March 2025

Estimation of Civilian-held Firearms in New Zealand

([1880] 1997-2024)

Emel Okur

Te Tari Pūreke
Firearms Safety Authority

Abstract

The estimation of civilian-held firearms is important for both firearms regulation and the monitoring of legal and illegal ownership of firearms. The main question of this research is 'How many lawfully imported firearms, approximately, are held by civilians in New Zealand?'. Within this question the aim of the research is to explain the methodologies of previous estimation efforts in New Zealand and present a robust methodology with a holistic perspective.

After a literature review, four methodologies were found regarding the estimation of civilian-held firearms in New Zealand. Document analysis was used as a qualitative method within this research to compare the methodologies. Attempts were made to replicate the methodology of each of the models as closely as possible, to determine up to date figures. Only the Thorp report had a detailed enough methodology to replicate therefore it was decided to use this methodology as a base and improve the estimation model from there.

In developing the estimation model, only lawfully imported rifles, shotguns and pistols were counted, and buyback and amnesty firearms data was incorporated to the calculation as those firearms are no longer available in the system. Lastly, the depreciation rate was also considered. The estimated civilian-held firearms between 1880 and 2024 is 1,577,553. If we were to consider 1% depreciation rate the estimation would be 1,561,777.

Key words: Civilian-held firearms, lawfully imported firearms, estimation model, estimation methodology, New Zealand

Introduction

The estimation of civilian-held firearms is important for both firearms regulation and the monitoring of legal and illegal ownership. However, documenting firearms data is challenging because most of the firearms in the world are privately owned (more than 80 %, Small Arms Survey, 2019, p.10) for hunting, shooting or agricultural purposes (Small Arms Survey, 2011; Karp, 2018; UN, 2015). Most countries have limited official reporting on privately owned firearms with varying degrees of details therefore researchers and policymakers need to estimate the numbers by wide variety of sources (Karp, 2018).

The main question of this research is 'How many lawfully imported firearms, approximately, are held by civilians in New Zealand?'. Within this question the aim of the research is to explain the methodologies of previous estimation efforts in New Zealand and develop a new repeatable methodology based on new data sources.

Records prior to 1880 for firearms importation do not exist (Thorp, 1997), hence the estimation model focusing on the period 1880-2024. Only lawfully imported rifles, shotguns and pistols were counted. Though not the focus of this estimation, we acknowledge that some of these lawfully imported firearms will end in the possession of unlicensed indivduals.

International civilian-held firearms estimation

The Small Arms Survey research team[1] developed a database on global firearms holdings maintained since 2007 that presents civilian-held firearms data (Small Arms Survey, 2017, 2018). Small Arms Survey civilian-held firearms data includes all firearms (lawful and unlawful) in civilian hands (Karp, 2018). There are four main data sources of global civilian firearm holdings database (Karp, 2018, p.8):

- National firearms registration statistics.
- General population surveys about firearm ownership.
- Experts' estimates of civilian holdings.
- Where none of these was available, analogous comparisons based on estimates for comparable countries.

The database further depends on the analysis of individual reports on civilian-held firearms from multiple sources such as:

- Published official documents and research studies on countries and regions,
- Official responses to questionnaires sent out by the Small Arms Survey,
- News reports,
- Private correspondence with experts. (Karp, 2018, p.8)

Small Arms Survey researchers assume that the annual change in total civilian-held firearms of a country is at least 1% increase per year, which represents the average balance of all losses and increases. When possible, highest and lowest numbers are also discarded as outliers. (Karp, 2018, p.8)

For example, according to the 2007 Small Arms Survey there were around 925,000[2] firearms (23 firearms per 100 persons) in New Zealand (Small Arms Survey, 2011). In 2017 it increased to 1,212,000 (26.3 firearm per 100 persons) civilian firearms (Small Arms Survey, 2017)[3]. These estimates were based primarily on Small Arms Survey results, Thorp Report and figures published in New Zealand news reports at the time.

The International Crime Victim Surveys (ICVS) 2004/2005 report presents data of 30 countries, one of which is New Zealand. New Zealand data was collected by the Ministry of Justice's

---

[1] The Small Arms Survey was established in 1999 as a project of the Graduate Institute of International and Development Studies in Geneva. The main aim of the survey is to combat illicit arms, armed violence, and terrorism by the collaboration of governments and international agencies (Small Arms Survey, 2019-2023 Strategy Document) therefore the results of this survey were omitted from the research, due to the Survey's focus on unlawful firearms.

[2] Minimum 850,000 and maximum 1,000,000 firearms, mean is 925,000 (Small Arms Survey, 2011, Annexe 3).

[3] Map source: https://www.smallarmssurvey.org/database/global-firearms-holdings . These numbers are also used by the World Population Review (2024) website as a latest data.

Department of Research, Evaluation and Modelling team. ICVS is a programme of sample surveys to look at householders' experiences with crime, but the main focus is not the estimation of firearms. However, survey participants were asked whether they or someone in their house owned a firearm, and if they did, what type and what was the reason for having a firearm. New Zealand data was collected by computer assisted telephone interviews and sampling with quotas by local government regions. The national sample size was 2000 households, and the response rate was 49 %. (van Dijk, van Kesteren & Smit, 2007)

There were five ICVS cycles between 1989 and 2005 and New Zealand only participated in the 1992 and 2004-2005 surveys. The firearms ownership (at least one firearm) of New Zealand was 24.4% according to the second cycle of the survey results conducted in 1992 and dropped to 16.6 % at the fifth cycle of the survey conducted between 2004-2005. The handgun ownership was 1.6 % in 1992 and 0.6% between 2004-2005. (van Dijk, van Kesteren & Smit, 2007)

New Zealand civilian-held firearms estimation

After a literature review, four methodologies were found regarding estimation of civilian-held firearms in New Zealand.

Methodology

Document analysis was used as a qualitative method within this research. Document analysis requires reviewing and evaluating printed (eg. books, institutional reports) or electronic (eg, journal articles) documents systematically and can be used as a standalone methodology as well as part of a case study (Bowen, 2009). Documents help researchers compare, track changes and developments over time. Bowen emphasises that the data yielded from document analysis should be checked and triangulated by other sources such as interviews or observations. Within the document analysis the purpose of the documents and the target audience should also be evaluated carefully. (Bowen, 2009)

Four documents were analysed within the document analysis.

- The Thorp report.
- New Zealand Police intelligence report on estimating how many firearms were in New Zealand.
- The New Zealand Police Policy team in 2019 estimated the potential cost of the firearm buy back scheme. The Firearms Safety Authority interviewed some members of the team to understand the details of the methodology.
- A New Zealand based PhD thesis estimating how many firearms were in New Zealand was located online.

Thorp Report (1997)

The Minister of Police requested an independent review of firearms control in New Zealand in 1996 and based on this request a report produced by Sir Thomas M. Thorp (known as the Thorp report) was published in 1997. The report discussed some basic information about the use and control of firearms in New Zealand; the misuse of firearms in crime, suicide and accidents; the purpose of firearms legislation; the available strategies for gun control and their interrelationship; the effectiveness of the present system of firearm controls, and a number of possible reforms. In Chapter 2, Thorp's (1997) estimation was around 960,000 – 1,000,000 firearms between 1880 and 1996. His estimation was primarily based on the Customs import data. (Thorp, 1997) (Table 1& Figure 1)

New Zealand Police Intelligence report (2016)

Nearly 20 years after publishing the Thorp report, the New Zealand Police Intelligence team completed a report that aimed to identify opportunities to improve the reliability of New Zealand firearms data and origins of legal and illegal firearms. This report considered the date range between 2010/2011 and 2014/2015 financial years and expressed that it used the same methodology as the Thorp report. However, there were differences in terms of data sources and the firearm types counted. (Table 1& Figure 1)

The report (2016) also used firearms import permit data and online firearms trading forums to count the legal trade in firearms and counted MSSAs and restricted firearms. The estimated number of the report was maximum 1,200,000 firearms.

New Zealand Police Policy team (2019)

In 2019, the New Zealand Police Policy team[4] referred to the estimated number of civilian-held firearms from the 2016 Intelligence Report (above) to advise Government on the potential funding impacts of the 2019 buy-back scheme. Within this methodology seized firearms data was also used as a data source and the date range was between 2014 and 2018.

Later in 2019, New Zealand Police Policy repeated the methodology from the 2016 report. The total of the estimation was 1,356,301. (Table 1& Figure 1)

Chaz Forsyth's PhD thesis (2021)

A PhD thesis was published in 2021 which estimated civilian-held firearms. The aim of the thesis was to evaluate the evolution of contemporary attitudes towards, and beliefs about firearms and firearm users, in New Zealand over the past three decades (Forsyth, 2021). As part of his

[4] Interview with Principal Policy Advisor and Senior Policy Advisor on 30 October 2024.

thesis, Forsyth estimated the number of civilian-held firearms being between 1,200,000 and 1,600,000 based on secondary sources. (Table 1& Figure 1) Additionally he also estimated that there might be 200,000 more illicitly held firearms. Forsyth collected the quantitative data by an online survey and one of the questions was: 'Approximately how many firearms are there at your place of residence?'. Of the participants 94.4 % (2263) were licence holders and 5.6 % (134) were non-licence holders. Forsyth found that the median number of firearms per survey participant was 8.1 (p. 219). However, there were not any calculations or assessments about the reflection of this number on New Zealand population (or per 100 people).

The details of these four methodologies can be seen in Table 1.

Table 1. Comparison of four estimation methodologies

	Thorp report's methodology	Intelligence report's methodology	Policy team's methodology	Forsyth's methodology
Estimation	~1,000,000	Max 1,200,000	1,356,301	1,200,000-1,600,000
Purpose	Independent review of firearms control in New Zealand.	Identification of opportunities to improve the reliability of New Zealand firearms data.	Estimation of the potential cost of firearms buy-back.	Evaluation of the evolution of contemporary attitudes towards, and beliefs about firearms and firearm users, in New Zealand over the past three decades.
Date range	1880-1996	2010-2014	2014-2018	1989-2016
Data sources	Customs import	Customs import	StatsNZ	
		Thorp report	Thorp report	Thorp report
		Import Permits Used	Import Permits Used	
		Online firearms trading forums (Legal trade in firearms)	Seized firearms (Rifles, Shotguns, MSSAs)	Alpers et al., 2017
				Alpers and Picard, 2021
Included	Rifles (including MSSAs)	Rifles (including MSSAs)	Rifles (including MSSAs)	Rifles
	Shotguns	Shotguns	Shotguns	Shotguns
	Pistols (Handguns)	Pistols (Handguns)		Muzzle loaders
	Ex-army firearms	Restricted and other		
	Illegal imports			
	Depreciation rate		Depreciation rate	
Excluded	Airguns (excluded after 1962)	Airguns	Airguns	Airguns
	Firearms imported by the military	Replica firearms	Pistols	Pistols
		Explosives or tasers	Muzzle loaders	Firearms imported by the military
		Depreciation rate		Depreciation rate

Current Estimation of the Civilian-held firearms

Te Tari Pūreke – Firearms Safety Authority considered the detailed methodologies for each of these estimate models and went through a process of replicating the methodologies as closely as possible, to determine up to date figures. The replication process was not exact in some areas, due to inaccessible data sources (Table 1). It is also worth noting that each of these methodologies had slightly or very different purposes for their estimation work, i.e., Police Policy team's methodology was to estimate the potential cost of the firearms buy-back.

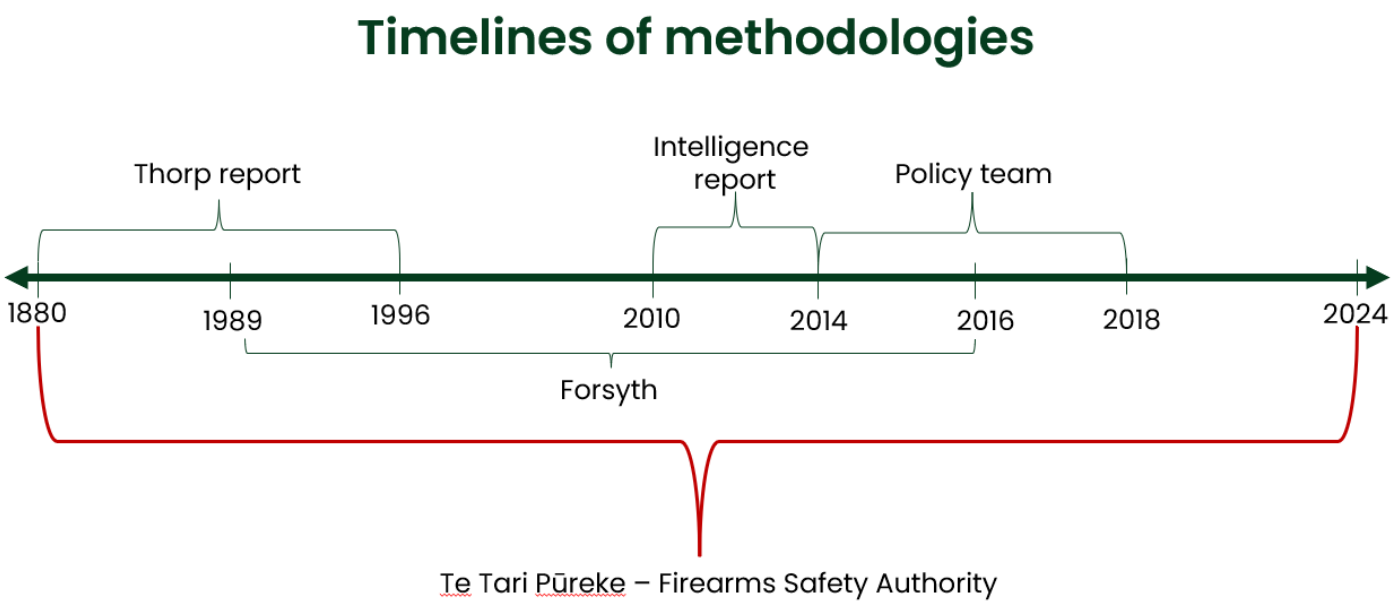

Figure 1. Comparison of the timelines of methodologies

When these four methodologies were compared, it was noticed that there were overlaps and differences on the timeline(Figure 1). For example, there was a gap (1996- 2010) between the timelines of the Thorp report (1997) and the Police Intelligence report (2016).

Forsyth's (2021, p. 145, Figure 5.14) main civilian-held firearms estimation was based on Alpers et al (2017) and Alpers and Picardi (2021)[5]. Alpers's estimation was between 1.2 million and 1.5 million firearms (lawful and illicit) and based on four references two of which were from newspapers (Ihaka, 2009; Flahive & Fyers, 2017). The others were an OIA response[6] and Karp (2018)'s report. Ihaka (2009) mentioned that there were 1.2 million firearms in 2009 according to Police's National Manager Operations. According to Stuff news in 2017, the estimated privately owned firearms (lawful and illicit) number by Police was 1.5 million (30 guns per 100 New Zealanders) while it was 26 guns per 100 people in 2006 (Flahive & Fyers, 2017). Similar to a New Zealand Herald article, an OIA response of 2018 said that Police estimated a maximum of 1.2

[5] The new website of GunPolicy is https://joomla4.gunpolicy.org/component/gpo/region/new-zealand?task=region&region=159

[6] https://www.police.govt.nz/sites/default/files/publications/14-sep-2018-ir-01-18-11101.pdf

million lawful firearms existed in 2014. All these lawful firearm estimations were sourced by Police, which we understand was sourced from the 2016 intelligence report.

The main focus of this paper is only lawfully imported firearms therefore a new model needed to be developed to cover the whole timeline between 1880 and 2024. The Thorp report (1997) considered only rifle, shotgun, pistol and military style-semi automatic (MSSA) firearms. Therefore to be able to consistent with the Thorp report, only lawfully imported rifles, shotguns and pistols were counted within this research.

The New Zealand amended Arms Act prohibited MSSAs effective from 12 April 2019 (Arms Act 1983, s10). New Zealand Customs confirmed that MSSAs might be recorded under different tariff codes. We, therefore, accepted that we would also count MSSAs under the rifle category, if they were recorded before 2019.

Other sources

Through the development of this methodology, additional reports of estimates were identified, primarily from news articles and published between 2015 and 2018 (Table 2). The common point of these resources was that there were no specific methodologies available explaining these numbers.

Table 2. Other estimates between 2015 and 2018

	1.2 million	1.5 million
Bayer (2015) NZ Herald		x
Bradley (2016) RNZ	x	
Lim (2017)	x	
News Hub (2018)		x

There is a commonly held view across multiple sources, matching Fosyth's and Alpers' estimations, of between 1.2 and 1.5 million firearms in New Zealand. New Zealand news article in 2015 said that there were around 1.5 million firearms sourced by Police (Bayer, 2015). Radio New Zealand (RNZ) news referred to 1.2 million civilian-held firearms in 2016 (Bradley, 2016). There were 1.2 million firearms amongst civilians in New Zealand in 2015, according to the Lim's Bachelor of Laws dissertation (2017) sourced from a Police briefing. Another Stuff news article mentioned 1.5 million firearms one more time in 2018 (News Hub, 2018). The common points of these sources are that the given numbers are very similar to Forsyth's and Alpers' estimations between 1.2 and 1.5 million.

Firearm Buyback and Amnesty

Firearms Safety Authority also accounted for the number of firearms that were involved in the national firearms buyback and firearm amnesty which occurred in 2019 and 2020 as those

firearms are no longer available in the system. Firstly, the total number of civilian-held firearms was calculated and secondly, the number of buyback and amnesty firearms was subtracted from the total (Table 4). According to Police reporting to the Minister, 61,441[7] prohibited firearms[8] had been collected and destroyed during 2019 and 2021. Some rifles and shotguns are defined as prohibited firearms therefore the numbers of buyback were considered in the model.

Depreciation rate

Depreciation in the firearms space means permanent removal of a firearm from use (Azrael, Hepburn, Hemenway& Miller, 2017). There is no consensus about depreciation or attrition rate among researchers because this is accepted as an *attrition enigma* (Karp, 2007, p.48). On the one hand firearms are durable items and can remain workable for centuries with minimum care. On the other hand, firearms functionality can deteriorate over time (Karp, 2007) and a firearm can be lost or destroyed. The actual rate of loss from wastage and misuse, therefore, can only be estimated (Karp, 2007, p.48). Karp in 2007 said that '...the attrition enigma requires further research (Karp, 2007, p. 43).' In lieu of research advances, he concludes that today there still is no scientific basis for wastage estimation, and maintains that any such estimate is a guess, not useful in a scientific process (Karp, e-mail, 2024)[9]. One percent means that typical firearms can last 100 years (Karp, 2007, p.43).

Similar to Karp, some researchers accepted 1% depreciation rate (Azrael et al, 2017; Cook& Ludwig, 1996) while some others 0% (McDougal, Montolio, & Brauer, 2020, 2023) or 0.015 (Armona & Rosenburg, 2024).

McDougal et al (2020, 2023) compared the United States (US) total official domestic firearms sales and the Small Arms Survey estimates between 2011 and 2017. They found the official statistics showed noticeably lower results than Small Arms Survey estimation. The Small Arms Survey estimated 123.3 million stock growth of firearms between 2011 and 2017 but it was only 92 million according to the US official statistics.

Azrael et al (2017) used 1% depreciation rate by citing Phillip Cook's papers. Cook (e-mail, 2024)[10] said that the US had data on legal manufacture, imports, and exports going back more than 100 years. When he applied an annual 1% depreciation rate to these new additions, Cook produced an estimate that was similar to a survey-based estimate of the number of firearms in private hands.

---

[7] OIA (IPR-20-14) response

[8] Please refer to the Arms (Prohibited Firearms, Magazines, and Parts) Amendment Act (2019, s2A) for the full definition of prohibited firearms which includes Military style semi-automatic (MSSA) firearms.

[9] Based on personal email communication on 22 November 2024.

[10] Based on personal email communication on 19 November 2024.

According to the literature, 1% appeared to be a researched and more widely applied depreciation rate. Therefore 1% depreciation has been adopted as the depreciation rate within this research.

Data collation process

The date range applied was 1997 (the end point of Thorp report), and 2024 (Figure 1).

StatsNZ -Infoshare

Infoshare (2024) is is a publicly available database of StatsNZ and is fed by New Zealand Customs import (and export) data. It lists civilian-held firearms import data from 1988. Import data is classified based on 10-digit Harmonised System/Tariff codes and data can be extracted using tariff codes.

When developing the scope for this methodology, a decision was made to count rifles, shotguns and pistols. This, therefore, excluded certain other types of weapons such as airguns or captive-bolt humane killers. Applying this scope to the StatsNZ data meant that of the fifteen items that were counted under tariff codes as firearms, only four of them were applicable to this methodology (Appendix 1). These firearms are

- Firearms; sporting, hunting or target-shooting shotguns, including combination shotgun rifles.
- Firearms; sporting, hunting or target-shooting rifles, .22 calibre.
- Firearms; sporting, hunting or target-shooting rifles, other than .22 calibre.
- Revolvers and pistols; other than those of heading no. 9303 or 9304.

Imports

At the second stage of the data collation process, Firearms Import Permit Used Data that went back to 2002 was downloaded from New Zealand Police systems. Only Permit Used Date was considered to calculate the actual firearms that came into the country. Visitor licences' data was also excluded.

These counts were categorised as: Rifle, Shotgun, Pistols, Rifle/Shotgun combination, Prohibited firearm and Carbine. (Appendix 2)

Results of data analysis

StatsNZ and Import permit data broken down by firearm types and year was compared based on maximum values (Appendix 3, 4, 5). The sum of maximum values was calculated (Appendix 6) and these numbers were reflected on Table 4 between 2002 and 2024 as the Imports data went back to 2002.

At the last stage of the calculation there were three data sources: Thorp report, StatsNZ and Imports. There were no Imports data between 1997 and 2001 therefore only StatsNZ's data were counted for this time frame (Table 4).

Imports data pre-2018 was paper-based and decentrialised, and therefore less reliable. A Permits Team was set up in 2018 and the import process centrialised and digitilised.

Using this import data, it was estimated that the total number of firearms that have been imported into New Zealand is 1,638,994. Buyback and amnesty firearms data was incorporated to the final calculations and this number was subtracted from the total number above as these firearms are no longer available in the system (Table 4). Using both the accepted 1% depreciation rate, and the total of the buyback firearms data (61,441), a final estimation figure was reached.

Table 3. Comparison of five estimation methodologies

	Thorp report's methodology	Intelligence report's methodology	Policy team's methodology	Forsyth's methodology	Firearms Safety Authority's methodology
Estimation	~1,000,000	Max 1,200,000	1,356,301	1,200,000-1,600,000	1,577,553 (1,561,777 with 1% deprecation)
Purpose	Independent review of firearms control in New Zealand.	Identification of opportunities to improve the reliability of New Zealand firearms data.	Estimation of the potential cost of firearms buy-back.	Evaluation of the evolution of contemporary attitudes towards, and beliefs about firearms and firearm users, in New Zealand over the past three decades.	Estimation of lawfully held firearms. First stage of Physical Stocks & Flows Model.
Date range	1880-1996	2010-2014	2014-2018	1989-2016	1997-2024
Data sources	Customs import	Customs import	StatsNZ		StatsNZ
		Thorp report	Thorp report	Thorp report	Thorp report
		Import Permits Used	Import Permits Used		Import Permits Used
		Online firearms trading forums (Legal trade in firearms)	Seized firearms (Rifles, Shotguns, MSSAs)	Alpers et al., 2017	Buy-back and amnesty scheme
				Alpers and Picard, 2021	
Included	Rifles (including MSSAs)	Rifles (including MSSAs)	Rifles (including MSSAs)	Rifles	Rifles (including MSSAs)
	Shotguns	Shotguns	Shotguns	Shotguns	Shotguns
	Pistols (Handguns)	Pistols (Handguns)		Muzzle loaders	Pistols (Handguns)
	Ex-army firearms	Restricted and other			
	Illegal imports				
	Depreciation rate		Depreciation rate		Depreciation rate
Excluded	Airguns (excluded after 1962)	Airguns	Airguns	Airguns	Airguns
	Firearms imported by the military	Replica firearms	Pistols	Pistols	Muzzle loaders
		Explosives or tasers	Muzzle loaders	Firearms imported by the military	Firearms imported by the military
		Depreciation rate		Depreciation rate	

Conclusion

The estimate of lawfully imported, civilian held firearms between 1880 and 2024 is 1,577,553. If we were to consider 1% depreciation rate the estimation would be 1,561,777 (Table 3 & 4).

Next steps

During the development of this methodology, attempts were made to scrutinize source data to an extent not previously ventured. The result of this is a better understanding of how firearms data is entered and managed across various data sources. The goal of this work was to develop a model for estimating lawfully imported firearms for civilian use. Efforts have been made to develop a methodology which can be repeatable and as such, an element of error has been accepted for the number of firearms counted across the model.

We see this as an opportunity to explore the various causes of the data anomalies detected and better align data flows within and between government agencies to improve data reliability.

In addition to this, further data sources have been identified which can be considered in future iterations of this report, these include:

- Firearms assembled in New Zealand.
- Exported firearms.
- Inflation rate.
- Seized, surrendered and stolen firearms.

These have not been evaluated for this model.

Table 4. The latest (Rifle, Shotgun, Pistol) numbers of the estimation model

Other caveats	Years	Firearms quantity	Cumulative
	Up to 1996	1,000,000	1,000,000
	1997	12,246	1,012,246
	1998	7,234	1,019,480
	1999	5,634	1,025,114
	2000	5,608	1,030,722
	2001	6,836	1,037,558
	2002	9,426	1,046,984
	2003	13,250	1,060,234
	2004	16,001	1,076,235
	2005	21,892	1,098,127
	2006	24,053	1,122,180
	2007	26,345	1,148,525
	2008	25,966	1,174,491
	2009	25,281	1,199,772
	2010	28,391	1,228,163
	2011	26,958	1,255,121
	2012	28,465	1,283,586
	2013	28,470	1,312,056
	2014	34,011	1,346,067
	2015	31,254	1,377,321
	2016	23,050	1,400,371
	2017	26,734	1,427,105
	2018	25,963	1,453,068
	2019	33,920	1,486,988
	2020	35,250	1,522,238
	2021	35,378	1,557,616
	2022	35,967	1,593,583
	2023	30,268	1,623,851
	2024	15,143	1,638,994
	Total	1,638,994	
Buyback	2019-2021	61,441	
	Grand Total	1,577,553	
1 % Depreciation	**Grand total with depreciation**	1,561,777	

Acknowledgement

We are grateful to Aaron Karp, Senior Consultant at the Small Arms Survey and Senior Lecturer at Old Dominion University for his review and suggestions.

References

Alpers, P., Rossetti, A., and Wilson, M. (2017). Gun Facts, Figures and the Law. Sydney School of Public Health, The University of Sydney. GunPolicy.org, 30 January. http://www.gunpolicy.org/firearms/ downloaded 10/01/2018.

Alpers, P., and Picard, M., (2021). New Zealand — Gun Facts, Figures and the Law. Sydney School of Public Health, The University of Sydney. GunPolicy.org, 24 September. https://www.gunpolicy.org/firearms/region/new-zealand. Downloaded 09 November 2021

Armona, L., & Rosenberg, A. M. (2024). Second-Best Amendment: Market Power and Tax Design in the Firearms Industry. https://luisarmona.github.io/research/secondbest.pdfArms Act (1983). https://www.legislation.govt.nz/act/public/1983/0044/latest/whole.html#LMS187084

Arms (Prohibited Firearms, Magazines, and Parts) Amendment Act (2019). https://www.legislation.govt.nz/act/public/2019/0012/latest/whole.html#LMS181205

Arms Act (1983). https://www.legislation.govt.nz/act/public/1983/0044/latest/whole.html?search=sw_096be8ed81ec89e9_semi-automatic_25_se&p=1#DLM72695

Azrael, D., Hepburn, L., Hemenway, D., & Miller, M. (2017). The stock and flow of US firearms: results from the 2015 National Firearms Survey. RSF: The Russell Sage Foundation Journal of the Social Sciences, 3(5), 38-57. https://www.rsfjournal.org/content/rsfjss/3/5/38.full.pdf

Bayer, K. (2015, October 10). 55,000 guns imported each year. New Zealand Herald. https://www.nzherald.co.nz/nz/55000-guns-imported-each-year/5BR3IAVSAAYO7WD2QQOOQ6Q2BU/

Bradley, A. (2016, July 10). Gun licences likely to move online. RNZ. https://www.rnz.co.nz/news/national/308333/gun-licences-likely-to-move-online

Bowen, G. A. (2009). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal, 9* (2), 27-40. https://doi.org/10.3316/QRJ0902027

Cook, P. J., & Ludwig, J. (1996). Guns in America: results of a comprehensive national survey on firearms ownership and use (pp. 13-14). Washington, DC: Police Foundation.

Flahive, B. & Fyers, A. (2017, October 4). 'Opportunity missed' for NZ to tighten gun control laws. Stuff. https://www.stuff.co.nz/national/crime/97512128/opportunity-missed-for-nz-to-tighten-gun-control-laws.html

Forsyth, C. (2021). Firearms in the New Zealand community: A study of place, socio-economic considerations and urban-rural contrasts (Published PhD thesis). The University of Otago.

Ihaka, J. (2009, May 12). Questions remain on 50,000 gun owners. New Zealand Herald. https://www.nzherald.co.nz/nz/questions-remain-on-50000-gun-owners/LVJ2HLLXAXKI7EHKEYOGP2SQCM/

Infoshare (2024). StatsNZ Infoshare. Harmonised Trade- Import, Exports and Re-exports. https://infoshare.stats.govt.nz/TradeVariables.aspx?DataType=TIM&AspxAutoDetectCookieSupport=1

Karp, A. (2007). Small Arms Survey 2007: Guns and the City. Chapter 2. Completing the Count: Civilian Firearms. https://www.smallarmssurvey.org/sites/default/files/resources/Small-Arms-Survey-2007-Chapter-02-EN.pdf

Karp, A. (2018). Estimating Global Civilian-Held Firearms Number. Small Arms Survey, Briefing Paper. Australian Government, Department of Foreign Affairs and Trade. https://www.smallarmssurvey.org/sites/default/files/resources/SAS-BP-Civilian-Firearms-Numbers.pdf

Lim, A. (2017). Gangs and Guns: Is a Blanket Firearms Ban on Gangs Justified? Otago University. Dissertation of Bachelor of Laws (with Honours). gangs-and-guns-is-a-blanket-firearms-ban-on-gangs-justified-672754.pdf

McDougal, T. L., Montolio, D., & Brauer, J. (2020). Modeling the US firearms market: the effects of civilian stocks, crime, legislation, and armed conflict. IEB Working Paper, ISSN 2334-0436, 2020/06. https://diposit.ub.edu/dspace/bitstream/2445/169467/1/IEB20-06_McDougal%2BMontolio%2BBrauer.pdf

McDougal, T. L., Montolio, D., & Brauer, J. (2023). Modeling the US firearms market: the effects of civilian stocks, legislation, and crime. International social science journal, 73(248), 279-323. DOI: 10.1111/issj.12396. https://onlinelibrary.wiley.com/doi/pdfdirect/10.1111/issj.12396

News Hub, (2018, February 15). Police union calls for firearms register in New Zealand as gun violence grows. https://www.stuff.co.nz/nz-news/350579590/police-call-for-a-firearms-register-in-new-zealand-as-gun-violence-grows

New Zealand Police Intelligence Report (2016). Firearms Availability in New Zealand. NIC-KP-160208 Unpublished Intelligence Report.

Small Arms Survey (2011). Estimating Civilian Owned Firearms (Based on 2007 data). Number 9, September 2011. https://www.files.ethz.ch/isn/140353/SAS-Research-Note-9.pdf

Small Arms Survey (2017). Annex. https://www.smallarmssurvey.org/sites/default/files/resources/SAS-BP-Civilian-held-firearms-annexe.pdf

Small Arms Survey (2017). Annual Report 2016. https://www.smallarmssurvey.org/sites/default/files/resources/SAS-Annual-Report-2016.pdf

Small Arms Survey (2018). Annual Report 2017. https://www.smallarmssurvey.org/sites/default/files/resources/SAS-Annual-Report-2017.pdf

Small Arms Survey (2019). Annual Report 2018. https://www.smallarmssurvey.org/sites/default/files/resources/SAS-Annual-Report-2018.pdf

Small Arms Survey, 2019-2023 Strategy Document. https://www.smallarmssurvey.org/sites/default/files/resources/SAS-2019-23-Strategy.pdf

Thorp, T.M. (1997). Review of Firearms Control in New Zealand. Report of an Independent Inquiry Commissioned by the Minister of Police. ISBN 0-477-01796-7

UNODC (United Nations Office on Drugs and Crime) (2010). The Globalization of Crime: A Transnational Organized Crime Threat Assessment. Chapter 6. https://www.unodc.org/documents/data-and-analysis/tocta/TOCTA_Report_2010_low_res.pdf

Van Disk, J., van Kesteren, J. & Smit, P. (2007). Criminal Victimisation in International Perspective: Key findings from the 2004-2005 ICVS and EU ICS. https://unicri.it/sites/default/files/2021-06/ICVS2004_05report.pdf

World Population Review (2024). Gun Ownership by Country 2024. https://worldpopulationreview.com/country-rankings/gun-ownership-by-country

Appendix 1. Included and excluded StatsNZ's firearm categories and their tariff codes.

Keywords	Tariff codes	StatsNZ categories	Final decision
Firearms	9303100000	Firearms; muzzle-loading	Excluded
Firearms	9303200000	**Firearms; sporting, hunting or target-shooting shotguns, including combination shotgun rifles**	**Included as Shotgun**
Firearms	9303300001	**Firearms; sporting, hunting or target-shooting rifles, .22 calibre**	**Included as Rifle**
Firearms	9303300009	**Firearms; sporting, hunting or target-shooting rifles, other than .22 calibre**	**Included as Rifle**
Firearms	9303900001	Firearms; n.e.c. in heading no. 9303, captive-bolt humane killers	Excluded
Firearms	9303900009	Firearms; n.e.c. in heading no. 9303, other than captive-bolt humane killers	Excluded
Firearms	9303900100	Firearms; humane killers, captive bolt	Excluded
Firearms	9303900900	Firearms; very pistols and other devices designed to project only signal flares, pistols and revolvers for firing blank ammunition (other than humane killers and captive bolt), line throwing guns	Excluded
Firearms	9304000100(1988-1991)& 9304001801 (1992-1999)	(Combined)Firearms; air rifles and air pistols (Between 1988 January and 1999 September)	Excluded
Firearms	9304001802	Firearms; soft air rifles (From 1999 October onwards)	Excluded
Firearms	9304001804	Firearms; air rifles, other than soft (From 1999 October onwards)	Excluded
Firearms	9304001806	Firearms; soft air pistols (From 1999 October onwards)	Excluded
Firearms	9304001808	Firearms; air pistols, other than soft (From 1999 October onwards)	Excluded
Pistol	9302000000	**Revolvers and pistols; other than those of heading no. 9303 or 9304 (From 2022 January onwards)**	**Included as Pistol**
Weapon	8710000000	Tanks and other armoured fighting vehicles; motorised, whether or not fitted with weapons, and parts of such vehicles	Excluded

Appendix 2. Counted Imports firearm categories.

Registry Item Subcategory	Counted in firearm categories as
Rifle	Rifle
Rifle/Shotgun (Combination)	Rifle
Prohibited Firearm	Rifle
Carbine	Rifle
Shotgun	Shotgun
Pistol	Pistol
Airgun (Pistol/Rifle)	Not counted
Airsoft Guns (AEG Automatic Electric Airgun)	Not counted
Antique Firearms/Pistols	Not counted
Blank Firing Gun	Not counted
Imitation Firearms	Not counted
Musket (Muzzle Loader)	Not counted
Other	Not counted
Paintball Guns	Not counted
Replica Firearms	Not counted
Restricted Weapon	Not counted

Appendix 3. Maximum values of rifles by year

Year	StatsNZ	Imports	Max
2002	5599	5	5599
2003	7831	124	7831
2004	9305	51	9305
2005	12285	327	12285
2006	15794	149	15794
2007	17000	115	17000
2008	19232	1036	19232
2009	18652	220	18652
2010	19702	246	19702
2011	16497	139	16497
2012	18452	109	18452
2013	19140	112	19140
2014	23441	99	23441
2015	20483	14248	20483
2016	15838	8683	15838
2017	19476	8393	19476
2018	16273	4284	16273
2019	24669	12381	24669
2020	22174	26009	26009
2021	20794	24093	24093
2022	24285	23093	24285
2023	15673	20010	20010
2024	10885	11543	11543

Appendix 4. Maximum values of shotguns by year

Year	StatsNZ	Imports	Max
2002	3810	6	3810
2003	5112	289	5112
2004	6344	15	6344
2005	9153	128	9153
2006	7696	92	7696
2007	8632	17	8632
2008	5988	19	5988
2009	5964	14	5964
2010	7923	14	7923
2011	9703	18	9703
2012	9040	10	9040
2013	8398	13	8398
2014	8953	8	8953
2015	8154	1964	8154
2016	5516	1207	5516
2017	5774	1910	5774
2018	7431	2028	7431
2019	7407	2572	7407
2020	7626	8130	8130
2021	10249	8385	10249
2022	10015	6471	10015
2023	7005	9240	9240
2024	2625	1854	2625

Appendix 5. Maximum values of pistols by year

Year	StatsNZ	Imports	Max
2002	0	17	17
2003	0	307	307
2004	0	352	352
2005	0	454	454
2006	0	563	563
2007	0	713	713
2008	0	746	746
2009	0	665	665
2010	0	766	766
2011	0	758	758
2012	0	973	973
2013	0	932	932
2014	0	1617	1617
2015	0	2617	2617
2016	0	1696	1696
2017	0	1484	1484
2018	0	2259	2259
2019	0	1844	1844
2020	0	1111	1111
2021	0	1036	1036
2022	1667	1170	1667
2023	797	1018	1018
2024	975	821	975

Appendix 6. Sum of maximum values of rifles, shotguns and pistols by year

Year	Rifle_Max	Shotgun_Max	Pistol_Max	Sum
2002	5599	3810	17	9426
2003	7831	5112	307	13250
2004	9305	6344	352	16001
2005	12285	9153	454	21892
2006	15794	7696	563	24053
2007	17000	8632	713	26345
2008	19232	5988	746	25966
2009	18652	5964	665	25281
2010	19702	7923	766	28391
2011	16497	9703	758	26958
2012	18452	9040	973	28465
2013	19140	8398	932	28470
2014	23441	8953	1617	34011
2015	20483	8154	2617	31254
2016	15838	5516	1696	23050
2017	19476	5774	1484	26734
2018	16273	7431	2259	25963
2019	24669	7407	1844	33920
2020	26009	8130	1111	35250
2021	24093	10249	1036	35378
2022	24285	10015	1667	35967
2023	20010	9240	1018	30268
2024	11543	2625	975	15143

Author information:

Emel Okur is a Data Analyst and Modeller at Te Tari Pūreke- Firearms Safety Authority, Firearms System and Performance Team.
firearms.ecosystem@police.govt.nz

Please cite this paper as (APA 7th Style):

Okur, E. (2025). *Estimation of civilian-held firearms in New Zealand ([1880] 1997-2024)*. Te Tari Pūreke – Firearms Safety Authority. Websitelink