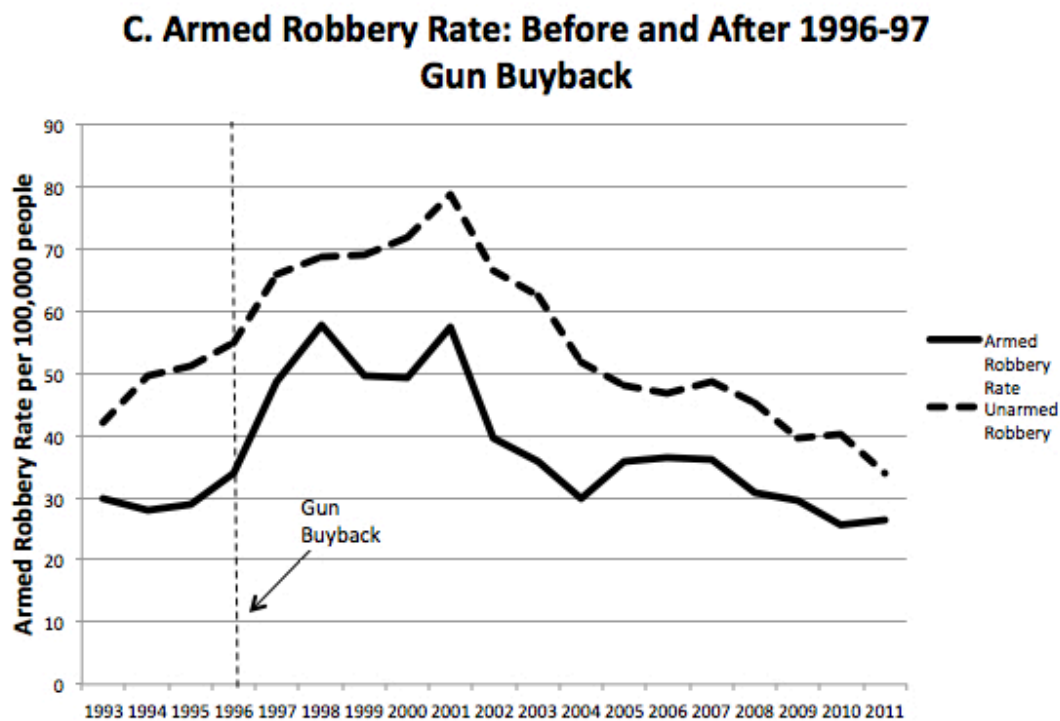


Figure C illustrates the frequency of armed robbery before and after the gun buybacks.<sup>4</sup> If armed robberies varied positively with the number of guns per capita, robbery should have fallen and then increased. Yet, the opposite happened: the armed robbery rate right soared right after the buyback and then gradually declined. Indeed, over the next eleven years, there is only

<sup>4</sup> Australian Institute of Criminology  
(<http://aic.gov.au/dataTools/facts/vicViolentRate.html>).

one year after the buyback where the armed robbery rate was lower than it was in 1995, the year immediately before the buyback.

But just as we cannot credit the buyback for the lower firearm homicide or suicide rates, it is also hard to blame the increase in armed robberies on the buyback. After all, the armed and unarmed robbery rates move up and down together. The one thing that might point to the buyback having a detrimental impact is that the increase in the armed robbery rate after the buyback was bigger than the increase in the unarmed robbery rate.

### **The Impact of 3D Printing**

Gun control, an already difficult task, is becoming even more difficult with 3D printing.

The 3D printing revolution is well under way. And it allows small companies and even individuals to manufacture a wide range of items. An example is individualized medical technology, with devices that fit each individual's unique size and shape. It is increasingly obvious that guns and gun parts can be made, too, even so-called "assault weapons." Yet, the initial regulatory proposals in Australia and the United States will be more likely to increase crime than to decrease it.

As usual, new technology is hard to stop, and the US Department of Homeland Security declared: "Limiting access [to 3D-printing to make guns] may be impossible."<sup>5</sup>

Until now, the stumbling block for 3D printing has been to design a printable gun that would be sturdy enough, a gun that can withstand the explosion when a bullet goes down the barrel. In other words, you don't want the gun to explode like a grenade in your hands.

Cody Wilson, the 25-year old founder of Defense Distributed, created a ruckus when he announced his successful design of a plastic gun that would operate like a normal one. Plastic guns can't be detected by metal detectors and would pose an obvious danger.

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<sup>5</sup> Jana Winter, "Homeland Security bulletin warns 3D-printed guns may be 'impossible' to stop," Fox News, May 23, 2013 (<http://www.foxnews.com/us/2013/05/23/govt-memo-warns-3d-printed-guns-may-be-impossible-to-stop/>).

In May 2013, when police in Australia downloaded the blueprint and easily made two plastic guns with a 3D printer, one of the two guns suffered “catastrophic failure” on its first shot.<sup>6</sup> The other gun made one successful shot before failing. Latter tests in November 2013 by the US Bureau of Alcohol, Tobacco, Firearms, and Explosives used a different polymer to make the gun and found that some versions of the plastic guns were able to fire eight rounds without any problem.

That said, plastic guns are really a side issue, for 3D printers are increasingly allowing for other materials, including metal. Really all that needs to be metal is the gun’s steel barrel and firing pin. Metal printers can make entire guns that look and function identically to guns produced by any manufacturer.

Despite a proposal in Australia to ban posting designs online, software is also impossible to control.<sup>7</sup> When Cody Wilson posted the software blueprint on his website, the software was quickly downloaded all around the world. In just 2 days, 100,000 downloads were made, with most coming from Spain, followed by the US and Brazil and Germany, the last two nations having strict gun control laws.<sup>8</sup> This all snowballed and within two weeks his software could be downloaded from over 4,000 servers all around the world.

Legal or not, just as with movies, file sharing is unstoppable. According to Torrent Freak, just a single episode of HBO’s Game of Thrones in 2014 was

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<sup>6</sup> Luke Hopewell, “The NSW Police Force Is Terrified Of 3D Printed Guns,” Gizmodo, May 23, 2013 (<http://www.gizmodo.com.au/2013/05/the-nsw-police-force-is-terrified-of-3d-printed-guns/>).

<sup>7</sup> Carl Judge, “Australian Politician Wants Stricter Laws on 3D Printed Guns,” May 23, 2014 (<http://3dprinterplans.info/tag/carl-judge/>). See also Elise Worthington, “3D printed guns: PUP introduces Queensland bill to regulate digitally generated firearms,” May 24, 2014 (<http://www.abc.net.au/news/2014-05-23/3-d-printed-guns-palmer-party-introduces-qld-bill-3d-firearms/5472566>) and Brian Krassenstein, “Australian Politician Introduces Bill to Make The Distribution of 3D Printable Gun Models Illegal,” May 22, 2014 (<http://3dprint.com/4206/australia-bill-illegal-3d-print-gun/>).

<sup>8</sup> Daily Mail Reporter, “Blueprints for 3D-plastic gun downloaded 100,000 times in 2 days before the State Department orders the site to take down the weapon designs,” Daily Mail (UK), May 9, 2013 (<http://www.dailymail.co.uk/news/article-2322150/Blueprints-3D-plastic-gun-downloaded-100-000-times-2-days-State-Department-orders-site-weapon-designs.html>).

illegally downloaded an estimated 7.5 million times.<sup>9</sup> Wilson had stopped distributing the file in just a couple of days, but that didn't really matter. His blueprint could soon be downloaded from over computers all around the world and within two weeks his blueprint was among the top 10% most downloaded bit torrent files.

Suppose the government registered every printer and used background checks, as proposed in California.<sup>10</sup> But then what would stop gangs from stealing these printers? Would the government try to monitor what people do with legally owned printers? Perhaps, in the end, people will need prior government permission for every item printed.

In any event, printers will soon be found everywhere. Gartner, a company that specializes in evaluating technology research, predicts “by 2016, enterprise-class 3D printers will be available for under [US]\$2,000.”<sup>11</sup> Wilson used a second-hand printer that cost [US]\$8,000.<sup>12</sup>

And what happens if we so thoroughly restrict access to printers? Besides stifling technology generally, it has the same problem plaguing gun control: the most law-abiding citizens will be the ones obeying the law. Only criminals will get access to these inexpensively made guns, the Australian police say that they made their guns for only \$35 each.<sup>13</sup> No doubt no matter what measures are taken, criminals will have easy access to cheap guns in the future.

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<sup>9</sup> Jay McGregor, “Game Of Thrones Season Finale Becomes Most Pirated Show In History,” *Forbes*, June 17, 2014

(<http://www.forbes.com/sites/jaymcgregor/2014/06/17/game-of-thrones-season-finale-becomes-most-pirated-show-in-history/>).

<sup>10</sup> Ryan W. Neal, “3D Printer Regulation Proposed: Democrats Fear Criminals Printing Guns,” *International Business Times*, May 13, 2013 (<http://www.ibtimes.com/3d-printer-regulation-proposed-democrats-fear-criminals-printing-guns-1254537>).

<sup>11</sup> “Gartner Says Early Adopters of 3D Printing Technology Could Gain an Innovation Advantage Over Rivals,” *Gartner*, March 26 2013 (<http://www.gartner.com/newsroom/id/2388415>).

<sup>12</sup> Andy Greenberg, “3D-Printed Gun's Blueprints Downloaded 100,000 Times In Two Days (With Some Help From Kim Dotcom),” *Forbes* May 8, 2013 (<http://www.forbes.com/sites/andygreenberg/2013/05/08/3d-printed-guns-blueprints-downloaded-100000-times-in-two-days-with-some-help-from-kim-dotcom/>).

<sup>13</sup> Bianca Wordley “3D-printed gun 'will kill', police warn,” *Sydney Morning Herald*, May 24, 2013 (<http://www.smh.com.au/digital-life/digital-life-news/3dprinted-gun-will-kill-police-warn-20130524-2k59g.html>).

This is a lesson Americans learned the hard way, for instance in DC and Chicago, where bans primarily disarmed law-abiding citizens and only increased violent crime. Indeed, around the world, every time guns are banned, murder rates go up.

It is already exceedingly difficult to prevent criminals from getting their hands on guns. 3D printing is making gun control even more counterproductive.

### **Storage of guns**

What about requiring guns to be locked up? An advantage of US data is the ability to compare the 50 different states and compare what happens when different states pass those laws in different years. According to my research, published in the Journal of Law and Economics and elsewhere, mandating individuals lock up their guns actually didn't reduce the few accidental gun deaths for children or teenagers.<sup>14</sup> Rather, such laws emboldened criminals to attack more people in their homes. Their crimes were also more successful: 300 more total murders and 4,000 more rapes occurred each year in 18 states with these laws. Burglaries also rose dramatically.

Further, gunlock laws didn't reduce accidental deaths. Despite the image in the media, two thirds of accidental gun deaths involving young children are not caused by shots fired by other little kids. Overwhelmingly, adult males, most with criminal backgrounds, shoot them. The notion that an adult male criminal who probably can't even legally own a gun, is going to obey some gunlock law is absurd.

Few accidental gunshots take place in law-abiding, normal homes. Unless you send your child to play over at a criminal's home, your child is exceedingly unlikely to get shot. It makes much more sense to investigate whether your neighbors have violent criminal backgrounds than asking whether they own a gun.

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<sup>14</sup> John R. Lott, Jr. and John E. Whitley, "SAFE-STORAGE GUN LAWS: ACCIDENTAL DEATHS, SUICIDES, AND CRIME," *Journal of Law and Economics*, October 2001, pp. 659-689. See also John R. Lott, Jr., "The Bias Against Guns," Regnery, 2003 and John R. Lott, Jr., "More Guns, Less Crime" (University of Chicago Press, 3<sup>rd</sup> edition, 2010).



## Mass public shootings

The University of Chicago's Bill Landes and I have collected data on all the multiple victim public shootings in the United States from 1977 to 1999.<sup>15</sup> We examined 13 different gun control policies including: waiting periods and background checks for guns, assault weapon and other gun bans, gun registration, the death penalty, and increased penalties for committing a crime with a gun. But the only one that reduced both the number and severity of these attacks was allowing victims to be able to defend themselves with permitted concealed handguns.

With just two exceptions, all the mass public shootings in the United States since at least 1950 have taken place in areas where guns are banned. All the mass public shootings in Europe, including the Norway attack that left 69 people shot to death and 110 wounded, have also taken place where guns are banned.<sup>16</sup>

New Zealand provides a useful comparison to Australia.<sup>17</sup> Both are isolated island nations, and they are socioeconomically and demographically similar. Their mass murder rate before Australia's gun buyback was nearly identical: From 1980 to 1996, Australia's mass murder rate was 0.0042 incidents per 100,000 people and New Zealand's was 0.0050 incidents per 100,000 people. The principal difference is that, post-1997, New Zealand experienced the drop over the same period of time without altering its gun control laws.

It would be just as inappropriate for gun control critics to cite New Zealand as it is for gun control advocates to cite Australia. There is a tendency to

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<sup>15</sup> John R. Lott, Jr. and William M. Landes, "Multiple Victim Public Shootings," Social Science Research Network, October 19, 2000 (<http://ssrn.com/abstract=272929>).

Another source is Lott's "More Guns, Less Crime."

<sup>16</sup> John Lott, "Making up facts about guns," Fox News, June 16, 2014 (<http://www.foxnews.com/opinion/2014/06/16/making-up-facts-about-guns/>) and John Lott, "Gun Control and Mass Murders," National Review, June 11, 2010 (<http://www.nationalreview.com/articles/229929/gun-control-and-mass-murders/john-r-lott-jr>).

<sup>17</sup> Samara McPhedran and Jeanine Baker, "Mass Shootings in Australia and New Zealand: A Descriptive Study of Incidence," Justice Policy Journal, Spring 2011 (<http://ssrn.com/abstract=2122854>).

cherry-pick data. There are limits to picking one country or one state in the United States to infer what policies work to reduce public shootings.

The benefit of looking at US data is that it allows one to look at many different comparable places as they experiment with different gun control laws over time.

## **Conclusion**

It is very hard to look at the raw data on firearm suicides and homicides and see any benefits from the gun buyback. In 2004, the US National Research Council released a report reaching this same conclusion (p. 95): “It is the committee’s view that the theory underlying gun buy-back programs is badly flawed and the empirical evidence demonstrates the ineffectiveness of these programs.”<sup>18</sup>

It is very difficult to use Australian data to evaluate the impact of a law because you only have one experiment and it is difficult to disentangle other factors that might be coming into play. When there is only one experiment it is not even possible to disentangle two different factors that might have changed at the same time. The solution is then to look across many different countries or to look at a jurisdiction such as the United States where you have 50 different states passing different laws in different years.

Using US data it is clear that laws restrict gun ownership or require that guns be locked and inaccessible adversely affect people’s safety. Police are extremely important in reducing crime – my research indicates that they are the single most important factor. But police themselves understand that they almost always arrive on the crime scene after the crime has occurred. Telling people to behave passively is definitely not the safest course of action for people to take.

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<sup>18</sup> Charles F. Wellford, John V. Pepper, and Carol V. Petrie, Editors, Committee on Law and Justice, National Research Council, “Firearms and Violence: A Critical Review,” Washington, DC: The National Academies Press, 2004.