Multiple Founding Imprints and Firm Internationalisation

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ABSTRACT

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Research aims: This study examines how multiple founding imprints and their evolution shape firms' internationalisation. We focus on three founding conditions: family firms, economic shocks, and institutional development, and assess their individual and combined influence on subsequent internationalisation.

Design/Methodology/Approach: The study analyses an unbalanced panel of 946 publicly listed firms founded between 1994 and 2012 across five Asian economies. Random effects panel regression and survival-time frailty models are used to evaluate the main and interactive effects of founding imprints and their evolved forms on internationalisation.

Research findings: Family founded firms and firms established during periods of economic shock are less likely to internationalise, whereas firms founded in more developed institutional environments are more likely to do so. Over time, the evolved forms of family and economic shock imprints actively facilitate internationalisation. Interactions among founding and evolved imprints either reinforce or weaken the main effects, confirming that multiple imprints jointly shape firms' internationalisation.

Theoretical Contribution/Originality: This study extends imprinting theory by demonstrating that multiple, interacting founding imprints and their evolution influence firm strategy, moving beyond the traditional focus on single imprints. The findings highlight the complex and enduring effects of founding conditions and environmental contexts on subsequent internationalisation.

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Practitioner/Policy Implication: Managers should recognise that founding conditions, including family legacy, economic crises, and the institutional environment, can have lasting effects on international strategy. Policymakers should consider how institutional reforms and economic crises influence firms' long-term global expansion.

Keywords: Multiple Founding Imprints, Imprinting Theory, Family Firms, Economic Shocks, Institutional Environments, Internationalisation.
JEL classification: C33, D21, L25, M16, O57

1. Introduction

A central idea in imprinting theory is that organisational and environmental conditions at founding stamp firms with characteristics that persist and influence their subsequent strategies, actions, and performance (Stinchcombe, 1965). Imprinting studies typically examine how a single founding imprint influences a specific firm action over an extended period (Boeker, 1989b; Johnson, 2008; Lounsbury & Ventresca, 2002; Terbeck et al., 2022; Xu & Hou, 2024), reflecting imprinting theory's predominant focus on single founding imprints (Marquis & Tilcsik, 2013). However, firms operate in complex, multidimensional environments (Greenwood et al., 2011; Lounsbury & Ventresca, 2002; Qiao & Xia, 2026), where multiple organisational and environmental conditions at founding may concurrently stamp firms with several imprints that influence firm actions both directly and interactively (Chen et al., 2025; Galdino et al., 2023). Although prior research has acknowledged the possibility of imprint interactions and organisational evolution (De Cuyper et al., 2020; Simsek et al., 2015), limited attention has been given to how multiple heterogeneous imprints collectively shape firm actions. We extend imprinting theory by conceptualising multiple, heterogeneous founding imprints that exert complex and interdependent influences on firms. In doing so, we respond to calls for imprinting theory to become "a theory that describes intersecting imprints and how they modify one another's influence" (Marquis & Tilcsik, 2013, p. 226).

We argue that organisational and environmental conditions at founding concurrently impose multiple, heterogeneous imprints that directly and interactively influence subsequent firm actions. These effects may be reinforcing or countervailing, creating ambiguity and complexity in the relationship between founding imprints and firm behaviour that remain underexplored in imprinting research. Accordingly, we ask: *how do multiple concurrent imprints at founding affect subsequent firm actions?* This question is particularly relevant in

emerging markets, where firms often experience institutional voids, rapid transformation, and external shocks simultaneously, creating coexisting and interacting imprints that a single-imprint perspective may overlook.

Furthermore, organisational and environmental conditions evolve after founding, causing founding imprints to evolve as well (Chen et al., 2025; Galdino et al., 2023; Lounsbury & Ventresca, 2002). As a result, evolved founding imprints may influence firm actions in ways that differ from the effects of the original founding imprints. For example, the family firm founding imprint has been shown to exert a persistent influence on firms (Gómez-Mejía et al., 2026; Gomez-Mejia et al., 2011; Pukall & Calabrò, 2013). However, as firms mature, professionalise, and adapt to changing environments, the family imprint may evolve and affect behaviour differently from its original form (Cheng et al., 2022; Gómez-Mejía et al., 2026; Kriauciunas & Kale, 2006). Despite this, imprinting studies commonly focus on founding imprints without considering how they change over time. Examining the evolution of multiple imprints can therefore enhance understanding of their long-term effects (Marquis & Qiao, 2020).

This raises a related question: *how do evolved multiple founding imprints influence subsequent firm actions independently of the original founding imprints?* We therefore evaluate both the effects of founding imprints and the independent effects of their evolved forms at the time of firm action. Examining imprints at founding and in their evolved state enables assessment of the persistence, decay, or reinforcement of multiple imprints over time (Chen et al., 2025; Johnson, 2008; Qiao & Xia, 2026; Tran & Freel, 2025).

Addressing these questions requires the following research design: (1) identifying multiple unrelated founding imprints that independently influence a subsequent key strategic firm action; (2) evaluating their main and interactive effects on that firm action; (3) establishing the evolved state of those founding imprints at the time of firm action; and (4) evaluating the main and interactive effects of both founding and evolved imprints.

We examine the impact of imprints on internationalisation, defined as a firm's expansion into foreign markets (Chen et al., 2025; Johanson & Vahlne, 1977). A substantial body of research attributes internationalisation to a wide range of firm, industry, and environmental factors operating at the time firms internationalise. Our objective is not to extend internationalisation theory, but rather to use internationalisation as a well-established strategic outcome through which to examine the effects of multiple imprints.

Internationalisation is particularly suitable because it was both extensively studied and strategically important in our empirical context.

We focus on three founding imprints that reflect firm, economic, and institutional characteristics associated with internationalisation: (1) firm identity, captured through family founders (Anderson & Reeb, 2003; Gómez-Mejía et al., 2026; Wang et al., 2026; Zahra, 2003); (2) economic conditions, captured through exposure to economic shocks (Claessens et al., 2000; Galdino et al., 2023; Reinhart & Rogoff, 2009); and (3) iinstitutional environments, captured through levels of institutional development (Cheng et al., 2022; North, 1990; Nuruzzaman et al., 2020; Stinchcombe, 1965). Our selection reflects three considerations. First, both imprinting and internationalisation research emphasise the importance of founders and the economic and institutional environments in which firms emerge (Arregle et al., 2017; Galdino et al., 2023; García-Canal et al., 2018; Stinchcombe, 1965). Second, resources are central constructs in both imprinting theory (Boeker, 1989a; Marquis & Tilcsik, 2013; Simsek et al., 2015) and internationalisation theory (Dunning, 1981; Hitt et al., 2006). Third, these imprints may also help explain other strategic actions, including diversification, acquisitions, and collaboration.

We explain the effects of these imprints on internationalisation primarily through their influence on resources and capabilities and, secondarily, through their effects on firms' efforts to expand beyond domestic markets. Specifically, we evaluate: (1) the main and interactive effects of these founding imprints; and (2) the main and interactive effects of their evolved forms at the time of internationalisation. This approach avoids what Simsek et al. (2015, p. 20) describe as "a key threat to tests of imprinting hypotheses": evaluating founding imprints without accounting for current conditions. It also addresses a related limitation in internationalisation research, which typically focuses on contemporaneous influences while overlooking founding imprints.

Our sample comprises 946 publicly listed firms founded between 1994 and 2012 in five Asian economies. This setting is ideal because it includes economies at different levels of institutional development, family and non-family firms, and three major economic shocks. We predict that multiple founding imprints exert both main and interactive effects, and that evolved imprints have independent main and interactive effects at the time of internationalisation. The results broadly support these predictions.

We contribute to imprinting theory by demonstrating that organisational and environmental conditions can stamp firms with multiple founding imprints. In doing so, we move beyond the dominant emphasis on the persistent effects of a single founding imprint and instead highlight the multidimensional and dynamic nature of imprinting. Our findings show that multiple imprints can persist and evolve, exerting distinct main and interactive effects at founding and at the time of subsequent firm action. Understanding how multiple founding imprints shape internationalisation also has important practical implications. Managers can use these insights when assessing whether and when to internationalise in light of their firms' founding conditions. Policymakers may consider how institutional reforms and crisis-management policies generate long-lasting imprinting effects on firm behaviour. For family business owners, the findings highlight how socioemotional wealth considerations established at founding may persist yet evolve as firms professionalise, suggesting pathways for overcoming initial reluctance towards internationalisation.

2. Theory

2.1 Multiple Founding and Evolved Imprints

Imprinting theory proposes that organisational and environmental conditions at founding shape firms' characteristics and influence their long-term strategies, actions, and performance (Boeker, 1989a, 1989b; Stinchcombe, 1965; Terbeck et al., 2022). Founding imprints are particularly influential because newly established firms typically lack formalised structures, routines, and experience, while facing significant resource constraints. Under these conditions, founding characteristics shape strategy, policies, culture, and key organisational decisions (Boeker, 1989b; Xu & Hou, 2024). The inertial forces of formalisation, institutionalisation, and routinisation embed these characteristics within firms (Marquis & Tilcsik, 2013; Stinchcombe, 1965). Subsequent survival and success reinforce these imprints, enabling them to persist even as firms and environments change (Chen et al., 2025; Johnson, 2008; Kriauciunas & Kale, 2006; Perkmann & Spicer, 2014).

Imprinting theory has paid relatively little attention to the possibility that complex organisational and environmental conditions (Greenwood et al., 2011; Lounsbury & Ventresca, 2002; Qiao & Xia, 2026) may generate multiple imprints simultaneously at founding. With few exceptions, imprinting studies examine the influence of

a single imprint (Marquis & Tilcsik, 2013). Yet multiple concurrent imprints are likely to exert distinct main and interactive effects, shaping firm actions in ways that differ from the influence of any single imprint. Incorporating multiple imprints can enhance the explanatory power of imprinting theory by providing greater scope to explain complex organisational phenomena. For example, a firm founded by a family during an economic shock and within a changing institutional environment is likely to acquire multiple concurrent imprints whose combined influence differs from that of any individual imprint.

Founding imprints also evolve. Although imprinting theory emphasises their persistence (Boeker, 1989b; Hannan et al., 1996; Johnson, 2008), imprints may change as organisations and environments develop over time. Recent work suggests that sensitive periods after founding can generate additional imprints that reinforce, replace, or weaken earlier founding imprints (Chen et al., 2025; Marquis & Qiao, 2020; Marquis & Tilcsik, 2013). Consequently, evolved imprints may exert contemporaneous effects, that is, effects at the time of a firm action occurring after founding, which are distinct from the effects of the original founding imprints.

The influence of founding imprints may therefore differ from the contemporaneous influence of their evolved forms. For example, firms founded during an economic shock are likely to acquire enduring imprints associated with adverse conditions. However, as economic conditions improve during recovery, the shock imprint may evolve and affect subsequent firm actions differently. Likewise, the recurrence of an economic shock may have a different effect from the original event. Recent studies suggest that recurring events can reinforce earlier imprints, refreshing, modifying, or amplifying their influence (De Cuyper et al., 2020; Qiao & Xia, 2026). The evolution of founding imprints highlights the need to theorize both the main and interactive effects of multiple imprints at founding and the distinct effects of those imprints in their evolved forms at the time of firm action. Despite its importance, this issue has received limited attention, and relatively little is known about how imprints evolve, persist, or decay over time (Marquis & Tilcsik, 2013).

2.2 Founding Imprints and Internationalisation

Firms internationalise to access resources, achieve growth, improve performance, and diversify risk (Johanson & Vahlne, 1977). Internationalisation is a demanding strategy that requires firms to overcome resource constraints, increased scope, and greater

organisational complexity (Arregle et al., 2012; Cuervo-Cazurra & Genc, 2008; Xu et al., 2020). Firms possessing the resources and capabilities needed to operate across different national environments are more likely to internationalise successfully (Banerjee et al., 2015; García-Canal et al., 2018). Consequently, both firm-level resources and capabilities, and the economic and institutional conditions that facilitate access to them, play important roles in enabling internationalisation (Johanson & Vahlne, 1977).

Research on internationalisation typically examines firm and environmental conditions at the time of internationalisation rather than at founding, reflecting the importance of resources and capabilities that are proximate to the internationalisation decision. With a few exceptions (e.g., Marquis & Qiao, 2020), studies have paid limited attention to the influence of founding imprints, prompting calls for greater consideration of historical influences on internationalisation (Nuruzzaman et al., 2020).

In this respect, internationalisation research mirrors much of the broader strategy literature in emphasising contemporaneous influences while giving relatively little attention to imprinting effects (Marquis & Qiao, 2020). By contrast, imprinting theory focuses on the enduring influence of founding conditions and often underplays the role of contemporaneous factors (Simsek et al., 2015). This difference reflects the tension between theories that attribute major firm actions to persistent founding conditions and those that explain such actions primarily through current organisational and environmental forces (Deng et al., 2020; Perkmann & Spicer, 2014; Shinkle & Kriauciunas, 2012).

Eden and Nielsen (2020) argue that internationalisation research seeks to explain the inherent complexity of the global economy, which is characterised by a multiplicity of factors, multiplex interactions, and continual change over time. This perspective is particularly relevant to the present study, which examines how complex founding environments generate multiple imprints that interact, persist, and evolve to influence firms' subsequent internationalisation.

2.3 Family at Founding Imprint

Family firms are a distinct organisational form and play an important role in most economies, particularly emerging economies (Anderson & Reeb, 2003; Arregle et al., 2017; Claessens et al., 2000). A defining characteristic of family firms is their emphasis on socioemotional wealth, the affective value associated with family ownership,

including preserving the founder's and family's legacy, maintaining family control, and protecting family identity and reputation (Gómez-Mejía et al., 2026; Gomez-Mejia et al., 2011). The shared experiences, relationships, and values of family founders create imprints that differ from those of non-family firms (Arregle et al., 2021; Gallegati et al., 2026; Pukall & Calabrò, 2013).

Newly established family firms often face substantial managerial and financial resource constraints, making them particularly sensitive to threats to socioemotional wealth and increasing the importance of mitigating such risks (Gómez-Mejía et al., 2026; Gomez-Mejia et al., 2010). Consequently, family firms tend to prioritise wealth preservation, resource conservation, and loss avoidance (Gomez-Mejia et al., 2010; Pukall & Calabrò, 2013), and generally exhibit greater risk aversion across a range of contexts (Gallegati et al., 2026; Hiebl, 2013). Recent research has further shown that socioemotional wealth considerations interact with implicit theories to shape family firms' risk preferences (Gómez-Mejía et al., 2026), while post-succession dynamics may create tensions between established imprints and the successor's desire for self-determination (Del Barone et al., 2026).

Family firms may be either more or less likely to internationalise depending on organisational and environmental conditions (Arregle et al., 2017; Gallegati et al., 2026). However, existing studies generally examine family firms at the time of internationalisation rather than as a founding imprint. Prior findings are mixed. Some studies report that family firms are less likely to internationalise (Gallegati et al., 2026; Gomez-Mejia et al., 2010), whereas others find a positive relationship (Arregle et al., 2021; Zahra, 2003) or no significant difference (Pukall & Calabrò, 2013). Our multiple-imprints perspective helps explain these inconsistencies by considering how family ownership interacts with economic (Galdino et al., 2023) and institutional founding conditions (Cheng et al., 2022). We argue that the resource constraints commonly associated with founding conditions imprint family firms with a strong emphasis on resource conservation, risk minimisation, and the preservation of socioemotional wealth. These priorities are likely to discourage costly and uncertain internationalisation activities. Accordingly, the family-at-founding imprint is expected to reduce the likelihood of internationalisation. By contrast, the non-family founding imprint is more likely to prioritise growth and profitability over the preservation of socioemotional wealth (Arregle et al., 2017; Gomez-Mejia et al., 2010; Pukall & Calabrò, 2013), making it less likely to discourage internationalisation.

2.4 *Economic Shock at Founding Imprint*

Economic shocks are sudden, substantial, and adverse changes in the economic environment that disrupt broad sectors of the economy (Agarwal et al., 2009; Claessens et al., 2000; Reinhart & Rogoff, 2009). Such shocks can trigger major reversals in capital and consumer markets, reduce economic activity and business confidence, and constrain resource availability (Hong et al., 2010; Singh et al., 2017). Although economic shocks have attracted increasing attention in strategy research, they remain relatively underexplored (Agarwal et al., 2009; Chakrabarti, 2015; Reinhart & Rogoff, 2009; Wenzel et al., 2020). While shocks may originate from financial, geopolitical, or technological disruptions, their effects are often manifested through economic crises involving two key phases (Mendoza, 2010; Reinhart & Rogoff, 2009). First, an exogenous event triggers a substantial reversal of capital flows, resulting in capital withdrawal and shortages of financial resources. Second, demand, revenues, and economic activity decline, leading to recessionary conditions.

Firms founded during economic shocks enter adverse, resource-constrained, and highly uncertain environments. These conditions expose firms to elevated risks of failure and imprint them with a heightened awareness of resource scarcity and risk management. Consequently, such firms are likely to develop enduring preferences for conserving resources, avoiding costly and uncertain strategies, and mitigating exposure to economic risks. The experience of being founded during an economic shock may also shape firms' perceptions of the external environment, leading them to view it as more threatening and prone to adverse outcomes (Staw et al., 1981). As a result, these firms may remain cautious about committing resources to high-cost and high-risk strategies, such as international expansion, even after the shock has passed. Therefore, the imprint of being founded during an economic shock is expected to be negatively associated with subsequent internationalisation.

By contrast, firms founded during non-shock periods begin operations in relatively favourable and munificent economic environments that provide easier and less costly access to resources (Bradley et al., 2011; Geroski et al., 2010). Without the experience of operating under severe economic adversity at founding, they are less likely to perceive the external environment as threatening (Staw et al., 1981). These firms may therefore be more willing to pursue challenging and growth-oriented strategies (Chakrabarti, 2015; Gallegati et al., 2026), including internationalisation. Accordingly, the imprint of being founded during a non-shock period may encourage international expansion.

2.5 *Institutional Environment Founding Imprint*

Institutions comprise the formal and informal rules, norms, and enforcement mechanisms that govern markets and shape firms' opportunities, actions, and performance (North, 1990). They influence both the formation and operation of firms and are a central explanation for variations in firm behaviour and success in strategy research (North, 1990; Whitley, 1992). More developed institutional environments are typically associated with more efficient markets, stronger governance systems, and clearer incentive structures. However, they also impose higher performance expectations and stricter constraints than less developed institutional environments (La Porta et al., 1998; Whitley, 1992). These differences create variation in institutional founding imprints (Kriauciunas & Kale, 2006; Tran & Freel, 2025), making institutional environments a valuable context for examining imprinting effects (Marquis & Tilcsik, 2013), including their influence on internationalisation (Marquis & Qiao, 2020; Nuruzzaman et al., 2020).

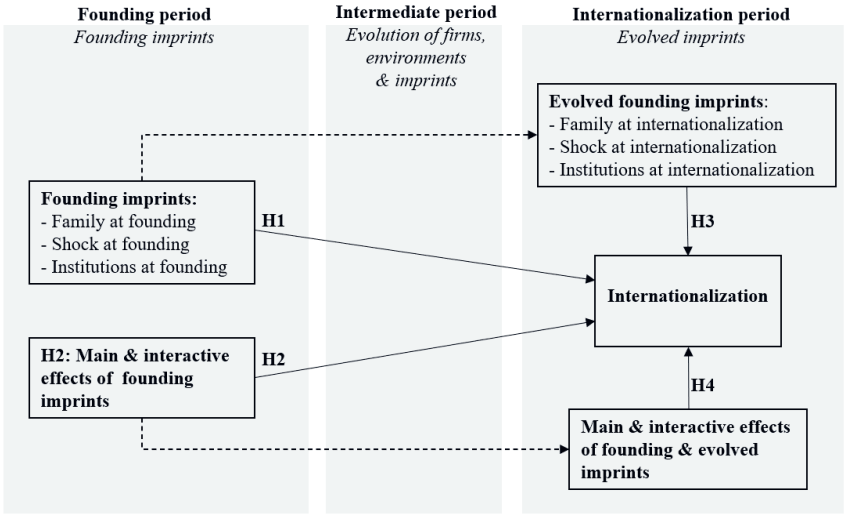
More developed institutional environments facilitate internationalisation by providing firms with greater access to information, resources, and capabilities. Firms can draw on stronger institutional support, more effective governance mechanisms, and better-developed market infrastructures to expand internationally with lower costs and risks (Cuervo-Cazurra et al., 2018; Nuruzzaman et al., 2020). In addition, developed institutional environments typically offer stronger incentives and rewards for improved performance (Galdino et al., 2023; La Porta et al., 1998), creating further motivation for firms to pursue international growth. Consequently, firms founded in more developed institutional environments are likely to acquire imprints that encourage subsequent internationalisation.

By contrast, less developed institutional environments provide weaker access to information, resources, capabilities, and market-supporting institutions. Firms operating in these contexts often face ambiguous market conditions, inconsistent institutional enforcement, and unreliable access to critical resources (North, 1990; Whitley, 1992). These conditions increase uncertainty and make internationalisation more costly and difficult. Firms founded in such environments are therefore likely to be imprinted with the perception that internationalisation is a resource-intensive, high-risk strategy. Accordingly, the imprint of being founded in a less developed institutional environment is expected to be negatively associated with subsequent internationalisation.

3. Hypotheses

Our focus is on establishing the existence and effects of multiple founding and evolved imprints rather than examining the influence of individual imprints in isolation. Building on the arguments developed in the previous section, we propose that firm identity (family versus non-family), economic conditions (economic shock versus non-shock), and the institutional environment (more versus less developed) at founding stamp firms with multiple imprints that influence subsequent internationalisation. We further argue that these founding imprints interact with one another, shaping internationalisation in ways that differ from the effects of any single imprint. Finally, we propose that imprints evolve over time, such that their main and interactive effects at the point of internationalisation differ from those of the original founding imprints. Figure 1 presents the conceptual model.

Figure 1: Conceptual Model and Hypotheses



3.1 Hypothesis 1: Multiple Founding Imprints

Resource constraints and the prioritisation of socioemotional wealth are likely to stamp family founded firms with imprints that encourage caution towards resource-intensive and high-risk strategies (Gómez-Mejía et al., 2026; Gomez-Mejia et al., 2010; Mishra & McConaughy, 1999), including subsequent internationalisation. Similarly, firms founded during an economic shock are likely to

be imprinted with heightened sensitivity to resource scarcity and environmental uncertainty, reducing their willingness to pursue international expansion. By contrast, firms founded in more developed institutional environments are likely to be imprinted with awareness of greater resource availability, institutional support, and performance incentives, increasing the likelihood of subsequent internationalisation. Importantly, these arguments concern the enduring effects of the imprints of *founding conditions* on *subsequent* firm behaviour (i.e. internationalization) after the passage of time.

Our objective, however, is not to test the effects of individual imprints beyond these baseline expectations. Rather, we seek to establish that organisational and environmental conditions at founding generate multiple founding imprints that collectively influence subsequent internationalisation.

Hypothesis 1 [H_1]: The characteristics of a family firm, an economic shock, and the institutional environment, create multiple founding imprints that collectively influence subsequent firm internationalization.

3.2 Hypothesis 2: Interactive Impact of Multiple Founding Imprints

Research on family firm internationalisation typically explains internationalisation in terms of internal resource availability and often pays limited attention to institutional influences, commonly focusing on single-country settings under relatively stable economic conditions (van Essen et al., 2015). However, multiple founding imprints are likely to interact in shaping internationalisation. For example, a family firm founded during an economic shock or within a less developed institutional environment may experience reinforcing or countervailing imprint effects. Demonstrating such interactions would support the need to examine multiple founding imprints and identify potentially important but underexplored influences on internationalisation.

Family firms founded during an economic shock face particularly severe resource and managerial constraints. Adverse conditions increase the risk of failure and emphasise the importance of maintaining liquidity and solvency (Hong et al., 2010; Singh et al., 2017). Access to resources may also be more difficult because capital providers impose higher risk-adjusted costs on newly established family firms, particularly when economic conditions are uncertain and capital is scarce (Mishra & McConaughy, 1999).

The interaction of family and economic shock founding imprints is therefore likely to strengthen preferences for resource conservation

and further discourage risky strategies such as internationalisation (Gómez-Mejía et al., 2026; Gomez-Mejia et al., 2010; Mishra & McConaughy, 1999). In this case, the interaction reinforces the negative main effects associated with both family and economic shock founding imprints.

More developed institutional environments may also alter the influence of family founded firms. During periods of economic shocks, these environments often impose more stringent requirements for access to capital and other resources. Resource and managerial constraints at founding may limit family firms' ability to meet the more stringent ownership, governance, and performance standards associated with more developed institutional environments (Gomez-Mejia et al., 2010; Mishra & McConaughy, 1999). In addition, governance requirements may reduce family control and thereby threaten socioemotional wealth (Bradley et al., 2011; Geroski et al., 2010; Gómez-Mejía et al., 2026). Consequently, the interaction between family founded firms and a more developed institutional environment may weaken the positive effect of institutional development on internationalisation while reinforcing the negative effect of the family imprint.

The interaction between economic shocks and institutional environments has received growing attention in strategy research (Singh et al., 2017). Economic shocks are characterised by major reversals in capital flows, followed by declines in demand, revenues, and economic activity (Mendoza, 2010; Reinhart & Rogoff, 2009). Firms founded during an economic shock within more developed institutional environments may face stricter governance and performance requirements when seeking resources for expansion. As a result, the combination of these founding conditions may discourage subsequent internationalisation, reinforcing the negative influence of the economic shock imprint while reducing the positive influence of the institutional development imprint.

Overall, interactions among founding imprints may either reinforce or weaken their individual effects. As our objective is to establish the importance of interactions among founding imprints, we predict that both the main effects of founding imprints and their interactions influence subsequent internationalisation.

Hypothesis 2[H_2]: The main and interactive effects of the founding imprints of a family firm, an economic shock, and the institutional environment collectively influence subsequent firm internationalization.

3.3 *Hypothesis 3: Founding and Contemporaneous Effects of Multiple Founding Imprints*

As firms and environments evolve, founding imprints also change, giving rise to evolved imprints whose effects may be distinct from the persistent influence of the original founding imprints. Consequently, evolved imprints may either encourage or hinder internationalisation independently of founding imprints.

The family-at-founding imprint is likely to weaken over time as family firms formalise and professionalise their operations, adopt modern managerial practices, and broaden ownership structures. Through formalisation, professionalisation, institutional compliance, and the gradual overcoming of liabilities associated with newness (Chang et al., 2022; Stinchcombe, 1965), family firms may place less emphasis on preserving socioemotional wealth. As a result, the negative influence of the evolved family-at-founding imprint on subsequent internationalisation is likely to diminish over time.

The economic shock-at-founding imprint may also weaken as economic conditions recover and growth resumes. However, unlike the family-at-founding imprint, its effects may be renewed by subsequent economic shocks. The recurrence of a shock may re-sensitise firms to the conditions experienced at founding (Marquis & Tilcsik, 2013; Simsek et al., 2015), reinforcing concerns about resource scarcity and discouraging internationalisation. Alternatively, firms that survived a shock at founding may become more aware of the risks associated with reliance on domestic markets and the potential benefits of geographic diversification (Dieleman, 2010; Lee et al., 2020). Consequently, the recurrence of an economic shock at the time of internationalisation may either reinforce or counteract the original shock imprint, reducing or increasing the likelihood of international expansion.

The institutional environment-at-founding imprint is likely to evolve more slowly than other imprints because institutions exhibit strong inertial tendencies (Acemoglu et al., 2001; Tran & Freel, 2025). As firms continue to operate within the institutional environments in which they were founded, institutional influences are repeatedly reinforced, limiting imprint decay or transformation (Chen et al., 2025). Firms also adapt to evolving institutional conditions over time. Consequently, in the absence of major institutional disruptions, the evolved institutional imprint may exert a relatively modest influence on internationalisation. However, our empirical setting comprises rapidly developing economies that experienced substantial institutional change, suggesting greater scope for institutional imprint evolution.

As with the founding imprints, our objective is not to predict the specific effect of each evolved imprint. Rather, we propose that the evolved forms of multiple founding imprints collectively influence internationalisation at the time firms expand internationally.

Hypothesis 3[H_3]: The founding imprints of a family firm, an economic shock, and the institutional environment as evolved at the time of internationalization will collectively influence internationalization.

3.4 Hypothesis 4: Main and Interactive Effects of Multiple Imprints at Founding and at Internationalisation

Finally, we predict that the main and interactive effects of the evolved founding imprints will differ from those of the original founding imprints. The key comparison is between the effects of imprints at founding and the effects of those same imprints as they have evolved by the time of internationalisation. As argued in H_3, the family-at-founding and economic shock-at-founding imprints are expected to weaken over time, resulting in effects at internationalisation that differ from their original influence at founding. However, the economic shock imprint may also be reinforced if additional economic shocks occur after founding. Although institutional environments generally evolve more gradually, substantial changes can occur during periods of rapid economic development or following major institutional or environmental disruptions.

Consequently, the evolution of founding imprints is likely to alter both their individual and combined influence on firm behaviour. The effects of evolved imprints at the time of internationalisation may therefore differ from the effects of the original founding imprints.

Hypothesis 4[H_4]: The evolution of the founding imprints of a family firm, an economic shock, and the institutional environment, causes their main and interactive effects at internationalization to differ from those of the original founding imprints.

4. Data, Measures, and Method

We examine firms in five Asian economies between 1994 and 2012. Hong Kong, Indonesia, Malaysia, Singapore, and Thailand were selected for several reasons aligned with our objective of examining multiple founding imprints and their evolution. First, these economies varied substantially in institutional development, ranging from the more developed environments of Hong Kong and Singapore to the less developed settings of Indonesia and Thailand,

enabling analysis of variation in institutional founding imprints. Second, they experienced three major economic shocks within a relatively short period: the 1997–1998 Asian Financial Crisis, the 2000–2001 technology downturn, and the 2007–2008 Global Financial Crisis (Hong et al., 2010; Reinhart & Rogoff, 2009). This allows us to examine both founding during economic shocks and the recurrence of shocks at the time of internationalisation. Third, all five economies contain large numbers of publicly listed family firms, providing sufficient variation to examine family firm imprints. Fourth, each economy underwent rapid development and significant institutional change during the study period, creating conditions that challenge imprint persistence and enable assessment of imprint evolution. Finally, their geographic proximity helps control for regional influences while preserving meaningful institutional differences. The combination of shared exposure to external shocks and distinct domestic institutional trajectories provides a suitable setting for examining the persistent and interactive effects of multiple founding imprints.

4.1 Data

Our dataset comprises all firms incorporated between 1994 and 2001 and listed on the primary stock exchange of their respective country between 1994 and 2012. We exclude finance and real estate firms because regulatory constraints often limit their internationalisation. Internationalisation was tracked from incorporation until 2012, allowing examination of imprinting effects over an extended period. The study concludes in 2012 to avoid the influence of subsequent trends and events. Observing firms from founding until the end of the study or delisting helps minimise censoring and survivor bias.

Firm-level data were obtained primarily from OSIRIS and supplemented with Capital IQ, Thomson One, company websites, IPO prospectuses, annual reports, and stock exchange records. Economic and institutional data were sourced from the World Bank's Worldwide Governance Indicators database. The final sample is an unbalanced panel of 946 firms and 13,466 firm-years. Family firms account for 46.8% of the sample, broadly consistent with previous studies of publicly listed family firms in these economies (Fan et al., 2011). Firms founded during economic shocks represent 33.2% of the sample, and 76.3% internationalised during the study period.

4.2 *Dependent Variable*

The dependent variable is foreign sales percentage (foreign sales as a percentage of total sales, measured annually), a widely used and validated measure of internationalisation (Arregle et al., 2012; Hitt et al., 2006; Marshall et al., 2020). As a robustness check, we also examine time to internationalisation.

4.3 *Explanatory Variables*

Family at founding. This is a binary indicator equal to 1 if a firm was founded as a family firm and 0 otherwise. Following Miller et al. (2007), we classify firms as family firms when three conditions are met: (1) the firm was founded by more than one member of a family; (2) at least one family member served as an officer or director (Arregle et al., 2017); and (3) the founding family was the largest shareholder and directly or indirectly owned more than 10% of the firm's shares at founding (Gomez-Mejia et al., 2010). Where multiple families were involved, the family with the largest ownership stake was designated as the focal family, consistent with prior research (Anderson & Reeb, 2003; Miller et al., 2007). Firms founded by a single individual were not classified as family firms, although their inclusion was examined in robustness tests.

Family at internationalisation. We use a similar measure for *family at internationalisation*, coded 1 if the firm retained its family-firm identity at the time of internationalisation. Firms founded as family firms were assumed to retain this identity except under two conditions: (1) a change in ownership; or (2) substantial growth leading to formalisation, professionalisation, and improved governance (Chang et al., 2022; Dyer, 2006; Kriauciunas & Kale, 2006). Such firms may operate more like non-family firms even if family ownership remains. Accordingly, family firms were reclassified as non-family firms if sales or total assets increased by at least 500% over any five-year period. This threshold, equivalent to approximately 38% annual growth, captures the top 20% of high-growth firms, where rapid expansion typically requires organisational changes that weaken family imprinting. Robustness tests using alternative thresholds (400% over four years and 600% over six years) produced similar results. Based on these criteria, 36 family firms were reclassified as non-family firms because of ownership changes and 74 firms because of rapid growth.

Shock at founding. This is a binary indicator equal to 1 if a firm was founded during one of the three economic shocks in our study

period (1997–1998, 2000–2001, or 2007–2008), and 0 otherwise. A strength of our setting is that all sample economies experienced these shocks concurrently, each lasted approximately two years, and recovery was generally rapid (Chakrabarti, 2015; Chakrabarti et al., 2007; Reinhart & Rogoff, 2009). *Shock at internationalisation* is coded 1 if a firm internationalised during one of these shock periods.

Institutions at founding. To measure *institutional development at founding*, we construct an index based on five dimensions of the institutional environment that influence business activity, organisation, and regulation (Galdino et al., 2023; La Porta et al., 1998; Whitley, 1992): (1) government effectiveness; (2) regulatory quality; (3) rule of law; (4) economic development, measured as the average standardised values of GDP per capita, foreign direct investment per capita, and foreign trade per capita; and (5) capital market development, measured as the average standardised values of stock market capitalization, stock market value traded, and bank deposits, each expressed as a percentage of GDP. Each indicator was standardised across all country-years, and the five standardised scores were averaged to create a composite index (mean = 0.03, SD = 0.16; see Table 1). Higher values indicate more developed institutional environments. For each firm, *institutions at founding* is the index value for its home economy in the year of incorporation. *Institutions at internationalisation* is measured using the same approach in the year the firm first internationalised. Both measures exhibit substantial variation and are only moderately correlated, indicating meaningful institutional change over time.

4.3 Control Variables

Following prior internationalisation and imprinting research, we control for three groups of factors that may influence internationalisation. The first group comprises five founder characteristics. *Foreign founders* (0–1) indicates whether the founding family held foreign citizenship. Foreign founders often possess international experience and overseas networks that may facilitate internationalisation (McCormick & Somaya, 2020). *Ethnic minority founders* (0–1) indicates whether the founding family belonged to an ethnic minority relative to the majority population in its home country (Alfan et al., 2023). Minority founders may internationalise to mitigate political or economic pressures or to exploit international networks (Erdener & Shapiro, 2015). *Political ties* (0–1) indicates whether founders had connections to government or political officials. Such ties may facilitate internationalisation by providing

privileged access to resources or protection from rent extraction and unfavourable institutional enforcement (Dieleman, 2010; Zheng et al., 2015). *Business group* (0–1) indicates whether founders were affiliated with an existing business group. Group resources may facilitate internationalisation, although group strategies may either support or constrain expansion (Nuruzzaman et al., 2020). Finally, *state-owned enterprise* (0–1) indicates state ownership, which may provide privileged access to resources and support internationalisation.

The second group comprises five firm-level resource measures. *Financial slack*, measured as the ratio of current assets to current liabilities, captures the availability of liquid resources. *Total assets* (log of total assets) measures overall asset availability. Together, these variables account for the influence of short- and long-term resources on internationalisation. *Profitability*, measured by return on assets (ROA), controls for firm efficiency and resource generation (van Essen et al., 2015). *Diversification* captures the extent to which firms reduce risk through product diversification (Gomez-Mejia et al., 2011), which may serve as an alternative to internationalisation. Diversified firms may also possess capabilities relevant to operating across different environments. Diversification was measured using the Herfindahl index: $1 - \sum S_i^2$, where S_i is the share of sales generated by business segment *i*. Finally, *time to IPO* measures the number of years before listing. Listing requirements may strengthen governance and external oversight while improving access to capital, both of which may affect internationalisation (Arregle et al., 2017).

The third group captures environmental conditions. *GDP* (current US$ '000 billion) measures the size of the economy, while *GDP growth* (annual percentage change in GDP) captures short-term economic performance. Together, these variables account for the effects of economic size and growth on internationalisation. *Industry* is represented by indicator variables for eight sectors based on two-digit SIC codes, and *Country* by indicator variables for the five sample economies.

All continuous explanatory and control variables were measured annually and lagged by one year. Correlations among variables were low, and a variance inflation factor of 1.52 indicates minimal multicollinearity. Descriptive statistics are reported in Table 1.

4.4 Empirical Methods

Our hypotheses were tested using the following model:

Internationalisation = β_0 + β_1(founding imprints) + β_2(founding imprint interactions) + β_3(founding imprints at internationalisation) + β_4(founding imprints at internationalisation interactions) + δ(controls) + $\mathcal{E}$

We estimated this model using random effects panel regression with robust standard errors clustered by firm, implemented through the 'xtreg' procedure in Stata. Random effects were preferred because they allow estimation of time-invariant variables, such as founding imprints, whereas fixed-effects models are less suitable for assessing the effects of founding conditions. The Hausman test was not significant (χ^2 = 18.47, p = .142), supporting the use of random effects. To reduce omitted-variable bias, the model includes country and industry fixed effects, together with macroeconomic controls such as *GDP* and *GDP* growth.

Table 1: Descriptive statistics

Variable	1	2	3	4	5	6
1. Foreign sales percentage	1.00					
2. Family at founding (0-1)	-0.09	1.00				
3. Family at internationalisation	-0.08	0.27	1.00			
4. Shock at founding (0-1)	0.03	-0.29	-0.38	1.00		
5. Shock at internationalisation (0-1)	0.11	0.09	0.05	-0.07	1.00	
6. Institutions at founding	0.13	0.02	0.13	-0.06	0.31	1.00
7. Institutions at internationalisation	-0.08	-0.08	-0.12	0.15	-0.16	-0.44
8. Foreign founders (0-1)	0.18	-0.04	0.03	-0.03	-0.03	0.02
9. Ethnic minority founders (0-1)	-0.29	0.01	-0.04	0.12	-0.02	-0.06
10. Political ties (0-1)	-0.06	-0.05	0.01	-0.01	-0.05	-0.02
11. Business group (0-1)	-0.04	-0.01	-0.01	0.02	-0.02	-0.00
12. Stateowned enterprise (0-1)	0.03	-0.05	0.03	-0.02	-0.05	0.01
13. Financial slack	0.00	-0.01	0.01	-0.02	-0.01	-0.01
14. Total assets (US$m, logged)	0.15	-0.05	-0.04	0.02	-0.05	-0.02
15. ROA	-0.00	0.02	0.05	-0.03	0.01	0.03
16. Diversification (Herfindahl)	0.10	0.00	-0.00	-0.01	-0.01	-0.01
17. Time to IPO (years)	0.28	-0.22	-0.21	0.10	-0.06	-0.06
18. GDP (US$, '000 billion)	-0.00	-0.11	-0.11	0.04	-0.06	-0.07
19. GDP growth (%)	-0.02	0.04	-0.18	0.07	0.01	-0.11
Mean	0.24	0.03	0.04	-0.02	0.03	0.03
Standard deviation	0.38	0.18	0.19	0.14	0.16	0.16
Minimum	0.00	0.00	0.00	-0.92	0.00	0.00
Maximum	1.00	1.00	1.00	0.91	1.00	1.00

Variable	7	8	9	10	11	12
1. Foreign sales percentage						
2. Family at founding (0-1)						
3. Family at internationalisation						
4. Shock at founding (0-1)						
5. Shock at internationalisation (0-1)						
6. Institutions at founding						
7. Institutions at internationalisation	1.00					
8. Foreign founders (0-1)	-0.01	1.00				
9. Ethnic minority founders (0-1)	0.08	-0.08	1.00			
10. Political ties (0-1)	0.00	0.05	-0.23	1.00		
11. Business group (0-1)	0.01	0.22	0.14	0.03	1.00	
12. Stateowned enterprise (0-1)	-0.01	0.16	-0.26	0.62	-0.10	1.00
13. Financial slack	0.01	-0.01	-0.02	-0.05	-0.03	-0.04
14. Total assets (US$m, logged)	0.01	0.18	-0.15	0.35	0.14	0.36
15. ROA	-0.02	0.04	0.08	0.03	0.03	0.05
16. Diversification (Herfindahl)	0.00	-0.02	-0.16	0.04	0.07	0.04
17. Time to IPO (years)	0.06	0.03	-0.11	0.05	-0.03	0.05
18. GDP (US$, '000 billion)	0.03	-0.00	0.01	0.01	0.09	-0.01
19. GDP growth (%)	0.07	-0.06	0.18	0.06	-0.03	0.01
Mean	-0.01	0.19	0.41	0.15	0.12	0.09
Standard deviation	0.13	0.39	0.49	0.36	0.32	0.29
Minimum	-1.03	0.00	0.00	0.00	0.00	0.00
Maximum	0.92	1.00	1.00	1.00	1.00	1.00

Variable	13	14	15	16	17	18	19
13. Financial slack	1.00						
14. Total assets (US$m, logged)	-0.11	1.00					
15. ROA	0.04	0.18	1.00				
16. Diversification (Herfindahl)	-0.07	0.12	-0.03	1.00			
17. Time to IPO (years)	-0.01	0.12	-0.11	0.09	1.00		
18. GDP (US$, '000 billion)	0.03	0.07	-0.01	0.04	0.37	1.00	
19. GDP growth (%)	0.05	-0.01	-0.01	-0.04	0.09	0.12	1.00
Mean	2.84	10.90	-0.01	0.26	4.77	0.20	3.25
Standard deviation	4.73	1.62	0.38	0.23	5.88	0.11	3.74
Minimum	0.00	4.07	-8.92	0.00	-15.00	0.07	-13.13
Maximum	96.74	18.83	9.04	1.00	19.00	0.92	10.00

N = 13,46

A key concern is that the timing of internationalisation may be influenced by firm-specific endogenous factors, some of which are unobserved. To address this issue, we control for *time to internationalisation*, defined as the number of years between founding and first internationalisation. This variable was estimated using the 'streg' procedure in Stata, which fits maximum-likelihood parametric survival models. Specifically, we estimated shared frailty models (Gutierrez, 2002) to account for firm-level heterogeneity in the timing of internationalisation. Frailty models incorporate latent firm-specific effects into the hazard function, thereby controlling for systematic unobserved differences in firms' propensity to internationalise. In this context, the approach provides an effective correction for selection effects. An additional advantage is that frailty models do not require instrumental variables (Puhani, 2000). Model selection based on the Akaike information criterion indicated that a lognormal distribution was most appropriate for the time-to-event function. Consistent with common practice, we adopted a gamma frailty specification. *Time to internationalisation* was estimated using the full set of control variables reported in Model 1 of Table 2. The predicted values were then included as a control variable in all main analyses. We did not use a Cox proportional hazards model because the proportional hazards assumption was violated.

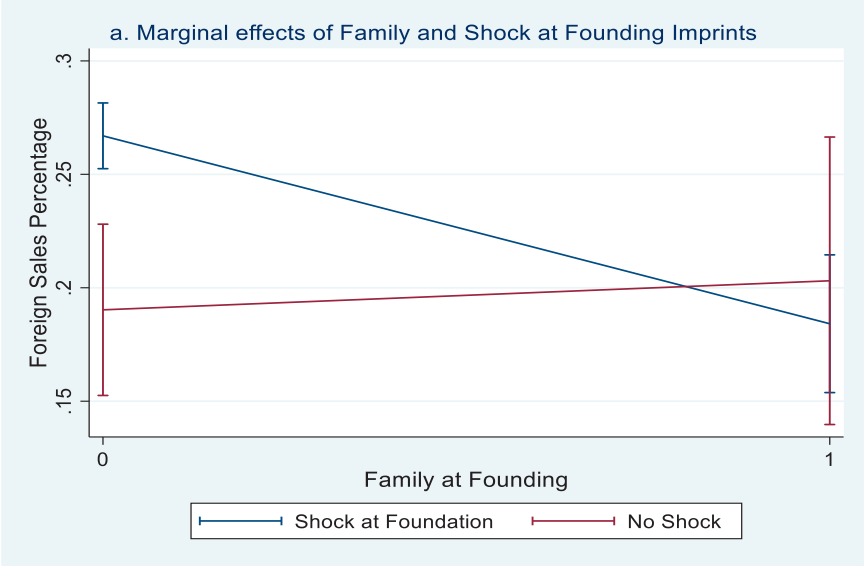
5. Results

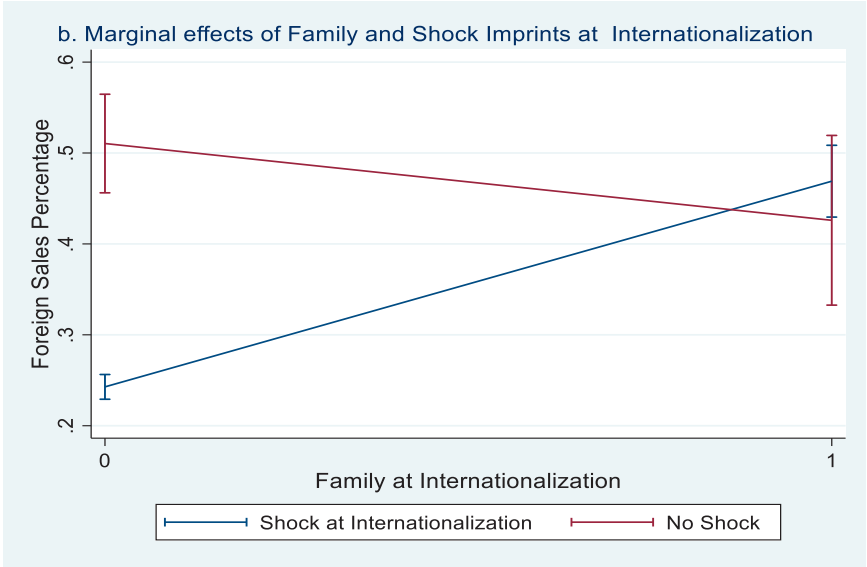
Table 2 reports the results of all hypothesis tests. Model 1 presents the baseline specification. Internationalisation, measured by *foreign sales percentage*, is positively associated with foreign founders, larger asset bases, higher ROA, later public listing, and stronger GDP growth. Firms with political ties, membership in business groups, and those operating in larger economies exhibit lower levels of internationalisation. *Time to internationalisation* is not significantly associated with *foreign sales percentage*. Models 2 to 4 introduce the founding imprints sequentially and show that all three founding imprints are associated with internationalisation.

Model 5 tests H1 by including all three founding imprints. *Family at founding* (β = –0.054, p < .001) and *shock at founding* (β = –0.057, p < .001) are negatively associated with foreign sales percentage, whereas *institutions at founding* (β = 0.197, p < .001) is positively associated. Economically, firms that are *family at founding* achieve *foreign sales percentages* that are 5.4 percentage points lower than those of non-family firms, equivalent to 22.5% of the sample mean. Similarly, *shock at founding* (i.e. firms founded during an economic

shock) reduces *foreign sales percentage* by 5.7 percentage points relative to firms founded in non-shock periods, or 23.8% of the sample mean. For a firm with average foreign sales of US$50 million, these effects are substantial, correspond to approximately US$11 to 12 million in annual foreign sales. A one-standard-deviation increase in *institutions at founding* increases *foreign sales percentage* by 0.4 percentage points, equivalent to 1.6% of the sample mean. Marginal effects for continuous variables are calculated as *exponential (βxσx)−1*, where β and σ represent the coefficient and standard deviation of variable x. Given the wide range of factors known to influence internationalisation (Gallegati et al., 2026; Pukall & Calabrò, 2013), these effects are economically meaningful. Figure 2a further illustrates the interaction among founding imprints. The finding that multiple founding imprints influence internationalisation up to 19 years after founding supports the concept of multiple founding imprints (Marquis & Qiao, 2020). H_1 is supported.

Figure 2: Plots of Interaction Effects




b. Marginal effects of Family and Shock Imprints at Internationalization
Foreign Sales Percentage
.2
.3
.4
.5
.6
0
1
Family at Internationalization
Shock at Internationalization
No Shock

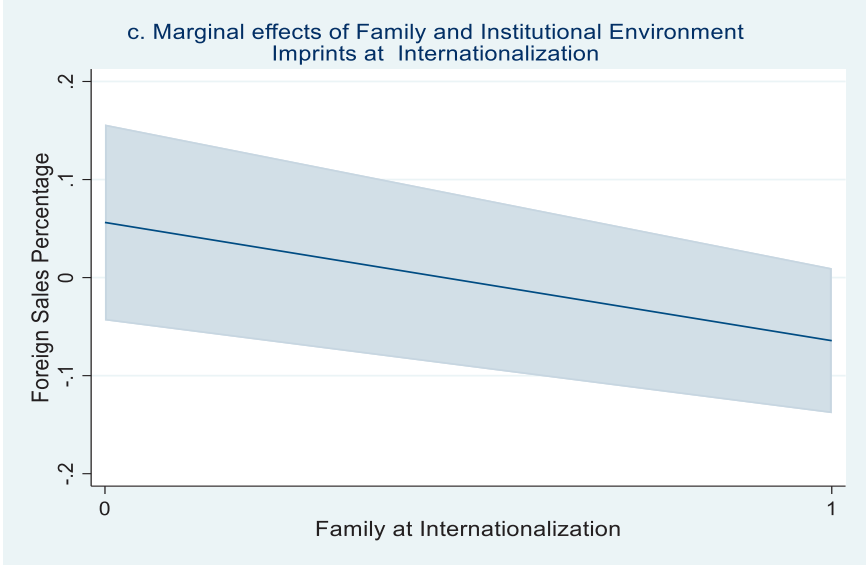

c. Marginal effects of Family and Institutional Environment Imprints at Internationalization
Foreign Sales Percentage
-.2
-.1
0
.1
.2
0
1
Family at Internationalization

Table 2: Tests of hypotheses predicting internationalisation with least squares random-effects panel regression

	DV: *Foreign sales percentage*											
	Model 1	Model 2	Model 3	Model 4	Model 5: H1	Model 6: H2	Model 7	Model 8	Model 9	Model 10	Model 11: H3	Model 12: H4
Family at founding		-0.104***			-0.054***	-0.083***						-0.076***
		(0.015)			(0.014)	(0.015)						(0.014)
Shock at founding			-0.116***		-0.057**	-0.077***						-0.091***
			(0.018)		(0.018)	(0.020)						(0.019)
Institutions at founding				0.238***	0.197***	0.217***						0.198***
				(0.020)	(0.020)	(0.028)						(0.027)
Family at founding						0.096**						0.120***
× Shock at founding						(0.037)						(0.034)
Family at founding						-0.027						0.015
× Institutions at founding						(0.039)						(0.036)
Shock at founding						-0.006						-0.004
× Institutions at founding						(0.046)						(0.042)
Family at internat.							0.218***			0.154***	0.225***	0.230***
							(0.015)			(0.017)	(0.019)	(0.019)
Shock at internat.								0.251***		0.210***	0.267***	0.258***
								(0.019)		(0.024)	(0.027)	(0.027)
Institutions at internat.									-0.117***	0.021	0.057	0.044
									(0.026)	(0.028)	(0.052)	(0.052)
Family at internat.											-0.311***	-0.319***
× Shock at internat.											(0.049)	(0.050)
Family at internat.											-0.121*	-0.137*
× Institutions at internat.											(0.059)	(0.059)
Shock at internat.											-0.039	-0.051
× Institutions at internat.											(0.064)	(0.064)
Foreign founders	0.070***	0.065**	0.071***	0.068**	0.066**	0.067**	0.078***	0.070***	0.072***	0.076***	0.076***	0.074***
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.020)	(0.021)	(0.021)	(0.021)
Ethnic minority founders	0.018	0.018	0.017	0.016	0.016	0.016	0.019	0.016	0.020	0.017	0.018	0.016
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
Political ties	-0.090**	-0.090***	-0.087**	-0.089**	-0.088**	-0.087**	-0.091***	-0.093***	-0.089***	-0.093***	-0.094***	-0.092***
	(0.027)	(0.027)	(0.027)	(0.028)	(0.028)	(0.028)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)

	DV: *Foreign sales percentage*											
	Model 1	Model 2	Model 3	Model 4	Model 5: H1	Model 6: H2	Model 7	Model 8	Model 9	Model 10	Model 11: H3	Model 12: H4
Business group	-0.045+	-0.045+	-0.045+	-0.043+	-0.043+	-0.043+	-0.045+	-0.049*	-0.045+	-0.048*	-0.046*	-0.044+
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
State owned enterprise	-0.052	-0.055+	-0.050	-0.051	-0.052	-0.051	-0.050	-0.055+	-0.051	-0.053	-0.054+	-0.053
	(0.032)	(0.032)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
Financial slack	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Total assets	0.039***	0.040***	0.038***	0.037***	0.037***	0.037***	0.041***	0.043***	0.039***	0.043***	0.043***	0.041***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
ROA	0.021*	0.021*	0.024*	0.026**	0.027**	0.027**	0.019*	0.016+	0.020*	0.016+	0.014	0.020*
	(0.010)	(0.010)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.010)	(0.009)	(0.009)	(0.009)
Diversification	-0.019	-0.016	-0.016	-0.015	-0.013	-0.012	-0.015	-0.011	-0.017	-0.010	-0.011	-0.004
	(0.020)	(0.020)	(0.020)	(0.019)	(0.019)	(0.019)	(0.020)	(0.020)	(0.020)	(0.019)	(0.019)	(0.019)
Time to IPO	0.024***	0.023***	0.022***	0.022***	0.021***	0.021***	0.025***	0.025***	0.025***	0.025***	0.025***	0.022***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
GDP	-0.660***	-0.626***	-0.623***	-0.591***	-0.567***	-0.560***	-0.664***	-0.678***	-0.671***	-0.673***	-0.677***	-0.577***
	(0.056)	(0.055)	(0.055)	(0.053)	(0.054)	(0.053)	(0.055)	(0.056)	(0.057)	(0.055)	(0.055)	(0.053)
GDP growth	0.007***	0.007***	0.006***	0.006***	0.006***	0.006***	0.007***	0.009***	0.008***	0.008***	0.008***	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Time to internat.	0.003	0.003	0.003	0.003	0.003	0.003	0.004+	0.003	0.003	0.003	0.003	0.003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Constant	-0.098+	-0.095	-0.084	-0.077	-0.072	-0.072	-0.143*	-0.150**	-0.103+	-0.169**	-0.173**	-0.145*
	(0.058)	(0.058)	(0.058)	(0.057)	(0.058)	(0.058)	(0.058)	(0.057)	(0.057)	(0.057)	(0.057)	(0.057)
Country & industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,466	13,466	13,466	13,466	13,466	13,466	13,466	13,466	13,466	13,466	13,466	13,466
Number of firms	946	946	946	946	946	946	946	946	946	946	946	946
Loglikelihood χ^2 (df)	1412 (24)	1448 (25)	1428 (25)	1461 (25)	1485 (27)	1504 (30)	1553 (25)	1538 (25)	1419 (25)	1595 (27)	1679 (30)	1782 (36)
Wald χ^2 test v Model 1 (df)		46.95*** (1)	43.36*** (1)	140.23*** (1)	147.81*** (3)	157.48*** (6)	198.60*** (1)	167.30*** (1)	19.65*** (1)	246.02*** (3)	317.13*** (6)	546.95*** (12)

Figures in parentheses are robust standard errors clustered by firm.
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Model 6 tests H_2 by incorporating both the main and interactive effects of the founding imprints. The main effects remain broadly consistent with those in Model 5. The interaction term *family at founding* × *shock at founding* is positive and significant (β = 0.096, p < .01), indicating that family firms founded during an economic shock subsequently exhibit higher levels of internationalisation than expected from the individual imprint effects alone. This interaction reduces the negative effects associated with both the founding imprints of family and economic shock. Holding other variables at their means, the interaction increases *foreign sales percentage* by 0.36 percentage points, equivalent to 1.5% of the sample mean. One interpretation is that experiencing an economic shock at founding heightens family firms' awareness of risk, encouraging later internationalisation as a risk-mitigation strategy (Gómez-Mejía et al., 2026). Although the remaining interaction terms are not significant, the results demonstrate that interactions among founding imprints can influence internationalisation and therefore support the collective impact of multiple founding imprints. H_2 receives partial support.

H_3 predicts that evolved founding imprints collectively influence internationalisation at the time firms internationalise. Models 7 to 9 examine each evolved imprint separately, while Model 10 includes all three. Model 11 incorporates both main and interaction effects and provides the primary test of H_3. Results show that *family at internationalisation* (β = 0.225, p < .001) and *shock at internationalisation* (β = 0.267, p < .001) are positively associated with foreign sales percentage. Formalisation and professionalisation may enhance family firms' capabilities over time, enabling evolved family imprints to facilitate internationalisation (Gallegati et al., 2026). Similarly, the recurrence of economic shocks may reinforce awareness of the risks associated with operating solely within one economy, encouraging international expansion. Family firms at internationalisation achieve *foreign sales percentages* 22.5 percentage points higher than non-family firms, while firms internationalising during an economic shock achieve *foreign sales percentages* 26.7 percentage points higher than those internationalising during non-shock periods. By contrast, *institutions at internationalisation* is not significant (β = 0.057, n.s.), possibly because firms continuously adapt to institutional environments, reducing their specific influence at the point of internationalisation.

Two interaction effects are significant. *Family at internationalisation* × *shock at internationalisation* is negative (β = –0.311, p < .001), indicating that family firms internationalising during economic

shocks exhibit foreign sales percentages 31.1 percentage points lower than comparable firms. *Family at internationalisation* × *institutions at internationalisation* is also negative (β = –0.121, p < .05); a one-standard-deviation increase in institutional development reduces foreign sales percentage by 0.7 percentage points, equivalent to 3% of the sample mean. These findings indicate that evolved imprints continue to shape internationalisation despite substantial organisational and environmental change. H_3 receives partial support.

H_4 predicts that the effects of evolved imprints differ from those of the original founding imprints. Model 12 tests this proposition by incorporating all main and interaction effects for both founding and evolved imprints. The results show that family at founding is negatively associated with internationalisation, whereas *family at internationalisation* is positively associated. A Wald test confirms that these effects differ significantly (p < .001). Likewise, *shock at founding* is negative, whereas *shock at internationalisation* is positive, and the difference is significant (p < .001). These findings suggest that survival, growth, and professionalisation cause evolved imprints to reflect contemporary conditions while retaining traces of their original imprinting effects (Gallegati et al., 2026; Gómez-Mejía et al., 2026).

Although *institutions at founding* is positively associated with internationalisation and *institutions at internationalisation* is not significant, the difference between the two effects remains significant (p < .01). The positive interaction effect of family at founding × shock at founding also differs significantly from the negative effect of *family at internationalisation* × *shock at internationalisation* (p < .001). Similarly, *family at founding* × *institutions at founding* is not significant, whereas *family at internationalisation* × *institutions at internationalisation* is negative and significant; the difference between these effects is significant (p < .05). Figures 2b and 2c further illustrate these relationships.

Taken together, the results indicate that founding imprints evolve over time while continuing to exert persistent influence. Both the main and interactive effects of imprints differ between founding and internationalisation, highlighting the importance of examining multiple imprints, their interactions, and their evolution. These findings support H_4.

5.1 Robustness Tests

We conducted three sets of robustness tests. First, we assessed the measurement of key variables and controls. We reclassified firms founded by a single individual as family firms (Miller et al., 2007) and added an *individual founder* indicator. Results were largely unchanged, although the *individual founder* variable was positively associated with internationalisation. This suggests that socioemotional wealth considerations may be less important in individually founded firms and that these firms face different internationalisation challenges from family founded firms. We also tested the sensitivity of our reclassification of high-growth firms by replacing the 500% growth (in sales or assets) threshold over five years with thresholds of 400% over four years and 600% over six years. Results remained substantively unchanged, supporting the argument that rapid growth moderates family firm founding imprints. Finally, we replaced *time to IPO* with *firm age*, which was highly correlated with the original measure, and added a *post-IPO* indicator. These modifications had no material effect on the results.

The second robustness test employed an alternative estimation approach. Specifically, we estimated multilevel models with firms nested within countries using the 'mixed' procedure in Stata. This approach controls for potential confounding effects arising from country-level differences in imprinting and internationalisation. We replicated all models reported in Table 2. Results for the key variables were qualitatively similar across specifications. The only exception was that *family at founding* was not significant in one model (Model 5). Across all models, firm-level factors explained more variation in *foreign sales percentage* than country-level factors, indicating that internationalisation is driven primarily by firm-level considerations.

The third robustness test used *time to internationalisation* as an alternative dependent variable. Rather than controlling for it, we directly examined how founding and evolved imprints influenced the speed with which firms internationalised. The survival-time model described earlier was used to test all hypotheses. Key results are reported in Table 3. Negative coefficients indicate shorter times to internationalisation and are therefore interpreted as greater internationalisation.

Table 3: Tests of hypotheses predicting first internationalisation with survival time models

	DV: Time to Internationalization (negative covariates indicate faster internationalization)					
	Model 1	Model 2: H_1	Model 3: H_2	Model 4	Model 5: H_3	Model 6: H_4
Family at founding		-0.268***	-0.622***			-0.463**
		(0.080)	(0.109)			0.159
Shock at founding		-0.249***	-0.361***			-0.022
		(0.067)	(0.077)			0.095
Institutions at founding		0.585***	0.830***			1.606***
		(0.104)	(0.125)			0.113
Family at founding			0.226			-0.442*
× Shock at founding			(0.145)			0.180
Family at founding			-0.586**			-1.340***
× Institutions at founding			(0.186)			0.240
Shock at founding			-0.244			-0.880***
× Institutions at founding			(0.170)			0.184
Family at internat.				-1.501***	-2.194***	-1.436***
				(0.087)	(0.136)	0.094
Shock at internat.				-1.499***	-2.104***	-1.478***
				(0.103)	(0.178)	0.125
Institutions at internat.				-0.173+	-0.112	-0.423***
				(0.091)	(0.107)	0.098
Family at internat.					1.795***	1.471***
× Shock at internat.					(0.187)	0.142
Family at internat.					-0.580**	0.170
× Institutions at internat.					(0.192)	0.166
Shock at internat.					-0.056	0.275
× Institutions at internat.					(0.243)	0.181
Foreign founders	-0.085	-0.081	-0.068	-0.297***	-0.279***	-0.217***
	(0.073)	(0.057)	(0.053)	(0.067)	(0.069)	0.050
Ethnic minority founders	-0.119	-0.108	-0.091	-0.087	-0.027	-0.010
	(0.097)	(0.077)	(0.073)	(0.086)	(0.088)	0.065

	DV: Time to Internationalization (negative covariates indicate faster internationalization)					
	Model 1	Model 2: H_1	Model 3: H_2	Model 4	Model 5: H_3	Model 6: H_4
Political ties	0.062	0.019	0.028	-0.036	0.048	0.012
	(0.114)	(0.089)	(0.084)	(0.102)	(0.107)	0.079
Business group	-0.016	-0.050	-0.060	0.034	0.030	0.007
	(0.098)	(0.077)	(0.073)	(0.090)	(0.093)	0.064
State owned enterprise	0.131	0.117	0.116	0.016	0.029	0.019
	(0.134)	(0.104)	(0.098)	(0.120)	(0.125)	0.091
Financial slack	0.005	0.002	0.002	-0.000	-0.001	-0.002
	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	0.003
Total assets	0.063**	0.039*	0.037*	0.039*	0.038*	0.036**
	(0.020)	(0.016)	(0.015)	(0.018)	(0.019)	0.013
ROA	-0.297***	-0.180***	-0.173***	-0.182**	-0.127*	-0.063+
	(0.058)	(0.045)	(0.043)	(0.056)	(0.054)	0.038
Diversification	0.051	0.080	0.085	-0.057	-0.096	-0.089
	(0.125)	(0.096)	(0.090)	(0.114)	(0.117)	0.080
Time to IPO	-0.020+	-0.006	-0.005	0.023**	0.026**	0.032***
	(0.010)	(0.008)	(0.008)	(0.008)	(0.008)	0.005
GDP	1.707***	1.944***	1.929***	1.315**	1.262**	1.872***
	(0.483)	(0.375)	(0.352)	(0.453)	(0.456)	0.407
GDP growth	-0.024**	-0.022***	-0.019**	-0.069***	-0.061***	-0.027***
	(0.008)	(0.006)	(0.006)	(0.010)	(0.011)	0.007
Country & industry f. effects	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.633**	0.844***	0.887***	1.659***	1.764***	1.672***
	(0.230)	(0.180)	(0.169)	(0.217)	(0.225)	0.160
Observations (firms)	7,682 (946)	7,682 (946)	7,682 (946)	7,682 (946)	7,682 (946)	7,682 (946)
Loglikelihood $\chi 2$ (df)	649 (23)	728 (26)	746 (29)	1737 (26)	1897(29)	1968 (39)
Wald $\chi 2$ v Model 1 (df)		78.94*** (3)	97.12*** (6)	1087.78*** (3)	1248.56*** (6)	1323.63*** (12)

Figures in parentheses are robust standard errors clustered by firm. *** $p<0.001$, ** $p<0.01$, * $p<0.05$, + $p<0.1$

Model 2 shows that founding imprints collectively influence the timing of internationalisation. Family at founding is associated with earlier internationalisation (β = –0.268, p < .001), as is shock at founding (β = –0.249, p < .001). By contrast, more developed institutions at founding increase the time to internationalisation

(β = 0.585, p < .001). These findings support H_1 by demonstrating that multiple founding imprints collectively influence when firms internationalise.

Comparing Model 5 in Table 2 with Model 2 in Table 3 suggests that the negative association between *family at founding* and *foreign sales percentage* may arise because these firms internationalise earlier, potentially before acquiring sufficient resources and capabilities. A similar interpretation applies to firms founded during economic shocks. In contrast, firms founded in more developed institutional environments take longer to internationalise, possibly because such environments impose higher governance and performance standards before supporting foreign expansion. This may explain the positive relationship between *institutions at founding* and *foreign sales percentage*.

Model 3 of Table 3 provides support for H_2 by showing significant main effects of the founding imprints and one significant interaction effect. Model 5 supports H_3 by demonstrating the collective influence of the main and interactive effects of evolved imprints at internationalisation. Finally, Model 6 supports H_4 by showing that founding imprints and their evolved forms exert distinct and independent effects on the timing of internationalisation. Overall, the robustness tests reinforce the main findings. Consistent with the primary analyses, imprints associated with earlier internationalisation are also associated with lower levels of foreign sales, suggesting that firms may internationalise before developing sufficient capabilities to support extensive foreign operations. Collectively, the robustness tests provide strong support for the study's conclusions.

5.2 Addressing Endogeneity

We acknowledge potential endogeneity concerns (e.g., reverse causality and omitted variable bias), but our design mitigates these issues because: (1) the founding variables are predetermined at incorporation and precede internationalisation; (2) we include extensive founder-, firm-, industry-, and country-level controls; (3) we employ shared frailty models ('streg') that account for unobserved firm heterogeneity; and (4) robustness tests using alternative dependent variables and multilevel modelling produce consistent results. Together, these features reduce concerns that the results are driven by endogeneity rather than imprinting effects.

6. Discussion and Conclusion

The results show that firms are stamped with multiple founding imprints that exert distinct main and interactive effects. These imprints evolve as firms and environments change, such that the main and interactive effects of evolved imprints differ from those of the original founding imprints. Family and economic shock founding imprints are negatively associated with internationalisation, whereas institutional development at founding is positively associated with it. In contrast, the evolved family and economic shock imprints are positively associated with internationalisation at the time firms internationalise. We also identify interactions that either reinforce or weaken the effects of both founding and evolved imprints. Time to internationalisation is similarly shaped by multiple imprints and their interactions, which evolve over time. More generally, founding imprints that delay internationalisation are associated with more intensive subsequent internationalisation.

6.1 Contributions

This study contributes to the continuing development of imprinting theory. We argue conceptually and demonstrate empirically that firms acquire multiple founding imprints that reflect the complexity of organisational and environmental conditions at founding. These imprints are heterogeneous and exert distinct effects on firm actions through their interactions and differing levels of persistence. Collectively, they "constitute an intricate texture of different conditions" (Marquis & Tilcsik, 2013, p. 196), generating reinforcing, countervailing, and interactive effects. Our findings therefore support calls for imprinting research to pay greater attention to complexity and heterogeneity in imprint formation and influence (De Cuyper et al., 2020; Marquis & Tilcsik, 2013; Simsek et al., 2015).

We also contribute to a more evolutionary view of imprinting theory by showing that imprints change in their influence over time. Rather than viewing imprinting as a static, one-time founding effect, our findings suggest that imprints evolve and may be reinforced, weakened, or modified through subsequent sensitive periods and interactions with other imprints. This perspective complements recent work showing that imprints can be reinforced during sequential sensitive transitions (De Cuyper et al., 2020; Marquis & Qiao, 2020). Such transitions may themselves generate multiple imprints analogous to those formed at founding. Our findings highlight the value of examining heterogeneity in both imprint formation and persistence across time.

Some imprinting research implicitly assumes that founding imprints constrain managerial agency because environmental change makes current conditions more influential than historical ones (Shinkle & Kriauciunas, 2012). While acknowledging this perspective, we show that founding imprints can also facilitate strategic action by influencing whether firms internationalize earlier or later and whether they do so more or less intensively. This raises the possibility of a more dynamic view of imprinting that incorporates managerial agency, including efforts to reinforce or overcome prior imprints (Kriauciunas & Kale, 2006; Marquis & Qiao, 2020). Whether multiple imprints generate inertia or flexibility appears contingent on founding conditions and on the economic and institutional environments in which firms operate.

More broadly, our findings suggest that imprinting-based and contemporaneous explanations of firm behaviour should be viewed as complementary rather than competing perspectives. Isolating imprinting effects remains challenging because evolving imprints create causal ambiguity and because substantial time may separate imprints, actions, and outcomes. At the same time, our study reinforces the need for imprinting theory to recognise that contemporaneous influences may modify or even replace founding imprints (Perkmann & Spicer, 2014; Shinkle & Kriauciunas, 2012). This perspective helps identify complexity and ambiguity in the relationship between founding conditions and subsequent firm actions, while enhancing imprinting theory's ability to explain and predict firm behaviour over time.

6.2 Practical Implications

Our findings have several practical implications. For managers, the results suggest that initial hesitation towards internationalisation can be overcome through deliberate professionalisation, including the formalisation of management processes and the development of systematic international market intelligence capabilities. Managers of firms founded during economic shocks should recognise that, although these firms may initially internationalise less intensively, the shock imprint can generate valuable capabilities, including heightened risk awareness, cost discipline, and crisis-management skills. Our findings on time to internationalisation further suggest that family firms may benefit from delaying international expansion until they have accumulated domestic experience and developed international capabilities through professionalisation. For family firms seeking to preserve socioemotional wealth while pursuing growth,

internationalisation may be framed as a risk-mitigation strategy. For example, involving the next generation in international operations can align succession planning with international growth, as younger family members often possess greater international exposure and lower levels of risk aversion (Del Barone et al., 2026).

For policymakers, the findings highlight the importance of stable and supportive institutional environments. Inconsistent policy implementation may have particularly harmful effects on newly founded firms by imprinting them with uncertainty and reducing their long-term propensity to internationalise. Maintaining institutional stability, access to finance, and support for innovation, particularly during periods of economic disruption, may alter the effects of founding imprints. Because founding during economic shocks can create long-term risk aversion that suppresses later internationalisation, governments should consider targeted support for start-ups during crises, such as export guarantees, technical assistance, and credit facilities. Policymakers should also prioritise regulatory quality, government effectiveness, and capital market transparency. Strong institutional infrastructures can imprint newly founded firms with high governance standards while providing access to the resources needed to pursue internationalisation.

6.3 Limitations and Future Research

Although the 1994 to 2012 observation period is appropriate for our objectives, Asian markets and institutions have evolved substantially since then. Consequently, our analysis does not capture more recent developments, such as digitalisation, COVID-19, or ESG-related transitions, and the findings may not fully generalise to the contemporary environment. Future research should extend the analysis beyond 2012 to assess the temporal generalisability of our results. The evolution of imprints also warrants further investigation. Future studies could examine interactions among imprints across multiple sensitive periods beyond founding and explore the specific mechanisms through which imprints persist, decay, or change. Qualitative and quasi-experimental approaches may be particularly valuable for understanding these processes. Further cross-country comparative research could strengthen theory development and assess the generalisability of our findings by examining a broader range of imprints, such as industry-specific and cultural imprints, across different firm types, including private and smaller firms, and in non-Asian or transition economies (Tran & Freel, 2025; Xu & Hou, 2024). Future research could also evaluate whether

multiple and evolving imprints influence strategic actions beyond internationalisation.

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