REFERENCES

Aitken, BJ & Harrison, AE 1999, 'Do domestic firms benefit from direct foreign investment? Evidence from Venezuela', *American Economic Review*, vol. 89, no.3, pp. 605-618.

Ahuja, R 2002, 'Export Incentives in Brazil and Korea within WTO Framework', *ICRIER Working Paper No. 79*, Delhi.

Albornoz, F & Yoguel, G 2004, 'Competitiveness and production networks: The Case of the Argentine automotive industry, *Industrial and Corporate Change*, vol.13, no.4, pp. 619-641.

Australian Productivity Commission 2002, *Review of Automotive Assistance*, Report No. 25, Melbourne.

Automotive Industry Export Council 2007, *Automotive Export Manual*. Pretoria: Looking@Publishing and Communication.

AIEC – see reference: Automotive Industry Export Council.

Barell, R & Pain, N 1997, 'Foreign direct investment, technological change, and economic growth within Europe', *The Economic Journal,* vol.107, no.445, pp.1770-10786.

Barlas, Y 1996, 'Formal aspects of model validity and validation in system dynamics', *System Dynamics Review*, vol.12, no.3, pp. 183-210.

Barlas, Y 2002, 'System dynamics: Systemic feedback modelling for policy analysis', in *Knowledge for Sustainable Development - An Insight into the Encyclopedia of Life Support Systems*, UNESCO-Eolss Publishers, Paris, France, Oxford, UK, pp.1131-1175.

Barnes, J 2000, *Domestic market pressure facing the South African automotive component sector*, Research Report No.33, Industrial Restructuring Project, University of Kwazulu Natal.

Barnes, J & Black, A 2003, *Motor Industry Development Programme, Review Report* Submitted to the Department of Trade and industry, Pretoria.

Barnes, J, Kaplinsky, R & Morris, M 2003, 'Industrial policy development', In *Developing Economies: Developing a Dynamic Comparative Advantage in The South African Automobile Sector*, Development Research Unit, University of Cape Town.

Begg, D, Fischer, S & Dornbusch, R 2003, *Economics,* 7th Edn, McGraw Hill Education, UK.

Bell, JA & Bell, JF 1980, 'System dynamics and scientific methods, *in Elements of the system dynamics method*, Cambridge, Mass, MIT Press.

Bell, T 1997, 'Trade Policy', in J Michie & V Padayachee (eds.), *The political economy of South Africa, London*, Harcourt.

Bell, T & Madula, N 2003, *South African motor industry policy in a cloud of uncertainty*, Paper for the National Union of Metal Workers of South Africa, Johannesburg.

Bernard, R 1999, *Social Research Methods: Qualitative and Quantitative Approaches*, Sage, Newbury Park.

Bernstein, J 1994, 'Taxes, incentives and production: The case of Turkey', *Journal of Development Economics*, vol.45, no.1, pp.55-79.

Bevan, A & Estrin, S 2000, *The determinants of foreign direct investment in transition economies*, William Davidson Institute Working Paper No 342: London Business School.

Beyer, J 2002, 'Please invest in our country – how successful were the tax incentives for foreign investment in transition countries', *Communist and Post-Communist Studies*, vol.35, no.2, pp.191-211.

Black, A 2001, 'Globalisation and restructuring in the South African automotive industry, *Journal of International Development,* vol.13, no.6, pp.779-796.

Black, A 2002, 'The export success of the Motor Industry Development Programme and the implications for Trade and Industrial Policy', paper presented at TIPS Conference, Muldrift, 12-14 March.

Bezuidenhout, A 2005, *Wheels 24 - South Africa Motoring Annual 2005*, Trident Press. Cape Town.

Blomström, M & Kokko, A 1998, 'Multinational corporations and spillovers', *Journal of Economic Surveys*, vol.12, no.3, pp.247-277.

Blomström, M & Sjohölm, F 1999, 'Technology transfers and spillovers: Does participation with multinationals matter?' *European Economic Review*, vol.43, no.4, pp. 915-923.

Blomström, M, Kokko, A & Globerman, A 2001, 'The Determinants of the home country spillovers from foreign direct investments: A review and synthesis of literature', in *Inward Investment, Technological Change and Growth: The Impact of Multinational Corporations on the UK Economy*, Basingstoke, Palgrave.

Brenton, P, Di Mauro, F & Lucke, M 1999, 'Economic integration and FDI: An empirical assessment of foreign investment in EU and in Central and Eastern Europe', *Empirica*, vol.26, no.2, pp. 95-121.

Brewer TL & Young, S 1997, 'Investment incentives and the international agenda', *The World Economy*, vol.20, no.2, pp.175-198.

Bronzini, R & Blasio, G 2006, 'Evaluation of the impact of investment incentives: The case of Italy's Law 488/992', *Journal of Urban Economics,* vol.60, no.2, pp.327-349.

Brunker, D, Offner, T & Ryan, J 1986, *Effectiveness of investment incentives*, Bureau of Industry Economics (BIE) Working Paper No 32, Canberra.

Bwalya, MS 2006, 'Foreign direct investment and technology spillovers: Evidence from panel data analysis of manufacturing firms in Zambia', *Journal of Development Economics,* vol.81, no.2, pp. 514-526.

Carayannis, EG & Roy, RIS 2000, 'David vs Goliaths in small satellite industry: the role of technological innovation dynamics in firm competitiveness', *Technovation*, vol.20, no.6, and pp.287-297.

Caves, RE 1996, *Multinational Enterprises and Economic Analysis*, 2nd Edition, Cambridge University Press, Cambridge.

Caulfield, CW & Maj, SP 2002, 'A case for system dynamics', *Global Journal of Engineering Education*, vol.6, no.1, pp. 23-33.

Chhibber, P & Majumdar, S 1999, 'Foreign ownership and profitability: property rights, control, and the performance of firms in Indian industry', *Journal of Law and Economics*, vol.42, no.1, pp.209-239.

Chiasakul, S 2004, 'Production networks, trade and investment policies, and regional cooperation in Asia: A case study of automotive industry in Thailand', paper presented at the 6th Asian Development Research Forum General Meeting, Bangkok, March.

Chudnovsky, D, Lopez, A & Rossi, G 2003, 'Foreign direct investment spillovers and the absorption capabilities of domestic firms in the Argentine manufacturing sector in the 90s', paper presented at the 1st Globelic Conference, Rio de Janeiro, 11-14 November.

Clark, J & Guy, K 2000, 'Innovation and competitiveness', *Technology Analysis & Strategic Management*, vol.10, no.3, pp.363-394.

Clarke, H, McCormack, D & Sunderland, J 1998, 'The future of Australian motor vehicle manufacture', paper presented at the Industry Economics Conference, National University of Australia, Canberra.

Coyle, RG 1996, *System Dynamics Modelling*, Chapman & Hall: London.

Coyne, R 2000, 'South Africa's automotive sector: On a long-terms growth path?' *Motor Business International*, 9 June, pp.11.

Collins, M & Bloom, R 1991, 'The role of oral history in accounting', *Accounting Auditing & Accountability Journal*, vol. 4, no. 2, pp.193-205.

Damoense, MY & Simon, A 2004, 'An analysis the impact of the first phase of South Africa's Motor Industry Development Programme (MIDP), 1995-2000', *Development Southern Africa*, vol.21, no.2, pp. 251-269.

Davies, RB 2005, 'State tax competition for foreign direct investment: A winnable war?" *Journal of International Economics,* vol.67, no.2, pp. 498-512.

Deichmann, JI 2001, 'Distribution of foreign direct investment among transition economies in Central and Eastern Europe', *Post-Soviet Geography*, vol.42, no.2, pp.142-152.

Department of Science and Technology South Africa 2005, *National survey of research and experimental development (R&D) 2003/4 fiscal year*, Pretoria.

Department of Trade and Industry South Africa 2004, *Current Developments in South African Automotive Industry 2004.* Pretoria Government Printer.

Driffield, N 2001, 'The Impact on domestic productivity of inward investment in UK", *Manchester School*, vol.69, no.1, pp.103-119.

Dunning, JH 1980, 'Toward an eclectic theory of international production: some empirical tests', *Journal of International Business Studies*, vol.11, no.1, pp.9-23.

Dunning, JH & Narula, R 1996, 'The investment development path revisited: some emerging issues', in *Foreign direct investment and governments: catalysts for economic restructuring*, Routledge, London.

Dupasquier, C & Osakwe, PN 2005, 'Foreign direct investment in Africa: performance, challenges, and responsibilities', *Journal of Asian Economics*, vol.17, no.2, pp.241-260.

Edwards, L & Golub, SS 2004, 'South Africa's international cost competitiveness and exports in manufacturing', *World Development*, vol.32, no.8, pp.1323-1339.

European Competitiveness Report 2004, viewed on 10 May 2006, <http://europa.eu.int/comm /enterprise/automotive/pagesbackground/competitiveness/comprep_2004_en_automotive.pdf.

Fan, P 2006, 'Catching up through developing innovation capability: evidence from China Telecom-equipment industry', *Technovation*, vol. 26, no.2, pp.359-368.

Flatters, F 2002, *From Import Substitution to Export Promotion: Driving the South African Motor Industry*, The Service Group, SADC Secretariat on Trade and Investment

Policies, viewed 18 March 2005, <http:0-www.satradehub.org/CXA_html/docs/reports.

Flatters, F 2005, The Economics of MIDP and the South African Motor Industry, Trade and Industrial Policy Strategies, viewed 5 May 2007, <http://www.tips.org.za/files/ff_economics_of_midp.pdf

Forrester, JW 1969, *Urban Dynamics*, Portland: Productivity Press.

Forrester, JW 1961, *Industrial Dynamics*, Waltham, MA. Pegasus Communications (Originally by MIT Press).

Forrester, JW 1980, 'Information sources for modelling the national economy', *Journal of the American Statistical Association*, vol. 75, no.371, pp.555-574.

Forrester, JW 1991, 'Usefulness of system dynamics approach in case of policy resistance', in Systems basis of policy making in the 1990s, Greene, K.B.D.

Forrester, JW & Senge, P 1980, 'Tests for Building Confidence in System Dynamics Models', in Legasto, A., JW Forrester, and J Lyneis (eds.), *System Dynamics*, New York: North-Holland.

Frank, RH 2000, *Microeconomics and Behaviour*, 4th Edn, McGraw Hill Education, USA.

Frankema, E & Lindblad, JT 2006, 'Technological development and economic growth in Indonesia and Thailand since 1950', ASEAN Economic Bulletin, vol.23, no.3, pp.303-324.

Feltenstein, A & Shah, A 1995, 'General equilibrium effects of investment incentives in Mexico', *Journal of Development Economics*, vol.46, no.2, pp.253-269.

Flatters, F 2002, *From import substitution to export promotion: Driving the South African motor industry*, Study report for the Service Group, SADC Secretariat, Gaborone.

Fumagalli, C 2003, 'On the welfare effects of competition for foreign investment', *European Economic Review,* vol.47, no.6, pp.963-983.

Galbraith, L 2007, *South African automotive yearbook*, Balgair, KwaZulu Natal.

Graham, AK 1980, 'Parameter estimation in system dynamics modelling', in *Elements of the system dynamics method*, Cambridge, Mass, MIT Press.

Global competitiveness ranking 2006, viewed on 18 March 2006, http://www.weforum.org/initiatives/gcp/Global%20Competitiveness.

Globerman, S & Shapiro, D 1999, 'The Impact of Government polices on foreign direct investment: Canadian experience', *Journal of International Business Studies*, vol.30, no.3, pp.513-532.

Gould, JP 1968, 'Adjustment costs in the theory of investment of the firm', Review *of Economic Studies*, vol.35, no.1, pp.47-56.

Graham, AK 1980, 'Parameter estimation in system dynamics modeling', in Elements of the system dynamics method, Cambridge, Mass, MIT Press.

Gustavsson, P, Hansson, P & Lundberg, L 1999, 'Technology, resource endowment, and international competitiveness', *European Economic Review*, vol.43, no.8, pp.1501-1530.

Hadari, Y 1990, 'The role of tax incentives in attracting foreign investment in selected developing countries and the desirable policy', *The International Lawyer,* vol.24, no.1, pp. 121-229.

Haddad, M & Harrison, A 1993, 'Are there positive spillovers from direct foreign investment?' *Journal of Development Economics*, vol.42, no.1, pp. 51-74.

Hall, B & Van Reenen, J 2000, 'How effective are fiscal incentives for R&D? A review of evidence" *Research Policy,* vol.29, no.4, pp.449-469.

Hall, RE & Jorgenson, DW 1967, 'Tax policy and investment behaviour', *American Economic Review*, vol.57, no.3, pp.391-414.

Hasset, KA & Hubbard, RG 1998, 'Are investment incentives blunted by changes in prices of capital goods?' *International Finance,* vol.1, no.1, pp.103-125.

Hayashi, F 1982, 'Tobin's marginal q and average q: A neoclassical interpretation", *Econometrica*, vol.50, no.1, pp.213-224.

Head, CK, Ries, JC. & Swenson, DL 1999, 'Attracting foreign manufacturing: Investment promotion and agglomeration', *Regional Science and Urban Economics*, vol.29, no.2, pp.197-218.

Higashi, S 1995, *The Automotive industry in Thailand: From protective promotion to liberalization*, paper by Institute of Developing Economies, Tokyo.

Hines, J & House, J 2001, 'The Source of Poor Policy: Controlling Learning Drift and Premature Consensus in Human Organisations', System *Dynamics Review*, vol.1, no.1 pp.3-32.

Howell, HZ, Janet, GS, Eduardo, L 2002, 'Tax incentives for business investment: A primer for policy makers in developing countries', *World Development,* vol.30, no.9, pp.1497-1516.

Humphrey, J & Memedovic, O 2003, *The global automotive industry value chain: What prospects for upgrading by developing Countries*, United Nations Industrial Development Organisation (UNIDO), Geneva.

IMD (Institute for Management Development) 2006, 'World Competitiveness Year Book', viewed on 04 March 2007, <http://www.imd.ch/research/publications/wcy/>

ITAC (International Trade Administration Commission) 1994, *Board of Tariffs and Trade: Notice 1345: Motor Industry Development Programme, Revised Proposals*. Government Printer, Pretoria.

ITAC (International Trade Administration Commission) 1995, *Board of Tariffs and Trade Report 3625*: *Revised Customs Dispensation for the Motor Industry*. ITAC, Pretoria.

ITAC (International Trade Administration Commission) 2000, *Board of Tariffs and Trade Report 4045*: *Midterm Review and Extension of the Motor Development Programme for Light Motor Vehicles*. ITAC, Pretoria.

ITAC (International Trade Administration Commission) 2005, *Guidelines in respect of Productive Asset Allowance*. ITAC, Pretoria.

Jenkins, C & Thomas, L 2002, *Foreign direct investment in Southern Africa: determinants, characteristics and implications for economic growth and poverty alleviation*, CREFSA Research Report, London School of Economics, London.

Kim, L 1997, *Imitation to Innovation: The dynamics of Korea's technological learning*. Boston: Harvard Business School Press.

Kogut, B 1996, 'Direct investment, experimentation, and corporate governance in transition economies', in *Corporate governance in Central Europe and Russia*, Central European University Press, Budapest.

Kokko, A 1994, 'Technology, market characteristics, and spillovers', *Journal of Development Economics,* vol.43, no.2, pp.279-293.

Koschatzky, YK, Bross, U & Stanovnik, P 2001, 'Development and innovation potential of Slovene manufacturing industry: analysis of an industrial innovation survey', *Technovation*, vol.21, no.5, pp. 311-324.

KPMG Global automotive survey 2007, viewed on 28 March 2007, www.kpmg.ca/en/news/documents/kpmg_081887.pdf.

Krugerman, PR 1994, 'Competitiveness: A dangerous obsession', *Foreign Affairs*, vol.73, no.2, pp.28-44.

Lall, S 1993, 'Understanding technological development', *Development and Change*, vol.24, no.4, pp.719-753.

Lall, S 1995, 'Industrial strategy and policies on foreign direct investment in East Asia', *Transnational Corporations*, vol.4, no.1, pp.1-26.

Lall, S 2001, *Competitiveness, Technology and Skills*. Edward Elgar Publishing Limited, United Kingdom.

Lankes, HP & Venables, AJ 1996, 'Foreign direct investment in economic transition: The changing pattern of investment', *Economics of transition*, vol.4, no.2, pp.331-347.

Laski, S 1998, 'EU eastern enlargement – hopes and problems related to FDI, *Moct- Most*, vol.8, no.2, pp. 1-2.

Lee, J 2000, 'Challenges of Korean technology-based ventures and governmental policies in emergent-technology sector', *Technovation*, vol.20, no.9, pp.489-495.

Lengnick-Hall, C 1992, 'Innovation and competitive advantage: What we know and what we need to know', *Journal of Management*, vol.18, no.2, pp.399-429.

Lim, D 1983 'Fiscal incentives and direct foreign investment in less developed countries', *Journal of Development Studies,* vol.19, no.2, pp.207-212.

Lim, D 1994, 'Explaining the growth performance of Asian developing economies', *Economic Development and Cultural Change*, vol.42, no.4, pp.829-844.

Lucas, RE 1967, 'Adjustment costs and the theory of supply', *Journal of Political Economy*, vol.75, no.4, pp.321-334.

Luna-Reyes, LP & Anderson, DL 2003, 'Collecting and analyzing qualitative data for system dynamics: methods and models', *System Dynamics Review*, vol. 19, no.4, pp.272-296.

Mass, NJ & Senge, PM 1980, 'Alternative tests for selecting model variables', *in Elements of the system dynamics method*, Cambridge, Mass, MIT Press.

McAlinden, S, Hill, K & Swiecki, B 2003, *Economic contribution of the automotive industry to the US economy – An update*, a study for Alliance of Automobile Manufacturers, Michigan.

Meadows, DH 1982, 'Whole earth models and systems', *CoEvolution Quarterly,* Summer, pp. 98-108.

Melin, L 1992, 'Internationalisation as strategy process', *Strategic Management Journal*, vol.13, no.1, pp.99-118.

Merrifield, B 1989, 'The overriding importance of R&D as it relates to industrial competitiveness', *Journal of Engineering and Technological Management*, vol.6, no.1, pp.71-79

Miozzo, M 2000, 'Transnational corporations, industrial policy and 'War of incentives': The case of Argentine automotive industry', *Development and Change*, vol.31, no.3, pp. 651–680.

Moore, ML & Swenson, CW 1987, 'Analysis of the impact of state income tax rates and bases on foreign investment', *The Accounting Review,* vol.62, no.4, pp.671-685.

Moos, O, Steyn, JL & Pretorius, MW 2006, 'Measures for successful technology forward integration: An example of semi-solid metal casting in South Africa', Unpublished thesis. University to Pretoria.

NAACAM Directory 2004, *National Association of Automotive Component and Allied Manufacturers Directory*, Johannesburg.

NAACAM Directory 2007, *National Association of Automotive Component and Allied Manufacturers Directory*, Johannesburg.

NAAMSA 2006, *National Association of Automobile Manufacturers of South Africa: Annual Report*, Pretoria.

NAAMSA 2001, *National Association of Automobile Manufacturers of South Africa: Annual Report*, Pretoria.

Narayanan, K 1998, Technology acquisition, de-regulation and competitiveness: a study of India automotive industry', *Research Policy*, vol.27, no.2, pp.215-228.

Narula, R 1996, *Multinational investment and economic structure*, London: Routledge.

Novick, M, Yoguel, G, Albornoz, F & Catalano, A 2003, *Developing Hybridisation in Argentina: The Case of Toyota and Volkswagen*, viewed on 25 March 2005, <www.eh.net/XIIICongress/cd/papers/41AlbornozCatalanoNovickYoguel110.pdf

OECD Main Science and Technology Indicators 2006, viewed on 18 March 2006, <http://www.oecd. org/dataoecd/49/45).

Oerlemans, LA, Pretorius, MW, Buys, AJ & Rooks, G 2003, *Industrial innovation in South Africa: 1998 -2000*, University of Pretoria: Pretoria.

Olivier, M 2007, 'DTI lifts veil on govt's new motor industry support policy', Engineering News, 15.December.

Oughton, C 1997, 'Competitiveness policy in the 1990s', *The Economic Journal*, vol.107, no.444, pp.1486-1503.

Ozawa, T 1995, 'Structural upgrading and concatenated integration', in *Corporate strategies in the pacific rim: Global versus regional trends*, Routledge, London.

Özçelik, E & Taymaz, E 2004, 'Does innovation matter for international competitiveness in developing countries? The case of Turkish manufacturing industries', *Research Policy*, vol.33, no.9, pp. 409-424.

Papadakis, M 1995, 'The delicate task of linking industrial R&D to national competitiveness', *Technovation*, vol.15, no.9, pp.569-583.

Popper, KR 1963, *Conjectures and Refutations: The growth of scientific knowledge*. Routledge & Kegan Paul, London

Porter, ME 1990, *The Competitive Advantage of Nations*, The Free Press. New York.

Radzicki, MJ 2004, 'Expectation formation and parameter estimation in uncertain dynamical systems: The system dynamics approach to post Keynesian-Institutional Economics', paper presented to twenty-second International Conference of System Dynamics Society, Oxford, 25-29 July.

Raff, H & Srinivasan, K 1998, 'Tax incentives for import-substituting foreign investment: Does signaling play a role?' *Journal of Public Economics*, vol.67, no.2, pp.167-193.

Radzicki, MJ 2004, 'Expectation formation and parameter estimation in uncertain dynamical systems: The system dynamics approach to post Keynesian-Institutional

Economics', paper presented to twenty-second International Conference of System Dynamics Society, Oxford, 25-29 July.

Randers, J 1980a, *Elements of the system dynamics method*, Cambridge, Mass, MIT Press.

Randers, J 1980b, 'Guidelines for model conceptualisation', in *Elements of the system dynamics method*, Cambridge, Mass, MIT Press.

Riemens, W 2002, 'Structural changes in the automotive industry in Australia: A Review of user-producer relationships', *International Journal of Automotive Technology and Management*, vol.12, no.1, pp. 101-125.

Reis, AB 2001, 'On the welfare effects of foreign investment', *Journal of International Economics*, vol.54, no.2, pp. 411-427.

Richardson, GP 1997, 'Problems in causal loop diagrams revisited', *System Dynamics Review*, vol.13, no.3, pp.247-252

Richardson, GP & Pugh, AL 1981, Introduction to System Dynamics Modelling with DYNAMO, Cambridge, MA, Productivity Press.

Richmond, B 2004, *An introduction to systems thinking*, ISEE systems.

Rhys, G 2000, *Economic prospects for the automotive industry in the UK and Europe and its Impact on Ford Dagenham*, Centre for Automotive Research, Cardiff University Business School.

Roberts, NH, Andersen, DF, Deal RM, Grant, MS & Shaffer, WA 1983, *Introduction to Computer Simulation: The System Dynamics Modeling Approach*, Addison-Wesley: Reading, MA.

Sethi, D, Guisinger, S, David, L, Ford, J & Stephen, E 2002, 'Seeking greener pastures: theoretical and empirical investigation into changing trend of foreign direct investment flows in response to institutional factors', *International Business Review,* vol.11, no.6, pp.685-705.

Solow, RM 1957, 'Technical change and aggregate production function', *The Review of Economics and Statistics*, vol.39, no.3, pp.312-320.

South Africa economy overview 2006, viewed on 18 March 2006, <http://www.south Africa.info/ess_info/sa_glance.

Statistics South Africa 2006, viewed on 03 March 2006, <http://www.statssa.gov.za/keyindicators/gdp.asp.

Sterman, JD 1991, 'A Sceptic guide to computer models', in *Managing a nation: the microcomputer software catalog*, Boulder, CO: Westview Press.

Sterman, JD 2000, *Business dynamics: systems thinking and modelling for a complex world, Irwin*, McGraw-hill, NY.

Sterman, JD 2002, 'All models are wrong: reflections on becoming a systems scientists', *System Dynamics Review*, vol.18, no.4, pp. 501-531.

Steyn, JL 2002, 'The Productive Asset Allowance', AIDC Government Programmes. Rosslyn.

Stumpf, WE & Vermaak, AP 1996, 'The role of technology in reconstructing South Africa's economy towards global competitiveness', *International Journal of Pressure Vessels and Piping*, vol.66, no.1, pp.3-16.

System Dynamics Society 2007, viewed on 09 September 2007, <http://www.systemdynamics .org.

Tanzi, V & Shome, P 1992, 'The role of taxation in the development of East Asian Economies', in *The Political Economy of Tax Reform*, University of Chicago Press, Chicago.

Tcha A & Kuriyama, T 2003, 'Protection policy under economies of scale – the welfare effects of tariffs on the Australian automotive industry'*, Journal of Policy Modelling*, vol.25, no.3, pp. 655-672.

Theparat, C 2003 'Thailand's automotive industry enjoys boost in new investments', *Bangkok Post*, 21 May.

Thomas, L 1974, *The lives of a cell: Notes of a biology watcher*, New York, Viking Press.

Tobin, J 1969, 'A general equilibrium approach to monetary theory', *Journal of Money, Credit and Banking*, vol.1, pp.15-29.

Treadway, A 1969, 'On rational entrepreneurial behaviour and the demand for investment', Review *of Economic Studies*, vol.36, pp.227-240.

Tung, S & Cho, S 2000, 'The impact of tax incentives on foreign direct investment in China', *International Accounting, Auditing & Taxation,* vol.9, no.2, pp.106-134.

United Nations Conference on Trade and Development 1996, *World investment report investment, trade and international policy Arrangements*, New York & Geneva

United Nations Conference on Trade and Development 2003a, *Incentives and foreign direct investment,* New York & Geneva.

United Nations Conference on Trade and Development 2003b, *World investment report. FDI policies for development: National and international perspectives,* Geneva.

UNCTAD – see reference: United Nations Conference on Trade and Development

United Nations Industrial Development Organisation 2003, *Industrial Development Report 2002/2003*, Geneva.

UNIDO – see reference: United Nations Industrial Development Organisation

Vanderminden, P 2006, 'System dynamics – A field of study, a methodology or both?' paper presented to the twenty-fourth International Conference of System Dynamics Society, Nijmegem, 23-27July.

Vennix, JA 1990, *Mental models and computer models: Design and evaluation of a computer-based learning environment for policy-making*, Den Haag: CIP-Gegevens.

Vennix, JA 1996, *Group Model Building: Facilitating Team Learning Using System Dynamics*, John Wiley & Sons Ltd, England.

Waddock, S & Graves, S 1994, 'Industrial performance and investment in R&D and capital goods', *Journal of High Technology Management Research*, vol.5, no.1, pp.1-17.

Wint, GW 1998, 'The role of government in enhancing the competitiveness of developing economies', *International Journal of Public Sector Management*, vol.11, no.4, pp.281-299.

Wiriyapong, N 2004, 'Thailand's automotive industry holds its own against China', *Bangkok Post*, 26 July.

Wolstenholme, E 1990, *Systems Enquiry – A System Dynamics Approach*, Chichester, England: John Wiley and Sons.

Zhouying, J 2005, "Globalisation, technological competitiveness and the 'catch-up' challenge for developing countries: some lessons of experience", *International Journal of Technology Management and Sustainable Development*, vol.4, no.1, pp.35-46.

Zhu, P, Xu, W & Lundin, N 2006, 'The impact of government's fundings and tax incentives on industrial R&D investment – Empirical evidences from industrial Shanghai'*, Economic Review China*, vol.17, pp. 51-69.

APPENDICES

Appendix 1: Industry-wide correlation and regression analysis

Variable symbols used in correlation/regression analysis	
Variable	**Symbol**
OEM investment (value)	v1
Production (value)	v2
Domestic market (value)	v3
Exports (value)	v4
Imports (value)	v5
Rebatable imports (value)	v6
Employment	v7
Export unit price	v8
Revenue (exports)	v9
Production (units)	v10
Domestic market (units)	v11
Exports (units)	v12
Imports (units)	v13
Cars and LCVs (units)	v14
Component exports (value)	v15
CBU exports (value)	v16
Total exports (value)	v17

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
v1	16	1483	892.53438	23730	400.00000	3576
v2	16	34703	22668	555254	12238	82595
v3	16	33423	22617	534766	11780	88837
v4	16	16519	16705	264300	800.00000	45000
v5	16	27094	20540	433500	6300	72000
v6	11	17338	10572	190723	4800	30416
v7	11	105482	5545	1160298	99162	119100
v8	16	88057	43801	1408919	40000	158361
v9	16	6745	7994	107924	381.00000	22000
v10	16	370261	62199	5924174	295000	525271
v11	16	357243	70381	5715884	283959	564974
v12	16	54194	50687	867108	9500	139912
v13	11	85730	56001	943025	27289	232091
v14	15	222709	31420	3340628	183662	301151
v15	15	8.77287	8.50420	131.59300	0.28700	22.88300
v16	15	5.73493	7.12264	86.02400	0.38100	19.46300
v17	15	14.50780	15.51122	217.61700	0.66800	40.73200

Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	v1	v2	v3	v4	v5	v6	v7	v8	v9
v1	1.00000	0.94464	0.93365	0.94862	0.96127	0.87837	0.82984	0.92751	0.93996
		<.0001	<.0001	<.0001	<.0001	0.0004	0.0016	<.0001	<.0001
	16	16	16	16	16	11	11	16	16
v2	0.94464	1.00000	0.98934	0.96688	0.99174	0.92862	0.88421	0.97792	0.97094
	<.0001		<.0001	<.0001	<.0001	<.0001	0.0003	<.0001	<.0001
	16	16	16	16	16	11	11	16	16
v3	0.93365	0.98934	1.00000	0.92769	0.98056	0.85359	0.94104	0.94592	0.93754
	<.0001	<.0001		<.0001	<.0001	0.0008	<.0001	<.0001	<.0001
	16	16	16	16	16	11	11	16	16
v4	0.94862	0.96688	0.92769	1.00000	0.97574	0.99054	0.72858	0.97426	0.99155
	<.0001	<.0001	<.0001		<.0001	<.0001	0.0110	<.0001	<.0001
	16	16	16	16	16	11	11	16	16
v5	0.96127	0.99174	0.98056	0.97574	1.00000	0.93429	0.87798	0.96859	0.97388
	<.0001	<.0001	<.0001	<.0001		<.0001	0.0004	<.0001	<.0001
	16	16	16	16	16	11	11	16	16
v6	0.87837	0.92862	0.85359	0.99054	0.93429	1.00000	0.67615	0.97014	0.98210
	0.0004	<.0001	0.0008	<.0001	<.0001		0.0224	<.0001	<.0001
	11	11	11	11	11	11	11	11	11
v7	0.82984	0.88421	0.94104	0.72858	0.87798	0.67615	1.00000	0.74439	0.77242
	0.0016	0.0003	<.0001	0.0110	0.0004	0.0224		0.0086	0.0053
	11	11	11	11	11	11	11	11	11
v8	0.92751	0.97792	0.94592	0.97426	0.96859	0.97014	0.74439	1.00000	0.95982
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0086		<.0001
	16	16	16	16	16	11	11	16	16
v9	0.93996	0.97094	0.93754	0.99155	0.97388	0.98210	0.77242	0.95982	1.00000
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0053	<.0001	
	16	16	16	16	16	11	11	16	16
v10	0.85826	0.90819	0.92648	0.82716	0.90466	0.69459	0.96187	0.82188	0.84446
	<.0001	<.0001	<.0001	<.0001	<.0001	0.0177	<.0001	<.0001	<.0001
	16	16	16	16	16	11	11	16	16
v11	0.75049	0.80198	0.86544	0.65885	0.79292	0.45684	0.95788	0.67991	0.68693
	0.0008	0.0002	<.0001	0.0055	0.0002	0.1578	<.0001	0.0038	0.0033
	16	16	16	16	16	11	11	16	16
v12	0.93910	0.93805	0.89390	0.99167	0.95333	0.98155	0.67475	0.94795	0.98198
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0227	<.0001	<.0001
	16	16	16	16	16	11	11	16	16
v13	0.88589	0.87710	0.94007	0.76022	0.88921	0.70169	0.93078	0.77235	0.78724
	0.0003	0.0004	<.0001	0.0066	0.0002	0.0161	<.0001	0.0053	0.0040
	11	11	11	11	11	11	11	11	11
v14	0.61587	0.78647	0.83088	0.63895	0.74624	0.43192	0.93487	0.71370	0.63280
	0.0145	0.0005	0.0001	0.0103	0.0014	0.2126	<.0001	0.0028	0.0113
	15	15	15	15	15	10	10	15	15
v15	0.97071	0.95717	0.93001	0.99338	0.98041	0.98439	0.66941	0.96927	0.97010
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0342	<.0001	<.0001
	15	15	15	15	15	10	10	15	15
v16	0.92585	0.96196	0.92827	0.99156	0.96826	0.99213	0.72354	0.95494	0.99999
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0180	<.0001	<.0001
	15	15	15	15	15	10	10	15	15
v17	0.95735	0.96651	0.93615	0.99995	0.98214	0.99381	0.69989	0.96992	0.99106
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0242	<.0001	<.0001
	15	15	15	15	15	10	10	15	15

	v10	v11	v12	v13	v14	v15	v16	v17
v1	0.85826 <.0001 16	0.75049 0.0008 16	0.93910 <.0001 16	0.88589 0.0003 11	0.61587 0.0145 15	0.97071 <.0001 15	0.92585 <.0001 15	0.95735 <.0001 15
v2	0.90819 <.0001 16	0.80198 0.0002 16	0.93805 <.0001 16	0.87710 0.0004 11	0.78647 0.0005 15	0.95717 <.0001 15	0.96196 <.0001 15	0.96651 <.0001 15
v3	0.92648 <.0001 16	0.86544 <.0001 16	0.89390 <.0001 16	0.94007 <.0001 11	0.83088 0.0001 15	0.93001 <.0001 15	0.92827 <.0001 15	0.93615 <.0001 15
v4	0.82716 <.0001 16	0.65885 0.0055 16	0.99167 <.0001 16	0.76022 0.0066 11	0.63895 0.0103 15	0.99338 <.0001 15	0.99156 <.0001 15	0.99995 <.0001 15
v5	0.90466 <.0001 16	0.79292 0.0002 16	0.95333 <.0001 16	0.88921 0.0002 11	0.74624 0.0014 15	0.98041 <.0001 15	0.96826 <.0001 15	0.98214 <.0001 15
v6	0.69459 0.0177 11	0.45684 0.1578 11	0.98155 <.0001 11	0.70169 0.0161 11	0.43192 0.2126 10	0.98439 <.0001 10	0.99213 <.0001 10	0.99381 <.0001 10
v7	0.96187 <.0001 11	0.95788 <.0001 11	0.67475 0.0227 11	0.93078 <.0001 11	0.93487 <.0001 10	0.66941 0.0342 10	0.72354 0.0180 10	0.69989 0.0242 10
v8	0.82188 <.0001 16	0.67991 0.0038 16	0.94795 <.0001 16	0.77235 0.0053 11	0.71370 0.0028 15	0.96927 <.0001 15	0.95494 <.0001 15	0.96992 <.0001 15
v9	0.84446 <.0001 16	0.68693 0.0033 16	0.98198 <.0001 16	0.78724 0.0040 11	0.63280 0.0113 15	0.97010 <.0001 15	0.99999 <.0001 15	0.99106 <.0001 15
v10	1.00000 16	0.94547 <.0001 16	0.79877 0.0002 16	0.83793 0.0013 11	0.93351 <.0001 15	0.78308 0.0006 15	0.78644 0.0005 15	0.79046 0.0005 15
v11	0.94547 <.0001 16	1.00000 16	0.61546 0.0112 16	0.85742 0.0007 11	0.98836 <.0001 15	0.55241 0.0327 15	0.53835 0.0384 15	0.55007 0.0336 15
v12	0.79877 0.0002 16	0.61546 0.0112 16	1.00000 16	0.72586 0.0114 11	0.56344 0.0287 15	0.98429 <.0001 15	0.97970 <.0001 15	0.98952 <.0001 15

	v10	v11	v12	v13	v14	v15	v16	v17
v13	0.83793 0.0013 11	0.85742 0.0007 11	0.72586 0.0114 11	1.00000 11	0.61262 0.0597 10	0.83963 0.0024 10	0.81727 0.0039 10	0.83339 0.0027 10
v14	0.93351 <.0001 15	0.98836 <.0001 15	0.56344 0.0287 15	0.61262 0.0597 10	1.00000 15	0.63984 0.0102 15	0.63179 0.0115 15	0.64091 0.0100 15
v15	0.78308 0.0006 15	0.55241 0.0327 15	0.98429 <.0001 15	0.83963 0.0024 10	0.63984 0.0102 15	1.00000 15	0.97028 <.0001 15	0.99381 <.0001 15
v16	0.78644 0.0005 15	0.53835 0.0384 15	0.97970 <.0001 15	0.81727 0.0039 10	0.63179 0.0115 15	0.97028 <.0001 15	1.00000 15	0.99116 <.0001 15
v17	0.79046 0.0005 15	0.55007 0.0336 15	0.98952 <.0001 15	0.83339 0.0027 10	0.64091 0.0100 15	0.99381 <.0001 15	0.99116 <.0001 15	1.00000 15

```
                        The REG Procedure
                         Model: MODEL1
                      Dependent Variable: v6

                       Analysis of Variance

                                 Sum of          Mean
  Source              DF        Squares        Square    F Value    Pr > F

  Model                3      978120439     326040146      16.36    0.0015
  Error                7      139505609      19929373
  Corrected Total     10     1117626048


         Root MSE              4464.23260    R-Square      0.8752
         Dependent Mean            17338    Adj R-Sq      0.8217
         Coeff Var              25.74761


                       Parameter Estimates

                        Parameter      Standard
  Variable     DF        Estimate         Error    t Value    Pr > |t|

  Intercept     1      -947.91781    5508.20614      -0.17      0.8682
  v1            1        -1.26850       6.64903      -0.19      0.8541
  v2            1         0.08224       0.47039       0.17      0.8662
  v5            1         0.47635       0.68580       0.69      0.5097




                        The REG Procedure
                         Model: MODEL1
                      Dependent Variable: v6

                    Stepwise Selection: Step 1

        Variable v5 Entered: R-Square = 0.8729 and C(p) = 0.1275


                       Analysis of Variance

                                 Sum of          Mean
  Source              DF        Squares        Square    F Value    Pr > F

  Model                1      975578948     975578948      61.81    <.0001
  Error                9      142047100      15783011
  Corrected Total     10     1117626048

                  Parameter      Standard
  Variable        Estimate         Error    Type II SS  F Value   Pr > F

  Intercept    -1095.44605    2632.91975       2732100     0.17   0.6871
  v5               0.51570       0.06559     975578948    61.81   <.0001

             Bounds on condition number: 1, 1
-----------------------------------------------------------------------------


      All variables left in the model are significant at the 0.1500 level.

    No other variable met the 0.1500 significance level for entry into the model.


                 Summary of Stepwise Selection

          Variable   Variable   Number    Partial     Model
  Step    Entered    Removed   Vars In   R-Square   R-Square    C(p)    F Value    Pr > F

    1      v5                     1        0.8729     0.8729    0.1275    61.81    <.0001
```

```
                        The REG Procedure
                         Model: MODEL1
                     Dependent Variable: v3

                       Analysis of Variance

                               Sum of         Mean
Source                  DF     Squares       Square      F Value    Pr > F

Model                    3    7510309036    2503436345    184.78    <.0001
Error                   12     162582770      13548564
Corrected Total         15    7672891806


            Root MSE            3680.83743    R-Square      0.9788
            Dependent Mean           33423    Adj R-Sq      0.9735
            Coeff Var             11.01292


                        Parameter Estimates

                         Parameter      Standard
         Variable    DF    Estimate        Error    t Value    Pr > |t|

         Intercept    1    -994.43627    2906.51307    -0.34     0.7382
         v1           1      -0.00834       3.98536    -0.00     0.9984
         v2           1       1.02319       0.33712     3.04     0.0104
        _v5           1      -0.03980       0.44292    -0.09     0.9299




                        The REG Procedure
                         Model: MODEL1
                     Dependent Variable: v3

                    Stepwise Selection: Step 1

         Variable v2 Entered: R-Square = 0.9788 and C(p) = 0.0125

                       Analysis of Variance

                               Sum of         Mean
         Source          DF    Squares       Square      F Value    Pr > F

         Model            1    7510139496    7510139496    646.02    <.0001
         Error           14     162752310      11625165
         Corrected Total  15    7672891806

                      Parameter      Standard
         Variable      Estimate        Error    Type II SS  F Value  Pr > F

         Intercept    -833.20972    1594.69088     3173619    0.27   0.6095
         v2              0.98711       0.03884  7510139496  646.02   <.0001

                  Bounds on condition number: 1, 1
-----------------------------------------------------------------------------

        All variables left in the model are significant at the 0.1500 level.

      No other variable met the 0.1500 significance level for entry into the model.


                      Summary of Stepwise Selection

          Variable    Variable    Number    Partial      Model
Step      Entered     Removed    Vars In   R-Square    R-Square    C(p)     F Value    Pr > F

 1        v2                        1        0.9788      0.9788    0.0125    646.02     <.0001
```

```
                    The REG Procedure
                    Model: MODEL1
                 Dependent Variable: v1

                  Analysis of Variance

                          Sum of        Mean
    Source          DF    Squares      Square    F Value    Pr > F

    Model            2    5514360     2757180      24.36    0.0004
    Error            8     905369      113171
    Corrected Total 10    6419730


            Root MSE            336.40923   R-Square    0.8590
            Dependent Mean     1874.82727   Adj R-Sq    0.8237
            Coeff Var            17.94348


                   Parameter Estimates

                      Parameter    Standard
    Variable    DF     Estimate       Error    t Value    Pr > |t|

    Intercept    1    465.74206   231.99787       2.01      0.0796
    v3           1      0.02094     0.00940       2.23      0.0566
    v6           1      0.02985     0.01932       1.55      0.1608




                    The REG Procedure
                    Model: MODEL1
                 Dependent Variable: v1

                 Stepwise Selection: Step 1

       Variable v3 Entered: R-Square = 0.8169 and C(p) = 3.3882


                  Analysis of Variance

                          Sum of        Mean
    Source          DF    Squares      Square    F Value    Pr > F

    Model            1    5244088     5244088      40.15    0.0001
    Error            9    1175642      130627
    Corrected Total 10    6419730

                Parameter    Standard
    Variable     Estimate       Error   Type II SS  F Value   Pr > F

    Intercept   455.26174   249.14186      436176     3.34   0.1009
    v3            0.03334     0.00526     5244088    40.15   0.0001

            Bounds on condition number: 1, 1
----------------------------------------------------------------------------


      All variables left in the model are significant at the 0.1500 level.

      No other variable met the 0.1500 significance level for entry into the model.


                 Summary of Stepwise Selection

         Variable    Variable    Number   Partial    Model
    Step  Entered     Removed    Vars In  R-Square   R-Square   C(p)    F Value   Pr > F

     1    v3                        1      0.8169     0.8169   3.3882    40.15    0.0001
```

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```
                         The REG Procedure
                           Model: MODEL1
                       Dependent Variable: v5

                       Analysis of Variance

                                 Sum of         Mean
        Source          DF       Squares       Square    F Value   Pr > F

        Model            2     3603114525   1801557262    220.94   <.0001
        Error            8       65232748      8154093
        Corrected Total 10     3668347273


                Root MSE           2855.53734   R-Square     0.9822
                Dependent Mean        35745     Adj R-Sq     0.9778
                Coeff Var          7.98853


                       Parameter Estimates

                         Parameter     Standard
        Variable    DF    Estimate       Error    t Value   Pr > |t|

        Intercept    1   -414.05492   1969.26395    -0.21     0.8387
        v3           1      0.55967      0.07981     7.01      0.0001
        v6           1      0.71119      0.16396     4.34      0.0025
```

```
                          The REG Procedure
                           Model: MODEL1
                       Dependent Variable: v5

                       Stepwise Selection: Step 1

          Variable v3 Entered: R-Square = 0.9404 and C(p) = 19.8143


                          Analysis of Variance

                                  Sum of          Mean
     Source              DF       Squares        Square     F Value   Pr > F

     Model                1     3449700689     3449700689    142.00   <.0001
     Error                9      218646583       24294065
     Corrected Total     10     3668347273


                     Parameter      Standard
     Variable         Estimate         Error    Type II SS   F Value   Pr > F

     Intercept      -663.74786    3397.66493        927140      0.04   0.8495
     v3                0.85516       0.07176    3449700689    142.00   <.0001

                 Bounds on condition number: 1, 1
-----------------------------------------------------------------------------

                       Stepwise Selection: Step 2


          Variable v6 Entered: R-Square = 0.9822 and C(p) = 3.0000


                          Analysis of Variance

                                  Sum of          Mean
     Source              DF       Squares        Square     F Value   Pr > F

     Model                2     3603114525     1801557262    220.94   <.0001
     Error                8       65232748        8154093
     Corrected Total     10     3668347273


                     Parameter      Standard
     Variable         Estimate         Error    Type II SS   F Value   Pr > F

     Intercept      -414.05492    1969.26395        360482      0.04   0.8387
     v3                0.55967       0.07981     401003783     49.18   0.0001
     v6                0.71119       0.16396     153413836     18.81   0.0025

              Bounds on condition number: 3.6847, 14.739
-----------------------------------------------------------------------------


        All variables left in the model are significant at the 0.1500 level.
```

```
The REG Procedure
Model: MODEL1
Dependent Variable: v5

Stepwise Selection: Step 2

All variables have been entered into the model.
```

Summary of Stepwise Selection

Step	Variable Entered	Variable Removed	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	v3		1	0.9404	0.9404	19.8143	142.00	<.0001
2	v6		2	0.0418	0.9822	3.0000	18.81	0.0025

```
The REG Procedure
Model: MODEL1
Dependent Variable: v2
```

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	4486823926	2243411963	962.36	<.0001
Error	8	18649347	2331168		
Corrected Total	10	4505473273			

Root MSE	1526.81642	R-Square	0.9959	
Dependent Mean	44230	Adj R-Sq	0.9948	
Coeff Var	3.45196			

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	3560.28607	1052.93827	3.38	0.0096
v3	1	0.68548	0.04267	16.06	<.0001
v6	1	0.66240	0.08767	7.56	<.0001

```
                            The REG Procedure
                             Model: MODEL1
                          Dependent Variable: v2

                       Stepwise Selection: Step 1

          Variable v3 Entered: R-Square = 0.9663 and C(p) = 58.0901


                           Analysis of Variance

                                  Sum of          Mean
     Source               DF      Squares        Square    F Value    Pr > F

     Model                 1    4353737310    4353737310     258.24    <.0001
     Error                 9     151735962      16859551
     Corrected Total      10    4505473273


                      Parameter      Standard
          Variable     Estimate         Error   Type II SS  F Value  Pr > F

          Intercept  3327.72277    2830.43680     23304155     1.38  0.2699
          v3            0.96070       0.05978   4353737310   258.24  <.0001

                  Bounds on condition number: 1, 1
------------------------------------------------------------------------------

                       Stepwise Selection: Step 2


          Variable v6 Entered: R-Square = 0.9959 and C(p) = 3.0000


                           Analysis of Variance

                                  Sum of          Mean
     Source               DF      Squares        Square    F Value    Pr > F

     Model                 2    4486823926    2243411963     962.36    <.0001
     Error                 8      18649347       2331168
     Corrected Total      10    4505473273


                      Parameter      Standard
          Variable     Estimate         Error   Type II SS  F Value  Pr > F

          Intercept  3560.28607    1052.93827     26652479    11.43  0.0096
          v3            0.68548       0.04267    601554428   258.05  <.0001
          v6            0.66240       0.08767    133086615    57.09  <.0001

              Bounds on condition number: 3.6847, 14.739
------------------------------------------------------------------------------


        All variables left in the model are significant at the 0.1500 level.
```

```
                        The REG Procedure
                          Model: MODEL1
                     Dependent Variable: v2

                    Stepwise Selection: Step 2

          All variables have been entered into the model.


                   Summary of Stepwise Selection

        Variable    Variable   Number    Partial    Model
Step    Entered     Removed    Vars In   R-Square   R-Square    C(p)      F Value    Pr > F

1       v3                     1         0.9663     0.9663      58.0901   258.24     <.0001
2       v6                     2         0.0295     0.9959      3.0000    57.09      <.0001




                        The REG Procedure
                          Model: MODEL1
                     Dependent Variable: v2

                      Analysis of Variance

                              Sum of        Mean
Source                DF      Squares       Square      F Value    Pr > F

Model                 2       4397964947    2198982473  163.63     <.0001
Error                 8       107508326     13438541
Corrected Total       10      4505473273


          Root MSE              3665.86152   R-Square    0.9761
          Dependent Mean       44230        Adj R-Sq    0.9702
          Coeff Var            8.28811


                      Parameter Estimates

                      Parameter    Standard
Variable     DF       Estimate     Error        t Value    Pr > |t|

Intercept    1        -143223      30476        -4.70      0.0015
v4           1        0.84945      0.10525      8.07       <.0001
v7           1        1.58985      0.30520      5.21       0.0008
```

```
                        The REG Procedure
                          Model: MODEL1
                     Dependent Variable: v2

                   Stepwise Selection: Step 1

        Variable v4 Entered: R-Square = 0.8952 and C(p) = 28.1361


                        Analysis of Variance

                              Sum of        Mean
Source              DF       Squares       Square    F Value    Pr > F

Model                1    4033296030   4033296030      76.88    <.0001
Error                9     472177243     52464138
Corrected Total     10    4505473273


                 Parameter     Standard
Variable          Estimate       Error    Type II SS  F Value  Pr > F        .

Intercept            15188   3967.49722    768824537    14.65  0.0040
v4                 1.24889      0.14244   4033296030    76.88  <.0001

                Bounds on condition number: 1, 1
------------------------------------------------------------------------------

                   Stepwise Selection: Step 2


        Variable v7 Entered: R-Square = 0.9761 and C(p) = 3.0000


                        Analysis of Variance

                              Sum of        Mean
Source              DF       Squares       Square    F Value    Pr > F

Model                2    4397964947   2198982473     163.63    <.0001
Error                8     107508326     13438541
Corrected Total     10    4505473273


                 Parameter     Standard
Variable          Estimate       Error    Type II SS  F Value  Pr > F
Intercept          -143223        30476    296800421    22.09  0.0015
v4                 0.84945      0.10525    875431126    65.14  <.0001
v7                 1.58985      0.30520    364668917    27.14  0.0008

              Bounds on condition number: 2.1314, 8.5256
------------------------------------------------------------------------------


        All variables left in the model are significant at the 0.1500 level.
```

```
                        The REG Procedure
                        Model: MODEL1
                     Dependent Variable: v2

                    Stepwise Selection: Step 2

              All variables have been entered into the model.
```

Summary of Stepwise Selection

Step	Variable Entered	Variable Removed	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	v4		1	0.8952	0.8952	28.1361	76.88	<.0001
2	v7		2	0.0809	0.9761	3.0000	27.14	0.0008

Appendix 2: Dates for Motor Industry Development Council (MIDC) meetings attended

- Meeting of 8 September 2004
- Meeting of 19 October 2004
- Meeting of 1 December 2004
- Meeting of 20 January 2005
- Meeting of 10 March 2005
- Meeting of 21 April 2005
- Meeting of 30 June 2005
- Meeting of 11 August 2005
- Meeting of 6 October 2005
- Meeting of 25 November 2005
- Meeting of 25 January 2006
- Meeting of 8 March 2006
- Meeting of 19 April 2006
- Meeting of 7 June 2006
- Meeting of 19 July 2006
- Meeting of 11 October 2006
- Meeting of 21 February 2007

Appendix 3: Expert interviews

Ingrid Metz, International Trade Administration Commission, Manager (A) Tariff Investigations II (First interview on 2 September 2004 at ITAC; follow up discussions, 31 March 2006 and 4 August 2006).

Pieter Goosen, International Trade Administration Commission, Manager (B) Tariff Investigations II (First interview on 2 September 2004 at ITAC, follow up discussions, 31 March 2006 and 4 August 2006).

Andre Botha, System dynamics modelling Consultant, Dynamic Strategies (First session took December 2005. This was followed four sessions in March, July and August 2006. One other session was held on 14 March 2007).

Appendix 4: Comparison between actual and projected values per the exogenous growth fractions used in the reference model simulation
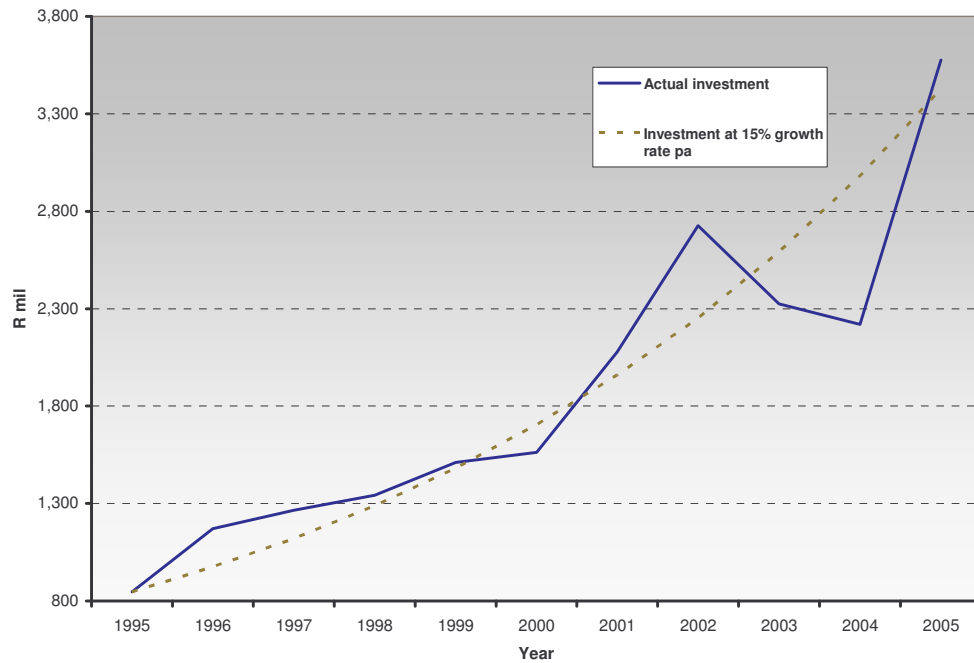
Actual OEM investment and OEM investment projection at 15% growth rate pa
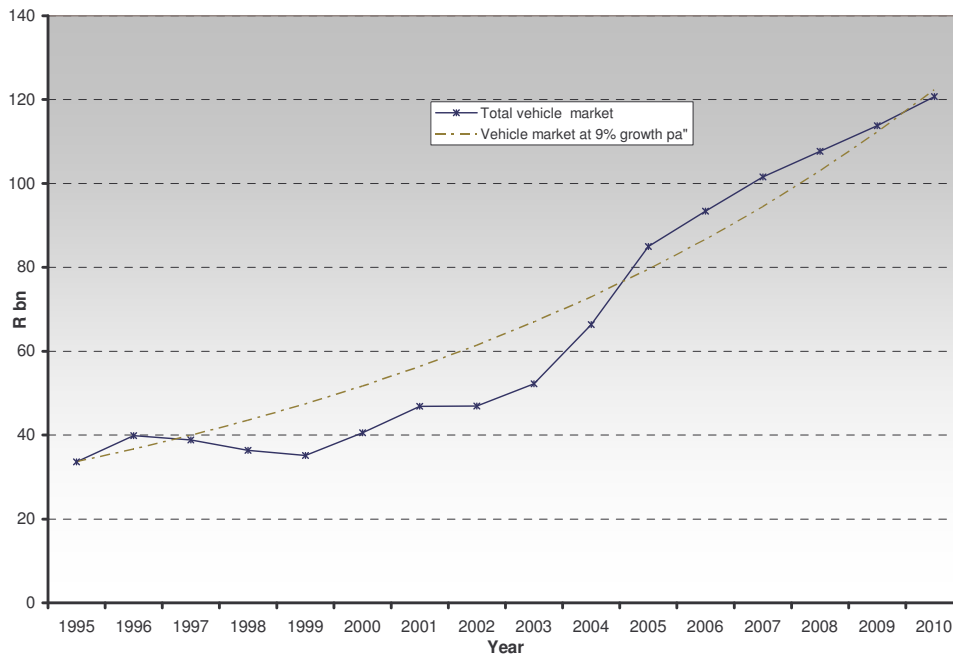
Actual domestic market and domestic market projection at 9% growth rate pa

Appendix: 5: Stella equations for the PAA-IEC model base-run

1. Domestic_market(t) = Domestic_market(t - dt) + (Market_growth) * dtINIT

   Domestic_market = 33.6 {Rand billion}

INFLOWS:

2. Market_growth = Domestic_market*Market_growth_fraction

3. Exports(t) = Exports(t - dt) + (Exporting) * dtINIT Exports = 4.2 {Rand billion}

INFLOWS:

4. Exporting = Exports*Export_growth_fraction {Rand billion}

5. Imports(t) = Imports(t - dt) + (Importing) * dtINIT Imports = 16.4 {Rand billion}

INFLOWS:

6. Importing = Imports*Import_growth_fraction

7. Investment(t) = Investment(t - dt) + (Investing) * dtINIT Investment = 0.85 {Rand

   billion}

INFLOWS:

8. Investing = Investment*Actual_growth_fraction {Rand billion}

9. IRCCs(t) = IRCCs(t - dt) + (IRCC_generation - IRCC_release) * dtINIT IRCCs = 0

   {Rand billion}

10. TRANSIT TIME = varies

11. INFLOW LIMIT = INF

12. CAPACITY = INF

INFLOWS:

13. IRCC_generation = Local_content__benefit_fraction*Exported_local_content

    {Rand billion}

OUTFLOWS:

14. IRCC_release = CONVEYOR OUTFLOW

15. TRANSIT TIME = IRCC_release__delay {Rand billion}

16. PAA_Rebates[Annual_Certificate](t) = PAA_Rebates[Annual_Certificate](t - dt) +

    (Rebate_generation[Annual_Certificate] -

    Rebate_certificate_release[Annual_Certificate]) * dtINIT

    PAA_Rebates[Annual_Certificate] = 0 {Rand billion}

INFLOWS:

17. Rebate_generation[Annual_Certificate] =

Qualifying_investment*Benefit_fraction/Certificate_spread {Rand billion}

OUTFLOWS:

18. Rebate_certificate_release[1] = CONVEYOR OUTFLOW

19. TRANSIT TIME = Rebate_Certificate_delay[1]

20. Rebate_certificate_release[2] = CONVEYOR OUTFLOW

21. TRANSIT TIME = Rebate_Certificate_delay[2]

22. Rebate_certificate_release[3] = CONVEYOR OUTFLOW

23. TRANSIT TIME = Rebate_Certificate_delay[3]

24. Rebate_certificate_release[4] = CONVEYOR OUTFLOW

25. TRANSIT TIME = Rebate_Certificate_delay[4]

26. Rebate_certificate_release[5] = CONVEYOR OUTFLOW

27. TRANSIT TIME = Rebate_Certificate_delay[5] {Rand billion}

28. Actual_growth_fraction = Normal__growth_fraction*production_potential_factor

29. Annual_certificate_release = ARRAYSUM(Rebate_certificate_release[*]){Rand billion}

30. Benefit_fraction = 0+STEP(0.2, 2001)

31. Certificate_spread = 5

32. Exported_local_content = Exports*Exported_local__content_fraction {Rand billion}

33. Exported_local__content_fraction = 0.7

34. Export_growth_fraction = CGROWTH(27)

35. Import_duty = 0.3

36. Import_growth_fraction = (CGROWTH(12)*Impact_of_rebatable_imports_and__domestic_market_on_imports)

37. Industry_rebatable__imports = IRCC_rebatable__imports+PAA_rebatable__imports {Rand billion}

38. Industry_trade__balance = Exports-Imports {Rand billion}

39. IRCC_rebatable__imports = IRCC_release*1 {Rand billion}

40. IRCC_release__delay = 1

41. Local_content__benefit_fraction = 0.9

42. Market_growth_fraction = CGROWTH(9)

43. Normal__growth_fraction = 0.15

44. PAA_rebatable__imports = Annual_certificate_release/Import_duty {Rand billion}

45. production_potential_factor = (Domestic_market+Exports-Industry_rebatable__imports)/(Domestic_market+Exports)

46. Qualifying_investment = Investment*Qualifying_investment_fraction {Rand billion}

47. Qualifying_investment_fraction = 0.8

48. Rebate_Certificate_delay[1] = 1

49. Rebate_Certificate_delay[2] = 2

50. Rebate_Certificate_delay[3] = 3

51. Rebate_Certificate_delay[4] = 4

52. Rebate_Certificate_delay[5] = 5

Import decision

53. Impact_of_rebatable_imports_and__domestic_market_on_imports = GRAPH(Industry_rebatable__imports/Domestic_market)

(0.00, 1.00), (0.04, 1.00), (0.08, 1.20), (0.12, 1.31), (0.16, 1.43), (0.2, 1.51), (0.24, 1.61), (0.28, 1.71), (0.32, 1.76), (0.36, 1.76), (0.4, 1.75), (0.44, 1.70), (0.48, 1.60), (0.52, 1.55), (0.56, 1.50), (0.6, 1.46), (0.64, 1.41), (0.68, 1.36), (0.72, 1.35), (0.76, 1.32), (0.8, 1.30), (0.84, 1.29), (0.88, 1.29), (0.92, 1.29), (0.96, 1.29), (1.00, 1.29)

Appendix 6: Automotive investment, production and vehicle prices for the period 1995 to 2006

Year	Automotive investment (Rm)	Vehicle production (Units)	Vehicle prices*
1995	847	389,476	87,568
1996	1,171	386,311	94,748
1997	1,265	326,104	97,306
1998	1,342	312,055	103,437
1999	1,511	326,065	107,885
2000	1,562	357,364	114,465
2001	2,078	406,149	122,593
2002	2,726	404,441	129,213
2003	2,325	421,338	136,530
2004	2,220	453,600	137,799
2005	3,576	525,271	137,643
2006	6,200	587,719	130,761

*Authors estimate from NAAMSA data
Source: NAAMSA Annual Report 2006

Appendix 7: Impact of increase of the effect of prices on export growth

Industry trade balance: 1 - 2 - 3 -

Page 1

Years

06:04 PM   31 Oct 2008

Trade balance sensitivity to the ef…verage of 10% (1); 15%(2) and 20%(3)
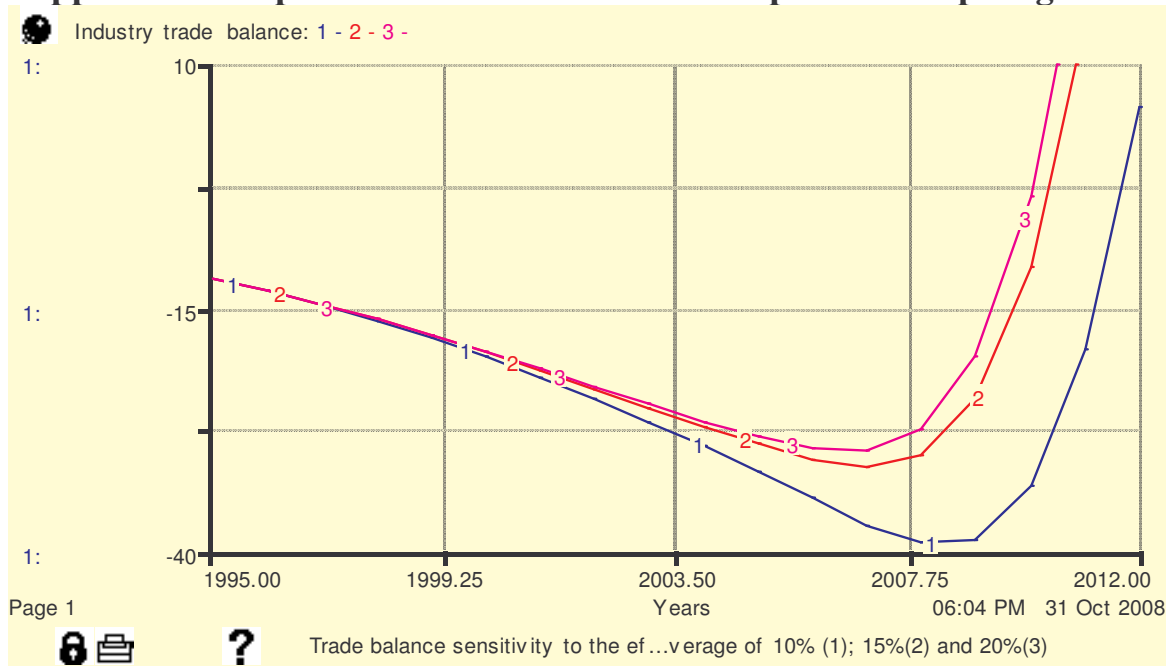
Note: Impact level(s) choice based on sensitivity analysis range used in the main model.

Appendix 8: Automotive industry import duty schedule for the period 1999 to 2012

Year	Import duty (%)	
	Buit-up Light Vehicles	**Original Equipment Components**
1999	50.5	37.5
2000	47.0	35.0
2001	43.5	32.5
2002	40.0	30.0
2003	38.0	29.0
2004	36.0	28.0
2005	34.0	27.0
2006	32.0	26.0
2007	30.0	25.0
2008	29.0	24.0
2009	28.0	23.0
2010	27.0	22.0
2011	26.0	21.0
2012	25.0	20.0

Source: NAAMSA Annual Report 2002/2006

Appendix: 9: Stella equations for the PAA-IEC-DFA model base-run

1. Domestic_market(t) = Domestic_market(t - dt) + (Market_growth) * dtINIT
   Domestic_market = 21.51 {Rand billion}

INFLOWS:

2. Market_growth = Domestic_market*Market_growth_fraction

3. Exports(t) = Exports(t - dt) + (Exporting) * dtINIT Exports = 4.2 {Rand billion}

INFLOWS:

4. Exporting = Exports*Actual_export_growth_fraction {Rand billion}

5. Imports(t) = Imports(t - dt) + (Importing) * dtINIT Imports = 16.4 {Rand billion}

INFLOWS:

6. Importing = Imports*Import_growth_fraction

7. Investment(t) = Investment(t - dt) + (Investing) * dtINIT Investment = 0.85 {Rand billion}

INFLOWS:

8. Investing = Investment*Actual_growth_fraction {Rand billion}

9. IRCCs(t) = IRCCs(t - dt) + (IRCC_generation - IRCC_release) * dtINIT IRCCs = 0 {Rand billion}

10. TRANSIT TIME = varies

11. INFLOW LIMIT = INF

12. CAPACITY = INF

INFLOWS:

13. IRCC_generation = Local_content__benefit_fraction*Exported_local_content {Rand billion}

OUTFLOWS:

14. IRCC_release = CONVEYOR OUTFLOW

15. TRANSIT TIME = IRCC_release__delay {Rand billion}

16. PAA_Rebates[Annual_Certificate](t) = PAA_Rebates[Annual_Certificate](t - dt) +
    (Rebate_generation[Annual_Certificate] -
    Rebate_certificate_release[Annual_Certificate]) * dtINIT
    PAA_Rebates[Annual_Certificate] = 0 {Rand billion}

INFLOWS:

17. Rebate_generation[Annual_Certificate] =

Qualifying_investment*Benefit_fraction/Certificate_spread {Rand billion}

OUTFLOWS:

18. Rebate_certificate_release[1] = CONVEYOR OUTFLOW

19. TRANSIT TIME = Rebate_Certificate_delay[1]

20. Rebate_certificate_release[2] = CONVEYOR OUTFLOW

21. TRANSIT TIME = Rebate_Certificate_delay[2]

22. Rebate_certificate_release[3] = CONVEYOR OUTFLOW

23. TRANSIT TIME = Rebate_Certificate_delay[3]

24. Rebate_certificate_release[4] = CONVEYOR OUTFLOW

25. TRANSIT TIME = Rebate_Certificate_delay[4]

26. Rebate_certificate_release[5] = CONVEYOR OUTFLOW

27. TRANSIT TIME = Rebate_Certificate_delay[5] {Rand billion}

28. Actual_export_growth_fraction =

Normal_export_growth_fraction*Effect_of_prices__on_exports

29. Actual_growth_fraction = Normal__growth_fraction*production_potential_factor

30. Annual_certificate_release = ARRAYSUM(Rebate_certificate_release[*]) {Rand billion}

31. Benefit_fraction = 0+STEP(0.4, 2001)

32. Certificate_spread = 5

33. Duty_free_allowance = 0.27

34. Duty_free_import = Domestic_market*0.75*Duty_free_allowance

35. Exported_local_content = Exports*Exported_local__content_fraction {Rand billion}

36. Exported_local__content_fraction = 0.7

37. Import_duty = 0.3

38. Import_growth_fraction =

CGROWTH(12)*Impact_of_rebatable_imports_and__domestic_market_on_imports

39. Industry_rebatable_and__tax_free_imports =
IRCC_rebatable__imports+PAA_rebatable__imports+Duty_free_import {Rand billion}

40. Industry_trade__balance = Exports-Imports {Rand billion}

41. Investment_productivity__ratio = 0.02

42. IRCC_rebatable__imports = IRCC_release*1 {Rand billion}

43. IRCC_release__delay = 1

44. Local_content__benefit_fraction = 0.9

45. Market_growth_fraction = CGROWTH(12)

46. Normal_export_growth_fraction = CGROWTH(27)

47. Normal__growth_fraction = 0.15

48. PAA_rebatable__imports = Annual_certificate_release/Import_duty {Rand billion}

49. Production = Investment*Investment_productivity__ratio

50. production_potential_factor = (Domestic_market+Exports-Industry_rebatable_and__tax_free_imports)/(Domestic_market+Exports)

51. Qualifying_investment = Investment*Qualifying_investment_fraction {Rand billion}

52. Qualifying_investment_fraction = 0.8

53. Rebate_Certificate_delay[1] = 1

54. Rebate_Certificate_delay[2] = 2

55. Rebate_Certificate_delay[3] = 3

56. Rebate_Certificate_delay[4] = 4

57. Rebate_Certificate_delay[5] = 5

58. Effect_of_prices__on_exports = GRAPH(Production)

59. (0.00, 0.97), (0.1, 0.99), (0.2, 1.05), (0.3, 1.08), (0.4, 1.09), (0.5, 1.12), (0.6, 1.14), (0.7, 1.16), (0.8, 1.20), (0.9, 1.20), (1, 1.20)

60. Import decision

61. Impact_of_rebatable_imports_and__domestic_market_on_imports = GRAPH(Industry_rebatable_and__tax_free_imports/Domestic_market)

62. (0.00, 0.98), (0.111, 1.04), (0.222, 1.10), (0.333, 1.23), (0.444, 1.38), (0.556, 1.52), (0.667, 1.61), (0.778, 1.49), (0.889, 1.11), (1.00, 0.86)