

1. The Anatomy of a Migration Splash:

2. A Hypothesis of Post-Shock Migration Adjustment

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3. Abstract

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Keywords: Migration dynamics; Net migration; migration systems; Migration; Demography; Policy

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Abstract

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5. Introduction

At first glance, the migration effects of a border closure seem straightforward. Closing borders should reduce migration; reopening them should allow flows to return gradually toward their previous path. Yet recent experience suggests a more puzzling sequence. In several countries, the suppression of mobility during the COVID-19 pandemic was followed not by smooth recovery, but by sharp rebound, temporary overshoot, and subsequent correction. Policies that constrained migration in one period helped produce the demographic conditions for unusually high net migration in the next.

This paper addresses that puzzle by introducing the concept of a migration splash. A migration splash describes one possible post-shock trajectory in which migration is compressed, released, overshoots, and then settles through damped oscillations rather than returning smoothly to trend. The argument matters because migration is often the most volatile component of population change; post-shock adjustment can therefore dominate short-run population trajectories, fiscal planning, labour-market adjustment, and public debate about migration control.

The terminology deliberately echoes earlier work on the “migration hump” (Martin & Taylor, 1996), which examined non-linear migration responses to economic development. Whereas the migration hump describes long-run structural relationships between income growth and emigration, the migration splash focuses on comparatively short-run post-shock adjustment. It addresses what happens when migration systems are abruptly displaced from steady state and may adjust and re-equilibrate under conditions of delay and constraint. The concept is useful because it shifts attention from migration shocks as isolated events to migration shocks as temporal sequences: compression, release, rebound, correction, and institutional steering.

The migration splash also sits alongside Zelinsky’s mobility transition hypothesis, which situated migration within broader transformations in demographic and social regimes (Zelinsky, 1971). Together, the migration hump and the mobility transition show why migration should not be treated as a linear response to immediate economic or policy conditions. But the migration splash differs from both. The migration hump concerns the medium-run relationship between development and emigration; the mobility transition concerns long-run changes in the scale, direction, and composition of mobility as societies transform. The migration splash instead concerns post-shock adjustment: the compression, release, rebound, correction, and attenuation of migration flows after abrupt disruption.

A simple example is a border closure. During the closure, arrivals fall, but departures may also be deferred as temporary migrants remain in place, travel becomes difficult, or visa settings are extended. When borders reopen, delayed arrivals and accumulated applications may be released, while departures remain temporarily below normal because the population at risk of exit has been reshaped by the earlier interruption. Net migration can therefore rebound sharply, overshoot, and then correct as backlogs clear, cohorts progress through visa durations, and departures catch up. The resulting pattern is not simply a one-off shock; it is a delayed adjustment sequence generated by the interaction of arrivals, departures, stocks, and institutions.

The mechanism is not expected to appear equally across all migration streams. It should be most visible where movement is elastic, time-limited, and institutionally sequenced: temporary work, student, seasonal, visitor-to-worker, and circular migration streams in which arrivals create future populations at risk of departure, and in which backlogs, visa extensions, processing delays, or reopening decisions can shift the timing of both entries and exits. It should be weaker where migration is governed by hard numerical caps, rights-based entitlements, humanitarian obligations, family reunification rules, or continuous administrative steering. In such streams, underlying pressure may accumulate, but the observable trajectory is more likely to be clipped, muted, delayed, or redirected. The migration splash is therefore a scope-bounded framework, not a universal model of migration change.

The framework draws on several foundational traditions: demographic equilibrium theory, general equilibrium economics, general systems theory, migration systems theory, and policy feedback and punctuated equilibrium theory. Across these literatures, migration is understood as a response to imbalance. Yet they also imply that adjustment unfolds at two analytically distinct but interrelated levels.

At the macro level, migration systems can be understood as coupled inflows and outflows. Net migration is not a primitive flow but the residual of arrivals and departures that operate on different time horizons and through different institutional channels. When shocks disrupt

the timing or scale of either flow—by suppressing exits, releasing pent-up arrivals, or interrupting circulation—the resulting phase shifts can generate rebound and corrective counter-movement before flows settle to a steady state again.

At the actor and institutional level, migration outcomes are shaped by reflexive migrants, employers, voters, and policymakers, who respond to perceived imbalance under institutional constraints. Policy tightening and liberalisation may lag behind underlying conditions; migrants may accelerate or defer movement in anticipation of regulatory change. Such responses can dampen volatility, but they may also amplify it through overcorrection and episodic shifts. A migration splash may therefore emerge from structural inflow–outflow dynamics, from reflexive political steering, or from their interaction.

Despite growing recognition that migration flows behave non-linearly after major disruptions, many mainstream forecasting approaches continue to rely on functional forms that presume smooth adjustment. Population projections commonly embed constant or linearly adjusted migration assumptions within cohort-component models; time-series forecasts often impose mean reversion toward a trend without allowing for systematic overshoot and counter-movement. These specifications make it difficult to represent rebound, temporary surge, or corrective downswing without ad hoc intervention. Yet empirical episodes—from post-war recoveries to pandemic reopenings—suggest that migration responses are frequently turbulent, characterised by delayed reaction, compensatory surge, and short-term volatility.

The migration splash offers a different diagnostic lens. It treats post-shock migration as potentially following a dynamic adjustment sequence in which abrupt displacement is followed by rebound, overshoot, and attenuation. Rather than assuming direct convergence toward equilibrium, the framework allows for oscillatory reversion as suppressed demand is released, departures are deferred, and institutional responses lag behavioural change. Where feedback mechanisms operate and constraints ease, the amplitude of swings may diminish over time.

To represent the macro-level pattern formally, the paper introduces the damped sine wave function as a reduced-form representation of oscillatory re-equilibration: not as a behavioural law, but as a compact vocabulary for comparing the size, timing, persistence, and attenuation of post-shock migration volatility. The function is employed here as an aggregate approximation. It does not assume that individual migrants behave sinusoidally. Instead, it approximates the system-level outcome that can emerge when coupled inflows and outflows adjust with delay under conditions of feedback and dissipation.

The aim is diagnostic rather than predictive: to characterise post-shock adjustment paths and how policy modulates them. In this sense, the migration splash is not proposed as a universal law of migration behaviour, but as a scope-bounded framework for identifying when post-shock migration volatility reflects delayed system adjustment rather than a simple contemporaneous increase in migration pressure.

The structure of the paper is as follows. Section 2 develops the theoretical foundations of the migration splash across demographic, economic, systems, migration-systems, and policy-feedback traditions. Section 3 introduces the damped sinusoidal model as a reduced-form representation of macro-level adjustment. Section 4 examines how regulatory intervention may suppress, truncate, amplify, or redirect oscillatory dynamics. Section 5 applies the

framework to pandemic-era and historical cases. The paper concludes by reflecting on the theoretical and policy implications of interpreting post-shock migration as a reflexive process of delayed adjustment.

6. Systems Seeking Balance: Theoretical Foundations of the Migration Splash

This section develops the theoretical foundations of the migration splash around two claims. First, migration systems can exhibit dynamic equilibrium: a patterned but provisional ordering of flows, institutions, expectations, and constraints. Second, when major shocks disrupt that ordering, adjustment may unfold through feedback, delay, and adaptation.

Stabilisation, however, is not the same as restoration. A system may settle after disruption without returning to its previous state, instead moving toward a changed equilibrium shaped by altered labour demand, policy settings, institutional capacity, migrant expectations, public opinion, or demographic need. This framing draws on punctuated equilibrium theory, which highlights how periods of relative stability can be interrupted by abrupt change (Baumgartner & Jones, 1993, 2005; Jones et al., 2003). The question for this paper is what happens after punctuation: under what conditions might migration adjustment take the form of rebound, overshoot, correction, and attenuation in aggregate flows?

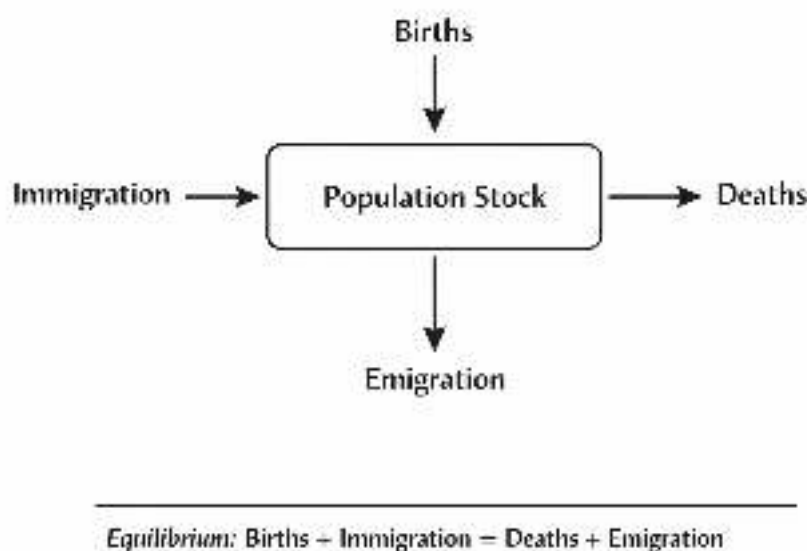
The literatures reviewed below show that assumptions of equilibrium and stabilisation run through several traditions concerned with migration. What they do not generally provide is a theory of the nature and form of stabilisation in international migration. That is the gap the migration splash framework seeks to address.

6.1 Demographic Equilibrium and Population Adjustment

Modern demography often models equilibrium through births, deaths, immigration, and emigration (Figure 1). A stationary population is a benchmark in which inflows and outflows balance over time, not a claim that populations remain fixed (Preston et al., 2001). Because fertility, mortality, and migration unfold on different time horizons, demographic equilibrium is best understood as an analytical construct for studying adjustment under changing conditions.

Migration is central to that adjustment. Ravenstein's "laws of migration" identified friction, delay, staged movement, and counterflow dynamics, anticipating later accounts of migration as patterned correction of spatial and economic imbalance (Ravenstein, 1885, 1889; Lee, 1966). More recent demographic theory posits that in high-income countries with below-replacement fertility, immigration can offset natural decrease, slow ageing, maintain labour-force size, and support pension systems (Espenshade et al., 1982; Alho, 2008; United Nations Population Division, 2000; Coleman, 2008). Migration may therefore act as a demographic adjustment mechanism, redistributing rather than eliminating demographic change.

Figure 1: Demographic equilibrium as a stock–flow system (adapted from Preston, Heuveline, & Guillot, 2001).



Source: Based on Preston, S. H., Heuveline, P., & Guillot, M. (2001). *Demography: Measuring and Modeling Population Processes*.

This adjustment is lagged and historically contingent. Shocks may produce transitional fluctuations before population indicators settle into a new configuration, whether natural, replacement-based, or migration-supported (Lee, 1980; Lesthaeghe et al., 1975; van de Kaa, 1987; McDonald & Kippen, 2001). Zelinsky’s mobility transition hypothesis extends this point by situating mobility within broader demographic and economic transformation (Zelinsky, 1971). Large shocks may therefore displace societies from their transitional trajectory, with adjustment occurring within an evolving demographic regime rather than through simple reversion to a fixed prior state.

6.2 Economic Equilibrium and Transitional Adjustment

Economic theories of migration also treat mobility as adjustment to imbalance, though this equilibrium framing has long been debated against historical-structural accounts of migration (Wood, 1982). Neoclassical models explain migration through expected returns across locations, with movement declining as expected wage differentials narrow (Sjaastad, 1962; Kindleberger, 1965; Todaro, 1969; Harris & Todaro, 1970; Greenwood, 1975; Rothenberg, 1977; Spengler & Myers, 1977). At the macro level, labour mobility contributes to the equalisation of marginal returns and factor prices, affects capital–labour ratios and steady-state growth paths, and forms part of regional convergence processes (Solow, 1956; Swan, 1956; Lutz, 1961; Spengler & Myers, 1977; Barro & Sala-i-Martin, 1992).

These models do not require instantaneous convergence. Adjustment is mediated by capital accumulation, information diffusion, institutional constraints, recruitment channels, and policy settings. Temporary migration shocks may therefore generate transitional imbalances before a new steady state is reached. Where feedback is delayed or adjustment costs are high, correction may be uneven. Whether this takes the form of overshoot is an empirical and institutional question.

6.3 Systems Theory, Migration Systems, and Recursive Feedback

Systems theory supports the claim that complex systems can exhibit dynamic equilibrium, and that displacement from equilibrium can trigger feedback processes that stabilise the system over time. Equilibrium here means organised continuity under changing conditions, not stasis or return to a fixed prior state.

General systems theory framed biological and social phenomena as open systems sustained through exchange with their environments, while cybernetics placed feedback, information, and correction at the centre of adaptive behaviour (Bertalanffy, 1968; Wiener, 1948). System dynamics translated these insights into a vocabulary of stocks, flows, feedback loops, and delays, showing how delayed correction can generate endogenous oscillation even without an external cycle (Forrester, 1961, 1971). Figure 2 illustrates this logic in Forrester's production–distribution setting: when corrective responses are delayed, adjustment need not proceed smoothly back to equilibrium, but may overshoot, reverse, and attenuate over time.

Figure 2: Forrester's model of delayed correction and damped adjustment in a stock–flow system

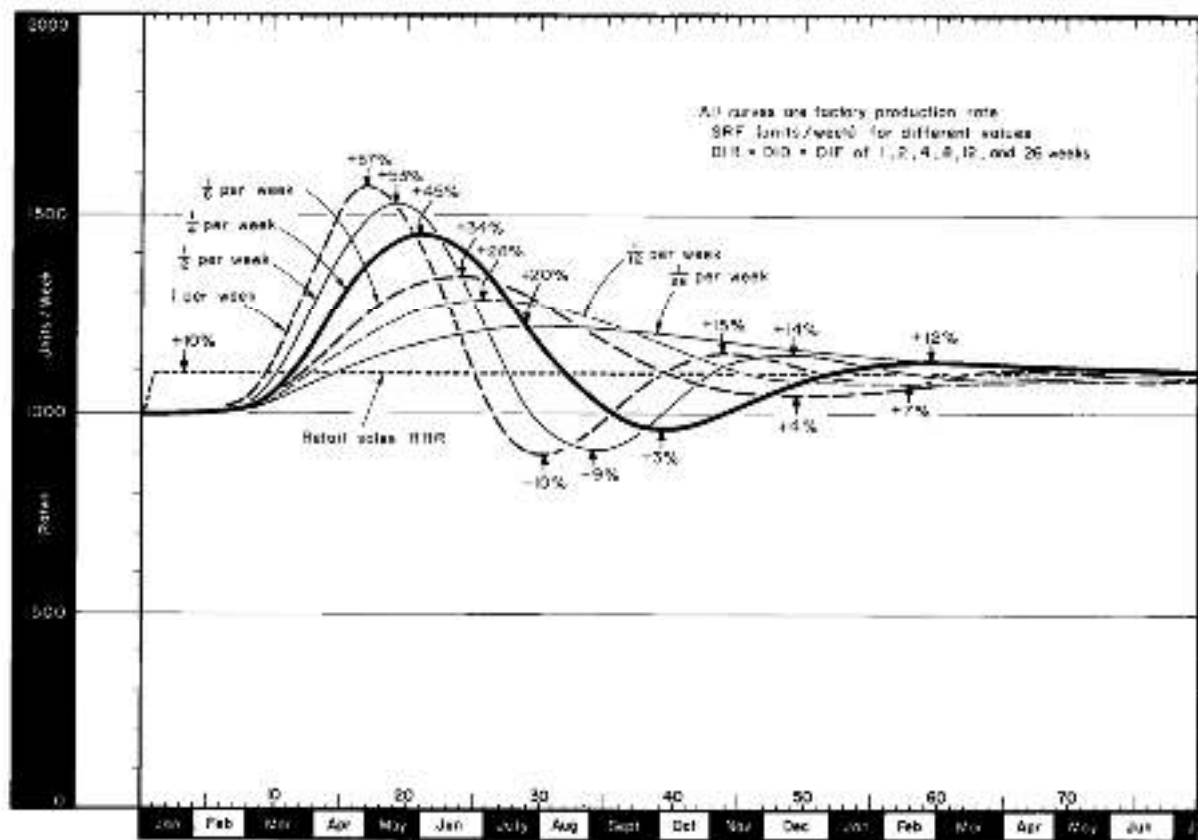


Figure 15-24 (Repeat of Figure 2.8) Changing the time to make inventory and in-process order corrections. (Fractions refer to amount of remaining imbalance corrected in following week.)

Source: Forrester, 1961, page 186.

The relevance for migration is not that migration systems are supply chains, but that aggregate volatility can emerge when interdependent stocks, flows, expectations, and institutional responses adjust on different timetables. Sociological systems theory extends this point to differentiated social systems, in which politics, law, and the economy operate

according to distinct logics and speeds, making system-wide adjustment uneven and institutionally mediated (Luhmann, 1995). Social systems therefore do not merely absorb shocks. They interpret, delay, redirect, dampen, or amplify them.

Migration systems theory brings this feedback logic directly into migration studies. Mabogunje's systems approach conceptualised migration as an adaptive process linking origin and destination environments through flows of people, information, resources, control mechanisms, and institutional response (Mabogunje, 1970). Migration was therefore not treated as a one-directional response to wage differences, but as a recursive process in which movement reshapes the conditions under which future movement occurs. Positive feedback can amplify flows by strengthening networks, expectations, and institutional channels; negative feedback can dampen deviation and stabilise established pathways. Subsequent work on cumulative causation and migrant networks extended this logic, showing how migration reduces future costs and risks, reshapes labour markets, alters household strategies, and influences institutions (Massey et al., 1993, 1998). Past migration therefore conditions future migration.

These theories support the migration splash framework in two ways. First, migration systems can exhibit dynamic equilibrium, with aggregate outcomes emerging from individual decisions, institutional rules, labour-market signals, demographic pressures, migrant networks, and political responses. Second, when shocks displace that equilibrium, arrivals and departures, visa stocks, application backlogs, employer demand, expectations, and policy responses may move out of phase. These delayed couplings create conditions under which rebound, overshoot, correction, and attenuation may appear in aggregate migration data. Systems theory supplies the broad mechanism; migration systems theory shows why that mechanism is plausible in migration specifically. The migration splash develops this insight into one possible account of post-shock stabilisation.

6.4 Policy Feedback, Punctuation, and Reflexive Adaptation

Policy feedback and punctuated equilibrium theories explain why migration adjustment is not only structural but political. Policies do not merely regulate pre-existing social processes; they restructure incentives, redistribute resources, create constituencies, alter expectations, and reshape future political possibilities (Pierson, 1993, 2000). At the same time, policy systems often display long periods of incremental stability interrupted by abrupt, disproportionate change when attention, framing, or governing coalitions shift (Baumgartner & Jones, 1993, 2005; Jones et al., 2003). For migration, this means that visa rules, processing capacity, enforcement discretion, public opinion, and electoral cycles may alter the timing, magnitude, and direction of adjustment.

Migration systems are therefore reflexive. Migrants, employers, education providers, advocates, voters, and policymakers interpret signals and anticipate regulatory change. Expectations of tightening may generate anticipatory applications or accelerated movement; expectations of liberalisation may encourage deferral; administrative backlogs can store unmet demand and release it later in concentrated form. Delayed and socially mediated information may also produce clustered responses and overcorrection, as classic accounts of cyclical adjustment and informational cascades suggest (Ezekiel, 1938; Banerjee, 1992; Bikhchandani et al., 1992). Regulatory adaptation may dampen or amplify these dynamics: phased implementation, forward guidance, monitoring, and incremental calibration can increase damping, while administrative lag, political pressure, or abrupt rule changes can

amplify volatility (Ayres & Braithwaite, 1992; Braithwaite, 2002; Halliday & Carruthers, 2007).

For the migration splash framework, the implication is crucial. Adjustment may occur around a changed baseline, as shocks reset labour demand, visa rules, migrant expectations, public opinion, administrative capacity, and demographic need. Similar underlying pressures may therefore produce different observed paths depending on caps, visa duration, processing capacity, enforcement discretion, political salience, and anticipatory behaviour.

6.5 Implications for the Migration Splash Framework

Taken together, these literatures establish the premises of the migration splash framework. Migration systems can exhibit dynamic equilibrium; shocks can destabilise that ordering; and adjustment may unfold through delayed coupling among flows, stocks, expectations, and institutions. They also show that stabilisation need not mean restoration: post-shock migration may settle around a new normal rather than return to the old one.

What these literatures do not specify is the aggregate form that post-shock stabilisation may take in international migration. The migration splash addresses that gap by describing one possible path from displacement toward a changed equilibrium: compression, release, rebound, correction, and attenuation. Section 3 introduces the damped sinusoid not as a behavioural law, but as a reduced-form representation of this possible stabilisation path.

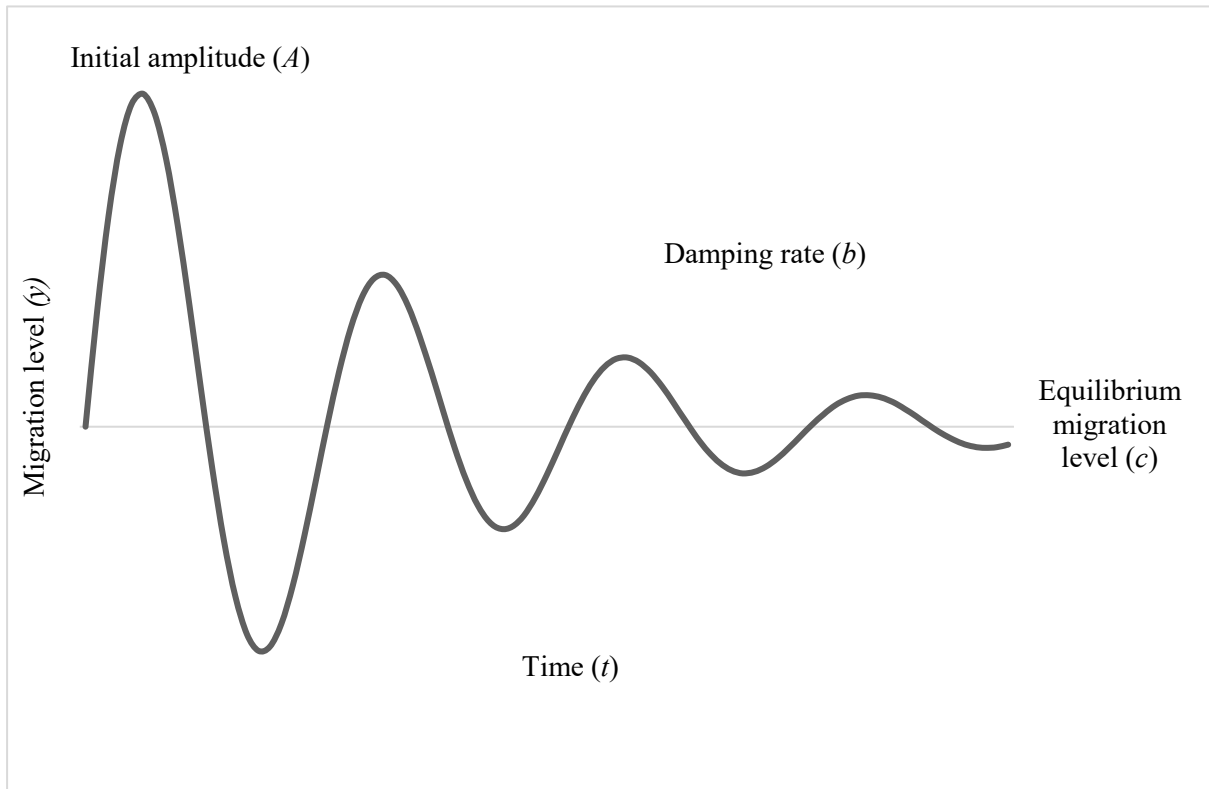
7. A Reduced-Form Model of Migration Splash Dynamics

Across the traditions reviewed above, migration is repeatedly conceptualised as adjustment under imbalance, mediated by feedback and delay. This creates theoretical scope for transitional rebound and counter-movement rather than smooth convergence. This section translates that intuition into a simple reduced-form representation: a damped sinusoid that summarises the magnitude, timing, and attenuation of post-shock adjustment (Figure 3). Section 4 then shows how regulation modifies the observable path.

At the macro level, the damped sine wave approximates how a coupled inflow–outflow system may adjust after displacement from steady state. When disruption generates phase shifts between inflows and outflows—through delayed exit, backlog release, asynchronous reopening, or staggered recovery—the resulting imbalance may produce rebound, overshoot, and corrective counter-movement. Under conditions of feedback and dissipation, this adjustment may resemble damped oscillation toward a new equilibrium. The claim is not that individual migrants behave sinusoidally, but that aggregate migration measures may display oscillatory adjustment when interdependent flows move out of phase.

This mechanism should be most visible in migration systems characterised by temporary mobility. Arrivals create a stock of migrants at risk of later departure; an unusually large cohort entering in one period increases the population exposed to exit in subsequent periods. Even without policy overreaction, this stock–flow linkage can generate rebound and corrective movement in observed net migration after major disruption. Reflexive policy and anticipatory behaviour may add to or reshape the cycle, but they are not necessary for oscillatory re-equilibration.

Figure 3: Illustrative damped oscillatory adjustment in the migration splash model



Source: Authors' illustration.

Splash dynamics are therefore most likely where four conditions coincide: a shock compresses mobility or status transition; unmet demand, deferred departure, or temporary status accumulates; reopening or policy change releases that pressure faster than departures, processing capacity, or policy settings can adjust; and inflows and outflows adjust on different timetables. They are least likely where admissions are fixed by quota, protected by rights, determined by humanitarian obligation, or continuously calibrated by policy.

The migration splash is represented using a damped sine wave function:

$$y(t) = Ae^{-bt} \sin(\omega t + \phi) + c \quad [\text{Equation 1}]$$

where A denotes the amplitude of initial displacement, b the damping parameter, ω angular frequency, ϕ phase shift, c the long-run level, and t time measured relative to the point of disruption or release. Applied to migration, $y(t)$ represents an aggregate migration measure, typically net migration, observed at time t .

The parameters provide a compact vocabulary for comparing post-shock adjustment paths. Amplitude (A) captures the magnitude of displacement, whether through suppressed mobility during border closure or the release of accumulated demand after reopening. The damping parameter (b) captures the rate at which volatility attenuates, reflecting factors such as labour-market saturation, visa expiry cycles, administrative capacity, backlog clearance, or deliberate stabilisation. Angular frequency (ω) captures the spacing of rebounds and corrective movements, potentially shaped by cohort turnover, seasonal demand, academic calendars, or recruitment cycles. The phase term (ϕ) captures delays between disruption and

observable response, including processing lags, staggered reopening, deferred departures, or implementation gaps. The constant (c) denotes the long-run level around which oscillations occur, which may differ from the pre-shock level if structural conditions change.

Empirically, the framework can be implemented through curve-fitting or regression techniques applied to time-series migration data. Estimated parameters allow comparison across countries, migration categories, and regulatory regimes, capturing shock magnitude, speed of attenuation, and persistence of oscillation without implying precise point prediction. This modelling logic is familiar in stock–flow and demographic systems, where aggregate oscillation may emerge from delayed interaction among components that do not themselves oscillate independently (Forrester, 1971; Lee, 1980; Lesthaeghe et al., 1975; Sterman, 2000). The damped sine wave should therefore be read as a compact reduced-form representation of aggregate dynamics that may arise when interdependent flows adjust with lag toward a shifting equilibrium.

8. When the Splash is Contained: Policy and Regulatory Constraints

The damped sine wave represents a hypothesised structural tendency of some displaced inflow–outflow systems to exhibit oscillatory reversion toward equilibrium. Its empirical relevance should be strongest in relatively elastic migration streams where flows can respond to accumulated demand, delayed departure, and cohort turnover. Migration systems, however, are embedded in regulatory regimes that may cap, delay, truncate, amplify, or redirect adjustment. Observed paths may therefore diverge from the unconstrained structural pattern, especially where movement is rights-based, tightly capped, or continuously steered by policy.

Regulatory intervention can modify the effective parameters of post-shock adjustment. Numerical caps and quotas constrain amplitude by limiting realised inflows regardless of underlying demand. The United States employment-based Green Card cap, fixed at 140,000 annually since 1990, has generated large backlogs, including more than 800,000 Indian nationals in queues by 2020, with projected waits exceeding 80 years in some categories (Wasem, 2020). Australia’s permanent migration planning levels similarly cap realised admissions even when labour-market or demographic pressures persist (Parliament of Australia, 2021). In such systems, imbalance may accumulate, but it cannot fully appear as realised inflow.

Administrative and categorical constraints alter timing. Static eligibility criteria, fixed processing rules, multi-stage approvals, background checks, and capacity limits can extend phase shifts by delaying the response of migration systems to shocks. Pandemic-era pauses and interruptions produced major application backlogs, including more than 1.8 million applications in Canada by late 2021 (IRCC, 2021). Suspensions or restrictions on temporary work programmes, including the H-2A programme in the United States and seasonal worker schemes in Australia and Canada, similarly delayed migration response despite continuing labour demand; H-2A arrivals in the United States fell by 10 per cent in 2020 (USDA ERS, 2021). Such bottlenecks may smooth adjustment by spreading it over time, or amplify rebound by releasing accumulated applications in concentrated bursts.

Border closures and travel bans operate differently. They suppress realised flows without eliminating the underlying coupling between inflows, outflows, stocks, and expectations. Intentions accumulate, departures may be deferred, and labour or demographic pressures

continue beneath the surface. When constraints are lifted, the release of accumulated imbalance may produce an amplified initial rebound. After 11 September 2001, enhanced visa scrutiny contributed to a 2.4 per cent decline in U.S. international student enrolment in 2003 (IIE, 2004). During COVID-19, Australia's border closure between March 2020 and November 2021 produced a 97 per cent fall in net overseas migration in 2020–21 (ABS, 2021). In parameter terms, closures reduce realised movement during the shock, extend phase shifts, and may increase subsequent rebound magnitude. Oscillation is displaced in time rather than eliminated.

Not all interventions are restrictive. Large-scale recruitment or assisted migration programmes can elevate inflows above market-adjustment levels, sustaining amplitude and delaying attenuation. Australia's post-war assisted migration programmes brought more than 1.5 million migrants between 1945 and 1972 (Jupp, 2001), while West Germany's recruitment treaties generated more than 14 million entries between 1955 and 1973 (Castles et al., 2014). Such programmes may produce extended shoulders or secondary peaks rather than smooth decay.

Policy is also reflexive. Governments do not merely observe migration adjustment; they interpret it and intervene. Electoral cycles, public salience, and anticipated rule changes may generate tightening or liberalisation only loosely aligned with demographic or labour-market conditions (Papademetriou & Martin, 1991; Ruhs & Martin, 2008). In the United Kingdom, efforts to reduce net migration to the “tens of thousands” contributed to student visa restrictions and the abolition of post-study work rights in 2012, producing decline followed by later rebound (Portes, 2016). In the United States, executive actions between 2017 and 2020, including travel bans and public charge rule changes, produced politically timed declines in visa issuance that were partly reversed after electoral change. Here volatility may arise less from stock–flow coupling alone than from reflexive political steering.

For these reasons, the migration splash should not be read as a deterministic forecast of magnitude or timing. It identifies structural tendencies and plausible adjustment paths under disruption. Where institutions are anticipatory and continuously calibrated, oscillation may be muted, delayed, or redirected; where policy responds reactively or episodically, volatility may be amplified. Regulatory regimes therefore reshape the observable splash: clipping peaks, extending phase shifts, flattening trajectories, sustaining shoulders, or creating secondary surges. Temporary and demand-driven streams should be the clearest places to look for splash-like patterns, while capped, rights-based, humanitarian, or continuously managed streams may appear muted or delayed. The next section illustrates these dynamics through contemporary and historical compression–release episodes.

9. Empirical Applications

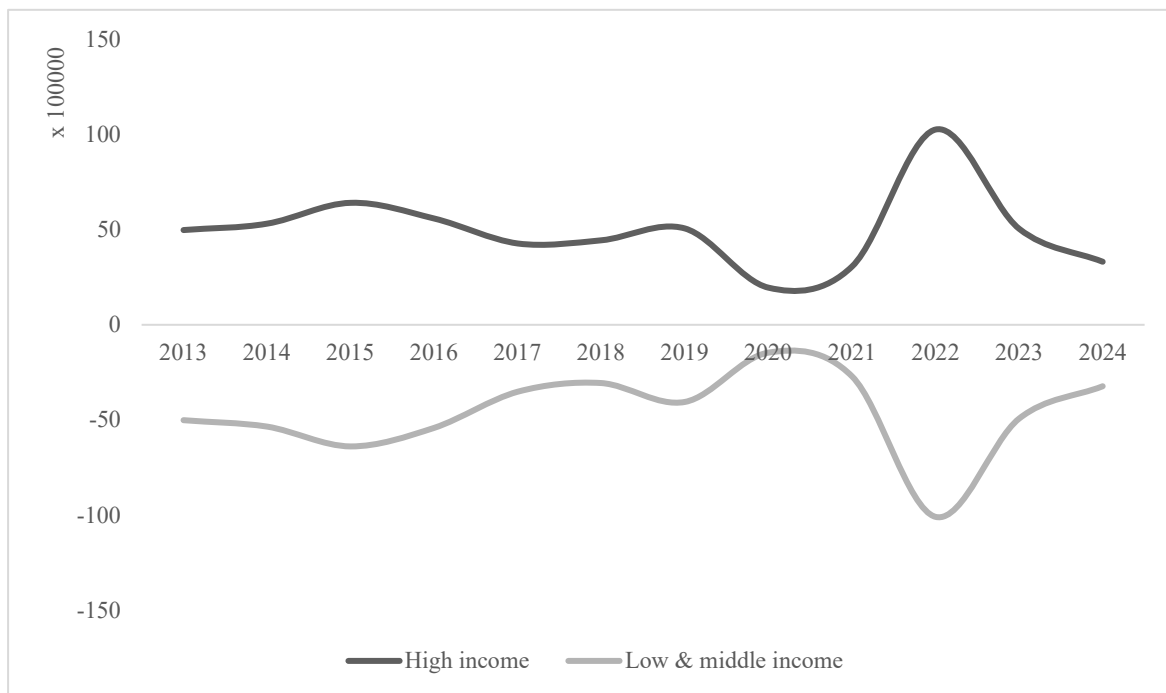
This section applies the migration splash framework to recent and historical migration shocks, focusing especially on cases where the scope conditions are likely to hold: temporary or elastic flows, compressed mobility, delayed departures or accumulated applications, and subsequent policy adjustment. The aim is not to prove that migration follows a universal mathematical law, or to test the damped sinusoid formally. It is to show how the framework helps interpret episodes in which migration was sharply interrupted, delayed movements accumulated, and later adjustment produced rebound and correction. The section begins with the global post-pandemic pattern, then turns to Australia, Canada, and New Zealand as contemporary cases with different mechanisms. It then considers permanent and

humanitarian programmes as weak-fit cases, before using the First World War as a more tentative historical analogue.

9.1 A Global Compression–Release Pattern in Pandemic-Era Migration

The COVID-19 pandemic offers an unusually clear case of a global migration shock. From early 2020, border closures, travel restrictions, quarantine rules, and visa-processing interruptions disrupted mobility across much of the world at once. Most migration shocks affect particular countries or corridors. This one interrupted the system more broadly.

Figure 4: Net Migration, high-income countries vs middle- and low-income countries, 2013-2024¹



Source data: *World Population Prospects, United Nations*

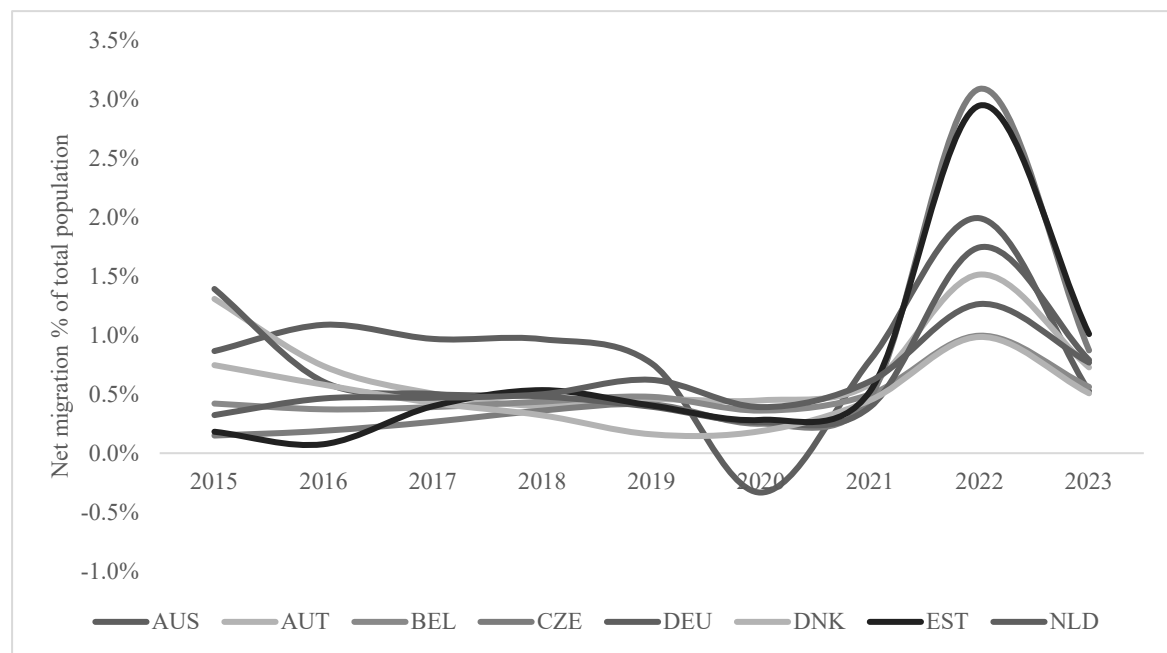
Figure 4 shows the aggregate pattern. Before the pandemic, net migration into high-income countries and net migration out of low- and middle-income countries were relatively stable. During 2020 and 2021, net migration into high-income countries fell sharply as mobility was restricted. As borders reopened, the pattern reversed: net migration into high-income countries rebounded strongly, while low- and middle-income countries recorded a corresponding rise in net outmigration.

¹ These data should be read with care. The pandemic trough appears smaller than the post-pandemic rebound, even though global lockdowns and travel restrictions suggest that actual disruption was severe. One likely reason is measurement. Many high-income countries measure immigration more carefully than emigration, while many origin countries record exits more closely than entries. As a result, global data may understate the extent to which the pandemic pushed countries temporarily away from their usual migration patterns. Even with that caveat, the broad movement is clear.

The pandemic compressed mobility. It did not remove the underlying demand for work, study, family reunion, or return migration. Plans were delayed, applications accumulated, and people waited. When restrictions eased, many of those deferred movements resumed over a short period. The result was not a smooth return to the old path, but a sharp rebound after a sharp interruption.

Figure 6 shows that this pattern was not confined to one country or one policy regime. Across a range of high-income countries, net migration fell during the pandemic, rebounded after reopening, and then began to moderate. Australia, Austria, Germany, the Netherlands, Estonia, Belgium, Denmark, and the Czech Republic differ markedly in their migration systems, but the broad sequence is similar: contraction, rebound, and partial correction.

Figure 5: The Migration Splash in pandemic-era net migration, selected countries



Source of net migration estimates data: Gaskin and Abel 2025, <https://arxiv.org/abs/2506.22821>

This does not prove a universal law of migration adjustment. The timing and scale of the rebound differ across countries, and national policy clearly mattered. Labour demand, student flows, processing capacity, humanitarian arrivals, and domestic politics all shaped the result. Nor do these figures show that migration mechanically follows a damped sinusoid. They show something more modest but important: after a major disruption, many migration systems displayed the same broad shape of interruption, rebound, and correction.

The global pattern therefore supports the use of the migration splash as a diagnostic framework. The pandemic compressed ordinary circulation; reopening released delayed movements into systems whose stocks, rules, and expectations had changed during the interruption. The splash was clearest where mobility was temporary, elastic, and sensitive to timing: students, temporary workers, seasonal migrants, and other circular flows. It was less visible where movement was capped, rights-based, humanitarian, or continuously managed.

The following cases examine how this broad pattern played out through different institutional mechanisms. Australia shows how delayed departures can inflate net migration after

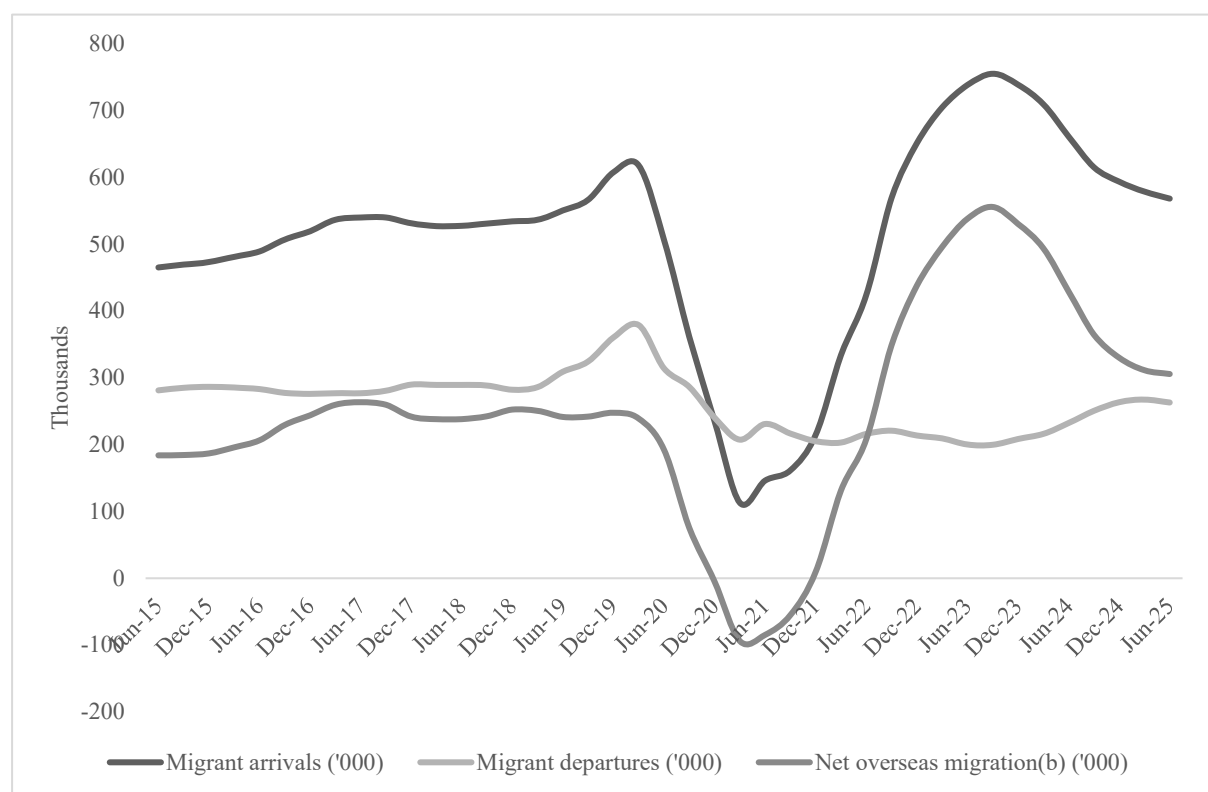
reopening. Canada shows how a temporary-resident stock can later be deliberately reduced. New Zealand provides a cleaner arrivals–departures version of the same dynamic. Permanent and humanitarian programmes then serve as weak-fit cases, before the First World War offers a more tentative historical analogue beyond the pandemic period.

9.2 Australia: Deferred Departures and Temporary-Migration Stock Dynamics

Australia shows one route into a migration splash: arrivals recovered after reopening, but departures took longer to return (Figure 6). Net overseas migration rose sharply because the two sides of the calculation moved out of phase.

During 2020 and 2021, Australia’s border restrictions compressed ordinary migration turnover. Prospective students, workers, visitors, and other temporary migrants could not enter at normal volumes. At the same time, many temporary migrants already in Australia were enabled to remain. The Pandemic Event visa, introduced in April 2020, allowed temporary visa holders to stay lawfully while borders were closed and helped address labour shortages in critical sectors. Other COVID-era concessions also extended stay rights for affected temporary visa holders. The result was not simply a fall in arrivals, but a disruption to the normal sequence of entry, stay, and exit.

Figure 6: Australia: Post-pandemic net overseas migration adjustment, 2019–2028



Source data: Australian Bureau of Statistics, Overseas Migration Series.

When borders reopened, arrivals recovered through student, work, working holiday, and other temporary channels. Backlogs were cleared and labour demand remained strong. But departures did not recover at the same pace. Partly this was structural: reduced arrivals during the closure period meant fewer recent entrants later reaching the point at which they would

normally leave. Partly it was policy-driven: visa concessions had kept many temporary migrants in Australia for longer. Australia therefore accumulated a temporary departure shortfall.

This timing mismatch explains much of the post-pandemic surge. Net overseas migration rose because arrivals restarted before departures normalised. The 2022–23 and 2023–24 increase was therefore not simply an arrivals story. It reflected the release of delayed entry demand and the continued suppression of exits.

The correction followed a shift in policy emphasis. Once net migration reached politically salient levels, the government moved from reopening and backlog clearance toward restraint and system integrity. From late 2023, COVID-era concessions were closed, the Pandemic Event visa was wound down, student and graduate pathways were tightened, and measures were introduced to limit visa hopping and strengthen international education integrity.

The data are consistent with this turn. Net overseas migration fell from its 2022–23 peak and continued declining in 2024–25. ABS estimates show net overseas migration of 306,000 in 2024–25, down from 429,000 a year earlier, with migrant arrivals falling 14 per cent and migrant departures rising 13 per cent. Temporary visa holders remained central: almost two-thirds of migrant arrivals were temporary visa holders, and temporary students were the largest arrival group.

The Australian case is therefore best understood as a departure-delay story as much as an arrivals-rebound story. Temporary migration was compressed during the pandemic, then released unevenly after reopening. Entry restarted first; exit followed later. Policy first helped preserve temporary status during the closure period, then tightened temporary pathways after the rebound became politically salient. This is precisely the kind of setting in which splash dynamics should be most visible: temporary, elastic, institutionally sequenced migration pushed out of phase by a major shock.

9.3 Canada: From Post-Pandemic Expansion to Temporary-Resident Stock Reduction

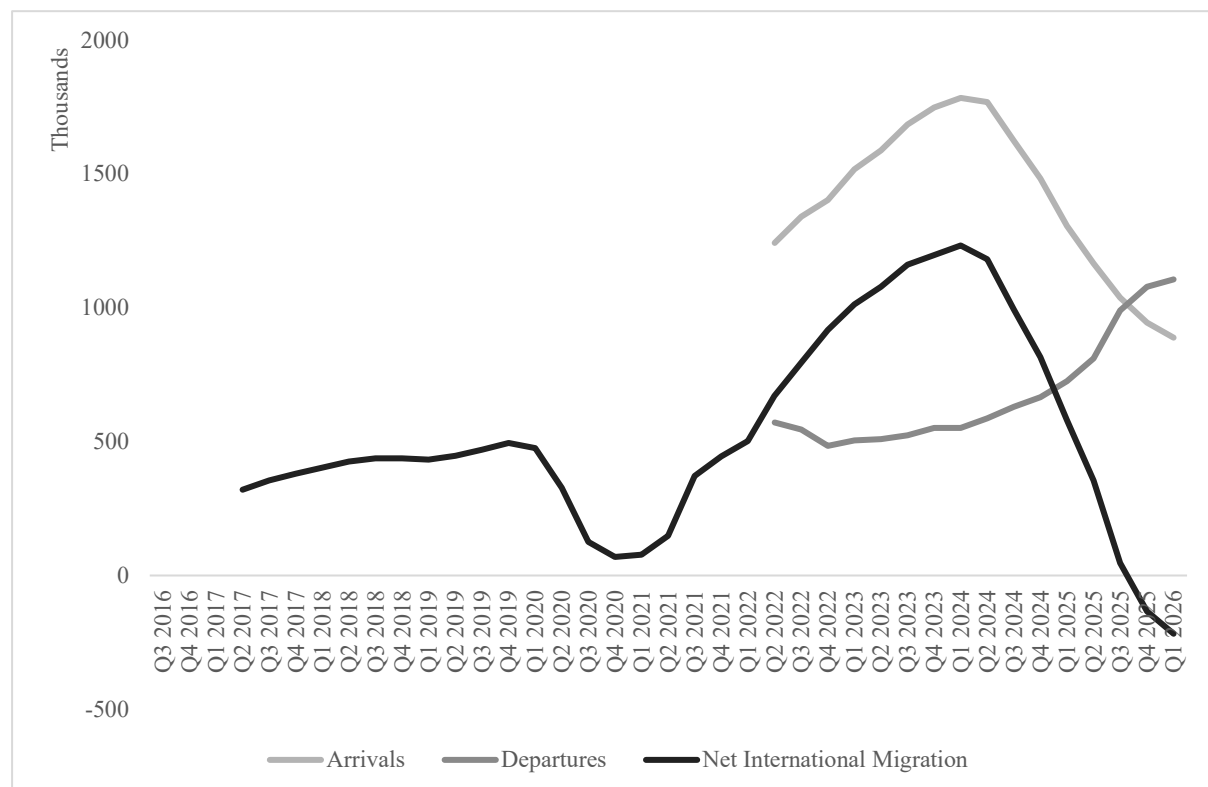
Canada shows a different route into, and out of, post-pandemic migration volatility (Figure 7). Its rebound was driven less by a simple arrivals–departures mismatch than by rapid growth in the temporary-resident population, followed by an explicit effort to bring that stock down.

After the pandemic, Canada’s net international migration rose rapidly, reaching historically high levels by 2023–24. Much of the increase came through non-permanent residents: international students, temporary foreign workers, asylum claimants, and accompanying family members. At first, this fitted Canada’s growth-oriented immigration model. Temporary migration supported labour supply, higher education, regional growth, and future permanent settlement.

By 2024, the political framing had changed. Housing pressures, infrastructure strain, and concerns about parts of the international education sector led the federal government to recast temporary migration as a stock-management problem. Budget 2024 linked immigration settings directly to housing affordability, arguing that migration planning needed to work alongside housing supply. The language of policy shifted from expansion to “balance” and “sustainability”.

The response was broad. From 2024, the federal government capped new international student permits, narrowed post-graduation and spousal work rights, restricted access to temporary foreign worker streams, and introduced a target to reduce temporary residents to less than 5 per cent of the population. These measures were not only designed to reduce new inflows; they were designed to reduce the temporary-resident stock itself. In effect, Canada moved from managing permanent immigration levels to managing the total temporary-resident stock.

Figure 7: Canada, international migration arrivals, departures and net migration, Trailing four-quarter totals, Q3 2016–Q1 2026



Source: Statistics Canada Table 17-10-0040-01. Trailing four-quarter totals. Arrivals=immigrants+returning emigrants+non-permanent resident inflows. Departures=emigrants+non-permanent resident outflows. Net international migration=arrivals–departures where gross NPR flows are available; otherwise it is calculated from immigrants–net emigration+net non-permanent residents.

Figure 7 is consistent with this policy turn. Net international migration kept rising through 2023 and early 2024, then fell sharply. Non-permanent resident inflows declined after student caps and related restrictions came into effect, while outflows continued to rise through 2025. By late 2025, trailing four-quarter departures exceeded arrivals, pushing net international migration below zero.

The word “departures” needs care in the Canadian data. Statistics Canada’s non-permanent resident outflows are not simply people leaving the country. They also include people leaving the temporary-resident stock because they become permanent residents or otherwise change status. Canada’s adjustment was therefore not mainly a removals story. It was a stock-drainage story: fewer new entries, fewer renewals, narrower bridges from study to work,

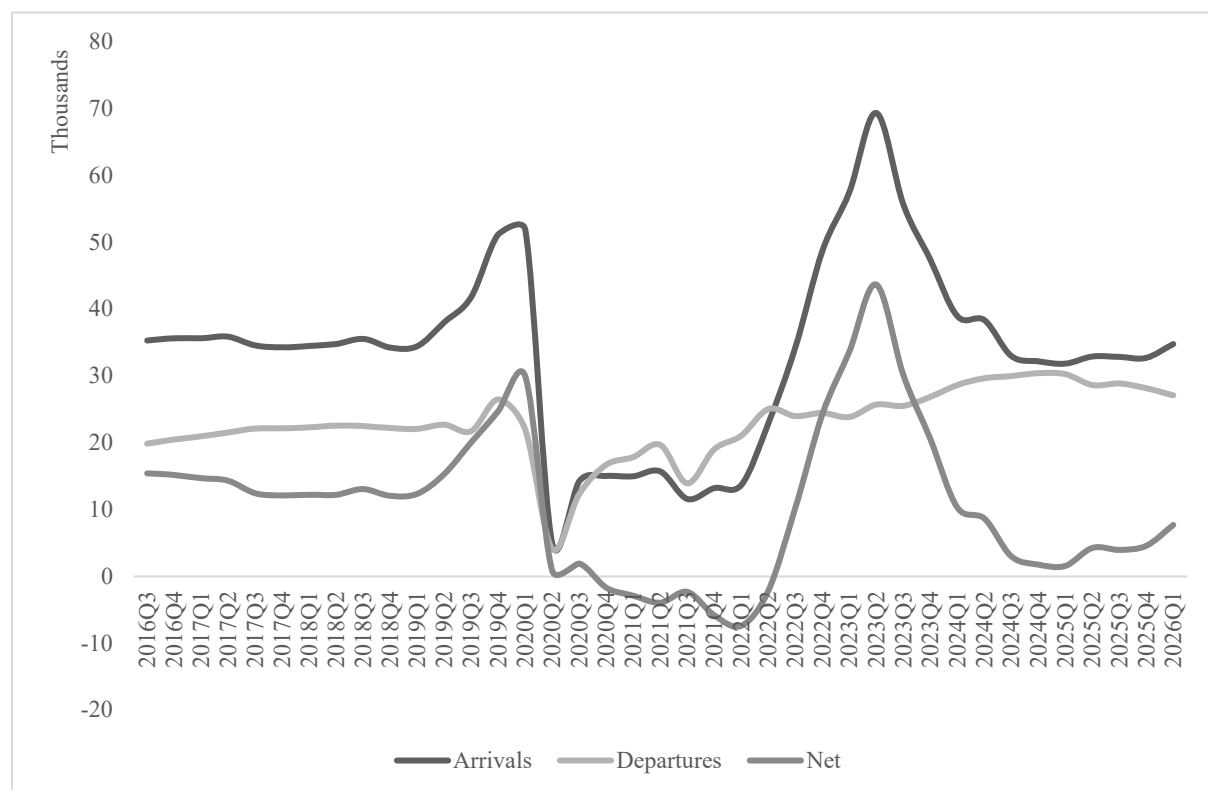
tighter family work rights, more expiry, more transition to permanent residence, and some physical departure.

This makes Canada a useful second case. It shows that a migration splash need not arise only through border closure and delayed exits. It can also emerge when a large temporary-resident stock grows quickly, becomes politically exposed, and is then deliberately reduced. The route differs, but the broad pattern is familiar: post-shock expansion, political correction, falling inflows, rising outflows from temporary status, and rapid movement toward a new balance.

9.4 New Zealand: A Clean Arrivals–Departures Splash

New Zealand provides a particularly clear post-pandemic migration splash because the movement in arrivals, departures, and net migration is visible in the same series (Figure 8). Its border was fully reopened by August 2022, after a staged reopening earlier that year.

Figure 8: New Zealand: migrant arrivals, departures, and net migration, trailing four-quarter totals, 2016–2026



Source: Stats NZ, International Travel and Migration series.

During the closure period, ordinary circulation was compressed. Migrant arrivals fell sharply, while departures also fell as mobility was restricted. When the border reopened, arrivals recovered very quickly. Stats NZ reports that annual migrant arrivals peaked at 234,800 in the October 2023 year. Departures rose later, provisionally peaking at around 122,000 in the May 2025 year.

This timing difference produced the splash. Net migration moved from a pandemic trough to a large post-reopening peak as arrivals surged before departures caught up. It then corrected

as arrivals fell and departures continued rising. By mid-2025, annual net migration had fallen to around 13,700, with arrivals down 23 per cent and departures up 13 per cent in the June 2025 year.

The policy setting also matters. New Zealand reopened into a redesigned migration system. The 2022 Immigration Rebalance changed post-study work rights and linked lower-level qualifications more tightly to labour-market need. The Accredited Employer Work Visa became central to work migration, and further changes in April 2024 tightened employer obligations and visa conditions.

New Zealand therefore shows the migration splash in a relatively simple form: border closure compressed circulation; reopening released arrivals; departures adjusted later; net migration spiked and then corrected. It is a useful companion to Australia because the chart makes the mechanism visible directly: net migration changed sharply because arrivals and departures moved on different timetables.

9.5 Weak-Fit Cases: Permanent and Humanitarian Programmes

Permanent and humanitarian programmes in Australia, Canada, and New Zealand provide useful weak-fit cases. They matter analytically because a framework that appears everywhere explains little. If the migration splash is a scope-bounded account of post-shock adjustment, it should be clearest in temporary, elastic, and institutionally sequenced flows, and weaker in streams where admissions are planned, capped, rights-based, or politically allocated.

This is broadly what the pandemic-era evidence suggests. Permanent migration programmes were disrupted by processing delays and travel restrictions, but their realised volumes were often shaped by annual planning levels, selection rules, and government-determined intake targets. Humanitarian programmes were also affected by travel constraints and administrative interruptions, but they did not generally operate through the same mechanism of compressed private demand followed by rapid release. Their trajectories were more likely to be determined by quotas, resettlement capacity, protection obligations, diplomatic priorities, and administrative processing.

These weak-fit cases therefore do not undermine the migration splash framework. They help define it. Where migration is capped, planned, or rights-based, post-shock pressure may be stored or displaced, but it is less likely to appear as a visible oscillatory sequence in realised flows. Where migration is temporary, elastic, and sensitive to timing, the same shock is more likely to produce observable compression, rebound, overshoot, and correction.

The contrast also helps interpret the historical case that follows: the question is not whether all migration after major shocks oscillates, but whether particular institutional and transport conditions allow compression and release to become visible in aggregate net migration.

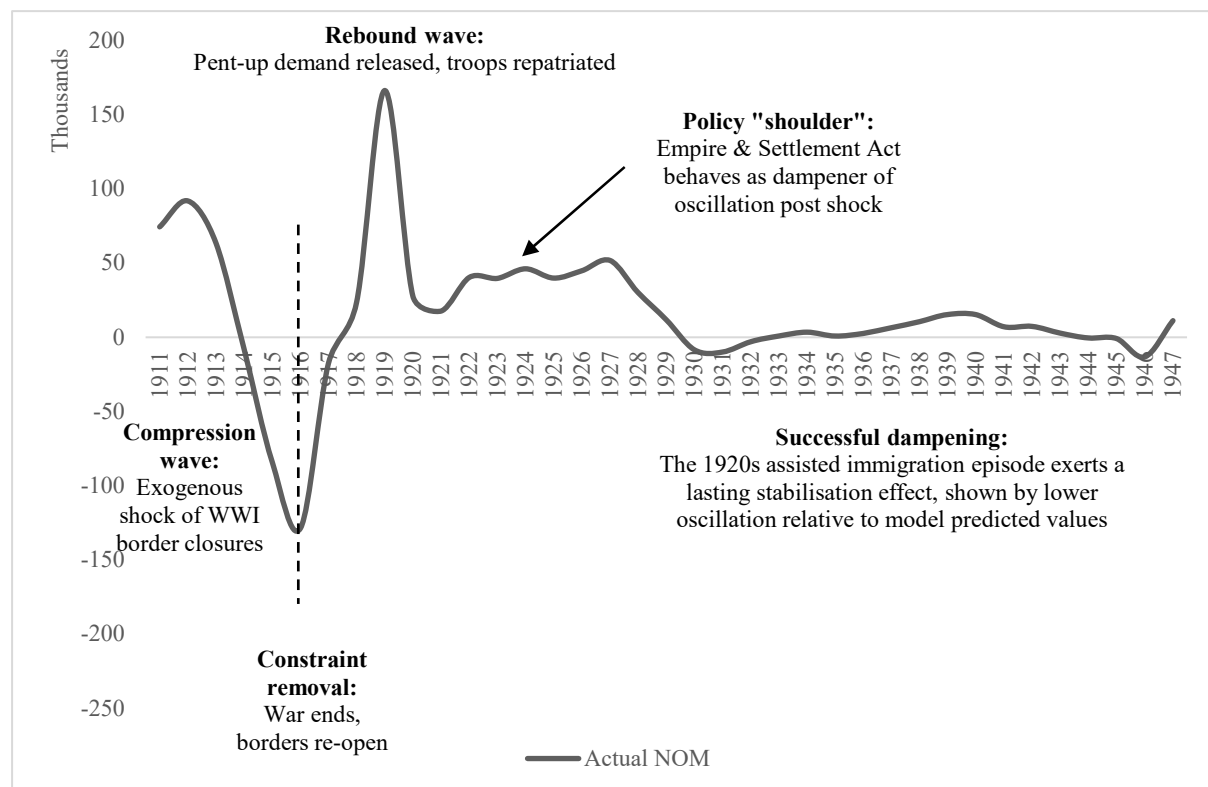
9.6 World War I: A Historical Compression–Release Analogue

The First World War provides a historical stress-test for the migration splash framework (Figure 9). The preceding cases are all shaped by the distinctive conditions of pandemic-era border closure, temporary migration stocks, and contemporary visa administration. The wartime case asks whether the underlying logic travels beyond that setting. Its role is not to validate the model or imply that early twentieth-century migration systems behaved like

contemporary temporary-migration regimes. Rather, it shows that compression–release dynamics can appear when a major shock constrains mobility, stores or defers movement, and is followed by reopening, transport normalisation, and policy intervention.

In Australia, net overseas migration shifted from substantial positive inflows before 1914 to deep negative values during the war years. This does not reflect only a normal cyclical downturn. Military mobilisation, shipping diversion, wartime administration, and border controls suppressed ordinary migration. The relevant point is not that wartime migration was “temporary” in the contemporary visa sense, but that the transport and institutional channels through which migration normally occurred were abruptly constrained. The system was compressed rather than simply adjusting freely.

Figure 9: Post-World War I adjustment in Australian net overseas migration, 1911–1947



Source data for Actual NOM: 3105.0.65.001 Australian Historical Population Statistics, 2019. Table 7.5 Net interstate and overseas migration, states and territories, year ended 31 December, 1860 onwards.

When wartime constraints eased, migration did not return smoothly to its earlier path. Net migration rebounded sharply in 1919, consistent with the release of some delayed movement. Return migration, settlement plans, family reunion, labour reallocation, and ordinary circulation may all have been disrupted during the war. As transport and administration normalised, these deferred movements resumed in concentrated form. The timing and composition of the rebound cannot be identified with the precision available in contemporary data, but the aggregate sequence is consistent with compression followed by release.

The case also tentatively suggests why policy matters to the post-shock path. In the early 1920s, assisted migration programmes may have softened what would otherwise have been a sharper post-rebound correction. Britain faced unemployment and fiscal strain, while

Australia sought population growth. The Empire Settlement Act of 1922 thus supported British–Dominion assisted migration through subsidised passages and settlement schemes. These flows were organised and politically supported rather than purely market-driven, and they undoubtedly sustained inflows above what ordinary post-war adjustment alone would have produced. In splash terms, policy may have prolonged the shoulder of the rebound and altered the rate of attenuation.

The value of this example is therefore comparative rather than confirmatory. It guards against reading the migration splash as a peculiarity of COVID-19, while also showing the framework's limits. The data are coarser, the mechanisms are less directly observable, and the institutional setting differs from contemporary temporary migration. Even so, the sequence of wartime compression, post-war release, and policy-shaped adjustment resembles the migration splash pattern enough to suggest that large-scale compression–release dynamics are not unique to the pandemic era. The case is best read as an historical analogue: useful for broadening the framework's temporal reach, but not for claiming a universal oscillatory law of migration.

The five cases above clarify both the reach and the limits of the migration splash framework. Splash dynamics are most visible when mobility is abruptly compressed, delayed movement or temporary status accumulates, and reopening or policy change releases that pressure faster than the system can immediately absorb. They may arise through different routes: in Australia, delayed departures inflated net migration after arrivals resumed. In Canada, the key mechanism was the deliberate reduction of a large temporary-resident stock. In New Zealand, arrivals and departures moved on visibly different timetables after reopening. Permanent and humanitarian programmes provide weak-fit cases, showing that where intake is capped, planned, or rights-based, the splash is muted or absent. The First World War case extends the comparison historically, suggesting more tentatively that compression–release dynamics can also appear when transport disruption, war, and assisted migration reshape mobility. These examples are illustrative, not definitive. They show that the migration splash is best used as a diagnostic lens: a way to recognise and compare post-shock adjustment paths while remaining attentive to data limits, institutional differences, and policy intervention.

10. Concluding Reflections: Migration, Oscillation, and System Recovery

This paper has introduced the migration splash as a framework for interpreting post-shock migration dynamics. Drawing on demographic equilibrium theory, general equilibrium economics, systems and migration-systems theory, and policy feedback and punctuated equilibrium theory, it develops a two-level account of adjustment following disruption.

At the macro level, migration systems operate as coupled inflow–outflow processes. When steady state is displaced, delayed interaction between arrivals and departures can generate rebound, overshoot, and corrective counter-movement. Under conditions of feedback and dissipation, such systems may exhibit a tendency toward damped oscillation. The damped sine wave provides a reduced-form way to describe this hypothesised pattern.

At the actor and institutional level, migration outcomes are mediated by reflexive institutions and strategic adaptation. Policymakers interpret signals, anticipate surges, and intervene through quotas, suspensions, recruitment schemes, or incremental calibration. These interventions modify amplitude, phase shifts, and damping, amplifying, truncating, or

attenuating oscillatory adjustment. Migration dynamics are therefore both structural and political: generated by system properties and continually reshaped by institutional design.

The framework also generates an empirical research agenda. Future work can examine whether rebound, overshoot, correction, and attenuation are systematically observable across migration streams, regulatory regimes, and historical episodes; whether the magnitude and timing of adjustment vary with the type of shock; and whether parameters such as amplitude, damping, and phase shift differ predictably across temporary, permanent, humanitarian, family, and labour migration systems. The point is not to establish a universal migration law, but to evaluate when a damped oscillatory representation provides a useful approximation of observed post-shock adjustment.

The framework may also have practical value for migration governance. If some forms of post-shock adjustment are recurrent, policymakers may be able to anticipate volatility rather than merely react to it. Staged reopening, backlog management, forward guidance, phased visa changes, and calibrated quota adjustments can all be interpreted as mechanisms that alter the amplitude, timing, or attenuation of migration responses. The framework implies a qualified argument for stabilising migration governance: not more control for its own sake, but institutional design capable of dampening avoidable volatility.

The argument is not simply that regulation changes migration levels, but that regulation can shape migration volatility. Poorly sequenced or reactive systems may amplify post-shock swings, producing visible surges that invite public backlash and further policy overcorrection. Conversely, adaptive regulation may dampen volatility by smoothing transitions, coordinating inflows and outflows, and reducing the likelihood that delayed adjustment is misread as loss of control. Whether such interventions reliably stabilise migration without creating new distortions remains an empirical question, but the migration splash framework provides a vocabulary for asking it.

The framework nonetheless has clear limits. In highly regulated environments, oscillatory dynamics may be muted, displaced, or strategically managed. Migration systems are reflexive: once volatility is anticipated, institutions may be designed to dampen it. The migration splash framework therefore does not assert the inevitability of visible oscillation. It identifies a possible adjustment path whose expression depends on institutional architecture, political response, and the composition of migration streams.

This returns us to the opening puzzle. Border closures, wars, and abrupt policy shocks do not simply interrupt migration; they can also reorder the timing of movement, defer exits, store demand, and reshape the institutional channels through which later flows occur. By integrating equilibrium dynamics with reflexive policy steering, the migration splash framework explains why migration may surge after being suppressed, and why the path back from disruption may be neither smooth nor a return.

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Governing Temporariness in a Settlement State:

Why Net Migration Targets Fail and What to Do Instead

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Abstract

Temporary migration has become structurally embedded in contemporary settlement states, yet migration policy remains focused on annual Net Overseas Migration (NOM) figures. This article argues that such measures are poorly matched to the dynamics they are often expected to govern. It develops a parsimonious stock–flow framework for analysing how temporary migrant populations grow, stabilise, and contract. Using Australia as a case, it shows that temporary population growth is determined not by total NOM, but by the relationship between temporary net inflows and transitions to permanent residence. Reconstructing Australia’s migration dynamics from 2009 to 2025, the article shows that the post-COVID expansion of the temporary population is best understood as the result of a widened gap between temporary inflows and onshore conversions, rather than a simple surge in arrivals. It then considers Canada’s temporary population target as a contrasting stock-based approach. The article concludes by proposing a conversion-anchored framework for governing temporariness.

Keywords: temporary migration; settlement states; net overseas migration; population dynamics; permanent residence transitions; Australia; Canada

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Article Category: Research Article

Introduction: The Politics of Temporariness

For much of the twentieth century, migration policy in countries like Australia was organised around a relatively simple model: people moved long distances and settled permanently. The central policy questions concerned selection, integration, and the long-term demographic and economic effects of permanent settlement.

That model no longer captures the reality of twenty-first century mobility. Human movement is now faster, more circular, and more complex. Advanced economies increasingly rely on large populations of temporary migrants—students, working holiday makers, employer-sponsored workers, and humanitarian entrants on temporary visas—whose legal status is conditional and whose pathways to permanence are uncertain. In practice, temporary migration has become structurally embedded in labour markets, higher education systems, and demographic growth strategies.

Existing scholarship has generated rich accounts of the politics, ethics, and labour-market consequences of temporary migration. What it has not provided is a parsimonious demographic framework for analysing how temporary migrant populations grow, stabilise, and contract over time. This paper addresses that gap.

In Australia and other immigration major destination countries, public debate has intensified around migration levels, particularly following the post-COVID rebound in arrivals. Yet that debate is framed overwhelmingly in terms of Net Overseas Migration (NOM)—a single annual headline number. The implicit assumption is that controlling NOM will control the broader social and economic consequences of migration. This paper argues that this framing is analytically mistaken.

The central policy challenge today is not “too much migration” in terms of aggregate inflows, but how to manage the size and dynamics of the temporary migrant population. Temporary

residents place demands on rental housing and infrastructure, shape labour market conditions, and raise ethical questions about expectations of permanent residence that may ultimately not be realised. Yet the tools used in public debate—especially annual NOM targets—are poorly aligned with these underlying stock dynamics.

Using a simple stock–flow model of a destination country migration systems like those of Australia and Canada, we show that the evolution of the temporary population depends not on total NOM, but on the relationship between temporary inflows and transitions to permanent status. Net migration is an accounting outcome, not a structural policy lever. A NOM target is therefore neither necessary nor sufficient to stabilise the temporary population.

We then examine Australia’s recent experience, including the post-COVID temporary population bulge, and compare it with Canada’s decision to adopt an explicit temporary population target. While Canada’s approach shifts attention from flows to stocks, its benchmark appears to be policy-driven rather than derived from a transparent demographic rationale.

Building on this analysis, we propose an alternative framework: anchoring temporary migration to the system’s permanent absorption capacity by aligning temporary inflows with the rate of conversion to permanent residence. This links the governance of temporary migration to settlement capacity while preserving flexibility within the permanent program cap.

The paper proceeds as follows. Section 2 develops the stock–flow framework. Section 3 demonstrates why net migration targets are a category error within that framework. Section 4 examines Australia’s temporary population dynamics since 2009. Section 5 considers Canada’s stock-based policy experiment. Section 6 outlines a conversion-anchored alternative for Australia, and Section 7 assesses its risks and trade-offs.

The question, ultimately, is not what NOM number to choose. It is what scale of temporariness a settlement state is willing—and able—to sustain.

Literature review

Current debates on temporary labour migration turn on a tension between economic need and political unease. One body of work argues that temporary programmes can meet labour demand while limiting permanent immigration; another shows that they often produce exploitation, dependency, and settlement dynamics that states neither plan for nor govern well. This tension is especially important in countries like Australia, Canada, and New Zealand, where migration policy was historically organised around permanent settlement but temporary migration is now embedded in labour markets, higher education, and population growth.

One strand of scholarship offers the strongest case for temporary labour migration as a policy instrument. Ruhs provides perhaps the clearest statement of the “triple-win” argument: if well designed, temporary programmes can help destination countries meet labour shortages, expand legal labour-market access for workers from poorer countries, and generate development gains for origin states through remittances, savings, and return migration (Ruhs, 2006). This literature argues that the failures of earlier guestworker schemes reflected poor design and weak enforcement rather than temporariness itself. On this view, temporary migration can work if states enforce labour standards, regulate recruiters, prevent migrants from being used as artificially cheap labour, and establish transparent rules for return and, where appropriate, limited transition to permanent residence (Martin et al., 2006; Ruhs, 2006).

The strongest normative version of this position is Ruhs’ claim that labour migration policy is shaped by a persistent trade-off between numbers and rights. States may admit larger

numbers of lower-skilled migrants only if some rights linked to full social membership are restricted; stronger rights, conversely, may reduce willingness to admit migrants at all (Ruhs, 2013; Ruhs & Martin, 2008). On this view, temporary labour migration may be ethically defensible if it secures a core floor of civil, legal, and workplace rights while limiting some rights tied to equal long-term membership. Bauböck and Ruhs extend this argument by suggesting that the “triple win” is normatively possible only under demanding democratic conditions, especially fair representation of affected interests and transnational governance that protects migrants from being treated merely as labour inputs (Bauböck & Ruhs, 2022). Together, this literature offers the clearest case for managed temporariness.

Against this stands the classic European critique of guestworker systems. Castles argued that the postwar model failed on its own terms because states tried to import labour without accepting people (Castles, 1986). Temporary workers did not simply rotate out; many stayed, reunited with families, formed communities, and became settled minorities. On this view, temporariness is unstable because labour migration sets in motion social processes that states cannot fully control. Castles later argued that newer European regimes often reproduce the same contradiction by seeking migrant labour while withholding equal membership (Castles, 2006). Related work reinforces this critique. Martin and Miller argue that large temporary worker programmes rarely remain temporary and often generate irregular migration, discrimination, and political conflict (Martin & Miller, 1980). Rass shows how European recruitment systems regulated temporary migration while embedding it in longer-term economic structures that exceeded the fiction of rotation (Rass, 2012). Lutz similarly argues that liberal democracies often prefer “mobility over migration,” though this preference weakens as countries become more accustomed to immigration (Lutz, 2024).

If European scholarship shows how temporary systems can become permanent despite official intentions, the Gulf literature highlights a different pattern: regimes designed to block

settlement while preserving long-term labour dependence. Longva's analysis of Kuwait's *kafala* system shows how sponsorship ties migrants' residence, employment, and mobility to a single employer, producing deep dependence while foreclosing permanent membership (Longva, 1999). Gardner and Pande similarly show how Gulf and Middle Eastern systems make migrants economically indispensable while excluding them from political belonging and producing dependency, illegality, and deportability (Gardner, 2010; Pande, 2013). Here temporariness is not transitional but institutionalised. At the same time, Errichiello and Nyhagen show that formal impermanence does not preclude strong forms of social attachment, producing belonging without permanence (Errichiello & Nyhagen, 2021).

A related Asian literature, especially on Singapore, treats temporariness as a system of labour control. Yeoh argues that Asian migration regimes rely on enforced transience and continuous circulation, a model the pandemic exposed as unjust and unsustainable (Yeoh, 2022). Neo shows how Singapore's legal regime keeps low-wage migrants outside the national community (Neo, 2015). Yea and Chin further show how temporality, employer control, and wider institutional arrangements generate dependence, disempowerment, and discrimination (Yea, 2017; Chin, 2019). Across this literature, temporary migration appears not merely as a visa condition but as a governing technology.

These debates are highly relevant to Australia, but the Australian case has its own distinctive context. Unlike classical European guestworker states, Australia was historically organised as a settler society in which long-distance migration was tied to permanent incorporation. Recent scholarship argues that temporary migration has progressively unsettled this model. Walsh argues that Canada and Australia have shifted from "nations of immigrants" toward "states of transience," where temporary migration serves labour-market regulation rather than nation-building (Walsh, 2014). Mares similarly suggests that temporary migration is

reshaping the Australian settler social contract by normalising a large population that is economically present but only partially incorporated (Mares, 2016).

Australian scholarship has developed this critique in two main directions. One strand highlights declining migrant bargaining power and the emergence of guestworker-like features in labour migration policy. Wright and Clibborn argue that since the mid-1990s migrants' residency security, labour mobility, and institutional protections have weakened, reducing workplace agency and making the system resemble a guestworker state (Wright & Clibborn, 2020). Koleth similarly argues that temporary migration has widened the gap between migration and social policy, while Robertson shows that temporariness is also a lived experience shaped by waiting, extension, and uncertainty (Koleth, 2017; Robertson, 2014).

A second strand examines the rise of two-step migration. McDonald argues that the merger of temporary and permanent skilled migration has made Australia's system more responsive to labour demand and more important to labour-force growth in an ageing society (McDonald, 2015). By contrast, Khoo, McDonald and Hugo show that this blurs the boundary between temporary and permanent migration, since many skilled temporary migrants either intended to settle or developed that intention after arrival (Khoo et al., 2008). Howe traces the political institutionalisation of temporary skilled migration and the increasingly contested governance of pathways to permanent residence, while more recent policy work suggests that debate has shifted from whether temporary migration should exist to how it should be regulated and what transitions to permanence should be available (Howe, 2019; Howe & Nikoloudakis, 2024; Coates et al., 2022; Sherrell, 2021).

These literatures identify three broad positions: temporary migration as a potentially beneficial policy instrument; temporary migration as prone to either unplanned settlement or entrenched labour dependence; and temporary migration as structurally embedded through

two-step migration and the normalisation of conditional membership. Yet while this scholarship explains the political logics, normative dilemmas, and labour-market effects of temporariness in considerable depth, it offers less purchase on the demographic dynamics of temporary populations themselves. In particular, it lacks a parsimonious framework for analysing how temporary migrant stocks grow, stabilise, and contract over time. This paper argues that, in settlement states, those dynamics are governed not by aggregate net migration totals but by the relationship between temporary net inflows and transitions to permanent residence.

A Stock-Flow Model for Temporary and Permanent Migration

Understanding contemporary migration policy requires a clear distinction between stocks — the number of people present at a point in time — and flows — the movements that change those numbers. Public debate frequently collapses this distinction, focusing on annual net migration figures without considering how different flows alter the composition and dynamics of the resident population. A stock–flow framework makes these mechanics explicit (Figure 1).

We conceptualise a destination country migration system as consisting of two population stocks. The first is the Permanent Population ($PPOP_t$), which includes citizens and permanent residents. The second is the Temporary Population ($TPOP_t$), comprising temporary visa holders who meet the same residence standard. Total population (the official Estimated Resident Population) is simply the sum of these two stocks.

[Insert Figure 1 about here]

Changes in these stocks occur through migration flows and natural increase. The temporary population changes through Temporary Net Overseas Migration ($TNOM_t$) — net inflows of temporary residents — and through onshore conversions from temporary to permanent status ($PCON_t$). Conversions reduce the temporary stock by transferring individuals into the permanent population. The permanent population, in turn, grows through Permanent Net Overseas Migration ($PNOM_t$), through these same conversions ($PCON_t$), and through natural increase (NI_t), defined as births minus deaths.

Permanent Net Overseas Migration ($PNOM_t$) itself consists of several components: visa-linked skilled and family migration, humanitarian migration, and net movements of those entitled to free movement (in the Australian case, this includes New Zealand and Australian citizens). These elements together constitute the net overseas migration that directly adds to the permanent stock.

The evolution of the system can be expressed compactly in the following equation:

$$\begin{pmatrix} PPOP_{t+1} \\ TPOP_{t+1} \end{pmatrix} = \begin{pmatrix} PPOP_t \\ TPOP_t \end{pmatrix} + \begin{pmatrix} PNOM_t + PCON_t + NI_t \\ TNOM_t - PCON_t \end{pmatrix}, \text{ with } NOM_t = PNOM_t + TNOM_t$$

The permanent population in period $t+1$ equals the permanent population in period t , plus permanent net overseas migration ($PNOM_t$), plus conversions from temporary status ($PCON_t$), plus natural increase (NI_t). The temporary population in period $t+1$ equals the temporary population in period t , plus temporary net overseas migration ($TNOM_t$), minus conversions to permanence ($PCON_t$). Total Net Overseas Migration is defined as the sum of permanent and temporary net flows: $NOM_t = PNOM_t + TNOM_t$. This is an accounting identity.

Two features of this structure are crucial. First, conversions reallocate individuals between stocks but do not affect total Net Overseas Migration. A person who converts from temporary to permanent status reduces the temporary stock and increases the permanent stock by the

same amount, leaving total NOM unchanged. Second, the growth of the temporary population depends not on total NOM, but on the relationship between temporary inflows and conversions.

From the law of motion for the temporary population, $TPOP_{t+1} = TPOP_t + TNOM_t - PCON_t$, it follows directly that the temporary population remains constant if and only if temporary net inflows equal conversions to permanence. In other words, the temporary stock stabilises when $TNOM_t = PCON_t$. If temporary inflows exceed conversions, the stock grows; if conversions exceed inflows, it contracts.

Substituting this stabilisation condition into the identity for total Net Overseas Migration yields a further result. When the temporary population is constant, total NOM must equal permanent net overseas migration plus conversions to permanent status. The sum of these two flows represents the total annual additions to the permanent population. We define this quantity as the Net Permanent Intake ($NPI_t = PNOM_t + PCON_t$). It follows that the temporary population is stable if and only if $NOM_t = NPI_t$.

This result is mechanical. It does not depend on political preference, behavioural modelling, or normative judgement. It arises directly from the accounting structure of the system. Natural increase does not enter into the stabilisation condition because it affects only the permanent stock.

The key analytical insight is therefore straightforward: the temporary population grows when temporary inflows exceed conversions to permanence, shrinks when conversions exceed those inflows, and stabilises when the two are equal. The dynamics of temporariness are governed by the gap between these flows — not by the aggregate Net Overseas Migration figure itself.

Why Net Migration Targets Are a Category Error

The stock–flow framework developed above has a straightforward implication for migration policy. If the aim is to stabilise or manage the temporary population, the key variable is not headline Net Overseas Migration (NOM), but the relationship between temporary net inflows and transitions to permanent status. The temporary stock grows when inflows exceed conversions and stabilises only when they are equal. That mechanical condition is largely independent of the aggregate NOM figure.

Yet debate in Australia and many other major migrant destination countries remains dominated by annual net migration targets. Their appeal is obvious: a single number appears simple, measurable, and politically decisive. But net migration is not a policy lever. It is an accounting outcome.

By definition, NOM aggregates permanent and temporary net flows. It includes visa-linked permanent migration, humanitarian migration, temporary migration, and the net movements of local citizens (and others entitled to free movement). These components are shaped by different rules, incentives, and shocks. Some are directly influenced by policy; others, especially citizen mobility, are not. Most importantly, NOM does not directly determine the size of the temporary population. That stock depends on the gap between temporary net inflows and conversions to permanence. A government could meet a NOM target while the temporary population continues to grow if temporary inflows exceed conversions. Equally, the temporary population could contract in a year of relatively high NOM if conversions outpace temporary inflows.

A NOM target is therefore neither necessary nor sufficient to stabilise the temporary population.

This is not just a technical problem. Using NOM as the main policy metric collapses distinct processes—permanent settlement, temporary labour mobility, and citizen movements—into a single annual residual. It substitutes the management of a headline number for the management of the underlying population dynamics. The result is a form of statistical politics that obscures the mechanisms actually driving pressure on housing, infrastructure, labour markets, and the social consequences of long-term temporariness.

If these are the real concerns, then the relevant object of policy is the size and trajectory of the temporary stock. Governing that stock requires attention to the flows that change it: temporary arrivals, departures, and transitions to permanent residence. Aggregate NOM does not capture those mechanisms with sufficient precision.

The stock–flow model makes this clear. NOM measures the combined result of several flows; it does not govern the relationship that drives temporary population growth. A NOM target is therefore an indirect and unreliable instrument for managing temporariness. If the objective is coherent governance in a settlement state, the central question is not what NOM number to choose, but how to structure the balance between temporary inflows and permanent absorption capacity.

Australia’s Temporary Population, 2009–2025: Stock Dynamics in Practice

Using ABS and Department of Home Affairs data for 2009–10 to 2024–25, we reconstruct the model’s key components and show that Australia’s temporary population evolves in line with the stock–flow logic set out above. Table 1 reports Permanent NOM, Temporary NOM, onshore conversions, and resulting temporary and permanent population stocks.

[Insert Table 1 about here]

The Mechanics of Growth

The law of motion for the temporary population is straightforward:

$$TPOP_{t+1} = TPOP_t + TNOM_t - PCON_t$$

Annual growth in the temporary population is therefore equal to Temporary NOM minus conversions to permanent residence. It bears repeating that this is not an empirical approximation; it is an accounting identity.

Figure 1 plots the annual numeric growth of the temporary population from 2009–10 to 2024–25. The growth in each year corresponds exactly to the difference between Temporary NOM and conversions.

[Insert Figure 2 about here]

From 2009–10 to 2012–13, under successive Rudd- and Gillard-led Labor governments, growth was modest at most. From 2013–14, under the Abbot-led Liberal-National Coalition Government, Temporary NOM began to exceed conversions consistently, so the temporary population expanded. Between 2016–17 and 2018–19, under successive Turnbull- and Morrison-led Coalition governments, the stock grew by approximately 100,000 persons annually. This sustained gap between inflows and conversions accumulated year after year, producing steady stock growth.

The model predicts precisely this outcome: when $TNOM_t > PCON_t$, the temporary population must increase.

The COVID Disruption

COVID-19 sharply disrupted mobility: border closures halted both arrivals and departures. In 2020–21, Temporary NOM turned negative and the temporary population fell. This illustrates a core feature of the model: because Temporary NOM is net movement, the temporary stock contracts when net inflows drop below conversions or become negative.

After borders re-opened, under the Morrison-led Coalition Government and then the Albanese-led Labor Government, the temporary population increased by more than 370,000 persons in 2022–23 — the largest single-year increase in the period under review. By 30 June 2025, the temporary population reached approximately 1.7 million persons (Figure 3).

[Insert Figure 3 about here]

The post-COVID expansion is often read as evidence of unusually high arrivals, but the data point to a more complex dynamic. Although arrivals rebounded, cumulative arrivals over the COVID period remained below pre-pandemic levels. The main driver of temporary stock growth was the interaction of delayed departures and resumed arrivals. Due to extensions granted during border closures, many temporary residents stayed longer than expected, depressing departures; when arrivals resumed, new entrants were added to an enlarged residual cohort. Because conversions to permanent status did not rise enough to offset net inflows, the gap between *TNOM* and *PCON* widened sharply. The resulting “bulge” in the temporary population was thus a mechanical outcome of the stock–flow system under volatile conditions.

Structural Embedding of Temporariness

Over the longer term, Australia's temporary population appears to have become structurally embedded in both labour markets and urban settlement patterns. Periods of contraction have been brief interruptions within a broader trajectory of expansion, and the post-COVID surge pushed the temporary population to historically high levels. This record reinforces the paper's central claim: the growth of the temporary population is governed not by aggregate Net Overseas Migration, but by the relationship between temporary net inflows and permanent absorption capacity.

What matters is whether temporary entries exceed the rate at which people transition to permanent status. The policy issue is therefore not whether migration is "too high" in terms of aggregate flows at the border, but how the relationship between temporary inflows and permanent settlement should be organised. If the gap between these flows drives temporary stock growth, policy must decide whether to allow that gap to widen, narrow it deliberately, or constrain it. The Canadian case provides a useful comparative test of this question.

Canada's Stock Target: A Live Policy Experiment

Canada has recently adopted one of the clearest stock-based migration strategies among advanced economies. Its 2026–2028 Immigration Levels Plan commits the federal government to reducing the temporary resident population from 7.6 per cent of the total population in 2024 to 5 per cent by 2027, while maintaining permanent migration at about 1 per cent of population annually (Canadian Office of the Parliamentary Budget Officer, 2026). The Parliamentary Budget Officer's analysis shows that this adjustment is being achieved not only through lower temporary inflows, especially of students, but also through one-off conversions of 148,000 non-permanent residents to permanent status, meaning that part of the

reduction reflects administrative reclassification rather than physical departure (Canadian Office of the Parliamentary Budget Officer, 2026).

This marks a clear shift away from reliance on net migration figures alone. Rather than targeting annual flows, Canada has specified a desired stock outcome: that the temporary population should remain below a given share of the total population. In doing so, it implicitly recognises that the core policy issue is not abstract net migration totals, but the scale and sustainability of temporariness.

Australia and Canada are comparable in important ways. Both are large, urbanised, commodity-exporting federations that have relied on skilled permanent migration since British colonisation in the 19th Century. Since the 1990s, both also experienced major growth in temporary resident populations, driven by international students, temporary workers, and other short-term entrants, followed by the sharp COVID contraction and post-pandemic rebound.

Canada's recent approach is therefore best understood as an attempt to reassert control over the temporary stock after a period of volatility. The 5 per cent target provides a politically salient benchmark, while the permanent intake target reinforces the idea that permanent settlement capacity should anchor the broader migration system.

[Insert Figure 4 about here]

Australian commentary on Canada's recent migration policy has often focused on its temporarily low Net Overseas Migration figures. That misses the main point. Canada's permanent migration planning levels remain substantially higher relative to population than Australia's—0.86 to 1.04 per cent, compared with Australia's current level of about 0.74 per

cent (Figure 4). And because the 5 per cent temporary-population target is a population share, the temporary population will grow again as the overall population grows. Canada's low NOM therefore reflects a transitional adjustment to reduce the temporary share from 7.6 to 5 per cent, not a permanent reduction in migration.

To reduce that share, temporary net inflows must fall below the rate of transition to permanence and departure. In practice, Canada has indicated that the main adjustment will come through lower international student admissions rather than cuts to labour-market-oriented temporary visas. This implies a prioritisation in which temporary residents tied directly to labour demand are treated as economically essential, while other categories are adjusted to meet the stock target.

At the same time, Canada has expanded pathways to permanent residence for some temporary cohorts, including protected persons. Conversions are therefore part of the adjustment strategy. In stock–flow terms, Canada is seeking to reduce the temporary population by narrowing, and in some cases reversing, the gap between temporary inflows and transitions to permanence.

The Canadian case matters for two reasons. First, it shows that governments can shift the policy frame from flows to stocks. The temporary population share is easy to understand and closely connected to concerns about infrastructure, housing, and social integration. Second, it highlights the limits of stock targeting. A figure such as 5 per cent may be politically salient, but it is still a policy judgement rather than a transparent demographic optimum.

Achieving such a target still requires manipulating the underlying flows. Without an explicit rule linking temporary inflows to permanent absorption capacity, the path to a chosen stock target may rely on ad hoc adjustments, discretionary administrative measures, or politically driven cuts to particular visa categories. Canada's approach is thus an important step in

migration governance, but it does not fully solve the structural problem. A stock target identifies the desired outcome; it does not by itself specify the mechanism needed to achieve it predictably. The next section proposes one way to do that.

A Conversion-Anchored Rule for Temporary Migration

Our analysis points to a simple but important conclusion: the temporary population is shaped by the relationship between temporary net inflows and transitions to permanent residence. If inflows exceed conversions, the stock grows; if conversions exceed inflows, it contracts. Stabilisation occurs only when the two are equal.

This suggests a direct policy response. Instead of targeting aggregate NOM or an arbitrary temporary-population share, policy could anchor temporary migration to permanent absorption capacity by aligning Temporary NOM as closely as possible with the number of temporary-to-permanent conversions permitted within the permanent program. Under this approach, the temporary population would tend to stabilise, with net additions matched by exits through permanent conversion. The permanent migration program, already set through annual planning and public scrutiny, would become the main policy anchor.

Operationally, this would mean continuing to set the permanent program through existing budget and policy processes, while allocating part of that cap to onshore conversion. Table 2 shows there is limited scope for greater onshore conversion in the Humanitarian, Parent, and Child categories, since these are mostly offshore and shifting them onshore would often require prior temporary entry. Greater scope exists elsewhere. More Partner visas could be granted onshore earlier, reducing temporary residence without increasing total population. Within the Skilled Stream, some increase in onshore conversion might also be possible, for example through regional pathways, though part of the intake would still need to come directly from overseas to meet labour demand.

Projected conversions would then help determine a target level of Temporary NOM. Since Temporary NOM is arrivals minus departures, the most immediate lever is the rate of new temporary arrivals. Temporary visa grants could be calibrated so projected net inflows broadly match available conversion places.

In the short term, the temporary population could also fall through the departure of people whose visa options have been exhausted; both major political parties in Australia have signalled interest in accelerating the exit of roughly 100,000 such residents. A further lever would be to expand the permanent skilled intake, increasing conversions from temporary to permanent status. Australia's permanent intake remains well below one per cent of population, the level now targeted in Canada.

[Insert Table 2 about here]

Under this approach, the permanent program becomes the structural governor of temporary migration: temporary entry is limited by the rate at which the system is willing and able to grant permanence. Its advantages are clear. It targets the actual driver of temporary population growth, embeds the stabilisation condition directly in policy, preserves the existing architecture of a capped and publicly debated permanent program, and improves infrastructure and fiscal planning by tying migration more closely to durable settlement. It also preserves some labour-market flexibility, since temporary visas can still respond to demand, but within a ceiling set by permanent absorption capacity.

The proposal would also reframe political debate. Rather than contesting a headline NOM figure, it would focus attention on the scale and composition of permanent settlement and, with it, the level of temporariness Australia is prepared to sustain. The rule does not remove

trade-offs: it favours long-term stock stability over unconstrained short-run flexibility, shifts pressure onto the permanent cap, and depends on competent forecasting and administration. But unlike NOM targets or arbitrary stock shares, a conversion-anchored rule aligns policy with the demographic mechanics of the system and thus offers a more coherent way to govern temporariness in a settlement state.

Risks and Trade-Offs of a Conversion-Anchored System

A conversion-anchored rule aligns temporary inflows with settlement capacity, but like any migration policy it entails real trade-offs that must be weighed carefully.

Labour Market Responsiveness

The main trade-off is reduced short-run labour-market flexibility. Temporary migration has often served as a rapid response to sectoral shortages, but anchoring temporary inflows to the permanent program cap would tie aggregate entries to long-term settlement capacity. In periods of strong demand, employers could seek more temporary workers than the system would permit if permanent intake remained capped. The proposal therefore prioritises demographic stability over maximum short-term labour elasticity. Whether this is a drawback depends on how one balances economic flexibility against population governance. The rule still allows targeted temporary recruitment, but keeps overall inflows consistent with permanent absorption.

Political Pressure on the Permanent Program

By making conversions the constraint, the proposal shifts political pressure toward the permanent migration program. Employers, temporary residents, and advocacy groups would have stronger incentives to lobby for increases in the permanent cap in order to expand conversion opportunities. This redistribution of political pressure may be desirable insofar as

it forces explicit debate about long-term settlement capacity. However, it does not eliminate political contestation; it relocates it. The permanent program would become the central arena in which the scale of migration is negotiated.

Composition Effects

Not all permanent places are equivalent in economic, fiscal, or social terms. The composition of the permanent intake — across skilled, family, and humanitarian streams — would interact with the conversion mechanism as discussed above. If a large share of permanent places were allocated to non-labour-market categories, fewer places would be available for onshore conversions linked to employment pathways. Continued careful design would therefore be required to ensure transparency in conversion pathways and alignment between temporary inflows and permanent eligibility criteria. Without this alignment, mismatches could arise between the temporary labour market and the structure of permanent settlement.

Administrative Capacity and Forecasting

The effectiveness of a conversion-anchored system depends on accurate forecasting and administrative competence. Because Temporary NOM would be tied to projected conversion numbers, delays in processing permanent applications could have system-wide effects. If conversions fall short due to bureaucratic bottlenecks rather than deliberate policy choice, temporary inflows would need to contract correspondingly to maintain stock stability. This makes administrative efficiency central to demographic governance. The proposal therefore increases the premium on transparent planning levels, processing targets, and reliable data.

Infrastructure and Distributional Effects

Temporary and permanent migrants generate different pressures on housing, infrastructure, and services. Temporary migrants are concentrated in rental housing and inner-urban labour markets, while permanent residents are more likely to move into home ownership and longer-

term settlement. Higher conversion rates would therefore ease rental pressure while increasing demand in owner-occupied housing. The proposal does not remove housing pressures so much as redistribute them and align long-term demand with the permanent migration program. It also does not solve spatial concentration: both temporary and permanent migrants remain clustered in major cities. Regional imbalance, infrastructure strain, and local housing shortages would still require complementary policies. Its advantage is to give governments a clearer basis for long-term planning and fiscal coordination.

Exceptional Circumstances

Some volatility in population growth and NOM is unavoidable because movements of Australian and New Zealand citizens, and existing permanent residents, are not policy-constrained. Shocks such as pandemics, disasters, conflicts, or humanitarian crises may also push temporary inflows above planned permanent absorption capacity, making a strict conversion-anchored rule too rigid. Australia's existing framework already allows government to respond by adjusting the annual permanent migration cap, including on a one-off or time-limited basis, to expand conversion places and restore alignment. To preserve credibility, however, such departures from the rule should be transparent, clearly justified, and matched by settlement and infrastructure funding. Emergency increases in permanent intake should be treated as explicit policy decisions, not ad hoc administrative responses.

The Nature of the Trade-Off

Migration policy cannot avoid political judgment; it can only structure it differently. A conversion-anchored rule prioritises long-term demographic coherence and transparency over unconstrained short-term adjustment. It shifts debate toward the permanent program, links temporary mobility to settlement capacity, and reduces reliance on headline NOM figures, while increasing the importance of planning levels and administrative competence. Whether

that trade-off is desirable depends on the objectives assigned to migration policy. The proposal does not remove complexity, but it makes the system's underlying mechanics explicit and better aligns policy instruments with them.

Governing Temporary Migration in Different Institutional Contexts: Australia and Canada

Canada's adoption of a temporary population target is one of the clearest recent attempts to govern migration through the size of the temporary resident stock rather than annual flow measures. By committing to reduce the temporary population from 7.6 per cent of the national population in 2024 to about 5 per cent by 2027, Canada has reframed migration management as a question of keeping temporariness within a politically acceptable range. This implicitly recognises that the core policy issue is not simply annual inflows, but the cumulative size of the population living in temporary status.

The Canadian case is therefore an important precedent for the stock-based approach advanced here. But Canada's migration system differs in important ways from Australia's, and those differences shape what kinds of stock governance are politically and institutionally feasible.

Historically, Canada has maintained a strong conceptual separation between permanent and temporary migration. Permanent migration has been treated as a nation-building instrument, expanding the long-term population through planned annual admission levels that have remained relatively stable over time. Temporary migration, by contrast, has primarily been treated as a labour-market instrument. International students, temporary foreign workers, seasonal workers, and other temporary entrants are admitted mainly in response to changing economic conditions, not as part of a long-term population strategy.

This distinction matters. Although many permanent residents in Canada are selected from within the temporary population, policymakers have generally resisted treating temporary migration explicitly as a feedstock for permanent settlement. The permanent intake is seen as a core element of national population policy, largely insulated from short-term economic fluctuation. Temporary programs, by contrast, are expected to expand or contract with labour-market demand. A direct mechanical link between temporary migration and permanent admissions would therefore blur a boundary that has long structured the Canadian system.

Australia has evolved differently. Although it also maintains separate temporary and permanent visa categories, the relationship between them has become much more tightly integrated. Over the past two decades, temporary migration has increasingly become the main pathway into both skilled employment and permanent residence. A substantial share of permanent visas is now granted to migrants already in Australia on temporary visas. For many employers, temporary migration is also the first stage of a longer recruitment and settlement trajectory.

Australia therefore already operates, in practice, as a two-step migration system in which temporary residence often precedes permanent settlement. In that context, aligning temporary inflows with permanent absorption capacity is less a radical departure than a formalisation of an existing relationship. The conversion-anchored rule proposed in this paper can thus be understood as making explicit a link that is already implicit in Australia's migration system.

The comparison also highlights that temporary migrants are not a homogeneous category. Some, such as skilled graduates and employer-sponsored workers, are widely seen as potential future permanent residents. Others, including seasonal agricultural workers and working holiday makers, are generally expected to remain only temporarily. Only part of the temporary population therefore realistically participates in a conversion pathway to

permanent status. Even so, the overall size of the temporary population still matters. When it becomes large relative to the number of permanent places available, substantial cohorts may accumulate whose chances of conversion remain very low. This dynamic became especially visible in both Australia and Canada after the pandemic-related expansion of temporary migration.

A further institutional difference concerns expectations. In sectors such as international education, migrants' decisions are shaped not only by current visa rules but also by perceived chances of eventual permanent residence. If conversion prospects decline sharply, demand for some temporary visas may weaken. Temporary migration systems therefore operate through both formal policy settings and expectations about settlement futures.

These contrasts help explain why Canada and Australia have moved toward different approaches to stock governance. Canada has sought to reduce the temporary population mainly by limiting new temporary inflows while maintaining relatively stable permanent migration levels. Australia, by contrast, faces a system in which temporary and permanent migration are already deeply intertwined. In that context, stabilising the temporary population may be more feasible through mechanisms that explicitly align temporary inflows with permanent settlement capacity.

The broader lesson is not that one model fits all cases. It is that temporary population management must be consistent with a country's existing institutional logic. Canada's stock target and Australia's proposed conversion-anchored rule are different responses to the same structural problem: how to govern temporariness in a settlement state.

Economic, Institutional and Ethical Implications of the conversion-based approach

The stock–flow framework clarifies a simple point: the temporary population grows when temporary net inflows exceed transitions to permanent status, and stabilises when the two are

equal. Managing temporariness therefore requires governing that relationship rather than targeting aggregate net migration.

For countries such as Australia, Canada, New Zealand, and others, this raises a deeper institutional issue. Such states historically understood themselves as settlement states, organised around permanent immigration and long-term incorporation. Temporary migration existed, but mainly as a supplement to permanent settlement rather than as a structural feature of the labour market.

Over the past two decades, however, these countries have drifted toward systems in which large temporary populations play a central economic role. This shift did not result from a single decision, but from the incremental expansion of student visas, working holiday schemes, employer-sponsored temporary visas, and other pathways that appeared administratively convenient and economically useful. Settlement states have thus become increasingly dependent on temporary residents.

Canada's recent adoption of an explicit stock target is significant because it recognises temporariness itself as a policy variable. It also brings into view a set of economic, fiscal, institutional, and ethical questions that migration debates often leave implicit. Those same questions arise in Australia, but the dominant focus on Net Overseas Migration has tended to obscure them. A stock-based perspective makes them harder to ignore.

Efficiency and Institutional Continuity

A key issue is labour-market efficiency. Temporary migration systems often assume workers can be rotated in and out as visas expire, but continual turnover can carry substantial costs. In sectors such as aged care, hospitality, education, and some professional services, effective work depends not only on formal skills but also on accumulated experience, familiarity with workplace routines, and relationships with colleagues and service users. When temporary

workers leave, those capabilities often disappear with them, forcing employers to recruit and train replacements and rebuild trust and coordination from scratch.

The result is a recurring loss of human capital and institutional continuity. In aged care, for example, workers may build important relationships with residents over time; visa expiry can abruptly sever those ties. Similar costs arise across other migrant-dependent sectors.

Migration is often compared to trade, but people are not inert goods. Systems based on constant churn can impose hidden productivity losses. Greater stability—especially where temporary migration genuinely leads to permanence—can preserve skills, relationships, and organisational continuity while reducing recruitment and training costs.

Fiscal Effects

A second implication concerns fiscal impacts. Temporary migrants often appear fiscally advantageous in the short term because they pay visa charges, income tax, and consumption taxes while having limited access to public transfers and social benefits. But infrastructure and service demand depends on the number of residents, not their visa status. Rapid growth in the temporary population can therefore generate fiscal pressure in housing, transport, and urban services even when temporary residents receive relatively few direct benefits.

A more stable temporary population changes this calculation. If the temporary stock remains broadly constant, its fiscal effects become more predictable and easier to incorporate into long-term infrastructure planning. Population growth—and thus additional infrastructure demand—would be driven mainly by the permanent migration program. In this sense, anchoring temporary inflows to permanent absorption capacity could improve fiscal planning by aligning population growth more closely with the policy instrument governments already control most directly.

The Post-Pandemic Temporary Population Bulge

These issues have become more urgent in Australia because the temporary population has reached about 1.7 million, an historically high level. This group is heterogeneous: many temporary migrants do not seek permanent residence, including most working holiday makers, many international students, and some intra-company skilled workers. But a substantial minority do want to stay. Roughly half a million may now be seeking permanent residence through various pathways—far more than the permanent migration program can absorb under current caps.

This post-pandemic bulge creates a difficult policy dilemma. Governments can either tighten visa settings and encourage departures over time, or expand permanent residence through a large one-off round of onshore conversions. Both options are politically and administratively difficult, and neither is directly addressed by current policy. The key point is that this is fundamentally a stock problem, not just a question of annual migration flows. Canada's recent response reflects the same logic: its 2026–2028 plan combines lower temporary arrivals with accelerated transitions to permanent residence to reduce the temporary population share below 5 per cent by 2027 (Canadian Office of the Parliamentary Budget Officer, 2026).

Democratic Resilience

Beyond economic considerations, the size of the temporary population raises questions about democratic governance. In the *Politics*, Aristotle defined democracy as a polity in which the governors are also the governed. That is not true of a temporary migrant population: temporary residents are subject to laws they have no role in making. Every political community includes some residents in that position. But if a substantial share of the population lives under laws they cannot influence, the democratic character of the polity may

gradually change. A settlement state must therefore consider whether there is some upper limit to how many temporary residents it can reasonably accommodate without an erosion of core democratic values. We are not aware of a political theory that specifies this limit, but the question itself becomes increasingly salient as temporary populations grow.

Egalitarianism

A related issue concerns egalitarian ideals. The “fair go” is widely understood as a core Australian value; similar ideals are common across the former settler societies of the so-called “New World.” Yet within the temporary population there are many people who, even if they can work for extended periods, will never fully share in that promise. Some degree of differentiation is inevitable in any complex society. But countries that count egalitarianism among their defining values must eventually ask how large a population can be excluded from full membership before the ideal itself begins to lose credibility.

Social Cohesion

Social cohesion also depends on the structure of belonging within a society. Since Adam Smith’s example of pin-making, it has been understood that economic prosperity depends less on natural endowments than on people’s ability to cooperate. Cooperation, in turn, relies on trust and reciprocity, grounded in expectations of stable pro-social behaviour over the long-term. Large and persistent distinctions between secure citizens and long-term ‘denizens’ with precarious status can undermine these foundations. Individuals whose visa may expire at short notice have limited ability to plan and commit to futures within the society in which they live and work. At the same time, citizens may find it harder to form stable expectations about people whose long-term presence remains uncertain. Managing the scale of temporariness therefore becomes part of the broader task of maintaining social cohesion.

Sovereign Capability

Finally, the size of the temporary population intersects with questions of national resilience and sovereign capability. In an era of geopolitical uncertainty and periodic disruptions to global mobility—as illustrated by the COVID-19 pandemic—governments are increasingly concerned about the robustness of domestic labour supply. This question has analogies to questions of supply-chain resilience in other areas. If a substantial share of labour in key sectors is performed by foreign citizens whose presence depends on continued international mobility, the system may become vulnerable to sudden shocks. Policymakers must therefore consider what scale of temporary population could realistically disappear during a crisis without seriously impairing essential economic functions.

Evaluating the Long-Term Balance

These considerations suggest that determining a desirable long-term level of temporariness requires balancing several criteria: labour market needs, fiscal effects, administrative feasibility, democratic legitimacy, egalitarian values, social cohesion, and national resilience.

These issues have all surfaced in recent debates about immigration in Australia, but in ways that produce more heat than light. One reason for the lack of progress in debate is that the current focus on annual Net Overseas Migration figures tends to lead to scapegoating of migrants rather than well-informed debate about the structural issues associated with maintaining a large temporary population.

A stock-based perspective does not resolve these questions automatically. But it makes them visible. It shifts the policy conversation away from annual migration totals and toward the deeper question that settlement states must confront: how large a population living in temporary status is socially, economically, and politically sustainable over the long term.

Conclusion: Governing Temporariness in a Settlement State

The main contribution of this paper is to shift analysis of temporariness from headline migration totals and normative description to a parsimonious demographic framework. Existing scholarship has illuminated the politics, ethics, and labour-market effects of temporariness; this paper shows how temporary populations themselves grow, stabilise, and contract.

Contemporary migration debate in Australia and many other migrant settlement states is framed overwhelmingly in terms of annual Net Overseas Migration. That focus obscures the structural transformation of the past two decades. Countries like Australia and Canada are no longer simply places of permanent settlement with cyclical temporary inflows. They have become societies in which temporariness is structurally embedded in labour markets, higher education, and urban and regional life.

The political backlash now evident is not merely a reaction to “high migration” in the abstract. It reflects unease about the scale and durability of a population living in conditional status—contributing economically, often deeply embedded socially, but without secure long-term belonging. Infrastructure pressures, housing stress, labour-market vulnerability, and concerns about social cohesion and exploitation all intersect in the temporary population.

The stock–flow framework developed here clarifies the mechanics underlying this reality. The size of the temporary population is not determined by aggregate net migration figures alone. It is governed by the relationship between temporary net inflows and transitions to permanent residence. When inflows exceed conversions, the temporary stock grows; when conversions match inflows, it stabilises. This is not a matter of political interpretation but of demographic arithmetic.

From this perspective, net migration targets are poorly matched to the dynamics they seek to govern. Even stock targets, while better aligned with the problem, still require a mechanism linking temporary inflows to permanent absorption capacity. As the Canadian case suggests, such targets may be policy-constructed and administratively operationalised rather than derived from any transparent demographic optimum.

The proposal advanced here is to make that mechanism explicit. By anchoring Temporary Net Overseas Migration to the rate of conversion permitted within the permanent migration program, the system aligns short-term mobility with long-term settlement capacity. The permanent planning level becomes the central policy lever, governing the scale of durable population growth and providing a more stable basis for infrastructure and fiscal planning.

This approach does not eliminate trade-offs. It constrains short-run labour flexibility in favour of long-term demographic coherence. It shifts political pressure onto the permanent migration program and increases the premium on administrative competence and transparency. But it replaces headline-number politics with a framework more closely aligned with the demographic mechanics of temporariness.

Ultimately, the question is not whether migration should be higher or lower in any given year. It is how a settlement state should govern temporariness: what proportion of the population should live in temporary status, how temporary mobility should relate to permanent belonging, and how migration policy should be aligned with infrastructure capacity, labour demand, and social cohesion. Answering those questions requires moving beyond debates over a single net migration number toward a framework that distinguishes stocks from flows and aligns policy instruments with the dynamics they are intended to govern.

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