THE IMPACT OF POPULATION, AFFLUENCE AND TECHNOLOGY ON THE ENVIRONMENTAL DEGRADATION: EVIDENCE FROM HETEROGENEOUS INCOME PANELS

MUHAMMAD HASEEB

DOCTOR OF PHILOSOPHY

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MUHAMMAD HASEEB

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Tarikh: **14 Mei 2017**
(Date)

Nama Pelajar
(Name of Student) : **Muhammad Haseeb**

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(Name of Supervisor/Supervisors) : **Assoc. Prof. Dr. Sallahuddin Hassan**

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ABSTRACT

Efficient utilization of scarce resources is always the prime aim of every state to ensure social welfare, while maintaining clean and green environment to sustainable development. The growing threats of global warming and climate changes have called for more sensible attention of the policy makers. Therefore, this study is an attempt to empirically investigate the linkages between population, affluence, technology, and environmental degradation for selected low, lower middle, upper middle, and high-income countries using disaggregate and aggregate panel data over the period 1980-2015. After checking the stationary properties of the data, Pedroni (1999) tests of cointegration were implemented for cointegration purposes. The FMOLS was employed for parameters estimation. The results show that population, nonrenewable energy consumption, urbanization, population growth, international trade and total energy consumption are the main culprits of CO_2 emissions in all selected panels whereas renewable energy consumption is found helpful in curbing the amount of CO_2 emissions. In addition, GDP growth, FDI and financial development are found having insignificant relationship with CO_2 emissions. Finally, results of Granger causality suggest that the population size, population density and urbanization are usually granger causes of CO_2 emissions. The findings of the study suggest important policy implications. This study recommends scientific planning for urban development, developing environmental awareness among urban residents, encouraging the adoption of more fuel-efficient vehicles, increasing the entire costs of private transport as a few measures to lower the energy consumption and CO_2 emissions. Furthermore, it is advised that policymakers should regulate such policies to trigger international trade activities as international trade detracts CO_2 emissions. In this regard, exploring the alternative energy policies, such as developing energy conservation strategies, decreasing the energy intensity, increasing the energy efficiency, and increasing the utilization of cleaner energy sources can prove better strategies to handle this issue.

Keywords: Population, Affluence, Technology, CO_2 emissions, Sustainable Development

ABSTRAK

Kecekapan penggunaan daripada sumber yang terhad adalah sentiasa menjadi matlamat utama di setiap peringkat bagi memastikan kebajikan sosial, di samping mengekalkan persekitaran yang bersih dan hijau untuk pembangunan lestari. Ancaman yang semakin meningkat daripada pemanasan dan perubahan iklim global meminta perhatian yang lebih bijak dari pembuat dasar. Oleh itu, kajian ini mencuba untuk menyiasat hubungan secara empirik antara populasi, afluen, teknologi, dan degradasi alam sekitar bagi negara-negara berpendapatan rendah, lebih rendah, menengah atas, dan tinggi terpilih dengan menggunakan data panel disagregat dan agregat sepanjang tempoh 1980-2015. Selepas memeriksa ciri-ciri kepegunan data, ujian kointegrasi Pedroni (1999) dilaksanakan untuk tujuan kointegrasi. FMOLS digunakan untuk penganggaran parameter. Keputusan menunjukkan bahawa populasi, penggunaan tenaga yang tidak dapat diperbaharui, perbandaran, pertumbuhan penduduk, perdagangan antarabangsa dan jumlah penggunaan tenaga merupakan penyebab utama pelepasan CO_2 dalam semua panel yang terpilih manakala penggunaan tenaga yang dapat diperbaharui didapati membantu dalam membendung jumlah pelepasan CO_2. Di samping itu, pertumbuhan KDNK, FDI dan kemajuan kewangan didapati mempunyai hubungan signifikan dengan pelepasan CO_2. Akhirnya, keputusan daripada hubungan sebab dan akibat Granger mencadangkan bahawa saiz penduduk, kepadatan penduduk dan pembandaran biasanya penyebab pelepasan CO_2. Dapatan kajian menunjukkan implikasi dasar yang penting. Kajian ini mencadangkan perancangan saintifik untuk pembangunan bandar, membangunkan kesedaran alam sekitar dalam kalangan penduduk bandar, menggalakkan penggunaan kenderaan bahan api yang lebih cekap, meningkatkan keseluruhan kos pengangkutan swasta sebagai ukuran untuk mengurangkan penggunaan tenaga dan pelepasan CO_2. Selanjutnya, pembuat dasar dinasihatkan melaksanakan dasar-dasar untuk mencetuskan aktiviti perdagangan antarabangsa sebagai perdagangan antarabangsa yang mengurangkan pelepasan CO_2. Dalam hal ini, meneroka dasar tenaga alternatif, seperti membangunkan strategi pemuliharaan energi, mengurangkan intensiti tenaga, meningkatkan kecekapan tenaga, dan meningkatkan penggunaan sumber tenaga yang lebih bersih membuktikan strategi yang lebih baik untuk menangani isu ini.

Kata Kunci: Populasi, Afluen, Teknologi, Pelepasan CO_2, Pembangunan Lestari

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LIST OF ABBREVIATIONS

AIC	Akaike's Information Criterion
ARDL	Autoregressive Distributed Lag
ASEAN	Association of South East Asian Nations
BRICS	Brazil, Russia, India, China and South Africa
Btu	Quadrillion British Thermal Unites
CCR	Canonical Cointegration Regression
CO_2	Carbon Dioxide
DOLS	Dynamic Ordinary Least Square
ECT	Error Correction Term
EKC	Environmental Kuznets Curve
EU	European Union
FDI	Foreign Direct Investment
FEM	Fixed Effects Model
FMOLS	Fully Modified Ordinary Least Square
GDP	Gross Domestic Product
GHGs	Greenhouse Gases
GMCI	Global Manufacturing Competitiveness Index (GMCI)
GMM	Generalized Method of Moments
GNP	Gross Domestic Product
IAA	Innovative Accounting Approach
IEA	International Energy Ageney
IPCC	Intergovernmental Panel on Climate Change
JML	Johansen Maximum Likelihood
MENA	Middle East and North Africa
MNCs	Multinational Companies
OCED	Organization for Economic Co-operation and Development
PHH	Pollution Heaven Hypothesis
PLS	Partial Least Square
R&D	Research and Development
REM	Random Effects Model
SO_2	Sulfur dioxide
STRIPAT	Stochastic Impacts by Regression Population, Affluence, and Technology
TY	Toda Yamamoto
UAE	United Arab Emirates
UN	United Nation
US	United States
VECM	Vector Error Correction Model
WEF	World Economic Forum
2SLS	Two-stage Least Square
3SLS	Three-Stage Least Square

CHAPTER 1

INTRODUCTION

Chapter 1 begins with the introduction and background of the study in Section 1.1. The problem of the study is stated in Section 1.2. The research questions and objectives are provided in Section 1.3 and Section 1.4, respectively. The significance of the study is discussed in Section 1.5 followed by the scope of the study under Section 1.6. The structure of the study is presented in Section 1.7. Finally, Section 1.8 provides the conclusion of the chapter.

1.1 Background of the Study

The increasing global warming threatens, and climate changes have called for more attention and discussion of global environmental issues. An increase in air and ocean temperatures leads to melting of snow and rising of average sea level are unambiguous evidences of global warming. Intergovernmental panel on climate change (IPCC) has predicted that by the year 2100, there would be a possible increase of 1.1^0C to 6.4^0C in global temperature and a rise of 16.5cm to 53.8cm in sea level (IPCC, 2013).

In this context, it will not be an exaggeration to mention that Greenhouse Gases (GHGs) emissions is the main cause of global warming and GHGs result primary from the combustion of fossil fuels. The fossil fuels come from the non-renewable sources like oil, coal and gas and contribute mainly in the CO_2 emissions. The world CO_2 emissions show

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References

Abosedra, S., Dah, A., & Ghosh, S. (2009). Electricity consumption and economic growth, the case of Lebanon. *Applied Energy, 86*(4), 429-432.

Adnan, N. (2011). *Measurement of financial development: A fresh approach.* Paper presented at the 8th International Conference on Islamic Economics and Finance. University of Surrey, United Kingdom and Comsats Institute of Information Technology, Islamabad, Pakistan.

Agan, Y., Acar, M. F., & Borodin, A. (2013). Drivers of environmental processes and their impact on performance: a study of Turkish SMEs. *Journal of Cleaner Production, 51*, 23-33.

Ahamad, M. G., & Islam, A. N. (2011). Electricity consumption and economic growth nexus in Bangladesh: Revisited evidences. *Energy Policy, 39*(10), 6145-6150.

Akarca, A. T., & Long II, T. V. (1979). Energy and employment: a time-series analysis of the causal relationship. *Resources and Energy, 2*(2), 151-162.

Akarca, A. T., & Long, T. V. (1980). Relationship between energy and GNP: a reexamination. *J. Energy Dev.; (United States), 5*(2).

Akbostancı, E., Tunç, G. İ., & Türüt-Aşık, S. (2011). CO 2 emissions of Turkish manufacturing industry: a decomposition analysis. *Applied Energy, 88*(6), 2273-2278.

Al-Iriani, M. A. (2006). Energy–GDP relationship revisited: an example from GCC countries using panel causality. *Energy Policy, 34*(17), 3342-3350.

Al-Mulali, U. (2011). Oil consumption, CO2 emission and economic growth in MENA countries. *Energy, 36*(10), 6165-6171.

Al-mulali, U. (2012). Factors affecting CO 2 emission in the Middle East: a panel data analysis. *Energy, 44*(1), 564-569.

Al-mulali, U., Binti Che Sab, C. N., & Fereidouni, H. G. (2012). Exploring the bi-directional long run relationship between urbanization, energy consumption, and carbon dioxide emission. *Energy, 46*(1), 156-167.

Al-mulali, U., & Che Sab, C. N. (2012). The impact of energy consumption and CO2 emission on the economic growth and financial development in the Sub Saharan African countries. *Energy, 39*(1), 180-186.

Al-mulali, U., Fereidouni, H. G., & Lee, J. Y. (2014). Electricity consumption from renewable and non-renewable sources and economic growth: Evidence from Latin American countries. *Renewable and Sustainable Energy Reviews, 30*, 290-298.

Al-mulali, U., Fereidouni, H. G., Lee, J. Y. M., & Sab, C. N. B. C. (2013). Exploring the relationship between urbanization, energy consumption, and CO2 emission in MENA countries. *Renewable and Sustainable Energy Reviews, 23*(0), 107-112.

Al-mulali, U., Lee, J. Y. M., Hakim Mohammed, A., & Sheau-Ting, L. (2013). Examining the link between energy consumption, carbon dioxide emission, and economic growth in Latin America and the Caribbean. *Renewable and Sustainable Energy Reviews, 26*(0), 42-48.

Al-mulali, U., & Sab, C. N. B. C. (2012a). The impact of energy consumption and CO2 emission on the economic and financial development in 19 selected countries. *Renewable and Sustainable Energy Reviews, 16*(7), 4365-4369.

Al-Mulali, U., & Sab, C. N. B. C. (2012b). The impact of energy consumption and CO2 emission on the economic growth and financial development in the Sub Saharan African countries. *Energy, 39*(1), 180-186.

Al-Mulali, U., & Sab, C. N. B. C. (2012c). The impact of energy consumption and CO 2 emission on the economic growth and financial development in the Sub Saharan African countries. *Energy, 39*(1), 180-186.

Al-mulali, U., & Sheau-Ting, L. (2014). Econometric analysis of trade, exports, imports, energy consumption and CO2 emission in six regions. *Renewable and Sustainable Energy Reviews, 33*, 484-498.

Al-Mulali, U., Tang, C. F., & Ozturk, I. (2015). Does financial development reduce environmental degradation? Evidence from a panel study of 129 countries. *Environmental Science and Pollution Research, 22*(19), 14891-14900.

Alam, M. J., Begum, I. A., Buysse, J., Rahman, S., & Van Huylenbroeck, G. (2011). Dynamic modeling of causal relationship between energy consumption, CO2 emissions and economic growth in India. *Renewable and Sustainable Energy Reviews, 15*(6), 3243-3251.

Alam, M. J., Begum, I. A., Buysse, J., & Van Huylenbroeck, G. (2012). Energy consumption, carbon emissions and economic growth nexus in Bangladesh: Cointegration and dynamic causality analysis. *Energy Policy, 45*, 217-225.

Alam, M. M., Murad, M. W., Noman, A. H. M., & Ozturk, I. (2016). Relationships among carbon emissions, economic growth, energy consumption and population growth: Testing Environmental Kuznets Curve hypothesis for Brazil, China, India and Indonesia. *Ecological Indicators, 70*, 466-479.

Alam, S., Fatima, A., & Butt, M. S. (2007). Sustainable development in Pakistan in the context of energy consumption demand and environmental degradation. *Journal of Asian Economics, 18*(5), 825-837.

Albornoz, F., Cole, M. A., Elliott, R. J., & Ercolani, M. G. (2009). In search of environmental spillovers. *The World Economy, 32*(1), 136-163.

Alkhathlan, K., Alam, M., & Javid, M. (2012a). Carbon dioxide emissions, energy consumption and economic growth in Saudi Arabia: A multivariate cointegration analysis. *British Journal of Economics, Management and Trade, 2*(4), 327-339.

Alkhathlan, K., Alam, M. Q., & Javid, M. (2012b). Carbon Dioxide Emissions, Energy Consumption and Economic Growth in Saudi Arabia: A Multivariate Cointegration Analysis. *British Journal of Economics, Management & Trade, 2*(4), 327-339.

Alshehry, A. S., & Belloumi, M. (2015). Energy consumption, carbon dioxide emissions and economic growth: The case of Saudi Arabia. *Renewable and Sustainable Energy Reviews, 41*, 237-247.

Ang, J. B. (2007a). CO2 emissions, energy consumption, and output in France. *Energy Policy, 35*(10), 4772-4778.

Ang, J. B. (2007b). CO 2 emissions, energy consumption, and output in France. *Energy Policy, 35*(10), 4772-4778.

Ang, J. B. (2008). Determinants of foreign direct investment in Malaysia. *Journal of policy modeling, 30*(1), 185-189.

Ang, J. B. (2008). Economic development, pollutant emissions and energy consumption in Malaysia. *Journal of Policy Modeling, 30*(2), 271-278.

Ang, J. B. (2009). CO 2 emissions, research and technology transfer in China. *Ecological Economics, 68*(10), 2658-2665.

Antweiler, W., Copeland, B. R., & Taylor, M. S. (1998). Is free trade good for the environment? : National bureau of economic research.

Apergis, N., & Payne, J. E. (2009a). CO2 emissions, energy usage, and output in Central America. *Energy Policy, 37*(8), 3282-3286.

Apergis, N., & Payne, J. E. (2009b). CO 2 emissions, energy usage, and output in Central America. *Energy Policy, 37*(8), 3282-3286.

Apergis, N., & Payne, J. E. (2010). The emissions, energy consumption, and growth nexus: Evidence from the commonwealth of independent states. *Energy Policy, 38*(1), 650-655.

Apergis, N., & Payne, J. E. (2010). Renewable energy consumption and growth in Eurasia. *Energy economics, 32*(6), 1392-1397.

Apergis, N., & Payne, J. E. (2012). Renewable and non-renewable energy consumption-growth nexus: Evidence from a panel error correction model. *Energy Economics, 34*(3), 733-738.

Apergis, N., Payne, J. E., Menyah, K., & Wolde-Rufael, Y. (2010). On the causal dynamics between emissions, nuclear energy, renewable energy, and economic growth. *Ecological Economics, 69*(11), 2255-2260.

Arouri, M. E. H., Ben Youssef, A., M'Henni, H., & Rault, C. (2012). Energy consumption, economic growth and CO2 emissions in Middle East and North African countries. *Energy Policy, 45*(0), 342-349.

Arrow, K. J. (1962). The economic implications of learning by doing. *The Review of Economic Studies*, 155-173

Asghar, Z. (2008). Energy-GDP relationship: a causal analysis for the five countries of South Asia.

Asghari, M. (2013). Does FDI promote MENA region's environment quality? Pollution halo or pollution haven hypothesis. *International Journal of Scientific Research in Environmental Sciences (IJSRES), 1*(6), 92-100.

Atici, C. (2012). Carbon emissions, trade liberalization, and the Japan–ASEAN interaction: A group-wise examination. *Journal of the Japanese and International Economies, 26*(1), 167-178.

Azlina, A. A., & Mustapha, N. H. N. (2012). Energy, Economic Growth and Pollutant Emissions Nexus: The Case of Malaysia. *Procedia - Social and Behavioral Sciences, 65*(0), 1-7.

Barbier, E. B., & Hultberg, P. T. (2007). Economic integration, environmental harmonization and firm relocation. *Environment and Development Economics, 12*(03), 379-401.

Beck, T., & Levine, R. (1999). *A new database on financial development and structure* (Vol. 2146): World Bank Publications.

Begum, R. A., Sohag, K., Abdullah, S. M. S., & Jaafar, M. (2015a). CO2 emissions, energy consumption, economic and population growth in Malaysia. *Renewable and Sustainable Energy Reviews, 41*(0), 594-601.

Begum, R. A., Sohag, K., Abdullah, S. M. S., & Jaafar, M. (2015b). CO 2 emissions, energy consumption, economic and population growth in Malaysia. *Renewable and Sustainable Energy Reviews, 41*, 594-601.

Bélaïd, F., & Abderrahmani, F. (2013). Electricity consumption and economic growth in Algeria: A multivariate causality analysis in the presence of structural change. *Energy Policy, 55*(0), 286-295.

Bello, A. K., & Abimbola, O. M. (2010). Does the level of economic growth influence environmental quality in Nigeria: A test of environmental Kuznets curve (EKC) hypothesis. *Pakistan Journal of Social Sciences, 7*(4), 325-329.

Ben Aïssa, M. S., Ben Jebli, M., & Ben Youssef, S. (2014). Output, renewable energy consumption and trade in Africa. *Energy Policy, 66*(0), 11-18.

Benhelal, E., Zahedi, G., Shamsaei, E., & Bahadori, A. (2013). Global strategies and potentials to curb CO 2 emissions in cement industry. *Journal of Cleaner Production, 51*, 142-161.

Bidsall, N. (1992). Another look at population and global warming. Population, health and nutrition policy research. Working Paper, WPS 1020. World Bank, Washington DC.

Bilgili, F. (2012). The impact of biomass consumption on CO2 emissions: cointegration analyses with regime shifts. *Renewable and Sustainable Energy Reviews, 16*(7), 5349-5354.

Birdsall, N., & Wheeler, D. (1993). Trade policy and industrial pollution in Latin America: where are the pollution havens? *The Journal of Environment & Development, 2*(1), 137-149.

Blanco, L., Gonzalez, F., & Ruiz, I. (2013). The impact of FDI on CO2 emissions in Latin America. *Oxford Development Studies, 41*(1), 104-121.

Bloch, H., Rafiq, S., & Salim, R. (2012). Coal consumption, CO2 emission and economic growth in China: Empirical evidence and policy responses. *Energy Economics, 34*(2), 518-528.

Bloch, H., Rafiq, S., & Salim, R. (2015). Economic growth with coal, oil and renewable energy consumption in China: Prospects for fuel substitution. *Economic Modelling, 44*, 104-115.

Blomström, M., & Kokko, A. (1998). Multinational corporations and spillovers. *Journal of Economic surveys, 12*(3), 247-277.

Bölük, G., & Mert, M. (2014). Fossil & renewable energy consumption, GHGs (greenhouse gases) and economic growth: Evidence from a panel of EU (European Union) countries. *Energy, 74*, 439-446.

Boserup, E. (1965a). The condition of agricultural growth: *The Economics of Agrarian Change under Population Pressure. Allan and Urwin, London.*

Boserup, E. (1965b). The Conditions ofAgricultural Growth. *TheEconomics of Agrarian Changeunder Population Pressure. Chi-cago: AldineBoserupThe Conditions of Agricultural Growth. The Economics of Agrarian Change under Population Pressure1965.*

Boserup, E. (1981). Population and technological change: A study of long-term trends.

Boutabba, M. A. (2014). The impact of financial development, income, energy and trade on carbon emissions: Evidence from the Indian economy. *Economic Modelling, 40*, 33-41.

Canas, A., Ferrao, P., & Conceicao, P. (2003). A new environmental Kuznets curve? Relationship between direct material input and income per capita: evidence from industrialised countries. *Ecological Economics, 46*(2), 217-229.

Chandran Govindaraju, V. G. R., & Tang, C. F. (2013). The dynamic links between CO2 emissions, economic growth and coal consumption in China and India. *Applied Energy, 104*(0), 310-318.

Chandran, V., & Tang, C. F. (2013). The impacts of transport energy consumption, foreign direct investment and income on CO2 emissions in ASEAN-5 economies. *Renewable and Sustainable Energy Reviews, 24*, 445-453.

Chang, C.-C. (2010). A multivariate causality test of carbon dioxide emissions, energy consumption and economic growth in China. *Applied Energy, 87*(11), 3533-3537.

Chebbi, H. E. (2010). Long and short–run linkages between economic growth, energy consumption and CO 2 emissions in Tunisia. *Middle East Development Journal, 2*(01), 139-158.

Chen, C., Gong, H., & Paaswell, R. (2008). Role of the built environment on mode choice decisions: additional evidence on the impact of density. *Transportation, 35*(3), 285-299.

Chertow, M. R. (2000). The IPAT equation and its variants. *Journal of industrial ecology, 4*(4), 13-29.

Chikaraishi, M., Fujiwara, A., Kaneko, S., Poumanyvong, P., Komatsu, S., & Kalugin, A. (2015). The moderating effects of urbanization on carbon dioxide emissions: A latent class modeling approach. *Technological Forecasting and Social Change, 90*, 302-317.

Claessens, S., & Feijen, E. (2007). *Financial sector development and the millennium development goals*: World Bank Publications.

Clement, K., Vaisse, C., Lahlou, N., Cabrol, S., Pelloux, V., Cassuto, D., . . . Lacorte, J.-M. (1998). A mutation in the human leptin receptor gene causes obesity and pituitary dysfunction. *Nature, 392*(6674), 398.

Cole, M. A. (2006). Does trade liberalization increase national energy use? *Economics Letters, 92*(1), 108-112.

Cole, M. A., & Elliott, R. J. (2005). FDI and the capital intensity of "dirty" sectors: a missing piece of the pollution haven puzzle. *Review of Development Economics, 9*(4), 530-548.

Cole, M. A., Elliott, R. J., & Fredriksson, P. G. (2006). Endogenous Pollution Havens: Does FDI Influence Environmental Regulations?*. *The Scandinavian Journal of Economics, 108*(1), 157-178.

Cole, M. A., & Neumayer, E. (2004). Examining the impact of demographic factors on air pollution. *Population and Environment, 26*(1), 5-21.

Copeland, B. R., & Taylor, M. S. (2001). International trade and the environment: a framework for analysis: National bureau of economic research.

Copeland, B. R., & Taylor, M. S. (2003). Trade, growth and the environment: National Bureau of Economic Research.

Copeland, B. R., & Taylor, M. S. (2005). Free trade and global warming: a trade theory view of the Kyoto protocol. *Journal of Environmental Economics and Management, 49*(2), 205-234.

Cowan, W. N., Chang, T., Inglesi-Lotz, R., & Gupta, R. (2014). The nexus of electricity consumption, economic growth and CO2 emissions in the BRICS countries. *Energy Policy, 66*, 359-368.

Cowan, W. N., Chang, T., Inglesi-Lotz, R., & Gupta, R. (2014). The nexus of electricity consumption, economic growth and CO 2 emissions in the BRICS countries. *Energy Policy, 66*, 359-368.

Cropper, M., & Griffiths, C. (1994). The interaction of population growth and environmental quality. *The American economic review*, 250-254.

Dasgupta, P. (2000). Population and resources: an exploration of reproductive and environmental externalities. *Population and development Review, 26*(4), 643-689.

Dasgupta, S., Laplante, B., & Mamingi, N. (2001). Pollution and capital markets in developing countries. *Journal of Environmental Economics and Management, 42*(3), 310-335.

Dasgupta, S., & Sengupta, P. (1995). Ultrametamorphism in Precambrian granulite terranes: Evidence from Mg-Al granulites and calc-silicate granulites of the Eastern Ghats, India. *Geological Journal, 30*(3-4), 307-318.

Davis, S. J., & Caldeira, K. (2010). Consumption-based accounting of CO2 emissions. *Proceedings of the National Academy of Sciences, 107*(12), 5687-5692.

Dean, J. M., Lovely, M. E., & Wang, H. (2009). Are foreign investors attracted to weak environmental regulations? Evaluating the evidence from China. *Journal of development economics, 90*(1), 1-13.

Dhakal, S. (2010). GHG emissions from urbanization and opportunities for urban carbon mitigation. *Current Opinion in Environmental Sustainability, 2*(4), 277-283.

Diesendorf, M. (2002). I= PAT or I= PBAT? *Ecological Economics, 42*(1-2), 3.

Dietz, T., & Rosa, E. A. (1994). Rethinking the environmental impacts of population, affluence and technology. *Human Ecology Review, 1*, 277-300.

Dietz, T., & Rosa, E. A. (1997). Effects of population and affluence on CO2 emissions. *Proceedings of the National Academy of Sciences, 94*(1), 175-179.

Dijkgraaf, E., & Vollebergh, H. R. (2005). A Test for Parameter Homogeneity in CO2Panel EKC Estimations. *Environmental and Resource Economics, 32*(2), 229-239.

Dincer, I., & Rosen, M. (2002). *Thermal energy storage: systems and applications*: John Wiley & Sons.

Dogan, E., & Turkekul, B. (2016). CO2 emissions, real output, energy consumption, trade, urbanization and financial development: testing the EKC hypothesis for the USA. *Environmental Science and Pollution Research, 23*(2), 1203-1213.

Doytch, N., & Uctum, M. (2011). Globalization and the Environmental Spillovers of sectoral FDI. *Unpublished manuscript*.

Du, L., Wei, C., & Cai, S. (2012). Economic development and carbon dioxide emissions in China: Provincial panel data analysis. *China Economic Review, 23*(2), 371-384.

Duffour, G. (2012). World energy use in 2011: Slowdown in global energy demand.

Eddine Chebbi, H. (2010). Agriculture and economic growth in Tunisia. *China Agricultural Economic Review, 2*(1), 63-78.

Ehrhardt-Martinez, K., Crenshaw, E. M., & Jenkins, J. C. (2002). Deforestation and the Environmental Kuznets Curve: A Cross-National Investigation of Intervening Mechanisms. *Social Science Quarterly, 83*(1), 226-243.

Ehrlich, P. R., & Holdren, J. P. (1972). A bulletin dialogue on 'The closing circle': critique: one-dimensional ecology. *Bulletin of the Atomic Scientists, 28*(5), 16-27.

Ekins, P. (1993). 'Limits to growth'and 'sustainable development': grappling with ecological realities. *Ecological Economics, 8*(3), 269-288.

Estrada, G. B., Park, D., & Ramayandi, A. (2010). Financial development and economic growth in developing Asia. *Asian Development Bank Economics Working Paper*(233).

Faiz-Ur-Rehman, Ali, A., & Nasir, M. (2007). Corruption, trade openness, and environmental quality: A panel data analysis of selected South Asian countries. *The Pakistan Development Review*, 673-688.

Fan, Y., Liu, L.-C., Wu, G., & Wei, Y.-M. (2006). Analyzing impact factors of CO2 emissions using the STIRPAT model. *Environmental Impact Assessment Review, 26*(4), 377-395.

Farhani, S., Chaibi, A., & Rault, C. (2014). CO 2 emissions, output, energy consumption, and trade in Tunisia. *Economic Modelling, 38*, 426-434.

Farhani, S., & Shahbaz, M. (2014). What role of renewable and non-renewable electricity consumption and output is needed to initially mitigate CO2 emissions in MENA region? *Renewable and Sustainable Energy Reviews, 40*, 80-90.

Fei, L., Dong, S., Xue, L., Liang, Q., & Yang, W. (2011). Energy consumption-economic growth relationship and carbon dioxide emissions in China. *Energy Policy, 39*(2), 568-574.

Feng, T., Sun, L., & Zhang, Y. (2009). The relationship between energy consumption structure, economic structure and energy intensity in China. *Energy Policy, 37*(12), 5475-5483.

Feridun, M., Ayadi, F. S., & Balouga, J. (2006). Impact of Trade Liberalization on the Environment in Developing Countries The Case of Nigeria. *Journal of developing societies, 22*(1), 39-56.

Ferrantino, M. J. (1997). International trade, environmental quality and public policy. *The World Economy, 20*(1), 43-72.

Fodha, M., & Zaghdoud, O. (2010). Economic growth and pollutant emissions in Tunisia: an empirical analysis of the environmental Kuznets curve. *Energy Policy, 38*(2), 1150-1156.

Fong, W.-K., Matsumoto, H., Lun, Y.-F., & Kimura, R. (2007). Influences of indirect lifestyle aspects and climate on household energy consumption. *Journal of Asian Architecture and Building Engineering, 6*(2), 395-402.

Ford Runge, C., & Davis, G. (1995). Freer Trade, Protected Environment: balancing trade liberalization and environmental interests. *Resources Policy, 21*(1), 73.

Frankel, J., & Rose, A. (2002a). An estimate of the effect of common currencies on trade and income. *The Quarterly Journal of Economics, 117*(2), 437-466.

Frankel, J., & Rose, A. (2002b). An estimate of the effect of common currencies on trade and income. *Quarterly Journal of Economics*, 437-466.

Frankel, J. A., & Romer, D. (1999). Does trade cause growth? *American economic review*, 379-399.

Frankel, J. A., & Romer, D. H. (1999). Does trade cause growth? *American economic review, 89*(3), 379-399.

Galeotti, M., & Lanza, A. (1999). Richer and cleaner? A study on carbon dioxide emissions in developing countries. *Energy Policy, 27*(10), 565-573.

Galeotti, M., Lanza, A., & Pauli, F. (2006). Reassessing the environmental Kuznets curve for CO 2 emissions: a robustness exercise. *Ecological Economics, 57*(1), 152-163.

Gholipour Fereidouni, H. (2013). Foreign direct investments in real estate sector and CO2 emission. *Management of Environmental Quality: An International Journal, 24*(4), 463-476.

Gholipour Fereidouni, H., & Ariffin Masron, T. (2013). Real estate market factors and foreign real estate investment. *Journal of Economic Studies, 40*(4), 448-468.

Ghosh, S. (2009). Import demand of crude oil and economic growth: evidence from India. *Energy Policy, 37*(2), 699-702.

Ghosh, S., & Kanjilal, K. (2014). Long-term equilibrium relationship between urbanization, energy consumption and economic activity: Empirical evidence from India. *Energy, 66*(0), 324-331.

Goldsmith, R. W. (1959). Financial structure and development as a subject for international comparative study *The Comparative Study of Economic Growth and Structure* (pp. 114-123): NBER.

Görg, H., & Strobl, E. (2005). Spillovers from Foreign Firms through Worker Mobility: An Empirical Investigation*. *The Scandinavian Journal of Economics, 107*(4), 693-709.

Gregg, J. S., Andres, R. J., & Marland, G. (2008). China: Emissions pattern of the world leader in CO2 emissions from fossil fuel consumption and cement production. *Geophysical Research Letters, 35*(8).

Grether, J.-M., Mathys, N. A., & de Melo, J. (2007). Is trade bad for the environment? Decomposing world-wide SO2 emissions 1990-2000: Discussion Paper, University of Geneva.

Griffith, G. T. (1967). *Population problems of the age of Malthus*: Psychology Press.

Grossman, G. M., & Krueger, A. B. (1991). Environmental impacts of a North American free trade agreement: National Bureau of Economic Research.

Grossman, G. M., & Krueger, A. B. (1994). Economic growth and the environment: National Bureau of Economic Research.

Gurney, K. R., Mendoza, D. L., Zhou, Y., Fischer, M. L., Miller, C. C., Geethakumar, S., & de la Rue du Can, S. (2009). High resolution fossil fuel combustion CO2 emission fluxes for the United States. *Environmental science & technology, 43*(14), 5535-5541.

Halicioglu, F. (2009a). An econometric study of CO2 emissions, energy consumption, income and foreign trade in Turkey. *Energy Policy, 37*(3), 1156-1164.

Halicioglu, F. (2009b). An econometric study of CO 2 emissions, energy consumption, income and foreign trade in Turkey. *Energy Policy, 37*(3), 1156-1164.

Halkos, G. E., & Tzeremes, N. G. (2014). Measuring the effect of Kyoto protocol agreement on countries' environmental efficiency in CO2 emissions: an application of conditional full frontiers. *Journal of Productivity Analysis, 41*(3), 367-382.

Hang, G., & Yuan-sheng, J. (2011). The Relationship between CO2 Emissions, Economic Scale, Technology, Income and Population in China. *Procedia Environmental Sciences, 11, Part C*(0), 1183-1188.

Hao, Y., & Liu, Y.-M. (2015). Has the development of FDI and foreign trade contributed to China's CO2 emissions? An empirical study with provincial panel data. *Natural Hazards, 76*(2), 1079-1091.

Hasanbeigi, A., Morrow, W., Sathaye, J., Masanet, E., & Xu, T. (2013). A bottom-up model to estimate the energy efficiency improvement and CO 2 emission reduction potentials in the Chinese iron and steel industry. *Energy, 50*, 315-325.

Hassaballa, H. (2013). Environment and foreign direct investment: policy implications for developing countries. *Journal of Emerging Issues in Economics, Finance and Banking*.

He, J. (2006). Pollution haven hypothesis and environmental impacts of foreign direct investment: The case of industrial emission of sulfur dioxide (SO2) in Chinese provinces. *Ecological Economics, 60*(1), 228-245.

Hedenus, F., Wirsenius, S., & Johansson, D. J. (2014). The importance of reduced meat and dairy consumption for meeting stringent climate change targets. *Climatic change, 124*(1-2), 79-91.

Heede, R. (2014). Tracing anthropogenic carbon dioxide and methane emissions to fossil fuel and cement producers, 1854–2010. *Climatic Change, 122*(1-2), 229-241.

Heidari, H., Turan Katircioğlu, S., & Saeidpour, L. (2015). Economic growth, CO2 emissions, and energy consumption in the five ASEAN countries. *International Journal of Electrical Power & Energy Systems, 64*(0), 785-791.

Helpman, E. (1998). Explaining the structure of foreign trade: Where do we stand? *Weltwirtschaftliches Archiv, 134*(4), 573-589.

Heres-Del-Valle, D., & Niemeier, D. (2011). CO 2 emissions: are land-use changes enough for California to reduce VMT? Specification of a two-part model with instrumental variables. *Transportation Research Part B: Methodological, 45*(1), 150-161.

Hettige, H., Lucas, R. E., & Wheeler, D. (1992). The toxic intensity of industrial production: Global patterns, trends, and trade policy. *The American economic review*, 478-481.

Hoffmann, J. (2002). The cost of international transport, and integration and competitiveness in Latin America and the Caribbean. *FAL bulletin, 191*.

Hossain, M. S. (2011a). Panel estimation for CO2 emissions, energy consumption, economic growth, trade openness and urbanization of newly industrialized countries. *Energy Policy, 39*(11), 6991-6999.

Hossain, M. S. (2011b). Panel estimation for CO 2 emissions, energy consumption, economic growth, trade openness and urbanization of newly industrialized countries. *Energy Policy, 39*(11), 6991-6999.

Hu, C.-q., Chen, L.-y., Zhang, C.-x., Qi, Y.-h., & Yin, R.-y. (2006). Emission mitigation of CO 2 in steel industry: current status and future scenarios. *Journal of Iron and Steel Research, International, 13*(6), 38-52.

Hu, J.-L., & Lin, C.-H. (2008). Disaggregated energy consumption and GDP in Taiwan: a threshold co-integration analysis. *Energy economics, 30*(5), 2342-2358.

Huang, B.-N., Hwang, M.-J., & Yang, C. W. (2008). Causal relationship between energy consumption and GDP growth revisited: a dynamic panel data approach. *Ecological Economics, 67*(1), 41-54.

Hutchison, R. (2009). *Encyclopedia of urban studies*: Sage Publications.

Hwang, J.-H., & Yoo, S.-H. (2014). Energy consumption, CO2 emissions, and economic growth: evidence from Indonesia. *Quality & Quantity, 48*(1), 63-73.

Im, K. S., Pesaran, M. H., & Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of econometrics, 115*(1), 53-74.

Islam, F., Shahbaz, M., Ahmed, A. U., & Alam, M. M. (2013). Financial development and energy consumption nexus in Malaysia: a multivariate time series analysis. *Economic Modelling, 30*, 435-441.

Jafari, Y., Othman, J., & Nor, A. H. S. M. (2012). Energy consumption, economic growth and environmental pollutants in Indonesia. *Journal of Policy Modeling, 34*(6), 879-889.

Jalil, A., & Feridun, M. (2011). The impact of growth, energy and financial development on the environment in China: a cointegration analysis. *Energy economics, 33*(2), 284-291.

Jalil, A., & Mahmud, S. F. (2009). Environment Kuznets curve for CO 2 emissions: a cointegration analysis for China. *Energy Policy, 37*(12), 5167-5172.

Javorcik, B. S. (2004). Does foreign direct investment increase the productivity of domestic firms? In search of spillovers through backward linkages. *American economic review*, 605-627.

Jayanthakumaran, K., Verma, R., & Liu, Y. (2012). CO2 emissions, energy consumption, trade and income: A comparative analysis of China and India. *Energy Policy, 42*(0), 450-460.

Joo, Y.-J., Kim, C. S., & Yoo, S.-H. (2014). Energy Consumption, Co2 Emission, and Economic Growth: Evidence from Chile. *International Journal of Green Energy, 12*(5), 543-550.

Jorgenson, A. K., & Clark, B. (2010). Assessing the temporal stability of the population/environment relationship in comparative perspective: a cross-national panel study of carbon dioxide emissions, 1960–2005. *Population and Environment, 32*(1), 27-41.

Kanjilal, K., & Ghosh, S. (2013). Environmental Kuznet's curve for India: Evidence from tests for cointegration with unknown structuralbreaks. *Energy Policy, 56*, 509-515.

Kao, C. (1999). Spurious regression and residual-based tests for cointegration in panel data. *Journal of econometrics, 90*(1), 1-44.

Kasman, A., & Duman, Y. S. (2015). CO2 emissions, economic growth, energy consumption, trade and urbanization in new EU member and candidate countries: a panel data analysis. *Economic Modelling, 44*, 97-103.

Kearsley, A., & Riddel, M. (2010). A further inquiry into the Pollution Haven Hypothesis and the Environmental Kuznets Curve. *Ecological Economics, 69*(4), 905-919.

Keho, Y. (2015). Is Foreign Direct Investment Good or Bad for the Environment? Times Series Evidence from ECOWAS Countries. *Economics Bulletin, 35*(3), 1916-1927.

Kivyiro, P., & Arminen, H. (2014). Carbon dioxide emissions, energy consumption, economic growth, and foreign direct investment: Causality analysis for Sub-Saharan Africa. *Energy, 74*, 595-606.

Klaassen, G. A., & Opschoor, J. B. (1991). Economics of sustainability or the sustainability of economics: different paradigms. *Ecological Economics, 4*(2), 93-115.

Knapp, T., & Mookerjee, R. (1996). Population growth and global CO2 emissions: A secular perspective. *Energy Policy, 24*(1), 31-37.

Kohler, M. (2013a). CO2 emissions, energy consumption, income and foreign trade: A South African perspective. *Energy Policy, 63*(0), 1042-1050.

Kohler, M. (2013b). CO 2 emissions, energy consumption, income and foreign trade: a South African perspective. *Energy Policy, 63*, 1042-1050.

Köhler, W. (2013). *The mentality of apes*: Read Books Ltd.

Komal, R., & Abbas, F. (2015). Linking financial development, economic growth and energy consumption in Pakistan. *Renewable and Sustainable Energy Reviews, 44*, 211-220.

Kraft, J., & Kraft, A. (1978). Relationship between energy and GNP. *J. Energy Dev.;(United States), 3*(2).

Kumbaroğlu, G., Karali, N., & Arıkan, Y. (2008). CO 2, GDP and RET: an aggregate economic equilibrium analysis for Turkey. *Energy Policy, 36*(7), 2694-2708.

Kuznets, S. (1955a). Economic growth and income inequality. *The American economic review*, 1-28.

Kuznets, S. (1955b). Economic growth and income inequality. *The American Economic Review, 45*(1), 1-28.

Lantz, V., & Feng, Q. (2006). Assessing income, population, and technology impacts on CO2 emissions in Canada: Where's the EKC? *Ecological Economics, 57*(2), 229-238.

Lau, L.-S., Choong, C.-K., & Eng, Y.-K. (2014). Investigation of the environmental Kuznets curve for carbon emissions in Malaysia: do foreign direct investment and trade matter? *Energy Policy, 68*, 490-497.

Lean, H. H., & Smyth, R. (2010). CO 2 emissions, electricity consumption and output in ASEAN. *Applied Energy, 87*(6), 1858-1864.

Lean, H. H., & Smyth, R. (2014). Will initiatives to promote hydroelectricity consumption be effective? Evidence from univariate and panel LM unit root tests with structural breaks. *Energy Policy, 68*, 102-115.

Lee, C.-C., & Chiu, Y.-B. (2011). Nuclear energy consumption, oil prices, and economic growth: Evidence from highly industrialized countries. *Energy economics, 33*(2), 236-248.

Lee, J. W. (2013). The contribution of foreign direct investment to clean energy use, carbon emissions and economic growth. *Energy Policy, 55*, 483-489.

Lee, J. W., & Brahmasrene, T. (2013). Investigating the influence of tourism on economic growth and carbon emissions: Evidence from panel analysis of the European Union. *Tourism Management, 38*, 69-76.

Levin, A., Lin, C.-F., & James Chu, C.-S. (2002). Unit root tests in panel data: asymptotic and finite-sample properties. *Journal of econometrics, 108*(1), 1-24.

Li, B., & Yao, R. (2009). Urbanisation and its impact on building energy consumption and efficiency in China. *Renewable Energy, 34*(9), 1994-1998.

Li, Y., & Xia, Y. (2013). DES/CCHP: The best utilization mode of natural gas for China's low carbon economy. *Energy Policy, 53*, 477-483.

Liddle, B. (2004). Demographic dynamics and per capita environmental impact: Using panel regressions and household decompositions to examine population and transport. *Population and Environment, 26*(1), 23-39.

Liddle, B. (2013). Consumption-driven environmental impact and age structure change in OECD countries: A cointegration-STIRPAT analysis.

Liddle, B. (2013). Population, affluence, and environmental impact across development: Evidence from panel cointegration modeling. *Environmental Modelling & Software, 40*(0), 255-266.

Liddle, B. (2013). What are the carbon emissions elasticities for income and population? Bridging STIRPAT and EKC via robust heterogeneous panel estimates. *Global Environmental Change, 31*, 62-73.

Liddle, B., & Lung, S. (2010). Age-structure, urbanization, and climate change in developed countries: revisiting STIRPAT for disaggregated population and consumption-related environmental impacts. *Population and Environment, 31*(5), 317-343.

Lin, B., & Moubarak, M. (2014). Renewable energy consumption–Economic growth nexus for China. *Renewable and Sustainable Energy Reviews, 40*, 111-117.

Lin, B., & Sun, C. (2010). Evaluating carbon dioxide emissions in international trade of China. *Energy Policy, 38*(1), 613-621.

Lin, S., Zhao, D., & Marinova, D. (2009). Analysis of the environmental impact of China based on STIRPAT model. *Environmental Impact Assessment Review, 29*(6), 341-347.

List, J. A., & Co, C. Y. (2000). The effects of environmental regulations on foreign direct investment. *Journal of Environmental Economics and Management, 40*(1), 1-20.

Liu, C., & Shen, Q. (2011). An empirical analysis of the influence of urban form on household travel and energy consumption. *Computers, Environment and Urban Systems, 35*(5), 347-357.

Liu, X. (2005). Explaining the relationship between CO 2 emissions and national income—the role of energy consumption. *Economics Letters, 87*(3), 325-328.

Lotfalipour, M. R., Falahi, M. A., & Ashena, M. (2010a). Economic growth, CO2 emissions, and fossil fuels consumption in Iran. *Energy, 35*(12), 5115-5120.

Lotfalipour, M. R., Falahi, M. A., & Ashena, M. (2010b). Economic growth, CO 2 emissions, and fossil fuels consumption in Iran. *Energy, 35*(12), 5115-5120.

Luzzati, T., & Orsini, M. (2009). Investigating the energy-environmental Kuznets curve. *Energy, 34*(3), 291-300.

Machado, G. V. (2000). *Energy use, CO2 emissions and foreign trade: an IO approach applied to the Brazilian case*. Paper presented at the Thirteenth international conference on input–output techniques, Macerata, Italy.

Maddala, G. S., & Wu, S. (1999). A comparative study of unit root tests with panel data and a new simple test. *Oxford Bulletin of Economics and Statistics, 61*(S1), 631-652.

Mairet, N., & Decellas, F. (2009). Determinants of energy demand in the French service sector: A decomposition analysis. *Energy Policy, 37*(7), 2734-2744.

Malthus, T. R., & Hollingsworth, T. (1973). *An essay on the principle of population*: Dent London.

Martínez-Zarzoso, I., & Bengochea-Morancho, A. (2004). Pooled mean group estimation of an environmental Kuznets curve for CO 2. *Economics Letters, 82*(1), 121-126.

Martínez-Zarzoso, I., Bengochea-Morancho, A., & Morales-Lage, R. (2007). The impact of population on CO2 emissions: evidence from European countries. *Environmental and Resource Economics, 38*(4), 497-512.

Martínez-Zarzoso, I., & Maruotti, A. (2011). The impact of urbanization on CO 2 emissions: evidence from developing countries. *Ecological Economics, 70*(7), 1344-1353.

McCarney, G. R., & Adamowicz, W. L. (2005). *The effects of trade liberalization on the environment: an empirical study*. Paper presented at the Annual Meeting, July 6-8, 2005, San Francisco, CA.

McCarthy, L. M., & Knox, P. L. (2005). *Urbanization: An introduction to urban geography*: Pearson Prentice Hall.

McKinnon, R. I. (1973). *Money and capital in economic development*: Brookings Institution Press.

McKinnon, R. I. (1993). *The order of economic liberalization: Financial control in the transition to a market economy*: JHU Press.

Meadows, D. H., Meadows, D. L., Randers, J., & Behrens, W. W. (1972). The limits to growth. *New York; 102*, 27.

Menyah, K., & Wolde-Rufael, Y. (2010a). CO 2 emissions, nuclear energy, renewable energy and economic growth in the US. *Energy Policy, 38*(6), 2911-2915.

Menyah, K., & Wolde-Rufael, Y. (2010b). Energy consumption, pollutant emissions and economic growth in South Africa. *Energy economics, 32*(6), 1374-1382.

Menz, T., & Welsch, H. (2012). Population aging and carbon emissions in OECD countries: Accounting for life-cycle and cohort effects. *Energy Economics, 34*(3), 842-849.

Merican, Y. (2007). Foreign direct investment and pollution in five Asean nations. *International Journal of Economics & Management, 1*(2), 245-261.

Mirza, F. M., & Kanwal, A. (2017). Energy consumption, carbon emissions and economic growth in Pakistan: Dynamic causality analysis. *Renewable and Sustainable Energy Reviews, 72*, 1233-1240.

Mongelli, I., Tassielli, G., & Notarnicola, B. (2006). Global warming agreements, international trade and energy/carbon embodiments: an input–output approach to the Italian case. *Energy Policy, 34*(1), 88-100.

Nasir, M., & Rehman, F. U. (2011). Environmental Kuznets curve for carbon emissions in Pakistan: an empirical investigation. *Energy Policy, 39*(3), 1857-1864.

Ocal, O., & Aslan, A. (2013). Renewable energy consumption–economic growth nexus in Turkey. *Renewable and Sustainable Energy Reviews, 28*, 494-499.

Odhiambo, N. M. (2010). Energy consumption, prices and economic growth in three SSA countries: A comparative study. *Energy Policy, 38*(5), 2463-2469.

Odhiambo, N. M. (2012). Economic growth and carbon emissions In South Africa: An empirical investigation. *Journal of Applied Business Research, 28*(1), 37.

Ohler, A., & Fetters, I. (2014). The causal relationship between renewable electricity generation and GDP growth: A study of energy sources. *Energy Economics, 43*(0), 125-139.

Omri, A. (2013). CO2 emissions, energy consumption and economic growth nexus in MENA countries: Evidence from simultaneous equations models. *Energy economics, 40*, 657-664.

Omri, A., Ben Mabrouk, N., & Sassi-Tmar, A. (2015). Modeling the causal linkages between nuclear energy, renewable energy and economic growth in developed and developing countries. *Renewable and Sustainable Energy Reviews, 42*(0), 1012-1022.

Omri, A., Nguyen, D. K., & Rault, C. (2014a). Causal interactions between CO2 emissions, FDI, and economic growth: Evidence from dynamic simultaneous-equation models. *Economic Modelling, 42*, 382-389.

Omri, A., Nguyen, D. K., & Rault, C. (2014b). Causal interactions between CO 2 emissions, FDI, and economic growth: Evidence from dynamic simultaneous-equation models. *Economic Modelling, 42*, 382-389.

Onafowora, O. A., & Owoye, O. (2014). Bounds testing approach to analysis of the environment Kuznets curve hypothesis. *Energy economics, 44*, 47-62.

Onafowora, O. A., & Owoye, O. (2014). Bounds testing approach to analysis of the environment Kuznets curve hypothesis. *Energy Economics, 44*(0), 47-62.

Outlook, A. E. (2010). Energy information administration. *Department of Energy*.

Ozturk, I., & Acaravci, A. (2010a). CO2 emissions, energy consumption and economic growth in Turkey. *Renewable and Sustainable Energy Reviews, 14*(9), 3220-3225.

Ozturk, I., & Acaravci, A. (2010b). CO 2 emissions, energy consumption and economic growth in Turkey. *Renewable and Sustainable Energy Reviews, 14*(9), 3220-3225.

Ozturk, I., & Acaravci, A. (2013). The long-run and causal analysis of energy, growth, openness and financial development on carbon emissions in Turkey. *Energy economics, 36*, 262-267.

Ozturk, I., & Bilgili, F. (2015). Economic growth and biomass consumption nexus: Dynamic panel analysis for Sub-Sahara African countries. *Applied Energy, 137*(0), 110-116.

Panayotou, T. (1993). Empirical tests and policy analysis of environmental degradation at different stages of economic development: International Labour Organization.

Pao, H.-T., & Tsai, C.-M. (2010). CO2 emissions, energy consumption and economic growth in BRIC countries. *Energy Policy, 38*(12), 7850-7860.

Pao, H.-T., & Tsai, C.-M. (2011). Modeling and forecasting the CO2 emissions, energy consumption, and economic growth in Brazil. *Energy, 36*(5), 2450-2458.

Pao, H.-T., Yu, H.-C., & Yang, Y.-H. (2011). Modeling the CO2 emissions, energy use, and economic growth in Russia. *Energy, 36*(8), 5094-5100.

Parikh, J., & Shukla, V. (1995). Urbanization, energy use and greenhouse effects in economic development: Results from a cross-national study of developing countries. *Global Environmental Change, 5*(2), 87-103.

Park, J., & Hong, T. (2013). Analysis of South Korea's economic growth, carbon dioxide emission, and energy consumption using the Markov switching model. *Renewable and Sustainable Energy Reviews, 18*, 543-551.

Park, S.-Y., & Yoo, S.-H. (2014). The dynamics of oil consumption and economic growth in Malaysia. *Energy Policy, 66*, 218-223.

Paul, B. P., & Uddin, G. S. (2011). Energy and output dynamics in Bangladesh. *Energy Economics, 33*(3), 480-487.

Payne, J. (2012). The causal dynamics between US renewable energy consumption, output, emissions, and oil prices. *Energy Sources, Part B: Economics, Planning, and Policy, 7*(4), 323-330.

Pedroni, P. (1999). Critical values for cointegration tests in heterogeneous panels with multiple regressors. *Oxford Bulletin of Economics and statistics, 61*(s 1), 653-670.

Pedroni, P. (2001). Fully modified OLS for heterogeneous cointegrated panels. *Advances in econometrics, 15*, 93-130.

Pedroni, P. (2004). Panel cointegration: asymptotic and finite sample properties of pooled time series tests with an application to the PPP hypothesis. *Econometric theory, 20*(03), 597-625.

Polemis, M. L., & Dagoumas, A. S. (2013). The electricity consumption and economic growth nexus: Evidence from Greece. *Energy Policy, 62*(0), 798-808.

Porter, M. E., & Van der Linde, C. (1995). Toward a new conception of the environment-competitiveness relationship. *The journal of economic perspectives, 9*(4), 97-118.

Poumanyvong, P., & Kaneko, S. (2010a). Does urbanization lead to less energy use and lower CO2 emissions? A cross-country analysis. *Ecological Economics, 70*(2), 434-444.

Poumanyvong, P., & Kaneko, S. (2010b). Does urbanization lead to less energy use and lower CO 2 emissions? A cross-country analysis. *Ecological Economics, 70*(2), 434-444.

press, O. u. (1992). World Development Report 1992: OUP.

Puliafito, S. E., Puliafito, J. L., & Grand, M. C. (2008). Modeling population dynamics and economic growth as competing species: An application to CO2 global emissions. *Ecological Economics, 65*(3), 602-615.

Rahman, F., Rehman, S., & Abdul-Majeed, M. A. (2012). Overview of energy storage systems for storing electricity from renewable energy sources in Saudi Arabia. *Renewable and Sustainable Energy Reviews, 16*(1), 274-283.

Ravallion, M., Heil, M., & Jalan, J. (2000). Carbon emissions and income inequality *Oxford Economic Papers, 52*(4), 651-669.

Ren, S., Yuan, B., Ma, X., & Chen, X. (2014). International trade, FDI (foreign direct investment) and embodied CO2 emissions: A case study of Chinas industrial sectors. *China Economic Review, 28*, 123-134.

Ren, X. Y., & Yang, S. L. (2013). *An Empirical Research on the Relationship between Foreign Direct Investment and Carbon Dioxide Emission Intensity of China.* Paper presented at the Advanced Materials Research.

Richmond, A. K., & Kaufmann, R. K. (2006). Is there a turning point in the relationship between income and energy use and/or carbon emissions? *Ecological Economics, 56*(2), 176-189.

Robalino-López, A., Mena-Nieto, A., & García-Ramos, J. E. (2014). System dynamics modeling for renewable energy and CO2 emissions: A case study of Ecuador. *Energy for Sustainable Development, 20*(0), 11-20.

Saboori, B., Sapri, M., & bin Baba, M. (2014). Economic growth, energy consumption and CO2 emissions in OECD (Organization for Economic Co-operation and

Development)'s transport sector: A fully modified bi-directional relationship approach. *Energy, 66*, 150-161.

Saboori, B., & Sulaiman, J. (2013). CO2 emissions, energy consumption and economic growth in Association of Southeast Asian Nations (ASEAN) countries: A cointegration approach. *Energy, 55*(0), 813-822.

Saboori, B., Sulaiman, J., & Mohd, S. (2012a). Economic growth and CO2 emissions in Malaysia: A cointegration analysis of the Environmental Kuznets Curve. *Energy Policy, 51*, 184-191.

Saboori, B., Sulaiman, J., & Mohd, S. (2012b). Economic growth and CO 2 emissions in Malaysia: a cointegration analysis of the environmental Kuznets curve. *Energy Policy, 51*, 184-191.

Sadorsky, P. (2009). Renewable energy consumption and income in emerging economies. *Energy Policy, 37*(10), 4021-4028.

Sadorsky, P. (2010). The impact of financial development on energy consumption in emerging economies. *Energy Policy, 38*(5), 2528-2535.

Sadorsky, P. (2014). The effect of urbanization on CO2 emissions in emerging economies. *Energy Economics, 41*(0), 147-153.

Saidi, K., & Hammami, S. (2015). The impact of CO 2 emissions and economic growth on energy consumption in 58 countries. *Energy Reports, 1*, 62-70.

Salahuddin, M., & Gow, J. (2014). Economic growth, energy consumption and CO2 emissions in Gulf Cooperation Council countries. *Energy, 73*, 44-58.

Salim, R. A., Hassan, K., & Shafiei, S. (2014). Renewable and non-renewable energy consumption and economic activities: Further evidence from OECD countries. *Energy Economics, 44*, 350-360.

Salim, R. A., & Rafiq, S. (2012). Why do some emerging economies proactively accelerate the adoption of renewable energy? *Energy Economics, 34*(4), 1051-1057.

Satti, S. L., Hassan, M. S., Mahmood, H., & Shahbaz, M. (2014). Coal consumption: An alternate energy resource to fuel economic growth in Pakistan. *Economic Modelling, 36*(0), 282-287.

Sbia, R., Shahbaz, M., & Hamdi, H. (2014). A contribution of foreign direct investment, clean energy, trade openness, carbon emissions and economic growth to energy demand in UAE. *Economic Modelling, 36*, 191-197.

Schmalensee, R., Stoker, T. M., & Judson, R. A. (1998). World carbon dioxide emissions: 1950–2050. *Review of Economics and Statistics, 80*(1), 15-27.

Schulze, P. C. (2002). I= PBAT: Elsevier.

Schumpeter, J. A. (1934). *The schumpttr: Theory economic development*: Harvard University Press.

Sebri, M., & Ben-Salha, O. (2014). On the causal dynamics between economic growth, renewable energy consumption, CO2 emissions and trade openness: Fresh evidence from BRICS countries. *Renewable and Sustainable Energy Reviews, 39*, 14-23.

Selden, T. M., & Song, D. (1994). Environmental quality and development: is there a Kuznets curve for air pollution emissions? *Journal of Environmental Economics and Management, 27*(2), 147-162.

Selden, T. M., & Song, D. (1995). Neoclassical growth, the J curve for abatement, and the inverted U curve for pollution. *Journal of Environmental Economics and Management, 29*(2), 162-168.

Shaari, M. S., Hussain, N. E., Abdullah, H., & Kamil, S. (2014). Relationship among Foreign direct investment, economic growth and co2 emission: a panel data analysis. *International Journal of Energy Economics and Policy, 4*(4), 706.

Shaari, M. S., Rahim, H. A., & Rashid, I. M. A. (2013). Relationship among population, energy consumption and economic growth in malaysia. *Int J Soc Sci, 13*(1).

Shabbir, M., Shahbaz, M., & Zeshan, M. (2014). Renewable and nonrenewable energy consumption, real GDP and CO2 emissions nexus: a structural VAR approach in Pakistan. *Bulletin of.*

Shafiei, S., & Salim, R. A. (2014). Non-renewable and renewable energy consumption and CO2 emissions in OECD countries: A comparative analysis. *Energy Policy, 66*, 547-556.

Shafik, N., & Bandyopadhyay, S. (1992). *Economic growth and environmental quality: time-series and cross-country evidence* (Vol. 904): World Bank Publications.

Shahbaz, M., Arouri, M., & Teulon, F. (2014). Short- and long-run relationships between natural gas consumption and economic growth: Evidence from Pakistan. *Economic Modelling, 41*(0), 219-226.

Shahbaz, M., Hye, Q. M. A., Tiwari, A. K., & Leitão, N. C. (2013a). Economic growth, energy consumption, financial development, international trade and CO2 emissions in Indonesia. *Renewable and Sustainable Energy Reviews, 25*, 109-121.

Shahbaz, M., Hye, Q. M. A., Tiwari, A. K., & Leitão, N. C. (2013b). Economic growth, energy consumption, financial development, international trade and CO 2 emissions in Indonesia. *Renewable and Sustainable Energy Reviews, 25*, 109-121.

Shahbaz, M., Khan, S., & Tahir, M. I. (2013). The dynamic links between energy consumption, economic growth, financial development and trade in China: Fresh evidence from multivariate framework analysis. *Energy Economics, 40*(0), 8-21.

Shahbaz, M., Khraief, N., Uddin, G. S., & Ozturk, I. (2014). Environmental Kuznets curve in an open economy: A bounds testing and causality analysis for Tunisia. *Renewable and Sustainable Energy Reviews, 34*(0), 325-336.

Shahbaz, M., Kumar Tiwari, A., & Nasir, M. (2013). The effects of financial development, economic growth, coal consumption and trade openness on CO2 emissions in South Africa. *Energy Policy, 61*(0), 1452-1459.

Shahbaz, M., Lean, H. H., & Farooq, A. (2013). Natural gas consumption and economic growth in Pakistan. *Renewable and Sustainable Energy Reviews, 18*, 87-94.

Shahbaz, M., Lean, H. H., & Shabbir, M. S. (2012). Environmental Kuznets curve hypothesis in Pakistan: cointegration and Granger causality. *Renewable and Sustainable Energy Reviews, 16*(5), 2947-2953.

Shahbaz, M., Mallick, H., Mahalik, M. K., & Loganathan, N. (2015). Does globalization impede environmental quality in India? *Ecological Indicators, 52*(0), 379-393.

Shahbaz, M., Mutascu, M., & Azim, P. (2013). Environmental Kuznets curve in Romania and the role of energy consumption. *Renewable and Sustainable Energy Reviews, 18*, 165-173.

Shahbaz, M., Nasreen, S., & Ozturk, I. (2016). FDI, Growth and CO2 Emissions Relationship: Evidence from High, Middle and Low Income Countries. *Bulletin of Energy Economics (BEE), 4*(1), 54-69.

Shahbaz, M., Salah Uddin, G., Ur Rehman, I., & Imran, K. (2014). Industrialization, electricity consumption and CO2 emissions in Bangladesh. *Renewable and Sustainable Energy Reviews, 31*, 575-586.

Shahbaz, M., Sbia, R., Hamdi, H., & Ozturk, I. (2014). Economic growth, electricity consumption, urbanization and environmental degradation relationship in United Arab Emirates. *Ecological Indicators, 45*, 622-631.

Shahbaz, M., Solarin, S. A., Mahmood, H., & Arouri, M. (2013). Does financial development reduce CO2 emissions in Malaysian economy? A time series analysis. *Economic Modelling, 35*, 145-152.

Shahbaz, M., Uddin, G. S., Rehman, I. U., & Imran, K. (2014a). Industrialization, electricity consumption and CO2 emissions in Bangladesh. *Renewable and Sustainable Energy Reviews, 31*, 575-586.

Shahbaz, M , Uddin, G. S., Rehman, I. U., & Imran, K..(2014b). Industrialization, electricity consumption and CO 2 emissions in Bangladesh. *Renewable and Sustainable Energy Reviews, 31*, 575-586.

Sharif Hossain, M. (2011). Panel estimation for CO2 emissions, energy consumption, economic growth, trade openness and urbanization of newly industrialized countries. *Energy Policy, 39*(11), 6991-6999.

Sharma, S. S. (2010). The relationship between energy and economic growth: empirical evidence from 66 countries. *Applied Energy, 87*(11), 3565-3574.

Sharma, S. S. (2011). Determinants of carbon dioxide emissions: empirical evidence from 69 countries. *Applied Energy, 88*(1), 376-382.

Shi, A. (2003). The impact of population pressure on global carbon dioxide emissions, 1975–1996: evidence from pooled cross-country data. *Ecological Economics, 44*(1), 29-42.

Shi, Y., & Massagué, J. (2003). Mechanisms of TGF-β signaling from cell membrane to the nucleus. *Cell, 113*(6), 685-700.

Shiyi, C. (2009). Energy Consumption, CO_2 Emission and Sustainable Development in Chinese Industry [J]. *Economic Research Journal, 4*, 1-5.

Shofwan, S., & Fong, M. (2011). FOREIGN DIRECT INVESTMENT AND THE POLLUTION HAVEN HYPOTHESIS IN INDONESIA. *Journal of Business Systems, Governance & Ethics, 6*(2).

Soytas, U., & Sari, R. (2009). Energy consumption, economic growth, and carbon emissions: Challenges faced by an EU candidate member. *Ecological Economics, 68*(6), 1667-1675.

Soytas, U., Sari, R., & Ewing, B. T. (2007a). Energy consumption, income, and carbon emissions in the United States. *Ecological Economics, 62*(3–4), 482-489.

Soytas, U., Sari, R., & Ewing, B. T. (2007b). Energy consumption, income, and carbon emissions in the United States. *Ecological Economics, 62*(3-4), 482-489.

Stern, D. I. (2004). The Rise and Fall of the Environmental Kuznets Curve. *World Development, 32*(8), 1419-1439.

Stern, D. I., & Cleveland, C. J. (2004). Energy and economic growth. *Encyclopedia of energy, 2*, 35-51.

Su, Q. (2011). The effect of population density, road network density, and congestion on household gasoline consumption in US urban areas. *Energy Economics, 33*(3), 445-452.

Tahvonen, O. (2000). *Economic sustainability and scarcity of natural resources: a brief historical review*: Resources for the Future.

Tamazian, A., & Bhaskara Rao, B. (2010). Do economic, financial and institutional developments matter for environmental degradation? Evidence from transitional economies. *Energy Economics, 32*(1), 137-145.

Tamazian, A., Chousa, J. P., & Vadlamannati, K. C. (2009). Does higher economic and financial development lead to environmental degradation: evidence from BRIC countries. *Energy Policy, 37*(1), 246-253.

Tamazian, A., & Rao, B. B. (2010). Do economic, financial and institutional developments matter for environmental degradation? Evidence from transitional economies. *Energy economics, 32*(1), 137-145.

Tamba, J. G., Njomo, D., Limanond, T., & Ntsafack, B. (2012). Causality analysis of diesel consumption and economic growth in Cameroon. *Energy Policy, 45*(0), 567-575.

Tang, C. F., & Tan, B. W. (2015). The impact of energy consumption, income and foreign direct investment on carbon dioxide emissions in Vietnam. *Energy, 79*, 447-454.

Tang, C. F., & Tan, E. C. (2015). Does tourism effectively stimulate Malaysia's economic growth? *Tourism management, 46*, 158-163.

Tao, S., Zheng, T., & Lianjun, T. (2008). An empirical test of the environmental Kuznets curve in China: a panel cointegration approach. *China Economic Review, 19*(3), 381-392.

Tiwari, A. K. (2011). A structural VAR analysis of renewable energy consumption, real GDP and CO2 emissions: evidence from India. *Economics Bulletin, 31*(2), 1793-1806.

Urry, J. (2011). *Climate change and society*: Polity.

van Ypersele, J. P., & Bartiaux, F. (1995). The role of population growth in global CO2 emissions. In R. S. A. R. v. R. M. T. J. K. S. Zwerver & M. M. Berk (Eds.), *Studies in Environmental Science* (Vol. Volume 65, pp. 669-674): Elsevier.

Vidyarthi, H. (2013). Energy consumption, carbon emissions and economic growth in India. *World Journal of Science, Technology and Sustainable Development, 10*(4), 278-287.

Waggoner, P. E., & Ausubel, J. H. (2002). A framework for sustainability science: A renovated IPAT identity. *Proceedings of the National Academy of Sciences, 99*(12), 7860-7865.

Wandji, Y. D. F. (2013). Energy consumption and economic growth: Evidence from Cameroon. *Energy Policy, 61*, 1295-1304.

Wang, K.-M. (2013). The relationship between carbon dioxide emissions and economic growth: quantile panel-type analysis. *Quality & Quantity, 47*(3), 1337-1366.

Wang, S., Fang, C., Guan, X., Pang, B., & Ma, H. (2014). Urbanisation, energy consumption, and carbon dioxide emissions in China: A panel data analysis of China's provinces. *Applied Energy, 136*(0), 738-749.

Wang, S., Zhou, D., Zhou, P., & Wang, Q. (2011a). CO2 emissions, energy consumption and economic growth in China: A panel data analysis. *Energy Policy, 39*(9), 4870-4875.

Wang, S., Zhou, D., Zhou, P., & Wang, Q. (2011b). CO 2 emissions, energy consumption and economic growth in China: a panel data analysis. *Energy Policy, 39*(9), 4870-4875.

Wang, S. S., Zhou, D. Q., Zhou, P., & Wang, Q. W. (2011). CO2 emissions, energy consumption and economic growth in China: A panel data analysis. *Energy Policy, 39*(9), 4870-4875.

Westerlund, J. (2007). Testing for error correction in panel data*. *Oxford Bulletin of Economics and statistics, 69*(6), 709-748.

Wolde-Rufael, Y., & Menyah, K. (2010). Nuclear energy consumption and economic growth in nine developed countries. *Energy economics, 32*(3), 550-556.

Xing, Y., & Kolstad, C. D. (2002). Do lax environmental regulations attract foreign investment? *Environmental and Resource Economics, 21*(1), 1-22.

Xu, B., & Lin, B. (2015a). How industrialization and urbanization process impacts on CO2 emissions in China: Evidence from nonparametric additive regression models. *Energy Economics. 48*, 188-202.

Xu, B., & Lin, B. (2015b). How industrialization and urbanization process impacts on CO 2 emissions in China: evidence from nonparametric additive regression models. *Energy Economics, 48*, 188-202.

Xu, B., & Lin, B. (2015c). How industrialization and urbanization process impacts on CO 2 emissions in China: Evidence from nonparametric additive regression models. *Energy Economics*.

Yang, Z., & Zhao, Y. (2014). Energy consumption, carbon emissions, and economic growth in India: Evidence from directed acyclic graphs. *Economic Modelling, 38*(0), 533-540.

Yildirim, E., Saraç, Ş., & Aslan, A. (2012). Energy consumption and economic growth in the USA: Evidence from renewable energy. *Renewable and Sustainable Energy Reviews, 16*(9), 6770-6774.

York, R., Rosa, E. A., & Dietz, T. (2003). STIRPAT, IPAT and ImPACT: analytic tools for unpacking the driving forces of environmental impacts. *Ecological Economics, 46*(3), 351-365.

You, W.-H., Zhu, H.-M., Yu, K., & Peng, C. (2015). Democracy, financial openness, and global carbon dioxide emissions: Heterogeneity across existing emission levels. *World Development, 66*, 189-207.

Yu, E. S., & Choi, J.-Y. (1985). Causal relationship between energy and GNP: an international comparison. *J. Energy Dev.;(United States), 10*(2).

Yuan, B., Ren, S., & Chen, X. (2015). The effects of urbanization, consumption ratio and consumption structure on residential indirect CO2 emissions in China: A regional comparative analysis. *Applied Energy, 140*(0), 94-106.

Yuan, J.-H., Kang, J.-G., Zhao, C.-H., & Hu, Z.-G. (2008). Energy consumption and economic growth: Evidence from China at both aggregated and disaggregated levels. *Energy Economics, 30*(6), 3077-3094.

Yuxiang, K., & Chen, Z. (2011). Financial development and environmental performance: evidence from China. *Environment and Development Economics, 16*(1), 93-111.

Zamani, M. (2007). Energy consumption and economic activities in Iran. *Energy economics, 29*(6), 1135-1140.

Zarsky, L. (1999a). Havens, halos and spaghetti: untangling the evidence about foreign direct investment and the environment. *Foreign direct Investment and the Environment, 13*(8), 47-74.

Zarsky, L. (1999b). Havens, halos and spaghetti: untangling the evidence about foreign direct investment and the environment. *Foreign direct Investment and the Environment*, 47-74.

Zeb, R., Salar, L., Awan, U., Zaman, K., & Shahbaz, M. (2014). Causal links between renewable energy, environmental degradation and economic growth in selected SAARC countries: Progress towards green economy. *Renewable Energy, 71*, 123-132.

Zeng, K., & Eastin, J. (2007). International economic integration and environmental protection: The case of China. *International Studies Quarterly, 51*(4), 971-995.

Zhang, C., & Lin, Y. (2012a). Panel estimation for urbanization, energy consumption and CO2 emissions: A regional analysis in China. *Energy Policy, 49*, 488-498.

Zhang, C., & Lin, Y. (2012b). Panel estimation for urbanization, energy consumption and CO 2 emissions: a regional analysis in China. *Energy Policy, 49*, 488-498.

Zhang, X.-P., & Cheng, X.-M. (2009). Energy consumption, carbon emissions, and economic growth in China. *Ecological Economics, 68*(10), 2706-2712.

Zhang, Y.-J. (2011). The impact of financial development on carbon emissions: An empirical analysis in China. *Energy Policy, 39*(4), 2197-2203.

Zhou, X., Zhang, J., & Li, J. (2013). Industrial structural transformation and carbon dioxide emissions in China. *Energy Policy, 57*, 43-51.

Zhu, H.-M., You, W.-H., & Zeng, Z.-f. (2012a). Urbanization and CO2 emissions: A semi-parametric panel data analysis. *Economics Letters, 117*(3), 848-850.

Zhu, H.-M., You, W.-H., & Zeng, Z.-f. (2012b). Urbanization and CO 2 emissions: A semi-parametric panel data analysis. *Economics Letters, 117*(3), 848-850.

Zhu, Q., & Peng, X. (2012). The impacts of population change on carbon emissions in China during 1978–2008. *Environmental Impact Assessment Review, 36*(0), 1-8.

Zhujun, J., & Boqiang, L. (2012). China's energy demand and its characteristics in the industrialization and urbanization process. *Energy Policy, 49*, 608-615.

Ziaei, S. M. (2015). Effects of financial development indicators on energy consumption and CO2 emission of European, East Asian and Oceania countries. *Renewable and Sustainable Energy Reviews, 42*, 752-759.