ABSTRACT

The production network of automotive industry is a case in lead firm-led. When automotive lead firms invested in less developed countries, they used to built and organize their reconfigured production networks with their “follow-source” suppliers and intermediaries according to the requirements of local government. Accordingly, a rich body of literature exists on the characteristics of temporal process and spatial organization of automotive lead firm-led reconfigured production networks because their organization is directly significant for local economic development. Additionally, the underlying dynamics mainly emphasize the role of the automotive lead firms or local government and governance with their “follow-source” suppliers focused on a firm-centered analysis. However, these studies overlook the different characteristics of the temporal process and spatial organization of the various automotive lead firms-led reconfigured production networks formed that can dynamically trigger diverse local economic development. Additionally, the underlying dynamics behind the formation of reconfigured production networks ignore the intra-firm dynamics such as assemblers, R&D centers and engines of lead firms and the extra-firm dynamics such as different lead firms interplaying with various levels of states in host regions.

This thesis employs quantitative methods such as firm-level data analysis and indicators measuring by Location Quotient index, Global Moran’s I and Geographic Information System techniques, as well as semi-structured in-depth interviews analyzing by coding. It examines the temporal process and spatial organization of Japanese reconfigured production networks, particularly the organization with their suppliers in the automotive industry led by various lead firms. It illustrates that the organization of reconfigured production networks of various Japanese lead firms-led in Guangzhou can be regarded as “exclusive networks” characterized by close organization with their “follow-source” suppliers in the formation of trust and long-term relationship whilst displaying relatively weak ties with local suppliers, although the extent of them are different. The most exclusive network is Toyota, followed by
Honda and Nissan. Spatially, there exist close inter-firm supply linkages in Japanese automotive firms, centering on their lead firms, having shaped tripartite confrontation of Japanese automotive investment within Guangzhou in terms of the extent of agglomeration, co-location effects, firm-size distribution within the agglomerations, and the effect of spatial autocorrelation.

Drawing upon the “strategies” concept of global production networks (GPNs) theory, this thesis further demonstrates the differing extent of exclusive networks led by various lead firms can be interpreted by the different inter-firm partnership strategies between Japanese lead firms and their suppliers or intermediaries; the different agglomeration of spatial organization in the tripartite confrontation can be elucidated by the different three intra-firm coordination strategy of Japanese lead firms, and extra-firm bargaining strategy between Japanese firms (usually lead firms and largest suppliers) and local government. As a result of weak organization with local suppliers, the reconfigured Japanese automotive production networks cannot substantially accelerate the development of Guangzhou’s local suppliers industry.
# TABLE OF CONTENTS

CHAPTER ONE  INTRODUCTION.................................................................1
  1.1 Background......................................................................................1
  1.2 Research Scope...............................................................................4
  1.3 Significance of the Study.................................................................5
  1.4 Structure of the Thesis......................................................................5

CHAPTER TWO  LITERAURE REVIEW......................................................8
  2.1 Introduction......................................................................................8
  2.2 Automotive FDI and Global Automobile Production Networks: Dynamics, Reconfiguration and Organization.........................................................9
    2.2.1 Automotive FDI and Market Imperative Dynamics.........................9
    2.2.2 Reconfigured Global Automotive Production Networks.................10
    2.2.3 Organization between Lead Firms and Suppliers..........................18
  2.3 Theoretical Opinions on the Determinants of Global Automotive Production Networks Reconfiguration and Organization..........................................23
    2.3.1 “Governance” Concept of GVCs Approach..................................23
    2.3.2 “Embeddedness” Concept of GPNs Approach...............................25
    2.3.3 “Strategies” Concept of GPNs Theory..........................................28
  2.4 Empirical Studies on Japanese Automotive Investment in China..........31
    2.4.1 Japanese Automotive Investment in Transition............................31
    2.4.2 Emerging Reconfiguration and Organization of Production Networks Led by Japanese Lead Firms Investment in China...............................33
    2.4.3 Determinants of Japanese Automotive Production Networks Reconfiguration and Organization in China............................35
  2.5 Summary.........................................................................................36

CHAPTER THREEE  DATA AND METHODOLOGY....................................38
  3.1 Introduction....................................................................................38
  3.2 Analytical Framework.....................................................................38
  3.2 Research Questions, Objectives and Hypotheses.............................39
3.2.1 Research Questions ................................................................. 39
3.2.2 Research Objectives .............................................................. 40
3.2.3 Research Hypotheses ............................................................. 41
3.3 Sector Selection – Japanese Automotive Industry ..................... 41
3.4 Study Area – Guangzhou ......................................................... 43
3.5 Data Collection ........................................................................... 46
  3.5.1 Statistical Firm-level Data ..................................................... 47
  3.5.2 Semi-structured In-depth Interview Data ............................... 48
3.6 Data analysis ............................................................................. 53
  3.6.1 Quantitative Analysis for Firm-level Data ............................... 54
  3.6.2 Validity Analysis for Semi-structure In-depth Interview Data .... 55
3.7 Summary .................................................................................. 56

CHAPTER FOUR  TEMPORAL PROCESS OF JAPANESE AUTOMOTIVE
INVESTMENT IN GUANGZHOU ......................................................... 58
  4.1 Introduction ............................................................................... 58
  4.2 Temporal Process of Japanese Automotive Investment in Guangzhou .. 58
    4.2.1 Japanese Automotive Investment from ASEAN Countries to Guangzhou 58
    4.2.2 Evolution of Japanese Automotive Investment in Guangzhou .......... 60
    4.2.3 Developmental Stages of Japanese Automotive Firms .................. 62
  4.3 Difference and Similarity of Temporal Process of Three Lead Firms-led
      Production Networks Formation .................................................. 67
    4.3.1 Temporal Process of Honda-led Production Networks Formation .... 67
    4.3.2 Temporal Process of Nissan-led Production Networks Formation .... 72
    4.3.3 Temporal Process of Toyota-led Production Networks Formation ...... 76
  4.4 Summary .................................................................................. 82

CHAPTER FIVE  SPATIAL ORGANIZATION OF JAPANESE AUTOMOTIVE
INVESTMENT IN GUANGZHOU ......................................................... 85
  5.1 Introduction ............................................................................... 85
  5.2 Spatial Patterns of Japanese Automotive Investment ..................... 85
    5.2.1 Geography Distribution of Japanese Automotive Investment ......... 85
5.2.2 Extent of Japanese Automotive Investment Agglomeration................. 88
5.2.3 Co-location of Assemblers and Suppliers or R&D Centers and Intermediaries.................................................................................................................. 91
5.2.4 Organization of Japanese Lead Firms and “Follow-source” Suppliers in Guangzhou........................................................................................................ 94

5.3 Different Spatial Organization of the Three Lead Firms-led Production Networks........................................................................................................ 95

5.3.1 Spatial Organization of Honda-led Production Network in Eastern Area.. 95
5.3.2 Spatial Organization of Nissan-led Production Network Suppliers in Northern Area........................................................................................................ 100
5.3.3 Spatial Organization of Toyota-led Production Network in Southern Area ........................................................................................................ 104

5.4 Impacts of the Exclusive Network on Guangzhou’s Local Automotive Supplier Industry........................................................................................................ 108

5.5 Summary........................................................................................................ 113

CHAPTER SIX  CONCLUSION................................................................. 115

6.1 Summary of Research Findings................................................................. 115
6.2 Theoretical Implications......................................................................... 117
6.3 Empirical and Policy Implications............................................................ 117
6.4 Limitations and Suggestions for Future Research................................. 118

APPENDICES......................................................................................... 120

BIBLIOGRAPHY..................................................................................... 122

CURRICULUM VITAE............................................................................ 134