
Extending the Laundered Funds Destination Theory: Applying the Walker-Unger Gravity Model to Australia-Based Money Launderer Country Preference from 2000-2020

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ABSTRACT: *The purpose of this study is to determine which countries were the top destinations for laundered funds by Australian-based money launderers between 2000 and 2020. A quantitative methodology using a regression research design was used to assess the attractiveness of each country to Australian-based money launderers during the 2000–2020-time frame. The model findings indicate that Australia, Bermuda, Cayman Islands, French Polynesia, Iceland, Japan, Liechtenstein, Luxembourg, Monaco, New Zealand, Northern Mariana Islands, Norway, Qatar, Singapore, Switzerland, and the United Kingdom were the most appealing countries for Australian money launderers between 2000 and 2020. The results of this inquiry contribute to the existing information on global money laundering patterns by applying the revised Walker-Unger model to ascertain which countries money launderers based in Australia used as funding destinations between 2000 and 2020 and whether there were any changes in the ranks during times of economic slowdown. The revised Walker-Unger model is among the limited number of instruments that can gauge money laundering levels.*

Key Words: *Illicit finance, Money laundering, Walker-Unger model.*



1. Introduction

Money laundering is the act of concealing the illegal source of earned income from law enforcement and regulatory authorities, enabling criminals to freely use the funds obtained through illegal operations. Common criminal activities linked to money laundering encompass drug trafficking, arms smuggling, governmental corruption and fraud, white-collar crime, tax evasion, and prostitution, among other illicit practices. The objective of a money laundering method is to create the perception for authorities that the cash generated are derived from lawful economic activity rather than illicit activities. This illusion enables the unrestricted circulation of those monies within the system, allowing criminals to derive economic gains from their illegal activities.

Money laundering has been a consistent social ailment in Australia for several decades with the most recent estimates placing the amount of laundered funds at \$28 billion per year (AUSTRAC, 2024). The first anti-money laundering law in Australia was the Proceeds of crime Act passed in 1987. Followed by the Financial Transactions Reports Act of 1988 which required financial institutions to report certain transactions to the Australian Transaction Reports and Analysis Centre (AUSTRAC). AUSTRAC is the country's financial intelligence unit (FIU) and money laundering enforcement authority. It was established in 1984 and was one of the first FIUs. Australia's anti-money laundering efforts center on reporting requirements of suspicious transactions, strengthening the legal framework, and deterrence & enforcement. Nevertheless, the extent of illegal financial activity and its impact on the lawful economy remain uncertain (Popa & Popa, 2013; Roman et al., 2023; Tiwari et al., 2020).

According to Fituni (1998), there is a significant lack of research in the field of money laundering on the understanding of its causes, the places where it occurs, the methods typically employed, and its overall prevalence. Furthermore, the absence of theories and models in the literature on money laundering impedes analysts' capacity to situate the problem of money laundering within the specific context of their own countries. This study seeks to fill this void by collecting economic and country-specific data spanning from 2000 to 2020. The Walker-Unger gravity model will be utilized to ascertain the percentage of illicitly obtained monies exchanged between Australia and 186 other nations.

The model results provide valuable information regarding the favored destination of money launderers based in Australia. As such, they shed light on a specific aspect of money laundering activities in Australia during the analyzed period. The secondary aim of this study is to assess whether there have been any alterations in the preferences of Australia-based money launderers during the three most recent episodes of global economic recession. The selected time periods include the 2001 terrorist attacks on September 11th, the global financial crisis that occurred in 2007 and 2008, and the ongoing COVID-19 pandemic. This investigation aims to apply and verify the Laundered Funds Destination Theory proposed by Roman and Schaefer (2022). According to this theory, once a money launderer chooses a destination for their illegal funds, they are unlikely to change it unless there are compelling external factors that necessitate a change.

2. Literature Review

Money laundering research has traditionally been conducted at a microeconomic level. Most of these studies have employed an informative technique rather than focusing on evaluations, forecasts, or descriptions (Wait, 1997; Ziegenfuss, 1996). The persons who are interested primarily concern themselves with safeguarding the public. The focus of their narrative is on rules, procedures, standards, and regulations (Government Accountability Office, 2019; FATF, 2020). Research on money laundering in the field of education has primarily concentrated on deterrent strategies from a macroeconomic standpoint, employing predominantly arithmetic models in the research methodology (Ferwerda et al., 2020; Walker & Unger, 2009).

To successfully launder money, it is crucial to maintain a significant distance between the cash and its illegal origins. The implementation of innovative corporate strategies, such as accounting bookkeeping, inventory systems, cost accounting, and supply chain management, along with government lobbying, helps to streamline this process. Some examples of these activities include creatively documenting financial gains and expenditures, replenishing illegal substances and firearms, coordinating operations and transportation, and bribing government and other administrative personnel, among other tasks. Lawful accounting, financial, and corporate transactions possess distinct attributes that differentiate them from illicit activities, rendering the latter vulnerable to detection through auditing and forensic accounting procedures. The objective of money laundering is to transfer the legitimate characteristics of funds to illicit activity.

The development of the globalized financial system and advanced information technology has made it easier to connect legal accounting activities to illegal trade and avoid detection by regulatory authorities (Filotto & Masciandaro, 2001; Zdanowicz, 2009). The process of money laundering involves three main stages: (1) placement, where illegal funds are introduced into the financial system; (2) layering, where the funds are passed through multiple accounting and business transactions to conceal their origin; and (3) integration, where the funds are reintroduced into the economy with their source concealed and ready for use. Effective prevention of money laundering necessitates cooperation among academia, the business sector, financial institutions, law enforcement, and policymakers (Ferwerda et al., 2020; Unger, 2009; Walker & Unger, 2009).



Money laundering in Australia, has evolved over time in response to various factors, including the growth of organized crime, regulatory developments, and the international financial system's increasing complexity. Australia's initial history, characterized by territorial expansion, surges in gold mining, and the formation of financial institutions, witnessed the emergence of illicit financial activity. After World War II, Australia underwent economic expansion and the establishment of a more intricate financial system. During this era, there was a significant increase in the emergence of organized crime syndicates, which necessitated the practice of money laundering.

Australia had another surge in organized criminal activities, specifically in the areas of drug trafficking, gambling, and smuggling, throughout the 1960s and 70s. These operations produced substantial quantities of illegal funds that required laundering to enter the legal economy. The Nugan Hand Bank was involved in one of the most notorious instances of money laundering in Australia during the late 1970s. The bank was utilized for the illicit process of laundering drug proceeds, and its downfall in the early 1980s revealed the magnitude of financial wrongdoing in the nation.

In the early 1980s, the Australian government acknowledged the necessity of implementing more robust measures to combat money laundering. The Australian Financial Intelligence Unit (FIU) was founded in 1984 as a division of the Australian Federal Police (AFP), representing a notable advancement in combating financial offenses. Subsequently, two significant laws were enacted: firstly, the Proceeds of Crime Act of 1987, which granted authorities the power to seize assets acquired through illicit activities, and secondly, the Financial Transaction Reports Act of 1988, which mandated financial institutions to disclose specific transactions to AUSTRAC. These legislations were crucial in the fight against money laundering and the monitoring of questionable financial transactions.

The worldwide integration of financial systems and the growing complexity of money laundering methods have resulted in increased international collaboration to tackle financial crime. Australia increased its engagement in international endeavors to combat money laundering, notably by joining the Financial Action Task Force (FATF). The Australian government enacted the Anti-Money Laundering and Counter-Terrorism Financing Act in 2006. This legislation aimed to modernize the legal framework surrounding anti-money laundering by aligning it with international standards and broadening the responsibilities of financial institutions in preventing money laundering and terrorism financing.

The emergence of digital currencies and online financial services has introduced fresh obstacles in the fight against money laundering. The Australian government has taken measures to regulate digital currency exchanges and improve monitoring capabilities. The government established the Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry (2017-2019), which revealed extensive wrongdoing in the financial sector, including occurrences of money laundering. The commission's conclusions prompted a need for enhanced regulatory monitoring and stricter enforcement of anti-money laundering legislation. Australian authorities have recently prioritized addressing the utilization of real estate, luxury goods, and other valuable assets in money laundering operations.

Australian authorities are continuously challenged by the ongoing intricacy of financial systems, as well as the growing sophistication of money laundering techniques. Australia continues to actively engage in worldwide endeavors to counteract money laundering, which include collaborating with entities such as the FATF and taking part in global conferences focused on financial crime. Australia's historical involvement in money laundering mirrors wider worldwide patterns, characterized by a transition from relatively straightforward financial offenses in the early 20th century to intricate, globally interconnected schemes that necessitate advanced regulatory and law enforcement measures.

Significant gaps exist regarding the origins of money laundering, estimates of its prevalence, the countries where it is most conducted, the methods used, and the effectiveness of anti-money laundering (AML) legislation. To gain a better understanding of money laundering, research efforts should be directed towards addressing these gaps (Fituni, 1998). Only a small number of articles thoroughly examine the subject. Especially rare are the ones that uncover the origins of the phenomenon, its actual extent and importance, as well as methods and schemes for hiding the illicit activities. Money laundering literature indicates a lack of trustworthy data on illicit financial activity, sprouting research gaps in anti-money laundering initiatives. The absence of data begets inadequate money laundering information, inconsistent identification of preferred destinations, unreliable means of detection, ineffective legislation, and uneven law enforcement initiatives, among other factors (Dobrowolski & Sułkowski, 2020; Popa & Popa, 2013; Sinuraya, 1997).



In the early 2000s, Australia was at the forefront of the anti-money laundering and regulation discussion with active participation in creating an FIU, passing novel AML legislation, implementing FATF recommendations, and cooperating on anti-terrorism financing. Culminating with in 2014, the Australian government committing to meet the recommendation by the Financial Action Task Force (FATF) to include Designated Non-Financial Businesses and Professions (DNFBPs) – commonly known as lawyers, accountants, and real estate agents – under the umbrella of anti-money laundering and counterterrorism finance laws (AML-CTF) (Jackson & Citowicki, 2022). However, little-to-no progress has been made since.

There has been a wide array of money laundering scandals in Australia. For instance, the National Australia Bank was investigated by the country's financial crimes regulator over concerns the lender broke money laundering laws (BAE Systems Australia Logistics Pty Ltd., 2021), Crown Resorts, casino operator, was also investigated by the country's financial crimes regulator for potential breaches of anti-money laundering and counter terrorism financing rules (Ainsworth, 2023), Westpac Bank was also accused of the biggest breach of money laundering laws in the nation's history. It alleges that the bank did not adequately monitor and report A\$11bn (\$7.5bn) in suspicious transactions (Garcia, 2020), the Commonwealth Bank of Australia was also enthralled in a money laundering scandal, which lead to new anti-money laundering legislation and further empowered the Australian Transaction Reports and Analysis Centre (AUSTRAC, 2018).

Newbury (2017) conducted a study that identified the vulnerabilities in Australia's anti-money laundering/counter-terrorism financing (AML/CTF) regime. The author notes the biggest vulnerability of current anti-money laundering measures is unfamiliarity with the origin and/or destination of funds. the ease with which entities can skirt regulatory requirements along with the staunch opposition from the regulated professions (e.g., lawyers, accountants, bankers, etc.). The most recent research on AML measure in Australia was conducted on the effectiveness of self-compliance by private/public corporations and its effect on corporate culture (MENA Report, 2023). However, those findings do not apply to the criminal enterprise.

2.1. Modern Money Laundering Schemes

Cryptocurrencies are unique in that they lack financial institutions and/or government approval for transfer of money. In a study of cryptocurrencies by Hillman (2021) he determined that there is lack of regulations around cryptocurrencies and that the United Kingdom has not kept pace with anti-money laundering regulations international best practices like the United States or Australia (Hillman, 2021). Shillito (2016) in his study found that today's money launderers have started to use Non-Traditional Payment Methods (NTPM's) to launder money using internet based, wireless devices or private networks. He identified five NTPM's: informal value transfer systems (IMVTs), wire transfers, stored value cards (SVCs), mobile payments and cryptocurrency. Because these payments methods are new and not heavily regulated yet and can be easily transferred internationally, they have created new opportunities to transfer money globally and become popular for money laundering (Shillito, 2016).

The Australian government wants to start regulating Bitcoin because it can easily be used to commit money laundering schemes. Bitcoin is used heavily to facilitate the sale and trafficking of drugs, firearms, chemicals, cyber-attacks, and child exploitation because the industry is yet to be strictly regulated. The problem is that Bitcoin fall under a loophole in the E-currency law because the law defines E-currencies as "an internet-based, electronic means of exchange" backed by something physical like a "precious metal" (gold or silver), or "bullion". However, Bitcoin is defined as digital currency and is not backed by any physical assets but rather by a "cryptographic algorithm" (Chau, 2017). In the proposed regulation the financial intelligence regulator Australian Transaction Reporting and Analysis Centre (AUSTRAC) will have the power to regulate digital currency exchanges like, Independent Reserve and BTC Markets, by requiring them to report threshold transactions, suspicious matters and maintain accurate transactions records with AUSTRAC. It will also require businesses that trade in digital currency to be registered with AUSTRAC (Chau, 2017, Seppala, 2016).

In Australia, wildlife, timber and human trafficking and casinos are prevalent amongst organize crime organizations to launder money. Julian Newman, director at Environmental Investigation Agency (EIA), has stated that money laundering seems to be associated with the illegal wildlife trade, but very few cases of successful prosecution of wildlife traffickers for financial crimes (Kenyon, 2021). The illegal wildlife trade is the fourth largest type of crime in the world after arms, drugs and human trafficking, and it generates US\$7–



23 billion in profits every year, according to the EIA. In 2018 the King Roman Group in Northern Laos was found to be involved in narcotics, wildlife and human trafficking. Macau is recognized as the global hub for money laundering (Kenyon, 2021). Most of the laundered money used at Crown's Casinos in Australia is said to have come from mainland China, via Macau, where Chinese people can sell goods like watches for cash or use mobile applications and cryptocurrencies. Newman states that "one way to combat money-laundering and related crimes is for global financial institutions, including multinational banks, to make greater efforts to identify and submit suspicious transaction reports to the relevant authorities. This would make it harder for wildlife criminals to move money through the formal banking system" (Kenyon, 2021). While the legal status of cannabis continues to evolve in many countries, today it is still a large source of illegal money laundering funds. According to Tiwari and Ferrill (2023) there have been no studies about whether cannabis policy changes on money laundering would address this issue (Tiwari & Ferrill, 2023).

The Perth Mint which is owned by the Gold Corporation and is in the business of mints, gold, silver and platinum legal tender coins was investigated for failure to comply with Anti-Money Laundering and Counter-Terrorism Financing Act 2006 (AML/CTF Act) laws. It is easy to use gold for money laundering purposes because it can be melted, it's easy to move and it's hard to trace its origin (Grigg et al., 2023). According to AUSTREC "all businesses enrolled with AUSTRAC must have robust systems in place to ensure they meet their anti-money laundering & counter-terrorism financing obligations (Bourke, 2023; Grigg et al., 2023). The Mint is required to conduct checks on the sale of gold and examine the source of their funds. The Mint has admitted that it did not know that these laws applied to them until 2021. AUSTRAC has completed an audit, and the Gold Corporation agreed to cooperate with the findings and work with AUSTREC to comply with the anti-money laundering and counter-terrorism laws (Bourke, 2023). Four Corners has been advised that the mint failed to register more than 5,000 transactions, with each failure depending on the gravity, could be liable to be fined of up to \$21 million, however no penalties have been issued yet (Bourke, 2023; Grigg et al., 2023).

Alternative Remittance Services (ARS), once used to transfer money between friends and family for many years, have been linked to money laundering in recent years. In Australia ARS's fall under the reporting jurisdiction of AUSTRAC and the Anti-Money Laundering and Counter-Terrorism Financing Act 2006 (AML/CTF Act). ARS's are classified as a service required to report suspicious matters and register with AUSTRAC before services can be provided and are required to file an annual report with AUSTRAC. The report found that there was a misuse of the remittance system that has led to instances of money laundering (Rees, 2010).

According to McGhee (2017) Australia's political donations are not monitored and are amongst the most relaxed in the world (McGhee, 2017). The author states that 49% (approximately \$77 million) of the money received by political parties in 2016 came from undisclosed sources. This happens because only donations of \$13,001 or more are required to be disclosed. They also used third party intermediaries, called associated entities, to disguise the sources of cash in money laundering. In 2016, \$218 million was received by associated entities in political campaign money (McGhee, 2017).

A study by Gurung et al. (2010) of the prepaid card industry found that another method used to launder money is the use of small and medium prepaid card service providers (SME). The loophole money launders use is that these providers are not yet fully covered under the Anti-Money Laundering and Counter-Terrorism Financing Act 2006 (AML/CTF Act). The exemptions from compliance are: \$1,000 for cards that can be used to withdraw cash and \$5,000 for cards without the facility to withdraw cash. The different categories of the prepaid cards are: stored value cards (SVCs), gift cards or network branded cards and "pay early" cards (Gurung et al., 2010). The advantages of these cards for money laundering are anonymity, convenience of buying the cards online and via retailers, no credit checks and worldwide acceptance. Over 90% of Australia's economy is comprised of small and medium service providers. Requiring further compliance reports from these entities would be costly and hard to manage by SME's (Gurung et al., 2010).

2.2. Central Banks

In the 2007 study by Van der Zahn et al. they found that there is little concern regarding anti-money laundering disclosures with the practices of the central banks of Australia (Reserve Bank of Australia-RBA) and Ukraine (National Bank of Ukraine-NBU). More resources should be considered and deployed by central banks to address anti-money laundering enforcement.

Australian Reforms and a Global Approach to Combating Money Laundering.



The article by [Ross and Hannan \(2007\)](#) discusses how the Australian Government enacted two reforms to aid in combating money laundering: Anti-Money Laundering and Counter-Terrorism Financing Act 2006. These reforms were created after an evaluation conducted by the Financial Action Task Force in 2005 found regulatory deficiencies. The money laundering landscape has changed from mainly drug trafficking funds to include organized fraud, financing of terrorism corruption and theft at the state level. These reforms aim to address privacy related issues, the role of the Australian Transaction Reporting and Analysis Centre (AUSTRAC) with financial institutions and reporting entities, and an increase in customer due diligence requirements ([Ross & Hannan, 2007](#)).

In a 2022 Middle East/North Africa (MENA) Report, AUSTRAC CEO, Nicole Rose, said that “the nature of financial crimes transcends borders, and underlies the need for international cooperation and regional solutions. Criminal and security threats to financial systems go to the heart of national security and prosperity, whether transnational organized crime or corruption. The ease of movement of goods, people, and money globally means an agile and collaborative approach is needed to combat financial crime” (MENA Report, 2022). The report discusses that one approach to combat money laundering is to follow the money across borders and diverse financial ecosystems by sharing intelligence and financial tools with global partners ([MENA Report, 2022](#)).

According to BAE Systems’ 2021 report, Australia's most versatile defense and security company, there is a need for more collaboration and shared intelligence. The research suggest “banks and financial institutions, policy makers and law enforcement, need to come together in what is described as a Fin Crime Feedback Loop to better tackle money laundering challenges”. According to the report many financial institutions are looking for more support from law enforcement bodies, with 50% of the respondents stating that they currently do not feel supported and 32% are asking for more shared industry intelligence. Enda Shirley, Head of Compliance at BAE Systems Applied Intelligence, commented in the report: “For real change to happen, collaboration across the anti-money laundering industry is essential. This means law enforcement, policy makers, financial institutions and technology consistently working together more closely to share insights and intelligence” ([BAE Systems Australia Logistics Pty Ltd., 2021](#)).

2.3. Money Laundering Fines

Australia's second-largest retail bank Westpac was fined 1.3 billion by AUSTRAC in reference to transactions and transfers that funded terrorism and human trafficking. Westpac admitted that it violated the Anti-Money Laundering and Counter-Terrorism and Financing Act 2006. The regulator found 23 million financial crime violations. Some of the other charges were that they did not "carry out appropriate customer due diligence in relation to suspicious transactions associated with possible child exploitation" ([Garcia, 2020; Khadem, 2020](#)).

Another one of Australia’s largest banks, The Commonwealth Bank of Australia (CBA), is facing a \$700 million Australian Dollars fine for breaching Anti-Money Laundering and Counter-Terrorism Financing Act 2006 (AML/CTF Act) by failing to report over 53,506 cash transactions totaling over \$625 million which exceeded the threshold limit of \$10,000 Australian Dollars between 2012 and 2015 ([Bhandari, 2017; Hakim, 2019](#)). The bank accepted that it did not comply with the requirements of its AML/CTF program relating to monitoring transactions on 778,370 accounts. AUSTRAC’s CEO, Nicole Rose was happy with the results and said, “as we have seen in this case, criminals will exploit poor business practices to launder the proceeds of their crimes”. He hopes that this outcome sends a strong message to the industry that non-compliance with the AML/CTF Act will not be tolerated ([AUSTRAC, 2018](#)). Another bank being investigated for areas of serious concerns and compliance issues by AUSTRAC is National Australia Bank Limited (NABZY) ([Bhandari 2017; Hakim 2019; & Zacks Equity Research, 2021](#)).

The HSBC Australia bank is being visited by a monitoring team as part of the bank's agreement with U.S. authorities to avoid criminal prosecution. During 2013, HSBC paid \$1.9 billion US Dollars in fines due to U.S. laws violations related to money laundering. Failure to comply with the audit could lead to further fines for HSBC holdings ([Sanglap, 2015](#)).

Crown Casinos has been fined \$450 million in conjunction with violations related to Australia's anti-money laundering laws by AUSTREC. Crown has acknowledged that it failed to properly assess the money laundering and terrorism financing risks, that they did not have proper risk-based systems in place, it did not have a transaction monitoring program that was appropriate to the complexity of their business, and it did not



conduct customer due diligence. They are working with AUSTREC to ensure compliance with AML/CTF reporting obligations (Ainsworth, 2023). Other entities under investigation by AUSTRAC and facing possible multi-million-dollar fines for serious non-compliance with the Anti-Money Laundering and Counter-Terrorism and Financing Act 2006 are: Star Entertainment's Sydney & SkyCity Adelaide Casinos (Janda & Whitson, 2021).

2.4. Lawyers, Accountants, and Tranche-Two Entities

Australia has become an attractive destination for money laundering by organized crime groups and terrorists due to major regulatory gaps related to the use of professional services like, lawyers, accountants, real estate agents, and dealers in precious metals and stones (known as tranche-two entities). According to the MENA Report (2023) if these regulatory gaps are not addressed Australia's financial system could remain exposed to criminal manipulation through professional services and possibly weakening of the integrity of Australia's Anti-Money Laundering and Counter-Terrorism Financing Act 2006 (AML/CTF Act) (MENA Report, 2023).

Australia currently does not have anti-money laundering laws that cover real estate agents, lawyers and accountants making it very attractive to launder money via real estate. Australia's hot property market is an attractive haven for criminals, with estimates of billions of dollars are currently laundered through residential property (Stamp & Walker, 2007; Lannin, 2017). According to AUSTRAC laundering funds using real estate in Australia seems to be an established method, with an estimate \$1 billion in suspicious transactions coming from Chinese investors in 2015-16 (Lannin, 2017). According to Besser et al. (2015) Chinese investment in Australia's real estate rose by more than 400% in five years, with about \$12 billion spent in the 2014 (Besser et al., 2015).

According to a 2017 report titled Doors Wide Open: Corruption and Real Estate in Four Key Markets: Australia, Canada, UK and USA have been identified as the top spots for corrupt officials and/or criminals to launder money using real estate (Martini, 2017). The problems identified in the report that have allowed corrupt individuals, companies, and criminals to anonymously buy luxurious property are:

- Inadequate coverage of anti-money laundering provision.
- Identification of the beneficial owners of legal entities, trusts and other legal arrangements is still not the norm.
- Foreign companies have access to the real estate market with few requirements or checks.
- Over-reliance on due diligence checks by financial institutions leads to cash transactions going unnoticed.
- Insufficient rules on suspicious transaction reports and weak implementation.
- Weak or no checks on politically exposed persons and their associates.
- Limited control over professionals who can engage in real estate transactions: no "fit and proper" test.
- Limited understanding of and action on money laundering risks in the sector.
- Inconsistent supervision.
- Lack of sanctions (Martini, 2017).

Real estate agents in Australia are not subject to the provisions of the Anti-Money Laundering and Counter Terrorism Financing Act 2006 and neither are lawyers and accountants who may be a part of real estate market. This means that there are no reporting requirements during the sale of real estate properties. The report states that in Australia, 70% of Chinese buyers paid in cash (Martini, 2017).

Newbury (2017) examined that designated non-financial businesses and professions (DNFBPs) such as: accountants, lawyers and real estate agents, are basically exempt from regulation under Australia's Anti-Money Laundering and Counter-Terrorism Financing Act 2006 (AML/CTF Act). This is not consistent with Australia's AML/CTF regulations and is considered a weakness in the effort to combat and prevent money laundering. The concerns against regulation of this industry center around: compliance and reporting costs, independence from executive control, and training and education. The use of lawyers, accountants, and real estate agents by criminals to is key to the success of money laundering system (Newbury, 2017). According to Geary (2009) "it is a fact that DNFBPs are considered to act as the gatekeepers for money launderers".

The accuracy of critical academic investigations into social phenomena needs to be enhanced due to the reports provided by Australian authorities, which fail to adequately reflect the methodology and sources of data collecting. An obstacle that numerous scholars encounter is the requirement for greater specificity in



different aspects of researching money laundering. Money laundering recognition models originated as improvised methods focused on criminals' understanding of illicit transactions. The prevailing model for detecting money laundering is employing auditing processes to detect irregularities in legitimate transactions. The advent of globalization and the digitalization of monetary markets has rendered old methods of quantification and representation outmoded.

Today, numerous money laundering systems have advanced and facilitate the detection of illicit activities. To stay ahead of individuals and organizations engaging in fraudulent activities, it is necessary for anti-money laundering research, methodologies, and detection models to progress by adopting a more comprehensive strategy (Cassella, 2018). Although there have been some advancements, there are still significant gaps in our understanding of the involvement of various entities in money laundering, the extent of money laundering in the legal economy, and the methods used for detection. Additionally, there is a need for research that focuses on the ongoing impact of money laundering on our societies today (Tiwari et al., 2020).

Researchers have a wide range of methods available to them for modeling money laundering behavior (Unger, 2009). The Walker-Unger gravity model is widely regarded as one of the most effective approaches for determining the potential destination of illegal financial flows. This approach has gained support in the academic community since it is based on an international economic model and incorporates criminology by considering economic perspectives (Hendriyetty & Grewal, 2017). Nonetheless, the model has garnered scrutiny for producing erroneous results (Reuter, 1983, 2007). The Walker-Unger model has been employed in several research across diverse contexts, establishing its reliability as a reliable simulation for tracking the financial capital flows involved in money laundering.

Walker first developed and applied his model to Australian illicit flows in 1992. The original Walker model combined Isaac Newton's gravity formula with Walker's own experience and expertise as an Australian law enforcement officer to develop a laundered funds index for the Australian economy. In Walker, 1995 began to present his findings Australian Transaction Reports and Analysis conference, a practice that continued until 2005 when it was taken over by other researchers. In Walker, 1999 applied his model to global money laundering flows an endeavor that was the first attempt to model global money laundering activity.

Inspired by Walker's seminal work, Unger et al. (2006) modified the original model by updating the distance deterrence variable and adding financial deposits to the index. The authors applied the new Walker-Unger model to the Netherlands economy. The study found that approximately 18-25 billion euros were laundered in the Netherlands in 2005. Finally, in 2009 Walker and Unger joined forces and updated Walker's (1999) efforts of measuring worldwide laundered funds.

Roman et al. (2023) applied the Walker-Unger model to determine Russian-based money launderer destination preference. The authors used the model's results to further validate the Laundered Funds Destination Theory, which suggests that once a money launderer has selected a destination for their illicit funds the destination does not tend to change. The investigations results support the theory as Russian-based money launderer destination preference remained mostly fixed through a 20-year period.

Roman and Schaefer (2022) utilized a model to identify the optimal destination for illicitly obtained monies for money launderers operating in the United States between 2000 and 2020. The study's result revealed that the preference for U.S.-based destinations among money launderers remained unchanged even throughout periods of recession and inflation. The investigation's result formed the foundation for the Laundered Funds Destination Theory.

A destination study was undertaken in 2021 by Roman et al., where the model was utilized to analyze money laundering flows in Mexico from 2000 to 2015. The study's findings indicate that money launderers headquartered in Mexico tend to prefer destinations that are geographically and economically close, as well as countries with well-established financial markets and cultural affinity. The study findings indicated that the results were statistically significant with a confidence level of .05.

Ferwerda et al. (2013) conducted a study examining various efforts to quantify money laundering activity and the challenges in evaluating the efficiency of these models. They suggested that trade-based money laundering models, such as the Walker-Unger model, which rely on established international trade principles, yield more accurate outcomes. In a subsequent study, Ferwerda et al. (2020) used gravity-based simulation to depict the global flow of illicit funds in financial money laundering, finding that these illegal funds typically constitute a small percentage of each country's GDP. Their research highlighted that most money laundering



occurs in the United States and the United Kingdom, while Belgium and Luxembourg have the highest proportion of money laundering relative to their GDP. In contrast, Japan and South Korea exhibit the lowest proportions of money laundering flows.

Balani et al. (2017) extended Ferwerda et al.'s (2013) recommendation by employing TBML models to evaluate the extent of money laundering in developing Asian economies from 2001 to 2015. They observed that Asian countries tend to cluster together in illegal financial practices. Wahaj et al. (2018) applied the Walker-Unger model to Pakistan to forecast the flow of laundered funds, finding that money launderers prefer nations with robust financial sectors, strong monetary systems, and political stability. The initial implementation of the Unger et al. (2006) model focused on analyzing financial cash flows related to money laundering in the Dutch economy, revealing that money launderers headquartered in the Netherlands favor destinations with strong economic, monetary, and geographical ties.

Researchers have explored alternative monetary models to measure illegal economic activities. Roy (2017) utilized the IS-LM model to quantify the worldwide informal economy, discovering that economic growth combined with low unemployment levels reduces the underground economy. Gasparèniè et al. (2018) employed the MIMIC model to examine the shadow economy, finding that factors such as Internet access, information technology, involvement in innovative financial and economic instruments, and robust eCommerce presence, as well as the flow of cryptocurrencies, do not provide sufficient information to accurately estimate the underground financial economy. Their study also noted that the outcomes were influenced by the limited time span of different financial instruments. Remeikienè et al. (2018) identified employment levels, gender pay discrepancy, and income inequalities as causal factors influencing the informal economy, using the MIMIC technique to analyze Eurozone data from 2005 to 2016.

Chan et al. (2020) developed a technique to identify the underlying elements that impact an individual's inclination to report suspicious financial activities. They found that regulatory focus and administrative culture significantly affect the reporting of unlawful financial activities, while stress and character qualities were major obstacles. Additionally, Loayza et al. (2019) developed a long-term growth model that examined both illicit financial activities and legal businesses in Colombia. This model estimated the magnitude of illicit income relative to laundered assets, though it noted that certain concepts, such as different financial and economic contexts, asset evaluations, and capital availability, may not be universally applicable.

In Schneider's (2019) research, the focus was on white-collar crime in Paraguay, specifically through the lens of the preventive hypothesis. The study found that high levels of fraudulent behavior create an environment conducive to the misallocation of financial assets and human capital, leading to inefficiencies in the production of goods and services. It also highlighted those lenient measures to combat fraud, such as the failure to prosecute white-collar criminals, may incentivize additional financial crimes by allowing perpetrators to avoid penalties. Barone et al. (2017) utilized the MIMIC model to investigate the correlation between the underground market, the act of disguising illegally obtained money, and economic activity fluctuations. Their study suggested that business cycles can influence clandestine financial activities, proposing that the magnitude of illegal funds could be affected by interest rates throughout the economic business cycle.

This investigation uses the Walker-Unger gravity model to generate results in the same manner as the Roman et al. (2023); Roman and Schaefer (2022); Roman et al. (2021); Ferwerda et al. (2020); Wahaj et al. (2018); Balani et al. (2017) and Ferwerda et al.'s (2013) studies. Following is the application formula

$$P(X, y_i) = 1 / n \sum_{i=1} [attractiveness (y_i) / distance (X, y_i)] * attractiveness (y_i) / distance (X, y_i)^2$$

where;

$P(X, y_i)$: The proportion of funds being transferred from country X to country Y. For instance, let X represent a specific country (Australia), and let y_i represent another country where i ranges from 1 to n, representing all countries in the world. For instance, the proportionate quantity of money transferring from country X (Australia) to nation y_i (United Kingdom) is equivalent to the attractiveness of Australia, accounting for the distance between Australia and the U.K. To ensure that the sum of the sums equals 1, the weighted desirability index for money laundering is modified based on the overall weighted attractiveness findings for all nations.

$Attractiveness (y_i)$: The level of attraction that country_y generates for money launderers based in country_x to engage in money laundering activities in country_y.



Distance $(X, y)^2$: The level of intricacy involved in the engagement of money launderers based in country_x in money laundering operations in country_y.

This research will contribute to the existing gravity model proposed by Unger et al. (2006). The following is an explanation of the factors and sources of data utilized in this research.

- GDP per capita is calculated in US dollars (\$) for the period from 2000 to 2020 and adjusted relative to Australia. The study utilizes data from the Central Intelligence Agency (CIA) World Factbook.
- Bank Secrecy (BS) is a rating scale ranging from 1 (indicating the absence of secrecy laws) to 4 (indicating the presence and enforcement of bank secrecy regulations). The data sources consist of the most recent available reports from the following entities: (a) The Organization for Economic Co-Operation and Development (OECD) has released a report on worldwide tax co-operation, specifically focusing on the progress made in identifying and removing harmful tax practices. (b) Additionally, the OECD has published a paper on enhancing the accessibility of bank data for tax purposes. Countries were assigned a score of 1 if their legal system is derived from civil law and if they do not have any additional legislation regarding privacy. Countries were assigned a score of 2 if their legal system was derived from common law but lacked any additional legislation pertaining to bank secrecy. Those with additional protections for confidentiality were assigned a score of 3, whereas those on the blacklists of FATF, FSF, or OECD earned a score of 4.
- Government Attitude (GA) scale measures the level of government support for anti-laundering efforts, ranging from 0 (indicating a government that is opposed to anti-laundering measures) to 4 (indicating a government that is tolerant of money laundering). Those that are members of the FATF are assigned a score of 0, whilst those who are currently listed as "Non-Cooperative" by the FATF are categorized with a score of 4. Countries that were previously included in this list are assigned a value of 3. Countries that belong to an anti-money laundering classification, apart from the FATF, are assigned a value of 1. Countries that do not belong to any group or were previously on the non-cooperative register but are now members of a group earn a rating of 2.
- The membership status of nations in the Society for Worldwide Interbank Financial Telecommunication (SWIFT) is represented by a value of 0 for non-member countries and 1 for member countries.
- Financial Deposits (FD) refer to the amount of money that is deposited into the monetary system in relation to the Gross Domestic Product (GDP). The variable in question represents the proportion of demand, time, and saving deposits in banks and other financial institutions relative to the Gross Domestic Product (GDP). This calculation was performed by Unger et al. (2006) using the deflation approach described below:

$$\{(0.5) * [F_t/P_{et} + F_{t-1}/P_{et-1}]\} / [GDP_t/P_{at}]$$

where;

F_t: Demand and time and saving deposits,

P_{et}: End-of period CPI,

P_{at}: Average annual CPI.

GDP_t: End of period gross domestic product

The most recent electronic edition of the IMF's International Financial Statistics was used to obtain raw data. The GDP figures in the local currency, the consumer price index (CPI) at the end of the period, and the yearly CPI were taken from the electronic edition of the IMF. The computations were based on the latest available data from Beck, T., Demitguc-Kunt, A. and R. Levine's "A New Database on Financial Development and Structure."

- Conflict (CF) is measured on a scale ranging from 0 (indicating the absence of conflict) to 4 (indicating the presence of a conflict situation). The value 0 is assigned when there has been no occurrence of conflict since 1989. A value of 1 is assigned if there was a small level conflict that has now been resolved. A number of 2 indicates the previous occurrence of a conflict at a more significant level, which has since been concluded. A number of 3 is assigned to indicate a state of disagreement at the current moment, whereas a value of 4 signifies an ongoing situation of conflict. The data for the CF variable were sourced from the latest online version of the Uppsala Conflict Data Project report.



- Corruption (CR) refers to the Transparency International index that has been adjusted on a scale of 1 to 5, where 1 represents low levels of corruption and 5 represents high levels of corruption. The data on corruption was extracted from the latest Transparency International Corruption Perception index and converted into a scale ranging from 1 to 5. The constant 10 was included to guarantee that all scores are greater than 0.
- The Egmont Group is a binary classification system, where 0 represents non-membership and 1 represents membership. The Egmont group is a consortium of Financial Intelligence Units (FIUs) established to promote and facilitate international collaboration.

The Walker-Unger model incorporates the remaining five variables (language, culture, colonial heritage, trade, and physical distance) into the distance deterrence and proportions section. A crucial aspect of the model is to integrate the attraction scores with a distance deterrence score. Distance deterrence refers to the geographical separation between two countries. As countries become more geographically proximate, the probability of a greater share of money being laundered increases. In the original [Walker model \(1995\)](#) distance deterrence refers to the quantification of the geographical separation between nations. Nevertheless, due to the worldwide integration of financial markets, it is improbable that geographical distance significantly hinders the flow of capital. While physical distance may have some impact, it is more likely that other factors also have an affect. By incorporating additional criteria beside physical distance, it becomes feasible to calculate a distance deterrence score between each country and all other countries. The distance formula proposed by [Unger et al. \(2006\)](#) is as follows:

$$\text{Distance}_{ij}^2 = \text{Language} + \text{Trade} + \text{Colonial background} + \text{Physical distance}$$

where;

Language: Indicates whether the native language spoken in country_x is the same as the native language spoken in country_y.

Trade: Represents the extent of lawful commercial transactions between country_x and country_y.

Colonial background refers to the historical status of country_x and country_y as colonies of a foreign entity.

Physical distance: This refers to the extent of the geographic space between country_x and country_y, measured in geographical miles.

Distance deterrence is a method that allocates a numerical value to countries based on their proximity to other countries, considering factors like as language, culture, colonial history, trade, and physical distance. Countries experience more distance when they possess dissimilar languages, lack cultural affinity or trade links, and/or have a significant geographical separation.

- Language = 0 or 1 (same language 0, different language 1)
- Colonial Background = 0 or 1 (same=0, different =1)
- Trade = 0 or 1 (0 same, 1 different), taken from countries import/export partners. Data was taken from the World Trade Organization (WTO) and the CIA World Factbook
- Culture = 0 or 1 (same ethnicity 0, different ethnicity 1)
- Physical distance = number for zones (1 to 7) 1 if countries are in the same region, 7 if countries have large geographical distance. Regional zones are used to simplify calculations.

If two countries share the same official language or have a commonly used language, they are assigned a score of 0, indicating a minimal distance between them. Colonial background refers to the historical connection of a country as either a former or current colony, or in some way related in a similar manner. If the countries are linked, they are given a value of 0, indicating that there is a shorter distance between them. The CIA World Factbook provided data on language and colonial past.

In this investigation, we use [Roman et al.'s \(2023\)](#) revised Walker-Unger gravity model that incorporates the Form of Government and Free Trade variables into the Distance Deterrence index. Australian-based money launderers leverage globalized free markets, lax regulations in foreign countries, and international trade connections to facilitate their money laundering operations, as indicated in the literature ([FINTRAC, 2022](#); [Fojcik, 2019](#); [Repousis et al., 2019](#); [Sher, 2003](#); [Fituni, 1998](#)). To enhance the dependability of the model, it was necessary to provide a variable that quantifies the influence of the kind of government and free trade agreements (FTA) on the preference of money launderers.

A scoring system ranging from 0 to 3 was devised to evaluate the type of government. Countries were evaluated based on their prevailing system of governance. The scoring system for free trade is based on three



categories: 0 for the absence of a free trade agreement (FTA), 1 for the presence of an FTA, and 2 for the existence of a memorandum of understanding (MoU) or ongoing FTA negotiations. The following information provides the specifics of the newly introduced variables.

- Form of Government: Full Democracy = 0; Flawed Democracy = 1; Hybrid Regime = 2; Authoritarian Regime = 3
- Free Trade = FTA exists = 0; MoU exists, or FTA is being negotiated = 1; No FTA or MoU exists = 2

Figure 1 displays the conceptual map of the model, illustrating the variables comprising the model, their interrelationships, and the resulting estimate produced by the model.

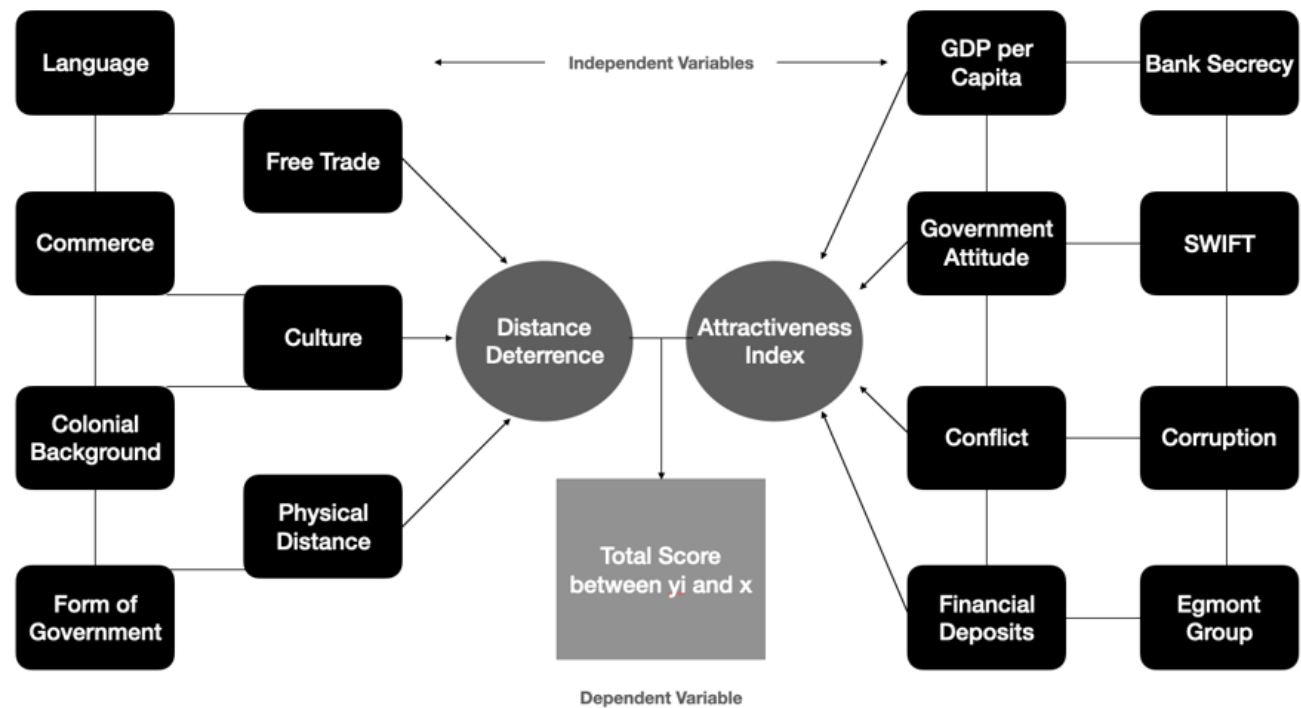


Figure 1. Walker-Unger Gravity Model.

Note: Conceptual map of the Modified Walker-Unger Model.

3. Research Questions

The principal research question is:

- Which countries were the top destinations for laundered funds by Australian-based money launderers between 2000 and 2020?

Additional research questions include:

- From 2000-2020, which countries ranked highest on the attractiveness index score as destinations for Australian-based money launderers?
- Which countries have the greatest similarities to Australia in terms of the distance deterrence score?
- Do country rankings fluctuate during periods of economic downturns such as the September 11 attacks, global financial crisis, and COVID-19?

4. Research Hypotheses

- *H₁: The Walker-Unger model ranks the relative desirability of nations for Australian money launderers between 2000 and 2020, considering the amount of illicit cash that were brought into each country.*
- *H₂: The Walker-Unger model provides a ranking of nations based on their attraction to Australian-based money launderers between 2000 and 2020, using an attractiveness score.*
- *H₃: The Walker-Unger model ranks the level of similarity between countries and Australia by using the distance deterrence score to determine their commonality intensity.*
- *H₄: The rankings of countries were altered because of the economic downturns caused by the September 11 attacks, global financial crisis, and COVID-19.*

5. Method

The aim of this study is to rank the attractiveness of each country to Australian-based money launderers during the 2000–2020-time frame. A secondary objective is to investigate whether variations in country rankings occur during economic downturns (e.g., September 11 attacks, global financial crisis, and COVID-19). The Walker-Unger gravity model, as applied by Roman et al. (2023), is used to conduct this examination. This study adheres closely to the methodology employed by Roman et al. (2023) to ensure consistency in applying the Walker-Unger model and validating the attractiveness simulation.

The simulation tests the analytical capability of the independent variables to determine the degree of desirability each country represents for funds from Australian-based money launderers. The model produces results that are examined, evaluated, and interpreted for their importance across all tested countries. Data sources are provided in Appendix A. All historical records used to generate the model were obtained in February 2024 (Appendix B).

6. Research Instrument

The method of this study involved incorporating publications, statistics, journals, and databases sourced from global and academic institutions. Data was gathered and combined using MS Excel® 2010, SPSS Graduate Pack 18.0 for Windows® software, and the Walker-Unger model (adjusted to account for the observed time intervals) at a significance level of .05. The regression analysis utilized data on money laundering streams, along with indicators, independent variables, and dependent variables. The analysis was conducted in accordance with the research of Roman et al. (2023); Roman and Schaefer (2022); Roman et al. (2021); Ferwerda et al. (2020); Wahaj et al. (2018); Balani et al. (2017); Ferwerda et al. (2013) and Unger et al. (2006). The utilization of foreign organizations as the data source may have made the data vulnerable to inherent participant biases or inaccuracies in publication, which could have had minimal impact on the conclusions. However, this investigation presupposes impartiality in the handling, encryption, assessment, and aggregation of released data.



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7. DATA

7.1. Regression Results for the Investigation's Hypotheses

Table 1. Regression Results.

| | | | | | | | Hypothesis Results | | | |
|------|----------------------|--------------|--------|-------------|---------|----------|--------------------|------------------------------|----|-----|
| | | Coefficients | t Stat | P-value | F-value | R Square | H1 | H2 | H3 | H4 |
| 2020 | Attractiveness Index | 0.0001 | 17.83 | 4.07728E-44 | 210.80 | 0.66 | | Null Hypothesis is rejected. | | |
| | Distance Deterrence | -0.2408 | -6.53 | 4.86785E-10 | | | | | | |
| 2019 | Attractiveness Index | 0.0001 | 21.04 | 6.38674E-54 | 276.64 | 0.72 | | Null Hypothesis is rejected. | | |
| | Distance Deterrence | -0.2109 | -6.87 | 6.93694E-11 | | | | | | |
| 2018 | Attractiveness Index | 0.0001 | 26.12 | 2.46786E-68 | 414.39 | 0.80 | | Null Hypothesis is rejected. | | N/A |
| | Distance Deterrence | -0.1922 | -7.789 | 2.92334E-13 | | | | | | |
| 2017 | Attractiveness Index | 0.0001 | 22.22 | 2.12212E-57 | 297.05 | 0.74 | | Null Hypothesis is rejected. | | N/A |
| | Distance Deterrence | -0.2033 | -5.237 | 3.90999E-07 | | | | | | |
| 2016 | Attractiveness Index | 0.0001 | 23.73 | 9.84194E-62 | 342.35 | 0.76 | | Null Hypothesis is rejected. | | N/A |
| | Distance Deterrence | -0.2091 | -5.61 | 6.24156E-08 | | | | | | |
| 2015 | Attractiveness Index | 0.0001 | 26.36 | 5.37561E-69 | 443.06 | 0.81 | | Null Hypothesis is rejected. | | N/A |
| | Distance Deterrence | -0.2175 | -6.287 | 1.80037E-09 | | | | | | |
| 2014 | Attractiveness Index | 0.0001 | 27.26 | 2.24614E-71 | 455.79 | 0.81 | | Null Hypothesis is rejected. | | N/A |
| | Distance Deterrence | -0.2339 | -6.289 | 1.78742E-09 | | | | | | |
| 2013 | Attractiveness Index | 0.0001 | 29.52 | 3.26586E-77 | 538.51 | 0.83 | | Null Hypothesis is rejected. | | N/A |
| | Distance Deterrence | -0.2190 | -6.742 | 1.44224E-10 | | | | | | |
| 2012 | Attractiveness Index | 0.0001 | 33.51 | 7.05716E-87 | 685.99 | 0.87 | | Null Hypothesis is rejected. | | N/A |
| | Distance Deterrence | -0.2117 | -7.476 | 1.96062E-12 | | | | | | |
| 2011 | Attractiveness Index | 0.0001 | 32.88 | 2.1544E-85 | 667.27 | 0.86 | | Null Hypothesis is rejected. | | N/A |
| | Distance Deterrence | -0.2157 | -7.712 | 4.68223E-13 | | | | | | |
| 2010 | Attractiveness Index | 0.0001 | 29.3 | 1.13936E-76 | 546.79 | 0.84 | | Null Hypothesis is rejected. | | N/A |
| | Distance Deterrence | -0.2286 | -7.881 | 1.65857E-13 | | | | | | |
| 2009 | Attractiveness Index | 0.0001 | 28.59 | 7.48141E-75 | 527.06 | 0.83 | | Null Hypothesis is rejected. | | |
| | Distance Deterrence | -0.2279 | -8.054 | 5.62509E-14 | | | | | | |
| 2008 | Attractiveness Index | 0.0001 | 32.66 | 7.1019E-85 | 650.00 | 0.86 | | Null Hypothesis is rejected. | | |
| | Distance Deterrence | -0.2194 | -8.264 | 1.49427E-14 | | | | | | |
| 2007 | Attractiveness Index | 0.0001 | 32.78 | 3.63622E-85 | 655.77 | 0.86 | | Null Hypothesis is rejected. | | |
| | Distance Deterrence | -0.2214 | -8.443 | 4.76663E-15 | | | | | | |
| 2006 | Attractiveness Index | 0.0002 | 29.64 | 1.60482E-77 | 552.56 | 0.84 | | Null Hypothesis is rejected. | | N/A |
| | Distance Deterrence | -0.2281 | -8.302 | 1.1731E-14 | | | | | | |
| 2005 | Attractiveness Index | 0.0002 | 28.5 | 1.28603E-74 | 518.45 | 0.83 | | Null Hypothesis is rejected. | | N/A |
| | Distance Deterrence | -0.2275 | -8.381 | 7.09063E-15 | | | | | | |
| 2004 | Attractiveness Index | 0.0002 | 25.45 | 1.66272E-66 | 419.35 | 0.80 | | Null Hypothesis is rejected. | | N/A |
| | Distance Deterrence | -0.2399 | -7.899 | 1.47718E-13 | | | | | | |
| 2003 | Attractiveness Index | 0.0002 | 25.36 | 2.91591E-66 | 411.89 | 0.79 | | Null Hypothesis is rejected. | | N/A |
| | Distance Deterrence | -0.2394 | -7.78 | 3.08172E-13 | | | | | | |
| 2002 | Attractiveness Index | 0.0002 | 20.33 | 8.78581E-52 | 286.18 | 0.73 | | Null Hypothesis is rejected. | | |
| | Distance Deterrence | -0.2558 | -6.95 | 4.37753E-11 | | | | | | |
| 2001 | Attractiveness Index | 0.0002 | 23.39 | 9.03738E-61 | 363.19 | 0.77 | | Null Hypothesis is rejected. | | |
| | Distance Deterrence | -0.2405 | -7.664 | 6.29679E-13 | | | | | | |
| 2000 | Attractiveness Index | 0.0003 | 22.28 | 1.45123E-57 | 338.06 | 0.76 | | Null Hypothesis is rejected. | | N/A |
| | Distance Deterrence | -0.2474 | -7.286 | 6.13113E-12 | | | | | | |

Note: Results of the regression model.

The regression findings utilized to evaluate the hypotheses are displayed in Table 1. The study evaluated the ability of the Walker-Unger model to rank the preferences of Australian-based money launderers for different countries between 2000 and 2020. It also examined the regression results to determine whether they supported or contradicted the hypotheses. The results indicate that the Walker-Unger model effectively ranks the preferences of Australian-based money launderers for different countries based on the proportion of money flows $[P(X, y_i)]$ during the specified period.

H2 assessed the model's ability to rank Australian-based money launderers according to their country preferences in a specific order of desirability. The model yielded country preferences for Australian money launderers between 2000 and 2020 based on attractiveness rankings. The study also evaluated the level of



similarity between countries and Australia using the distance deterrence score. The outcomes of the Walker-Unger model reveal that the score effectively ranks the power among the countries being analyzed.

H4 examined potential shifts in country rankings during economic downturns caused by the 9/11 attacks, the global financial crisis, and the COVID-19 pandemic. The model results demonstrated changes in the ranking sequence but did not indicate any significant shift in the overall preference for countries. The p-value of the regression results for all study hypotheses is below .05, indicating that the findings are statistically significant. Therefore, we confirm the null hypothesis for H1, H2, H3, and H4.

8. Results and Conclusions

This study utilizes the modified Walker-Unger model to assess the preference of Australian-based money launderers for destination countries throughout the period from 2000 to 2020. Prior studies by Walker (1992); Walker (1995); Walker (2005) and Unger et al. (2006) have already used the model to analyze Australia. However, this is the first endeavor to interpret the model's findings within the framework of the Laundered-funds Destination Theory, as formulated by Roman and Schaefer (2022). The literature suggests that Australia is a popular origin point of money laundering activity, primarily because of its sound financial markets, stable government, and robust economy (Unger et al., 2006). Roman et al. (2023) argue that further empirical investigation is required to examine illegal money activity specific to individual countries and further validate the Walker-Unger gravity model as well as the Laundered Funds Destination Theory. The results of this inquiry contribute to the existing information on global money laundering patterns. Furthermore, the revised Walker-Unger model is among the limited number of instruments that can gauge money laundering levels. However, it has its limitations since it fails to demonstrate the impact of money laundering on lawful economic activity along with the amounts of laundered funds in the examined countries currency.

The model findings indicate that Australia, Bermuda, Cayman Islands, French Polynesia, Iceland, Japan, Liechtenstein, Luxembourg, Monaco, New Zealand, Northern Mariana Islands, Norway, Qatar, Singapore, Switzerland, and the United Kingdom were the most appealing countries for Australian money launderers between 2000 and 2020. The model results indicate that the fraction of money flow scores varied over the course of two decades, but not to an extent that would significantly affect the nation preference of money launderers based in Australia. Money launderers headquartered in Australia consistently utilized the same nations for their illegal financial operations, irrespective of the condition of the legal economy. Nevertheless, if a new location emerged on the timeline, its existence stayed constant for the whole timeframe.

Australia, Bermuda, New Zealand, and Monaco consistently ranked among the top 10 preferred destinations for Australian money launderers, with only four exceptions throughout the analyzed period. Liechtenstein, Northern Mariana Islands, Singapore, and the United Kingdom were other popular choices among travelers. While there were some changes in the rankings of countries within the top 10 preferences, 80% of the chosen destinations remained in the top 10 both before and after the crisis. It is worth mentioning that Singapore emerged as a popular choice in 2011 and consistently ranked among the top ten preferred destinations until 2020. Similar events were reported in French Polynesia, Japan, Luxembourg, and Norway.

There were no significant shifts in destination preferences during the periods of 2001-2002, 2007-2008, and 2019-2020. This implies that the 9/11 attacks, global financial crisis, and COVID-19 global economic downturns may not have influenced the evaluation of Australian-based money launderers regarding the security of their funds. A crucial inquiry for future academics involves identifying the factors that trigger a change in destination. The model results indicate that once a destination changed, that destination remained consistent over multiple periods. These findings are consistent with the principles of the Laundered Funds Destination Theory.



Table 2. Proportion of Laundered Funds Score for the Australia.

| Year | Country | Score | Year | Country | Score |
|----------------------|--------------------------|------------------|-------|---------------------------|--------|
| 2000 | Northern Mariana Islands | 17.054 | 2011 | Monaco | 22.245 |
| | New Zealand | 16.784 | | Northern Mariana Islands | 15.627 |
| | Monaco | 11.475 | | Australia | 14.961 |
| | Australia | 9.750 | | French Polynesia | 14.910 |
| | Japan | 8.347 | | Singapore | 9.294 |
| | Bermuda | 7.371 | | New Zealand | 7.370 |
| | Iceland | 7.165 | | United Kingdom | 7.284 |
| | Liechtenstein | 7.059 | | Bermuda | 6.248 |
| | Luxembourg | 6.982 | | Switzerland | 6.051 |
| United Kingdom | 6.710 | Norway | 6.028 | | |
| 2001 | New Zealand | 16.990 | 2012 | Monaco | 21.358 |
| | Monaco | 14.163 | | French Polynesia | 19.109 |
| | Northern Mariana Islands | 11.570 | | Australia | 15.708 |
| | Australia | 10.519 | | Northern Mariana Islands | 14.562 |
| | Luxembourg | 7.575 | | Singapore | 10.254 |
| | Iceland | 7.509 | | United Kingdom | 6.961 |
| | Bermuda | 7.417 | | New Zealand | 6.546 |
| | Liechtenstein | 6.762 | | Bermuda | 6.393 |
| | United Arab Emirates | 6.367 | | Switzerland | 5.861 |
| United Kingdom | 6.276 | Norway | 5.761 | | |
| 2002 | New Zealand | 19.731 | 2013 | Australia | 20.676 |
| | Northern Mariana Islands | 16.304 | | Monaco | 20.452 |
| | Monaco | 11.735 | | Northern Mariana Islands | 17.504 |
| | Australia | 8.563 | | French Polynesia | 14.890 |
| | Bermuda | 7.774 | | Singapore | 10.504 |
| | Luxembourg | 7.211 | | Bermuda | 8.616 |
| | Liechtenstein | 7.091 | | Norway | 6.855 |
| | United Kingdom | 6.857 | | New Zealand | 6.789 |
| | Iceland | 6.807 | | Cayman Islands | 6.119 |
| Japan | 6.632 | Austria | 5.636 | | |
| 2003 | Monaco | 17.583 | 2014 | Australia | 24.281 |
| | New Zealand | 16.246 | | Korea, Rep. | 22.118 |
| | Northern Mariana Islands | 12.900 | | Monaco | 15.310 |
| | Australia | 10.365 | | Northern Mariana Islands | 14.111 |
| | Bermuda | 9.006 | | Sint Maarten (Dutch part) | 13.736 |
| | Iceland | 7.614 | | French Polynesia | 10.674 |
| | Liechtenstein | 7.353 | | Singapore | 9.189 |
| | Luxembourg | 7.052 | | Norway | 6.402 |
| | United Arab Emirates | 6.325 | | Bermuda | 5.938 |
| United Arab Emirates | 5.488 | New Zealand | 5.559 | | |
| 2004 | Monaco | 17.246 | 2015 | Australia | 25.711 |
| | New Zealand | 15.354 | | Monaco | 14.717 |
| | Northern Mariana Islands | 13.340 | | Northern Mariana Islands | 14.293 |
| | Australia | 11.339 | | French Polynesia | 13.553 |
| | Bermuda | 8.752 | | Singapore | 10.691 |
| | Liechtenstein | 7.112 | | Norway | 7.968 |
| | Luxembourg | 6.979 | | New Zealand | 7.523 |
| | Iceland | 6.547 | | United Kingdom | 6.976 |
| | Qatar | 5.894 | | Cayman Islands | 6.161 |
| United Arab Emirates | 5.662 | Bermuda | 5.904 | | |
| 2005 | Monaco | 17.435 | 2016 | Australia | 29.887 |
| | New Zealand | 12.797 | | Norway | 14.924 |
| | Northern Mariana Islands | 12.634 | | New Zealand | 12.046 |
| | Australia | 11.112 | | United Kingdom | 8.984 |
| | Bermuda | 8.517 | | Singapore | 6.461 |
| | Liechtenstein | 6.865 | | Cayman Islands | 6.322 |
| | Qatar | 6.800 | | Italy | 6.108 |
| | United Kingdom | 6.738 | | San Marino | 5.615 |
| | Luxembourg | 6.669 | | Japan | 5.499 |
| Iceland | 5.947 | Qatar | 5.378 | | |
| 2006 | Monaco | 19.824 | 2017 | Australia | 31.200 |
| | New Zealand | 12.676 | | New Zealand | 12.896 |
| | Northern Mariana Islands | 12.370 | | Cayman Islands | 7.314 |
| | Australia | 12.110 | | Singapore | 7.086 |
| | Qatar | 8.164 | | Italy | 6.828 |
| | Bermuda | 7.179 | | Japan | 6.282 |
| | United Kingdom | 7.142 | | San Marino | 6.147 |
| | Luxembourg | 6.888 | | Germany | 6.144 |
| | Liechtenstein | 6.880 | | Qatar | 5.870 |
| Singapore | 6.273 | Liechtenstein | 5.656 | | |
| 2007 | Monaco | 23.914 | 2018 | New Zealand | 14.797 |
| | Australia | 12.201 | | Switzerland | 9.610 |
| | New Zealand | 12.104 | | Cayman Islands | 8.660 |
| | Northern Mariana Islands | 11.352 | | Singapore | 7.314 |
| | United Kingdom | 7.588 | | Japan | 7.034 |
| | Luxembourg | 6.864 | | United States | 6.269 |
| | Singapore | 6.419 | | Liechtenstein | 6.186 |
| | Liechtenstein | 5.970 | | San Marino | 6.177 |
| | Bermuda | 5.845 | | Austria | 6.135 |
| Qatar | 5.659 | Qatar | 5.774 | | |
| 2008 | Monaco | 23.676 | 2019 | New Zealand | 18.765 |
| | Australia | 14.829 | | Singapore | 8.830 |
| | New Zealand | 11.213 | | Japan | 8.085 |
| | Northern Mariana Islands | 10.462 | | United States | 7.788 |
| | United Kingdom | 8.343 | | Qatar | 7.029 |
| | Singapore | 6.718 | | Liechtenstein | 6.903 |
| | Bermuda | 6.269 | | Belgium | 6.706 |
| | Liechtenstein | 5.838 | | Monaco | 6.190 |
| | Austria | 5.530 | | Bermuda | 6.079 |
| Luxembourg | 5.457 | Macao SAR, China | 6.068 | | |
| 2009 | Monaco | 18.675 | 2020 | New Zealand | 22.613 |
| | Australia | 14.973 | | Singapore | 10.259 |
| | New Zealand | 11.864 | | Japan | 8.948 |
| | Northern Mariana Islands | 11.550 | | Liechtenstein | 7.612 |
| | United Kingdom | 8.915 | | Monaco | 7.310 |
| | Singapore | 8.621 | | Belgium | 6.837 |
| | French Polynesia | 7.740 | | Finland | 6.516 |
| | Bermuda | 7.042 | | Brunei Darussalam | 6.403 |
| | Norway | 5.722 | | Denmark | 6.398 |
| Denmark | 5.681 | Bermuda | 6.270 | | |
| 2010 | Monaco | 19.534 | | | |
| | Australia | 14.563 | | | |
| | Northern Mariana Islands | 14.015 | | | |
| | French Polynesia | 13.085 | | | |
| | New Zealand | 11.126 | | | |
| | United Kingdom | 8.607 | | | |
| | Singapore | 7.940 | | | |
| | Bermuda | 6.703 | | | |
| | Norway | 5.655 | | | |
| Switzerland | 5.579 | | | | |

Note: Countries with the top proportion of laundered funds score in Australia.



The Walker-Unger model accurately identifies countries engaged in money laundering activities with Australia. The existing literature on money laundering operations conducted by illegal financiers based in Australia corroborates the inclusion of Australia in the Top 50 nations with high scores of money laundering. This finding aligns with previous studies on money laundering in Australia. Although the model findings align with the current literature, the absence of agreement on crucial theories hinders the practicality of applying them in real-world scenarios and making comparisons with similar research that employ different methodologies. The Laundered Funds Destination Theory remains the sole theory that comprehensively outlines the flow of money laundering and clarifies patterns of destination.

The literature on money laundering reveals the significant influence of the legal economy on illicit financial transactions. Illicit funds are not only accepted but also actively promoted, owing to the significant influence cash has on the money supply and total economic activity. Australian-based money launderers consider several factors when deciding where to send and transfer their illegal funds. These factors include the monetary and economic stability of the destination, lenient financial transaction laws, and the business relationships between the countries involved, particularly with Australia, which has a high score for money laundering.

Australia's rankings for countries with the highest percentage of laundered funds during the observed period align with the conclusions of Roman et al. (2023); Roman and Schaefer (2022); Roman et al. (2021); Unger et al. (2006); Walker (2005) and Walker (1995) and established international trade theory. The authors determined that Australian-based money launderers consistently favored the same nations, regardless of economic conditions. Evidence that corroborates well-established patterns in international trade theory and the Laundered Funds Destination Theory.

Table 2 presents a ranking of countries based on the preference of money launderers who are based in Australia. The nations occupying the top rankings were Australia, Bermuda, New Zealand, and Monaco. From 2000 until 2020, Monaco achieved the highest rankings 10 times. New Zealand and Australia, each holding the top position five times, followed. The percentage of laundered cash score also demonstrates that the preference for a certain country is not significant when considering legitimate economic downturns. Despite big economic events such as the 9/11 attacks, the global financial crisis, and the COVID-19 pandemic, the scores remained rather stable.

The results of this study, along with the findings of Roman et al. (2023); Roman and Schaefer (2022); Roman et al. (2021); Ferwerda et al. (2020); Wahaj et al. (2018); Balani et al. (2017); Ferwerda et al.'s (2013) and Unger et al. (2006), provide strong evidence in favor of the Laundered Funds Destination Theory. Existing work on economic financial activity after a significant decrease indicates that both the marketplace and consumer behavior tend to undergo alterations. Simulation results indicate that the preferred destination for illicit proceeds among money launderers based in Australia is rather stable.

Therefore, we postulate with a high level of confidence that once an Australian-based money launderer chooses a specific location to send their illegal money, their preference for that location is unlikely to alter. While the results of this investigation are statistically valid and add to the existing body of knowledge on illicit finance and money laundering, additional research is required to expand the Walker-Unger model and further validate the Laundered Funds Destination Theory.

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