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Appendix A

Table A1 The measure of focal variables drawing from World Bank's Enterprise Survey

Variables	Survey Questions
Product innovation	1. In fiscal year 2011, what percent of this establishment's total annual sales was accounted for by products or services that were introduced in the last three years? 2. In fiscal year 2011, what were this establishment's total annual sales for ALL products and services?
B-G ties	1. In a typical week over the last year, what percentage of total senior management's time was spent on dealing with requirements imposed by government regulations?
Legal institution	1. The court system is fair, impartial and uncorrupted. [1 Strongly disagree, 2 Tend to disagree, 3 Tend to agree, 4 Strongly agree] 2. To what degree is/are Courts an obstacle to the current operations of this establishment? [0 No obstacle, 1 Minor obstacle, 2 Moderate obstacle, 3 Major obstacle, 4 Very severe obstacle]
Business regulation	1. To what degree is/are Tax Rates an obstacle to the current operations of this establishment? [0 No obstacle, 1 Minor obstacle, 2 Moderate obstacle, 3 Major obstacle, 4 Very severe obstacle] 2. To what degree is/are Tax Administration an obstacle to the current operations of this establishment? [0 No obstacle, 1 Minor obstacle, 2 Moderate obstacle, 3 Major obstacle, 4 Very severe obstacle] 3. To what degree is/are Business Licensing and Permits an obstacle to the current operations of this establishment? [0 No obstacle, 1 Minor obstacle, 2 Moderate obstacle, 3 Major obstacle, 4 Very severe obstacle]
Financial systems	1. To what degree is Access to Finance an obstacle to the current operations of this establishment? [0 No obstacle, 1 Minor obstacle, 2 Moderate obstacle, 3 Major obstacle, 4 Very severe obstacle]
Infrastructure supporting systems	1. To what degree is Electricity an obstacle to the current operations of this establishment? [0 No obstacle, 1 Minor obstacle, 2 Moderate obstacle, 3 Major obstacle, 4 Very severe obstacle] 2. To what degree is Telecommunications an obstacle to the current operations of this establishment? [0 No obstacle, 1 Minor obstacle, 2 Moderate obstacle, 3 Major obstacle, 4 Very severe obstacle]

Nederlandse Samenvatting (Dutch Summary)

In opkomende economieën maken de doorgaande institutionele ontwikkeling en markthervormingen het ondernemingsklimaat vaak dynamischer, onzekerder en onvoorspelbaarder. De manier waarop bedrijven in een dergelijke omgeving kunnen overleven, groeien en concurreren heeft steeds meer de aandacht gekregen in zowel de bedrijfskunde als in de zakelijke praktijk. Er is echter nog steeds slechts beperkte en inconsistente empirische kennis over wanneer en hoe bedrijven interne activa manipuleren en de externe institutionele omgeving beheren om hun overlevingskansen en innovatieprestaties in opkomende markten te verbeteren. Voortbouwend op de *resource-based view* (RBV), de *institutional-based view* (IBV) en *resource dependence theory* (RDT), en met China als context, beoogt het onderzoek in dit proefschrift dit hiaat te verkleinen door de volgende vragen te beantwoorden: 1) Hoe bepaalt een gecombineerd gebruik van interne middelen het voortbestaan van Chinese startende hightech bedrijven? 2) Onder welke situaties van institutionele ontwikkeling profiteert de innovatie van Chinese bedrijven van politieke connecties? 3) Hoe en wanneer bepaalt de dynamische institutionele omgeving de innovatiedrang van Chinese bedrijven? Om deze vragen te beantwoorden, zijn vier onafhankelijke empirische studies uitgevoerd om het begrip van de mechanismen waarmee de interne middelen en externe institutionele omgevingen bijdragen aan de overlevings- en innovatieprestaties van bedrijven in opkomende markten te verdiepen.

Voortbouwend op Chinese empirische data ondersteunen de resultaten de meeste theoretische voorspellingen. Aangezien complementaire interne middelen kunnen leiden tot synergetische invloed om de bedrijfsprestaties te verbeteren, bevestigen de resultaten in hoofdstuk 2 dat het gecombineerde gebruik van drie interne middelen, namelijk R&D-middelen, interne financiële middelen en wetenschappelijk geschoolde werknemers, een effectieve buffer kan vormen voor het overlevingsrisico van hightech starters. Bovendien zijn de politieke banden van bedrijven, d.w.z. contacten tussen het bedrijfsleven en de overheid (hoofdstuk 3) en liaisons met de overheid (hoofdstuk 4), cruciale antecedenten van bedrijfsinnovatie in opkomende markten zoals China. Om precies te zijn, *ceteris paribus*, bedrijven met overheidsbanden hebben meer productinnovatie-output dan bedrijven die geen overheidsbanden hebben; en hoe sterker de overheidsbanden, des te hoger zal de innovatie-output zijn (hoofdstuk 3). Ook presteren bedrijven die zijn aangesloten bij een hogere overheid beter op het gebied van productinnovatie (hoofdstuk 4). Bovendien stelt dit proefschrift een verband vast tussen institutionele verandering en ondernemende exploratieve en exploitatieve innovatie door de innovatie-motiverende effecten en -onderdrukkende effecten van institutionele verandering te identificeren (Hoofdstuk 5). Het stelt vast dat de omvang van de institutionele verandering zich positief verhoudt met de verkennende en exploiterende innovatie van bedrijven; en dat de snelheid van institutionele verandering waarschijnlijk exploratieve innovatie stimuleert, maar een omgekeerde U-vormige invloed uitoefent op exploitatieve innovatie. Ten slotte laten de interacties tussen politieke connecties en institutionele verandering complexe effecten zien op

bedrijfsinnovatie (Hoofdstuk 3, Hoofdstuk 4 en Hoofdstuk 5). De resultaten suggereren over het algemeen dat de innovatie stimulerende effecten van politieke connecties in China zullen voortduren, ongeacht de status quo van institutionele ontwikkeling. In het bijzonder werpen de bevindingen substantieel licht op innovatiemanagement door de complementaire relatie tussen politieke banden- d.w.z. overheids-banden en de ontwikkeling van formele instituten te valideren (hoofdstuk 3 en hoofdstuk 5) en overheidsrelaties (hoofdstuk 4) versterken de innovatieprestaties van bedrijven in provincies met meer ontwikkelde formele instituties.

Dit proefschrift draagt bij tot een beter begrip van de interne en externe determinanten van overleving en innovatie van bedrijven in opkomende markten, met name in China. Het biedt aanzienlijke theoretische inzichten in en empirisch bewijs over wanneer en hoe Chinese bedrijven profiteren van politieke connecties, institutionele verandering en een gecombineerd gebruik van interne middelen. Wetenschappers kunnen het gebruiken als een bouwsteen voor het ontwikkelen van een dieper begrip van het overleven en de innovatie van bedrijven in opkomende markten als China. Managers in China kunnen de inzichten die uit dit proefschrift voortkomen gebruiken om effectieve strategische beslissingen te nemen met betrekking tot innovatie, concurrentie en overleven in hun opkomende markt.

English Summary

In emerging economies, ongoing institutional transition and market reforms often make the business environment more dynamic, uncertain, and unpredictable. How firms survive, grow, and compete in such environments has attracted an increasing attention in management academia as well as in business practice. However, there is still limited and inconsistent empirical knowledge of when and how firms manipulate internal assets and manage external institutional environments to improve their survival chance and innovation performance in emerging markets. Building on the resource-based view of the firm (RBV), the institutional-based view (IBV), and resource dependence theory (RDT), this dissertation contextualizes China and is designed to narrow down this research gap by addressing the following questions: 1) How does a combined use of internal resources determine Chinese high-tech start-up firms' survival? 2) Under what institutional transition conditions does Chinese firms' innovation benefit from political connections? and 3) How and when do dynamic institutional environments shape Chinese firms' innovation propensity? To address these questions, four independent empirical studies are conducted to deepen the understanding of the mechanisms through which the internal resources and external institutional environments contribute to firm survival and innovation performance in emerging markets.

Building on Chinese empirical data, the results support most of the theoretical predictions. Given that complementary internal resources can lead to synergetic influence to improve firm performance, the results in Chapter 2 validate that the combined use of three internal resources *i.e.* R&D resources, internal financial resources, and scientifically skilled employees, can effectively buffer high-tech start-ups' survival risk. Furthermore, firms' political connections *i.e.* business-government (B-G) ties (Chapter 3) and government affiliations (Chapter 4) are crucial antecedents of firm innovation in emerging markets like China. To be specific, *ceteris paribus*, firms with B-G ties have more product innovation output than firms that have no B-G ties; and, the stronger the B-G ties are, the higher the innovation output will be (Chapter 3). Also, firms that are affiliated with higher-level government perform better in terms of product innovation (Chapter 4). Moreover, this dissertation further establishes a relationship between institutional transition and firm exploratory and exploitative innovation by identifying the innovation motivating effects and innovation depressing effects of institutional transition (Chapter 5). It finds that the scope of institutional transition is positively associated with firms' exploratory and exploitative innovation; and, that the speed of institutional transition is likely to incent exploratory innovation but exerts an inverted U-shaped influence on exploitative innovation. Finally, the interactions between political connections and institutional transition demonstrate complicated effects on firm innovation (Chapter 3, Chapter 4, and Chapter 5). The results generally suggest that the innovation stimulating effects of political connections will continue in China regardless of the *status quo* of institutional development. Particularly, the findings shed substantial light on innovation management by validating the complementary relationship between political connections and the development of formal institutions — *i.e.*

B-G ties (Chapter 3 and Chapter 5) and government affiliations (Chapter 4) do reinforce firm innovation performance in provinces with more developed formal institutions.

This dissertation contributes to a further understanding of the internal and external determinants of firm survival and innovation in emerging markets, especially in China. It provides substantial theoretical insights in, and empirical evidence on when and how Chinese firms benefit from political connections, institutional transition, and a combined use of internal resources. Scholars can use it as a building block for developing a deeper understanding of firm survival and innovation in emerging markets in China. Managers in China can use the insights flowing from this dissertation to effectively make strategic decisions regarding innovation, competition, and survival in their emerging markets.

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