

Estimation of Civilian-Held Firearms in New Zealand ([1880] 1997–2024)

Emel Okur

Data Analyst and Modeller

Firearms System and Performance Team

Te Tari Pūreke- Firearms Safety Authority

firearms.ecosystem@police.govt.nz



Te Tari Pūreke
Firearms Safety Authority

New Zealand civilian-held firearms estimation

The estimation of civilian-held firearms is important for firearms regulation and the monitoring of lawful ownership. The aim of this research, therefore, is ‘How many lawfully imported firearms, approximately, are held by civilians in New Zealand?’ and what are the national estimation models.

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

- The Thorp Report (1997) estimated 960,000 – 1,000,000.
- A Police Intelligence report (2016) estimated 1,169,051.
- The Police Policy team estimated (2019) 1,356,301.
- A publicly available PhD thesis authored by Chaz Forsythe (2021) estimated 1,200,000 to 1,600,000.

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. 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. A new model needed to be developed to cover the whole timeline between 1880 and 2024.

Timelines of methodologies

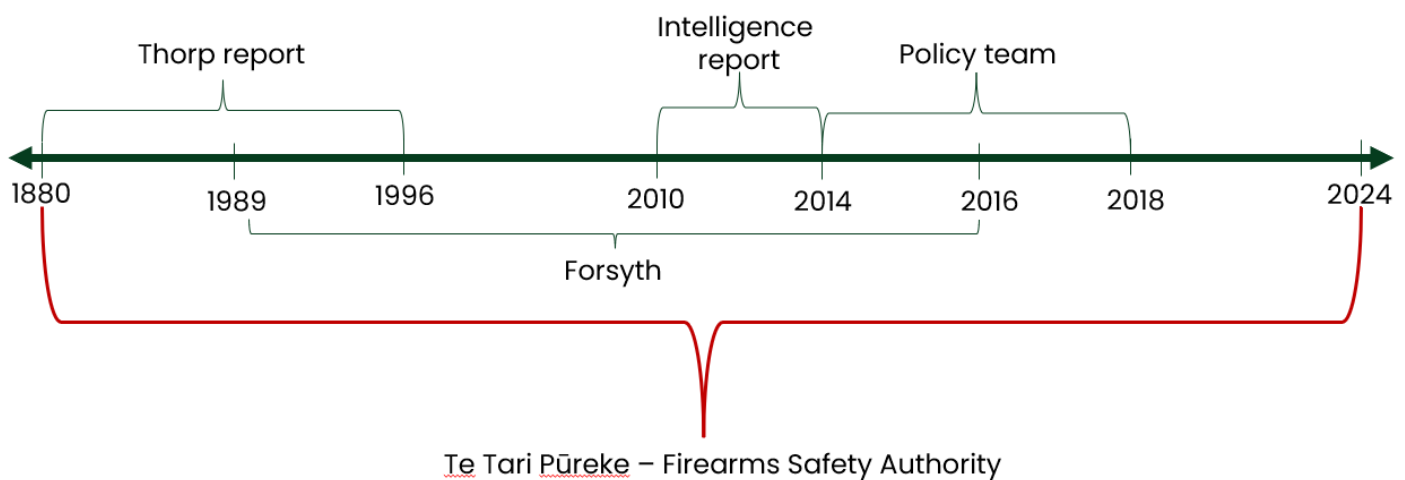


Figure 1. Comparison of the timelines of methodologies



The Thorp report (1997) considered rifle, shotgun, pistol and military style–semi automatic (MSSA) firearms. These are the most common types of firearms and to enable consistency, only lawfully imported rifles, shotguns and pistols were counted within the research (MSSA’s were included in rifle numbers).

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. According to Police reporting to the Minister 61,441¹ prohibited firearms² 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 in the firearms space means permanent removal of a firearm from use (Azrael, Hepburn, Hemenway& Miller, 2017). The depreciation rate was also calculated. 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.

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 1).

¹ OIA (IPR-20-14) response

² 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.



Table 1 - 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% depreciation)
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	

References

Arms Amendment Act (2019).

<https://www.legislation.govt.nz/act/public/2019/0012/latest/whole.html#LMS181205>

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>

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

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.

New Zealand Police Intelligence Report (2016). Firearms Availability in New Zealand. Unpublished Intelligence Report.

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