

**ECONOMIC ANALYSIS OF INTRA-INDUSTRY TRADE: THE CASE OF SOUTH
AFRICA'S AUTOMOTIVE INDUSTRY**

by

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SUMMARY

Over recent years, international trade flows of automotive products have experienced rising trends. Thus, the need to gain a better understanding of trade theories that could explain such trade flows. Until recently, the theoretical and empirical distinction of intra-industry trade (IIT) into patterns of horizontally differentiated (by variety) intra-industry trade (HIIT) and vertically differentiated (by quality) intra-industry trade (VIIT) has become crucial because each IIT pattern may potentially be influenced in different manners by country and industry factors (Greenaway, Hine & Milner, 1995).

The objective of this thesis is twofold. Firstly, to measure the empirical significance of IIT in the automobile industry between South Africa and its bilateral trading partners and to decompose total IIT (TIIT) into VIIT and HIIT patterns. Secondly, to develop empirical models to investigate potential country- and industry-specific determinants of IIT patterns in the South African automobile industry. The empirical strategy adopted in this thesis is a gravity model spanning the period 2000 to 2007. The automobile industry is a principal industrial sector in the South African economy contributing notably to trade, investment, employment and national output. The structure and conduct of the industry is aligned with several elements of IIT theories and thus represents an important and fascinating case of IIT patterns to investigate. Therefore, the findings of this thesis will be valuable to trade policy analysts and manufacturers in the local and global automotive industries.

According to the objectives, the significance of IIT is estimated using the trade overlap index and the empirical separation of total intra-industry trade (TIIT) into VIIT and HIIT is conducted using the threshold method. The empirical results reveal the presence of significant levels of IIT in automotive trade flows between South Africa and its bilateral trading partners. In accordance with theoretical expectations, the empirical investigation signifies the existence of high shares of VIIT dominating TIIT in the South African automobile industry. Moreover, the empirical analysis postulates that, within VIIT, the domestic automobile industry potentially produces and exports high quality automotive products proposing that such VIIT can be partly explained by fragmentation and international production processes.

Next, gravity models are estimated to investigate the determinants of IIT patterns in the automobile industry. The econometric results of the gravity models of VIIT, HIIT and TIIT are statistically and economically significant in the context of the fixed effects method of estimation and in accordance with new trade theories. The empirical results reveal that relative difference in economic size, trade openness, foreign direct investment (FDI) and tariffs stimulates VIIT, whilst distance, economies of scale and automotive assistance negatively affect it. Conversely, relative difference in economic size, FDI and automotive assistance negatively affects HIIT, whereas trade openness and depreciation of the exchange rate positively influences it. Thus, the findings of the thesis assert that IIT patterns of VIIT and HIIT in the automobile industry are influenced differently by country and industry determinants, revealing that the theoretical and empirical distinction of TIIT is important. The thesis proposes advancing trade liberalisation and deregulation of the South African automobile industry that could attract greater efficiency-seeking FDI complementary to trade and as a consequence enhance IIT levels.

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ABBREVIATIONS

AGOA	Africa Growth Opportunity Act
AIDC	Automotive Industry Development Council
APDP	Automotive Production and Development Programme
APEC	Asia-Pacific Economic Community
BTI	Board of Trade and Industry
CBU	Completely built-up unit
CGE	Computable general equilibrium
CIF	Cost, insurance and freight
CKD	Completely knocked-down
CompCom	Competition Commission of South Africa
CPI	Consumer price index
CEPII	Centre d'Etudes Prospectives et d'Informations Internationales
DFA	Duty-free allowance
DTI	Department of Trade and Industry
EFTA	European Free Trade Area
EoS	Economies of scale
ERA	Effective rate of assistance
EU	European Union
FDI	Foreign direct investment
FGLS	Feasible generalised least squares
FOB	Free on board
FPE	Factor-price equalisation
FTA	Free trade agreement
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
G-L	Grubel-Lloyd
GLS	Generalised least squares
GM	General Motors
GMM	Generalised method of moments
GNI	Gross national income
GNP	Gross national product
HIIT	Horizontally differentiated IIT
H-O	Heckscher-Ohlin

H-O-S	Heckscher-Ohlin-Stolper
H-O-V	Heckscher-Ohlin-Vanek
HS	Harmonised system
ICT	Information, communication and technology
IE	Integrated equilibrium
IEC	Import–export complementation
IIT	Intra-industry trade
ILO	International Labour Organisation
IMF	International Metalworkers’ Federation
IMF	International Monetary Fund
IMS	Integrated manufacturing strategy
IRCC	Import rebate credit certificates
ISIC	International Standard Industrial Classification
IT	Information technology
LABORSTA	ILO database on labour statistics
LCP	Local Content Programme
M	Imports
MERCOSUR	Southern American Common Market (Mercado Comun del Sur)
MIDP	Motor Industry Development Programme
MITG	Motor Industry Task Group
MFN	Most favoured nation
MFP	Multifactor productivity
MNC	Multinational corporations
MRTC	Mid-Term Review Committee
NAAMSA	National Association of Automobile Manufacturers of South Africa
NAFTA	North American Free Trade Agreement
NTBs	Non-tariff barriers
OECD	Organisation of Economic Cooperation and Development
OEMs	Original equipment manufacturers
OICA	International Organisation of Motor Vehicle Manufacturers
OLS	Ordinary Least Squares
OWT	One-way trade
PAA	Productive Asset Allowance
PTA	Preferential trade agreement

R&D	Research and Development
REER	Real effective exchange rate
ROW	Rest of the world
SACU	Southern Africa Customs Union
SADC	Southern Africa Development Community
SITC	Standard International Trade Classification
SCM	Subsidies and countervailing measures
STAN	Standard Industry
SVI	Small vehicle incentive
TDCA	Trade Development and Co-operation Agreement
TRIMS	Trade and Related Investment Measures
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
USA	United States of America
VIIT	Vertical differentiated IIT
VWSA	Volkswagen South Africa
WDI	World Development Indicators
WTO	World Trade Organization
X	Exports