

CURRICULUM VITAE

ROBERT A. W SMITH

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Year of Birth: 1940

Nationality: British

Education: BA (Hons.) - Economics & Political Science, Trinity College, Dublin, 1962

Professional Societies: **International Consulting Economists Association**

Key Experience:

Has worked as a transport economist for over 30 years during which time he has gained wide experience in transport economics and planning with particular emphasis on road transport. He has worked on technical assistance projects in Eastern Europe, Asia, Africa, the Caribbean, Latin America and North America for national governments and the main international financing agencies such as the European Commission (EDF), World Bank, the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the Caribbean Development Bank (CDB), the Kredit Anstalt fur Wieder Aufbau (KfW) and the Kuwait Fund for Arab Economic Development (KFAED).

His main specialisation has been in transport planning, financing and policy, with particular emphasis on the appraisal of investments in road and maritime infrastructure. In recent years he has become more actively involved in highway financing studies and studies of cost recovery based road user charging and taxation. He has participated both as team member and team leader in the formulation of study programs, in devising appropriate methodologies for the economic analysis of projects and road maintenance strategies, in carrying out these analyses and in presenting the results to client governments and donor agencies.

His experience includes participation in projects in Albania, Armenia, Azerbaijan, Botswana, Brazil, Bulgaria, Czech Republic, Ghana, Georgia, Grenada, Guyana, India, Indonesia, Jamaica, Kazakhstan, Kosovo, Kyrgyz Republic, Malawi, Mongolia, Mozambique, Nepal, Nigeria, Philippines, Saint Lucia, Sierra Leone, Slovakia, Slovenia, Solomon Islands, Saint Vincent and the Grenadines, Tanzania, Turkmenistan, Ukraine, Uzbekistan and Uganda.

Employment Record

2001	Independent Consultant
2000	<u>Sinclair Knight Merz (Europe) Ltd</u> Senior Transport Economist with special responsibility for road transport projects.
1993 to 1999	<u>TecnEcon - Hyder Consulting Limited</u> Associate, responsible for project appraisal and management and economic studies in the transport sector
1980 to 1993	<u>Hoff & Overgaard A/S, Planning Consultants</u> Senior Transport Economist, responsible for transport studies in Eastern Europe, Indonesia, China, Angola, the Philippines and Malawi
1965 to 1980	<u>The Economist Intelligence Unit</u> Senior Consultant, responsible for transport studies worldwide
1963 to 1965	<u>Standard Pressed Steel International Inc</u> Involved in marketing studies and sales forecasting in connection with the aerospace and machine tool industries

Relevant Experience

2010 / 2011	Transport Economist and team leader on a study developing a transport investment programme in Malawi. The project involved assessing the priorities of investment in all transport modes and preparing a preliminary programme of investments and studies of potential investments in the short, medium and long term. Full account was taken of Malawi's important position in international transport corridors.
2009	Transport economist on an EC Funded study of the rehabilitation of two main roads in Sierra Leone. Responsibility included preparation of the full range of inputs required for economic appraisal and implementation of the economic analyses with particular emphasis on sensitivity and risk analyses.
2008	Transport economist on a final design / feasibility study of a road on a new alignment in Botswana. The economic appraisal included preparation of traffic forecasts, estimates of economic road user costs and full economic analysis including sensitivity and risk analysis.
2008	Transport economist on a pre-feasibility study of the upgrading of a 450 km road linking Guyana's coastal

region with the south of the country and the Brazilian border. The study involved a preliminary assessment of potential diversion to a corridor through Guyana of international goods traffic currently moving between Manaus and Brazil's Amazon region and ports on Venezuela's Atlantic coast.

- 2007 Carried out an economic re-evaluation of the World Bank's highway investments in Mozambique over the past five years. This involved updating the main cost and other input data in the original feasibility studies, establishing the ex-post economic feasibility indicators and evaluating them within the context of a comprehensive risk analysis.
- 2006-2007 Transport planning specialist on a team providing long-term technical assistance to Mozambique's Administracao Nacional de Estradas in its implementation of a major 10-year road and bridge management and maintenance project. This programme is jointly financed by the Government of Mozambique and international donors, including the World Bank.
- 2005 Transport economist on a feasibility and final design study of the improvement of the Tanga-Horohoro (Kenya border) trunk road in Tanzania. The project, which is now at final design stage, is being carried out by Norwegian consultants for TANROADS.
- 2005 Economic Appraisal of Capacity Expansion of part of the Baku-Astara (Iranian border) highway in Azerbaijan. Transport economist responsible for the economic assessment of the feasibility of widening the existing 2-lane road to 4 - lane standard. The feasibility analysis was based on the use of HDM 4 Version 2. The project was undertaken for Azerbaijan's Road Transport Service Department and sponsored by the World Bank.
- 2005 Economic Appraisal and Prioritisation of Investments in Agricultural and Feeder Roads in Grenada. Transport economist responsible for appraising the rehabilitation priorities of agricultural and feeder roads damaged by hurricane Ivan in September 2004. The project was undertaken for the Government and the Kuwait Fund. The priorities for rehabilitation were based on economic analysis using the World Bank's RED model.
- 2004 Economic Appraisal of a Road Rehabilitation Project in Mozambique
Transport Economist responsible for an economic appraisal of the final design of the rehabilitation of the Meconta-Corrane road in northern Mozambique. The appraisal was carried out using the World Bank's RED model and considerable emphasis was placed on the uncertainty and risk analysis aspects of the appraisal. The project was undertaken for government and World Bank – IDA.

- 2004 Study of the Improvement of Rural Roads in Mongolia
 Team Leader and Transport Economist on a study of the engineering and economic feasibility of carrying out spot improvements on selected rural roads in western and central Mongolia. Spot improvement projects were prioritised based on the results of the economic analysis and the highest priority improvement projects have subsequently been selected for implementation. The project was financed by KfW.
- 2004 Airport Upgrading Project in St. Vincent & the Grenadines
 Transport economist carrying out an economic feasibility study of extending the airport runway on Canouan Island in St. Vincent and the Grenadines. The study was undertaken in association with German consultants for the Government of St. Vincent and the Grenadines.
- 2003 Agricultural and Feeder Road Study in St. Lucia
 Transport Economist on an engineering and economic feasibility study of the rehabilitation of the agricultural and feeder road network in St. Lucia. The economic analysis was supported by a multi-criteria analysis in the prioritisation of rehabilitation projects and the development of an expenditure programme. The study was undertaken for the Government of St. Lucia and the Kuwait Fund.
- 2003 Improvement Study of the Mtwara-Songea-Mbamba Bay Road in southern Tanzania
 Transport economist on a study of the improvement of the paved and unpaved sections of a key link in the southern trunk road corridor in Tanzania. The study was carried out for Tanzania's National Development Corporation and the Kuwait Fund for Arab Economic Development. The study involved the use of HDM 4 and the World Bank's RED model in the engineering and economic appraisal of alternative improvement options.
- 2002 Road rehabilitation and improvement Study – St. George's Grenada
 Transport economist on a feasibility study of the rehabilitation and improvement of the urban road network of St. George's, Grenada W.I. The study is being carried out for the Government of Grenada and the Kuwait Fund.
- 2002 Road rehabilitation studies in Jamaica-
 Transport economist on a study of a series of road rehabilitation projects being undertaken in Jamaica

for the National Works Agency and the Kuwait Fund for Arab Economic Development.

- 2002 Highway maintenance planning in Kosovo
Transport economist undertaking a brief appraisal of the appropriateness of a simplified road network maintenance planning system for use in Kosovo.
- 2001 Road feasibility studies in Grenada
Transport economist on a study of the feasibility of rehabilitating the East Main road in Grenada.
- 2001 Road feasibility studies in St .Lucia
Transport economist on four sets of road planning studies in St .Lucia: the Vieux Forts – Gros Islet Road Improvement Study, feasibility studies of roads forming part of the Road Development Programme, the Tertiary Roads Development Programme and the Castries – Gros Islet Road Transport Corridor Study.
- 2000 Integrated Passenger Transport Study – Ahmedabad, Gujarat, India
Transport economist responsible for the preparation of a technical working paper on economic and financial road user costs to be used in subsequent feasibility studies of potential mass transit schemes. Also participated in the analyses of the results of an extensive household interview survey as part of the traffic forecasting process.
- 2000 Road Maintenance Financing Study in Jamaica
Senior transport economist and team leader on a EC–EDF financed study of road maintenance needs and financing in Jamaica. The study involved an analysis of the adequacy of existing financing through the state budget and explored alternative options for providing secure and sustainable financing for road maintenance. The study recommended reform of the existing financing system and the adoption of a policy of commercialisation of main road network management. This involved the recommendation of cost recovery based road user charges designed to finance road maintenance through an autonomous road fund. The study was carried out with German consulting engineers.
- 2000 Road Feasibility Study in Azerbaijan
Senior transport economist responsible for economic feasibility studies of a series of road improvement projects within Azerbaijan in the transport corridor between the Caspian Sea, the Georgian border and the Black Sea. The study was part of a detailed road design and economic appraisal project sponsored by the World Bank and the European Bank for Reconstruction and Development.

- 1999 Road Feasibility Studies in Ghana
Senior transport economist responsible for studies of the economic feasibility of improvements to a number of primary and secondary roads in the Ashanti and Brong Ahafo regions of Ghana. The economic prioritisation of the road improvements was part of an engineering – economic study undertaken with German engineering consultants for the KfW.
- 1999 Transport Sector Strategy Study, Uganda
Leader of a team of transport economists and modal specialists undertaking a World Bank sponsored transport sector strategy study in Uganda. The main aims of the study were to forecast future trends in transport demand and to advise the Government on its strategy of disengagement from transport operations. A particular concern of the study was to advise the Government on its future transport policy and regulatory functions.
- 1998 Shipping and Marine Sector Study in the Solomon Islands
Team Leader and Transport Economist on an EC-EDF sponsored study of the inter-island shipping and marine sector. The aim of the study was to recommend appropriate policies for the development of the sector in general and for the provision of services to the more remote islands in particular. Forecasts of traffic and shipping costs in inter-island routes were prepared as a basis for estimating requirements for subsidisation of commercially non-viable routes and the total costs of an appropriate subsidisation policy. A route franchising system was proposed and the establishment of a Shipping Authority was recommended to regulate all aspects of route subsidisation.
- 1998 Evaluation of the EC TACIS TRACECA Programme
Member of the team carrying-out an evaluation of the impact and effectiveness of EC TACIS's TRACECA programme for improving transport links between Europe, trans-Caucasia and Central Asia. As part of the evaluation, individual TRACECA projects were examined and their potential contribution to the overall programme objectives was assessed. Mr Smith studied the potential impact of selected projects and the overall programme in Central Asia.
- 1997 Study of the Reform of Ukraine Road Sector Financing
This Study, which was undertaken as part of an EBRD sponsored road improvement project in Ukraine, examined the financing of road maintenance and rehabilitation to the country's interurban road networks and assessed its adequacy in relation to needs. The economic costs of inadequate road maintenance were also analysed. Recommendations were prepared for a reformed

road user charging system based on a fuel levy designed to cover fixed road use costs. Alternative transition paths between the existing situation and full cost recovery financing were examined.

- 1997 Road Feasibility Studies in Azerbaijan and Georgia
Senior Transport Economist on six road studies in Azerbaijan and Georgia. These studies, which were carried-out with Kocks Consult GmbH, were financed by EC TACIS as part of its TRACECA initiative. They comprised engineering options for one road in Azerbaijan, which was of particular interest to the EBRD, and six roads in Georgia. Together these form part of the trans Caucasus corridor between the Black Sea and the Caspian Sea and the main road links between Georgia and Armenia.
- 1996 Transport Economist on Road Pavement Management Systems Study, Central Asia and Caucasus Region
This study was financed by EU-TACIS as part of its TRACECA program. The study was undertaken in collaboration with Kocks Consult GmbH and Danish engineering consultants and involved fieldwork in Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Turkmenistan and Uzbekistan. Mr Smith was responsible for the analysis of traffic, including the results of axle load surveys, traffic forecasts, the analysis of vehicle operating costs using the HDM-III operating cost model and economic analysis of road improvement options. He was also responsible for carrying out highway financing studies in each country involving the estimation of road use costs, the allocation of these between different categories of vehicles, road network maintenance requirements and a comparison of these with actual highway budgetary allocations.
- 1995 Road Projects Economic Impact Evaluation, Philippines
This post evaluation study for the Asian Development Bank (ADB) examined past Bank operations in the Philippines' road sector with the objective of improving Bank project work and strengthening the strategic content of Bank lending. Evidence had suggested that there was scope for significant reorientation, especially if road infrastructure was perceived in terms of greater system self reliance. The study involved, firstly, upgrading and existing data base to provide a unified set of performance data for past bank road subsector operations. Following this, a mission led by ADB staff and supported by TecEcon prepared a study report for the use of the Bank. The study identified the impact of past Bank lending for roads in the Philippines and focused on steps to guide the Bank to a higher level of project performance in the road sector, taking into account the local institutional and economic environment.

- 1995 Turkmenistan Road Studies, Turkmenistan
 Team leader and senior transport economist on a study for the European Bank for Reconstruction and Development of the administration and financing of Turkmenistan's road sector. A central aim of the studies was to recommend how road user charges could be changed to reflect economic costs of road use and to move the road sector towards financial self sufficiency, while reflecting the socio economic priorities of the government. The basis for these recommendations was a survey and analysis of the characteristics and utilisation of the road network, an identification of its future maintenance, rehabilitation and other expenditure priorities, existing road user charges, revenues and road user costs based on the use of the HDM-III operating cost model. The capability of the national road agency to meet the future demands on it was also evaluated and appropriate recommendations prepared.
- 1994 Feeder Road Programme Review, Ghana
 Team leader and transport economist on a Danida mission reviewing Denmark's contribution to Ghana's National Feeder Road Rehabilitation Programme. The mission reviewed the programme of labour based feeder road rehabilitation projects being supported by Danish aid and identified a number of key issues to be addressed by Danida, other international donors and Ghana's Department of Feeder Roads for the successful implementation of the programme.
- 1994 Armenian Highway Study, Armenia
 Team leader and senior transport economist on this EU TACIS sponsored survey of the country's 1,400 kilometre main road network. The maintenance and rehabilitation requirements of the network were evaluated and prioritised on the basis of engineering and economic analysis and an indicative five year road expenditure programme was recommended as a basis for potential foreign financial and technical assistance. Considerable use was made of relevant sub-models from HDM-III, notably the vehicle operating cost model.
- 1994 Road User Charges and Axle Load Study, Ghana
 Participated as senior transport economist on this study undertaken for the Ghana Ministry of Roads and Highways. The objectives of the study were to provide a basis for determining how far and by what means the resources needed to finance road construction rehabilitation and maintenance could be financed by road users. This involved an examination of current user charges, road system costs and traffic levels and characteristics and preparation of recommendations.
- 1993 Technical Assistance on the Ministry of Transport, Bulgaria

Senior transport economist assisting a German technical assistance mission to produce the final report of its findings and recommendations for the Ministry of Transport and EC Phare.

1993 Takoradi / Axim Road Rehabilitation Study, Ghana
Senior Economist responsible for all economic aspects of the study including the provision of advice on the conduct of traffic surveys, analysis of the results of traffic and axle load surveys, analysis of road user costs using the World Bank's HDM-III model, the preparation of traffic forecasts and the economic analysis of alternative road improvement options.

1993 Transport Sector Mission, Central and Eastern Europe
Senior transport economist on a preparatory mission for an EC sponsored initiative to ascertain the main transport priorities and infrastructure requirements in the main transport corridors of Central and Eastern Europe. The main objectives of this mission were to evaluate the potential contribution to recent ongoing, committed and planned transport studies and projects within these corridors, to identify any further priority transport infrastructure projects and to evaluate the requirements for training in transport planning methodology and to contribute suggestions on how the coverage and quality of transport statistics in each of the 11 PHARE countries might be improved.

1992 Review of Road Capacity Problems, Indonesia
Carried out a review of emerging capacity problem on the country's 50,000km national and provincial road network for the Directorate General of Highways and the World Bank. Potential additions to highway capacity from the planned construction of new toll roads were evaluated as were the implications of alternative traffic growth assumptions. The main potential bottlenecks were highlighted and the timing and severity of the emerging capacity problems clearly indicated.

1990/92 Integrated Road Management System, Indonesia
Leader of a team of highway planners, engineers and systems analysts completing the development of ambitious road maintenance improvement and management system for the Indonesian Directorate General of Highways. This technical assistance project represented a continuation of the development of the World Bank assisted Integrated Road Management System (IRMS) which comprised applications modules for planning, programming, design, budgeting and economic review grouped around a core highway database. Implementation and testing of the system was completed and training of central and provincial highway directorate staff was undertaken.

- 1989/90 Toll Road Programme Review, Indonesia
 Transport economist on a team which prepared a review of Indonesia's toll road program for the country's toll road agency and the World Bank. Responsibilities included assessment of previous toll road feasibility studies, review of traffic forecasts and analysis of toll road traffic potential and the economic analysis and priority ranking of potential toll road projects.
- 1988/89 Integrated Road Management System, Indonesia
 Transport economist on the first phase of a World Bank assisted project to create an integrated road management system and associated highway database for the country's 50,000km national and provincial road network. The project involved in the integration and, where necessary, development of road planning, programming, design and economic evaluation models as well as a highway database.
- 1987/88 Road Improvement Project, Indonesia
 Transport economist on an Asian Development Bank sponsored road improvement project for the Indonesian Directorate General of Highways. The work involved road network studies and the formulation of a five year road development programme for national and provincial roads. This was based on a screening of around 50,000km of roads on 26 provinces and more detailed studies of selected road links in ten provinces. The techniques developed for the prioritisation of road improvement and maintenance expenditures, using the World Bank's HDM-III model, were subsequently incorporated into an integrated road management system which was developed in stages between 1988 and 1992.
- 1987 Road Sector Maintenance Project, Indonesia
 Team leader and senior economist on a road sector maintenance project undertaken for the Indonesian Directorate General of Highways and the Asian Development Bank.
- 1985/86 Highway Betterment Project, Indonesia
 Senior economist in a transport planning unit set up under the auspices of the World Bank's Highway Betterment project in Indonesia to provide consultancy service to the Indonesian Directorate General of Highways. Responsibilities included preparation of traffic forecasts to the year 2000 for all national and provincial roads, the development of prescreening and screening methodologies for the selection of highway betterment projects and the review and updating of existing vehicle operating cost models.
- 1985 Coal Shipping Study, China
 Carried out an analysis of the international coal trade and its likely development, with particular emphasis

on its shipping and port capacity aspects. This study formed part of a prefeasibility study of a coal terminal project in China.

- 1983/84 Road Project Screening, Indonesia
Project manager on an Asian Development Bank sponsored technical assistance road project in Indonesia. The aim of the project was to select a number of high priority road betterment projects from a screening of the arterial and collector road network in Java, Sumatra and Nusa Tenggara and to undertake engineering and economic feasibility studies on those with the highest priority.
- 1983 Lobito Port Masterplan, Angola
Transport economist on a master plan study for the port of Lobito, Angola, financed by DANIDA, the Danish aid agency. Main responsibility was the preparation of port traffic forecasts under alternative assumptions about the opening of the Benguela Railway and potential developments in the southern Africa transport system.
- 1980/82 Rural Roads Improvement Programme, Philippines
Transport planner on a rural roads improvement programme financed by the World Bank, with subsequent participation by the Asian Development Bank. The programme covered 22 provinces and include the preparation of recommendations for investment plans, rural road maintenance procedures and highway organisation and administration.
- 1980 Blantyre/Mwanza Study, Malawi
Transport economist on a European Development Fund sponsored feasibility study of the improvement of the road between Blantyre and Mwanza (Mozambique border).
- 1978 Mahaweli Development Project, Sri Lanka
Transport economist on a series of feeder road studie associated with the Mahaweli Development project. The study was carried ut for the Asian Development Bank.
- 1978 Future Prospects Study, Brazil
Economist responsible for the study of the past growth and future prospects of the Brazilian economy.
- 1978 Tourism Study, Gibraltar
Economist on a short study of tourism in Gibraltar.
- 1977 Deep Sea Shipping Study, Canada
Transport economist on a study of alternative shipping development options for Canada's international deep sea trade.

- 1977 Study of Aid Flows, International
Economist responsible for a study of aid flows to the less developed countries, with particular emphasis on the potential role of OPEC aid.
- 1976 Pedestrian Bridges Study, Nepal
Project manager and senior economist on a World Bank assisted study of the feasibility of constructing hill trail bridges for pedestrians throughout the Himalayan region of Nepal.
- 1975/76 Coastal Shipping Study, Indonesia
Project leader and senior economist on a study of investment requirements and priorities in coastal shipping in Irian Jaya. The study was carried out for the United Nation's Development Programme.
- 1975 Road Feasibility Study, Ghana
Senior economist and team leader on Phase III of the Ghana Road Feasibility Study undertaken for the Ghana Ministry of Public Works and the World Bank.
- 1973/74 National Ports Master Plan Brazil
Senior transport economist on a masterplan study of all Brazil's main ports, undertaken for the Brazilian Government.
- 1973 Intermodal Shipping Study, International
Senior economist on a study of the handling costs of containers, shipper packed units and break bulk cargoes.
- 1972/73 Road Studies, Malawi
Transport economist on a study examining the economic and engineering feasibility of improving the Lilongwe-Zambian border and Lilongwe-Mchinji-Mzimba roads in central and northern Malawi. The study was undertaken for the Government of Malawi and the World Bank
- 1971 Road Studies in the Kumasi-Takoradi Corridor - Ghana
Transport economist on a study of investment priorities in the Kumasi-Takoradi transport corridor in Ghana. The study was undertaken for the United Kingdom Ministry of Overseas Development and the Ghana Government.
- 1970/71 Road Feasibility Study, Ghana
Transport economist on Phase II of the Ghana Road Feasibility Study which was carried out for the Ghana Ministry of Public Works and the UK Ministry of Overseas Development.
- 1969/70 Road Transport Study, Nigeria
Transport economist on a World Bank sponsored study of the development of the secondary road network in the northern states of Nigeria.
- 1968 Copper Market Study, International

Economist responsible for a study of the world copper market and copper pricing aspects. The study was carried out for the economic planning authorities of a copper producing country.

- 1967 Energy Requirements Study, United Kingdom
Economist on a study of the United Kingdom's total energy requirements.
- 1966 Inland Waterways Study, Nigeria
Economist on a study of inland water transport requirements in the Wari-Patani area of the Niger delta.
- 1965/66 Market Research, United Kingdom
Economist responsible for carrying out various industrial market research and commodity studies.

Languages: English (Native)
Turkish (Good)
Portuguese (Fair)
French (Limited)
German (Limited)