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Abstract

Firms increasingly build competitive advantage on cultural resources whose value derives from collective meaning, yet existing institutions either remove those symbols from the market or fail to protect them in time. We study the concept of embedded collective governance (ECG) for the use of traditional cultural expression: a governance form that embeds culturally-informed community review directly within market access institutions. We argue that ECG operates through two channels. Screening regulates entry at the registration gate. Certification rewards cultural alignment at the renewal margin, generating a premium for trademarks that survive culturally-informed community review. We test ECG at the trademark level and the portfolio level using New Zealand's 2003 Trademarks Act, which placed a Māori Advisory Committee (MAC) within the trademark system. Results confirm both channels: Māori-related trademarks are less likely to be registered and expire in New Zealand relative to abroad. At the trademark level, effects concentrate where commercial incentives are strongest. These results carry a broader policy implication: integrating culturally-informed community review with the state's gatekeeping process can help align firm incentives with community interests without removing cultural resources from the market.

Key words: Traditional Knowledge; Embedded Governance; Trademark Strategy; Certification; Cultural IP

JEL Codes: O34, D02, L15, O38, Z10

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1 Introduction

Firms increasingly build competitive advantage on traditional cultural resources: indigenous language, imagery, and heritage (Michalopoulos and Xue 2021, Michalopoulos and Rauh 2024). For example, trademarks incorporating the Māori word Mānuka command export prices roughly seven times the global honey average, making New Zealand the second-largest honey exporter by value despite producing about one percent of global volume (e.g., The Guardian 2022). We argue that these trademarks might not only capture the health benefits associated with higher-quality Manuka honey but also the cultural meaning of the word, a meaning rooted in Māori language and practice, creating potential for higher consumer appeal and consumer segmentation (Bowles 1998, Orozco and Poonamallee 2014, Jaeger et al. 2025).¹

However, unrestricted market access invites misappropriation that erodes cultural meaning. Prior studies document that firms have patented traditional knowledge and genetic resources ranging from Indian turmeric to Amazonian ayahuasca without community consent (e.g., Castaldi et al. 2024). The more widely a cultural resource is misappropriated, the less it can sustain the premium that attracted commercial interest in the first place (Hess and Ostrom 2007).

From an economic perspective, many existing approaches that aim to prevent misappropriation run the risk of sacrificing market access.² In theory, ex-ante protections such as *sui generis* registries and cultural heritage declarations can preempt misappropriation either by removing cultural resources from the market altogether or by making them available only on community-defined terms (Castaldi et al. 2024, Jimenez et al. 2022, Orozco and Poonamallee 2014).³ In other words, ex-ante approaches might protect the symbol by constraining or eliminating the market exchange. Ex-post mechanisms such as trademark opposition or invalidation can impose costs after misuse has already occurred, offering limited predictability for firms seeking to engage legitimately (Landes and Posner 1987). We ask: how can responsible firms, those seeking to engage with cultural resources legitimately and with community consent, build sustainable competitive advantage on cultural resources like the Māori’s “*mātauranga* and *taonga*” (“knowledge and treasures”) when existing approaches either withdraw them from the market or fail to protect them in time? We recognize that this question is posed from the perspective of the firm. From the perspective of many indigenous communities, however, the prior question to ask is whether firms should be able to derive competitive advantage from cultural resources at all without “Free, Prior and Informed

¹Similar applies to other culturally branded tourism services or premium food/beverage producers such as Ngāi Tahu, Miraka and Kono.

²We acknowledge that there are other institutional mechanisms such as exacting Free, Prior, and Informed Consent (FPIC) or ethical research and ethical access which are aligned with customary law and that do not necessarily limit market access.

³For instance, the Mataatua Declaration proposed a code of ethics governing how indigenous intellectual and cultural property may be used by third parties (clause 1.3).

Consent” (FPIC). Moreover, we acknowledge that there are firms who do engage responsibly with communities in prior consultations or by conducting due diligence search before using cultural resources.

Still, in this paper, we argue that, from an economic perspective, another solution and plausible answer to the above question lies in the governance arrangement itself.⁴ While alternative regimes such as sui generis rights or trademark oppositions as well as the sharing of rewards from IP protection are outside the scope of this study, we are first to explore and provide empirical evidence on the specific concept of embedded collective governance (ECG) and likely changes in filing behavior: this governance form embeds culturally-informed community review directly within market access institutions, bringing community-grounded cultural expertise into entry decisions while formal decision authority remains with the state. ECG operates through two channels. The screening channel regulates entry at registration, screening culturally misaligned applications without eliminating market access (Tirole 1996, Bai et al. 2022). The certification channel rewards cultural alignment at the renewal margin, generating a certification premium for those that survive MAC review (Dranove and Jin 2010, King et al. 2005, Spence 1973, Terlaak and King 2006). Together, the two channels align firm incentives with community interests without removing traditional knowledge from the exchange.

We test the effects of ECG using New Zealand’s 2003 Trademarks Act, which established the Māori Advisory Committee (MAC) to advise the Commissioner on the registration of trademark applications incorporating Māori signs, a category that encompasses both Māori language and imagery. Identifying which trademarks carry Māori content is not trivial, particularly before the law change when no official classification existed. We address this by developing a natural language processing classifier trained on Māori linguistic structure, effectively limiting our identification of Māori signs to unique characteristics of their language. We apply the classifier to TM-Link, a cross-jurisdictional trademark database covering filings in New Zealand, Australia, Canada, the European Union, the United Kingdom, and the United States from 1993 to 2013 (Petrie et al. 2020).

Our empirical strategy compares Māori-related trademarks from the same family filed in New Zealand (treated) versus abroad (control) in a difference-in-differences design. In doing so, we isolate ECG’s effect. We complement this with a portfolio-level analysis that tracks firm strategic jurisdiction choice in response to the reform.

Our results confirm both predictions. At the trademark level, Māori-related trademarks were 12.7 percentage points less likely to be registered in New Zealand relative to the same trademarks

⁴We note that economic analysis only offers a partial view: traditional knowledge carries cultural, spiritual, and social significance that market-based metrics cannot fully capture. Our contribution is to show that governance design can align firm incentives with community interests, a necessary, if not sufficient, condition for responsible market engagement with cultural resources.

filed abroad after the reform, reflecting screening at registration. Registered Māori-related trademarks were 12.4 percentage points less likely to expire, reflecting the certification premium conferred by surviving MAC review. Notably, both effects concentrate entirely among commercially active trademarks, indicating that ECG operates on trademarks with genuine marketplace presence rather than speculative or defensive filings.

The portfolio-level analyses additionally confirm both channels and prior results. Firms reduced new Māori-related registrations in New Zealand by approximately 38 percent relative to abroad following ECG introduction, and registered Māori-related trademarks were approximately 42 percent less likely to expire. More importantly, experienced cross-jurisdictional filers reduced New Zealand registrations by approximately 37 percent while simultaneously retaining trademarks already held there at higher rates. Because ECG raises the cost of new entry but increases the value of existing trademarks, firms strategically redirect new filings away from MAC review to offices abroad while retaining existing trademarks under it. We subject these results to several checks, including more stringent classification thresholds for identifying Māori-related trademarks, a placebo test that assigns the reform to 1999, and alternative estimators. The effects hold across specifications at both levels.

Our study makes two contributions. First, commons governance theory focuses on settings where the community imagined by Ostrom and others collectively manages and successfully sustains shared resources by developing and enforcing their own set of rules (Hess and Ostrom 2007, Madison et al. 2010, Ostrom 2010). We show that effective enforcement is also achievable within an existing intellectual property (IP) system when voices from the community are nested and embedded within the state’s own gatekeeping process. In doing so, we respond to calls for evidence on whether IP institutions can serve collective interests of indigenous communities (Castaldi et al. 2024, 2025, Jimenez et al. 2022).⁵ Second, the certification literature examines voluntary, standalone programs that require explicit participation and dedicated organizational infrastructure (Dranove and Jin 2010, King et al. 2005, Terlaak and King 2006). We show that certification arises endogenously from mandatory screening: a single governance feature embedded in the registration process simultaneously reduces entry and reduces expiration, making screening and certification complementary outputs of a single institutional mechanism.

Taken together, we show that, from an economic point of view, traditional cultural resources can be governed through the market when voices from the community are represented at the institutions that already control market entry. Embedding MAC review at the registration gate discourages misaligned entry while raising private returns to alignment (Menapace and Moschini 2012,

⁵We note that this should not be read as a claim that existing integration in IP institutions is perceived as sufficient by Māori communities. The Wai 262 report and the ongoing work of the Taumata Whakapūmau reflect Māori aspirations for rights that extend well beyond the advisory role established under the Trademarks Act. Still, our empirical findings speak to what is achievable from an economics perspective within the current setup and institutional design.

Mazé 2023). As the commercial value of traditional cultural expression grows globally, the institutions that govern market access increasingly shape whether these resources are protected. Our findings speak to the conditions under which market institutions can contribute responsibly to the protection of cultural resources from misappropriation: the structural embedding of culturally-informed community review within the institutions that govern access.

The paper proceeds as follows. Section 2 describes the institutional background. Section 3 develops the theoretical framework. Section 4 describes the research design. Section 5 presents the trademark-level analysis. Section 6 presents the portfolio-level analysis. Section 7 discusses implications and concludes.

2 Institutional Background

This section sets out the institutional setting from which embedded collective governance arises. We trace the constitutional foundation in *Te Tiriti o Waitangi*, the Wai 262 claim, and the Trade-marks Act 2002 that established the Māori Advisory Committee, and we describe the parallel Māori committees adopted in later intellectual property statutes. **Online Appendix A** presents the full legislative history, and Section 3 derives the screening and certification channels from the institutional features described here.

2.1 Background: *Te Tiriti o Waitangi*

Aotearoa New Zealand’s “founding document”⁶ is the Treaty of Waitangi. It establishes a “partnership” between the Crown and Māori, where a dual principle of sovereignty operates (Jones 2016): the Crown exercises formal legal authority, while Māori, as *tangata whenua* (people of the land), retain *rangatiratanga* (chieftainship or self-determination) and collective responsibilities (Taiuru et al. 2022) of *kaitiakitanga* (guardianship) over both tangible and intangible resources. Of relevance, article 2 of the Māori version of the Treaty of Waitangi, *Te Tiriti*, provides that Māori retain rights of “*rangatiratanga*” over “*ngā taonga katoa*,” which is accepted to mean rights of “chieftainship” over “all treasures.”⁷

While a number of helpful legal changes have been made to reflect the Treaty relationship and its significance (see, for example, section 4 of the Conservation Act 1987), IP law has been

⁶New Zealand Māori Council v Attorney-General [1987] 1 NZLR 641.

⁷Note that *Te Tiriti* differs from the English version of the Treaty of Waitangi, which states that Māori retain “the full exclusive and undisturbed possession of... other properties which they may collectively or individually possess so long as it is their wish and desire to retain the same in their possession.” The vast majority of Māori chiefs signed *Te Tiriti*, the Māori version of the Treaty. See Belgrave, Kawharu and Williams (eds) *The Treaty of Waitangi: Perspective on the Treaty of Waitangi* (2nd ed, Oxford University Press) for more, particularly IH Kawharu’s translations of the Treaty of Waitangi therein.

firmly anchored in the Crown’s logic of private ownership, detached from the cultural meanings trademarks and other IP systems sometimes embodied. Questions about the propriety of using Māori words and imagery were addressed informally, relying on examiner discretion rather than any codified mechanism of Māori consent and/or consultation. Māori words such as *mana* (spiritual authority), *aroha* (love), and *waka* (ancestral canoe) carry identity, genealogy, and spirituality, making their commercial use particularly sensitive. However, the IP system did not provide for any established system of accounting for these perspectives nor protecting them.

2.2 The Wai 262 Claim and the Trade Mark Act 2002

This gap in legal protection became increasingly visible in the 1980s and 1990s. The landmark Wai 262 “flora and fauna” claim, filed before the Waitangi Tribunal in 1991, argued that the state IP system failed to protect Māori traditional knowledge and cultural expressions (Sullivan and Tuffery-Huria 2014). The claimants’ aspirations were for a legal system which provided for the Māori rights of *rangatiratanga* and *kaitiakitanga* (collectively, their rights of self-determination) to their intangible cultural property, or what is more commonly referred to today as *mātauranga* Māori, and/or taonga, as guaranteed in article 2 of *Te Tiriti o Waitangi*.⁸

The government’s response, among other things,⁹ included the passage of the Trade Marks Act 2002. The Trade Marks Act repealed the 1953 Act and empowered the Commissioner of Trade-marks to establish an advisory committee to advise whether the registration or use of a trademark derived from a Māori sign is, or is likely to be, “offensive” to Māori, this committee commonly known as the Māori Advisory Committee (Mead 1996). This was a policy innovation and the first time that a form of cultural guardianship was formally embedded within an IP regime.¹⁰

⁸“*Mātauranga* Māori and taonga” is the preferred terminology when discussing the cultural resources at issue. See the Plant Variety Rights Act 2022. See also the current Wai 262 Taumata Whakapūmau at <https://www.wai262.nz/Taumata-whakapumau>. For reference, the Wai 262 Taumata Whakapūmau are the descendants and tribal representatives of the five original claimants of the Wai 262 claim.

⁹See for instance sections 225–228 of the Patents Act 2013 and Part 5 of the Plant Variety Rights Act 2022, which establish similar Māori committees with respect to patent applications and plant variety rights applications respectively. See below for more.

¹⁰The reform introduced no parallel changes to trademark substantive law, fee structures, or enforcement mechanisms, providing a clean break from the prior regime of idiosyncratic examiner discretion. Because MAC review applies only to trademarks incorporating Māori language, the broader trademark register is unaffected. Moreover, we note that, beyond the specific case of New Zealand, trademark laws typically include an absolute ground for refusal where a mark is contrary to “public order or accepted principles of morality”, a concept reflected in Article 6 quinquies (B)(3) of the Paris Convention, which permits the refusal of protection for marks that are contrary to morality or public order.

2.3 The Trade Mark Act 2002

New Zealand has a well-established history of trademark legislation. The first trademark act was passed in 1866, entitled “An Act to Amend the Law Relating to the Fraudulent Marking of Merchandise and to provide for the Registration of Trademarks” (Frankel 2011). The current Trade-marks Act 2002 came into force on 20 August 2003 (Finch 2017). The Act is largely based on the Trade Marks Act 1998 (Singapore) and retains many fundamentals of its predecessor. However, several unique reforms were introduced, most relevantly including new measures to prevent the registration of trademarks that may offend Māori or other sections of the community. Section 3 of the Trademarks Act 2002 expressly states that one of its purposes is to “address Māori concerns relating to the registration of trademarks that contain a Māori sign, including...text.”¹¹

Section 177 of the Trade Mark Act empowers the Trademarks Commissioner to establish an advisory committee, which, pursuant to section 178, is to advise the Commissioner on whether the proposed use or registration of a trademark that is, or appears to be, derivative of a Māori sign is, or is likely to be, offensive to Māori. The threshold in the Act is high: offensiveness. Under Section 17, if the Commissioner considers that the use or registration would be likely to offend a significant section of the community, including Māori, then the Commissioner must not register that trademark. In making this decision, the Commissioner is not legally bound by the advice of the MAC. If the MAC advises against registration, the Commissioner is free to depart from this advice and register the trademark. In practice, however, the Commissioner has consistently followed the MAC’s recommendations, making the advisory function *de facto* binding (see below).

These new measures reflected the advice of a Ministry of Commerce discussion paper in 1997, which recommended amendments to the trademark registration process to incorporate examination of Māori concerns (Frankel 2011). The recommendations were most likely influenced by the Wai 262 claim, filed before the Waitangi Tribunal in 1991.

2.4 The Māori Advisory Committee

The MAC is guided by the Intellectual Property Office of New Zealand (IPONZ) terms of reference for the Māori trade marks advisory committee. The Commissioner of Trademarks may appoint up to five MAC members, including a chair. In practice, four members have served at any one time, each selected for expertise in *mātauranga* Māori (Māori knowledge systems) and *tikanga* Māori (customary practice).

Referral to the MAC is triggered automatically. When IPONZ receives a trademark application, it cross-references the application text against a database containing four Māori dictionaries. Any

¹¹While the MAC’s mandate extends to both the textual and visual elements of a Māori sign, our main focus is on the textual dimension.

match flags the application for committee review. “They err on the side of giving us everything that is triggered by the dictionaries,” explained Aroha Mead, a current member of the MAC. The referral mechanism extends beyond language: visual trademarks containing Māori iconography are also referred, as examiners are trained to recognize indigenous motifs and ancestral symbols. There is no additional filing fee for referral, but the additional scrutiny introduces uncertainty and potential delay for firms.

Each member reviews referred applications online and votes among four options: (a) not offensive to Māori, (b) offensive to Māori, (c) needs further information, or (d) conflict of interest. Unanimous online clearance disposes of the application without a meeting. If at least one member requests discussion, the case is deferred to the next committee meeting, typically held quarterly. “If one person doesn’t agree, it’ll go to committee,” Aroha Mead noted. “When it goes to committee, those all get delayed in the system until the committee meets.” Because Māori society is relatively small and interlinked, members frequently recuse themselves for reasons of kinship or affiliation, declaring conflicts of interest to preserve impartiality. The committee’s assessment thus reflects collective deliberation among domain experts rather than the judgment of a single examiner.

While the statute speaks only of “offensiveness,” the MAC interprets this threshold through Māori concepts such as *tapu* (sacred, restricted) and *noa* (common, unrestricted). Trademarks invoking sacred names, ancestral figures, or revered geographic sites are treated as *tapu* and therefore inappropriate for commercial registration, particularly when associated with products like alcohol.

The MAC additionally guards against linguistic enclosure. Attempts to monopolize Māori words are refused. “We won’t approve single-word usage of the Māori language, because that is an attempt to capture the language,” Aroha Mead explained. “So there’s got to be a descriptor with it.”¹²

The same reasoning extends to other indigenous flora and fauna. Geographic and ecological names (mountains, rivers, and regions) require evidence of local consultation with affected *iwi*¹³ before approval, and applications seeking to trademark personal or children’s names are typically declined on identity grounds. Through these criteria, the MAC translates Māori cultural reasoning into administrative decision-making, giving operational content to the law’s notion of offensiveness.

Since the MAC’s establishment, the number of referrals has grown at an average of approximately ten percent annually. The proportion of applications found offensive peaked at approximately eight percent around 2018 before declining to roughly four percent between 2021 and 2023. More systematic data on committee proceedings and review outcomes are not published by

¹²This expectation overlaps with the ordinary requirement that a registrable trademark be distinctive, since a common word carries little distinctiveness on its own.

¹³Iwi are traditional Māori tribal groups whose members share common ancestry and collective cultural and territorial identity.

IPONZ, as the work of the committee is considered part of the internal examination process.

Three features of the MAC’s design are central to the theoretical development that follows. First, the MAC’s assessment is informative: members are selected for “deep understanding of *mātauranga* Māori (Mead 2003) and *tikanga* Māori” (Intellectual Property Office of New Zealand 2023), and the criteria target the features that distinguish culturally aligned from misaligned use. Second, the governance threshold is substantive: the committee applies specific cultural criteria rather than exercising ad hoc discretion. Third, MAC recommendations, although not legally binding on the Commissioner, have in practice become decisive.¹⁴

2.5 Parallel Māori Committee Provisions

After the passage of the Trade Mark Act 2002, similar advisory committees have been established to address Māori concerns in other areas of intellectual property.¹⁵ Two parallel provisions are particularly relevant. We address them in turn.

The Patents Act 2013 expressly notes its purpose is to, among other things, address Māori concerns relating to the granting of patents for inventions derived from indigenous plants and animals or from Māori traditional knowledge (Section 3(d)). Section 225 empowers the Patents Commissioner to appoint a Māori advisory committee, which, under Section 226, is to advise the Commissioner on whether the commercial exploitation of an invention (claimed in a patent application to be derived from Māori traditional knowledge or from indigenous plants or animals) is likely to be “contrary to Māori values.” As with the trade mark MAC, the Patents Commissioner is not bound by the committee’s advice; the Commissioner need only consider it (Section 227).

Section 3 of the Plant Variety Rights Act 2022 states that one of its purposes is to “protect *kaitiaki* relationships with taonga species and *mātauranga* Māori in the plant variety rights system.” Section 57 directs the Commissioner to establish a Māori Plant Varieties Committee. This committee is to: (i) issue engagement guidelines and provide advice to firms and *kaitiaki*; (ii) consider applications referred to it by the Commissioner and make decisions; (iii) advise the Commissioner whether the use or approval of a proposed denomination is likely to be offensive to Māori (not binding); and (iv) provide advice to the Commissioner on any information relevant to the application of criteria for granting a plant variety right (not binding).

Unlike the two former advisory committees, the Māori Plant Varieties Committee can give binding advice in some circumstances. The committee can make binding recommendations re-

¹⁴See the IPONZ practice guidelines on using Māori elements in trademarks. More systematic data on committee proceedings are not published, as the MAC’s work is treated as part of the internal examination process.

¹⁵A summary of key issues raised by Māori during a series of consultations around Aotearoa New Zealand is available via this link. Submissions following public consultation around the Plant Variety Rights Act 2022 included, for example, views expressed by the Māori Law Society. In general, they are supportive of a Māori Advisory Committee but also argue for stronger and more coherent protections of Māori rights and interests.

garding whether an application will have adverse effects on *kaitiaki* relationships (Section 62). If the committee considers that an application can proceed but with certain conditions, the Commissioner must impose those conditions when granting the plant variety right (Section 30(5)).

The progression from advisory to partially binding authority across these three statutes illustrates an institutional trajectory: the advisory committee model, first introduced in trademarks, has been adopted and strengthened in subsequent IP regimes. This trajectory provides further evidence that the ECG studied in the main text represents a generalizable institutional form rather than an isolated experiment in New Zealand.

2.6 Beyond the MAC: Māori Aspirations for the Future

Clearly, the MAC is a powerful, effective institutional step in the protection of *mātauranga* Māori and taonga. However, it is a start and not the end of the matter when it comes to the protection of *mātauranga* Māori, at least from the Wai 262 claimants and the current Wai 262 Taumata Whakapūmau’s perspective. Additional protective mechanisms that are sought include making the advice of the MAC formally binding, continuing the development and empowering of Māori advisory committees in the IP space (see the Plant Variety Rights Act 2002 Māori Committee, above); providing for a form of the requirement for the free, prior and informed consent of the relevant *kaitiaki* (or stakeholders) before *mātauranga* Māori and/or taonga are used by third parties; and enacting *sui generis* legislation, which protects *mātauranga* Māori and taonga and recognises Māori rights of *rangatiratanga* and *kaitiakitanga* with respect to Māori cultural resources.¹⁶ Some of these additional mechanisms would go well beyond existing institutional protective mechanisms, such as the MAC, and could provide forms of positive legal protection with respect to *mātauranga* Māori and taonga.

3 Theory Development

ECG operates through two channels that share a common institutional source: MAC review at the registration gate. Building on the institutional features described in Section 2, we derive the screening and certification channels and state the two predictions that the empirical analysis tests. **Online Appendix B** describes the formal model from which both predictions follow.

¹⁶See <https://www.wai262.nz/Taumata-whakapumau>.

3.1 Screening

Trademarks that incorporate cultural resources vary in cultural alignment: the degree to which the trademark's use conforms to the cultural appropriateness standards of the originating community. Alignment reflects whether the trademark avoids linguistic enclosure, respects geographic and ecological names, and uses personal or ancestral names appropriately.

The firm has full knowledge of its own cultural alignment. The MAC can assess much of it from the application: trademark text, product class, and cultural connotations. But some dimensions of alignment, particularly the depth of community consultation and the intended commercial use, are not fully observable from the application alone. Without MAC review, cultural alignment is not assessed. Hence, all applications that satisfy distinctiveness, descriptiveness, and prior rights are approved regardless of cultural alignment. This constitutes the baseline against which ECG operates: the absence of cultural alignment assessment within the standard registration system is precisely the governance gap that the MAC addresses by embedding culturally-informed review at the relevant gatekeeping margin.

The MAC introduces cultural alignment into the registration decision, functioning as a gatekeeper that screens for cultural appropriateness at the point of entry (Dranove and Jin 2010, King et al. 2005). The MAC review creates a cultural alignment threshold that trademarks must clear on top of the standard assessment. Because the MAC's assessment is informative and the threshold is substantive, culturally aligned trademarks are more likely to pass review.¹⁷ Under these conditions, the MAC reduces the number of culturally associated trademarks that enter the register. With this reasoning, we predict that:

Prediction 1 (Screening). *ECG reduces the registration of culturally associated trademarks relative to jurisdictions without it.*

3.2 Certification

Screening also changes the composition of registered trademarks. Because the MAC's assessment is positively correlated with true cultural alignment with Māori resources, the trademarks screened out are disproportionately those with lower cultural alignment. The trademarks that remain are, on average, better culturally aligned. Trademarks registered under MAC review therefore have higher average cultural alignment than trademarks registered without it.

Tirole (1996) shows that when group membership is observable while individual quality is not, third parties rely on the group's collective track record to form expectations about any individual

¹⁷MAC review may also deter some firms from filing. The empirical design addresses this by conditioning on trademarks actually submitted (see Section 5.1). Hence, any registration-rate reduction observed reflects institutional screening of submitted applications rather than strategic jurisdiction choice.

drawn from it. The resulting signal benefits all group members, including those who were never individually assessed. Bai et al. (2022) provide empirical evidence that this mechanism operates in trade settings where product quality varies within a collectively branded group.

Building on this logic, we argue that MAC review generates a certification premium for trademarks registered under it. Third parties observe that the registration process includes MAC review but not the cultural alignment of any individual trademark. Because screening has shifted the composition upward, trademarks registered under MAC review carry a credible signal of cultural alignment with Māori resources. This signal constitutes a certification premium: the additional value a trademark derives from being registered under a process known to screen for cultural alignment (Dranove and Jin 2010, Spence 1973). Every trademark registered under MAC review benefits, including trademarks that predate the MAC.¹⁸ The premium raises the expected return of holding the trademark. Trademarks that would otherwise have lapsed become worth keeping.¹⁹ Hence, we predict:

Prediction 2 (Certification). *ECG reduces the expiration of culturally associated trademarks relative to jurisdictions without it.*

Taken together, screening raises the cost of registration by screening out culturally misaligned trademarks, while the resulting composition shift raises the certification premium for those that remain.²⁰ Both effects should concentrate among commercially active trademarks, because the commercial consequences of governance, whether through screening at registration or through the certification premium at expiration, are proportional to marketplace exposure. Moreover, as a strategic response to ECG introduction, firms operating across jurisdictions could reallocate new filings away from MAC review while retaining existing trademarks under it.

4 Research Design

In this section, we describe the research design. First, we establish the empirical setting and shared identification structure (Section 4.1). We then develop the classification pipeline for identifying Māori-related trademarks (Section 4.2). Lastly, we explain the rationale behind two complementary levels of analysis (Section 4.3).

¹⁸This logic parallels how ISO certification raises the perceived quality of all products from a certified supplier, not only those that underwent audit (King et al. 2005).

¹⁹We use expiration rather than renewal as our outcome because, in practice, the two coincide. A trademark expires at the end of its registration term if the owner does not renew.

²⁰Arguably, the ex-ante screening mechanism through the MAC also removes some of the uncertainty and elevated risk perceived by firms via ex post trademark opposition around using Māori resources.

4.1 Empirical Setting

Testing ECG requires a setting where MAC review is introduced at a known date, applies to a defined subset of trademarks, and has no Māori offensiveness review mechanism established the comparison jurisdictions. Hypothetically, if comparison jurisdictions introduced similar review mechanisms around the same time, or if other policy changes coincided with the reform, the resulting effect cannot be attributed to the ECG. New Zealand’s 2003 Trademarks Act provides such a setting. The MAC applies only to trademarks incorporating Māori language, and no other major trademark office subjects applications to a comparable cultural review.

We draw on TM-Link, a cross-jurisdictional trademark database that links trademarks filed across jurisdictions (i.e., Australia, Canada, the European Union, New Zealand, the United Kingdom, and the United States) into families (Petrie et al. 2020). It does so by applying a neural-network algorithm that matches trademarks across jurisdictions based on trademark text, filing date, product class, and firm name. The family structure allows us to observe the same trademark filed by the same firm in multiple offices, providing the within-family variation.

All six offices assess distinctiveness, descriptiveness, and prior rights. The critical difference is that New Zealand alone subjects applications to MAC review. The treatment indicator equals one for trademarks filed or held at IPONZ and zero for all other offices. The post-reform indicator equals one for years after 2003. Both levels of analysis compare treated versus control, before versus after, in a difference-in-differences framework.

The sample covers filings from 1993 to 2013. The start date follows the filing of the Wai 262 claim in 1991. The end date precedes New Zealand’s accession to the Madrid Protocol in 2013, which altered the filing infrastructure by enabling single-application international registration and would confound the post-reform period. The resulting window provides a symmetric ten-year span before and after the reform.

4.2 Identifying Māori-Related Trademarks

Identifying Māori-related trademarks is empirically challenging, particularly before the law change when no official classification existed. Many Māori words share surface forms with other languages: *mate* means “death” in Māori but “companion” in English, *take* means “topic” in Māori but “to grasp” in English. Brand owners also frequently stylize Māori words, for example writing “Qia Ora” for *Kia Ora* or omitting macrons so that *tāne* becomes tane.

We address this by developing a natural language processing classifier trained on Māori linguistic structure. The classifier draws on two inputs: the *Te Aka Māori Dictionary*,²¹ which contains

²¹Te Aka Māori Dictionary is one of the most authoritative and widely used resources for te reo Māori and is maintained by the Te Murumāra Foundation. While it draws extensively on Māori linguistic expertise and is widely

approximately 29,000 entries, and the phonological rules of the Māori language, which restrict permissible consonants and require words to end in a vowel. Words that satisfy both criteria are identified as candidate Māori terms.

For ambiguous cases where words exist in both Māori and another language, we assess whether Māori is the dominant linguistic context of the full trademark text using Lingua, an open-source language identification library. A trademark reading “Mate Brewing” would be classified as English, while “Mate Aroha” would be classified as Māori. The classifier mirrors the process employed at IPONZ, where applications are cross-referenced against Māori dictionaries before being referred to the MAC (Section 2.4).

We validated the classification through three complementary checks. First, we compiled a list of 494 high-confidence Māori words, including widely recognized terms in branding (e.g., Mānuka). Lingua assigns high Māori probabilities (of at least 90%) to all words in this list, supporting face validity.

Second, we conducted a manual review of a random sample (733 words) by cross-referencing each against the *Te Aka* Māori Dictionary. The manual review confirmed that Lingua correctly identified both high-frequency terms such as *aroha* and *mana* and less common terms such as *tupu* and *huna*.

Third, we triangulated with LangDetect, an independent language detection library, as an external benchmark. Trademarks receiving a high Māori probability from Lingua and a low English classification score from LangDetect were considered strong signals of accurate identification, while discordant cases were flagged for closer scrutiny. Full technical details and sensitivity analyses are reported in **Online Appendix C**.

4.3 Two Complementary Levels of Analysis

A decline in Māori-related registrations in New Zealand after the reform could reflect different underlying processes. The MAC may be screening submitted applications (institutional screening). Firms may be anticipating scrutiny and redirecting filings elsewhere (strategic jurisdiction choice). Or both may operate simultaneously. No single empirical design can distinguish them, because the observable outcome, fewer registrations, is consistent with each explanation.

The trademark-level analysis resolves a part of this ambiguity. By comparing the same trademark filed in New Zealand versus abroad within the same family, it conditions on trademarks that were actually submitted. Any registration decline observed in this design reflects the MAC’s screening of submitted applications, not strategic jurisdiction choice.

relied upon in education and government, there is no evidence that it represents a formal endorsement or collective consent of all Māori communities. Accordingly, it should be understood as an authoritative lexicographical resource rather than as a body exercising collective Māori authority over traditional knowledge.

In addition, the portfolio-level analysis captures strategic jurisdiction choice, which the trademark-level design cannot detect. A firm that bypasses New Zealand entirely is unobservable in the trademark-level data. The portfolio-level analysis detects this reallocation by tracking each firm’s total filing activity across jurisdictions, and permits restricting the sample to firms with demonstrated cross-jurisdictional presence around the reform window.

Together, the two analyses separate institutional screening from strategic jurisdiction choice within the same empirical setting. Both also examine the expiration margin, testing the certification channel at each level. Sections 5 and 6 present them in turn.

5 Trademark-Level Analysis

This section tests Predictions 1 and 2 using within-family variation across jurisdictions. We restrict the TM-Link sample (Section 4.1) to Māori-related trademark families (Section 4.2) with a valid family identifier and at least one USPTO filing, which permits the commercialization test. The sample comprises 6,728 observations across 2,338 families. We provide full sampling details and robustness analyses in **Online Appendix D**.²²

5.1 Identification Strategy

The unit of observation is a trademark application i in jurisdiction j in year t . We estimate a linear probability model:

$$Y_{ijt} = \alpha + \beta (Treat_j \times Post_t) + \gamma_i + \delta_t + \epsilon_{ijt}, \quad (1)$$

where Y_{ijt} is a registration indicator equal to one if the trademark is registered, or an expiration indicator equal to one if a registered trademark subsequently expired. Both indicators equal zero for all other outcomes (abandoned, cancelled, withdrawn, or under examination). $Treat_j$ equals one for applications filed at IPONZ and zero otherwise. $Post_t$ equals one for filing years after 2003. γ_i are trademark-family fixed effects, and δ_t are filing-year fixed effects. Standard errors are clustered at the trademark-family level.

5.2 Results

Summary Statistics

Table 1 reports summary statistics and pairwise correlations for the trademark-level sample. Approximately 37 percent of trademark applications in the sample are registered, and about 8 percent

²²Results are robust to the full sample of 8,265 observations across 3,021 families, which includes families without USPTO filings.

of registered trademarks expire. New Zealand filings account for 7 percent of observations, reflecting the five comparison jurisdictions in the sample (Australia, Canada, the European Union, the United Kingdom, and the United States). The mean filing year of 2005 falls slightly after the reform, consistent with the general expansion of trademark activity over the sample period. About 60 percent of families have at least one member with an active use claim at the USPTO, indicating that the majority of families in the sample have transitioned at least one trademark from intent-to-use to actual use in commerce.²³

Table 1 Summary Statistics: Trademark-Level Sample ($N = 6,728$)

	Mean	Std. Dev.	Min	Max	[1]	[2]	[3]	[4]	[5]
[1] Registered	0.372	0.483	0	1	1.000				
[2] Expired	0.077	0.267	0	1	-0.223***	1.000			
[3] Treated	0.073	0.261	0	1	0.101***	0.275***	1.000		
[4] Year	2005.3	5.437	1993	2013	0.354***	-0.112***	-0.013	1.000	
[5] Commercialized	0.597	0.491	0	1	0.009	-0.097***	-0.045***	-0.077***	1.000

Note. The sample consists of Māori-related trademark families under the baseline classification with a valid family identifier, a non-missing filing date, and at least one USPTO filing, 1993–2013. *Registered* equals one if the trademark was registered. *Expired* equals one if a registered trademark expired. *Treat* equals one for applications filed at IPONZ. *Commercialized* equals one if any family member has an active use claim at the USPTO. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The pairwise correlations reveal three patterns worth noting. First, the unconditional correlation between *Treat* and *Registered* is positive (0.101, $p < 0.01$), indicating that Māori-related trademarks filed in New Zealand are registered at higher unconditional rates than those filed abroad. Second, the unconditional correlation between *Treat* and *Expired* is also positive (0.275, $p < 0.01$), indicating that NZ trademarks expire at higher unconditional rates. Third, the negative correlation between *Commercialized* and *Expired* (-0.097 , $p < 0.01$) is consistent with the intuition that commercially active trademarks are less likely to lapse.

Screening

Prediction 1 states that ECG reduces the registration of trademarks carrying cultural resources relative to jurisdictions without it. Column (1) of Table 2 reports the results. Māori-related trademarks filed in New Zealand were 12.7 percentage points less likely to be registered than the same trademarks filed abroad after the reform ($p < 0.01$). Because the sample conditions on trademarks that were actually submitted, this estimate reflects institutional screening. These results provide support for Prediction 1.

²³Use claim data are available only from the USPTO. We assign commercialization status at the family level: a family is classified as commercialized if at least one member has an active use claim. The sample is smaller than in Table D.1 because commercialization status requires USPTO use claim data, which is not available for all families.

Table 2 Trademark-Level Estimates: Registration and Expiration

	(1) Registered	(2) Expired
<i>Treat × Post</i>	−0.127*** (0.045)	−0.124*** (0.045)
<i>Family fixed effects</i>	Yes	Yes
<i>Year fixed effects</i>	Yes	Yes
<i>Observations</i>	6,728	6,728
<i>Trademark families</i>	2,338	2,338
<i>R-squared</i>	0.537	0.430

Note. The table reports linear probability model estimates. The dependent variable in Column (1) is a registration indicator; in Column (2), an expiration indicator. *Treat* equals one for applications filed at IPONZ. *Post* equals one for filing years after 2003. The sample consists of Māori-related trademark families under the baseline classification with at least one USPTO filing. Standard errors clustered at the trademark-family level are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Certification

Prediction 2 states that ECG reduces the expiration of trademarks carrying cultural resources relative to jurisdictions without it. Column (2) of Table 2 reports the results. Māori-related trademarks registered in New Zealand were 12.4 percentage points less likely to expire than the same trademarks registered abroad after the reform ($p < 0.01$). Firms retain trademarks whose value is augmented by the certification premium. This finding lends support for Prediction 2.

Commercialization

The baseline results establish that ECG affects trademark filing behavior. A natural question is whether this behavior reflects actual marketplace activity or merely administrative patterns in the register (see also Heath and Mace 2020). We test this by splitting the sample according to whether any member of a trademark family has an active use claim filed at the USPTO, which indicates that the trademark transitioned from intent-to-use to actual use in commerce.

Table 3 reports the results. The screening effect is concentrated entirely among commercialized trademarks: registration declines by 19.8 percentage points ($p < 0.01$) for commercialized families (Column (2)) but shows no significant change for non-commercialized families (Column (1)). The certification effect follows the same pattern: expiration declines by 14.8 percentage points

Table 3 Trademark-Level Estimates: Commercialization Split

	<i>Registered</i>		<i>Expired</i>	
	<i>Not Comm.</i> (1)	<i>Comm.</i> (2)	<i>Not Comm.</i> (3)	<i>Comm.</i> (4)
<i>Treat × Post</i>	0.009 (0.059)	−0.198*** (0.065)	−0.110 (0.074)	−0.148*** (0.056)
<i>Family fixed effects</i>	Yes	Yes	Yes	Yes
<i>Year fixed effects</i>	Yes	Yes	Yes	Yes
<i>Observations</i>	2,714	4,014	2,714	4,014
<i>Trademark families</i>	1,013	1,325	1,013	1,325
<i>R-squared</i>	0.583	0.514	0.444	0.407

Note. The table reports linear probability model estimates. Columns (1) and (2) report registration results; Columns (3) and (4) report expiration results. The sample is split by whether any member of the trademark family has an active use claim at the USPTO (*Comm.*) or not (*Not Comm.*). *Treat* equals one for applications filed at IPONZ. *Post* equals one for filing years after 2003. Standard errors clustered at the trademark-family level are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

($p < 0.01$) among commercialized families (Column (4)), with no significant effect among non-commercialized families (Column (3)). This concentration indicates that ECG’s screening and certification channels operate on trademarks with genuine commercial activity rather than speculative or defensive filings.

5.3 Robustness

We assess the robustness of the trademark-level results along several dimensions. Figure 1 reports event-study estimates for Māori-related trademark registrations. Coefficients before the Trade-marks Act 2003 are statistically indistinguishable from zero, providing no evidence of differential pre-trends between New Zealand and comparison jurisdictions. Coefficients after the Trademarks Act are mostly negative, with the effect strengthening over time. The corresponding event-study figure for expirations shows no pre-trends and is reported in Online Appendix D, Figure D.1.

The baseline estimates restrict the sample to families with at least one USPTO filing, which permits the commercialization test but may affect representativeness. To assess whether this restriction drives the results, we re-estimate Table 2 on the full sample. The estimates are comparable (Online Appendix D, Table D.2).

The classification of Māori-related trademarks involves judgment in setting the linguistic threshold. To assess whether the results depend on this choice, we re-estimate Tables 2 and 3 using a more stringent threshold. The results are stable across classification thresholds (Online Appendix

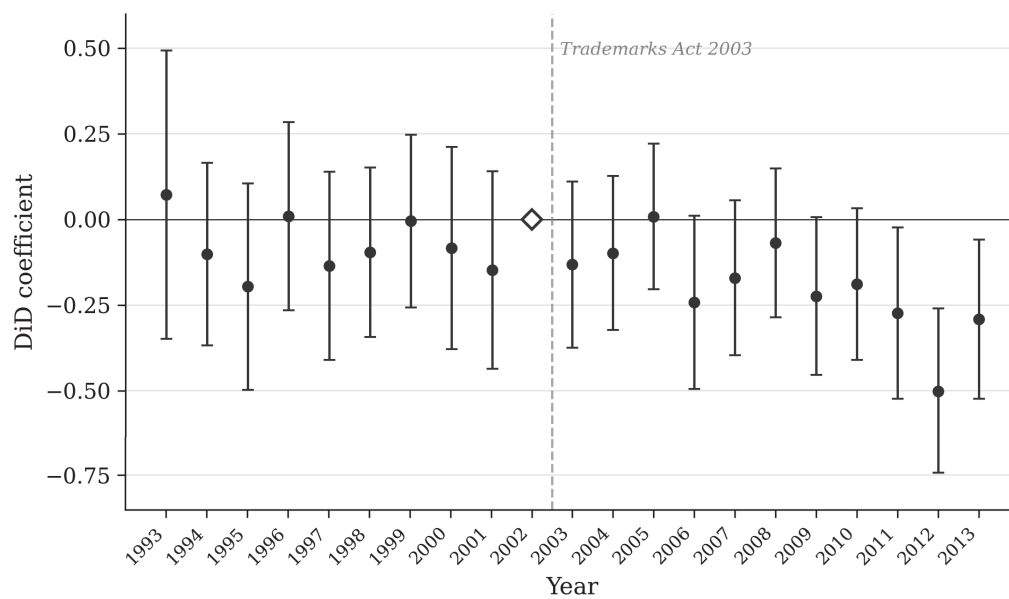


Figure 1 Trademark-Level Event-Study Estimates for Māori-Related Trademark Registrations

Notes. Event-study estimates for Māori-related trademark registrations at the trademark level. The figure plots coefficients from a linear probability model with trademark family fixed effects that interacts the treatment indicator (*Treat*) with year dummies. The reference year is 2002 (diamond). Error bars indicate 95 percent confidence intervals. Standard errors are clustered at the trademark-family level. The sample consists of Māori-related trademark families under the baseline classification with at least one USPTO filing, 1993–2013. The vertical dashed line marks the Trademarks Act 2003.

D, Tables D.3 and D.4).

The estimated effects could reflect pre-existing trends rather than the reform itself. To assess this, we run a placebo test assigning a false reform date within the pre-period on Māori-related trademarks only. The placebo yields no significant effect, confirming that the results are driven by the 2003 Trademarks Act (Online Appendix D, Table D.5).

6 Portfolio-Level Analysis

So far, we tested ECG’s predictions by comparing the same trademark filed in New Zealand versus abroad. In this section, we test the same predictions at the portfolio level. We restrict our sample to firms that have a Māori-related trademark in New Zealand and track their filing activity across six jurisdictions, allowing us to capture how firms strategically reallocate their portfolios after the reform. We describe the full sampling details and include robustness checks in **Online Appendix E**.

6.1 Identification Strategy

The unit of observation is firm i in jurisdiction j in year t . We estimate a Poisson pseudo-maximum likelihood model:

$$E[Y_{ijt} | \cdot] = \exp\{\alpha + \beta (Treat_j \times Post_t) + \theta AFS_{ijt} + \gamma_{ij} + \delta_t\}, \quad (2)$$

where Y_{ijt} is the count of Māori-related trademarks registered or expired by firm i in jurisdiction j in year t ; $Treat_j$ equals one for applications filed at IPONZ and zero otherwise; $Post_t$ equals one for filing years after 2003; AFS_{ijt} is the firm’s average trademark family size; γ_{ij} are firm-jurisdiction fixed effects; and δ_t are filing-year fixed effects. Standard errors are clustered at the firm level.

6.2 Results

Summary Statistics

Table 4 reports summary statistics and pairwise correlations for the portfolio-level sample. Each observation corresponds to a unique applicant-country-year combination. The average observation contains approximately 0.51 registered trademarks and 0.50 expired trademarks, reflecting the sparsity of Māori-related filings. Roughly 64 percent of observations correspond to Māori-related trademarks filed in New Zealand (treated), and 71 percent fall in the post Trademarks Act, consistent with the expansion of trademark activity over the sample window. The average family size

of approximately 3.3 applications indicates moderate internationalization among applicants using Māori cultural resources.

Table 4 Summary Statistics: Portfolio-Level Sample ($N = 15,645$)

	Mean	Std. Dev.	Min	Max	[1]	[2]	[3]	[4]	[5]	[6]
[1] Registered	0.51	1.06	0	45	1.000					
[2] Expired	0.50	0.97	0	29	-0.114***	1.000				
[3] Treated	0.64	0.48	0	1	-0.165***	0.229***	1.000			
[4] Post	0.71	0.45	0	1	0.043***	-0.132***	0.045***	1.000		
[5] Year	2005.39	5.36	1993	2013	0.082***	-0.114***	0.037***	0.830***	1.000	
[6] Ave. family size	3.30	5.18	1	58	0.150***	-0.123***	-0.354***	-0.056***	-0.060***	1.000

Notes. The table reports summary statistics and pairwise correlations for Māori-related trademarks in the portfolio-level sample (1993–2013). Registered and Expired are counts of trademarks per firm-jurisdiction-year. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Pairwise correlations reveal two patterns consistent with theoretical predictions. Registered and Expired counts are negatively correlated (-0.114), indicating that applicant-country-year with more registrations tend to have fewer expirations. The treatment indicator correlates negatively with registrations (-0.165) and positively with expirations (0.229): Māori-related trademarks filed in New Zealand are registered at lower rates and expire at higher rates than those filed abroad, before conditioning on the reform.

Screening

Prediction 1 states that ECG reduces the registration of trademarks carrying cultural resources relative to jurisdictions without it. Column (1) of Table 5 reports the results. The estimated coefficient of -0.485 ($p < 0.01$) corresponds to a decline of approximately 38 percent in Māori-related trademark registrations at IPONZ following the Trademarks Act. These results provide support for Prediction 1 at the portfolio level.²⁴

Certification

Prediction 2 states that ECG reduces the expiration of trademarks carrying cultural resources relative to jurisdictions without it. Column (2) of Table 5 reports the results. The estimated coefficient of -0.542 ($p < 0.01$) corresponds to a decline of approximately 42 percent in Māori-related trademark expirations at IPONZ following the reform. Consistent with the trademark-level analysis, firms retain trademarks whose value is augmented by the certification premium conferred by MAC review. These results provide support for Prediction 2 at the portfolio level.

²⁴We note that observation counts differ across columns because Poisson pseudo-maximum likelihood estimation drops firm-jurisdiction-year panels that are singletons or perfectly predicted by the fixed effects.

Table 5 Portfolio-Level Estimates: Registration and Expiration

	Registered (1)	Expired (2)
Treat $\times$ Post	−0.485*** (0.103)	−0.542*** (0.153)
<i>Ave. family size</i>	−0.020*** (0.006)	−0.016* (0.009)
Firm-jurisdiction fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Observations	2,451	1,307
Pseudo R^2	0.11	0.19

Note. The table reports Poisson pseudo-maximum likelihood estimates. The dependent variable in Column (1) is the count of Māori-related trademarks registered; in Column (2), the count expired. Treat equals one for applications at IPONZ. Post equals one for filing years after 2003. Standard errors clustered at the firm level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Strategic Jurisdiction Choice

The main results establish that Māori-related registrations decline and expirations fall at the portfolio level. A natural question is whether these patterns reflect firms that actively operate across jurisdictions. To answer this, we restrict the sample to firms that filed Māori-related trademarks in both New Zealand and abroad around the reform window. We require at least one Māori-related trademark registered in New Zealand before 2003 and at least one registered abroad after the reform. These firms face a strategic jurisdictional choice and can respond to the reform by reallocating activity across offices and limiting their exposure to ECG review.

Table 6 reports the results for the sample also accounting for potential strategic filing behavior. Māori-related registrations at IPONZ declined by approximately 37 percent ($\beta = -0.457$, $p < 0.01$) and expirations by approximately 32 percent ($\beta = -0.389$, $p < 0.05$). Both effects persist among firms with the capacity to reallocate, confirming that the portfolio-level results are not driven by firms with no international presence.

6.3 Robustness Checks

We assess the robustness of the portfolio-level results along several dimensions. Figure 2 reports event-study estimates for Māori-related trademark registrations at the portfolio level. Coefficients before the Trademarks Act are jointly indistinguishable from zero ($\chi^2 = 10.28$, $p = 0.329$), providing no evidence of differential pre-trends between New Zealand and comparison jurisdictions.

Table 6 Portfolio-Level Estimates: Strategic Jurisdiction Choice

	Registered (1)	Expired (2)
<i>Treat</i> $\times$ <i>Post</i>	−0.457*** (0.126)	−0.389** (0.193)
<i>Ave. family size</i>	−0.020*** (0.008)	0.018 (0.028)
Firm-jurisdiction fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Observations	902	182
Pseudo R^2	0.12	0.10

Note. The table reports Poisson pseudo-maximum likelihood estimates. The sample is restricted to firms with at least one Māori-related trademark registered in New Zealand before 2003 and at least one registered abroad after the reform. The dependent variable in Column (1) is the count of registered Māori-related trademarks; in Column (2), the count expired. *Treat* equals one for applications at IPONZ. *Post* equals one for filing years after 2003. Standard errors clustered at the firm level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Coefficients after the Trademarks Act turn negative and grow in magnitude, becoming individually significant from 2008 onward and remaining persistently below zero through the end of the sample. The corresponding event-study figure for expirations is reported in Online Appendix E, Figure E.1.

The main text estimates a Poisson pseudo-maximum likelihood model, which accommodates zero counts and provides consistent estimates under heteroskedasticity. To assess whether the results depend on the estimator, we re-estimate Table 5 using OLS on $\ln(1 + \text{count})$. The results are comparable (Online Appendix E, Table E.1).

The classification of Māori-related trademarks involves judgment in setting the linguistic threshold. To assess whether the results depend on this choice, we re-estimate Table 5 using a more stringent threshold. The registration effect is larger under the conservative classification, consistent with a cleaner treatment group (Online Appendix E, Table E.2).

The estimated effects could reflect pre-existing trends rather than the reform itself. To assess this, we run a placebo test assigning a false reform date within the pre-period on Māori-related trademarks only. The placebo yields no significant effect, confirming that the results are driven by the 2003 Trademarks Act (Online Appendix E, Table E.3).

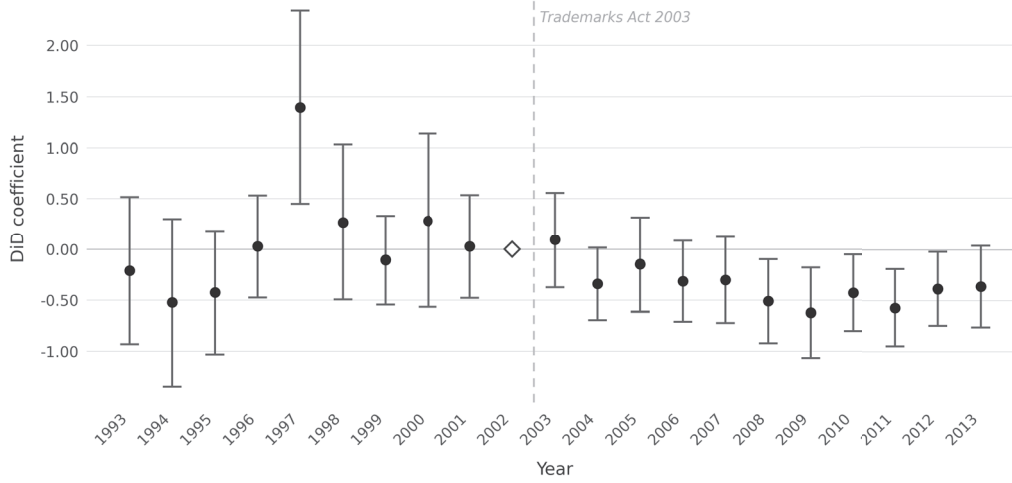


Figure 2 Portfolio-Level Event-Study Estimates for Māori-Related Trademark Registrations

Notes. Event-study estimates for Māori-related trademark registrations at the portfolio level. The figure plots coefficients from a Poisson pseudo-maximum likelihood model with firm-jurisdiction fixed effects that interacts the treatment indicator (*Treat*) with year dummies. The reference year is 2002 (diamond). Error bars indicate 95 percent confidence intervals. Standard errors are clustered at the firm level. The vertical dashed line marks the Trademarks Act 2003.

7 Discussion and Conclusion

In this paper, we showed that ECG reduces the registration of trademarks in New Zealand carrying cultural resources through screening and as compared to jurisdictions abroad. Furthermore, it reduces the expiration of registered trademarks in New Zealand through certification. Firms respond to both margins, and both effects concentrate among commercially active trademarks. We also observe minor shifts in filing behavior across borders. Some firms with cross-jurisdictional filing capacity redirect new registrations toward jurisdictions without MAC review while retaining trademarks already held under MAC review at higher rates.

We contribute to the literature in two ways. First, commons governance theory identifies boundary enforcement as a necessary condition for effective resource governance (Hess and Ostrom 2007, Madison et al. 2010, Ostrom 2010). Ostrom (2010), for example, focuses on settings where the community itself holds the capacity to enforce these boundaries. We show that effective enforcement is achievable when culturally-informed review is embedded within the state’s own gatekeeping process. The MAC operates within the existing individual trademark system, applying MAC review as a procedural step in the standard examination process. The state supplies enforcement capacity while the community supplies cultural expertise. We thereby extend commons governance theory to IP systems where the state administers entry rather than the resource community. In doing so, we respond to recent calls for evidence on whether existing IP institutions can be redesigned to serve collective and indigenous interests alongside private ones (Castaldi et al.

2024, 2025, Jimenez et al. 2022).

Second, the certification literature examines voluntary, standalone programs in which firms elect to participate and bear the cost of external audit (Dranove and Jin 2010, King et al. 2005, Terlaak and King 2006). Prior work treats screening and certification as distinct institutional functions served by separate organizational arrangements. We show that certification arises endogenously from mandatory screening through the composition shift it induces. MAC review screens culturally misaligned applications at registration, shifting the composition of the register toward higher cultural alignment. This composition shift generates a certification premium (Tirole 1996) that raises the value of all registered trademarks, reducing expiration. The concentration of both effects among commercially active trademarks confirms that this complementarity operates through genuine marketplace incentives rather than administrative patterns. The institution is self-reinforcing: screening produces the certification premium that makes compliance worthwhile. Thus, we extend the certification literature by identifying a form of certification that arises involuntarily, that produces opposite-sign effects at two decision margins within the same firm, and that does not require a standalone organization whose independence, funding, or standards must be actively maintained.

Our findings yield practical implications for firms managing trademark portfolios in culturally sensitive markets. Trademarks that clear MAC review acquire a certification premium whose value derives from the institution's governance stringency. Firms that invest in cultural alignment before filing access this premium; while filings routed to jurisdictions without MAC review do not generate such a premium. As similar advisory mechanisms expand to patents and plant variety rights in New Zealand and are considered in other jurisdictions, firms should weigh the short-run cost of stricter screening against the long-run certification premium it confers.

Our results also carry implications for policymakers. ECG reduces misaligned registrations in the jurisdiction where it applies, but the strategic jurisdiction choice results indicate that some firms redirect filings toward jurisdictions without MAC review. Screening in one jurisdiction does not eliminate culturally misaligned appropriation in other jurisdictions. Policymakers considering ECG-style reforms should recognize that MAC review in one jurisdiction leaves an asymmetry in how cultural resources are governed across offices. Our portfolio-level results indicate that multinational firms might reduce their relative filing activity in jurisdictions where MAC review exists. Coordination mechanisms that extend cultural review across jurisdictions could help reduce this asymmetry.

Our study has three limitations that suggest directions for future research. First, the MAC's internal proceedings are not public, which prevents direct observation of the screening process. Our results establish that MAC review reduces registration rates among filed applications, implying that the MAC functions as a genuine screen rather than merely deterring applications before filing. Nevertheless, future research with access to committee-level data could examine the determinants

of MAC recommendations and how they relate to registration decisions directly.

Second, our results capture how firms respond to ECG. However, we do not know whether these responses benefit the cultural community. Future research linking trademark records to indigenous business activity could assess whether ECG's firm-level effects translate into community-level welfare gains and preservation of cultural resources and compare them to the effects from alternative governance mechanisms such as use prohibition or granting *sui generis* rights for cultural resources.

Third, our classification pipeline identifies Māori-related trademarks through their linguistic content, yet the MAC also considers visual elements such as indigenous imagery and design motifs when assessing offensiveness. While we show that ECG shapes firm trademark strategy through the linguistic channel, the visual dimension remains unexplored. Future research could extend the analysis to figurative trademarks and test whether the screening and certification channels operate similarly beyond language.

Taken together, we show that governing cultural common-pool resources through market-embedded institutions can be a viable alternative to both prohibition and *sui generis* property rights. ECG screens entry without foreclosing market access and rewards cultural alignment without subsidizing it. As the commercial value of indigenous cultural heritage grows globally, we hope this research can help inform future policy design and encourages further studies on how culturally-informed community review can be integrated into formal rights allocation systems to protect shared cultural resources while sustaining the exchange that gives them economic value.

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