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Welcome by Conference Chair

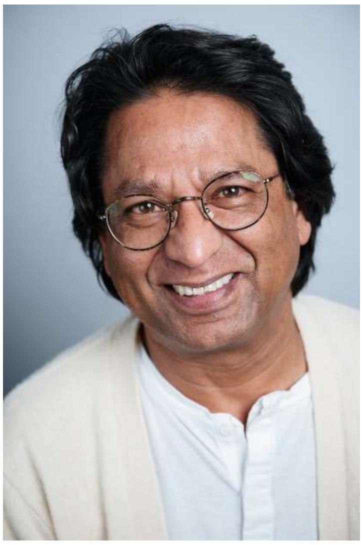
I am very pleased to welcome you to The International Conference on Business Research and Ethics, which is organised and published by Science, Technology and Management Crest Australia (STAMCA) in association with Global Circle for Scientific, Technological and Management Research, Sydney, Australia. This conference aims to provide an international platform for effective exchange of ideas, reaffirming the existing collegial contacts, provide opportunities for establishing new ones as well as providing a forum for academics and researchers to present their research findings and discussing current and challenging issues on a wide range of topics relevant to business.

As the Co-Chair of the 1st International Conference on Business Research and Ethics (iCBRE2017), it is my great privilege to thank the Plenary Speakers, Keynote Speakers, Invited Speakers, Authors, Sponsors, Secretaries, IT Team Members, Authors, Conference Advisory Committee Members, Organising Committee Members, Technical Committee Members, Reviewers and Volunteers for making this conference successful. We are grateful to them for their presence and kind support for the conference.

I wish you all an intellectually stimulating and productive conference as well as an opportunity to meet new colleagues, establish collaborations and enjoy your time in beautiful Sydney city. My best wishes are for the grand success of this conference.

Dr Mamta B Chowdhury
Co-Chair
1st International Conference on Business Research and Ethics (iCBRE2017)

Plenary and Keynote Speakers



Dr Shams Rahman is a Professor of Supply Chain Management at the School of Business IT and Logistics, RMIT University. Professor Rahman, a former British Commonwealth scholar, has worked with several universities in Australia, United Kingdom, and Thailand. In Australia he worked for the University of Western Australia, The University of Sydney, prior to joining RMIT University. He also held visiting fellowship at the University of Exeter, UK, Virginia Tech., US, Linkoping University, Sweden, National Sun Yat Sen University, Taiwan, University of Applied Sciences, Nuremberg, Germany, Indian Institute of Technology Delhi, India and currently, an International research scholar to Shanghai University of International Business and Economics, Shanghai, China. During his academic career which spans over 25 years, Professor Rahman worked in various senior management and leadership positions. He works as the discipline expert, Global Supply Chain, NSW Department of Education and Training, Australia, and the foundation member of the International Advisory Committee of the Asia-Pacific Federation of Logistics & Supply Chain Systems. He has consulted for a number global organisations including Adidas, Nestle, Fuji Xerox and TNT on areas such as supply chain sustainability, talent management in logistics, lean six-sigma manufacturing and quality management. Professor Rahman has published over 200 research papers which include articles in international journals, book chapters, and referred papers in international conference proceedings. He has successfully led several externally funded research projects in the field of lean manufacturing, procurement, and reverse logistics. Professor Rahman is on the editorial board of fifteen international journals and an Associate Editor of the *International Journal of Information Systems and Supply Chain Management*, *and a* Member of the Editorial Advisory Board of the *Advances in Information Systems and Supply Chain Management.*

Plenary and Keynote Speakers

Dr. Anne Bunde-Birouste is the Director of the UNSW Yunus Social Business for Health Hub. She is also the Founding Director of Football United and Director of the Creating Chances social enterprise. Anne is recognized both nationally and internationally for her expertise in Health Promotion, Sport for Development and Social Change, community participation in health, innovative health promotion approaches for working with disadvantaged groups. leadership, mentoring and networking, all qualities that have assisted to develop the significant partnerships underpinning the Football United Program (www.footballunited.org.au) which she founded as a result of her PhD study, and has fostered ever since.

1st International Conference on Business Research and Ethics (iCBRE2017), 20-22 November 2017, Sydney, Australia

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The 2017 Small Business Tax Enterprise Plan

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Abstract

This paper examines the Commonwealth's 2017 Enterprise Tax Plan for small business. In doing the paper analyses these reforms having regard to the issue of defining a small business and by examining the various rationales that are commonly extended for such concessions. The government's rationale stated that increasing the small business threshold to $10 million will allow an additional 90,000 to 100,000 businesses to access the benefits of the small business concessions, decreasing the compliance costs such as for record keeping and calculation requirements and would increase cash flow. The government also asserted that the reforms would enable greater reinvestment in small businesses and provide the opportunity for these businesses to increase employment and increase wages. The lower corporate tax rate and the expanded tax discount for unincorporated small businesses will provide increased cash flow to profitable small businesses. Notwithstanding the stated rationales for the small business tax concessions, they should be used sparingly if at all. Defining a small business is problematic. The new measures produce four definitions of a small business with turnover thresholds of $2m, $5m, $10m or $25 now applying. Tax concessions generally contribute to complexity, inefficiency, inequity and damage fiscal adequacy. This paper submits direct targeted government grants are a better alternative to support both small business and the wider economy.

Keywords: *small business, income tax, enterprise tax plan*

1. INTRODUCTION

Australia's small business tax concessions have grown in both availability and number and appear to be very political, as governments' seek electoral support from an estimated 2.7 million small businesses. However, the tax expenditures associated with these concessions are significant. Additionally, their complexity produces considerable uncertainty as to their practical operation and for many the concession benefits do not appear to outweigh the additional compliance costs. The various concessions favour particular types of businesses of a certain size and / or with certain structures over other taxpayers and this hinders economic growth, creates distortions and inequities. A number of government reviews however, The *Ralph Review* (1999) and The *Henry Review* (2009) have generally supported concessions for small business. Over time, and with each election cycle, the scope of these concessions have significantly broadened. During the 2016-17 the Liberal Coalition Government introduced its Enterprise Tax Plan (ETP) for small business. The paper first outlines the ETP and then analyses the reforms having regard to the issue of defining a small business and the examining the various rationales that were provided for these concessions. This paper is innovative since it highlights the regressive nature of the small business tax concessions that helps comparatively few wealthier businesses. The paper is also innovative in suggesting a better way to help small business and the broader economy.

2. ENTERPRISE TAX PLAN

In 2016 the Commonwealth government announced its Enterprise Tax Plan (ETP) to greatly expand access to tax concessions and reduce income tax rates for small business. The ETP provided an immediate reduction in the corporate tax rate to 27.5 per cent for the 2016–17 tax year for small business entities (SBEs) and a progressive increase in the tax discount for unincorporated SBEs equivalent to the above reductions in the corporate tax rate. The ETP also broadened the definition of small business by increasing the aggregated turnover threshold from \$2 million to \$10 million. This allowed access to most of the pre-existing small business tax concessions as well as the ETP concessions. Additionally, from 2017–18, a new category of corporate entities, known as base rate entities (BRE), with higher aggregated turnover threshold are also eligible for a lower tax rate.

The Senate referred the Treasury Laws Amendment (Enterprise Tax Plan) Bill 2016 to the Economics Legislation Committee for inquiry and reporting. The Liberal majority on the Committee found that the ETP is "a critical reform that will improve Australia's tax system for businesses and drive investment and growth in the economy". The Labor minority sought against increasing the SBE threshold and to only reduce the company tax rate to 27.5% for businesses with a turnover of less than \$2 million; and only increase the unincorporated small business tax discount from 5% to 8% for SBEs. Noting:

> *the Grattan Institute made a submission and stated that the best analysis from the Commonwealth Treasury shows that the net benefits to Australians' incomes will be much smaller once profits flowing out of Australia are taken into account. In addition, a cut to the corporate tax rate places pressure to raise taxes in other areas and the benefits from additional investment may take time to emerge.*

Notwithstanding these concerns, in 2017 the *Treasury Laws Amendment (Enterprise Tax Plan) Act 2017* increased the small business entity aggregated turnover threshold from \$2 million to \$10 million effective from the 2016-17 income year. The threshold for the small business tax offset though was only increased to \$5 million, and the \$2 million threshold was retained for the CGT small business concessions in Div 152. The explanatory memorandum's rationale provided:

> *Increasing the small business threshold to \$10 million will allow an additional 90,000 to 100,000 businesses to access the benefits of the small business concessions, decreasing the compliance costs (such as for record keeping and calculation requirements) and increasing cash flow.*
>
> *This will enable greater reinvestment in small businesses and provide the opportunity for these businesses to increase employment and increase wages. It will also provide incentives for small businesses at or near the existing \$2 million turnover threshold to grow, as they would currently lose these concessions once they pass the threshold.*
>
> *Taxpayers will need to be aware of and familiarize themselves with the new changes. This is expected to be relatively straight forward and potentially part of the routine update processes.*

Additionally, the company tax rate was reduced from 28.5% to 27.5% for the 2016–17 income year for SBEs. The SBE small business definition remains at \$10 million from 2017–18 whilst the BRE threshold rises. From 2017–18, BREs are eligible for the lower tax rate, initially set at 27.5%. In 2017–18 the threshold for BREs is $25 million and in 2018–19 to $50 million. The changes to the turnover threshold and tax rate reductions for base rate entities are set out in the following table:

Table 1: Enterprise Tax Plan Corporate Tax Rates and Thresholds

Year	Aggregated annual turnover threshold ($m)	Base rate entities	Other corporate tax entities
2017–18	$25m	27.5%	30.0%
2018–19	$50m	27.5%	30.0%
2019–20 to 2023–24	$50m	27.5%	30.0%
2024–25	$50m	27.0%	30.0%
2025–26	$50m	26.0%	30.0%
2026–27	$50m	25.0%	30.0%

Under the changes the maximum franking credit that can be allocated to a frankable distribution paid by a corporate entity will be based on their corporate tax rate for that particular year, unless the entity's turnover for the prior year is equal or greater than the threshold for the current year (the corporate tax rate for imputation purposes). The Government has also introduced a second Bill that proposes to progressively extend the lower corporate tax rate to all corporate entities with a proposed 25% tax rate applying from 2026-27.

The unincorporated small business tax discount (the small business income tax offset) will be increased to 16% by the 2026-27 income year. For the 2016-17 to 2023-24 income years, the offset is 8 per cent of net small business income. For the 2024-25 income year, the offset is 10 per cent of net small business income. For the 2025-26 income year, the offset is 13 per cent of net small business income. The explanatory memorandum asserted:

> *Reducing the corporate tax rate does not provide a tax cut for those businesses that are not operated through a company. Approximately 70 per cent of small businesses are unincorporated. This means that 2.3 million businesses would not receive any benefit from a corporate tax cut.*
>
> *The 2015-16 Budget introduced a 5 per cent unincorporated tax discount for small businesses to provide them with a tax cut at the same time as small business companies. This further increase in the unincorporated tax discount for small businesses is consistent with the original design parameters and mirrors the company tax cut for small business.*

> *An expanded tax discount for unincorporated small businesses will provide increased cash flow to profitable unincorporated businesses. Unincorporated small business owners will have higher after-tax earnings which they will be free to reinvest in their businesses.*

In assessing the ETP there are two key questions. What is a small business? Should small business receive tax concessions?

3. WHAT IS A SMALL BUSINESS?

Defining a small business is extremely challenging. Should a small business be defined qualitatively or quantitatively? For practical reasons qualitative definitions are inappropriate since objective and measurable criteria are needed in legislation. Using quantitative measures brings the problem of ascertaining the parameters, whether it be by sales, profit, assets and / or number of employees. Different parameters will produce different ranges of small businesses. There does not appear to be any clear way of working out when a business ceases to be small. The Australian experience illustrates the dilemma. As noted above, prior to the SBE framework the various small business tax concessions adopted different parameters and this created uncertainty and complexity. For example, the former Simplified Tax System STS originally required a $1 million STS average turnover and $3 million depreciating assets test, whilst other small business concessions provide separate tests. The SBE regime then harmonized the definition of small business for many of the tax concessions. The STS depreciating asset test was abolished and a $2 million aggregate turnover replaced the $1m turnover test. The ETP though results in four definitions. For SBEs the aggregate turnover was increased to $10m from 2016-17. For larger small businesses, BREs, the aggregated turnover threshold for accessing tax concessions is $25m in 2017-18 (increasing to $50m by 2026-27). A $5 m SBE aggregated turnover applies to access the SBTO, and a $2 m SBE aggregated turnover applies to access the CGT concessions.

The silence in the ETP reform process detailing how the new SBE / BRE parameters were designed illustrates the arbitrariness. Under these rules, larger businesses with low turnovers would qualify as SBE (such as start up listed companies). Setting parameters also poses the problem of manipulation as businesses restructure so as to access the small business concessions. This is evident with complex anti-avoidance measures in the former STS and in the current SBE and BRE regimes.

Overall, there is no consensus on what a small business is, nor is there any consensus about the appropriate parameters. A number of parameters appear to be needed in order to appropriately identify the smaller businesses (to prevent manipulation) but the more parameters the greater the complexity. Also, more turnover thresholds increase complexity as seen in the new: $10 m SBE aggregated turnover, the $5 m SBE aggregated turnover to access the SBTO; the $2 m SBE aggregated turnover to access the CGT concessions and the $25 m plus aggregated turnovers for the BRE regime. The various current thresholds are ad hoc.

4. SHOULD SMALL BUSINESS RECEIVE TAX CONCESSIONS?

As to the question whether small business should receive tax concessions, the ETP argued the reforms would help offset the regressivity of compliance costs and to aid simplicity. The ETP also asserted the changes were needed given the importance of small business to the economy and to encourage investment and productivity. Research in Australia and elsewhere has found that the costs for small business in complying with tax laws are regressive given their lack of resources and expertise (Evans 2003). On this basis, the ETP called for tax concessions to offset these costs. The explanatory memorandum's rationale in the *Treasury Laws Amendment (Enterprise Tax Plan) Act 2017* asserted increasing the threshold would decrease the compliance costs such as for record keeping and calculation requirements.

Although, it is counter argued that small business have a higher non-compliance with tax laws than employees which reduces the regressive impact of compliance. Slemrod (2004) provides evidence that non-compliance is similarly regressive to small business as are compliance costs. The smaller the business, the less compliant. Pope (2008) also pointed to a number of studies from OECD countries that showed small businesses, especially micro businesses are responsible for a large proportion of tax evasion. There is also a trade-off between compliance costs and evasion. Tax concessions introduced to reduce compliance costs may increase opportunities for tax avoidance. For example, the numerous turnover thresholds in the STS, SBE and BRE regimes provide avoidance opportunities by artificial means.

Since many small businesses will comply with tax laws there still exists an argument for tax concessions and exclusions where these provide an overall benefit in simplifying tax laws such that tax revenue and efficiency increase, Gentry (2004). For example, there is an apparent role for exclusions (such as the $75,000 GST registration turnover threshold) to minimize the compliance and administration costs by reducing the number of affected taxpayers, OECD (1997). However, a high threshold may create inequity between who have to register and those who do not. This is inefficient since competition is impacted as more efficient larger small firms are at a disadvantage.

Tax concessions introduced to reduce compliance costs may also inadvertently increase these costs since the concessions can increase complexity. For example, the complexity of the STS resulted in a low take up by small business given the concession targeted 95 per cent of businesses. Only 14 per cent of eligible small businesses joined by 2002 (*Tax Laws Amendment (Small Business) Act 2007* (Cth). Under the STS, SBE and BRE regimes there are numerous turnover thresholds which all produce added complexity for small business. Under the ETP, the SBE turnover threshold would increase from $2 million to $10 million and for BRE a $25 m turnover initially applies. This reform to broaden the taxpayer eligibility will increase compliance and administration costs associated with more businesses accessing the SBE and BRE regimes, and thus will all damage fiscal adequacy. The revenue costs are of reducing the corporate tax rate for SBEs and BREs are not insignificant, being estimated at $400m in 2016-17; $500 m in 2017-18, $800 m in 2018-19 and $950 m in 2019-20. This will also lead to inequity as larger and asset rich small businesses will gain the most from the SBE and BRE regimes' generous tax concessions. This reform also shows how the introduction of small business tax concessions has led to the greater use of tax concessions by as more small businesses become eligible. The ETP asserted the reforms would "simplify" the tax system. Rather, small business continually need to keep abreast of an extensive range of ever changing tax concessions and eligibility requirements such as the ETP in order to benefit. The complexity of the concessions means that small businesses rely extensively on professional help. For many the high costs of professional advice outweigh the benefits. If simplification was the aim, the ETP should have recommended the abolition of small business tax concessions.

The ETP argued that small business is important to the economy and the concessions would increase investment and employment. In developed countries, there is a strong positive correlation between small business entrepreneurship and GDP growth as well as the level of gross domestic product (GDP) per capital, Pope (2008). In Australia the small business sectors provides about 30 per cent of GDP and from 1983 it has increased at an annual rate of 3.5 per cent per annum, Pope (2001). Whilst large business (with more than 200 employees) has only increased at 2.5 per cent per annum since 1983. In 2011 small business employed 47 per cent of all private sector employment, ABS (2012). An OECD report found that the contribution of small business to innovation is increasing as a result of new technologies which make it easier for small businesses to overcome barriers to entry and access larger markets, OECD (2010). In Australia, small businesses account for around one third of research and development of spending in high-tech industries, Connolly et al (2012).

However, other data and studies suggest small business importance is overstated. In 2016 businesses that employ fewer than 20 people accounted for a lower 45% of private sector employment. Bigger businesses, having more than 200 staff have contributed more than three quarters of new jobs since 2009 Creighton (2017). Research has criticized studies purporting to show the importance of small businesses for job creation, De Rugy (2005). In the United Kingdom research has also found that only a minority of small firms generate jobs, Bannock (2005). This leads to the impossible problem of targeting tax concessions (if justified at all) to such firms. Australia's former STS, the SBE regime and BRE small business tax concessions, for example apply to all small businesses. Under these concessions small businesses which do not intend to grow will benefit. Many small businesses do not wish to grow, with owners preferring a manageable scale and lifestyle, Small business roundtable (2012). Also, hobby and life-style businesses will also access these tax concessions (if not subject to the non-commercial loss rules). As noted above, the concessions may result in the restructuring or manipulation of businesses to create a small business in order to qualify for the tax advantages, leading to tax avoidance. Tax concessions targeted at size are blunt instruments, they do not focus on jobs growth. Other parameters such as innovation appear more appropriate. Identifying such firms can be problematical, which firms should be targeted for success or failure? Holtz-Eakin (2000). In 2009-10, only 42 per cent of small businesses were involved in innovative activity, versus 62 per cent of larger businesses, ABS (2012). Even if these firms could be identified, tax concessions are not focused on innovation unlike a direct subsidy. If the targeting is not effective then resources will be misallocated and reduce productivity Henry Report (2009). The US success with its Small Business Innovation Research program (of $2 billion grants per annum over 26 years) shows though that innovative small business can be targeted and that such grants have a significant impact on catalyzing a broader economic transformation in innovation Keller and Block (2012).

5. CONCLUSION

First, having regard to the matter of defining a small business, the politically driven ETP reforms (like the *Ralph Review (1999) and Henry Review (2009*) provided little analysis for introducing the four new ad hoc SBE / BRE thresholds for defining a small business. The Commonwealth government appears not to have learned anything from the Banks Taskforce ( ) and the need to align and rationalize the definition of a small business. Whilst defining a small business is problematical for tax concessions, there may be a role for uniform definitions of 'micro', 'small', 'medium' and 'large businesses'. This would help the examination of the impact of the small business sector of taxation and promote more informed policy making. Secondly, the ETP concessions are significant: increasing the turnover thresholds, lowering corporate tax rates and increasing the SBTO. Having regard to the stated rationales for the concessions, the available evidence suggests that as a general principle, concessions should be employed in a very limited way. The concessions creates sets of winners and losers and impose significant compliance and administration costs as evident from the experiences in the former STS and SBE regimes. They impose a not insignificant cost to tax revenue collections and are inequitable and inefficient. Direct government grants are a better way of assisting small business as evident in the long standing success of the US Small Business Innovation Research program. The ETP neglected to answer this central question, as to whether small business tax concessions are justified, having regard to the available research. This highlights the highly political nature of the reforms.

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A Study to Analyse Economic Benefits of Cloud-Based Open Source Learning for Australian Higher Education Sector

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Abstract

The radical progression in the information and communication technology (ICT) is changing every aspect of human life including the education system. Easy and inexpensive accessibility of internet is also allowing students, teachers, and educational institutes to explore new possibilities of learning through modern devices and ICT. Cloud computing is an essential technology in ICT today and can be applied in different sectors including education industry. The Cloud based open source learning is the result of such exploration and this practice of learning is improving with the time. The concept of this kind of learning had been introduced in the early 1990s but the arrival of the internet took it to the new level. Now, latest technologies like smart mobile devices, Cloud computing, and wireless internet connectivity are opening new opportunities for open source learning for more and more people all over the world. In future, the capabilities of this practice are expected to increase further but the question is what would be next development in this field. The aim of this paper is to review the literature on open source Cloud based learning and analyze its economic benefit of this practice for Australian higher education sector. Paper suggests that with the application of Cloud-based open source learning in Australian higher education sector will reduce cost as well as improve productivity. Also, machine learning and artificial intelligence technologies can make open source learning system more efficient and need to integrate these technologies in Australian education sector.

Keywords: *Open Source Learning, Economic Benefits, Cloud Computing, Australian Higher Education Sector.*

1. INTRODUCTION

Learning is a complicated process which involves the interaction of people, sharing of knowledge and proper guidance from a mentor. Educational institutes are trying to create a favorable environment for learning for different groups of people. These institutes have provided this world lots of genius mind and contributed a lot to the modern development in the world. Although, universities, colleges, and schools are essential for learning there is a large number of people who can't enroll in these institutes but they are eager to gain knowledge and learn new skills. Electronic learning, powered by ICT, is providing a fine way for these people to take classes and get certificate remotely. It is not enough but most e-learning programs are managed by educational institutes and they charge the registration fee. Open source learning is a promising solution to this problem. This type of learning is inexpensive, effective and flexible (Olla, 2012). The concept of open source learning is as old as the commercial internet but its application is relatively new (Edwards, 2001). Open source learning management system (OS LMS) is one application of this type of learning which is gaining immense popularity all over the world. Open source mobile learning is another application of this practice (Hidayat and Utomo, 2014). Open source learning can provide many benefits to Australian education sector in many different ways, apart from improving efficiency and reducing cost. Cloud based service application can improve organisation efficiency by reducing the cost of infrastructure as well having access to on demand service (Gide and Sandu, 2015b).

Khedr and Idrees (2017) mentioned that with the increasing number of education contents and resources, students, services had become problematic. Furthermore, he asserts that educational institutes are facing challenges in providing Information technology support for research and development activities. Cloud computing enables the institute to run the application as service on Internet proving scalability and enabling educational institutions to support their own infrastructure without requiring technical expertise for it. Also, Cloud computing can provide on-demand service to deploy tools that are scalable and provide a cost saving to the different industrial sector (Gide and Sandu, 2015a). This research paper will examine those future capabilities and economic benefits of open source learning for Australian higher education sector by reviewing literature in this field.

2. LITERATURE REVIEW

Open source learning practice is already playing a vital role in the success of learning management system of lots of educational institutes all over the world (Olla, 2012). The next step was open source mobile learning which allows people to interact with each other and share knowledge of their interest. The interaction of people is the best way to learn anything. The importance of one to one interaction in the process of learning is far more than hi-tech devices and modern technologies. These devices and technologies can facilitate this interaction and make it possible for people in remote areas to find people of similar interest and share knowledge effectively (Bai and Smith, 2010). Therefore, experts recommend one to one interaction between student and teacher which is becoming extremely difficult due to increasing number of students in classrooms (Singh and Holt, 2013). Olla (2012) states that Technology can make it possible for every student to have a personal teacher or mentor. The concept of machine learning can be used to train a machine to act as an instructor on eLearning platforms. These virtual instructors or teachers can help students to learn different skills efficiently (Hidayat and Utomo, 2014). Digital data of different formats can be used in open source learning platforms (Maican and Lixandroiu, 2016). Now, three-dimensional videos can be recorded easily. These videos can help a lot in explaining complicated concepts to e-learners. Videos are also very popular in open sour e-learning environment because learners can watch them in their spare time and these videos can also help them visualize different concepts. Some popular video streaming websites like YouTube allow users to upload, share and watch millions of video for free. These websites monitor users' activity and make recommendations on the basis of those activities. This feature can be added to the open source learning platform (Yousafzai et al., 2016). These activities can be analyzed using different parameters and then some recommendations can be provided to the learner or instructor to make the learning process more efficient. Kleftodimos and Evangelidis (2016) mention that for instance, if a learner has seen some videos on one topic and someone upload or shares something new related to that topic then the system will recommend learner to take a look at it. Similarly, this feature can also help in the evaluation process but there is need to work thoroughly on this capability of the open source system.

Open source learning is also making difference is the software industry. Several high profile software tools and operating system are open-source as anyone can see their source code and modify it for their personal usage. Moodle for high education is one of those tools which allow educators to make and manage their own online learning system. According to Costello (2013), there are two types of open source forums on the internet including education related and non-education forums. The non-education open source forums can also be used for learning some skills like software development and programming. Singh and Holt (2013) indicate that open source learning is not limited to education-related platforms. Non-education platforms can also be used to create awareness about different academic, economic, and social issues.

Now students don't want to acquire certificates and degrees only. They want real valuable knowledge which can help them to improve their lifestyle. Open source learning can offer them exactly what they want. This practice has the capability to even produce professional engineers and doctors. Olla (2012) states that learning-centric students can use cutting edge ICT and smart devices to complete different courses. There is one limitation of this practice; students will not be able to perform practices. Students can complete small practical projects with the guidance of their mentor but some experiments require supervision of an instructor, appropriate environment, suitable security and expensive equipment. This deficiency can also be eliminated by offering regular attendees and highly active participant a chance to perform some experiments in their nearby facility. Australian education institutes, entrepreneurs and other related entities like publishers and e-library owners need to work together on the commercial level to make it possible for learners to have at least every virtual resource. A mobile application can be developed which allow users to read popular books and journals online. Hidayat and Utomo (2014) mention that this app will be like iTunes of apple where users can listen to thousands of songs in just a few bucks and copyright act is also not violated. Su et al. (2016) show the application of new hybrid fuzzy multiple criteria for decision making model to examine the Cloud based e-learning services for improving e-learning innovation performance. When a student has easy and cheap access to reading materials, instructors and peers he will learn from the core of his heart which will make the learning system more valuable not only for the student but also for his community and next generation of open source learners (Kleftodimos and Evangelidis, 2016).

Cloud computing offers student and university worker access to different resources and application through the internet, quickly and at minimal cost. Cost can be reduced by educational institute by reduction of ICT infrastructure cost of managing hardware, software and licenses cost. Resource and maintenance cost can be reduced due to a flexible aspect of Cloud computing by reducing ICT staff and eliminate high operational costs. Thus the Main benefit of Cloud computing for Australian higher education is financial. According to Almajalid (2017) just like other industries, the educational institution will be able to reduce the cost association with ICT infrastructure including energy consumption, labor cost, licensing, as well as hardware cost due to virtualization that comes with Cloud computing. Furthermore, Cloud computing will enhance the user experience, learning can be retrieved from a central point and can be accessed from anywhere and anytime without relying on the local server. With centralized learning resources, staff can focus on high quality learning experience rather than managing inefficient systems.

3. RESEARCH LIMITATION AND FUTURE WORK

This research is based on secondary source and focuses on Australian higher education sector only. Similar research can be replicated in other sectors and different countries. Future research will focus on Quantitative and Qualitative research. The survey would be sent to random education institute to understand the factors affecting adoption of Cloud based open source learning as well as an interview with the decision maker in the education sector will provide deep insight on advantages and challenges of adopting this services.

4. CONCLUSION

Open source learning is relatively a new concept but it is already making difference. This practice is making learning easier, inexpensive, equitable, accessible, and adaptable. The future of open source learning is bright as it has the potential to produce professionals. There is a need to integrate modern ICT with this practice in order to take it to the next level using Cloud computing in order to improve productivity and reduce cost. Machine learning and artificial intelligence technologies can make open source learning systems more efficient and there is a need to make serious efforts in integrating these technologies in Australian education sector. Entrepreneurs can also work with Australian educational institutes, publishers and other digital asset owner companies on the commercial level to add more value to this type of learning.

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Micro Finance Scheme in Tunduru

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Abstract

Microfinance scheme for women and youth in Tunduru District - Tanzania was started in July 2017. Targeting women and youth, the aim of this initiative is to create jobs and alleviate poverty. Tanzania has a population of about 50 million people, approximately 80 percent of the population live in the rural and semi urban areas. Most people living in rural areas depend on small scale farming and small businesses for income. Tunduru is one of districts in Ruvuma Region, the region is economically marginalized compared to other regions in Tanzania. Stagnant economy growth has been reported in Ruvuma and Tunduru despite agricultural and other economic potential. Poor governance and challenges to access capital for investment and agricultural markets are major challenges to poverty reduction in the district. Common financial institutions in the district are the Saving and Credit Cooperative Societies (SACCOS) and Village community banks (VICOBA). Tanzanian government has taken measures to regulate and supervise SACCOS and VICOBA. However, joining and participating in these initiatives remains difficult for poor villagers mainly due to lack of capital to join VICOBA, and high interest rates charged by some of MFIs. Borrowing from family members and friends has become the most common method for people who earn very low income to get fund to start or sustain small businesses and farming activities.

Key words: Social business, microfinance, poverty alleviation, farming, unemployment, rural economy

1. INTRODUCTION

In recent years Tanzanian government has developed an ambitious development agenda focused on creating a better business environment through improved infrastructure, access to financing, and education progress, however achieving these goals has been a challenge due to insufficient budget. In 2012, it was reported that more than 30% of the Tanzanian population could not meet their basic needs while almost 20% could not afford basic needs and sufficient food for healthy living, Tanzania National Bureau of Statistics (2017). According to the World Bank (2012) major causes of poverty in Tanzania are fiscal and monetary policies that do not support the leading economic sector of agriculture. Tanzania government has been reforming the country's financial sector since 1991. This resulted in the privatisation of the National bank of commerce (NMB) and the Cooperative and Rural Development Bank (CRDB) which were dominant providers of rural finance. Privatization of the banks led to decreased access of financial services in rural areas causing an exclusion of the rural poor from the financial system. In 2006 only 5% of the rural population had access to bank services. Tunduru district has a population of about 300,000, 90 % of the population live in rural areas while 10 % live in sub urban area, Tanzania National Bureau of Statistics (2017). people in this region face more economic challenges compared to other regions. Despite having moderate number of crop farming households compared to other regions, Ruvuma region has lower number of crop growing households per square kilometre and land utilisation percentage compared to other regions in Tanzania, Ishengoma and Mbwilo (2008). Micro-finance institutions (MFIs) emerged in Tunduru district in 2001 as results of government effort to support business for small scale farmers and small business owners in rural areas of Ruvuma region, Economic and Social Research Foundation (2016).

However, microfinance institution face challenges of inconsistence regulation by government and stringent eligibility requirements that cannot be met by very small businesses, Girabi and Mwakaje (2013). Difficulties in accessing fund from financial institutions is major constraint to development of small businesses, for example findings from a survey show that about 94 per cent of the surveyed small businesses depend on personal resources and loans from family members and friends as a source of start-up capital for business, Satta (2004). Microfinance schemes have been favourable approach in providing credit to the low-income earners who are not accepted by other sources of finance. These schemes are willing to loan small amounts to first-time or less creditworthy borrowers and most of the times to those lacking collateral, Girabi and Mwakaje (2013), Kessy and Temu (2010) and Satta (2004).

2. THE ROLE OF MICROFINANCE SCHEME AMONG WOMEN AND YOUTH IN RURAL AREAS

About 70 percent of world's poor are women, Khan and Noreen (2012). Approximately 60 percent of women in Tanzania live in absolute poverty, in many societies in Africa, customary laws and practices remain discriminatory against women on issues of property inheritance particularly on land and business ownership, Kato and Kratzer, (2013). Participating in microfinance services could be a way for women to gain the ability to make strategic choices concerning their lives. With access to microfinance services women can set up their own businesses and consequently improve their status in the household and community, MFIs enable women to contribute to family household budget, providing opportunity to have greater voice and increases their role in decision making (Kato and Kratzer, 2013) and Khan and Noreen, 2012). MFIs targeting women are favourable because women are good credit risk, less likely to misuse the loan, and more likely to share benefits of the loans with others in their household, especially their children, Acquaah (2016) and Kato and Kratzer (2013). Microfinance scheme in Tunduru targets women in informal sector, unemployed youth, rural small-scale farmers and the disabled. Women as a group are expected to take higher percentage of disbursed loans.

However, some studies have also detected negative impact on women's income and employment from MFIs that give loans at very high interest rate similar to the money lenders, causing women to leave their homes and villages after failure of repayment of loan instalment, to avoid their properties to be taken by MFIs, Economic and Social Research Foundation (2016) and Girabi and Mwakaje (2013). Microfinance scheme in Tunduru provides loans to women who own very small to medium size businesses, the loan given is not asset based. When loan recipients struggle to pay back their loans, the scheme provides more entrepreneurship training or additional loans to enable them to achieve their business targets and pay back the loan.

Microfinance has significant impact on agricultural productivity under small holder farmers. Borrowers from MFI invests in purchase of agricultural inputs and livestock establishment; MFI creates employment opportunities in rural areas, Girabi and Mwakaje (2013). Recipients of microfinance funding can access competitive prices in agricultural markets through warehouse voucher systems, ability to hire labourers and transport to carry goods to the markets, Girabi and Mwakaje (2013). A group of 6 young people have successfully used loan provided by Microfinance scheme in Tunduru to transport rice from Chikomo village to sub urban Tunduru to access better markets for their produce.

Study on impact of providing training to recipients of microcredit shows that recipients of business training have higher level of assets and sales revenue compared to non-recipients of training. Motivational characteristics are significant factors in changing behaviour of owners of small business to enable them to perform well in their businesses. This can be acquired through training and learning from others Kessy and Temu (2010). Groups of entrepreneurs in Tunduru consists of mixture of experienced and new entrepreneurs, the group of 10 women in sub urban area meet once a week to share their experiences and learn from each other.

3. OBJECTIVES OF THE PROJECT

Microfinance scheme in Tunduru District - Tanzania was started in July 2017, the aim of the initiative is to create jobs and alleviate poverty. The initiative "Microfinance scheme in Tunduru" explores opportunities and barriers influencing micro-enterprises' access to finance in rural and semi urban areas, and provide alternative solution to existing challenges. The initiative gives micro-enterprises and informal-economy businesses access to capital money to start and develop small business and to secure savings and borrowings with transparent costs, low interest rate and without time burden to return the loan. Objectives of the microfinance scheme in Tunduru are:

1. To provide low interest loans to individuals and groups of women and young entrepreneurs, to enable them to establish or develop their small businesses, to increase their income.
2. To provide entrepreneurship training to groups of entrepreneurs and individuals to enable them to reach business goals.

Three entrepreneurs' groups have received the loans, 10 women in semi urban Tunduru, 6 youth and 4 women in rural Tunduru.

4. OUTPUT OF THE PROJECT

This project provides microloans to women and young men to run small businesses. Loans are provided according to procedures outlined in loan contract. The outcomes of the first part of the project are, to lend small amounts of loans at low interest to individuals and groups of entrepreneurs, to establish or develop small businesses, to increase their income and to provide entrepreneurship training to recipients of the microloans as needed.

The scheme also provides opportunity for entrepreneurs to learn from each other. Returned loans are saved in a bank account to further expanding the scheme. Interest gained from the loan is used to administer the loans to maintain sustainability of the project. The project started by providing a total of 3.5 Million Tanzanian Shillings as microloans to 20 entrepreneurs. Evaluation of the first 4 months of the scheme shows loan return rate of more than 70%. The aim of the project is to reach 100 entrepreneurs in the first quarter of 2018.

Microfinance scheme in Tunduru is undertaken in such manner that the loan receivers and their families are the beneficiaries of the project. Returned microloans and other monetary profit will be used to lend to other groups and individuals, develop or subsidize ongoing projects, or starting new projects. Profit is calculated as number of people who have received the loan and successfully paid back, the profit will be calculated monthly.

5. PROJECT ACTIVITIES

Community leaders in semi urban Tunduru were asked to identify women who would benefit from the scheme. Community leaders identified 7 women, the women were asked to identify more women, they identified 3 women from local area and 4 women from rural area. 14 women formed two groups, one group of 10 women in semi urban Tunduru and a group of 4 women in rural Tunduru. Community leaders also identified a group of 6 young rice farmers in rural Tunduru, who would benefit from the scheme by receiving loan to transport their produce to better market. Selection of entrepreneurs focused on women and young people who do small scale farming or own small businesses and have limited or no access to loans from formal financial institution. Selection was made without discrimination in tribe, religion beliefs or political party membership. Community leaders involved in selection process were excluded from application of the microloans to avoid bias in selection process.

Entrepreneurs selected two project leaders, chairperson and a secretary. Leaders received training on filling in joining forms, registers for financial records and contracts. Entrepreneurs were asked to sign forms and contracts providing their contact details, details of their business activity, and amount of loan they wish to receive. Members of group were educated about the operations, aim and objectives of the project. Leaders of the projects visited individual entrepreneurs at their business places and contacted their husband or families to ask for consent for their family members to join the scheme.

Members of the scheme decided to meet once a week at home of secretary of the scheme to collect weekly return of the loan and to share challenges and success of their business activities. The secretary of the scheme collects returned fund weekly, keeps records and deposits the fund in a bank account for the scheme.

6. MANAGEMENT OF PROJECT

Elizabeth Kpozehouen is a medical doctor trained in China and research associate at the University of New South Wales (UNSW), Australia, she has completed Master of Public Health and Master of Health Management programs at UNSW. Elizabeth has experience in management of the National Health and Medical Research Council (NHMRC) Centres for Research Excellence. Currently she manages the NHMRC Centre for Research Excellence (CRE) - Integrated Systems for Epidemic Response (ISER), previously she managed the CRE Immunisation in Under-studied and Special Risk Populations. Elizabeth takes part in financial contribution and management of the microfinance scheme in Tunduru as well as planning and evaluation of project activities.

Ado Shaibu Ado is graduate lawyer from University of Dar es Salaam Tanzania (UDSM), Ado is chair of Tanzania Sahrawi Solidarity Committee and secretary of ideology and publicity for Alliance for Change and Transparency party. Previously Ado worked at Mwalimu Julius Nyerere Professorial Chair, the Chair was established by UDSM in 2008 to honour and promote the thoughts and ideas of Mwalimu Julius Nyerere, the founder of Tanzania nation and first President of the United Republic of Tanzania. The chair promotes Nyerere's ideology and commitment to human rights and to uplifting the welfare of the poor. Ado oversees administration of the project, record keeping and reporting, monitoring of project activities, financial management and he takes part in planning and evaluation of project activities.

7. EXPANSION OF THE PROJECT

More than 90 % of people in Tunduru depend on farming for living. Maize, beans and cassava are among popular food crops while cashews, pigeon peas, sesame and tobacco are main cash crops, Economic and Social Research Foundation (2016). Farmers in Tunduru face challenges due to draught caused by climate changes and low prices of unprocessed cash crops particularly cashewnuts, Rweyemamu (2002). Future plans for Microfinance scheme in Tunduru are; to establish small businesses that will be owned by groups of women and young entrepreneurs to create employment opportunities to increase their income and to plant a small cashew processing facility to add value to cashews by as the main cash crop. Income from these businesses will be used to further expand the scheme and to subsidize microlending activities and other development projects in rural areas. Business activities for the scheme will focus on using new and environmental friendly agriculture technology to increase crop productivity such as irrigation and green house farming. Microlending activities are expected to reach 100 people in the first quarter of 2018. The scheme is expected to have activities in each village of Tunduru district after 5 years by year 2022

8. CONCLUSION

Majority of Tanzanians live in rural and semi urban areas and depend on small scale farming and small business for living. Ruvuma region is economically marginalised compared to other regions of Tanzania. Difficulties in accessing loans for business cause challenges in developing and starting small businesses in rural areas. Microfinance schemes have been favourable approach in providing credit to the low-income earners who are not accepted by other sources of finance. The Microfinance scheme in Tunduru district provides microloans to women and youth to develop and start business, the aim is to create jobs and alleviate poverty. Training in entrepreneurship has been found to benefit entrepreneurs by increasing profit and sustainability of their business activities. The microfinance scheme in Tunduru provides opportunity for entrepreneurs to learn from each other. Recently experienced entrepreneurs have volunteered to provide training to members of scheme. The project is expected to expand to reach all villages of Tunduru district by year 2022.

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The Dynamics of Australian Commodity Prices

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Abstract

The study uses Johansen's (1988, 1991) cointegration technique and vector error correction model to understand the dynamic interactions between Australian commodity prices and other fundamental macroeconomic variables. The author has been formulated the econometric models by using seasonally adjusted monthly time series from January 2000 to December 2015. The study shows that the real interest rate (rr), real exchange rate (rer) and the industrial production (ip) have an adverse effect on Australian real commodity price (rci). Moreover, the model of this study shows that all the variables are helping to restore the divergence from the long-run equilibrium in commodity prices of Australia.

Keywords: Commodity prices, Macroeconomic variables, Cointegration, Vector error correction

1. INTRODUCTION

Commodity price swings affect world's commodity exporting nations and these fluctuations are major concerns of the policy makers without any doubt. Australia is not an exception of those nations. Australia noted its 25th year of uninterrupted economic growth in 2015-16. After considering the uncertain economic and political condition in this present world, this Australian achievement is definitely significant. This is the only commodity exporting nation after Netherlands which has the longest record of economic growth, at 26 years (OCE, 2016).

Increasing commodity export prices had been a positive contributor for the Australian economic growth at the beginning of twenty first century. During that timeframe Australian terms of trade have reached their highest level since the Korean War boom. The difference between the growth of export and import prices was believed to be the reason of that favourable condition. But there is an argument over whether these gains are purely cyclical or show a structural shift to an eternally higher level of national income. Some researchers point out towards the historical experiences of Australia which suggests that this country is well placed to weather any downturn in commodity prices. They argue that commodity production and exports are not as important to the overall Australian economy as commonly assumed (Kirchner, 2009).

The above view is not supported by many academics and policy circles of commodity exporting nations as fluctuations in commodity prices responsible for countries' external and internal balances as well as their particular fiscal and monetary policies (Byrne, Fazio, & Fiess, 2013). Moreover, Australia has experienced both the upward and downward swings in its commodity prices in last two decades. Commodity price rises to its highest peak in real terms during the Global Financial Crisis of 2008-2009 and this kind of former historical highs reached in the 1970s. The commodity price index then had a steady falling trend since 2011 till recent time. The surge in commodity prices is partially, if not primarily, attributed to the drop in interest rates and the exchange rates and vice versa (Q. Farooq Akram, 2009; Krichene, 2008).

These are the reasons of focusing on the Australian commodity prices dynamics. The main focus on this article is given on assessing the influence of various fundamental macroeconomic variables on Australian commodity prices to observe their long-run as well as short-run influences.

2. LITERATURE REVIEW AND RESEARCH OBJECTIVES

Like many other countries in the world, Australian economy is also highly dependent on commodity market. High commodity reliance impacts almost every policy standpoint in an open economy, like Australia. Therefore, determinants of commodity prices are an important task.

The revolutionary model of Ridler and Yandle (1972) presents a simple method of taking into account of a number of exchange rate changes as they may affect the value of world exports of a primary commodity and the export earnings of a single country from the commodity. The model of Dornbusch (1985) shows similar features like Ridler and Yandle (1972) that the elasticity of commodity prices to real exchange rate would be less than one in absolute value. Beenstock (1988) mentions about few other factors that affect the world commodity prices as part of a general model of North-South interdependence. Pindyck and Rotemberg (1990) show that the prices of a broad set of commodities may move together because of changes in macroeconomic variables. The reason is that it can affect demands and /or supplies of those commodities and these changes can affect prices in two ways. The theoretical model of Frankel and Rose (2010) presents the model of the determination of prices for storable commodities that provides full expression to such macroeconomic aspects as economic activity and real interest rates. The theory of Frankel and Rose (2010) is similar to the prominent theory of exchange rate overshooting of Rudiger Dornbusch (1976), with the price of commodities substituted for the price of foreign exchange and with convenience yield substituted for the foreign interest rate.

Determinants of Australian commodity prices are also analyzed by many researchers. Bleaney (1996) uses ninety-two years of Australian data to analyze how real exchange rates of primary commodity exporters responded to variations in the relative prices of their exports. The study of Simpson and Evans (2004) also identifies Australia as a price taker and shows that volatility in commodity prices is reflected in volatility in exchange rates. The study of Hatzinikolaou and Polasek (2005) supports the view that the floating Australian dollar is a 'commodity currency'. The study of Bhattacharyya and Williamson (2011) shows that Australia has indeed reacted differently to unstable commodity prices than have other commodity exporters. The study of Bashar and Kabir (2013) shows two-way Granger causality between exchange rate and commodity prices, but one-way Granger causality from Global Financial Crisis to commodity prices. The distributional consequences of commodity price shocks are assessed in the research of Bhattacharyya and Williamson (2016).

This current study assesses the long run as well as short run dynamic interactions between Australian commodity prices with fundamental macroeconomic variables to get better understanding of the swings in commodity prices. These understandings can help the policymakers to develop efficient measures to control the shocks of these variables to control the commodity prices of such a commodity dependent economy for its sustainable economic growth.

3. MODEL SPECIFICATION AND METHODOLOGY

This study uses the equations of a competitive market model for understanding the dynamics of various macroeconomic variables which are affecting Australian commodity prices. The study uses Johansen's (1988, 1991) cointegration technique to understand the long-run relationship between commodity prices and Australian macroeconomic variables. This research assumes a vector of g variables (here, g = 5) and four of which are $I(1)$ to assess the dynamic interactions among the variables:

$$Y_t = [rci, rr, rer, ip, spr] \tag{1}$$

where, rci denotes real commodity price, rr represents real interest rate, rer shows the trade weighted real exchange rate of Australia, ip denotes industrial production index over time and spr shows S&P/ASX 200 resources index in real form. To construct the model, four variables have been used in logs (rci, rer, ip and spr) and real interest rate (rr) after following Bloch (2012), Rossi (2012), Frankel and Rose (2010), Akram (2009), Akram (2004), Cashin (2004) and the references therein. The author has been formulated the econometric models for seasonally adjusted monthly time series from January 2000 to December 2015. As the study has found significant long run relationship among the variables, the vector error correction model (VECM) is used to judge the short-run dynamic relationship among the variables. Four out of five variables of our model show the same break date in the series. The commodity price index(rci), real interest rate (rr), real exchange rate (rer) and Australian real resources stock price index (spr) shows the break date as 01/10/2008. For that reason, the model of this study has considered a dummy variable at the break date to analyse the interactions more accurately.

4. ECONOMETRIC RESULTS

This study considers four macroeconomic variables, (rr, rer, ip and spr) to see their influence on Australian real commodity price (rci). The trace and eigenvalue statistics yield the same results of one cointegrating vector. Moreover, the eigenvalue statistics drop sharply for both the tests from 0.23 to 0.13. So, it can be said that the statistical model of this study represents the commodity price model fairly.

After normalising the value of rci, the following cointegrating Equation (2) with the standard error in parentheses can be found:

$$rci = -\underset{(2.096)}{9.291\, rr} - \underset{(0.351)}{0.019\, rer} - \underset{(0.640)}{3.303\, ip} + \underset{(0.102)}{0.773 spr} + \underset{(0.097)}{0.191\, dummy} \tag{2}$$

The Equation (2) shows the expected sign of all the variables according to the literature. However, real interest rate (rr), industrial production (ip), real resources stock prices (spr) and the dummy are significant in the current commodity price model. The result shows that the real interest rate (rr), real exchange rate (rer) and the industrial production (ip) of Australia have an adverse effect on the real commodity price (rci). But, the effect of real exchange rate on real commodity prices in the long-run is not significant. On the other hand, the real resources stock price (spr) is showing a significant favourable effect on the real commodity price (rci) in the long-run which is also supported by existing literature. The effect of structural break is also significant in the model. Overall, the Equation (2) represents the long-run relationship between commodity price index and other macroeconomic variables of Australia.

The variables of the commodity price model of this study are cointegrated in the long-run, so there exists an error correction mechanism which brings together the long-run relationship with its short-run dynamic adjustments. The error correction mechanism (ECM) combines the long-run equilibrium with short-run dynamics to reach the equilibrium situation. Since the study is dealing with a multivariate VAR system, the multivariate counterpart of ECM is known as the vector error correction model (VECM). This VECM can be expressed according to the following matrix form:

$$\begin{bmatrix} \Delta rci_t \\ \Delta rr_t \\ \Delta rer_t \\ \Delta \mathrm{rip}_t \\ \Delta spr_t \end{bmatrix} = \begin{bmatrix} -0.025 \\ -0.010 \\ -0.029 \\ -0.003 \\ -0.072 \end{bmatrix} \begin{bmatrix} 1.000 & -9.291 & -0.019 & -3.303 & +0.773 \end{bmatrix} \begin{bmatrix} rci_{t-1} \\ rr_{t-1} \\ rer_{t-1} \\ ip_{t-1} \\ spr_{t-1} \end{bmatrix} + \begin{bmatrix} +0.514 & +0.765 & +0.092 & -1.144 & -0.013 \\ -0.024 & -0.019 & +0.031 & -0.085 & -0.042 \\ -0.269 & -0.384 & +0.043 & +2.079 & -0.008 \\ -0.000 & -0.022 & +0.002 & +0.891 & +0.002 \\ -0.202 & -0.486 & +0.111 & -1.737 & -0.214 \end{bmatrix} \begin{bmatrix} \Delta rci_{t-1} \\ \Delta rr_{t-1} \\ \Delta rer_{t-1} \\ \Delta \mathrm{ip}_{t-1} \\ \Delta spr_{t-1} \end{bmatrix}$$

$$+ \begin{bmatrix} -0.046 & +0.210 & +0.083 & -0.345 & -0.021 \\ +0.059 & +0.115 & +0.098 & +0.083 & -0.030 \\ +0.088 & +0.043 & -0.130 & -1.584 & +0.006 \\ -0.011 & +0.029 & -0.022 & -0.106 & -0.001 \\ +0.209 & +0.433 & +0.532 & -1.250 & -0.117 \end{bmatrix} \begin{bmatrix} \Delta rci_{t-2} \\ \Delta rr_{t-2} \\ \Delta rer_{t-2} \\ \Delta \mathrm{ip}_{t-2} \\ \Delta spr_{t-2} \end{bmatrix} + \begin{bmatrix} +0.103 & +0.516 & +0.200 & +1.651 & +0.042 \\ +0.036 & -0.130 & -0.066 & +0.322 & -0.001 \\ -0.030 & +0.216 & +0.025 & -0.967 & -0.020 \\ -0.003 & -0.069 & +0.003 & -0.323 & -0.004 \\ -0.012 & +0.064 & -0.360 & +1.549 & +0.017 \end{bmatrix} \begin{bmatrix} \Delta rci_{t-3} \\ \Delta rr_{t-3} \\ \Delta rer_{t-3} \\ \Delta \mathrm{ip}_{t-3} \\ \Delta spr_{t-3} \end{bmatrix}$$

$$+ \begin{bmatrix} +0.033 & +0.315 & -0.008 & -0.954 & +0.061 \\ -0.031 & -0.068 & -0.003 & +0.008 & +0.001 \\ -0.073 & +0.220 & -0.209 & +1.109 & -0.032 \\ -0.002 & +0.018 & -0.009 & +0.202 & -0.004 \\ -0.221 & -0.075 & -0.083 & -1.403 & -0.092 \end{bmatrix} \begin{bmatrix} \Delta rci_{t-4} \\ \Delta rr_{t-4} \\ \Delta rer_{t-4} \\ \Delta \mathrm{ip}_{t-4} \\ \Delta spr_{t-4} \end{bmatrix} + \begin{bmatrix} u1_t \\ u2_t \\ u3_t \\ u4_t \\ u5_t \end{bmatrix} \quad (3)$$

It is clear from the previous matrix that the vector error correction has cointegration relations built into the specification so that it restricts the long-run behaviour of the endogenous variables to converge to their cointegrating relationships while allowing for short-run adjustment dynamics. The cointegration term, which is known as the error correction term since the deviation from long-run equilibrium is corrected gradually through a series of partial short-run adjustments. All the error correction terms of the model of this study is negative and statistically significant. Thus, the model shows that all the variables are helping to restore the divergence from the long-run equilibrium in commodity price model of Australia.

5. CONCLUSION

The result of this current study shows the expected sign of all the variables according to the literature. However, real interest rate (rr), industrial production (ip) and real resources stock prices (spr) are significant in this commodity price model. The result shows that the real interest rate (rr), real exchange rate (rer) and the industrial production (ip) of Australia have an adverse effect on the real commodity price (rci). These findings are consistent with the outcome for Australia by Bleaney (1996). But, the effect of real exchange rate on real commodity prices in the long-run is not significant in our study. On the other hand, the real resources stock price (spr) is showing a significant favourable effect on the real commodity price (rci) in the long-run. This result is consistent with the study of Sarkar, Ratti and Westerholm (2015) which also considered Australian case.

As the variables of this model are cointegrated in the long-run, there exists an error correction mechanism which is presented in this study. This vector error correction mechanism combines the long-run equilibrium with short run dynamics to reach the equilibrium situation. The signs of the error correction terms of the model has expected negative (-) sign with statistical significance. Thus, the model shows that all the variables are helping to restore the divergence from the long-run equilibrium in commodity price model of Australia.

The commodity price model of this study does not show significant long run relationship between commodity price and real exchange rate of Australia. As Akram (2009) explains in his empirical analysis to control some macroeconomic variables like interest rates and economic activity to find out the true connection between commodity price and real exchange rate. This feature can be explored further in future study.

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A 21st Century Approach to Solving Water Poverty

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Abstract

Water poverty is a complex problem that is caused by two major factors amongst other factors, one is the lack of appropriate technology, and secondly it is compounded with an affordability crisis resulting in 783 million people lacking access to clean drinking water all over the world. This paper discusses how new age business practices can help create better products and high impact to eliminate water poverty. Methodologies including Lean Start-up, social business models and Triple Bottom Line have been discussed and applied to create consumer-focused products by incorporating consumer feedback at the prototype stage. This allowed development of key criteria in order to produce appropriate technology for consumers in rural areas of the developing countries with low purchasing power. The business development is made possible by social business model that allows high level of collaboration between small companies and industry leaders like Grameen as compared to a much more competitive conventional profit based business model. Based on success of these business models in other fields and their similarity to water sector, they can create high impact in water poverty sector. Key findings include the product development thus far leading to lower price points with better usability than the competitors by focusing on process modifications and incorporation of a holistic approach.

Keywords: Water Poverty, Solar Still, Lean Start-up, Social Business

1. INTRODUCTION

As per the UN research, water scarcity affects 40% of the global population. An estimated 783 million people do not have access to clean drinking water. Unclean water is the main source of diarrhea and dysentery and the leading cause of child mortality in rural areas globally with over 1.5 million deaths annually. On the other hand, solving water poverty results in high return. UN Research shows that every US $1 invested in improved water and sanitation translates into an average return of US $9. Those benefits are experienced specifically by poor children and in the disadvantaged communities that need them the most, as mentioned in reports by United Nations (2017).

Water is utmost vital for sustaining life. With increase in global warming, the fresh water sources are depleting at a higher rate than anticipated. Year after year area of arid regions has been constantly increasing, which was determined by World Water Development Report (2016). The freshwater sources have also been left undrinkable due to excessive dumping of untreated waste. This affects not only the environment but also human health.

Wassouf *et al* (2011) discussed that groundwater is extracted as the surface water depletes faster than it is naturally rejuvenated. Though there is no severe water shortage, there is a dire need to address the growing demand and the stress on the existing water sources. The most common desalination process currently in use is reverse osmosis, which is an energy-intensive process. Most of the inland freshwater need treatment to filter out the dissolved toxins and microbes before it is deemed fit for consumption as stated by Young (2017). The current supply is already a deficit of the demand, and the gap will further increase in future.

Many of the existing processes are either capital intensive or energy intensive. People in the arid regions and rural areas cannot afford these systems.

To counter the energy-intensive processes, we can use solar energy to treat the water. The biggest advantage of solar energy is its infinite availability and zero fuel cost. Distillation process has been utilized since ancient times with references made by Aristotle as early as 4th century BC. Young (2017) also reiterated ths distillation process, it involves evaporation of water from the impure mixture and condensing the vapour to retrieve water, which is fit for human consumption like the process nature makes rain. The energy and cost-intensive processes are compromised by the low output observed of this process since evaporation and condensation are not fast processes. Though the technology is not new, the effort has been made to develop a product that makes use of this technology and bring it for the rural communities for whom affordability is a higher priority than system efficiency.

On understanding the prevalent barriers hindering the solar still technology from becoming mainstream it was determined that the key factors involved were cost, payback period, and most importantly low efficiency. However, considering the current scenario where there are millions of people especially in the remote areas of developing and underdeveloped nations who do not have access to clean potable water; this technology in its current form could help ease their life and improve their health tremendously.

2. TECHNICAL DETAILS

Almost all the active research that has been undertaken has been from the perspective of enhancing the solar still efficiency. However, the approach applied in this paper for the implementation of this technology, that makes it unique, is to bring forth for the masses in the most economical and effective way.

The core concepts that have been implemented in this project are based on the existing proven research. The best and cheap methodologies that help improve the system efficiency without compromising on the affordability of the target consumer have been incorporated.

Furthermore, the process improvement is the focus of the project. To bring the product to the target consumer at affordable cost optimizations from the perspective of logistics, usability, and maintainability in the design have been made. Adhering to the principle of concurrent design any issues that may arise from the prototype will be addressed.

The core system design is addressed to efficiency enhancement by means of studying the effect of glass inclination, encasement material, base insulation, wick type, water column depth, chamber height & volume, charge flow-rate, the effect of chamber humidity, pressure, water salinity on the rate of evaporation, these were adopted from Wassouf *et al* (2011) and Naim and Abd El Kawi (2003).
Selective compromise has been made in the overall system efficiency and area covered by the module to achieve the target yield of water production. Keeping in mind the key demographic, the economics of this project is vital.

2.1 Alternatives Comparison

The existing alternatives for securing potable water include purchasing bottled water, water filters and Reverse Osmosis systems.

The market study by Numbeo (2017) suggests average cost of bottled water in developing nations such as India, Pakistan, Bangladesh, Cambodia, Peru & Nigeria vary in the price range of 0.4 to 0.8 A$/L.

One of the alternatives by Unilever (2017) is non-electric gravity-based membrane water purifiers that produces water at the cost in the range of 0.004 to 0.006 A$/L as stated in their pricing. Though cheaper, the membrane performance is limited based on the turbidity of water. The filter life reduces exponentially when using highly turbid and saline water, thereby resulting in a more expensive solution as discussed by Wilf (2008).

The Reverse Osmosis systems are more feasible for large-scale production based on the process complexity and capital requirement. The portable Reverse Osmosis systems do exist; however, they need an additional powering unit for operation and require trained workforce for maintenance, resulting in an overall expensive solution.

The target production for the system discussed in this paper is 10 L/day at the unit cost of $100 with a life of at least 5 years. This results in 0.0055 A$/L cost of distilled water. The solar still when pitted against the alternatives outshines its cost benefits.

3. SOCIAL ENTERPRISE BUSINESS MODEL

Implementation of social enterprise business model has proven to be one of the most effective systems to create impact in the modern age. According to Nobel Laureate and social enterprise pioneer, Dr Muhammad Yunus (2010),
"Social business is a cause-driven business. In a social business, the investors/owners can gradually recoup the money invested, but cannot take any dividend beyond that point. Purpose of the investment is purely to achieve one or more social objectives through the operation of the company, no personal gain is desired by the investors."

A purpose-based approach also allows companies to work in collaboration more than the traditional business practices. Skarya *et al* (2012) discusses the collaboration opportunities in social business as two companies with similar or complementary purposes can collaborate to achieve their specific purposes rather than compete with others. As an implementation of this methodology, Water Democracy also intends to collaborate with Grameen Foundation and other industry leaders by incorporating successful micro-credit finance scheme for people to purchase their products and get access to clean drinking water. A utilization of existing distribution channels also greatly reduces the company's cost of establishing channels in the target markets. This is made possible by social enterprise business model where competition can be replaced by collaboration.

3.1 Triple Bottom Line

A commonly applied practice for social enterprises and social business is Triple Bottom Line. It takes into account Financial, Social and Environmental aspects of the company equally. It is unlike traditional businesses where financial bottom line is the one that matters the most. An application of triple bottom line has allowed multiple social businesses to succeed while creating impact as stated by Hall (2011).

3.2 Lean Startup Methodology and Exponential Growth

Lean Start-up Methodology by Reis (2011). is a tried and tested method that has worked successfully in the IT industry for a long time now and has resulted in exponential growth for multiple companies as stated by Moogk (2012). One key example is the rise of Facebook.

It follows simple principles of validating a company's ideas by incorporating consumers input and measuring the input before execution as stated by Reis (2011). It is a basic scientific principle; however, this has only been applied recently as an official business practice. Lean Start-up Methodology and its effectiveness are also applicable outside of IT world as seen in the success of many companies, one of the examples is GE's energy storage division, discussed by Blank (2013) where they came back to customer focus, inquiring about customers and then delivering the product and planning. The first step is the customer and the last step is customer's feedback and validation.

4. PROPOSED BUSINESS MODEL AND CONCLUSION

A combination of Social business practices compounded with triple bottom line accountability and lean start-up methodologies for growth resulting in an exponentially growing high impact social enterprise in any sector as in for profit sector. Incorporating consumer feedback at the design and prototyping stage enhances chances of success as well as save scarce funds that might have to be spent in later stages. Triple Bottom Line makes sure that the company is accountable in all aspects while a social business model ensures that the company is focused on impact and open to collaboration.

Implementation of these methodologies resulted in three key criteria for products to be developed by the project for the rural customers in developing world.

4.1 Key Criteria; Simple, Robust and Cheap

These three criteria have been selected as the foundation of technological development at Water Democracy due to the target market.

Simplicity allows easy maintainability and contributes to the longevity of the product. A simple enough product makes it easier to train people to maintain it overcoming a barrier in promotion of social enterprise at a local level.

Robust products reduce the breakage and going against a market trend of planned obsolescence to provide consumers with longer lasting products and reduce cost of impact.

Low Prices is a key criterion due to the target market. Only cheap enough products can succeed in the above stated markets, since even cheap products require assistance via micro credit.

Execution of simple designs also allows flexibility in terms of hybridization and add-ons. This improves the aspect of reach in terms of targeting higher level of economic demographics to help cross subsidize the need-based customers.

The application of above principles has showed the trajectory of achieving the same water purification yield at a much lower price point as our competitors making solar still.

CONCLUSION

With high level of success of social business models in multiple sectors, it is important that even engineering companies place a high priority at developing a holistic business model that incorporates customers' needs from an early stage. Development of a dynamic social enterprise that is able to adopt to and operate in multiple different cultures in cooperation with local partners and is self-sustaining, is needed to tackle challenges. With the increasing stress on the current water sources due to rise in population and climate change impact, it is quite imperative to address the concerns affecting millions of humans all over the world with solutions developed with 21stCentury approach. Amongst other methods a key part of the solution for water poverty is business that cane quickly developed products based the key demographics identified with local partners and their experience such as a Solar Still. This is presented in the form of Water Democracy; a social business enterprise that develops customer focused products, follows Triple Bottom Line and is driven by impact while simultaneously able to sustain itself without relying on charity.

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Foreign Direct Investment and its Impact on Total Factor Productivity in Pakistan

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Abstract

This study examines the effect of foreign direct investment (FDI) on the total factor productivity (TFP) of Pakistan in presence of trade openness, human capital, government expenditure and inflation using annual data over the period of 1970 to 2015. Since the variables are co-integrated in the long run, the study uses Johansen co-integration technique and error correction method to examine the long run and short run relationship among the variables. The results suggest that there is a positive and significant impact of FDI on total factor productivity in Pakistan in the long run. FDI inflows bring in new ideas and technologies in the host country exposing the labor to better methods and skills. This causes an increase of the efficiency of the domestic factors of production and the results are consistent with this theory. The results also suggest that trade openness has a positive impact on productivity. Human capital represented by education expenditure is found to have a positive effect on TFP in Pakistan however; government expenditure has a negative effect. This suggests that government spending is not effectively allocated to create an efficient workforce that would result in an increase in factor productivity. Pakistan needs to improve the quality of human capital in order to fully utilize its economic resources. An increase in education expenditure, better healthcare facilities and improved school conditions is a prerequisite to increase the productive capabilities of people.

Keywords: *Total factor productivity, foreign direct investment, trade openness, human capital, Pakistan*

1. INTRODUCTION

With the rapid globalization, the importance of foreign direct investment (FDI) has been broadly recognized as a growth engine for a country. FDI inflows are particularly important for developing countries because they generate an increase in domestic investment compensating for the lack of national savings (Dhrifi, 2015). In a labor intensive country like Pakistan, the estimation of total factor productivity (TFP) indicates the overall efficiency of inputs and is an important measure to determine the effect of labor on the growth of GDP. A lot of literature focuses on the relationship between GDP and FDI but limited number of studies are conducted to analyse the productivity growth in developing economies especially Pakistan.

Pakistan is rich in natural resources but is struggling as a developing economy due to inefficient allocation of resources. Pakistan liberalized its economic policies in 1984 and since then it has experienced a growth in FDI inflows. For the past two decades, it has been receiving higher FDI but after 2007, the FDI inflows declined dramatically owing to the socio-political instability. Nevertheless, Pakistan steadily started receiving more investment from foreign countries; mainly from China followed by United States (US) and United Arab Emirates (UAE). As of 2015, FDI inflows make up 0.36% of total GDP.

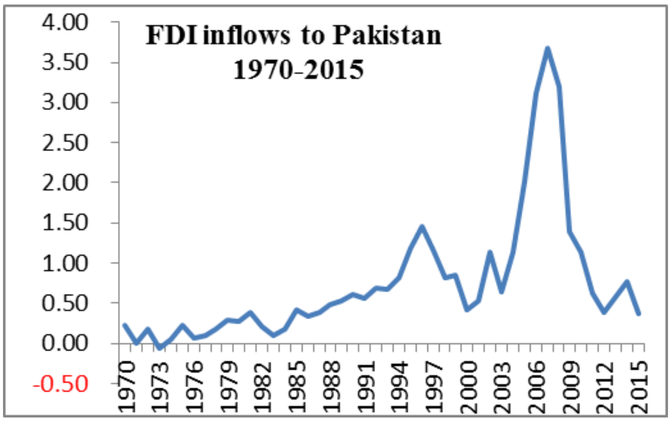

Figure 1 Pakistan's FDI inflows (% of GDP)

The figure shows the FDI in Pakistan as percentage of GDP from 1970 to 2015. Until now, Pakistan has received the highest level of FDI in 2007. As can be seen in the figure, there is a major structural break at 2008 which was caused by many sociopolitical factors. In 2008, after the death of Benazir Bhutto, a prominent political leader and ex prime minister of Pakistan, the increasing political instability and growing terrorism caused a massive downfall of foreign investment in Pakistan.

The evidence on the effect of FDI inflows to Pakistan's economic growth is mixed. Various studies show the effect to be positive (Shah et, al. 2011; Rahman, 2014; Rehman, 2015), while a few studies suggest the effect is negative or insignificant (Falki, 2009; Salman and Feng, 2010; Najia et.al; 2013). However, limited literature is available that examines the relationship between productivity growth and FDI. This study attempts to find the relationship between these two major factors relating to the overall growth of the country considering trade openness, government expenditure and consumer price index as crucial control variables.

The rest of the paper is organized as follows; section 2 explains the theoretical framework and empirical model followed by the data and methodology in section 3. Section 4 discusses the obtained results and the last section comprises of policy recommendations.

2. FRAMEWORK AND EMPRICAL MODEL

Total factor productivity (TFP) of a country is defined as the output relative to the factors of production. Literature suggests that per capita income growth can only be sustained when it is generated by total factor productivity growth (Akinlo and Adejumo 2016).

Following the endogenous growth theory, this study analyses the relationship between total factor productivity and FDI in presence of trade openness and human capital. The model includes fiscal policy variables such as government expenditure and CPI. The impact of FDI is affected by other policy variables including trade policy regime, inflation and government expenditure. Human capital is particularly important for FDI to be able to positively affect the productivity of a country. Better quality of human capital implies better absorptive capabilities of the host country.
Hence, the empirical model is specified as

$$TFP_t = c_t + \alpha_1 FDI_t + \alpha_2 OPEN_t + \alpha_3 H_t + \alpha_4 G_t + \alpha_5 CPI_t + \varepsilon_t$$

Where TFP_t is is the total factor productivity at time t. FDI_t Is foreign direct investment at time t. $OPEN_t$ is trade openness calculated as (Exports + Imports)/GDP. H_t is the human capital at time t, represented by education expenditure. G_t is the government expenditure and CPI_t is consumer price index at time t.

3. DATA AND METHODOLOGY

The study uses annual time series data of 46 years from 1970-2015 for Pakistan. All the data is obtained from Penn world table 9.0 and World development indicators (WDI). All the variables are expressed in natural logarithmic form.

The study employs Johansen co-integration technique and error correction method to estimate both long run and short run effects of FDI, trade openness, human capital and fiscal policy variables on TFP.

Table 1 shows the summary statistics of all the variables under study. The definition of variables is given in appendix 2.

To apply Johansen co-integration technique, all the variables need to be integrated of order 1. Unit root test is performed to test the order of integration of the variables using ADF, PP, DF-GLS and KPSS tests. The tests indicate that all the variables are integrated of order 1. The results of unit root tests are shown in table 2.

Table 1 Summary Statistics

Variable	Mean	Std. Dev.	Skewness	Kurtosis	JB normality test	No. of observations
lnTFP	2.99	0.047	-0.37	2.27	2.03	45
lnFDI	-0.76	1.148	-0.909	4.77	11.81	44
lnOPEN	2.96	0.43	-0.46	3.13	1.67	46
lnH	0.56	0.21	-0.65	3.15	3.23	45
lnG	2.4	0.17	0.244	3.23	0.55	45
lnCPI	3.09	1.09	-0.093	2.05	1.76	45

Table 2 Unit Root Test

Variables	**ADF**		**PP**		**DF-GLS**		**KPSS**	
	C	**C & T**	**C**	**C & T**	**C**	**C & T**	**C**	**C & T**
LnTFP	-2.2(3)	-2.8(1)	-1.17(2)	-0.8(1)	-1.4(1)	-1.5(1)	0.85(0)	0.77(0)
***Δ*lnTFP**	-4.6(1)***	-4.9(1)***	-5.5(2)***	-6.1(2)***	-4.1(0)***	-5.0(0)***	0.31(2)***	0.05(2)***
lnFDI	-2.2(3)	-3.1(3)	-2.8(2)	-4.8(3)	-1.6(3)	-3.2(3)	0.71(5)	0.15(4)
***Δ*lnFDI**	-3.3(3)**	-3.4(3)*	-12.4(0)***	-11.5(2)***	-2.2(0)**	-4.3(0)***	0.08(3)***	0.04(3)**
lnOPEN	-1.57(0)	-2.46(0)	-1.5(1)	-2.4(2)	-0.3(0)	-2.3(0)	1.01(3)	0.15(2)

ΔlnOPEN	-8.34(0)***	-8.35(0)***	-8.3(1)***	-8.31(1)***	-7.3(0)***	-8.1(0)***	0.09(1)***	0.07(1)**
lnH	-2.5(2)	-2.35(2)	-2.7(3)	-2.27(4)	-0.95(2)	-1.8(2)	0.46(5)	0.19(5)
ΔlnH	-4.2(2)***	-4.33(2)***	-5.4(3)***	5.58(3)***	-5.4(0)	-5.6(0)	0.22(2)**	0.07(5)**
lnG	-1.73(0)	-1.89(0)	-1.8(2)	-1.96(2)	-1.7(0)	-1.85(0)	0.49(1)	0.28(1)
ΔlnG	-5.9(0)***	-5.87(0)***	-5.9(0)***	5.87(0)***	-5.9(0)***	-3.29(2)**	0.10(0)**	0.09(0)***
lnCPI	-1.21(1)	-3.2(3)	-0.88(2)	-2.36(2)	1.1(3)	-2.1(3)	0.86(5)	0.16(1)
ΔlnCPI	-3.57(3)**	-3.35(3)**	-3.46(2)**	-3.48(1)*	-3.55(3)***	-3.78(3)***	0.16(1)***	0.11(1)**

- *, ** and *** implies level of significance at 1%, 5% and 10% level respectively.
- Numbers in parentheses represent lag length selected using AIC criterion.

4. RESULTS AND CONCLUSION

In an attempt to examine the relationship between TFP and FDI in presence of other control variables, Johansen co-integration technique is applied. The tests results indicate the presence of at least one co-integrating vector for all equations at the 5% significance level. The results of Johansen co-integration test are shown in table 3. Since the variables are co-integrated in the long run, there exists a short run dynamic adjustment towards its long run equilibrium. To test the short run dynamics of the variables under study, vector error correction method is employed; the results of which are shown in table 4.

Table 3
Johansen's Co-integration Test
Co-integration LR test based on maximum eigenvalue of the stochastic matrix

Variables under study: lnTFP, lnFDI, lnOPEN, lnH, lnG and lnCPI					
	hypothesis	alternative	Eigen-value	λ-value	λ-trace
VAR	r=0	r=1	0.641600	41.04418***	113.5796**
	$r \leq 1$	r=2	0.520937	29.43690	72.53539
	$r \leq 2$	r=3	0.496228	27.42523	43.09849
	$r \leq 3$	r=4	0.208749	9.365577	15.67326
	$r \leq 4$	r=5	0.130425	5.590031	6.307685
	$r \leq 5$	r=6	0.017781	0.717653	0.717653

LR estimates

$$lnTFP = 0.048\ lnFDI^{**} + 0.612\ lnOPEN^{***} + 0.001\ lnH - 0.063 lnG - 0.006 lnCPI^{**}$$

(3.2) (5.69) (0.06) (1.09) (3.7)

Eq.1.2 tests the short run relationship among the variables considering the structural break. A structural break can be seen in figure 1 at 2007 which is included in the model as a dummy variable $\delta_1 D_{07}$ where $D_{07} = 0$ before 2008 and $D_{07} = 1$ otherwise. This would capture the effect of how the changes Pakistan's economy experienced as a result of global financial crisis, political instability and most importantly the sudden emergence of terrorist activities in the region.

With dummy included in the model, the results show a strong immediate effect of the socio-political shock at 2007 that dramatically affected Pakistan's economy.

Table 4
Vector error correction model for total factor productivity and FDI in Pakistan

Variables	Eq.1.1	Eq.1.2	Eq.1.3	Eq.1.3
ECM_{t-1}	- 0.476166*** (-3.50332)	-0.166929 (-1.03546)	- 0.107771*** (-2.76706)	0.073205 (0.97556)
$\Delta \ln TFP_{t-1}$	0.057619 (0.33595)	0.110604 (0.49234)	-0.181702 (-1.07785)	-0.082474 (-0.41407)
$\Delta \ln TFP_{t-2}$	-0.030022 (-0.17310)	0.145847 (0.72188)	-0.140801 (-0.79081)	0.033384 (0.16265)
$\Delta \ln FDI_{t-1}$	-0.013435* (-1.98218)	-0.006708 (-0.78379)	0.004084 (0.56707)	-0.002842 (-0.38044)
$\Delta \ln FDI_{t-2}$	-0.003874 (-0.68130)	-0.006363 (-0.92612)	0.002757 (0.39666)	-0.012704* (-1.99256)
$\Delta \ln OPEN_{t-1}$	-0.011415 (-0.28043)	-0.025460 (-0.42592)	-0.019878 (-0.47532)	0.072791 (1.23431)
$\Delta \ln OPEN_{t-2}$	0.014285 (0.35866)	0.030393 (0.56637)	0.028029 (0.77378)	0.076950 (1.50806)
$\Delta \ln H_{t-1}$	0.049861* (1.66663)	0.031162 (0.84934)	0.011390 (0.38523)	0.021980 (0.62593)
$\Delta \ln H_{t-2}$	0.018813 (0.60531)	-0.014624 (-0.38413)	0.021018 (0.67291)	-0.011539 (-0.32840)
$\Delta \ln G_{t-1}$	-0.054490 (-1.44733)	-0.014831 (-0.33743)	-----	-----
$\Delta \ln G_{t-2}$	-0.035200 (-1.11689)	-0.052570 (-1.24803)	-----	-----
$\Delta \ln CPI_{t-1}$	-0.065240 (-0.63320)	-0.188584 (-1.35646)	0.076699 (0.64600)	-----

$\Delta\ln CPI_{t-2}$	-0.295105*** (-2.93728)	-0.228324* (-1.79910)	-0.256120** (-2.57145)	-----
D_{07}	0.039471*** (4.32868)	----	0.021158*** (2.56258)	0.002636 (0.76265)
Constant	-0.057784*** (-4.06090)	0.033506** (2.52693)	-0.045151*** (-3.57872)	-0.019663* (-1.75788)
Adjusted R^2	0.416867	0.074450	0.369777	0.103085
F-stat	2.889312	1.228941	2.809115	1.425253
Akaike AIC	-5.409657	-4.952961	-5.353880	-5.029295
Schwarz SIC	-4.763241	-4.349640	-4.793653	-4.555257
LM test	33.75(0.58)	39.16(0.32)	34.01(0.11)	18.92(0.27)
HET	565.1(0.52)	559.27(0.34)	370.29(0.17)	167.52(0.88)
Normality test	7.58(0.81)	13.53(0.33)	3.27(0.97)	5.13(0.74)
Log likelihood	117.7835	108.1063	114.7237	106.5566

Figures in parenthesis represent the t-statistics.
***Indicates significant at 1%.
** Indicates significant at 5%.
* Indicates significant at 10%.

The study suggests that there is a positive and significant effect of FDI on the total factor productivity in the long run. FDI inflow is an important stimulus for productivity gains through introduction of new processes, efficient managerial skills, technological know how and employee training in the host country (Jude and Levieuge, 2013) and the results of this study are consistent with this theory. The results also suggest that trade openness has a significant positive effect on TFP. Both trade and FDI are means to expose the local market to new ideas and innovation hence inclusion of both variables was critical to the study; omitting one variable might overstate the effect of other (Hejazi and Safarian, 1999). Human capital is represented by education expenditure and it has a positive effect on TFP though not significant. This might be because education expenditure as a percentage of GDP is very low in case of Pakistan which is not enough to influence the productivity. Moreover, education expenditure might not be able to fully capture the effect of human capital on TFP. These results validate the previous literature (Akinlo and Adejumo, 2016; Liu et, al. 2010; Sedhain, 2016; Ciruelos and Wang, 2005; Borensztein, 1998).The government expenditure however has a negative effect on total factor productivity suggesting that government spending is not allocated efficiently so as to be able to affect the productivity.

The results for VECM show that TFP converges at the rate of about 47% per annum towards its long run equilibrium. FDI affects TFP positively in the short run whereas trade openness and human capital have no significant effect. However, when the dummy variable is included to capture the short run effect of structural break at 2007; the VECM results show a significant impact of dummy variable indicating that the economy suffered an immediate setback.

5. POLICY RECOMMENDATIONS

Pakistan is a labor intensive developing economy. In order to fully utilize its economic resources it needs to improve the quality of human capital to be able to develop more efficient factors of production. Despite of a positive impact of human capital on TFP, the effect is insignificant. An increase in education expenditure, better health facilities and betterment of school conditions is a prerequisite to increase the productive capabilities of people. The negative effect of government expenditure suggests that the government needs to particularly focus on diverting its expenditure on education and health development. The amount of FDI received by Pakistan has been very minimal in recent years despite of significantly positive effect of FDI on productivity growth. Hence, it is imperative for policy makers in Pakistan to revise the policies in order to attract more FDI that would help increase employment and efficiency of labor and to expose its factors of production to state of the art technologies.

Appendix:

1) This study follows the model by Xu (2000) and Ciruelos and Wang (2005) to calculate the total factor productivity TFP as $Y_t/(K_t^{\alpha} L_t^{1-\alpha})$ where Y_t is the real GDP for Pakistan. The value of α is calculated by normalizing $Y_t/(K_t^{\alpha} L_t^{1-\alpha})$ with respect to labor. The value of α for Pakistan comes out to be 0.55. K_t is the capital stock and L_t is the labor force at time t.

   The capital stock K_t is measured following the models by Barro et al. (1995); Easterly and Levine (2001) and Ciruelos and Wang (2005). The capital stock K_t is calculated in a specific period t, I_t is the real investment in period t and the depreciation rate of capital is taken as δ. The value of depreciation rate (δ) of capital stock for each year is obtained from Penn world table 9.0. Following Easterly and Levine (2001); Barro et al (1995), Let g be the growth rate of real output and I_0 be the initial gross investment. The initial value of k can be computed following Solow growth model.

   $$K_0 = I_0/(g + \delta)$$

   Following Easterly et al (2003), steady state growth rate g is computed as weighted average of the countries. The world growth rate is given a weight of 0.75 and the country's growth rate 0.25. These studies have computed the value of g to be 0.0423.
   The above equation gives the initial value of investment K_0 and the capital stock for following periods can be calculated from the capital accumulation equation

   $$K_t = (1 - \delta)K_{t-1} + I_t$$

2) Variable definition

Variable	Definition
TFP	Total factor productivity defined as $Y_t/(K_t^{0.55}L_t^{0.45})$ calculated by using data for real GDP, capital stock and population.
FDI	Natural log of foreign direct investment, as a percentage of GDP (FDI/GDP)
OPEN	Trade openness calculated as the natural log of sum of total exports and imports as a percentage of GDP [(IMP+EX)/GDP]
H	Human capital, proxy used is log of education expenditure (USD) as a percentage of GDP (USD)
G	Government expenditure also calculated as the natural log of Government expenditure (in USD) as a percentage of GDP(USD)
CPI	The consumer price as a proxy for inflation.

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Foreign Direct Investment and the Manufacturing Sector in Bangladesh

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Abstract:

As in many other developing countries, Bangladesh has initiated reform strategies and provided incentives to attract foreign direct investment (FDI). The central aim of FDI strategies is to promote the export-oriented manufacturing sector and improve the productive capacity, efficiency, technological advancement and export performance of the country. However, due to conflicting theoretical and empirical findings, the contribution of FDI to economic development is still an issue of debate. This study examines the contribution of FDI to the performances of the manufacturing sector in Bangladesh over the period 1984-2015 using time series analysis. The Johansen-co-integration technique and Vector Error Correction model (VECM) are applied to estimate long run relationship between FDI and Manufacturing Value Added (MVA) for Bangladesh using time series data for the period 1980-2015. Based on the statistical and empirical results the study found that FDI inflows create some positive contributions to the growth, export, and productive capacity base of the sector. However, FDI inflow seems fail to establish sufficient backward linkages in the sector. Bangladesh should place more emphasis on backward linkages issue when dealing with foreign investors and promoting FDI.

Keywords: *Manufacturing value added, FDI and Bangladesh*

1. INTRODUCTION

In Bangladesh, as in many other developing countries, there has been an intensification of 'outward oriented' economic reforms since the late 1980's. Considering the low resource, technology and productivity base of the country, pressure for job creation for a growing labour force and the increasing challenges of the global competitiveness, Bangladesh is attempting to attract foreign direct investment to promote its export-oriented manufacturing sector. The current Perspective Plan (2010-2021) and 7th Five year Plan (2016-2020) of the government also recognizes that export-led manufacturing growth is the driver of job creation and sustainable development of the country. The 7th Plan suggests that FDI inflows need to be increased to at least 3 percent of GDP to achieve the overall 8 percent growth target. The main foreign investments now occur in manufacturing, power, trade & commerce, telecommunications, agriculture, chemical, engineering, services (Bangladesh Bank, 2016). The manufacturing sector has the major share (42%) of total FDI inflow in 2015-16.

2. THEORETICAL AND EMPIRICAL LITERATURE REVIEW

FDI inflows have the potentiality to generate positive contribution to the host economy both directly and indirectly. FDI inflows supply external capital to the capital scare country which directly contributes to extend the productive base of the country. FDI inflows may stimulate domestic firm's competitiveness and efficiency through its positive 'spillover' or indirect effect. Efficiency spillover can be generated by establishing linkages with domestic firms, copying of foreign firm's technology by local firms and the training of workers who then find employment in local firms or start their own firms (Gallagher and Zarsky, 2004). On the other hand, FDI may contribute to economic growth negatively. Foreign firms may crowd-out domestic investment by increasing competition (Chudnovsky and López, 2008). In these cases, FDI inflows may create adverse effect on growth and employment of the host country. Furthermore, benefits of the FDI on growth will not come automatically. It depends on the absorption capacity of the host government (Blomstrom et al., 1992, Alfaro et al., 2004, Borensztein et al., 1998, Gallagher and Zarsky, 2004).

The empirical literatures about FDI and growth provide mixed results. Several studies found positive relationship between FDI and economic growth (Choe, 2003, Mullen and Williams, 2005, Yao, 2006). Some studies found negative relationship between FDI and economic growth (Aitken and Harrison, 1999, Alagoz et al., 2008, Mutenyo et al., 2010, Kurtishi-Kastrati, 2013). On the other hand, Carkovic and Levine (2002) concluded that FDI has no significant impact on economic growth. Roy and Mandal (2012) examined causal relationship between FDI and economic growth for selected nine Asian countries (China, India, Pakistan, Sri Lanka, Indonesia, Malaysia, Philippines, Singapore and Thailand). They employed Granger-causality test. Their study found bidirectional relationship only for Thailand. For Malaysia they found granger neutrality between these two variables for Malaysia. On the other hand, unidirectional causality- economic growth to FDI was found for rest of the seven countries.

Several studies have been carried out in relation to FDI and economic growth in Bangladesh. Kabir (2007) investigated the relationship of FDI and sustainable growth for Bangladesh and found positive result. Shimul (2009) examined the long run relationship between foreign direct investment and economic growth for Bangladesh using time series data of 1973-2007. They employed ARDL Model and Engle Granger two step procedures to analyze the data. The study found no co-integration between FDI and GDP. Adhikary (2011) examined the linkage between FDI, trade openness, capital formation, and economic growth rates in Bangladesh over the period 1986 to 2008 using time series analysis. He found a strong unidirectional long-run relationship between GDP growth rates and the explanatory variables. Hossain and Hossain (2012) investigated co-integration between FDI and GDP growth in both short run and long run for three south Asian countries (Bangladesh, India and Pakistan) for the period 1972-2008. They found no co-integration between FDI and GDP in the short and long run in Bangladesh and India. However, for Pakistan they found positive co-integration in both the short and long run.

In sum, both the theoretical and empirical literatures related to FDI and its contribution to economic development provides conflicting and mixed results. Moreover the results could vary from country to country. A very few researches have been conducted to examine the growth and FDI nexus for Bangladesh. Moreover, no research has been carried out for the manufacturing sector specifically. As most of the FDI inflows in Bangladesh goes to the manufacturing sector and the government is promoting FDI in this sector with a hope that it will bring advancement and enhance efficiency and competitiveness this sector, it is crucial to examine the impact of FDI inflows in this sector.

3. FDI AND THE MANUFACTURING SECTOR IN BANGLADESH

3.1. Growth performance

The FDI inflow started to increase in Bangladesh from mid 1990s and mostly concentrated to the manufacturing sector. The manufacturing sector also growth picked up pace in the 1990s, from average growth of 4.7% per annum in eighties to 7.2% in nineties. The average manufacturing growth reached to 9.47 percent during 2010-2015. Manufacturing growth has shown a double digit (10.3%) in FY 2014/15 and 2015/16 (GOB, 2016). Therefore, it could claim that the outward-looking export-oriented FDI inflow contribute positively to the growth performance of the manufacturing sector in Bangladesh.

3.2. 'Crowding in' or 'crowding out' of domestic investment

FDI may generate negative impact on the domestic investment base by crowding out domestic firms through increasing competition. The gross fixed capital formation is one of the popular indicators to assess the domestic investment base of a country. In Bangladesh, the gross fixed capital formation as percentage of GDP has increased from 20.73 percent in 1996 to 25.83 percent in 2005 and reached to 28.58% in 2014 (World Bank, 2017).The share of FDI in total annual investment increased by 4 folds over the same period of time, increased from annual average of 1.44 percent during 1995-2000 to 4.99 percent in 2015 (Bangladesh Bank, 2016).Therefore, in Bangladesh with the expansion of foreign investment the domestic investment base has also increased which contributed to the positive growth performance of the manufacturing sector in Bangladesh. Moreover, as per the investment registration report of the BOI (as on 15 April 2016), local investment is the principal constituent, more than 90 percent in the total investment basket in Bangladesh which also indicates FDI didn't crowd out domestic investment rather it stimulates domestic investment.

3.3. Export performance

Compare to the FDI inflows manufactured exports increased at a higher rate over the last two decades in Bangladesh. Manufactured exports increased from US$3706 million in 1996 to US$32952 million in 2016 (GoB 2016, World Bank 2017). More than 80 percent of Bangladesh exports are from the manufacturing sector. Manufactured exports grew at the rapid rate of 15 percent a year on an average between 1996 to 2014.The share of manufactures in total merchandise exports has been increased from 77.49 percent to over 92 percent during 1990-2014 (GoB 2016, World Bank 2017).

Despite impressive performances of manufactured exports, the long term stability of this sector is far from assured. Manufactured imports grew even faster than exports in most of the year over the last two decades. The sector runs an average US$ 58 million deficit per year during 2000-2011. The import penetration ratio[1] of the country grew from 51.54 percent in 1972 to more than 84 percent by 2015 which indicates that the demand for intermediate goods is being made by foreign producer's rather domestic producers. In other words, it indicates that FDI inflow fails to establish sufficient backward linkages in the sector. Moreover, as per the latest Survey of Manufacturing Industry (BBS, 2012) conducted by the BBS, both large and medium firms rely more on imported, rather than locally sourced inputs. More than 60 percent of raw materials used in the medium and large firms are purchased from foreign sources.

3.4 Empirical Analysis

3.4.1 Model specification

The focus of the study is to investigate the relationship between FDI inflow and performance of the manufacturing sector in Bangladesh. Manufacturing Value Added (MVA) as percentage of GDP is used as an indicator to measure the performance of the manufacturing sector. The model also includes the trade openness (TO) measures as total trade over GDP and gross fixed capital formation (GFCF) as proxy of domestic investment as controlled variables as they likely to influence FDI inflow and manufacturing value added. Time dummy variables (*TimeD)* are incorporated to capture time specific effects and structural breaks of the variables. Therefore, the following econometric equation is used to investigate the relationship and causality among the variables of interest:

1 The ratio between the values of imports as a percentage of total domestic demand which shows what degree of domestic demand is satisfied by imports. Calculated as M/D, where M denotes import and D denotes domestic demand which is the GDP minus exports plus imports i.e. [D = GDP-X+M)].

$$\ln MV_t = \beta_0 + \beta_1 \ln FDI_t + \beta_2 \ln GFCF_t + + \beta_4 \ln TO_t + \sum_{t=1}^{n} \beta TimeD + u_t$$

The variables are standardized as percentage of GDP to overcome the problem of nominal value. Log-linear specification provides more appropriate and efficient results compared to simple linear functional form of model (Cameron, 1994). Furthermore, logarithmic form of variables gives direct elasticities for interpretations.

3.4.2. Data sources

In this study, we used time series data from 1984 to 2015 sourced from World Development Indicators (WDI).

3.4.3 Estimation procedure, results and main findings:

The nature of the data distribution is examined by using the standard descriptive statistics (mean, median, standard deviation, skewness and kartosis). The descriptive statistics of the log values of the variables reveal that the data are fairly dispersed around the mean having a considerable degree of homogeneity (see annexure table-1). In time series analysis, before running the causality test the variables must be tested for stationarity. The conventional unit root tests such as ADF (Augmented Dickey–Fuller) test and PP (Phillips– Perron) test are conducted. The unit root results of the variables are found to be first difference stationary (see annexure table-2).

We have applied Johansen maximum likelihood ratio tests in order to a examine co-integration. The Johansen co-integration test both at the trace and maximum eigen value levels provide evidence that there is at least one co-integrating vector in the model (see annexure table-3). Thus, it can be concluded that there is a long-run co-integrating relationship among the variables.

Table- 1 presents the long run coefficients of the variables of interest. The long run coefficients of most of the independent variables have the expected relationships with manufacturing value added to GDP. FDI has a positive estimated coefficient and it is statistically significant. Gross fixed capital formation also has a positive and statistically significant coefficient which is expected as per theory. However, trade openness has a negative coefficient and it is statistically significant. It is probably due to high imports and negative trade balance position for the sample period.

Table-1: Long run normalized coefficients (standard error in parentheses)

LNMV	LNGFCF	LNTO	LNFDI
1.000000	-0.907621	0.108364	-0.187587
	(0.01117)	(0.01373)	(0.02629)

To confirm the long run equilibrium relationship and estimate the speed of the adjustment, we have applied VECM model. The results of the VECM confirm a long run relationship among the variables (see annexure table-4). The estimated coefficient of the error correction term is negative (-0.69), as expected and statistically significant which implies that any short run deviation is being adjusted at the speed of 69 percent and variables will be in an equilibrium position in the long run. The model incorporates time dummy variables are found insignificant (see annexure table-4). Pair wise Granger causality results indicate that there are unidirectional causality running from MVA to FDI inflow, MVA to TO and MVA to GFCF. However, there is a strong bidirectional causality exist between FDI and trade openness (see annexure table-5).

Variance decomposition analysis results (see annexure table-6) forecasted that FDI will have an increasing effect on manufacturing value added and the effect is stronger in the long run. It is indicated that over 32% of the variation in manufacturing value added is expected to be explained by FDI after 8 years beyond the sample period of this study. Gross fixed capital formation has also forecasted to continue to effect on manufacturing value added even to a greater extent.

3.4.5 Validity of the model:

The numeric of adjusted R^2 at 0.87 shows a very high explanatory power of the model. The F statistics at 8.16 suggest that a moderate interactive feedback effect exists within the system. The optimum number of lag (3) is determined based on the AIC and SIC criterion. The results of the Breusch-Godfrey LM test (see annexure table-7) confirm that there is no serial among the variables. The normality of data distribution is also ascertained by Breusch-Pagan-Godfrey Heteroscedasticity test (see annexure table-8) and CUSUM test (see annexure Fig-1).

4. CONCLUSIONS AND POLICY IMPLICATION

This study examines the relationship between FDI inflows and manufacturing value added for Bangladesh using time series data for the period 1984-2015 to check the contribution of FDI inflows to the manufacturing sector. The study further considers two other important variables; gross fixed capital formation and trade openness that are likely to potentially affect to manufacturing value added.

The Johansen maximum likelihood co-integration test and VECM are applied to estimate the long-run relationship between FDI and economic growth. The causality was determined using the Granger causality test. The robustness of the long-run association was checked by the application of variance decomposition analysis technique.

Findings from VER estimates indicated that there is a positive and significant relationship between FDI and manufacturing value added in Bangladesh in the long-run. Gross fixed capital formation also stimulates economic growth. However the study found a negative but significant relationship between trade openness and manufacturing value added. The Granger causality test revealed that there is strong unidirectional causal link between manufacturing value added and FDI inflows.

Results obtained from this empirical exercise provide a number of important policy implications. Although findings suggest that the economic growth of Bangladesh is stimulated by FDI inflows, the effect could have possibly been even stronger. Such failure may be attributed to failure of establishing sufficient backward linkages of FDI inflows. Moreover, now a days, innovation and technology have emerged as the key elements for industrial development. A high level of industrial sophistication is crucial to meet the internationally recognized standards of product quality. The diffusion of advanced technology and innovation techniques from foreign firms to domestic firms are crucial to harness the benefit of FDI. However, due to the limitation of time and data this paper does not cover that issue. Therefore, a further research is needed on theses area.

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Annexure

Annexure table-1: Summary of the descriptive statistics

	LNMV	LNFDI	LNTO	LNGFCF
Mean	2.704598	-2.334826	-1.736043	3.045193
Median	2.703432	-2.137882	-1.907102	3.089600
Maximum	2.868549	0.551249	-0.734451	3.363381
Minimum	2.510036	-7.057022	-2.472455	2.669960
Std. Dev.	0.101276	2.275328	0.646186	0.225520
Skewness	-0.106573	-0.314349	0.427988	-0.085559
Kurtosis	2.061731	1.783732	1.559914	1.432062
Jarque-Bera	1.388671	2.811855	4.209813	3.731568
Probability	0.499406	0.245140	0.121857	0.154775
Sum	97.36551	-84.05375	-62.49754	109.6270
Sum Sq. Dev.	0.358988	181.1991	14.61445	1.780074
Observations	36	36	36	36

Annexure table-2: Unit root test

	ADF				**PP**			
	level		1st difference		level		1st difference	
	Constant	Constant & trend	Constant	Constant & trend	Constant	Constant & trend	Constant	Constant & trend
lnmv	-1.056	-3.09**	-3.35**	-4.40***	-0.61	-2.51*	-4.49***	-4.41***
lnfdi	-1.26	-3.78***	-5.81***	-5.84***	-1.26	-3.70**	-8.305***	-8.34***
lngfcf	-0.81	-3.43**	-7.15***	-3.87***	-0.91	-1.93	-6.52***	-6.50***
lnto	-0.31	-2.13*	-7.06***	-6.74***	-0.44	-4.52***	-6.99***	-6.67****

Note: * indicates significance at 10% level, *** indicates significance at 5% level while *** indicates significance at 1% level.

Annexure table-3: Co-integration test results

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.813645	78.11165	40.17493	0.0000
At most 1 *	0.328031	24.34844	24.27596	0.0490
At most 2	0.246622	11.62709	12.32090	0.0651
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.813645	53.76321	24.15921	0.0000
At most 1	0.328031	12.72136	17.79730	0.2463
At most 2	0.246622	9.062041	11.22480	0.1172
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level				

Annexure table-4: Vector Error Correction Estimates

Sample (adjusted): 1984 2015				
Included observations: 32 after adjustments, Lags -3				
Standard errors in ( ) & t-statistics in [ ]				
Cointegrating Eq:	CointEq1			
LNMV(-1)	1.000000			
LNFDI(-1)	-0.139662			
	(0.01731)			
	[-8.06968]			
LNGFCF(-1)	-0.241865			
	(0.10420)			
	[-2.32118]			
LNTO(-1)	0.018054			
	(0.01048)			
	[1.72226]			
C	-2.168722			
Error Correction:	D(LNMV)	D(LNFDI)	D(LNGFCF)	D(LNTO)
CointEq1	-0.693313	0.201584	-0.209407	-0.917981
	(0.10798)	(1.15973)	(0.12195)	(7.44052)
	[-6.42057]	[0.17382]	[-1.71717]	[-0.12338]
Time Dummy_1997	-0.011389	0.030430	-0.016970	-0.209947
	(0.00709)	(0.07611)	(0.00800)	(0.48832)
	[-1.60709]	[0.39980]	[-2.12032]	[-0.42993]
R-squared	0.870573	0.215842	0.694804	0.466128
Adj. R-squared	0.763987	-0.429935	0.443467	0.026469
F-statistic	8.167748	0.334237	2.764426	1.060204
Log likelihood	97.63705	21.67005	93.74494	-37.81001
Akaike AIC	-5.164816	-0.416878	-4.921559	3.300626
Schwarz SC	-4.477752	0.270185	-4.234495	3.987689
Mean dependent	0.006430	0.045861	0.017382	0.207097
S.D. dependent	0.032325	0.141044	0.023773	1.096692
Determinant resid covariance (dof adj.)		9.82E-10		
Determinant resid covariance		7.83E-11		
Log likelihood		190.7127		
Akaike information criterion		-7.919542		
Schwarz criterion		-4.988070		

Annexure table-5: Pairwise Granger Causality Tests

Sample: 1984 to 2015, Lags: 3			
Null Hypothesis:	Obs	F-Statistic	Prob.
LNGFCF does not Granger Cause LNMV	33	9.66205	0.0002
LNMV does not Granger Cause LNGFCF		1.71737	0.1880
LNTO does not Granger Cause LNMV	33	3.50409	0.0294
LNMV does not Granger Cause LNTO		2.21060	0.1108
LNFDI does not Granger Cause LNMV	33	3.39808	0.0327
LNMV does not Granger Cause LNFDI		0.97928	0.4177
LNTO does not Granger Cause LNGFCF	33	0.27656	0.8418
LNGFCF does not Granger Cause LNTO		13.6556	2.E-05
LNFDI does not Granger Cause LNGFCF	33	1.21433	0.3243
LNGFCF does not Granger Cause LNFDI		2.49464	0.0821
LNFDI does not Granger Cause LNTO	33	1.94159	0.1477
LNTO does not Granger Cause LNFDI		1.32776	0.2868

Annexure table-6: Variance Decomposition of LNMV:

Period	S.E.	LNMV	LNGFCF	LNTO	LNFDI
1	0.017303	100.0000	0.000000	0.000000	0.000000
2	0.024651	95.71747	0.748203	0.279575	3.254753
3	0.043578	47.66264	39.39936	1.976502	10.96150
4	0.064763	29.95564	48.35111	2.778998	18.91425
5	0.082365	24.25385	50.35804	3.013904	22.37421
6	0.094001	22.46950	48.71876	2.706362	26.10538
7	0.102979	21.75773	46.81850	2.396373	29.02740
8	0.109205	22.07751	44.73457	2.172085	31.01584
9	0.113538	22.91683	42.87562	2.022834	32.18472
10	0.117057	23.84789	41.42404	1.911717	32.81635

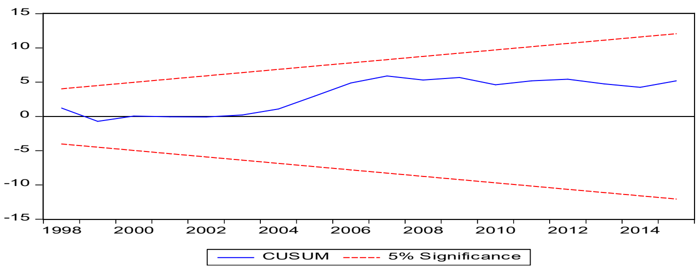
Annexure table-7: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.377112	Prob. F(3,15)	0.7708
Obs*R-squared	2.244247	Prob. Chi-Square(3)	0.5233

Annexure table-8: Heteroscedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.48	Prob. F(16,15)	0.91
Obs*R-squared	10.93	Prob. Chi-Square(16)	0.81

Annexure Fig-1: CUSUM test



Promotional Awareness of Islamic Finance: Australian perspective

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Abstract

The role of promotional awareness of Islamic Finance does not end only boosting up product selling rather it should be goaled to educate consumers about what Islamic Finance is and how it is different from interest based finance and demonstrate a clear procedure to educate them. It is worthy of mentioning that a knowledgeable customer might act as brand advocate for the corresponding financial institutions. In this commentary, the authors share their industry experiences in building customer knowledge and awareness towards the Islamic financial products in Australian context. To this point, the specific objective of this paper is to create awareness among the existing Australian Islamic Financial Institutions through various promotional tools in the broad theoretical discipline of marketing. The data has been mostly obtained from the secondary sources including grey literature. The paper concludes by providing market effective promotional advice for the Australian Islamic Financial Institutions.

Keywords: Islamic Finance Promotion, Australian Islamic Finance, Promotion, Islamic Finance, Sariah.

1. INTRODUCTION

In the new millennium, the amazing growth of trade and commerce approaches both the profit and non-profit organization to the demand for huge promotion and communication as the people want to get the necessary information about goods and services they use (Alam and Islam, 2013). Kotler and Keller (2006) defined promotion as means of activities that communicate the merits of the product and persuade target customers to buy it. To persuade customers the specific mix of advertising, personal selling, sales promotion and public relations could be used to according to the suitability of the product and customer group. Like any other products Islamic finance also needs to use promotional tools. The underling characteristics of the Islamic finance itself instigates the need to create awareness among the consumers as it relates to *Shariah* related question on top of financial queries. Islamic financial organizations should use promotional tools not just to sell the product but to create awareness among the consumers.

2. ISLAMIC FINANCE AND ITS GRWOTH

Islamic finance is defined as a financial service principally implemented to comply with the main tenets of Shariah or Islamic law (Sain and Rahman, 2013). The basic difference between Islamic and non-Islamic finance lies in the fact that the former operates on an equity-participation system in which a predetermined rate of return is not guaranteed, whereas the latter's operation is based on both equity and debt systems that are driven by interest. This essential difference resulting from the implementation of the Islamic *Shariah* principles (Naser and Moutinho, 1998).

Islamic banking has witnessed substantial growth in recent years and it is still expanding (Khattak et all, 2011). Being the second largest religious sects in the world the size of the market is increasing as the population is increasing (Desilver and Masci, 2013). In addition, religious guidance encourages Muslims to use financial institutions those comply with *Shariah* principles. (Wajdi and Abdullah, 2007). However, Islamic Banks do not operate in isolation and compete with traditional banks for customers, rather customers have access to both Islamic and Traditional Banking system (Naser and Moutinho, 1998). The reason for Muslim customers to enter into traditional banking system may be identified as low knowledge of Islamic banking principles or poor awareness of Islamic banks. In addition some scholars have questions whether all Islamic banks comply with Shariah principles and are truly 'Islamic'(Khan, 2010). These shows a clear indication to educate people.

Islamic finance in Australian context is relatively new. The first attempt to introduce Islamic financing products in Australia was made by the Muslim Community Cooperative Australia (MCCA). Apart from MCCA there are other organizations those offer Islamic Finance Facilities, such as Islamic Finance Australia Limited (ICFAL), Iskan Finance (Sain et all, 2013). In July 2003 the Weekend Australian reported that the Prime Minister John Howard had endorsed a shared partnership scheme between home buyers and banks which was very similar to schemes already being used by Islamic financial institutions (Ahmad, 2010). In 2006 National Australian Bank were interested about Islamic financing which was shown to their offer for post-graduate scholarship to a member of the Muslim community for NAB's understanding of Islamic Finance (Sain et all, 2013). According to 2016 Census the number of Muslims living in Australia is 604,200 which is 2.6% of the total population. In terms of percentage it was 1.7% on 2006, and 2.2% on 2011 (ABS, 2016). Empirical research on attitudes towards Islamic finance and banking has been limited globally. In Australia, only two known studies have been carried out to date (Farrar, 2015) and only one on individual customers' attitudes, by Hussain and Raft. Their research was carried out in Adelaide in June 2004 and showed genuine interest amongst practising Muslims in the idea of Islamic banking products – but a lack of familiarity with Islamic brands and understanding of Islamic principles of financing (Rammal and Zurbruegg, 2007). In the other study, it was noted that 59.50% of small business respondents (the majority of whom were non-Muslim) expressed an interest in profit and loss (i.e. muđarabah) financial arrangements and 41.2% of the financial institutions were prepared to lend on that basis (Jalaluddin, 1999). The latter study suggests policy makers should look beyond the actual numbers of the Muslim population when determining the potential market; Islamic finance is not just for Muslims.

The gradual increase of number of Muslims shows the demand of the Islamic financial products. To meet the growing demand in last decades there are some other financial institutions merged in the industry, namely, Hejaz Financial Services, Amanah Shariah Complaint Islamic Finance Solutions Australia, Insaaf Islamic Finance Australia, EFSOL, Lawful Finance Australia Limited. All these organizations have significant impact in providing Islamic financial services. These organizations offer muraqabah, musharaka, istisna and ijara, superannuation investment (in different names) and some products to meet customers' need. Islamic financial advice is one the new products offered by Hejaz Financial Services.

3. PROMOTIONAL TOOLS AND WHY THESE SHOULD BE USED FOR ISLAMIC FINANICAL PRODUCTS?

Financial services marketing has some unique aspects. According to Estelami (2012), financial services marketing is a unique and highly specialised branch of marketing which makes selling, advertising, pricing and distribution of financial service products far more complex than that of consumer goods. It should note that there is need to appreciate the distinctions between marketing of financial services and marketing of consumer or industrial goods (Jan, 2012). Since the services are different from tangible consumer goods and hence require different marketing frameworks as identified by Swankie and Watson (2006). They also identified four fundamental differences between marketing of financial services and marketing of consumer goods, these are: fiduciary responsibility, intangibility, inseparability and lack of standardisation.

Christian (1990) mentioned, for each of these categories of promotional tool has its own distinctive characteristics. The nature of a relationship marketing strategy is more suitable when we are taking about financial products. These areas represent a major challenge for marketing and organizational behaviour, practitioners and academic alike, to remove traditional borderlines and work together. When we are talking about the financial product the word 'trust' plays a bridging role between the organization and its customers.

The idea of using promotional tools is to influence to consumers to do something, at least aware them. The traditional conceptual model for creating any advertising or marketing communications message is the AIDA model; get attention, hold interest, arouse desire and obtain action. John Caples, extended the traditional concepts of marketing communication into: get attention, hold attention, create desire, make it believable, prove it is a bargain, make it easy to buy and give a reason to buy now (Alam and Islam, 2013). The major highlight here is to make it believable.

Islam has well-established business, economic and social systems and its influences are interwoven with the daily life of Muslims. Therefore, it is vital for the Islamic financial institutions to comprehend the impact that religion makes on Muslim societies before designing their marketing strategies. (Yousaf, 2014). To highlight this issue the entire planning process of the Islamic financial institution should consider the various elements of marketing mix. Rather than focusing all promotional tools, we will only highlight the promotional tools relevant to Islamic finance. The basic concept in marketing mix, defined the elements an organization control that can be used to satisfy or communicate with customer (Anand and Murugaiah, 2004). The main concern of Islamic marketing and the promotional tools it utilizes, should be to earn Allah's pleasure by serving consumers and society at large (Anwar and Saeed, 1996).

3.1 Product: Existing Practice and how it should be in Australian Perspective

A vital component of marketing mix, the product or service is the basis of which customer satisfaction is created, it has to satisfy the want of need of the customer (Kotler and Keller, 2006). The quality of the production process is of a paramount concern in Islamic ethics. The impact and prohibition of 'riba' is declared in Holy Qur'an by the following versus, Surah al-Rum: verse 39; Surah al-Nisa: verse 161, Surah Al 'Imran, verses 130-2 and Surah al-Baqarah, verses 275-81. Allah (SWT) says, those who benefit from riba shall be raised like those who have been driven to madness by the touch of the Devil; this is because they say: "*Trade is like riba" while God has permitted trade and forbidden riba. Hence those who have received the admonition from their Lord and desist, may have what has already passed, their case being entrusted to God; but those who revert shall be the inhabitants of the fire and abide therein for ever* (2:275).

In Hadith it was mentioned- '*Jaabir (R.A.A) said: The Messenger of Allah (blessings and peace of Allah be upon him) cursed the one who consumes riba and the one who pays it, the one who writes it down and the two who witness it, and he said: they are all the same. [Muslim 1598]*

This is noticeable here that, Rasuallah (SWS) encouraged to prohibit both direct and indirect impact of riba. The financial products in Islam is visualized quite differently compared to conventional thinking. Islamic principles dictates that the production operations must be innocent and pure from beginning to end. (Sain et all, 2013). Thus, the quality of the product offered by the Islamic financial institutions must meet the need of the customers. *Shariah* compliance is the indefinite component here. Maqasid Al-Shariah is the objectives and the rationale of the *Shariah*. A comprehensive and careful examination of the *Shariah* rulings entails an understanding that *Shariah* aims at protecting and preserving public interests (*maslahah*) in all aspects and segments of life. According to Imam Al-Ghazāli (d.1111) "*The objective of the Shariah is to promote the well-being of all mankind, which lies in safeguarding their faith (dīn), their human self (nafs), their intellect ('aql), their posterity (nasl) and their wealth (māl). Whatever ensures the safeguard of these five serves public interest and is desirable*" (Abozaid and Dusuki, 2007).

Second most common question arises basically from misunderstanding of the products. Among the many reasons for this confusion one is the names of the products are derived from Arabic language. Customers form different language background might not have knowledge in Islamic term such as Murabaha (selling on profit), Musharakah (joint venture) and Ijara (hire) (Abozaid and Dusuki, 2007).

In Australian Islamic finance industry, it is known that a majority of these organizations are based on the borrowed fund from third party based on the ruling that as long as the financial organizations' transaction with member is with *Sharia* principle there is nothing to be worried. Industry leader MCCA declares, 'MCCA's funding sources can be grouped into third party institutions and its' own sources, such as the MCCA Income Fund'. The MCCA Income Fund is Shariah certified by MCCA's Shariah Advisors. (MCCA FAQ, 2017). If this is acceptable practice then question may raise why Rasulullah (SWS) cursed the persons who indirectly involved? Based on this believe there are some institutions manage their fund from members only source. Some of the institutions don't declare the sources of fund. Being market leader MCCA has communicated the source of fund and the *Shariah* issue clear and precise way. In general, all the financial institutions are encouraged to follow the trail so that customers have clear idea about the source of fund and product structure.

Once financial institution gets the approval of their product from the Shariah regulatory body, copy of the certificate should be readily available to communicate to the customers, preferably presented to their web site including the contact details of the regulatory body. This will ease the customers to directly contact with the regulatory body. The demo copy of the financial contract should be available on the website as well so that if customers would go through the contract with and consult with their local Islamic Scholar, they have the opportunity.

3.2 Place & Price: Existing Practice and how it should be in Australian Perspective

Marketing focuses on making the product available to the customers at the right place, the right time, and at a reasonable price (Anwar and Saeed, 1996). It has been suggested that for building long-term relationship financial industry should prioritize reasonable price along with good quality and after-sell services (Domazet et all, 2010). To protect the weak and the feckless, Sharia transactional law (al-muˇamalat) imposes rules on all parties to make sure deals are fair, transparent and conducted with scrupulous honesty. Among the many rules it also mentioned to inform the amount of profit charged (Farrar, 2015). In Australia very few of the Islamic finance organizations disclose their profit rate. But both the *Shariah* and customer point of view it is required that the price should be reasonable and it need to be disclosed. Organizations should consider this seriously while setting their promotional mix.

3.3 Customer Service: Existing Practice and how it should be in Australian Perspective

Since products are very similar and easily copied, financial institutions are now focusing on improving the quality of customer service. Information technology is a tool that can be used to create distinctiveness through targeting and relationship development (Anand and Murugaiah, 2004). Strong knowledgeable customer service team should be backed by good promotional support tools. As mentioned by Anand and Murugaiah, 2004, promotional effort must be stimulating and motivating enougt to generate interest in and promote positive attitude towards the financial institution and its products. Customer acquisition, retention, corporate stability, public image and awareness all are tied up with good staff morale. A dedicated and knowledgeable customer service team can bring the change about product perception of the customers. The presentation of the customer service team wouldn't be immaculate unless they have clear knowledge about the Islamic products compare to conventional products. Classic example of this, MCCA *Sharia* board is sectioned as international and local body. Most of these honourable *Sharia* members are community trusted person and some of them are also known as specialized Islamic finance. MCCA's recent videos include the opinion of general people, MCCA officials and the scholars. These videos will create positive impact about MCCA. Some new organizations also following this trail.

4. BUILDING COMMITMENT TRUST RELATIONSHIP

In terms of relationship development, commitment has big impact toward building trust. The commitment-trust theory maintains that qualitative outcomes contribute to overall network performance. If commitment and trust are the key, the relationship commitment and trust will be developed when firm attend to relationship by providing resources, opportunities and benefit compare to alternative partners (Morgan and Hunt, 1994). Being able to maintain commitment will make existing customers loyal and acquiring new customers (Anand and Murugaiah, 2004). In this perspective, Islamic financial organizations in Australia are recommended to maintain commitment firmly, no matter they have shortage of fund due be member funded or need to follow third party organizations' policy from where they are borrowing.

5. QUALITY PROCUST NEEDS CONTINIOUS IMPROVEMENT: EXAMPLE

Delivering quality service also requires to measure the gap between the service and the expectation of the customer (Parasuraman et all, 1985). These gaps are: customers' expectations versus management perceptions; management perceptions versus service specifications; service specifications versus service delivery; service delivery versus external communication; The discrepancy between customer expectations and their perceptions of the service delivered; The discrepancy between customer expectations and employees' perceptions and the discrepancy between employee's perceptions and management perceptions. Australian Islamic finance industry should close these gaps. For example, it is commonly discussed that all Islamic finance institutions always charge higher than the conventional financial organizations. The customer expectation here is the price should be same. Islamic financial organization could develop a visual campaign why in the current industry practice they can't make the product competitive to conventional products. Customer service team of the Islamic finance organizations should have knowledge about the similar conventional products so that they can clearly communicate to the clients the difference between the products. Not just halal, the underlying reason why the product is halal need to be highlighted.

More example could be mentioned. The study shows that, the most common expectation, mentioned by 73 percent of consumers, is real-time access to and support of their financial accounts (Market Strategies International, 2011). Some of the Australian financial organizations yet to develop online access to their members' account. They can take immediate initiative to give that access to their customers to build trust and bring comfort to customer's mind. The same study shows that 40 percent of the customers expect rewards for customer loyalty and nearly as many value notification of discounts for not-banking products and services. At current Australian Islamic financial industry, the demand of Islamic finance supersedes the supply. Among the institutions, those who can cope these facilities as a promotional tool of their product definitely they have the potential to lead the industry in long run. The two major reasons why financial institutions choose over another are: trustworthiness, named by 80 percent and well-managed 76 percent. 30 percent of consumers would choose an institution on the recommendation in other words, word of mouth impact. So, highlighting the value of creating loyal customers will act as brand advocates.

6. CONCLUSION

Australian Islamic financial institutions should focus on educating their members/customers through the promotional tools as advised. In summary, our recommendation: (a) Product: clear and concise explanation of *Sharia* authenticity for general people, readily available translation of Arabic terms used for the products, source of fund and its *Sharia* explanation, access to *Sharia* board for *Sharia* related query; (b) Price: close to the competitive market price, if not should have explanation why it is not possible; (c) Place: more branches to have more access to customers (based on cost benefit analysis of the organization); (d) Promotion: involve local Sheikhs, Imams who have good trust in the community; electronic presentation of their opinion about the product in media, website, social media etc. (e)

Customer Service: knowledgeable and friendly customer service team about Islamic and conventional financial products.

Implementation of the above advises will eventually help members/customers to upgrade their knowledge about Islamic financial products. The domino effect is, more and more people will be interested for Islamic finance. Knowledgeable customers might act as brand advocate for the financial institutions.

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Causal Relationship between Australian Commodity Prices and Macroeconomic Variables

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Abstract

This study uses Granger's (1969) causality technique, given this vector error correction Granger causality / block exogeneity to understand the causal interactions between Australian commodity prices and other fundamental macroeconomic variables in different time horizons. Seasonally adjusted monthly time series from January 2000 to December 2015 were selected as benchmark. The study shows that the real interest rate (rr) and resources stock prices Granger causes Australian commodity prices in the short-run. But commodity prices Granger causes the real exchange rate (rer) and the industrial production (ip). Moreover, the long-run causality test results show current and past information of the adjustment speed of the cointegrating vector of the long-run commodity prices model helps improve forecasts of its prices in almost every time horizon in Australia. Further cross countries studies would add valuable discussion and analysis to understand the causal relationships among the commodity prices as well as these fundamental macroeconomic variables.

Keywords: Commodity prices, Macroeconomic variables, Granger causality, Block exogeneity

1. INTRODUCTION

The fluctuation in commodity prices during recent times has conveyed new momentum to ample discussion between academics and policy makers in Australia. Short-term supply shocks are the main focus points when researchers think about the trend of commodity prices. On the other hand, the long run movements in commodity prices are thought to be related with the demand in China, India and other fast-growing parts of the developing world. Interest rates stay as an ignored factor in many cases. Moreover, the nature of the relationships among commodity prices as well as real exchange rates, economic activities and prices of equities are also need to be considered very carefully to have a sound economic policy for such a commodity dependent economy. For that reason, the present study attempted to investigate the long-run as well as short-run causal interactions between commodity prices and the above Australian fundamental macroeconomic variables, especially the interaction of the monetary policy and real exchange rates with Australian commodity prices.

Commodity price fluctuations influence world's commodity exporting nations and these consequences are major concerns of the policy makers without any doubt. The policy makers of such commodity dependent economy need to know the interactions among the commodity prices and macroeconomic variables to adopt efficient as well as effective policies. Therefore, the main focus on this article is given on assessing the causal relationships among fundamental macroeconomic variables and Australian commodity prices to observe their long-run as well as short-run interactions.

2. DATA AND METHODOLOGY

This study uses a simple competitive market model as the commodity price model which assumes a vector of g variables (here, g = 5) and four of which are $I(1)$ to assess the dynamic interactions among the variables:

$$Y_t = [rci, rr, rer, ip, spr] \tag{1}$$

where, rci denotes real commodity price, rr represents real interest rate, rer shows the trade weighted real exchange rate of Australia, ip denotes industrial production index over time and spr shows S&P/ASX 200 resources index in real form. These variables are chosen for this model after following Akram (2004; 2009), Bloch, Fraser, and MacDonald (2012), Cashin et al. (2004), Frankel and Rose (2010), Rossi (2012) and the references therein. This research uses seasonally adjusted monthly time series from January 2000 to December 2015. The presence of the significant cointegrating vector in the model, would ensure the existence of the vector error correction (VEC) terms to show the short-run dynamics among the variables. The VEC model can be written by the following equations:

$$\Delta rci_t = \gamma_1 + \sum_{i=1}^{k-1} \delta_{1i} \Delta rci_{t-i} + \sum_{i=1}^{k-1} \zeta_{1i} \Delta rr_{t-i} + \sum_{i=1}^{k-1} \eta_{1i} \Delta rer_{t-i} + \sum_{i=1}^{k-1} \theta_{1i} \Delta ip_{t-i} + \sum_{i=1}^{k-1} \lambda_{1i} \Delta spr_{t-i} + \alpha_{11} ETC_{t-k} + \varepsilon_{rci} \quad \text{---------- (2)}$$

$$\Delta rr_t = \gamma_2 + \sum_{i=1}^{k-1} \delta_{2i} \Delta rci_{t-i} + \sum_{i=1}^{k-1} \zeta_{2i} \Delta rr_{t-i} + \sum_{i=1}^{k-1} \eta_{2i} \Delta rer_{t-i} + \sum_{i=1}^{k-1} \theta_{2i} \Delta ip_{t-i} + \sum_{i=1}^{k-1} \lambda_{2i} \Delta spr_{t-i} + \alpha_{21} ETC_{t-k} + \varepsilon_{rr} \quad \text{------------- (3)}$$

$$\Delta rer_t = \gamma_3 + \sum_{i=1}^{k-1} \delta_{3i} \Delta rci_{t-i} + \sum_{i=1}^{k-1} \zeta_{3i} \Delta rr_{t-i} + \sum_{i=1}^{k-1} \eta_{3i} \Delta rer_{t-i} + \sum_{i=1}^{k-1} \theta_{3i} \Delta ip_{t-i} + \sum_{i=1}^{k-1} \lambda_{3i} \Delta spr_{t-i} + \alpha_{31} ETC_{t-k} + \varepsilon_{rer} \quad \text{------------- (4)}$$

$$\Delta ip_t = \gamma_4 + \sum_{i=1}^{k-1} \delta_{4i} \Delta rci_{t-i} + \sum_{i=1}^{k-1} \zeta_{4i} \Delta rr_{t-i} + \sum_{i=1}^{k-1} \eta_{4i} \Delta rer_{t-i} + \sum_{i=1}^{k-1} \theta_{4i} \Delta ip_{t-i} + \sum_{i=1}^{k-1} \lambda_{4i} \Delta spr_{t-i} + \alpha_{41} ETC_{t-k} + \varepsilon_{ip} \quad \text{------------- (5)}$$

$$\Delta spr_t = \gamma_5 + \sum_{i=1}^{k-1} \delta_{5i} \Delta rci_{t-i} + \sum_{i=1}^{k-1} \zeta_{5i} \Delta rr_{t-i} + \sum_{i=1}^{k-1} \eta_{5i} \Delta rer_{t-i} + \sum_{i=1}^{k-1} \theta_{5i} \Delta ip_{t-i} + \sum_{i=1}^{k-1} \lambda_{5i} \Delta spr_{t-i} + \alpha_{51} ETC_{t-k} + \varepsilon_{spr} \quad \text{----------- (6)}$$

The causal relationship between the variables in this study can be tested with VEC Granger causality tests to determine the relationship between Australian commodity prices and the other considered macroeconomic variables.

3. ECONOMETRIC RESULTS

As the present study has one cointegrating vector in the model; therefore, a VAR-based Granger causality would be misleading (Enders, 2008; Granger, 1988; Parsva & Lean, 2011). Thus, the sources of causality could be identified from the significance test of the coefficients of independent variables in the vector error correction model (VECM). The current study divided the results for both short-run

(Table 1) and long-run (Table 2) causality. The null hypothesis was that the lagged explanatory variables of the model and also their joint significance do not Granger cause the dependent variableThe current study divided the results for both short-run (Table 1) and long-run (Table 2) causality. The null hypothesis was that the lagged explanatory variables of the model and also their joint significance do not Granger cause the dependent variable.

Regarding the causality of the short run, this study tested the nullity of the parameters associated with independent variables in each equation of VECM (Equations 2, 3, 4, 5 and 6) using the χ^2 – Wald statistics. Gujarati (2009) showed that the direction of causality might depend critically on the number of lagged terms included; therefore, this study conducted the tests for different lagged terms as undertaken by Brahmasrene, Huang, and Sissoko (2014).

Table 1 Short-run Granger Causality Tests

Sources of Causation → Dependent Variable	**Number of Lags**	**Chi-sq**
$\Delta rr \rightarrow \Delta rci$	4 months	8.033***
$\Delta rr \rightarrow \Delta rci$	5 months	12.267*
$\Delta rr \rightarrow \Delta rci$	6 months	11.774***
$\Delta rci \rightarrow \Delta rr$	1 month	5.875*
$\Delta rci \rightarrow \Delta rr$	4 months	10.044*
$\Delta rci \rightarrow \Delta rr$	5 months	10.473***
$\Delta rer \rightarrow \Delta rci$	1 month	2.997***
$\Delta rci \rightarrow \Delta rer$	2 months	5.452***
$\Delta rci \rightarrow \Delta rer$	3 months	10.088*
$\Delta rci \rightarrow \Delta rer$	4 months	8.027***
$\Delta rci \rightarrow \Delta ip$	2 months	4.488***
$\Delta rci \rightarrow \Delta ip$	3 months	7.359***
$\Delta rci \rightarrow \Delta ip$	10 months	16.036***
$\Delta rci \rightarrow \Delta ip$	11 months	19.641*
$\Delta spr \rightarrow \Delta rci$	2 months	5.911**
$\Delta spr \rightarrow \Delta rci$	3 months	7.137***
$\Delta spr \rightarrow \Delta rci$	7 months	16.060*

Notes: $\rightarrow$ Implies Granger cause, e.g. $\Delta spr \rightarrow \Delta rci$ implies stock price Granger causes commodity price index. *, ** and *** denotes statistical significance at the 1 per cent, 5 per cent and 10 per cent levels, respectively.

Table 1 helps to analyse the causal relationships between *rci* and other variables of interest of the commodity price model. Based on the Granger (1969) approach, Granger's concept of causality does not imply a cause-effect relationship, but rather is based only on 'predictability' or 'forecastability'. Therefore, the short-run causality tests from the VECM equation (2) shows that the current and past information on interest rate helps improve the forecasts of commodity prices in four to six months. Only the four and sixth month lags had a statistical significance level of 10 per cent, while the fifth lag had a 1 per cent significance level. The null hypothesis was rejected in these months. Therefore, according to the data, interest rate Granger caused commodity price index in the short run. This finding supports the study of Frankel (2006).

Table 1 also shows that the Australian trade weighted real exchange rate's current and past information helps improve the forecasts of commodity prices immediately (one month) and this lag has a statistical significance level of 10 per cent with $\chi^2 = 2.997$. Thus, the null hypothesis of the Granger causality tests is rejected for this VECM equation with a significant error correction term. The author also observed that commodity price index Granger caused the real exchange rate in between two and four-month lags. However, the error correction term of the VECM equation with real exchange rate as the dependent variable (Equation 4) was also significant. Our findings are consistent with Simpson and Evans (2004). This result is also consistent with Bashar and Kabir (2013) who conducted their research on Australian quarterly data for over 30 years. They showed a two-way Granger causality between exchange rate and commodity prices. However, the result of this study shows stronger causality from commodity prices to real exchange rates in the short run than the other way around.

The VECM short-run Granger causality tests also showed that the current and past information on S&P/ASX 200 resources index improved the forecast ability of commodity prices in two to three months as well as in seven months' time. The seven-month lag had a statistical significance level of 1 per cent with $\chi^2 = 16.060$. However, the null hypothesis was rejected in two months at 5 per cent and in three months at the 10 per cent level of significance. Thus, the result showed that real stock price index Granger caused commodity price index in the short run. Our findings are consistent with Rossi (2005; 2012).

Table 1 also represents unidirectional causality from commodity price to *ip* in two, three, ten and eleven months. In all these four cases the null hypotheses were rejected with significant statistics. This is consistent with the outcomes of Labys and Maizels (1993). In the present study, *ip* is the dependent variable of the VECM Equation (5), which has the significant error correction term.

The VECM Granger causality for the long run is reported in Table 2. The causality in the long run can be tested by the significance of the speed of adjustment. This study utilised the t-statistics of the coefficients of the error correction term, which indicated whether there were long-run causal effects. In Table 2 only the long-run Granger causality for Equation (2) are shown, which also has the significant error correction term with appropriate sign and shows the main objective of our research, i.e. to identify the impacts of other macroeconomic variables on Australian commodity prices.

Table 2 Long-run Granger Causality Tests

Sources of Causation → Dependent Variable	Number of Lags	t-statistics
$ECT \nrightarrow \Delta rci$	1 month	4.057 (0.5412)
$ECT \nrightarrow \Delta rci$	2 months	14.99 (0.1321)
$ECT \rightarrow \Delta rci$	3 months	22.408 (0.0975)
$ECT \nrightarrow \Delta rci$	4 months	27.8203 (0.1137)
$ECT \rightarrow \Delta rci$	5 months	39.9825 (0.0370)
$ECT \rightarrow \Delta rci$	6 months	44.0355 (0.0473)
$ECT \rightarrow \Delta rci$	7 months	68.2139 (0.0007)
$ECT \rightarrow \Delta rci$	8 months	77.6911 (0.0003)
$ECT \rightarrow \Delta rci$	9 months	82.1915 (0.0006)

$ECT \rightarrow \Delta rci$	10 months	84.0004 (0.0018)
$ECT \rightarrow \Delta rci$	11 months	82.7956 (0.0091)
$ECT \rightarrow \Delta rci$	12 months	86.8572 (0.0133)

Notes: $\nrightarrow$ implies does not Granger cause and $\rightarrow$ implies Granger cause. Parentheses show the probabilities of the relevant t-statistics.

Table 2 shows the results for the causality tests for VECM equation (2) for different lag lengths. The long-run causality test results show that error correction term does not Granger causes commodity price during the first and second months. However, the results explain that current and past information of the adjustment speed of the cointegrating vector of our long-run model helps improve forecasts of commodity prices in three to twelve months, except during the fourth month that has the statistical significance level close to 10 per cent. Thus, the result of this study can conclude that the elasticity of the cointegration vector Granger caused commodity price index in the long run.

4. CONCLUSION

This study presents the VEC Granger causality test results to show the causal relationship between the commodity prices and Australian macroeconomic variables. The research divided the results for both short and long run. It showed that the Australian interest rate Granger caused *rci* in the short run and the same was true for the opposite direction. However, the current and past information of Australian trade weighted RER helped improve the forecasts of commodity prices immediately and the opposite was true between two to four months lags. Moreover, the current and past information on S&P/ASX 200 resources index helped improve the forecast ability of *rci* mostly in the short run. Another unidirectional causality has been found from *rci* to *ip* in the short to medium term.

The VECM Granger causality for the long run was also reported in this study, which was tested by the significance of the speed of adjustment. This result in current study explained that current and past information of the adjustment speed of the cointegrating vector of the long-run model of this study helped improve forecasts of commodity prices in almost all time horizons. Thus, the research can conclude that the elasticity of the cointegration vector Granger caused *rci* in the short as well as long run. The study also shows that Australian commodity prices has the power to influence the real exchange rate and hence, the competitiveness of Australia in world trade.

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Demand for Islamic Finance and an Ethical Approach of Explaining Global Financial Crisis

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Abstract

The aim of this paper is to elucidate the Global Financial Crisis (GFC) from ethical point of view and to explain the motives of continuous growth of the demand for Islamic finance around the world. The paper shows that ethical justice triggered the disintegration of the financial organisations which ultimately sourced the modern extraordinary GFC in 2008. This research paper sheds some lights on ethical Islamic financial systems which can demonstrate the world various basic principles and these ethics are very much linked to common sense which could enhance financial stability. Is this the right time for the world's conventional financial institutions to embrace ethical financial process?

Keywords: Islamic Finance, Ethical Justice, Financial Institutions, Global Financial Crisis, Globalisation.

1. INTRODUCTION

Recent business history has demonstrated beyond any hesitation that splitting up businesses from ethics run huge risks and latest Global Financial Crisis (GFC) is the attestation of such massive jeopardy. The repercussion of unethical lending practices of major institutional providers devastated the United States financial markets and eventually all major world markets during the second half of 2008. Most of the world's leading economies are still filling that pain. So, global financial market collapse is the testimony to both the unethical behaviors of the businesses based on greed, hubris, corruption and poor corporate governance within the financial sectors as well as the intimate inter-relationship between and among nations through globalisation.

Actually, emphasizing on the wealth maximisation of the shareholder deliberately neglects the perception of ethics and its long term shock on the value of the organisation. Moreover, various corporate misdeeds founded on the lack of corporate governance eroded the public trust of business leaders and their organisations, which eventually caused the biggest financial crisis since the great depression. In addition, globalisation which refers to the integration of national economies, especially their financial sectors, greatly increased the intensity of the GFC because of its capability to transmit an impulse arising in one country around the world very rapidly.

According to Al-Suhaibani and Naifar (2014), all the recent financial crises are, in principle, debt crises. As the Islamic finance is offering the provision of avoiding debt-creating flows and the opportunity of adopting such a financing system that are found on 'risk-sharing', rather than 'risk-shifting', the demand for Islamic finance is growing rapidly throughout the whole world. Therefore, Aribi (2015) appropriately mentions that the Islamic financial systems are a fast-growing segment of the global finance industry, and posturing challenges to the ways that current financial institutions are received and expected around the world. In the last 15 years, Islamic finance around the world has consistently been recording double-digit annual growth rates not only within but also outside of Muslim economies (Fang & Foucart, 2014). Thus, the signs of growing demand for ethical finance across the world are clearly observable and the people are showing curiosity for such sustainable ethical economic development irrespective of their religious or ethnical background.

The purpose of this paper is therefore to explain the Global Financial Crisis from ethical point of view and to clarify the reasons of continuous growth of the demand for Islamic finance around the world. This paper is structured as follows: next section shows an ethical approach of explaining the Global Financial Crisis; followed by the historical basis of ethical finance around the world. After this section we show the business ethics in religion, especially in Islam and the final segment of this research shows the lessons for the world's existing conventional financial systems from Islamic finance.

2. ETHICAL APPROACH OF GLOBAL FINANCIAL CRISIS

One of the major specific responsibilities of every business organization in modern age is to maximize their shareholders' possessions, which lead them to perform unethical practices. Natale and Sora (2010) point out that the beginning of the ethical process is a method that can evoke and train individuals to understand and feel what others are feeling. But the process in this case appears to govern automatic and impaired components that focus on the corporations' enhancement of wealth. Hence, aggressive lenders engaged in loans called "sub-prime mortgages." These mortgages were extremely high risk and most of them violated traditional underwriting standards for the industry (Lewis, Kay, Kelso, & Larson, 2010). So, that was the point where greed conquered ethical practices among mortgage lenders nationwide.

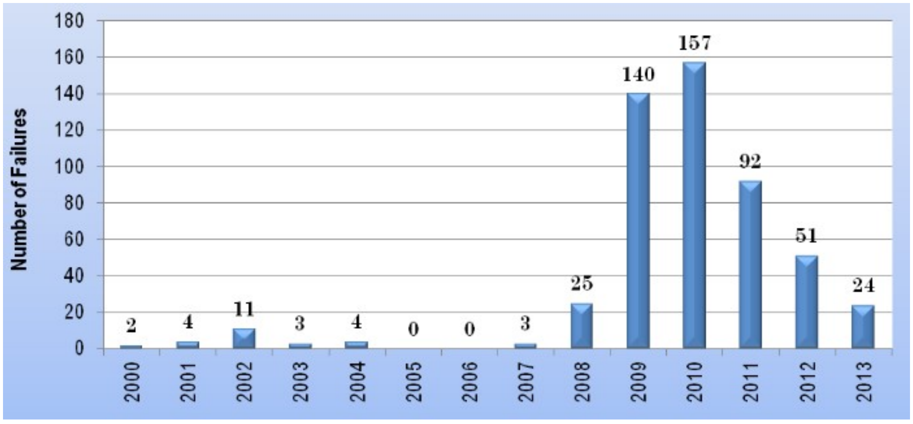

Figure 1: *U.S. Bank Failures, 2000 to 2013. Source: FDIC(2016).*

2.1 Contagion: One of Chief Contributors to GFC

Wall Street financial companies then leveraged these bad loans and sold them to unsuspecting buyers as bundled investments in the secondary markets, which actually exacerbated the problem. Gordon and Valentine (2010) mention that these sub-prime mortgage problems led the government to mediate the banking sectors. When the housing bubble burst, bank were so deep in debt that mass catastrophes appeared about to happen (Patton, 2014).

The collapse of a bank could direct to other banks coming under risk because of their exposures to the original bank through interbank lending / borrowing and other wholesale markets. This type of cumulative bank failure is known as contagion. It would undermine the viability of the payments system which forms the basis of economic transactions. But providing this type of supports generates moral hazard, which means it can lead bank managements to take excessive risks in the knowledge that the authorities will bail them out if things go wrong and these ideas guided them to commit historical humiliations. Trevino and Nelson (2010), therefore, appropriately mention that no scandal of recent years matches the GFC in 2008 and the crisis was incomparable in its scope. Earle (2009) also reverberates that the 2008 GFC has been compared to a "once – in – a – century credit tsunami", a tragedy in which the failure of trust and confidence played key precipitating roles and the revival from which will necessitate the restoration of these significant factors. Thus, the moral vulnerability and unprincipled practices of the businesses caused the fall down of major banks, grounded a worldwide crumple of stock values, and led to collapse the financial companies, insurers, and eventually sourced the Global Financial Crisis.

2.2 Unethical Corporate Governance Acts as another Contributor to GFC

Inadequate governance and regulations can also lead organisations to commit various corporate misdeeds and eventually people can lose their trust on them. Clarke (2010) states that the prolonged systemic crisis in international financial markets commencing in 2007 / 2008 was also a crisis in corporate governance and regulation. The sternest financial catastrophe since the Great Depression of the 1930s exposed the dangers of unregulated financial markets and nominal corporate governance. Transparency and sound corporate governance are matters of moral turpitude (Hawtrey & Johnson, 2010). Generally speaking, the process of avoidance of ethical responsibility in the credit crisis was not outright criminal evasion and there had been no courtroom prosecutions arising directly from the GFC. But, Hawtrey et al. (2010) point out that unethical choices hiding behind the veil of legality are nonetheless unethical and equally capable of leading to problems such as those witnessed in the GFC. So, during that time, de-regulation of Wall Street unleashed highly incentivised investment banks to flood world markets unethically with toxic financial products. As a result a stunning series of banks and investment companies collapsed in the USA and then in Europe. A fresh world chaos of aggressively unstable markets and deep financial insecurity became fully apparent. People started to lose their expectation from businesses and the process became more intense while the US public were becoming increasingly concerned how they might survive a severe recession, the executives of major banks seemed focused primarily on maintaining their bonuses (Clarke, 2010). Therefore, regulatory restructuring was a must do fixation. But, the lesson to be learned is that regulatory reform without ethical reform will never be enough (Weitzner & Darroch, 2009). Sanchez (2010) also states that one of the pillars of the stability of the financial organisation is an efficient regulatory and supervisory framework of the organisations. Thus, the situation exemplifies how markets and ethics interact in the presence of inadequate governance as well as corporate regulations.

2.3 Globalisation Inflates Unethical Behaviors of Business to Contribute to GFC

Economic globalisation is another aspect which exaggerated the latest financial crisis through rapidly transmitting the impulse happening in one country because of the volatile behaviours of their organisations in the whole world. Therefore, Wade (2008) mentions that these U.S. - centered causes were complemented by more international ones and the house – price bubbles in the USA, the UK, Ireland, Spain, Australia, and New Zealand are just fraction of a more global property bubble over the past decade.

But a number of years ago, mortgages were held by local banks where the mortgagee was most probably known to the bank manager. The mortgage was maintained on the books of the various lending institutions so the bankers had a genuine concern that the mortgage was given under appropriate conditions and that the loan was "good" (Natale & Sora, 2010).

However, because of this economic globalisation, investors can provide their funds in the countries which are perceived to propose the highest return and overall disparity in saving and borrowing allows high borrowing in one country to be financed by high saving in others. Thus, the process expands the opportunity of borrowing and Gordon et al. (2010) states that these expansions as well as the decline of credit standards created "toxic" (subprime) debt. Thus, the procedure triggered the disintegration of the financial organisations which ultimately sourced the modern extraordinary GFC.

3. HISTORICAL BASIS OF ETHICAL FINANCE

The critiques of 2008 Global Financial Crisis pointed to the absence of true risk sharing in lending as one of the main reasons of that global disaster. In one sense, this is just an extension of an age-old story, where the primary antagonist is the desirous and immoral moneylender taking benefit of helpless people in need of capital (Looft, 2014).

The prohibition of unethical financing is not a new phenomenon. Early European philosophers such as Plato (350 BC) and Aristotle (350 BC) condemned the exercise of directing immoral financing by taking interests. Aristotle (350BC) mentions in *Politics*, Book 1, Part X:

> *"There are two sorts of wealth-getting, as I have said; one is a part of household management, the other is retail trade: the former necessary and honorable, while that which consists in exchange is justly censured; for it is unnatural, and a mode by which men gain from one another. The most hated sort, and with the greatest reason, is usury, which makes a gain out of money itself, and not from the natural object of it. For money was intended to be used in exchange, but not to increase at interest. And this term interest, which means the birth of money from money, is applied to the breeding of money because the offspring resembles the parent. Wherefore of a modes of getting wealth this is the most unnatural".*

Prohibition in practicing unethical financing is actually an old religious concern also, not only in Islam but also in Judaism, Christianity, Hinduism and Buddhism. Ancient records from *Vedic* texts in India (2,000-1,400 BC) and later in the *Sutra* texts (700-100 BC) and in Buddhist *Jatakas* (600-400 BC) display a contempt for taking interest on debt (Kunhibava & Rachagan, 2011).

But according to Looft (2014), the most enduring arguments in contradiction of lending at interest have come from the Abrahamic faith ethnicities of Judaism, Christianity and Islam. This preparation of earning money from money with tiny or no investor accountability was specifically condemned in early Judaism for it exposed to destabilize the community and eventually tear family and tribe apart. Interestingly in Judaism, in the Old Testament (Torah) it is stated, 'if you lend money to any of my people with you who are poor, you shall not be to his as a creditor; neither shall you require usury from him' (Ex. 22:25). This declaration, though, was interpreted to mean that loaning through usury was not permitted between Jews, but tolerable to a non-Jew (Kunhibava & Rachagan, 2011).

About five hundred years back, the Christian church continued to squabble internally over whether or not the prohibitions in the Hebrew scriptures applied to its members or not (Looft, 2014). The prohibition against unethical loaning, usurious transactions, changed. Kunhibava et al (2011) mentions that the reformist group, led by Luther (1483-1546) and Zwingli (1484-1531), approved to the introducing of interest. In the year 1545 the Act of 'In restraint of usury' of Henry VIII in England legalized the obligation of interest. This Act fixed a lawful maximum interest and any amount in additional of the maximum was termed as usury. The exercise of setting a legal maximum o interest rates was later followed by most states of the United States and most of other Western nations. Hence interest was legalized and usury was not legal. Usury today is referred to as a very high rate of interest and thus, Christianity espoused the immoral financing system in their economic life.

Over time both Christianity and Judaism have drawn dissimilarities between interest and usury, Islamic law does not draw this division. The scholar Reza Aslan (Looft, 2014) reminds that one of the first changes the prophet Muhammad (peace be upon him) made after getting accepted religious authority in Medina was to improve the 'divide between the ridiculously wealthy and the absurdly poor'. With this intention of building the society on moral rather than utilitarian principles, he banned both interest on loans and taxes on transactions from Islamic economic life. On the other hand, mandatory zakat was introduced, with every member of the community paying according to his or her means. Thus, after collecting 2.5 per cent of total net worth of any Muslims annually, the money was then reallocated to the poorest fellows of the community. Looft (2014) also mentions that as one of the pillars of Islam, and still followed by practicing Muslims, zakat demonstrates an influential passage to assist the poorest of the poor across the world.

On top of redistributing zakat, Islam has also tackled the question of how to integrate risk sharing into investor-driven finance (Looft, 2014), which is the basis of ethical finance in our day to day life. Thus, the intention of establishing the risk sharing financing procedure can ensure an ethical as well as sustainable economic system in our society.

4. ISLAM AND BUSINESS ETHICS

The foremost foundations of Islamic ethics are the Quran, the absolute collection of exposures acknowledged by the prophet Muhammad (peace be upon him), and the Sunnah, which is custom endorsed by tradition, mainly records of the activities of the prophet. The Islamic financial system is founded on total bond to Islamic acknowledged law extracted from these foundations, referred as the Sharia'h (Erragraguy, Merbouh, & Paranque, 2014).

In Islam, all interest-based transactions are firmly banned through both the Quran and the recommendations as well as activities of the prophet (Sunnah) of Muhammad (peace be upon him). The Prophet left no scope for any conflicting or contrary judgement regarding this issue in Islam. This was also decided in the Council of the Islamic Fiqh Academy, during its second session, held in Jeddah 22-28 December 1985, resolution 10/2 (cited in (Kunhibava & Rachagan, 2011):

> *"Any increase or interest on a debt which has matured, in return for an extension of the maturity date, in case the borrower is unable to pay and increase (on interest) on the loan at the inception of its agreement, are both forms of usury which is prohibited under Sharia'h".*

Thus, the Islamic code is the general condemnation for all interest-based transactions which is defined as *Riba* in arabic. According to Erragraguy et al (2014), Islamic ethics underlines that profit in business actions should only come from a real handover of goods and not from an exchange of money. Nonetheless, the exclusion of *Riba* has a much broader meaning than simply denoting to usury or interest. It includes all kinds of unnecessary charges as well as manipulation in business transactions. As such, some trading instruments used in stock markets lend themselves to practices that can be viewed as a form of extreme charges levied on misinformed members.

Erragraguy et al (2014) mentions that in Islamic finance, the major issue is the equitable distribution of risk, while the main threat remains the unfair appropriation of the surplus by a single agent. For that reason, in Islamic finance, the profit-and-loss sharing (PLS) principle is supposed as the most competent way to guarantee equitable distribution of wealth and income among the different contractors. The aim of firm execution of partnership-based contracts in Islam means to introduce more discipline into financial markets by decreasing excessive securitization. Thus, Islamic ethics is designed by the legal architecture resulting from the thorough explanatory efforts directed by Islamic jurists or *fiqh* to preserve equitable conduct in human affairs. It should be remembered that the search for equity in public welfare is fundamental to the justification of financial markets' role and place in society.

5. LESSONS THE WORLD CAN LEARN FROM ISLAMIC FINANCE

After the Global Financial Crisis in 2008, an increasing number of people are questioning the way business is done across the world, bearing in mind the ethical options and speaking more about responsible finance. But the inadequate number of ethical financial systems in modern economy is posing greater threat to social welfare comparing to any other previous time in human history. Therefore, Khan (2015) seems mentioning appropriately that while the global economy remains so systematically based on debt finance and speculation, another crisis is inevitable at some point. After few years of the explosion of the Global Financial Crisis in 2008, several lessons the world's conventional financial institutions can learn from Islamic ethical financing system:

As Islamic finance only allows financing to activities as long as it is linked to the value-creating real transactions, ultimately 'co-investment' growth, which is known as 'credit growth' in conventional financial systems, is very much restricted by growth in productivity and income. Thus, the Islamic financing system creates a natural brake for co-investment growth in 'good' years (De la Torre, 2011). But excessive credit growth in one of the major contributors to modern economic instability. Interest rates are normally used by Central banks to influence this credit growth, which sometimes proved as ineffective. Professor De la Torre (2011) mentions this as the reason of creating '*Hyman Minsky's credit cycles*' that can only worsen economic cycles. Thus, lending too much in good years and too little in bad years like conventional financial institutions is one of the triggers to create financial instability.

Professor De la Torre (2011) also mentions that Islamic financial institutions only allow to invest in physical assets for generating free cash flow and valuation of these physical assets is more transparent. On the other hand, conventional financial institutions can lose most of its investment in a complex to value synthetic product, such as a Collateralized Debt Obligation (CDO), a CDO squared or a Collateralized Loan Obligation (CLO). Thus, Islamic financial institutions can ensure more financial stability compared to that of an investment of conventional financial institutions in a theoretically risk-limited AAA rating CDO squared.

Islamic finance allows risk-taking only if it is integrated with wealth creation, rather than pure zero-sum side betting. But in case of conventional financial institutions, the replacement value of global derivatives with global GDP shows how side-betting can grow to almost reach world production of goods and services mostly through over-the-counter (OTC) transactions which enhance systemic risk. As betting is forbidden under the principle of '*Gharar*' in Islamic faith, this financial system is much less affected by this systemic risk, the OTC derivatives meltdown, that caused the demise of Lehman Brothers (De la Torre, 2011).

The Islamic financial systems ensure long-term ethical sustainable welfare of the human society which is desirable by everyone irrespective of their religious background. Therefore, Khan (2015) righteously mentions that if you remove the Arabic terminology from all of this, Islamic economics makes sense to those in mainstream society who are interested in ethics and value-based economics, rather than the capitalist view of making money as a goal in itself.

6. CONCLUSION

Ethical justice, whether it is encouraged by philosophy or religious faith, can ensure maximum welfare of human society. It can guarantee the desire of accomplishing moral responsibilities for the benefit of all in the society. It seems right that the ethical authoritarian practices of worldwide businesses can ensure maximum welfare achieving efficient procedure. Therefore, the concept of ethical finance catches the utmost importance in every ages of human civilization. Failure to ensure the sustainable ethical financial system in the world would bring disastrous consequences in economic solidity.

Thus, the global corporate humiliations over the past few years came as a shock because of both the enormity of policy failures as well as the discovery of dubious unethical corporate domination, which was far more insidious and widespread than previously envisioned. Prioritising on the maximization of shareholder wealth as the underlying purpose of corporate activity can lead to a situation where the ethical, social and the financial system of the global economy as a whole can be concerned. The power of this apprehension felt throughout the world during the recent Global Financial Crisis. In short, global financial market collapse is the demonstration to both the unethical behaviors of the businesses as well as the intimate inter-relationship between and among nations through globalisation.

In fine, this research paper also sheds some lights on ethical Islamic financial systems which can demonstrate the world various basic principles and these ethics are very much linked to common sense which could enhance financial stability. But the questing is whether the world is ready to bring that 'light' of optimistic economic rebellion in their conventional financial system or not. As Plato stated (cited in Khan, 2015):

> *"We can easily forgive a child who is afraid of the dark. The real tragedy of life is when men are afraid of the light".*

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The Effects of Institutional Quality on the Dhaka Stock Exchange

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Abstract

Dhaka Stock Exchange (DSE) plays a key role in channelling a large volume of funds from the investors to the entrepreneurs in Bangladesh. In 2013, 256 companies were listed and total market capitalisation of DSE was US$25,351.66 million with a 15.82% growth in stock return. DSE significantly contributes to the output, employment and overall income of the country when the pulled capital returns to the economy as ultimate investments. Since the institutional factors as well as the socio-economic are fundamental to the growth and savings of an economy and encourages investment, this paper examines the magnitude of the influence of a selective set of institutional quality of the country along with macroeconomic factors on stock market in Bangladesh using cointegration and error correction model employing monthly time series data from July 2007- June 2015. Results of the study suggest that the increased industrial production and workers' remittances have long run positive relationship with stock returns of DSE. Inflation and money supply found to have negative long run relationship with stock returns; however, market capitalization and consumer confidence indicate a positive relationship with stock returns of DSE. Nonetheless, the results indicate increased corruption and composite risk are having negative impact on the stock returns of DSE. Thus, the policy prescriptions recommend controlling inflation rates and money supply growth and implementing various policies to correct the administrative irregularities and corruption and lowering composite risk would assist to channel the funds in the productive investment via DSE and enhance the economic growth of the country.

Keywords: Quantum index of production, Remittances, Macroeconomic Factors, Institutional factors, Dhaka Stock Exchange.

INTRODUCTION

Investing in stock is one of the most preferred modes of investment. Economy of many countries around the world is dominated by the stock markets as the main dynamical force. There are 43,192 companies are listed globally in various stock exchange of the world to raise a global market capitalization of US$ 64,854 billion in 2016 compared to 43,209 billion in 2005 by 50,936 listed companies (The World Bank, 2017). Globally, USA is dominating the world stock market with a market capitalization of US$27,352 billion, which is 42% of the total global market capitalization and is followed by China, Japan, UK, Canada, France, Germany, Australia and India.

Stock Exchange plays a very important role in an economy by raising capital for business through mobilizing savings for investment which facilitates company growth and profit sharing among shareholders. Thus, it creates employment opportunities and decreases unemployment rate which is one of the major macroeconomic indicators of economic growth of a country. Stock exchange assists from a small investor to a government by creating investment opportunities to raising capital for development projects. Overall, stock exchange acts as a barometer of an economy.

Market capitalization in Dhaka Stock Exchange (DSE), Bangladesh increased from 430 million in 1988 to 52,551 million in 2017. DSE's Contribution to the economy was 15.02% of GDP in 2012, which increased from 5.83% in 2006 (The World Bank, 2012). The vast majority of research conducted so far has focused on the major United States and European securities market. There are limited studies on the less developed countries stock markets; and no quantitative study is found on the institutional quality variable along with macroeconomic variables on Dhaka Stock Exchange (DSE) in Bangladesh; this study aims to fill that void. Since Bangladesh has an over spread allegation of various weaknesses in institutional quality such as rampant corruption, which may have significant effect on the share returns and the stock exchange activities of the country. Thus, the objective of the study is not only to investigate the major economic determinants of stock returns but also the institutional quality factors that may significantly influence the stock returns' volatilities.

TRENDS OF STOCK EXCHANGE TO BANGLADESH ECONOMY

Dhaka Stock Exchange (DSE) has a history of sixty years of functioning with a break of five years since the start of the war of liberation in 1971 until it restarted in 1976. Prior to the independence of Bangladesh in 1971, there were 196 securities listed on the DSE with a total paid-up capital of about US$ 500 million and the daily average transaction of shares during that period was about 20,000 (Chowdhury 1994). In 1976, DSE had only nine listed companies with a paid-up capital of approximately US$ 9.16 million. Market capitalization of DSE reached to $32 billion with 528 listed securities in 2013, compared to $1.68 billion in 2003.

Bangladesh experienced fast pace of industrial growth which has been reflected by the increase in industry value added from $13.15 billion in 2003 to $31.87 in 2013 (World Bank 2013). The economy of Bangladesh was resilient in Global Financial Crisis (GFC) in 2007-2009 and achieved GDP growth (annual %) of over 6% while most of the countries with strong economy were experiencing a declining annual GDP growth.

In 2012, DSE's Contribution to the economy was 15.02% of GDP (Market capitalization of listed companies as percentage of GDP) which increased from 5.83% in 2006 (The World Bank). Service sector industry has contributed 53.90% of the GDP to the economy while agriculture and manufacturing industry have claimed 17.70% and 28.50% respectively during that time.

It has been noticed that DSE showed unexpectedly high positive returns during 2009-2010. Attracted by this returns, a large number of people in Bangladesh (including the unemployed people), who do not have enough pervious stock market trading experience; tend to invest in the market to gain high returns. Some of these ordinary investors invest their hard earning savings; some others took loans from banks, mortgaging their houses or lands to invest in stock market. Some of these investors made a good fortune and a big portion of them lost everything. However, it is alleged that the government, the central bank or the DSE did not take any initiative to protect these new investors, which has also been regarded as major institutional weakness of the country.

EMPIRICAL MODEL

Bangladesh has been having a solid growth of average over 6% over 2003-2015. Furthermore, more than half a million Bangladeshi workers are going for overseas employments and sending remittances to the country. Thus, it is presumed that solid economic growth and strong flow of remittances has positive effects on the manufacturing growth which has been having considerable influence on stock returns too. This study specifies the following model to investigate the influence of economic and institutional factors on the Dhaka stock returns.

$$DSR_t=\alpha+\beta_1 WR_{it}+\beta_2 IP_{it}+\beta_3 CPI_{it}+\beta_4 MKI_{it}+\beta_5 M2I_{it}+\beta_6 CCONF_{it}+\beta_7 CRR_{it}+\beta_8 CORR_{it}+\varepsilon_t \ldots (1)$$

Where, *WR* is referring to the remittances inflow in U.S. Dollars. Remittances are the current transfers sent by the non-resident workers from overseas countries (Chowdhury 2011). *IP* referring to the Index of industrial production (general manufacturing) Base: 2005-06=100. It comprises value added in mining, manufacturing, construction, electricity, water, and gas. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources (World Bank 2012).

CPI represents the price level which is measured by consumer price index and the base period is 2005-06=100. *MK* refers to the market capitalization that represents the overall size of the stock market in U.S. dollar. It is calculated by taking the share price times the number of shares outstanding. MKI is constructed as an index of the market capitalisation of DSE. *M2I* denotes money and quasi money comprise the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government. M2I is constructed as an index of the broad money supply (M2I), and ε_t is the error term.

Remittances are spent primarily on day-to-day consumption expenditures, housing, land purchase, and debt repayment. Although a small proportion of remittances are directed into productive investments. However, remittances inflow is positively influencing the IP and stock market through increased consumer expenditure by the remittances recipient households. The relationship between remittances and stock returns is expected to be positive since increased flow of remittances may directly enhance deposit, credit and money availability. Nonetheless, steady flow of remittances may decrease the saving efforts of the recipient families and hinder the intermediation of the financial sector (Aggarwal et al., 2006).

Industrial production presents a measure of overall economic activity in the economy and affects stock returns through its influence on expected future cash flows (Fama, 1990). Thus, a positive relationship is expected between stock returns and industrial production (Nishat and Shaheen, 2004). Expected relationship, in general, a negative relationship is expected between the *stock returns and inflation* due to the inverse relationship between the inflation and asset price.

Market Capitalization measure equals the share price times the number of shares outstanding. The assumption behind this measure is that overall market size is positively correlated with the ability to mobilize capital and diversify risk on an economy-wide basis (Mohtadi and Agarwal, 2001). Thus, it is expected that higher the market capitalisation, the better would be stock returns and the relationship is expected to be positive.

An increase in *money supply* will increase the liquidity in the economy resulting in an increase in the purchasing power of the citizen, which means that more money will be available not just for consumption but also for investment. Hence, a positive relationship is expected. The study has also added consumer confidence (CCONF) index as one of the right hand side variables, as higher the consumer confidence on the economy the higher would be the demand for goods and services. The level of consumer confidence faces to face credible surveys, where available, or approximations based on employment trends, economic growth and investment, etc. It follows an ordinal ranking of 0-12, 0 being worse condition in terms of consumer confidence to make investment or additional expenses. A positive relationship is expected between consumer confidence and the stock returns of a company.

Composite risk ratings (CRR) and corruption (CORR) are also included to estimate the long run effects of those important institutional quality (IQ) variables on stock market and returns in Bangladesh. IQ factors have been included in the model taken from International Country Risk Guide (ICRG). Composite risk rating for a country is calculated after considering political risk, financial risk and economic risk, ranging from very high risk (00.0 - 49.5) to very low risk (80.0 - 100). The higher the points are, the lower the risk is. For example, the positive sign between composite risk rating and stock returns means that higher return is associated with improved risk ratings.

Since Bangladesh has been victim of rampant corruption for last 10 years evident from transparency international corruption perception index 2015 which was prepared by observing 180 countries worldwide.

Table 1: Transparency international corruption perception index 2015 for Bangladesh

Rank	Country/territory	2015 Score	2014 Score	2013 Score	2012 Score
139	Bangladesh	25	25	27	26

As corruption has a negative relationship with stock market return (Bellavite and Sergi 2017), it is imperative to add corruption as one of the most important institutional quality variable in equation 1.

METHODOLOGY: COINTEGRATION AND VECTOR ERROR CORRECTION MODEL

This study employs the cointegration and error correction model (ECM) to examine both long relationship and short run dynamics of WR, IP, CPI, MKI, M2I, CCONF and CRR. The Johansen (1991) Vector Error Correction Model (VECM) has been adopted for the empirical analysis. Hardouvelis (1987); Keim (1985); Litzenberger and Ramaswamy (1982) empirically investigated whether the main economic indicators (e.g., inflation, interest rates, treasury bond's returns, trade balance, dividend returns, exchange rates, money supply, and crude oil prices) are effective to explain the share returns (Nishat and Shaheen 2004).

If the variables are co-integrated relation between macroeconomic indicators and share returns, there would be a causal relation between these variables, too. Otherwise, long run share returns share returns cannot be explained by the movements of main macroeconomic variables (Nishat and Shaheen 2004). In this study, the relationships between share returns and selected macroeconomic variables have been examined for the Dhaka stock Exchange.

As a prerequisite of the cointegration analysis, this study begin with the unit root test for all the variables under study using Augmented Dickey-Fuller (ADF), Dickey-Fuller GLS (GLS AD) and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) tests. The test results with a constant and a constant and trend showed that all variables are non-stationary in levels and stationary in their first differences. Following the stationarity test, the presence of cointegration is examined using the Johansen Likelihood Ratio statistics for maximum Eigen value (LR) and Trace test. Result of these tests suggests that there is one linearly independent combination of non-stationary variables that are stationary. Since, the variables are cointegrated in the long run; there exists an error correction mechanism, which brings together the long run relationship with its short run dynamic adjustments.

DATA SOURCES

The monthly data from July 2007 to June 2015 is obtained from various World Bank data sources, including World Development Indicators, International Financial Statistics (from IMF), Bangladesh Bureau of statistics (BBS), Bangladesh Bank (BB) and Dhaka stock exchange (DSE).

RESULTS

The long run elasticities of the independent variables and their t-ratios are reported in Table 2 along with Johansen's cointegration test statistics. The Johansen test results indicate that all variables are cointegrated based on the maximum likelihood ratio and trace tests. In all the cases, the eigen-value statistics drop sharply for the last alternative hypotheses. Thus, it can be concluded that the model with three or more variables is a fair representation for most of the cases. The test statistics also indicate that there is a stable long run relationship between *DSR and WR, IP, CPI, MKI, M2I, CCONF, CRR,* *CORR*. Different versions of the equation 1 has been tested and the results are reported in Appendix Table 2.

Table 2 presents the long-run estimated relationship between stock returns and selected macroeconomic variables (*WR, IP, CPI, MKI, M2I)*. The values of stock returns index is normalised to one. Econometrics results suggest Industrial production, remittances and market capitalisation is having positive relationship with DSR. Results also indicate inflation and M2 is negatively related with stock returns. This result is consistent with the analytical expectation and supported by Mohtadi and Agarwal, 2001, Nishat and Shaheen, 2004.

Equation 1 indicates that the increased industrial production is having highly significant positive effect on SR, the stock returns of Bangladesh. A one-percentage point increase in IP causes an increase in SR over 0.56 percentage point. This result is consistent with the analytical expectation that increase in the industrial production tend to have positive long run relationship with the stock returns and supported by various existing literature (Nishat and Shaheen, 2004).

The remittances income measured by *WR* is also exhibiting a significant positive long run relationship with DSR in all equations. This result is consistent with the theoretical expectation and conforms to a study by Billmeier and Massa (2007). Results also indicate that both *CPI and M2* are having long run significant negative relationship with the stock returns (DSR) in all equations. Increase in both price level and *M2* have the potential to increase the interest rates, which in turn, raises the cost of borrowing and reduces the investment. Increased CPI lowers real income and demand for goods and services and has adverse impact on investment and stock price. *MK* indicates a significant positive relationship with DSR in equation 1.1. Result of the study finds that a one percentage point increase in MK increases DSR by 0.06 percentage point. This result is consistent with analytical framework of the study and supported by Mohtadi and Agarwal (2001). CCONF is also found to be having significant positive effect on the SRs of DSE. Among the two institutional quality variables, composite risk rating (CRR) was not significant in any preliminary test and thus omitted from the equations. Corruption index (Corr) shows a positive sign, which means a significant long run negative relationship with the stock returns of the DSE in equation 1.3. This result indicates when the corruption index increase, i.e., corruption level falls, the stock returns increases. This result is consistent with the existent literature (Bellavite, et.al, 2017).

The study has conducted VECM using both one cointegrating vector and two cointegrating vector as λ-Trace indicates two cointegrating vector. However, the test result did not find any contestants in terms of significant vector bearing the correct sign for a true cointegrating relationship while using two cointegrating vector for VECM. Normalising the vector on CPI produces inconsistent estimates of the long run coefficients[1]. Therefore, the study concludes that SR provides strong evidence of error correction to the first vector for all equations. The coefficients of the first difference regressors indicate short run dynamics of the explanatory variables on SR. Some of the lags of the first differences of the explanatory variables are showing the opposite sign to that observed in the long run due to adjustment process, however, they are insignificant in most of the cases. The lagged error correction terms for the stock price equation is statistically significant at 1% level and has the expected negative sign indicating that there is a cointegrating relationship between the left hand side and the right hand side variables.

CONCLUSION AND POLICY RECOMMENDATIONS

This paper analyses long-term equilibrium relationships between a group of macroeconomic variables, consumer confidence and corruption level and the Dhaka Stock Exchange returns. The macroeconomic variables are represented by the worker's remittances, industrial production, inflation, broad money M2 and market capitalisation. The study employs time series econometric modelling to

[1] Results for VECM are not reported to conserve the space. They will be provided upon request.

examine such relationships in order to avoid potential misspecification biases that might result from the use of a more conventional vector autoregression modelling technique. The study finds that these five variables are cointegrated and long-term equilibrium relationships exist among these variables.

Analysis of the results indicates that the increased industrial production, consumer confidence and workers' remittances are having long run positive relationship with stock returns of DSE. Inflation and money supply are found to have negative long run relationship with stock returns; however, market capitalization indicates a positive relationship with stock returns of DSE. Thus, the policy prescriptions recommend controlling inflation rates and money supply growth and implementing various policies to encourage remittance recipient families to invest via DSE can further enhance the investment and growth prospects of the country.

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Appendix

Table 2: Johansen's Cointegration Test

Variables: DSR and WR, IP, CPI, MKI, M2I, CCONF July 2007 to June 2015							
	Hypothesis	Alternative	Eigen-value	λ-max	P-values**	λ-Trace	P-values**
VAR(1)	r = 0	r =1	0.377149	43.83	0.01*	112.52*	0.002
	r ≤1	r =2	0.230847	24.80	0.43	68.69	0.06
LR estimates	$DSR_t=0.04WR_{it}+0.56IP_{it} – 0.01CPI_{it}+0.06MKI_{it}-1.50M2Iit -1.05CCONF_{it}$ - - -(1.1) (3.60) (3.57) (-0.326) (1.70) (-4.74) (-0.2628)						
Variables: DSR and WR, IP, CPI, M2I, CORR July 2007 to June 2015							
	Hypothesis	Alternative	Eigen-value	λ-max	P-values**	λ-Trace	P-values**
VAR(1)	r = 0	r =1	103.52	37.83	0.05*	95.75*	0.01
	r ≤1	r =2	65.69	27.80	0.22	65.69	0.10
LR estimates	$DSR_t=0.10WR_{it}+0.66IP_{it} – 0.20CPI_{it}+2.22M2I_{it} +23.81CORR_{it}$ - - -(1.2) (3.92) (2.16) (-3.80) (3.54) (2.17)						
Variables: DSR and WR, IP, CPI, M2I, CCONF, CRR July 2007 to June 2015							
	Hypothesis	Alternative	Eigen-value	λ-max	P-values**	λ-Trace	P-values**
VAR(1)	r = 0	r =1	0.4696	58.35	0.00	156.31*	0.00
	r ≤1	r =2	0.3173	35.12	0.16	97.96*	0.03
LR estimates	$DSR_t=0.24WR_{it}+1.43IP_{it} –0.35CPI_{it} -4.00M2Iit +5.59CCONF_{tt}+1.69CORR_{it}$ - - -(1.3) (5.03) (2.64) (-2.91) (-3.70) (3.30) (01.762)						

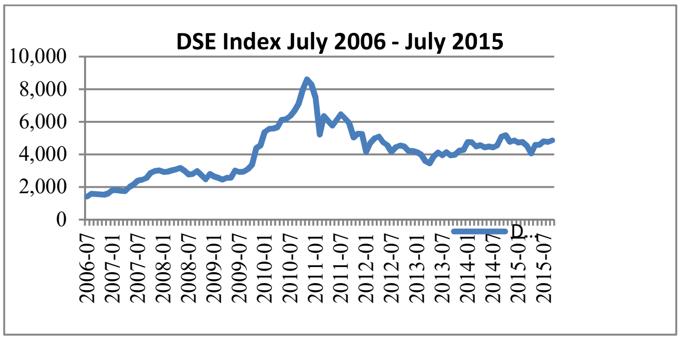

Figure 1: DSE Index July 2006 - July 2015

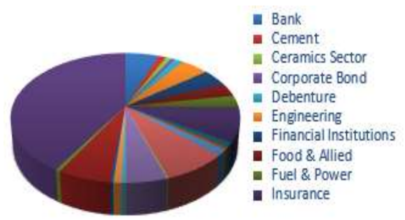

Figure 2: Sector wise listed companies

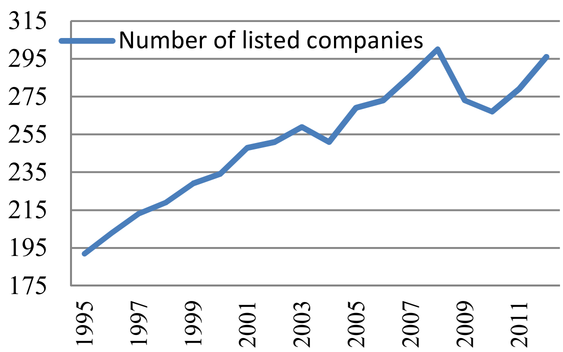

Figure 3: Number of listed companies in DSE 1995-2012

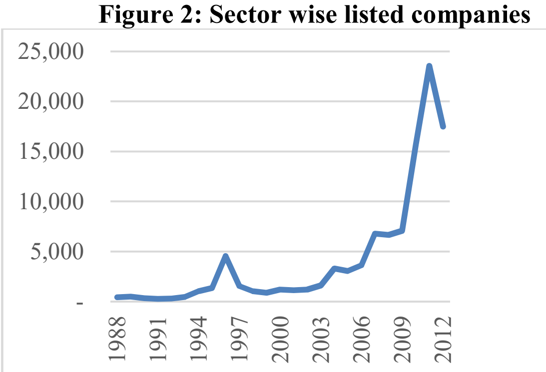

Figure 4: Market capitalization of listed companies in DSE 1988-2012

State Responses to Demands for Rights of Autistic (specially gifted) Children in Bangladesh

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Abstract

In Bangladesh just a few years back, people were merely aware about disability with Autism. So lack of knowledge in Autism is common in Bangladesh. Most of the times they are considered as disable children although they are completely different. This has added with the lack of public-private supports. However autistic children in Bangladesh will not be looked down upon anymore. Bangladesh is now being recognised as a role-model for combating autism. Despite some challenges, the Government of Bangladesh is actively considered autism issues with measures to register child births, raising awareness at the national level, the role of family in the psychological and physical nourishment of the autistic children, holding international conference on autism(held on 25-26 July, 2011in Bangladesh) and many more. The aim of the paper is to appraise the initiatives taken by Bangladesh government and highlights policies targeting. We argue that, awareness with the appropriate policy formulation is very much necessary. The cooperation of social awareness and Governmental, Non Governmental initiatives at the society level can bring a dramatic change about the condition and development of autistic children in our society.

Keywords: Autism, Policy, Rights, Children, Bangladesh.

1. INTRODUCTION

Autistic children are not like other disabled children. Autistic children face lifelong developmental disability that affects their communication with other people (Rapin & Tuchman, 2008). It is a neurological disorder that also affects how they make sense of the world around them (Mythili & Shanavas, 2014). Most of the autistic children have natural intelligence. According to the doctors, children with Autism Spectrum Disorders (ASDs) develop motor, language, cognitive and social skills at different rates from other children at their age. For instance, they may be very good at solving math problems or fine art but have great difficulty making friends or talking. Thus, socially very often they are termed as "Specially gifted Children". According to World Health Organisation (WHO), autism has defined as "ASD refers to a range of conditions characterised by some degree of impaired social behaviour, communication and language, and a narrow range of interests and activities that are both unique to the individual and carried out repetitively".

Due to lack of awareness of parents and government's assistance, autistic children suffer most from inhospitable attitudes of the society. Families with autistic children often feel unable to attend social and cultural programs as a fear that their child may get negative or even aggressive reactions from surrounding peoples (Kempe 2015). In spite of constitutional obligation and number of initiatives taken by government and private sector, parents with autistic children face problem. In Bangladesh just a few years back, people were merely aware about disability with Autism. An international conference on autism held in Bangladesh on 25-26 July, 2011 got everyone's attention. Unfortunately, our country did not have any policy regarding autistic children. They are considered as disable children although they are completely different. So normally the concern arises, despite of having difference between other disability and autistic children why there is no specific policy in national children policy and law to meet the demand of the rights of autistic children?

However it is a matter of great prospect that recently Bangladesh has come to the forefront in this regard. The state is positively responses to the rights of the gifted children. Some initiatives done by Bangladesh government are adoption of Rights of Persons with Disabilities Act2013(amended), Final Approval of the Neuro Developmental Disabled Persons Protection Trust Act 2013, setting up National Advisory Committee on Autism and Neurodevelopment Disabilities, running a pilot program, embracing Dhaka declaration. And On December 12, 2012 the United Nations General Assembly (UNGA) passed a new resolution. The resolution was drafted and tabled by the Mission of Bangladesh with the support of Autism Speaks.

2. DISCRIMINATIONS AGAINST AUTISTIC CHILDREN IN BANGLADESH

According to the ministry of social welfare of Bangladesh, it was estimated that the number of autistic children in Bangladesh is 14 lakh and 86 thousand (Hossain 2009). But exact figure is yet to be known as survey is started to conduct. Symptoms of autism in the children are usually first noticed by their parents. Parents try to protect their child from hostile attitudes of the society. Many parents don't want to face the reality that their children are autistic. This attitude comes due to lack of knowledge, appropriate support from state policy regarding the autism and lack of education.

Our society treated them as social curse. They are invisible in marketplace, station, work place and social programs. The lacking of social awareness is accountable for this condition. Socio-economic status play significant role in terms of development of the special children. Social stigma poses a major challenge in the early diagnosis of autistic children. Due to lack of understanding of autism, people remain negligent about treating autistic children. Inappropriate education system is another obstacle for their development. Autistic children face discrimination at the mainstream education system. As there is no specific policy guideline, mainstream schools reject the application of autistic children. Even after the admission sometimes school authority exclude them in response to the objection of regular students. In Bangladesh, treatment and schooling for autistic children are expensive, which is a burden for a family that has to take care of other children. Sometimes autistic girls are in more vulnerable situation than boys. These especially needy children face obstacles in every basic rights of life in our country. They are even deprived of the property inherited rights. These circumstances are happening for short of proper policy implication, lack of awareness and negative psyche of the society. In these circumstances it is well understood why such deliberation from state is vital for the welfare of the gifted children.

3. AN APPRAISAL OF STATE’S RESPONSE

For the last five years autism has been an important focus in Bangladesh’s development policy. Rights of autism and disable persons have played a significant role in national budget and development plan. On this endeavor 2013 and 2014 was remarkable years for autism circumstances in Bangladesh. Government approved a law: “National Trust for Rights and Protection of Persons with Neuro Developmental Disabilities Act 2013.”

3.1. Adoption of Rights of Persons with Disabilities Act 2013(amended)

It has been long demanded by the parents and various organizations who working on autistic children to revise the disable child welfare act 2001.Governmnet of Bangladesh has responded positively in this regard. The process to amend the act, which started about two years ago, finally came into light in this year. At the very first, on July 15, 2013, the Cabinet approved the draft of the Disabled Persons Protection and Rights Bill 2013.
Then lastly Parliament on 3rd October passed the revised law of the Rights and Protection of People with Disabilities 2013 (Bangladesh Sangbad Sangstha 2013). The existing Bangladesh Disabled

Persons Welfare Act, 2001 has been scrapped with the passage of the bill. Although the bill is known as “Protection and Preservation of the Rights of the Disabled Persons Bill-2013”, it addresses all kinds of disabilities including autism. Therefore it can be taken as landmark to fulfil the demands for rights of autistic (specially gifted) children in Bangladesh.

Amended law includes separate section for defining different disability. Here autism entails a details explanation that implies autism mentioned at section 4 of revised law. According to the law the people with disability will get all facilities and opportunities such as legal recognition, individual freedom, access to justice and information, health, education, voting rights and others like any other citizen.

Moreover many other prerequisite like Upazila committee, unified education, special education, clarification of discrimination, inclusive education in mainstream school, societal rehabilitation, equal recognition before the law has been recognized in section 2-(1), (2), (19), (20), (25), (26) and (28). Many autistic children face discrimination during the study at normal school. Sometimes school authority deny to admit them and sometime although accept but after some days they are rejected by complain from the parents of normal children. Section 15 of the revised law will be fruitful to remove this type discrimination as it clearly mentioned in 15(h) that, it is the rights of disable children to take part in every education level in institution.

There is a penalty section also. According to section 36(1), anyone standing in the way of the legal rights of the people with disabilities will face three years in jail and a financial punishment of Tk 500, 000. A 28-member high-powered national committee will have to be formed with the social welfare minister to oversee the implementation of the law. Similarly, each of the upazilas will have separate committees to protect the rights of the people with disabilities.

3.2. Final Approval of the Neurodevelopmental Disabled Persons Protection Trust Act 2013

Beside the amendment of the Rights and Protection of People with Disabilities Act 2013, government finally approved Neurodevelopmental Disabled Persons Protection Trust Act 2013. It is a great responsive acceptance by the government to ensure the rights and welfare of autistic children. The law involved the issues related to providing assistance to autistic people, their nurture, security and rehabilitation. According to this law an advisory council will be set up headed by the prime minister and overall 13 ministers and state ministers will be the members of the council. Further, a trustee board comprising experts and other stakeholders will be created to look after the enforcement of the law and will provide registrations to organizations interested to work on autism. The Act offers to develop a national institute for education and training of the people with special needs and a separate unit at every hospital for them. It also emphasize on initiatives to ensure their employment and right to inherit property.

3.3. National Advisory Committee on Autism and Neurodevelopment Disabilities

This committee is doing great for extending support for the rights and welfare of the autistic children. It is the rights of the autistic children to get priority in terms of obtaining ticket to visit doctor and also priority on doctors’ chamber to meet doctor. Because of the advocacy and support of this committee Bongabondhu Sheikh Mujib Medical University has extended another step of their support toward the children/persons with special needs. Now parents will get priority with their autistic children to obtain ticket or see doctor.

3.4. A pilot Program

The government has so far built more than 13,000 community clinics, pledging to build a facility for every 6,000 population (Hasib 2013). Under the pilot program, training has been given to the community health worker to monitor development disabilities using tailor-made tools. The Ministry of Health had already trained about 8,000 community health workers from seven districts to screen development disabilities.

3.5. Dhaka Declaration

In 2011, Autism Speaks, WHO and the government of Bangladesh organized an international conference on autism. Here "Dhaka Declaration," was adopted to bring attention to the unmet needs of millions of individuals with developmental disabilities including autism. The Dhaka Declaration endorsed the priority actions to meet the healthcare needs of the children with developmental disorders. The declaration also approved a plan to increase the awareness about the rights of autistic children, strengthen healthcare capacity, increase the capacity of professionals and mobilize and allocate human and financial resources for the healthcare of those children. It also urged governments to strengthen their mental health services and attend to the needs of people with developmental disorders.

3.6. Bangladesh Proposal on Autism

Bangladesh is pioneer to propose resolution on autism in United Nations and that resolution was adopted unanimously. Dhaka Conference on Autism Spectrum Diseases in July 2011 has contributed significantly to the UN resolution. It is a great contribution of Bangladesh regarding autism because it will act as the basis for high level discussion on autism at the United Nations in 2013. This resolution will assist UN agencies and organizations and member states to collect disintegrated data on ASD and DD. It will help rehabilitation and treatment of autistic children and end discrimination to them. It will also influence governments to prepare a database for the autistic children and take necessary steps for their rehabilitation. Beside this, WHO accepted the resolution namely "Comprehensive and Coordination Efforts for the Management of Autism Spectrum Disorders (ASDs)" in response to Bangladesh's request.

4. A LONG TRAIL

No doubt Bangladesh has taken such initiative indicating positive response to the rights of autistic children .Government is giving proper attention towards them. But a long trail is still ahead to pursue. The approved acts need to be implemented effectively to ensure the benefits to the autistic children. There is still some deficient in the disabilities act 2013, regarding the demand of autistic children. For illustration, section 32 mentions that, any educational institution would not reject the admission of such person who have capability only by the excuse of being disabled according to description mentioned in section 5(physical disability), section 7(b, c--partial blindness, low vision), section 8 (b, c, d-speech disability) and section 10, subsection 2(b, c-hearing disability).Therefore it leave out the instruction about the education of autistic children.

In addition most special education center and organizations are Dhaka centric. Even in Dhaka city all ward don't have special education or supporting center. Although some organizations are taking some initiative for workshop on awareness building lying on outside the Dhaka city but the numbers and initiatives are not satisfactory enough.

Logistic and Financial constrain is a big issue. In Bangladesh trained health worker and specialist are not enough in number compare to autistic children's number. Furthermore, the organizations are running their program with the help of foreign assistance, some private bank and private sources and also by receiving certain fees from parents of autistic children. In this case government involvement is very unsatisfactory. Those nongovernmental organizations who are currently working on the special education are enough enthusiastic for giving special care and education to autistic children but the reality is that they are facing financial and logistic support. They are opted for government participation.

There is no specific action policy for special education based program. Most of the special education center don't have fully developed program. As a result during certain age they have to leave that center, even though they are needy. Hence Bangladesh government must add the special education program under the education ministry and there must have definite allowance for the education and welfare of autistic children.

Parents demand that there should be some reliable center and specific action policy so that after passing away their children do not face any problem. For example, autistic children don't have rights in hierarchical resources of their parents. So there must have government sources where parents can deposit money which will take the responsibility after their parents' death. Section 6.9 of national children policy deals with special education program of autistic children. So measures shall be taken to mainstream them in society with ensuring their active participation. It is appreciable as government give concern and includes section on autism in national children policy. But this policy fell short since it do not specifically stated about the measures to mainstream them in society. There is no segment about their property right and employment also. Therefore national children policy should be reshuffled.

Besides Autistic girls are more susceptible than any other children. But autistic girls do not get any special assistance from "women and child abuse law". There should have precise segment for them. Therefore the implementation of the National Neurodevelopmental Trust act 2013 is very much required. Only high level governmental policy is not enough, there must have community based program. Monitoring sell under the community should look after the various incentives. Table 1 summarises the key policy and legislatives issues dealing with autism and disable persons in Bangladesh.

Table 1: Key Policy and Legislative issues Dealing with Autism and Disable Persons in Bangladesh

Key Policy and Legislative issues	**Descriptions**
Section-4 and 6(Definition of Autism and Disability)	This section entails a details explanation that implies autism
Section -1(Upazila Committee)	Refers to a committee established for every Upazila (sub-district) to promotes the rights of persons with disabilities. Here logistic and financial constrain is a big issue
Section-2 ,32(Equal Unified Education)	Refers that no institution can omit the admission of any student with disabilities for any reason. But it leaves out the specific instruction about the education of autistic children.
Section -6 and 17(Inclusive Education)	Refers that general schools will arrange inclusive special education for persons with any type of disability. There is no specific action policy for special education based program. Most of the special education center don't have fully developed program.
Section -19(Equal Lawful Acceptance)	Refers to persons with disabilities having the right to act independently without depending on others
Section -20 (Social Rehabilitation)	Refers that disable person can participate in all branches of society. Yet they need special treatment. In Bangladesh trained health worker and specialist are not enough in number compare to autistic children's number
No section on hierarchical rights of parents resources	There must have government sources where parents can deposit money which will take the responsibility after their parents' death

5. CONCLUSION

Autistic children normally suffer lifelong developmental disabilities despite having some intelligence. They are different than other disabled children. However, there was no specific policy available in Bangladesh to protect their rights and benefits in few years back. They were considered as like other disabled children. They are being discriminated from their basic rights, education and even from property rights. These situations are happening due to the lack of proper policy/law, lack of social awareness and negative attitude of the society. Previously only the urban parents were mainly concerned about their children with Autism .But at present, the situation is improving gradually throughout the country. Government has responded positively to demands for rights of autistic children in Bangladesh. They have taken some good initiatives to protect the rights of the autistic children such as, adoption of adoption of Rights of Persons with Disabilities Act 2013(amended), final approval of the Neurodevelopmental Disabled Persons Protection Trust Act 2013, setting up National Advisory Committee on Autism and Neurodevelopment Disabilities for extending support to the rights and welfare of the autistic children, running a pilot program to give training to the community health worker to monitor development disabilities using tailor-made tools, embracing Dhaka declaration to increase the awareness about the rights of autistic children and contribution to the development of new resolution on Autism in United Nations.

Not only government, both electronic and print Media plays an important role to build up awareness on this issue. Non-government organisations and foreign agencies are also working for awareness building in this regard. Organisations like SWAC (Society for the Welfare of Autistic children), ASSC (Advanced School For Special Children) are working enthusiastically with the aim of educating, training and rehabilitating children, adolescents and adults with autism. Enabling them to develop and perform to their fullest potential, making them independent and active members of the society, facilitating them to integrate and contribute to the mainstream of national development and establishing their rights as citizens of this country. Some other organizations like YPSA (Young Power in social action) is working to facilitate ICT based capacity of youths with disabilities. So that they can exercise equal employment and business opportunities from the society& state by using their ICT skills. Since different acts have been passed by the government, now the new challenges are to implement those policies correctly and effectively. If implementation can be done in a proper way, then the rights of the autistic children can be ensured in Bangladesh.

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Transforming Organisational Culture in the Australian Disability Sector: the need for social business

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Abstract

Social business has been explored within the context of developing nations and its benefits in alleviating poverty (Yunus et al, 2015 and Masukujjaman et al, 2016). However, there has been little research in exploring its utilisation in other marginalised populations or its benefits in developed countries. Furthermore, the values of social business fosters an organisational culture of empowerment, continuous learning and community engagement that has not been explored (Yunus and Weber, 2007).Organisational culture is diverse, multifaceted and has long been recognised as a key component to the running of an organisation. In disability, various studies have been conducted to explore the different aspects of organisational culture (e.g. leadership, job satisfaction, employment for people with disabilities) (Rhodes & Toogood, 2016 and Bigby & Beadle-Brown, 2016). Difficulties resulting from inherent organisational cultures within the disability sector have been documented and the need to transform the organisational culture has been identified. The latest reports identify the need to change organisational culture from one of perceiving individuals with disability as 'charity cases' to one recognising them as individuals with valuable contributions to society (FaHCSIA, 2012). This article suggests that social business, which already contains values of empowerment and inclusion can support the disability sector in making the required changes in organisational culture.

Keywords: *Social business, disability, organisational culture*

1. INTRODUCTION

In Australia, the disability industry contributes significantly to the economy of the country and continues to be a major topic on political agendas. 1 in 5 Australians, 4.3 million or 18.3% of the population identify as living with a disability (Australian Bureau of Statistics, 2016). The government estimated that in 2016-2017, $34 billion would be spent on welfare payments to people with disabilities, with this amount set to increase with the rapidly expanding sector (Parliament of Australia, 2015).

Disability impacts significantly on the Australian population. With increasing life expectancy, people are also living longer with some level of impairment. At birth it is estimated that individuals will live approximately one-fifth of their lives with some degree of disability and the prevalence of disability increases for those 65 years and above (Australian Institute of Health and Welfare 2017). People living with a disability are also more likely to face challenges in society in participating in the workforce, higher levels of unemployment, lower income and lower levels of education compared to people without disabilities (Australian Institute of Health and Welfare 2017).

The disability sector has a long history of providing support with an inherent culture of viewing people with disabilities as in need of charity and donations (FaHCSIA, 2012). This cultural perspective, although charitable, fails to bridge the gap between the need to provide support and enabling individuals to be active members within society. This culture also fosters a reliance on government welfare, which often results in unmet needs and conforming to set processes thus inhibiting innovation. Therefore, to rectify the difficulties within the disability sector, the underlying culture needs to be transformed.

1.1 Current disability sector

The majority of disability specific services are provided by the government, non-government and private sectors. Apart from the direct income support through welfare payments, under the National Disability Agreement (NDA), the government plays a major role in providing state and federal funding, mainly as block funding to non-government service providers (FaHCSIA, 2012).

In 2015-16, the Australia Institute of Health and Welfare identified that 87% of services were provided by the non-government sector, largely made up on not for profit organisations (Australian Institute for Health and Welfare, 2017). As the majority of services are provided by not for profit organisations, they have a major influence on the organisational culture within the sector.

However, the disability sector has long been plagued with difficulties with peak bodies calling for more funding and support (People with Disability Australia, 2017). Not for profits continue to be underfunded with a heavy reliance on government funding daily. Individuals with disabilities continue to experience social exclusion, discrimination and large gaps in health equity with significantly lower health outcomes than the general Australian population (National People with Disabilities and Carer Council, 2009).

In light of the mounting challenges, the productivity commission launched an inquiry into solutions to address these difficulties. The overall finding concluded that the current supports were 'inequitable, underfunded, fragmented and inefficient, and gave people with disability little choice' (Productivity Commission, 2011).

These difficulties are part of the underlying organisational culture that is currently within the disability sector. Although perceptions of people with disability are slowly evolving, there continues to be a misconception that people with a disability rely on 'handouts' and donations rather than perceiving them as active, independent members of their communities. Service providers recognise the increasing need for person centred care and support. However, due to their reliance on government funding, there are often unnecessary compliance processes, use of outdated models of organisation and constraints to flexibility and innovation (Productivity Commission, 2011). As a result, a culture of programs developed around organisational and system needs exists where individuals are expected to fit within the offered programs offered to them even if it is not entirely suited to their needs. The block funding model also eliminates the need for competition within the sector, thus reducing the need for organisations to create new ideas to differentiate themselves in the market.

As a result of the identified difficulties by the productivity commission, the inquiry requested an overhaul of the disability system that would transform the culture with an emphasis on the need for integrated services that increases the engagement of participants, provide increased choice, social inclusion and empowerment of individuals. A recommendation of the implementation of a National

Disability Insurance Scheme (NDIS) was provided to introduce a market based approach to increase choice and quality of services in order to address the deficits (Productivity Commission, 2011).

1.2 Changes in the disability sector

The NDIS has been slowly rolled out across the country with the aim of addressing these difficulties. Utilising the principles of insurance models, the NDIS aims to provide reasonable and necessary supports to participants to achieve their goals, increase independence, social and economic participation in the community (National Disability Insurance Scheme, 2017). Block funding will be replaced by individual funding packages aimed to provide increased choice and control to the participants over the supports and services they would like to access. Service providers will also require a dramatic shift in their approach to marketing and service provision, with an increased need to take on business practise principles in order to remain sustainable within an increasingly competitive market.

However, since the initial roll out, the NDIS has been fraught with difficulties, with increased cost pressures and advocacy groups pushing for an increase in NDIS pricing to align with the actual cost of services (National Disability Service, 2016). Although the NDIS will bring with it many advantages for participants, difficulties will continue to exist in the organisational culture and approach to service provision. Services remain heavily funded by the government, though this time indirectly through individualised funding packages. Organisations will continue their reliance on the government and may inadvertently continue the culture of service centred practise as they strive to comply with the regulations of the NDIS in order to maximise received funds. Consumers will continue to experience limitations as governed by what is eligible for funding in their individualised funding packages.

There is also a recognition that to transform the culture within the disability sector, the building up of knowledge (ideas, skills, innovation), social capital (networks between community, government and businesses) and materials (assets, revenue, infrastructure) will be required (PWC, 2011). However, this will be difficult within the current system, as organisations have existed and operated in fixed service models for a long time, making it extremely difficult for them to create and innovate transformative new approaches that look to sources outside government support (Kendrick et al, 2017). Therefore current processes and organisations will be unable to make the transformation that is called on by the introduction of the NDIS without a new injection of ideas and business models. Social business is a concept and a new business model approach that can bring about the organisational transformation that is necessary.

2. SOCIAL BUSINESS: AN INNOVATIVE ORGANISATION

The concept of social business has slowly gained traction since its initial conceptualisation. The main aim of a social business is to target the social determinants of health such as poverty alleviation, inequalities in access to health care and poor health through a self - sustaining business model (Yunus & Weber, 2007). Social businesses are not charities nor are they profit maximising businesses. Instead, they run using business processes but attempts to ensure no loss and no dividend and any accidentally generated profit is used to solve more social problems or reinvested into a new social business (Yunus et al, 2010). There are two types of social business: The first type is a company that provides products and services that targets a social issue. The second type is a company owned by the target market themselves (Yunus, 2010).

A social business is also not a low cost, low quality business, but maintains high quality products and services at affordable prices to their target population whilst still generating enough profit to sustain the business (Yunus et al, 2010). In order to achieve this, innovative ideas and community engagement is key. The social business approach has also been identified as an integrative approach that helps to identify the specific needs of their customers and provide support to increase empowerment thus reducing the vulnerability of the clients.

3. THEORIES OF ORGANISATIONAL CULTURE

The organisational culture of a system and workplace is multi-faceted comprising of everything learnt and shared by the team, consisting of expectations, values and assumptions (Fillary & Pernice, 2005). These influence the way that individuals within an organisation interact with each other, with their patients and people external to the organisation (Samant et al, 2009). Culture can often be an ambiguous term to define partly due to the great variation and interconnectedness of various factors. There are various theories and models developed over the decades attempting to define organisational culture. One popular framework was developed by Harrison (1972) and has been adapted and adjusted by researchers over the years. The 4 components within the framework consist of:

- Power culture – highly autocratic with executives exercising the most power over decisions and processes within the organisation. It is competitive and will fight for dominance over a market.
- Role culture – places importance in following formal rules and regulations, attempting to be as orderly and stable as possible.
- Achievement culture – task orientated with an emphasis on achieving a goal as the main focus with all processes, organisational systems and structures aimed at achieving the goal.
- Support culture – the aim of the organisation is to serve the needs of its members to meet their needs where it may not have been possible to do so themselves (Harrison, 1972).

From observation of the current organisations within the disability sector, it appears to lean towards a power and role culture as consumers need to conform to the organisation's rules and guidelines and the need of organisations to complete compliance measures. However, as already identified in the disability sector, the power and role cultures have difficulty providing flexibility and adapting to changes in their environment.

On the other hand, social business leans towards fostering a support and achievement culture where the main purpose is on achieving their goal through providing a flexible and person-orientated approach. Perhaps this inclusion of different culture types is what is required to provide a balance to ensure a more sustainable and effective disability system.

4. SOCIAL BUSINESS: REDEFINING ORGANISATIONAL CULTURE

Within the disability sector, having a shared vision and mission that is actively integrated into all aspects of work is a key influence of the organisational culture (Bigby & Beadle-Brown, 2016). There are several key inter-related values and concepts that help to define and develop the support and achievement culture within social business which is highly beneficial to the disability sector. These include reorienting the purpose of business, sustainable and innovative, engaging the community and empowerment. These values that define the culture are the same values that the Australian disability sector hopes to achieve, making social business a suitable organisational model to implement to drive transformation in the organisational culture of the sector.

4.1 Reorienting the purpose of business

In a traditional model of business the main goal is the maximization of profit. Profit making businesses are vital to the prosperity of the economy in the world. The social business challenges the assumption that the goal of establishing a business is to make financial profit. It seeks to demonstrate that the development of social and economic value can be compatible and combined within the same business framework (Wilson & Post, 2013). A social business is driven by the purpose to create social value and economic value is interwoven into the design and creation of its ventures. This ensures that the desire for financial profit will not influence the services provided to consumers. The underlying concept of not for profit organisations are similar, except the approach taken is different.

In eliminating the need to make a profit, it will lower the cost of providing the service or resource to its customers without affecting the quality of the service. Within the disability sector, this will result in lowering the costs for services and products, making it more affordable to the target population. Social business seeks to take its place amongst the private and non-government organisations as a competitor thus boosting the market based approach in increasing competition and diversity in the types of organisations.

4.2 Sustainability & Innovation

A unique quality of social business is being 'self-sustaining, self-propelling, self-perpetuating and self-expanding', resulting in a decrease on the reliance of government funding, offering services that are sustainable and can be provided long term (Yunus & Weber, 2007). The ability to self-generate funds will also allow the social business to develop their own governance system thus affording the flexibility to provide more specialised services without constraint from forces outside the company. To achieve sustainability, the social business will need to think innovatively and understand the market they are operating within. There are again skills that social business can contribute to the disability sector in encouraging a market based approach.

4.3 Community engagement

Social businesses rely on community engagement in order to ensure sustainability of the business. Community engagement in forming decisions is seen as an essential part to social business and businesses strive to embed their organisations into the workings and culture of the community to ensure they are achieving the social goal. Social business relies on a consumer approach and utilises double loop learning (Yunus & Weber, 2007). The double loop learning approach encourages discussion between the stakeholders – i.e. the target population and their business to adapt and evolve their systems and processes to better suit the community. This builds mutual trust and ensures that difficulties or ineffective services are identified early (Goyal & Sergi, 2015). Double loop learning also encourages changing the values and norms underlying behaviour which will result in organisational culture that is different to that of organisations applying single loop learning

4.4 Empowerment

Empowerment is particularly shown within the second type of social business, which is an organisation owned and operated by the consumers themselves. This structure speaks to an organisational culture were the customers are valued and seen as individuals with skills to contribute within society. Part of the goal for a social business is also to inspire behaviour change in their consumers at the same time ensuring that their approach is not patronizing (Yunus et al, 2015). They do this through capacity building in the form of training and providing education, providing on the job training or through other innovative ways as decided by the different organisations. This approach aligns with person centred practise and empowerment that the disability sector strives to achieve for those living with disabilities. Empowerment also occurs for the employees as this business model provides increased motivation and meaning for staff as they are engaged in the process of enabling others (Yunus et al, 2015).

5. CONCLUSION

The organisational culture within the disability sector is in need of a dramatic shift from a system influenced by the 'power' and 'role' culture orientations to one of 'achievement' and 'support'. Alongside the current organisations and introduction of the NDIS system, social business organisations or the incorporation of its values can help stimulate the transformation required. It is based on the values of reorientation of an organisation to a market based approach, sustainability, innovation, community engagement and empowerment that the NDIS system is attempting to foster within the disability sector. Of course, the social business model may raise new challenges, such as how to define guidelines for a specific target group or generate enough profit to remain sustainable. However, this is all part of the innovative value that social business brings. The social business model also cannot exist as the sole business type within the disability sector, but in combination with the existing service models. It will provide new competition and uniqueness to the disability sector, which perhaps is the additional ingredient required to ensuring a more sustainable and effective system.

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