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Editor's Note

"This changes everything."

Apple CEO Steve Jobs made this prediction and phrase famous when he introduced the iPhone in 2007. In just seven years, a device that fits in your hand has revolutionized how we communicate, read, teach, learn, exercise, create videos and music, and even practice medicine. The iPhone did change everything.

And so it will be for Southeast Asia: the ASEAN Economic Community changes everything. We can't imagine all the social, educational, economic and political effects that will arise from creating an integrated community of more than 600 million people with a combined GDP worth more than $2 trillion and a free flow of labor, goods and services. Even before it begins at the end of 2015, AEC is already shaping people's attitudes, hopes and fears.

We can't imagine all the changes, but we can try. Our theme for this issue of *RJSH*, **'Thailand and her Regional Affairs',** looks at ASEAN, AEC, how we got here, and where we might be headed in the years ahead. Wherever we wind up, this region will take a fascinating journey, so perhaps it's best to quote from *Alice in Wonderland* and 'begin at the beginning'. In our lead article, 'The Kingdom of Thailand and the Association of Southeast Asian Nations,' distinguished statesman, diplomat and noted scholar Sompong Sucharitkul gives us a first-hand account of ASEAN's birth and the people who made it happen.

Since then, its members have experienced varied levels of development that will affect how they each experience AEC's inception. Danuvas Sagarik and Nan San Nwe outline the huge challenges Myanmar faces as it leaps from decades of isolation to regional integration, while Yot Amornkitvikai details the "middle-income trap" threatening Thailand as it comes under pressure from low-cost, more dynamic economies such as those in Vietnam and Indonesia.

In foreign affairs, diplomat and scholar Anuson Chinvanno examines ASEAN-China relations under the cloud of China's increasingly assertive claims against individual countries over nearly the entire South China Sea. Chitriya Pinthong sees the potential to develop an "Indo-Pacific" idea for ASEAN and Asia-Pacific, a "strategic architecture" that promotes peace and stability while reducing the chance of further conflict.

We welcome your comments and manuscripts. Links to our manuscript submission site can be found at the *RJSH* Online Submission and Review System: http://rjsh.rsu.ac.th. We look forward to hearing from you.

Sincerely,

Anek Laothamatas
Editor-in-chief

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CONTENTS

Thailand and ASEAN
The Kingdom of Thailand and the Association of Southeast Asian Nations

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1. Preliminary Observations

The title of the present topic of study appears highly intriguing, to say the least. In the first place, it seems strange to conjure up a subject entailing the study of one Kingdom and the role, relations, functions and activities of that Kingdom in regard to the initiation and operation of a regional grouping for active economic cooperation, such as the Association of Southeast Asian Nations, or ASEAN. It may be of some initial interest to enquire as to the author of the acronym ASEAN. Its five founding members, Indonesia, Malaysia, the Philippines, Singapore and Thailand, must have been endowed with extraordinary far-sightedness to envision that within less than half a century, membership would redouble itself to grow to 10 nations by embracing Brunei Darussalam, Cambodia, Laos, Myanmar and Vietnam.

Much has indeed been written about the activities of this regional or sub-regional association for economic, social and cultural cooperation, not to mention the strength of its collective political power. The quality of neighboring states as the foundation of the invisible strength of the collectivity of these Southeast Asian nations has indeed provided what it takes to sustain its strong collective unity and powerful individual and collective existence with relative strength and natural timely growth as the result of uninterrupted economic development. This short study will be confined initially to the establishment, management and operation of ASEAN as an institution of durability, and to its activities within the purview and for the purposes for which it came into being, especially in regard almost exclusively to the perspective of the Kingdom of Thailand, as one of the co-founders of ASEAN in the mid-1960s. This topic may be divided into two separate but not unrelated parts, namely ASEAN and Thailand or the significance of ASEAN to Thailand, on the one part, and "Thailand and ASEAN", and the importance of Thailand from ASEAN's standpoint, on the other. These two parts could be followed up by a third: "ASEAN and Thailand in the World Community".

2. Pacific calm in the pre-ASEAN era

Prior to the advent of ASEAN as a native regional association for closer economic and social cooperation, approaching regional integration, Thailand had been experimenting with a variety of different forms of regional cooperation, taking into consideration as possible models the establishment and growing activities of several groups of states in other regions of the world, notably the European Economic Community, European Common Market, Scandinavian or Nordic Group of States, European Free Trade Area, Benelux Communities, Pan American Organization and the North Atlantic Treaty Organization (NATO), as well as the Southeast Asia Treaty Organization (SEATO), of which Thailand was an active founding member, though the organization ceased to function since Vietnam's unification.

As a prelude to ASEAN, Thailand took the initiative to invite the UN Economic and Social Commission for Asia and the Pacific, originally known as "Asia and the Far East," to be stationed more permanently in Bangkok, rather than return to mainland China, while the Chinese representation question was still pending as a perennial problem at the United Nations: which government was to represent China, the Republic of China or Chinese Taipei, earlier Taiwan, or the People's Republic of China, or PRC?. At the height of this uncertainty, Thailand decided to provide the seat for the United Nations Economic Commission for the region, whose official name was formally changed to "Asia and the Pacific" following Carlos P. Romulo's questions, "East of what?" and "Far from where?" These questions were raised at a UN meeting in Bangkok early in 1970, whereupon the acronym was formally changed from ECAFE to ESCAP in response to General Romulo's questioning.

The region or sub-region of Southeast Asia itself was further confounded by overlapping conflicting interests of outside powers such as the United States of America, the United Kingdom and France, whose former colonial possessions included emerging new states such as Vietnam, Laos and Cambodia, as well as the Federation of Malay States including Singapore, as a newly emerged sovereign island republic within the Commonwealth of the British Nations, and the Union of Myanmar.

3. The Birth of ASEAN

It is difficult to exaggerate ASEAN's significance to Thailand. As one of its original founding members and as a free and independent state, Thailand has always been able and relatively well prepared to preserve and protect her political independence and territorial integrity, not without a high price of significant sacrifices at some crucial periods of her national history, when Thailand had to weather the storm of territorial expansion, especially during the height of successive political waves of Western colonial expansion. The bitter lessons learned by the Kingdom have taught Thai leaders the art and skill of human endurance to be better able with respectable accuracy to evaluate the relative strength and weaknesses of Thailand's position in a given area or arena at various dark moments in her history. Since the advent of ASEAN, Thailand has been at relatively greater ease and has seemed better prepared to shield herself from the danger of colonial expansion. Unity is strength indeed. It would be harder to attack Thailand as an ASEAN member, as it would be easier to divide first and rule later than to attempt to rule one founding member of an organized collectivity of states such as ASEAN.

This research is designed to identify and shed further light on the connectivity between ASEAN as an international organization for regional or sub-regional economic, social and political or security cooperation and on one of its founding members, the Kingdom of Thailand. At the outset, it is highly pertinent to point out that Thailand initiated the concept and successfully brought into being an association for regional economic cooperation primarily to ensure Thailand's own survival as a free and independent nation, along and together with the other co-founding member states: Malaysia, originally Federation of Malay States; Indonesia, the Philippines and Singapore. Each of these four states had barely joined the rank of the Southeast Asian group of "Newly Emerging Nations" since the close of World War II and the establishment of the United Nations as a world organization.

In this brief study, it will be shown that Thailand had the courage and the audacity to initiate the concept of today's ASEAN as early as almost half a century ago. Thailand was then aiming far wider and broader than Southeast Asia, more particularly to the newly emerged region of the Pacific Rim, which covered the Republic of Korea, Japan and the United States, as well as Australia and New Zealand. The last three nations were included in another regional association loosely founded in Seoul in 1966, just one year before ASEAN's birth. This association, the Asian Pacific Council, had the first draft of its constituent instrument in the form of the Seoul Joint Communiqué initially drawn up by Thailand and subsequently co-sponsored by Ambassador Kim of the Republic of Korea. This concrete result was the by-product of President Park Chung Hee's visit to Thailand in 1965, and Thailand's decision to turn this first attempt by Korea to bring Japan into the closer Pacific Grouping rather than face the danger of leaving Japan isolated in the region, thereby avoiding possible repetition of recent war history along the Pacific Rim. As it occurred, Foreign Minister Shiina of Japan also attended this historic session in Seoul, almost beyond the expectation of the native organizers of the occasion.

4. Thailand's role in the pre-natal care of ASEAN

This paper is intended to bring out some of the salient features in the special relationship between Thailand and ASEAN. Indeed this study's title has been reversed to read "THAILAND AND ASEAN" instead of "ASEAN and THAILAND" because it is more precise chronologically, historically and even logically. In one respect, the problem is akin to finding a more credible answer to the question: "Which came first, the chicken or the egg?" Thailand is more likely comparable to the chicken or rather, "the hen that laid the ASEAN egg". For the sake of politeness, it is not unlikely that the acronym ASEAN could well have preceded its framer, Thailand. For non-Thai members, it was probably more convincing to conceive of ASEAN as a more comprehensive unit, or a collective entity, originally composed of Thailand as well as

the other four founding members with the accession to ASEAN on successive dates by Vietnam, Laos, Myanmar and Cambodia in addition to Malaysia, Singapore, Indonesia and the Philippines.

Thailand's part in actively bringing into being a new association for Southeast Asian economic cooperation can scarcely be exaggerated. To be modest, there would have been no ASEAN without Thailand's untiring effort and its genuine understanding and thorough appreciation of the general political, economic, social and cultural realities of Southeast Asian Nations. It is opportune at this point to give a more detailed account of the events leading to ASEAN's formation in Bangkok at Saranrom Palace on 8 August 1967.

Thailand almost single-handedly conceived and cautiously brought ASEAN into being. The association may be said to owe its conception and birth to one person, His Excellency Dr. Thanat Khoman, then Minister of Foreign Affairs of Thailand, who had served as Thailand's head of mission to the United Nations in New York and on the UN International Law Commission in Geneva, Switzerland. Under Dr. Thanat's guidance, Thailand had earlier created the Association of Southeast Asian States (ASA) for Thailand, Malaysia and the Philippines, and had been active in the development of the Lower Mekong Basin, involving Laos, Vietnam, Cambodia and Thailand.

Under the instructions and supervision of the Thai foreign minister, this writer, who had served as his Chef de Cabinet, accompanied the foreign minister on his visits to Kuala Lumpur, Singapore, Jakarta and Manila in an effort to persuade Thailand's southern neighbors to form a new grouping following the suspension of ASA after the Federation of Malay States became Malaysia and the United Kingdom released Sabah, which led to the period of "Konfrontasi" by Indonesia under President Sukarno and Foreign Minister Subandrio. An opening came after what Indonesian colleagues referred to as the "Gestapo". General Soeharto came into power in Indonesia in the nick of time, following Colonel Untung's unsuccessful attempt to seize power in Indonesia by assassinating almost all Indonesian generals. Luckily a few generals, such as General Sukendro and General Panggabean, survived as they happened to be in Hong Kong or otherwise outside Indonesia and avoided being caught in the mass killing.

5. Thailand's special visits to Southeast Asia in preparation for ASEAN's formation

Following the visit of President Park Chung Hee to Bangkok in 1965 and the formation of ASPAC, or the Asian Pacific Council, in Seoul in 1966, Foreign Minister Thanat embarked on another journey to visit Southeast Asian leaders to strengthen their collective hand with Thailand. By this time, two historic incidents had occurred: the "Gestapo" in Indonesia and the separation of Singapore from Malaysia. It should be recalled that during the difficult period of "Konfrontasi," Thailand fully exercised her good offices with Malaysia, Indonesia, Singapore and the Philippines. Indonesia actually dropped parachutists into Malaysia and Singapore. Thailand provided the necessary good offices by way of an impartial third party to facilitate the repatriation of Indonesian parachutists and ease the growing tensions between Malaysia and the Philippines regarding Sabah. As a friend to every party concerned in the peace-keeping process, Thailand set out to propose and negotiate with her neighbors the successive steps leading to the formation and formal establishment of ASEAN.

5.1 Initial visit to Malaysia

On this exploratory mission, Foreign Minister Thanat first visited Kuala Lumpur and the Istana or the official residence of Tunku Abdul Rahman. The author was the only person accompanying Dr. Thanat, who presented the draft declaration in the form of a joint communiqué prepared by Thailand under the minister's instructions and close supervision. This writer happened to prepare the first draft with a number of operative paragraphs setting out the aims and purposes of the impending regional association. The Thai foreign minister had a long talk with the tunku.

After a good talk, Malaysian Prime Minister Tunku Abdul Rahman invited me to accompany him to a football match at the "Merdeka" national stadium. I accepted his invitation and went to the stadium with the tunku in his limousine. Before coming to Kuala Lumpur, I had known many Malaysian tunkus. For instance, at Oxford University, Worcester College, since 1950, I had been close to Tunku Ahmad of Pahang. At Wadham College the following year, I met Tunku Harlim and Tunka Malik from Kedah, the same home state as Malaysia's prime minister. I had also known Tunku Jaffa from a badminton game,

Tunku Nga as Malaysian Ambassador to Thailand and Tunku Razaleigh as Malaysia's representative during UN General Assembly sessions in New York. I had also learned that Tunku Abdul Rahman was adopted by King Rama VI of Thailand and spoke Thai fluently since the tungu also attended Thepsirin College in Bangkok. But along the way to the Merdeka stadium, the tunku never spoke one Thai word with me. In his limousine, he simply offered me a good choice of brandy with soda or water, as the automobile was well equipped with a refrigerator large enough to contain what appeared to be a choice of luxuriant fruit juices to suit the occasion, namely the football match.

5.2 Visit to Singapore

From Kuala Lumpur, the Thai mission continued to Singapore to visit Prime Minister Lee Kwan Yu at his official residence. The prime minister was accompanied by Harry Chan, Undersecretary for Foreign Affairs, and Nathan, Deputy Undersecretary. Dr. S. Rajaratnam was not present but later attended the inaugural Bangkok meeting. During the exchange, Prime Minister Lee made one observation that seemed astonishing. He confessed to Foreign Minister Thanat that he had a nightmare that one day Thailand might proceed to dig or construct a canal or made a maritime passage across the Kra Isthmus. Prime Minister was assured Lee that no such plan was contemplated by Thailand at the time, although the construction of a pipeline across the isthmus was not to be precluded. The prime minister appeared relieved and welcomed Thailand's initiative of a new economic grouping in which Singapore could play a significant role as a newly industrialized country centrally located within the group.

5.3 Visit to Indonesia

Indonesia had in almost every respect the broadest and widest land and sea area by far, covering a greater variety of islands, large and small, from densely populated to barely inhabited. As an indigenous population, Indonesia comprised principally Malay, Indian, Chinese and other native Asian islanders. It was to be recalled even in the 1960s that a decade earlier, Indonesia under President Sukarno and Foreign Minister Subandrio had organized a memorable meeting at Bandung in 1955 to adopt a document that was subsequently known as "The Principles of Peaceful Co-existence" or the Principles of "Pancha Sila", only to be superseded 12 years later by the Bangkok Declaration of the "Satta Sila" or the ASEAN Declaration of 8 August 1967.

In Indonesia, the Thai mission proceeded to pay respect to Bepah Suharto, then the new Indonesian Leader who had survived the "Gestapo" coup staged by Colonel Untung earlier. The Thai mission did visit Bung Sukarno in retirement in a wooded area, complete with his entourage. A new progressive group of experienced Indonesian diplomats had by now emerged in Indonesia, led by Dr. Adam Malik, former Head of Indonesian Mission in London and other European capitals. He was assisted by his right-hand man, Anwar Sani, a veteran jurist diplomat from the Asian African Legal Consultative Committee and the Sixth (Legal) Committee of the General Assembly of the United Nations, and by a team of lawyers headed by Ms. Lawrence. It is noteworthy that most Indonesian legal experts had their basic legal education and training at Leiden University in the Netherlands. To the surprise of outsiders, especially from Thailand, Indonesian colleagues preferred to consult and exchange their views privately among themselves not in Bahasa Indonesia, but rather in Dutch or "Nerderlandse Taal". It was fortunate that this specially exclusive language was not unknown to an international lawyer, whose first basic international law books must include "De Jure Belli Ac Pacis" in Libri Tres, or the "Law of War and Peace" by Hugo Grotius, first published in Leiden around 1625.

Dr. Malik took a quick look at the draft declaration and smiled. He then suggested an insertion of one sentence to serve as the final preambular paragraph of the declaration under consideration. The gist of this vital paragraph reads as follows:

> "All foreign bases are temporary and remain only with the express concurrence of the countries concerned and are not intended to be used directly or indirectly to subvert the national independence and freedom of the States in the area or prejudice the orderly process of their national development."

His astonishing insertion was understandable from Indoneisa's standpoint, as Indonesia had barely succeeded in closing all Dutch bases on its territories after their prolonged establishment and activities as Netherlands bases, military and naval, in Java and Sumatra.

This came as a surprise and the Thai mission needed time to consider it. Upon reflection, it became clear that this caveat did not apply to Thailand. All the air bases from which operated the B-29 and B-22, whether at Taklee or Ubol or Udorn, or from the naval base at U-Tapao, were exclusively Thai bases. Although on several occasions attempts were made to initiate negotiations on the status of forces agreement on the model of the US-UK Status of Forces Agreement, and in particular on the US-Japan bilateral arrangements, experience had shown that these agreements provided legitimacy for visiting foreign forces to remain outside the jurisdiction and control of the local administration of justice. As such, it would be far easier to be without such controversial agreements. In particular, examples were numerous for Okinawa and Atsugi in Japan, or arrangements for U.S. Forces in England, such as at Oxford, where American forces could visit for relief and rehabilitation, thereby exacerbating existing town-and-gown problems with the relaxation of foreign forces coming from and returning to active service.

Singapore had active British bases. Malaysia also had Fort Butterworth and the Philippines had a US air base in Manila and a large naval base at Subic Bay. On the other hand, Thailand never had foreign bases on its territory. U.S. Ambassador Graham Martin once assured Thai military leaders that American aircraft would only be allowed to use a Thai airfield with the permission of Thai military authorities and would remain under Thai jurisdiction. The U.S. Ambassador confirmed that U.S. forces in Thailand were at Thailand's command to help preserve and protect the territorial integrity of Thailand, including in particular, the bombing of North Vietnam and Ho Chi Minh Trail.

5.4 Visit to Philippines

Prior to this special visit to the Philippines, Thailand had very close relations and collective defense arrangements with the country, for instance, under the Southeast Asia Treaty Organization (SEATO) on the model of NATO, with the support of the military powers from the West, such as the United States on behalf of the Philippines, the United Kingdom together with Australia and New Zealand on behalf of Malaysia, and France on behalf of Vietnam, Laos and Cambodia. As such, the Philippines was as closely linked to Thailand's security as any other neighbor and clearly with the backing of the United States at Manila and Subic Bay. These U.S. air and naval bases were alluded to in Dr. Malik's insertion in the preambular paragraph about the temporary character of foreign bases that eventually would have to be removed from ASEAN soil. Thus they were removed after some four decades or so later, as he had anticipated.

For Thailand, former President Macapagal had visited the country earlier, and on the 10th anniversary of Bandung, Vice-President Emmanuel Pelaez, foreign secretary of the Philippines, came to visit the Thai foreign minister who happened to be at the Thai Embassy in Paris awaiting to attend the Asian-African Conference in Algiers that ultimately never took place, to compare their respective positions before going to the Afro-Asian Conference in 1965 to celebrate the 10th anniversary of Bandung. On that occasion, the Philippines vice-president had with him a young assistant, Benigno Aquino, who became a teammate with this writer many years until his assassination.

These prior friendly personal relations between aides to the two foreign ministers had facilitated further broader negotiations between the two leaders, while discussing common regional problems with the Philippines. By that time in 1967, Benigno Aquino, or Ninoy as he came to be known, was governor of one of the provinces and was close to President Ferdinand Marcos. This author met Ninoy's wife, Corazon Aquino, at their home with their son, Benigno, or Ninoy Junior. Little did anyone know then that decades later, after Ninoy's assassination, Corazon would become the first lay president of the Philippines. Nor could anyone have predicted that Aquino Junior would also become president: two from the same family, although Benigno, the father, never had the chance to celebrate the ascension of his dear spouse or son, the current president. Ninoy was assassinated upon his return from medical treatment in the United States. He was a man of true courage and a hero who made his sacrifice and invaluable contributions to his nation, the region and to mankind.

Foreign Minister Thanat's visit to the Philippines succeeded in securing the Philippine's partnership in ASEAN's formation. The Thai special mission met with the president of the Philippines and Foreign Minister Narciso Ramos, who came to Bangkok for the adoption of the ASEAN Declaration on 8 August 1967. The Philippines' delegation to Bangkok also included Ambassadors Pablo Pena, Narciso Reyes, Calingo and Mr. and Mrs. Manalo. Its team included Ambassador Jose Ingles, later undersecretary for foreign affairs. Manila had been the last stop for the Thai mission on its Southeast Asian tour to establish ASEAN or to resuscitate the former Association of Southeast Asia with the addition of Indonesia and Singapore. A newborn association came into being in Bangkok after meticulous pre-natal care by Thailand as the initiating founding member. The draft joint communiqué was thoroughly discussed by the working group and the drafting committee at Laem Taen near Bang Saen. This writer had the honour to chair both the working group and the drafting committee at Laem Taen, as he drafted the declaration upon clear instructions and under close supervision of Foreign Minister Thanat.

6. ASEAN in its early formative years

As it actually occurred at the preparatory meetings at Laem Taen, following Foreign Minister Thanat's visits to the four prospective founding members of ASEAN, two high officials from Sri Lanka were also present, ready, willing and waiting for an invitation to participate in the preliminary sessions in the founding process of ASEAN. However, the Minister of Foreign Affairs of Singapore, Dr. Rajaratnam, born in Sri Lanka, conversant with its internal affairs and in his own way an international expert on Asian affairs, warned the meeting of the impending danger of including his home country in the geographical regional grouping. Whereas even from geographical viewpoint, Sri Lanka could scarcely qualify as a Southeast Asian nation, and more appropriately belonged to the southern region of Asia, subsequent turmoil, civil disturbances and insurgent movements clearly justified his earlier cautions.

At ASEAN's birth in 1967, the association was driven by the multiple motivations of the collective leadership of each peace-loving statesman of the Southeast Asian region, initiated by Thailand under the guidance of Foreign Minister Thanat. Seasoned by his personal political and diplomatic skills in international and regional affairs and strengthened by his broad comprehension and mature experience in United Nations Affairs, Dr. Thanat proved to be timely in his initiative to safeguard and in his untiring effort to secure the continuing survival of the emerging nations of Southeast Asia. Looking back half a century and more, any historian can see the looming danger surrounding the myth of the newly emerging nations, namely the Federation of Malay States, later Malaysia or Greater Malaysia, with the addition of Sabah and Sarawak, and the separation of the Republic of Singapore, together with the archipelagic state of the Philippines, each with its long history of subjugation from European or Western influence and domination. To compound the difficulties and add further complexities, another new archipelagic state, Indonesia, emerged as a new nation. Given independence by the Netherlands, it began its career by being admitted to the United Nations with the policy of "Konfrontasi" vis-à-vis the formation of the ASA, or Association of Southeast Asian States, composed of Thailand, Malaysia and the Philippines, which of necessity had to remain dormant in the myth of "Konfrontasi" by Indonesia and the burning question of Sabah, which had earlier ties with the Sultan of Zulu of the Philippines.

Thailand had to employ the best of her good offices to convert and turn the tide of this colossal crisis into an even greater opportunity. Under the leadership of her foreign minister, Thailand had the foresight to forestall this impending danger within the region by taking the initiative to prepare a blueprint of a new regional association in the form of a draft joint communiqué to serve as a constituent instrument or constitution of a new regional organization, and secondly to have this draft under negotiation for final approval and adoption by the other Southeast Asian ministers. This two-fold task Thailand had to perform with the blessing of Phra Siam Devadiraj, as Thailand was blessed with a long-standing and continuous possession and exercise of her sovereign independence with unmatched experience in the maintenance of its dignity and independence, surviving the waves of Western expansionism. Although not without heavy sacrifices, experience taught Thailand the art of survival and the skill of maintaining regional integrity through collective unity. Union is strength, and united ASEAN nations could better fare the sea of turmoil and weather the political storms in the Asia-Pacific region in the years and decades ahead. Strongly convinced and persuaded by these motivations, ASEAN nations each reviewed the draft prepared by

Thailand's foreign minister. As an expert jurist in international law and a member of the International Law Commission, Dr. Thanat took to the task of drafting and negotiating the draft. This writer had the double task of producing the first draft and starting the process of negotiations with the other founding members, including Indonesia's additional preambular paragraph about the temporary status of foreign bases on ASEAN soil.

In the first decade of ASEAN's formative years, it was experimenting with various projects and was liberal enough to call any project "ASEAN" if two or more of its members were prepared to adopt a project that eventually could be shared by others. ASEAN also rotated its annual ministerial meetings twice over in the first 10 years, when it decided to remain more durably anchored in Jakarta, where ASEAN now has its permanent headquarters, while maintaining national secretariats within each of the current 10 members.

If during the initial formative decade of ASEAN member states were experimenting on any possible proposed projects with greater or lesser economic results, the second formative decade with headquarters in Jakarta focused more on the operation and development of various projects already adopted, in development, in full operation or producing concrete results. At its beginning, the ASEAN way was characterized by simplicity and utility that appeared ideally appropriate to encourage and promote wider participation as projects began to attract wider regional attention and greater appreciation from constructive results. ASEAN with a permanent headquarters in Jakarta and with rotating secretaries general and members of the Secretariat, appeared to be serving the interests of both worlds. The association was blessed with rotation of personnel and variations of progressive ideas, and yet remained clearly better able to progress collectively as a united society in the collectively chosen direction to reach the final common goals and targets as set by member governments from the start. It has had the advantage of learning from the experience of earlier regional associations from other regions in the world such as Europe and the Americas.

7.   ASEAN endeavours to attain economic community

If the first two decades of ASEAN were to be labeled experimental or exploratory, as it was trying to explore all ways and means to achieve meaningful economic developments, following or comparing the existing European and Latin American models, ASEAN concurrently had to indulge in discovering itself, i.e., its members had to learn more about each other so as to enlarge and expand intra-ASEAN trade, investment and developments in political, economic, social and cultural relations. In addition, it inevitably had to learn at the same time not only to cultivate intra-ASEAN relations, but to initiate and expand collective and individual cooperation in these fields with its immediate and distant neighbors, in particular, China, Japan, Korea, United States, Australia and New Zealand on bilateral, tri-lateral as well as multi-lateral bases. ASEAN members individually as well as collectively had to conduct relations of meaningful positive cooperation with all peace-loving nations. Its efforts were to avoid tensions and to prepare the groundwork for mutually fruitful cooperation with all peace-loving nations, close or distant, culturally akin or relatively unknown to be able to survive with honor in this world of diverse cultures and different forms of civilization, as all nations would have to learn how to live and co-exist in peace.

After the first two decades when ASEAN had to experiment with a wide variety of active economic cooperation arrangements among its members and with external friends and neighbors, reactions and results were mixed. Learning at the same time from the experience of other regional associations, to its surprise ASEAN discovered that different results were obtained by different associations despite similar pattern of activities. ASEAN was eventually persuaded to follow the trend of gradual economic integration with an accelerated pace of economic, political, social and cultural assimilation, and wherever practical also integration. The objective was apparent. At the end of the tunnel, there would be a ray of light to allow ASEAN's collective identity to replace the individual national variation within the collective. Eventually, its spirit should be synonymous with each individual national member so that, for instance, Thai, Myanmar, Malaysian, Indonesian or Filipino should equally be identified as "ASEAN", and a Thai or Laotian alike should be pleased to respond to the adjective "ASEAN". That should serve as a conclusive test to transform national existence to that of the community of ASEAN collectivity or association.

With the aim of effecting the ASEAN Economic Community by the end of 2015, ASEAN is learning practically how to live together in peace as one community and one market. From ASEAN'S birth in August 1967, it was felt that eventually the expression "ASEAN" should be identified if not synonymous with Thai or Singaporean or Malaysian or Indonesian or Filipino identity or indeed that of any of the newer members of ASEAN, such as Myanmar, Vietnamese, Laotian, Bruneian or Cambodian, in much the same way as the expression "European" could be identified with those who may also refer to themselves as Dutch, Belgian, Luxembourger, Norwegian, Swedish, Danish, German, Spanish, Italian or Portuguese.

For these reasons, Thailand should be prepared to recover her pace in the race to become a perfect ASEAN national, as indeed ASEAN was conceived, formulated and brought into being almost singlehandedly by Thailand, whose farsightedness and mission it was to bring the organization to life, leading the founding members into accepting the creation of ASEAN with the original constituent instrument drafted in English by the hands of Thai international legal expertise. Now Thailand should have no complaint to pick up, not from where she left off, from the top of the five constituent members to almost the bottom of the existing ASEAN members, in English as well as in almost all activities that could have been contemplated by Thai leaders of the past, who provided birth and shelter for ASEAN. Thailand is duty bound to recover her own rightful place in the family of ASEAN nations, retrieving her rightful leadership within the association and continuing to lead it into the future of more meaningful active cooperation and fruitful relations of friendship and prosperity in its collective endeavors.

8. Concluding observations

It is with constructive thoughts and expectations that this essay should end with a clear and unshaken conviction and expression of hope and every confidence that once Thailand awakens from her slumber, she will realize what a colossal monument she had succeeded in created through her planning, architecture and actual construction. Thailand could now be persuaded to return to occupy her rightful place within this active association of cooperative and peace-loving Southeast Asian nations, that she had been at pains to conceive and deliver, and now cannot forsake the responsibility of continuing to nurture and to cultivate and ultimately to collect the fruits and reap the benefits of her constructive thought and effort.

ASEAN-China Relations: Prospects and Challenges

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Abstract

This article aims to examine ASEAN-China relations in their proper perspective. While the issue of the South China Sea has become the major issue which dominates the relationship in recent years, ASEAN-China cooperation is in fact multi-faceted and wide-ranging, covering 11 socio-economic, as well as scientific and technological, areas. This cooperation also extends to political and security issues. This article also examines the implications of the rise of China, "peaceful" or otherwise, as the major world power, on regional political and economic development and how this "rise" will affect the future direction of ASEAN-China relations.

Keywords: *ASEAN-China Relations, South China Sea, China's Rise, connectivity, Code of Conduct, hegemonic power*

1. Introduction

To both casual and informed observers, the relationship between the Association of Southeast Asian Nations (ASEAN), comprising Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam, and the People's Republic of China (PRC) in recent years has been dominated by one major issue: the South China Sea. The issues concerning overlapping maritime boundaries, territorial claims of the PRC and four ASEAN member states, namely Brunei, Malaysia, the Philippines and Vietnam, to parts of the South China Sea, and especially sovereignty over the Paracel and Spratly Islands have led to tension in the area and are seen as a potential flashpoint in the region.

Although largely overshadowed by the South China Sea issues, ASEAN-China relations are by no means limited to them. ASEAN-China cooperation is broad, covering 11 priority areas: agriculture, information and communication technology, human resource development, Mekong Basin development, investment, energy, transport, culture, public health, tourism and environment.

As a regional grouping ASEAN is the focal point for Chinese diplomacy with Southeast Asia because China's development and potential to be a superpower depends to an extent on a stable and economically vibrant Southeast Asia. It is China's *bilateral* relationships with some individual ASEAN countries that have experienced problems because of territorial disputes (Qiu, 2013). At the same time, China's strategic importance for ASEAN is obvious given its economic influence, military capability and proximity to ASEAN countries.

2. Overview of ASEAN-China Relations

ASEAN and China began their dialogue relations in July 1991, when the Malaysian government invited Qian Qichen, then the PRC's Minister of Foreign Affairs, to attend the opening session of the 24th ASEAN Ministerial Meeting (AMM) in Kuala Lumpur. At the session, FM Qian expressed China's "keen interest" to cooperate with ASEAN. Subsequently, China was accorded full Dialogue Partner status at the 29th AMM in July 1996 in Jakarta. However, throughout the 1980s, China had been cooperating closely with ASEAN, both in a multilateral context at the United Nations and bilaterally with some ASEAN member states, in finding a solution to the Cambodian problem after Vietnamese forces invaded Cambodia in December 1978.

After attaining full Dialogue Partner status in 1996, ASEAN-China relations developed quickly. At the 7th ASEAN-China Summit in October 2003 in Bali, both sides agreed to sign the *Joint Declaration of the Heads of State/Government on Strategic Partnership for Peace and Prosperity* with Plans of Action (POA) to implement it. The current POA covers the period 2011-2015. The PRC is the first dialogue

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partner to accede to the Treaty of Amity and Cooperation (TAC) in 2003. It is also the first nuclear weapon state to express its intention to accede to the protocol of the Southeast Asian Nuclear-Weapon-Free Zone Treaty. ASEAN and China have also collaborated to address transnational non-traditional security threats such as drug and human trafficking, piracy and terrorism. ASEAN and China have continued to enhance their political and security cooperation through regular dialogue and consultations, including the ASEAN Regional Forum (ARF) and the East Asia Summit (EAS).

Trade and economic ties between ASEAN and the PRC have been growing rapidly. China has been ASEAN's largest trading partner since 2009, while ASEAN is now China's third-largest trading partner. Bilateral trade stood at USD 318.6 billion in 2012 and is targeted to reach USD 1 trillion by 2020. In November 2002, both sides signed the Framework Agreement on Comprehensive Economic Cooperation that established the ASEAN-China Free Trade Agreement (ACFTA) realized on 1 January 2010. The China-ASEAN Expo (CAEXPO) has been organized and hosted by China annually in Nanning since 2004 to showcase products from ASEAN and China. The ACFTA has a very large growth potential. It comprises a market of almost 2 billion people and USD 3 trillion in gross domestic product. Notably, bilateral trade relations between China and ASEAN are now reciprocal in that China is no longer the exporting competitor of past decades. It is now an important consumer market for ASEAN, which in turn is growing in importance to China's manufacturing sector. Moreover, ASEAN is now China's fourth-largest destination for outward investment and its third-largest source of foreign direct investment. Two-way investment is targeted to reach USD 150 billion by 2020.

China has also established several mechanisms to support and strengthen further economic cooperation with ASEAN. In 2009, it established the USD 10 billion China-ASEAN Fund on Investment Cooperation and USD 15 billion in credit and preferential loans to support infrastructure development projects in ASEAN member states. Following the adoption of the Master Plan on ASEAN Connectivity (MPAC) in 2010, China proposed to provide an additional USD 10 billion credit (USD 4 billion in preferential loans and 6 billion commercial loans) to support MPAC's implementation. At the 16th ASEAN-China Summit on 9 October 2013, China took this a step further by presenting an initiative to set up an Asian Infrastructure Investment Bank to provide financial support to regional infrastructure projects, with priority on ASEAN connectivity.

China also has become a major source of tourists for ASEAN. In 2012, almost 9 million Chinese tourists visited ASEAN countries, a growth rate of almost 20% over 2011. At the same time, almost 6 million tourists from ASEAN countries visited China in 2012.

In socio-cultural fields, cooperation between ASEAN and China is very broad, covering education, culture, public health, science and technology, labour, local government and people-to-people exchanges, media, youth and social development. For example, on education, since 2010 ASEAN and China have made efforts to "Double 100,000 Goal of Student Mobility" that envisaged the number of exchange students from ASEAN countries to China to reach 100,000 by 2020 and vice versa. Ten ASEAN-China Education and Training Centres have been established in six Chinese provinces. ASEAN and China also designated the 2014 as ASEAN-China Cultural Exchange Year, and an ASEAN-China Centre has been established in Beijing as a one-stop information centre promoting ASEAN-China cooperation in trade, investment, tourism, education and culture.

3. China's "Peaceful" Rise?

The unparalleled economic growth that has led to the growth in China's power, importance and influence has brought with it increased regional and global anxieties about China's long-term goals and intentions. It appears that the realist view about power politics continues to be convincing: that sharp increases in the material power of states, even when accompanied by profuse reassurances, have the capacity to unsettle other countries (Tellis in Schmitt, 2009). So Chinese leaders insistently and consistently deny any desire to become a "hegemonic power", while Chinese scholars have tried very hard to purvey the doctrine of a "peaceful rise", which asserts that in contrast to the warlike behavior of ascending great powers of the past, China's ascent as a modern great power will be entirely peaceful since the era of tight economic interdependence between China and its trading partners in Asia not only makes war unthinkable, but actually allows all sides to "rise together" through peaceful trade and commerce.

The term "China's Peaceful Rise" was first publicly used in a speech by the Chinese scholar Zheng Bijian, the former vice principal of the Central Party School, in late 2003 during the Boao Forum for Asia. In 2005, Zheng's article on this subject was published in *Foreign Affairs* (Zheng, 2005). The term was designed to rebut the "China threat theory" and became official policy under President Hu Jintao. It sought to characterize China as a responsible world power that is not a threat to international peace and security, i.e., not a "hegemonic" world power. It also reflected the achievements of economic reform of the past 30 years, throughout which period China managed an average annual real growth in excess of nine percent. Per capita income in China rose by more than six percent annually during 1978-2003. It is now the world's second-largest economy after the United States, and catching up fast. But government officials worried that the word "rise" was too threatening, changed the phrase to "China's Peaceful Development".

The State Council, China's cabinet, issued a paper in 2005 defining this "peaceful development" strategy (People's Daily, 2005). It emphasized economic development as China's main goal and that a peaceful international environment was essential to achieve this goal. It pledged that China would remain open to the outside world for trade, promote organizations like the World Trade Organization and support regional integration through institutions and arrangements like the ASEAN-China Free Trade Area. Significantly it promised that China would resolve its remaining border disputes peacefully.

Of course some observers challenge these promises. For example, University of Chicago's John Mearsheimer gives a definite "no" to the question of whether China can rise peacefully (Mearsheimer, n.d.). He contends that if China continues its impressive economic growth over the next few decades, China will likely engage in an intense security competition with the United States with considerable potential for war. He believes an increasingly powerful China is likely to try to push the U.S. out of Asia, much the way the U.S. pushed European powers out of the Western Hemisphere. This view seems to be widely shared in ASEAN countries. Many fear that a rising China will set off power rivalries in the region, especially since China does not have the best of relations with other powers in the region such as Japan and India. This could present a hostile environment that would be unfavorable for ASEAN's economic growth.

4. The South China Sea

The new emphasis on good neighborly relations, as derived from the concept of "peaceful rise" or "peaceful development" is dramatically different from China's behavior during the 1990s when it stressed its claims in territorial and maritime disputes in the South China Sea with several ASEAN member states. The disputes involve complicated issues of overlapping maritime boundaries, territorial claims and sovereignty over the Paracel and the Spratly islands for which the 1982 United Nations Convention on the Law of the Sea offers no clear guidelines. Moreover, the South China Sea embraces some of the world's busiest sea lanes. It has been estimated that over half of the world's annual merchant fleet tonnage passes through it. The South China Sea is also purported to be rich in petroleum, natural gas and other marine resources.

The tension in the area in the 1990s, especially the clash between China and the Philippines over Mischief Reef in 1995, was mitigated somewhat by the *2002 Declaration on the Conduct of Parties in the South China Sea* (DOC). But while the Parties to the Declaration declared that they would work to resolve their territorial and jurisdictional disputes by peaceful means and to exercise "self-restraint in the conduct of activities that would complicate or escalate disputes and affect peace and stability", the DOC is not a legally binding agreement.

The conflicts intensified again with the U.S. "rebalancing" in the Asia-Pacific region. There is a perception in China that the U.S. actively supports some ASEAN countries against China. Consequently, China's renewed assertiveness over territorial and maritime disputes with ASEAN countries, particularly Vietnam and the Philippines, in the South China Sea since 2009 has only compounded the fears about China's growing military, especially naval, capabilities. China's increasing use of military and other law enforcement authorities to assert sovereignty in areas under dispute, as enclosed in its nine-dashed-lines map, is seen as a new element in the disputes. Many are concerned that China's air and naval acquisitions are altering the regional balance of power. Moreover, ASEAN countries are worried by China's declaration in March 2010 that the South China Sea is a "core national interest", a term previously used only in connection with Taiwan and Tibet.

In his book "Asia's Cauldron: The South China Sea and the End of a Stable Pacific", Robert D. Kaplan quotes Henry P. Bensurto Jr., Secretary-General of the Commission on Maritime Affairs of the Philippines, as saying that "the real issue here is the creeping expansion of Chinese naval power", and that "the more militarily capable China becomes, the less flexible it will be"(Kaplan, 2014). This point raises a pertinent question whether it is in the interests of ASEAN member states that have overlapping claims with China to try to settle the issue with China *sooner* than later, before China becomes totally inflexible.

China's official position is that it will discuss the claims with other claimants through bilateral negotiations. With claims so numerous and so often overlapping, the idea of a solution acceptable to all seems unattainable. Therefore, it may be more realistic to just manage the status quo to the benefit of all. This was actually attempted in 2005 when China, Vietnam and the Philippines agreed on a joint seismic survey for petroleum exploration in the areas of overlapping national claims. China and ASEAN also issued a Joint Declaration that would ensure that these efforts meant that claimants hadn't revised their claims but rather that their overlapping claims would "take a back seat" for as long as the oil exploration required (Simon, 2008). But subsequent events have dashed any hope of this arrangement coming to fruition.

The apparent failure thus far of the regional multilateral diplomacy between ASEAN and China on this issue has raised the call for a binding code of conduct (COC) to mitigate the possibility of armed conflict. China has never been enthusiastic about a COC. While it had agreed in principle to discuss one with ASEAN in late 2011, it reversed its position in July 2012 (Storey, 2013). However, it has been mentioned that not just China wants to go slow on drafting a COC because if one is finalized, all claimants will have to justify or retract from projects of strategic or economic interest to them (Pal, 2013). This was made clear by the fact that ASEAN itself was unable to agree on the Guidelines for the Implementation of the DOC until 2011.

As the coordinator of ASEAN-China dialogue relations from 2013 to 2015, Thailand is expected to act as an "honest broker" because of its non-claimant nature in the dispute. But this is an unenviable position to be in for its major uphill task is to convince China that ASEAN is not trying to bully it into agreeing to talks. Nevertheless, through Thailand's efforts, ASEAN and China have made progress, for both sides commenced official consultation on a COC at the 6th Senior Officials' Meeting (SOM) on the DOC in Suzhou in September 2013. The 6th SOM on DOC also agreed on the process and modality to move the COC consultation forward. More discussions took place at the 7th SOM on DOC in April 2014 in Pattaya. But even this modest start was soon derailed by China's deployment in May and its subsequent withdrawal in July of an oil rig in disputed waters near Vietnam. This led to a call by ASEAN foreign ministers at their annual meeting in Myanmar in August 2014 to hold "substantive" negotiations for an early conclusion of the COC. But it was also emphasized that it would be created through negotiations with China.

So the South China Sea lies at the crossroads of some of the most important trends in the Asia-Pacific region today: the rising power of China; the U.S. rebalancing toward Asia; and ASEAN's increasing desire to shape the regional security environment and take the sharp edges off the growing competition between China and the United States.

5. Direction of ASEAN-China Relations

In October 2013, President Xi Jinping and Premier Li Keqiang embarked on a high-profile trip to five Southeast Asian countries. President Xi made a statement to the Indonesian Parliament on 3 October 2013 stating that China wants to build "a community of common destiny" with ASEAN member states, while at the 16th ASEAN-China Summit on 9 October 2013, Premier Li made a proposal known as the "2+7 cooperation framework". They revealed the new leadership's policy declaration on Southeast Asia for the next decade and signaled China's attempt to find a new direction for its relations with ASEAN.

The "2+7 cooperation framework" consists of a two-point political consensus that the basis for promoting cooperation is deeper strategic trust and good neighborliness and that the key to deepening cooperation is to focus on economic development and expanding mutual benefit. The seven-point proposal included some interesting ideas for further cooperation, including the signing of a treaty on good-neighborliness, upgrading the ACFTA, setting up an Asian infrastructure bank and building a 21st-century "Maritime Silk Road" (Parameswaran, 2013).

These pronouncements were aimed at sending out a signal to ease ASEAN's suspicions toward China. While ASEAN countries have welcomed in principle China's new initiatives, some caution has been expressed on whether security issues between China and ASEAN can be weakened or even addressed simply by deepening economic cooperation. It appears that, from the 1990s, China has been making huge efforts to enhance its economic relationship with ASEAN, but the mutual trust between both sides on security issues has not been elevated as much as the volume of trade has. Moreover, "excessive economic benefits" given by China have made some ASEAN countries more alert and careful for fear of becoming too dependent on China. Some ASEAN countries are concerned that being overly dependent economically would allow China to use its dominance to undermine their foreign policy autonomy, as clearly demonstrated by ASEAN's unprecedented failure to issue a joint communiqué in July 2012.

While the proposal of a treaty of "good neighborliness and friendly cooperation" garnered much attention, ASEAN's response has been cautious and "nuanced", noting it with appreciation but also signaling a preference for a more open and inclusive agreement by mentioning Indonesia's hope for a similar agreement that includes "a wider Indo-Pacific region, beyond ASEAN and China". Accepting that there are challenges ahead for the ASEAN-China relations, the Chinese feel that Premier Li's proposal may be the most feasible way for both sides to formulate a closer rapport as, by signing such a treaty, distrust between them "could potentially be greatly reduced leading to a more institutionalized relationship" (Qiu, 2013).

A new treaty notwithstanding, it is expected that China will deepen economic links with ASEAN in the coming decade. Apart from increasing trade, China will focus more on increasing direct investment and building infrastructure, especially roads and high-speed trains, as there are already plans to build rail lines from Kunming that will connect Laos, Vietnam, Cambodia, Myanmar, Thailand, Malaysia and Singapore. ASEAN countries should also benefit from rapid urbanization and the rise of middle-class families in China that will change consumer lifestyles, thus stimulating imports of quality and luxury products and services from ASEAN countries.

But the pace of this new direction will depend much on how the South China Sea issues, the main irritant in China's relations with several Southeast Asian countries, are dealt with. They present a real test for China and ASEAN until China demonstrates its willingness to address these key issues head-on.

6. Concluding Observations

The economic, political security and military implications of China's rise are acutely felt in ASEAN. It is impossible for ASEAN to ignore the rise of China as a potential hegemon in the region. As it has little power to restrain or confront China in case of a serious confrontation, the viable course of action for ASEAN is to accommodate and have a working relationship with China. Therefore, ASEAN has for many years made a concerted effort to enmesh China in a multitude of regional institutions to induce moderation in its behavior and increase the costs of any use of force by China. At the same time, ASEAN also employs a "hedging" strategy by establishing links with other large outside powers, not only the US but also Japan, Russia and India, as counterweights to Chinese influence (Roy, 2005).

While it is argued that this effort's success has more to do with China's strategic preferences than ASEAN's merits, and that this is the deciding factor for China's support of ASEAN's attempts to create a balance of power in the region, it has been observed that, in fact, ASEAN-China relations have reinforced the regional standing of both (Egberink, 2011). Moreover, by promoting the use of diplomacy instead of force, by getting regional powers to participate in its several frameworks for regional cooperation, and by establishing new platforms and channels for communication, ASEAN has made a significant contribution to regional peace and security. Its role as a regional stabilizer in Southeast Asia has been widely recognized. However, as the success of this role depends heavily on external dynamics over which it has little influence or control, the prospects for a more active stabilizing role appear to be limited, as "the room for ever-more multilateral mechanisms is arguably finite, and it is not likely that further ASEAN initiatives in this sphere will have the same impact on great-power stability that they had in the past."

This makes it an even more urgent task for ASEAN to devise a new regional security architecture that maintains "ASEAN's centrality", as well as strengthens "ASEAN's unity", in order to continue to play its role as regional stabilizer. The Council for Security Cooperation in the Asia Pacific, a track-II institution,

recommends that ASEAN develop a clear vision and roadmap for an "enduring rules-based regional security order, as well as enhance the management of existing and inter-linked multilateral processes through improving connectivity and coordination and delineating clearly the primary role and competency of each process (CSCAP, 2014). Whether these steps, even if judiciously implemented, will be enough for the changing security environment in the region, it remains to be seen.

After more than 20 years of development, ASEAN-China relations are entering a new phase. This relationship faces the challenges of a new and formidable international and strategic environment: how to cope with a rising China when it becomes a superpower in its own right in the context of an Asia-Pacific region that also has a strong Japan and a United States, which aims to maintain its sole superpower status. Moreover, recent developments in the South China Sea have spotlighted a challenge of how to forge a real common or united perception and policy among ASEAN member states vis-à-vis China. The future direction of ASEAN-China relations will be dictated as much by the legacies of each member state's historical ties with China as by the geopolitical implications of China's political, economic and military rise, and the role of balance of power and regional multilateral institutions.

While debates on whether a rising China will be ASEAN's friend or foe are ongoing and as yet no discernable consensus exists on how to meet the above-mentioned challenges, George Yeo, the former foreign minister of Singapore, already gave a succinct answer: "China can't be an enemy" (Bangkok Post, 2014). China's rise, ASEAN's integration and the shift of the international center of gravity to the Asia-Pacific (or a wider Indo-Pacific) region will test the future of ASEAN-China relations.

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The Evolving Regional Architecture for the Asia-Pacific:
Toward an Indo-Pacific Idea

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Abstract

Asia-Pacific security and consequent regional architecture have always posed a complicated question to security analysts and policy makers given the region's vast economic and political diversity. The rising dichotomy between growing regional economic integration and inter-dependence on the one hand, and rising tensions between the major powers and countries in the region on the other, once again raises the issue of how to manage the strategic transformations to ensure peace and stability conducive to economic development and prosperity. It appears that the ASEAN-centred and ASEAN-led mechanisms that have evolved over time can be developed to cope with "new shared interests" and "perception of shared challenges". The growing linkages between the major sea lines — the Indian and Pacific oceans — and enhanced connectivity among India, ASEAN and China are also influencing strategic transformations. Despite its limitations, the East Asia Summit may be best positioned to develop the Indo-Pacific idea.

Keywords: dichotomy, regional architecture, strategic transformations, ASEAN, East Asia Summit

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1. Introduction

"What type of regional architecture do we mean and what type of regional architecture do we seek for the Asia-Pacific?"

This question has been on the minds of policy-makers and academia in ASEAN since the first efforts to generate a region-wide forum for dialogue on regional security issues resulted in the launching of the ASEAN Regional Forum (ARF) in Bangkok in 1994. One may recall that U.S. President John F. Kennedy raised a similar question, but he focused principally on peace. He posed the question, "What type of peace do I mean and what type of a peace do we seek?"(Kennedy, 1963) at the American University in Washington, D.C., in 1963 at the height of the Cold War.

The question regarding the regional architecture for the Asia-Pacific is more complicated because it involves more than just peace. It goes beyond Kennedy's famous question on the nature of peace in the global order because this question involves addressing multiple challenges. These include promoting order and stability, managing the peace dividend and increasing the insurance against outbreak of conflict. Ultimately, regional architecture is about creating the optimal regional conditions for economies to prosper, societies to progress and human security to flourish.

This paper will attempt to examine the evolving regional architecture in the Asia-Pacific and emerging ideas on such architecture, including an "Indo-Pacific idea". It will first attempt to define regional architecture and answer the question, "What type of regional architecture do we mean?" The paper will then lay out some theoretical frameworks to analyze the region's evolving regional architecture. Next it will examine the conditions surrounding the current regional architecture and the ways forward, including the emergence of an Indo-Pacific idea. In so doing, the paper will try to respond to the question of regional architecture. Finally, within the context of an emerging Indo-Pacific idea, the paper will examine how India fits into the regional architecture of the Asia-Pacific.

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2. Evolving Regional Architecture in the Asia-Pacific

What do we mean by regional architecture, especially the regional architecture in the Asia-Pacific? In Alan K. Henrikson's seminal work, Negotiating Global Order: The Architecture and Artisanship of Global Diplomacy, (Henrikson, 1996) a product of the Fletcher School of Law and Diplomacy's Negotiating World Order project, a significant distinction is made between the architecture and artisans of diplomacy.

"Architecture" refers to the various institutional frameworks and nature of the global system that influences the direction of global diplomacy. "Artisans", on the other hand, refers to the practical diplomatists who influence the development and implementation of global diplomacy. The implication seems to be that the architecture of the global order and the role of the artisans of diplomacy interact with one another, influencing the course of diplomacy and, ultimately, history.

It would seem that a similar analysis could be made at the regional level. Diplomacy within the region, and the regional developments that such diplomacy generates, will depend significantly on the regional architecture as well as the policy-makers working through states that shape events through their actions. In this context, regional architecture is defined as a combination of frameworks of cooperation and dialogue, institutional arrangements, and agreements and interactive processes among states in a region that help manage relations in that region. As such, the regional architecture in the Asia-Pacific, a region traditionally defined to include Southeast Asia, Northeast Asia and Oceania would include several frameworks that are ASEAN-centered or initiated, for example, ASEAN Plus One, ASEAN Plus Three, ASEAN Regional Forum, ASEAN Defense Ministers' Meeting Plus and the East Asia Summit (ARF, 2007).

Other frameworks involve some or all ASEAN Member States but are not necessarily ASEAN-driven, for example, the Asia-Pacific Economic Cooperation or APEC, Asia Cooperation Dialogue or ACD, and the Conference on Interaction and Confidence Building in Asia (CICA). Still other frameworks of cooperation do not involve ASEAN Member States but nevertheless play an important role in promoting regional order and stability, such as the Shanghai Cooperation Organization or SCO.

All of the above frameworks touch either directly and indirectly on security and security-related matters. Other components of regional architecture include bilateral and multilateral security and/or defense agreements among countries inside and outside the region. The Five Powers Defense Arrangement that involves Malaysia, Singapore, the United Kingdom, Australia and New Zealand is one example. Bilateral security arrangements between the United States and some ASEAN Member States are another.

Looking at these components of the regional architecture in the Asia-Pacific, one can see that the existing regional architecture has unique features. First is its immense internal diversity as depicted in Figure 1.
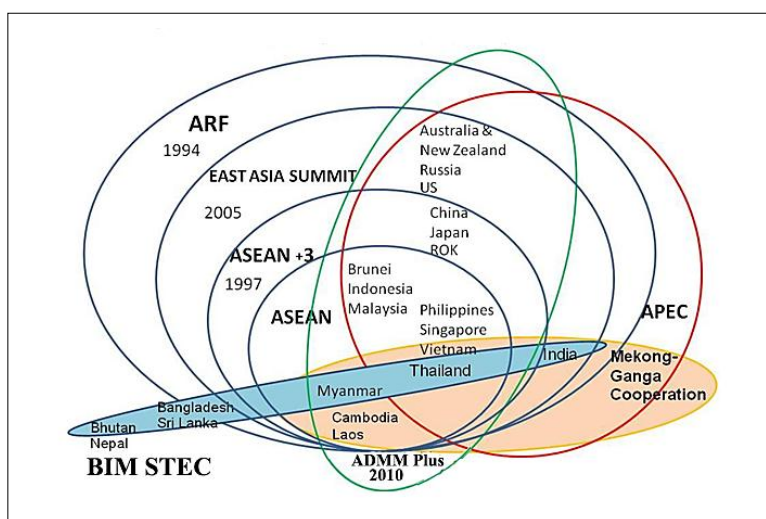

Figure 1 ASEAN-India Regional Architecture in Asia-Pacific

Components of the regional architecture in the Asia-Pacific comprise multilateral and bilateral treaties and agreements to institutionalized frameworks, looser arrangements for cooperation and dialogue fora. These multiple institutions and fora, overlapping membership and agendas, and possibly clashing interests have caused much confusion. Furthermore, supplementing this regional architecture are sub-regional cooperation frameworks with their own interests. These include the Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS), Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT), and the Greater Mekong Subregion (GMS). Generally, they seek to promote economic and development cooperation, drawing on available resources and expertise, but not excluding support from non-members.

Second is that the regional architecture has no overarching body, much less an organizational or institutional superstructure. It is a jigsaw of overlapping frameworks for cooperation based on shared interests and some shared understanding of similar norms of behavior. In some cases, albeit limited, there are codes of conduct. All these frameworks evolved over time, in response to differing circumstances and situations, rather than by design with well-laid-out blueprints. For example, the ARF and the ADMM Plus grew out of different needs: the former from the need for a platform to encourage constructive engagement of key powers outside the region with ASEAN and perhaps with each other, the latter from the need to have more concrete defense cooperation to address growing challenges such as piracy and natural disasters. Likewise, the operating environment and geopolitical circumstances that gave birth to the EAS, and subsequently the expanded EAS and the SCO, respectively, were vastly different.

 Third, the regional architecture in the Asia-Pacific is not comprehensively and fundamentally rules-based, at least not at present. Granted, there are important shared norms in the region and many of these have been codified. These include critical principles such as non-use of force and peaceful settlement of disputes, which are reflected in the Treaty of Amity and Cooperation in Southeast Asia, or TAC, that comprises 32 High Contracting Parties from within and outside the Asia-Pacific. But TAC's scope is limited to disputes only within Southeast Asia, and since TAC was signed in 1976, there has been no activation of its dispute settlement mechanism. Other important framework documents such as the Declaration on the Conduct of Parties in the South China Sea, or DOC, which involves ASEAN and China, are not legally binding. (Nevertheless, consultations are under way between ASEAN and China, with Thailand serving as the ASEAN-China Dialogue Relations Country Coordinator, to develop a Code of Conduct, or COC, for the South China Sea that is generally envisaged to be legally binding.)

In essence, this unstructured, diverse and loose arrangement of multiple frameworks that characterises the regional architecture in the Asia-Pacific mirrors the Asia-Pacific's nature itself. The region comprises states of different sizes, levels of development, political cultures, historical experiences and visions of what they wish to see emerging in the region. Compared with the Asia-Pacific, the Europe that forms the European Union has great homogeneity. Anchored by Judeo-Christian values, a common understanding of history — one that almost universally regards the Battle of Marathon as one of its critical civilizational moments — and economic thinking based on different variants of capitalism, the EU's Europe is homogeneous indeed.

The same cannot be said of the Asia-Pacific.

In addition to the great diversity of the member states that make up the region, there are legacies of history, from colonial to pre-colonial times, with which a number of states have been unable to come to terms and which continue to plague inter-state relations in the region. Aside from China, Japan and Thailand, which retained independence during European colonization at great cost, the rest of the Asia-Pacific was under one form of colonial rule or another, with implications for the future development of perceptions of regional order. Asia-Pacific's great diversity played a key role in developing the unstructured, diverse and loose nature of the regional architecture that is evolving today.

3. Theoretical Frameworks

Given the unique nature of the Asia-Pacific's regional architecture, emanating from an environment of great diversity among the region's countries, it is not easy to devise a theoretical framework that could be used to analyze such an architecture. That is not to say important and useful efforts have not been made. One such effort was undertaken recently by Amitav Acharya in his ground-breaking article,

"Power Shift or Paradigm Shift: China's Rise and Asia's Emerging Security Order" (Acharya, 2014). In this article, the idea of a consociational security order is offered whereby some sharing of responsibilities and leadership between a rising power in the form of China and other states in the region exists to help shape a regional order, based not so much on rules but more on common interests.

In analyzing the development of Asia-Pacific's regional architecture, one must bear in mind the unique characteristics of such an architecture and the region as outlined above. In this light, an "order-centric approach" that seeks to manage relations in the region primarily through rules-based frameworks and institutions may not work, especially at this time. As explained earlier, a common perception of what laws and rules to use in governing inter-state relations has not reached a sufficient critical mass in the region to become the main driver of relations. At most, there is general acceptance on shared norms, principles and even some values, but no collective effort to enforce decisions based on shared legal principles.

At the same time, a "threat-centric approach" whereby the regional architecture will evolve based on shifting threat perceptions and changing balances of power may be inappropriate for analyzing the region. The threat-centric approach has countries managing their relations based primarily on changing threat perceptions and relying on bilateral and multilateral security arrangements to project deterrence and defense. It also involves countries shifting alignments in response to changing threat perceptions to maintain the best possible balance of power in the region. Such an approach was tried in Southeast Asia during the Cold War years and the so-called containment policy has been found wanting. At the end of the day, the threat-centric approach to building regional architecture does not appear to be sustainable in the long-run, although it might have some value in the short-run, especially when distrust and lack of confidence amongst states run high. Furthermore, the threat-centric approach implies a fast-shifting realignment of powers to meet changing challenges, something difficult to replicate in the Asia-Pacific context (Tow, 2014).

A third approach can be called a "shared interest-centric approach". It posits that a regional architecture built on the development of shared interests among states in the region, and sustained through cooperative frameworks that seek win-win solutions, is likely to be more sustainable in the long-run. The viability of such an approach, however, depends on several factors. One is a high level or growing trend of interdependence and integration in the region. This is because such trends or conditions are more likely to result in the development of shared interests in a larger number of areas. Such conditions could be said to exist currently in the region because its healthy economic growth rates make it one of the key engines for global growth.

When viewing the above three approaches, it seems the best approach in analyzing the regional architecture is the shared interests-centric approach. As stated above, an order-centric approach would seem to be an approach for the future rather than for the present, given the weakness of the rules-based system in the Asia-Pacific at the present time. The threat-centric approach appears to have credence during times of high levels of mistrust and perceptions of great political instability in the region, but it is also premised on a high flexibility in shifting alignments quickly. This condition appears absent in the region at present. This approach will be employed to examine the regional strategic situation and the most appropriate regional architecture for the Asia-Pacific.

4. Current Strategic Transformations in the Asia-Pacific: Implications for the Regional Architecture and the Indo-Pacific Idea

There appears to be a general consensus that the current strategic situation of the Asia-Pacific is one of great flux, whereby important longer-term transformations are being played out. Some have termed the situation as a paradox of a growing dichotomy between the region's rising geo-economics on the one hand, as reflected in growing integration and interdependence, and greater and sustained dynamic growth, and the region's deteriorating geo-politics on the other, as reflected in growing tensions between and among the major powers and various countries in the region (Ministry of Foreign Affairs, 2014). At the same time, other observers note that such a seemingly dichotomous situation should not come as a surprise: a situation of growing economic potentials such as in the Asia-Pacific naturally attract competing powers that bring competing interests, values and perceptions of how to best manage the growing economic potentials of a

region.The deteriorating geo-politics are in part a result of growing tensions and rivalries among the major powers, especially between China and the United States, and between China and Japan. A rising China in the economic, political and social spheres carries both enormous expectations and uncertainties. Many feel that a rising China can help serve as an important pillar for stability and prosperity of the Asia-Pacific, but this rise must be translated into constructive engagement with the region on the basis of mutual benefit. For its part, China has proposed initiatives to ASEAN and to the Asia-Pacific commensurate with its rising status in the region. For ASEAN, China proposed an ASEAN-China Treaty of Good Neighbourliness, Friendship and Cooperation to help provide a secure framework for the ASEAN-China Strategic Partnership. Then there is the Maritime Silk Route initiative to enhance maritime connectivity in the region, and the proposed Asian Infrastructure Investment Bank with initial capital of USD 50 billion and an expected target of USD 100 billion. For some, these initiatives represent efforts to engage constructively with the region and build a secure foundation for growth. Others see them as a continuing move to shift further the strategic balance in the region in China's favour.

The new rebalancing strategy of the United States in the region, at first sight seems to put heavier emphasis on the military dimension, even though many important U.S. initiatives launched during the first Obama Administration had a strong non-military focus. These include the Lower Mekong Initiative, which sought to help close development gaps in the five Southeast Asian countries of the Mekong Sub-region. There is also stronger U.S. support for ASEAN centrality and the ASEAN-led regional architecture. One thus sees the U.S. signing of the Treaty of Amity and Cooperation in Southeast Asia (TAC) and the elevation of ASEAN-U.S. Dialogue Relations to one of strategic partnership. Active U.S. engagement is generally welcome because the U.S. presence has served as a stabilizing force for the region for much of the post-World War II era, providing a secure foundation for the economic growth and dynamism that the region experiences today. Nevertheless, when these U.S. initiatives are juxtaposed against China's rise, questions are inevitably raised as to whether this represents a new strategy of containment.

Japan's new National Security Strategy and foreign policy reflect its renewed sense of confidence and a perceived need to restore a strategic balance in the Asia-Pacific. From assisting some ASEAN member states in strengthening their coast guard fleets to promoting rule of law in maritime areas as announced at this year's Shangri-la Dialogue to strengthening relations with Australia, India and like-minded states, these policy initiatives from Japan reflect an effort to assert itself more proactively on the regional and global stage. This has elicited supportive and cautious reactions within the region. Some feel that this "normalization" of Japan's security policy is long overdue, given Japan's economic weight in the world. Others feel that a more active Japan engagement on regional and global security issues may generate historical comparisons and therefore it needs to be anchored on the U.S.-Japan alliance and on the multilateral collective security system of the United Nations. Indeed, when these initiatives are viewed against the backdrop of rising tensions from overlapping maritime claims in the East China Sea, questions are raised of whether this renewed activism from Japan is part of an overall regional containment effort.

There are other important developments as well with implications for the evolving regional architecture. One is the rising role of India and Russia, two countries that have a strong presence and impact in the Asia-Pacific, but that have not been a proactive part of the region. Another is the rising role of ASEAN as a regional power whose ongoing community-building efforts may give it added clout in helping set the strategic direction for the region. These important strategic transformations impinge on one another, creating friction that has translated into growing strategic trust deficit in the region. The reality is that much more is at stake for Asia-Pacific's future, which has encouraged a zero-sum game mentality on the part of the major powers when they approach the region.

Combining the unique characteristics of the Asia-Pacific as discussed above leads to important implications on the evolving regional architecture. First, because of the current high level of strategic mistrust among the major powers, especially between China and the U.S. and between China and Japan, it would be difficult for these countries to propose initiatives for a regional architecture that would not be greeted with suspicion. In this connection, among the three countries mentioned above, only China has proposed an initiative with some bearing on the regional architecture, in the form of a new treaty of friendship and cooperation between ASEAN and China.

Second, related to the first point but important in and of itself, is the unique role of ASEAN. This organization of 10 Southeast Asian countries is acknowledged by all in the region as being in the best possible position to provide a neutral platform for countries large and small to help develop a regional architecture. In this context, ASEAN's key strength is its non-threatening character: an enemy to none and a friend to all. Because of this, ASEAN has what is generally acknowledged to be important "convening powers" (ARF, 1994) — the power to convene meetings and develop cooperative arrangements that larger powers are willing to gravitate to without feeling threatened or disadvantaged.

Taking all of the above into account, it would be most appropriate that the evolving regional architecture to help manage the existing dichotomy and strategic transformations in the Asia-Pacific be developed from ASEAN-centered and ASEAN-led arrangements. Such arrangements have been flexible and not rigidly rules-based in the past and this would seem to be necessary today in a diverse, rapidly transforming region. In this context, the East Asia Summit (EAS) (Originally comprised the 10 ASEAN member states and six Dialogue partners (Australia, China, India, Japan, the Republic of Korea and New Zealand) and subsequently accepted the Russian Federation and the United States into its ranks.), comprising all key countries in the region and the only framework that is leader-led, would be the most appropriate framework on which to further develop the regional architecture. The EAS also has a clear mandate to promote dialogue and cooperation on critical strategic issues that affect the region.

In addition, other ASEAN-led arrangements can be pursued. Such arrangements, whether the ARF or ADMM Plus, will continue to have important niche roles to fill. But the EAS, with its unique composition and level of representation, is best positioned to drive the regional architecture building process from the top. Indeed, the EAS is an important manifestation of a "shared interest-centric approach", one that can adapt quickly to new shared interests and perceptions of shared challenges, and not constrained by rigid rules and regulations inherent in an order-centric approach, or shifting continuously as would be expected in a threat-centric approach.

5. Emerging Indo-Pacific Idea

Using the EAS as a building bloc for developing the regional architecture is also appropriate because this forum is the only one at the leadership level that seeks to link the Pacific with the Indian Ocean region: two regions becoming increasingly inter-linked in terms of economics, security and geo-strategic thinking. That is why an Indo-Pacific idea has been discussed extensively in policy-making and academic circles in recent years. Indeed, the idea of an Indo-Pacific Treaty has been proposed by Indonesia in ASEAN circles, reflecting perhaps a more "order-centric" approach based on norms and rules. (Although elaborated by Indonesia in a number of ASEAN meetings and in academic conferences, the Indo-Pacific Treaty idea has yet to receive full ASEAN consensus as an official ASEAN strategy to be pursued in ASEAN-led arrangements, as of mid 2014.) Indonesia's Foreign Minister, Dr. Marty Natalegawa, is the idea's chief proponent, which he elaborated on in a speech at the Indonesia Conference in Washington, D.C., in 2013 and in various ASEAN meetings. Essentially, the idea was that such a treaty, embracing norms for relations in the Indo-Pacific area, would help enhance peace and stability in the region, achieving an optimal situation of what he called "dynamic equilibrium".

Perhaps because of such a "order-centric" approach, questions linger as to how the new Indo-Pacific Treaty would build on (or perhaps replace?) the existing Treaty of Amity and Cooperation in Southeast Asia. There are queries as to the new treaty's geographical scope of application and mandate. After all, TAC's geographical scope is limited to Southeast Asia. Is it the aim of the Indo-Pacific Treaty to develop rules that would govern the entire geographical region of the Pacific and Indian oceans? (Ministry of Foreign Affairs, 2014).

It is critical for ASEAN, in exercising its convening powers and in reaffirming its centrality, to lead development of the EAS so it can more effectively serve as the centre point of a regional architecture that can respond flexibly but effectively to strategic transformations in the region. The EAS need not find a solution to all the challenges facing the region; it is not in a position to do so. But it can offer itself as a legitimate and acceptable platform for major and regional powers to engage in strategic dialogues on the critical geo-political issues of our times. The goal is to help lay the groundwork for some solutions or at least help prevent crises from escalating.

The EAS seems to be the most appropriate modality to advance the idea of enhanced cooperation in the wider Indo-Pacific region, whose exact geographical scope will need to be defined. In view of the great diversity in such a region, a process of developing a habit of dialogue and consultation, meaningful cooperation on win-win strategic issues, and perhaps even a code of conduct governing inter-state relations in the Indo-Pacific, will need to be advanced step-by-step. ASEAN, as the neutral convener, should drive the process at a pace comfortable to all.

6.   Role of India in the Emerging Regional Architecture

What role can India, as a rising power and strategic partner of ASEAN, play in this evolving regional architecture? Historically, it was not considered part of the Asia-Pacific regional architecture despite its long-standing cultural ties with Southeast Asia and links with the broader region. APEC does not include India, and the Asia-Europe Meeting (ASEM) did not include India in its early years. But India's growing economic importance over the past two decades, coupled with growing ties between India and ASEAN and enhanced engagement of India in the ASEAN-led regional architecture (ASEAN-India Strategic Partnership, ARF, ADMM Plus and EAS), have made India an increasingly integral part of the extended Asia-Pacific region. Connectivity between India and ASEAN — manifested in the Trilateral Highway project linking India, Myanmar and Thailand — and the complementarity between India's Look East policies and ASEAN's Look West policies, have helped integrate India into the Asia-Pacific.

Moreover, the growing links between the Pacific and Indian oceans, in terms of opportunities (maritime trade and commerce) and challenges (piracy, safe and secure sea lines of communication, and other cross-border issues), reflect the reality of growing interdependence between the two oceans and their respective areas. Climate change, for example, is fueling natural disasters that have affected both oceans and their rims. This has encouraged the development of early warning systems that cut across the Indo-Pacific. From a maritime security standpoint, growing blue ocean naval capabilities are making it increasingly difficult to distinguish the two oceans as separate and distinct theaters of operations. India will have an important role to play in this emerging reality of a Pacific Ocean-Indian Ocean continuum.

On land, India can continue to enhance its connectivity with mainland Southeast Asia and ultimately link with Northeast Asia. At sea, it can help promote enhanced maritime connectivity. Overall, India can work with in partnership with the rest of South Asia to help enhance trust and confidence in the wider Indo-Pacific region. In so doing, it can make full use of its participation in the existing ASEAN-led regional architecture and help make the evolving regional architecture more effective and resilient. There is every indication that the newly elected Indian government will continue to "Look East". It is hoped that India's continued constructive engagement with the Asia-Pacific will also emanate from enhanced interaction with ASEAN and the ASEAN-led regional architecture.

7.   Conclusion

The story of the evolving regional architecture in the Asia-Pacific is still being written, in part by the artisans of diplomacy working through the various states that are proposing new ideas on how to manage strategic transformations in the Asia-Pacific. However, Asia-Pacific's unique nature and the unique character of the region's architecture based on a shared interest-centric approach may limit the options as to what would be the most appropriate vehicle to drive the regional architecture. At present, the evolving regional architecture must be developed from existing ASEAN-led regional processes because a regional architecture driven by other powers may not gain traction given current levels of distrust among some of the major powers. ASEAN's convening power thus appears to award a premium to ASEAN-led processes and arrangements.

In this regard, the existing EAS, even with all its limitations, appears to be the best vehicle to further develop this regional architecture. The EAS is also the only leader-led forum that already promotes an inherent link between the Pacific and Indian oceans, which makes it even better positioned to develop further the Indo-Pacific idea. If this is the best way forward, it would be important for India, as the key link between the Asia-Pacific architecture and the Indian Ocean area, to play a constructive role through its partnership with ASEAN and its active engagement in the ASEAN-centered regional processes and arrangements.

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Institutional Challenges Facing Economic Development in Myanmar:
A Case Study

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Abstract

The New Institutional Economics (NIE) school of thought suggests that institutions are necessary for economic efficiency and are the primary cause of economic development. After a half-century of isolation under the military rule, Myanmar is experiencing major political and economic reforms. This paper gives a descriptive overview of Myanmar's current institutional environment from the perspective of NIE. The study finds that Myanmar's economic development potential is widely recognized; however, the poor quality of its institutions remains one of its biggest challenges. Major institutional challenges such as a centralized political structure, concentration of resources and business in the hands of the military, cronyism, bribery and other forms of corruption, ineffective and outdated bureaucratic structures and policies, and an underdeveloped banking system remain as obstacles in the developmental process. Myanmar's rapid economic progress in the years ahead will depend on how the large number of challenges regarding policy issues will be resolved. Thus, this study's primary purpose includes examining and analyzing Myanmar's current institutional environment as well as providing suggestions and policy recommendations for beneficial economic development.

Keywords: economic development, institution, Myanmar, new institutional economics
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1. Introduction

More than five decades of military rule has left Myanmar with very weak institutions and capabilities, posting several challenges to the current transformation process. Major institutional challenges around the concentration of power in the hands of the military, monopolization of the resources and business, bribery and other forms of corruption, ineffective and outdated bureaucratic structures and policies, and underdeveloped public services and the banking system are obstacles to development. The New Institutional Economic school of thought suggests that institutions are necessary for economic efficiency, which is the primary cause of economic development. Therefore, institutional quality is important since a country's prosperity and economic development rely on its institutional environment. Myanmar's rapid economic progress in the years ahead will depend on how its numerous challenges regarding policy issues will be resolved.

This study's first objective is to review the New Institutional Economics (hereafter NIE) theory to gain a better understanding of the importance of institutions in national economic development. A second objective is to overview, examine and analyze the current political and economic institutions necessary for Myanmar's economic development, based on the NIE concept. This study also aims to provide policy implications regarding the institutional environment needed for prosperous economic development in Myanmar.

Therefore, results from this study can contribute to the country's development by providing a descriptive case study with concrete examination and thorough analysis of the institutional environment during Myanmar's current transitional period, relying on the NIE's general insights. This study's outcome and analysis will help guide and inform government policies to promote economic development. This paper examines the current institutional environment and addresses the problems in Myanmar's institutions that are necessary for economic development. To that end, the study provides the implications of effecting institutional changes for a smoother transition and economic prosperity in Myanmar. It is hoped that the outcome and analysis the study generates will help guide and inform government policies to promote beneficial economic development.

2. Literature Review

The NIE school of thought is a vast and relatively new multidisciplinary field that includes aspects of economics, sociology, history, political science, business organization, and law. It combines and extends the two economics theories of the original, or old, institutional economics and neo-classical economics. The NIE acknowledges the important role of institutions (assumption of old institutional economics), particularly institutions within the framework of neoclassical economics. Considering the insight of this theory, some linkages can be drawn to provide a connection between economic development and structural changes needed for Myanmar, which may require a huge reform effort to support economic development as well as cope with upcoming challenges brought about by the implementation of ASEAN Economic Community in late 2015.

2.1 Theoretical background

The NIE is built around the works particularly advocated by Douglas North (1990, 2005) and Oliver Williamson (1975). The term NIE was introduced by Williamson in his paper focusing on transaction costs. It has since become a standard term that classifies a diverse group of economists who share a common intellectual ground: institutions matter, the relationship between institutional structure and economic behavior requires attention, and the determinants of institutions can be analyzed with the aid of economic theory (Richter, 2005). NIE provides a new way of analyzing economic phenomena. It explains the determinants of institutions and their evolution over time, and it evaluates their impact on economic performance, efficiency, and distribution.

Thus, NIE is a useful framework that could help determine the types of institutions needed (either formal or informal) to improve Myanmar's economic performance. Therefore, based on NIE's concepts and general hypothesis, this paper examines the current institutional environment in Myanmar and intends to provide analysis and recommendations.

Based on North's definition, it is commonly agreed that "institutions are made up of formal rules (political systems, constitutions, laws governing contracts, property rights, organizations, product information, taxes, tariffs, regulation of banks, etc.), informal constraints (culture, norms of behavior, customs, values, traditions, sanctions, religions, etc.), and their enforcement characteristics; and they establish the rules of the game of a society" (North, 1990). More formally, institutions are humanly devised constraints that structure political, economic, and social interactions.

NIE suggests that in market exchanges there exist transaction costs comprising the cost of information as well as the cost of protecting rights and policing and enforcing agreements. Thus the existing cost in transactions due to imperfect information or uncertainty leads to the creation of both formal and informal institutions. Wiggins and Davis (2006) stated that these institutions evolve in response to the uncertainty, risk and information costs associated with living and transacting in an imperfect world. In turn, this leads to lower transaction costs and reduced uncertainty between market exchanges, both of which affect economic performance as a whole.

2.2 What kind of institutions promote growth and how?

North (1990) stated that institutions that evolve to lower transaction costs are key to economic performance. However, NIE suggests that due to path dependency, no single strategy for institutional design exists for all countries. Nevertheless, much NIE literature and many NIE economists have suggested fundamental institutional elements and designs that could enhance economic performance and foster development.

According to Milo (2007), only efficient institutions promote growth. Milo posits that countries need two distinct and not necessarily complementary sets of institutions to meet the challenges of development:

1) those that promote exchange by lowering transaction costs and promoting trust (contracts and contract enforcement mechanisms, commercial norms and rules, and habits and beliefs favoring shared values and the accumulation of human capital), and
2) those that induce the state to protect rather than expropriate private property (constitutions, electoral rules, laws governing speech, and legal and civic norms).

These types of institutions encourage individuals to engage in productive activities by providing appropriate incentives and establishing a stable structure of human interactions, thus reducing uncertainty.

Similarly, in Rato's (2006) essay "Building Better Institutions", good institutions are those that adopt policy frameworks that accept several broad principles. First, the private sector is recognized as the main actor on the economic stage, with the state stepping in to provide appropriate regulation of markets. The second principle states that a good institution should have a commitment to protecting property rights and creating an environment in which innovation can thrive. Third, the rule of law prevails, and corruption is not tolerated in either the public or private sectors; and fourth, there is a stable macroeconomic environment, reflected in low inflation and a sustainable fiscal position (Rato, 2006).

2.3 How do institutions affect economic performance?

According to Wiggins and Davis (2006), the previously proposed types of institutions help determine the economic growth by potentially affecting three factors: investment, technical innovation and economic organization. Owners of capital are more likely to invest when property rights are secure. If it is easy to trade, obtain credit, retain a reasonable share of the profits (i.e., without excessive taxation) and ensure against risk, then investment is encouraged. Investment may also be stimulated when establishing companies or more informal economic groups is a relatively straightforward task.

Institutions help promote technical innovation by securing intellectual property rights, which is likely to promote private investment in research and development of innovation. Consequently, when institutions facilitate transactions and co-operation among individuals and thus build trust, whether in formal companies or less formal co-operatives, an economic organization is likely to be more effective and efficient, delivering the benefits of specialization and economies of scale where they apply.

In summary, NIE theory takes into account the profound effect of institutions on economic interaction as it acknowledges that legal, political, social and cultural institutions affect an economy's performance. The NIE's central hypothesis is that institutions (formal and informal) are crucial and the first determinant of economic performance. Overall, the NIE demonstrates that institutional quality as measured by bureaucratic efficiency, absence of corruption, protection of property rights and the rule of law is important for growth. Thus, it is suggested that the kinds of institutions that matter are those that protect property rights (a constitution, the rule of law), and lower transaction costs (promoting trust, contract and contract enforcement mechanism, stable macroeconomic, and an absence of corruption).
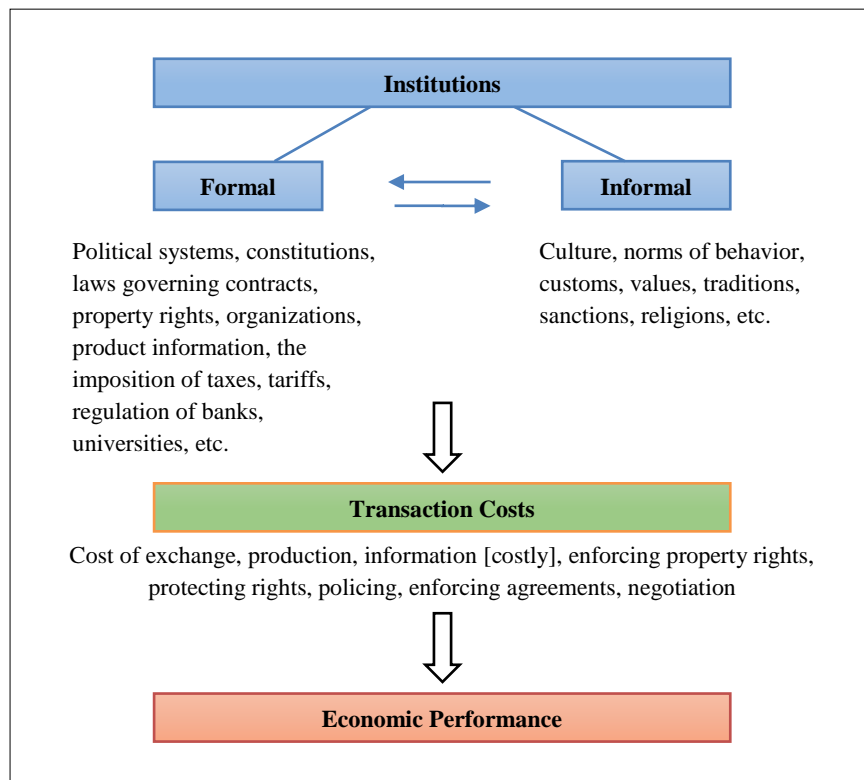
Figure 1 NIE Model and its Application

3.   NIE Application in the case of Myanmar

As described in the above framework, "institutions" lead to better "economic performance". The transaction cost is an intervening variable between institutions and economic performance, which is causally affected by institutions and itself affects economic performance. However, this study does not aim to discern the relationship between these variables, but the theoretical framework is constructed and variables are identified as a means to provide a descriptive theory that establishes the overall framework.

This study is, therefore, a descriptive case study research paper that includes a description and examination of the current institutions necessary for Myanmar's economic development. The study uses both quantitative and qualitative data collection methods, which required a web-based review of existing reports, journals, news, articles, opinions, official publications and documents for content analysis. The study also uses quantitative methods to indicate the level of institutional environment (governance quality, the degree to which protection of property rights exists, political atmosphere, etc.) through application of several economic development indicators (such as the Freedom Index, Regulatory Efficiency, Good Governance indicators, Rule of Law) provided by several international organization such as The World Bank.

The information is from primary documents, secondary statistical data and tertiary sources. Regarding the data collection process, both tertiary and secondary sources are used to make textual analysis. The study mainly is in a descriptive style and mixes analysis methods in that it uses both qualitative and quantitative methods. The paper is outlined in a deductive style: it begins with a brief discussion on general theories (especially NIE) provided by several scholars. It then applies the theoretical framework and existing economic development indicators to focus on an analysis of the specific case study of Myanmar.

Even though institutions include both formal and informal constraints, this study only focuses on examining the formal institutions (political systems, constitutions, laws governing contracts, property rights, organizations, the imposition of taxes, tariffs, regulation of banks, etc.). Informal constraints such as culture, norms and traditions require a study of history, thus needing a large amount of time. Therefore, this paper focuses only on the formal rules/institutions needed to examine the institutional environment via information, data and indicators that can be collected in a relatively short time period.

4. Examination and Findings

Considering the NIE perspective, we have examined the institutional atmosphere using several indicators. To examine the quality of formal institutions in Myanmar as suggested by some institutional economists, we rely on several indicators and indexes, such as the Index of Economic Freedom on Myanmar by The Heritage Foundation, six key governance indicators of Myanmar from The World Bank, and the Economic Freedom of the World by the Fraser Institute.

The following are the summary figures that indicate Myanmar's institutional quality, economic freedom, governance quality and other aspects related to its economic institutional environment (North refers to the polity, judiciary, laws of contract and property).
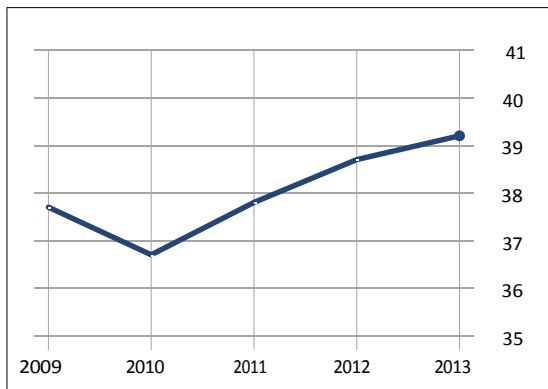
Figure 2 Index of Economic Freedom
Source: The Heritage Foundation/Wall Street Journal, 2013
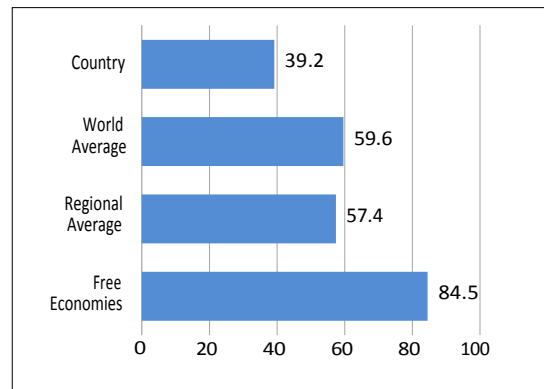
Figure 3 Country Comparisons

Myanmar's economic freedom score is 39.2, 0.5 point higher than in 2012, thus rendering its economy the 172nd freest in the 2013 *Index* out of 177 countries rated. According to the Heritage Foundation this is due to improvements in reducing corruption and increasing monetary freedom. The country is ranked 40 out of 41 countries in the Asia-Pacific region, and thus its overall score is much lower than the regional average.
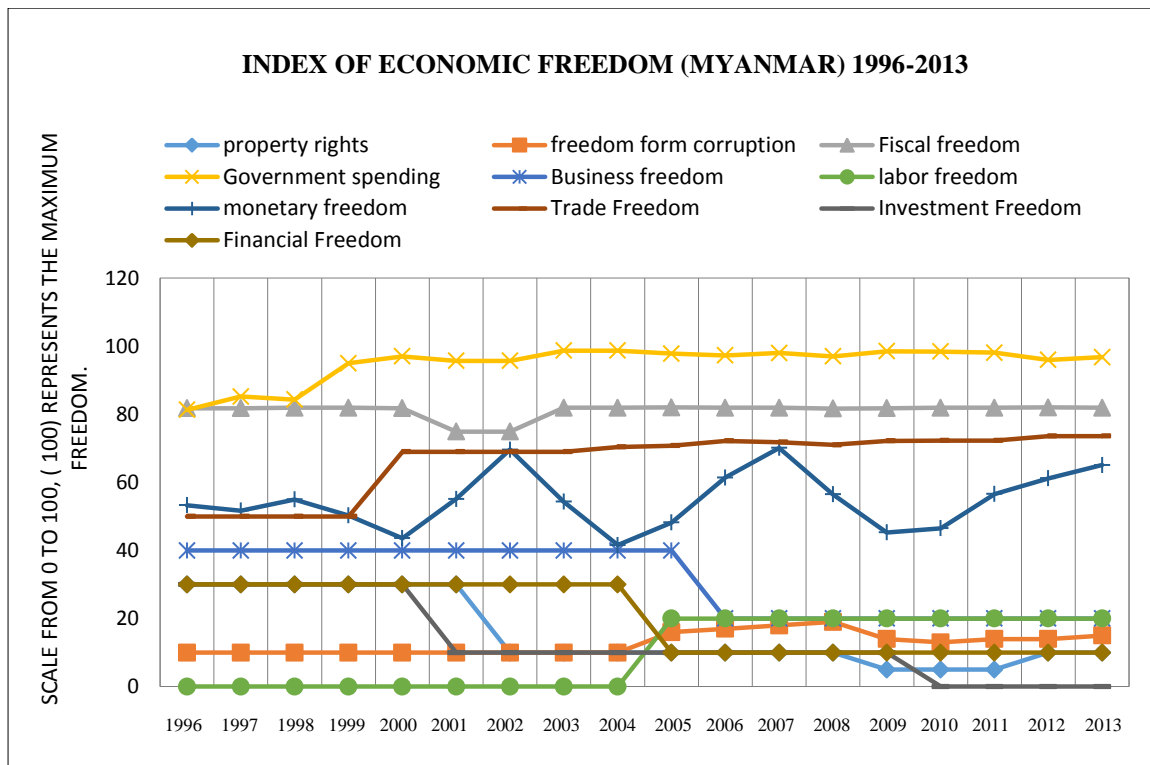
Figure 4 Summary of the Index of Economic Freedom on Myanmar
Source: The Heritage Foundation/Wall Street Journal (2013) and author's summary on the Index of Economic Freedom on Myanmar from raw data.

The index measures 10 components of economic freedom on a scale of 0 to 100, whereby 100 represents maximum freedom, from 1996 to 2013. Overall, private property is not protected in Myanmar. Corruption remains a serious problem, and compared with the rest of the world Myanmar falls among nations with the highest levels of repression.
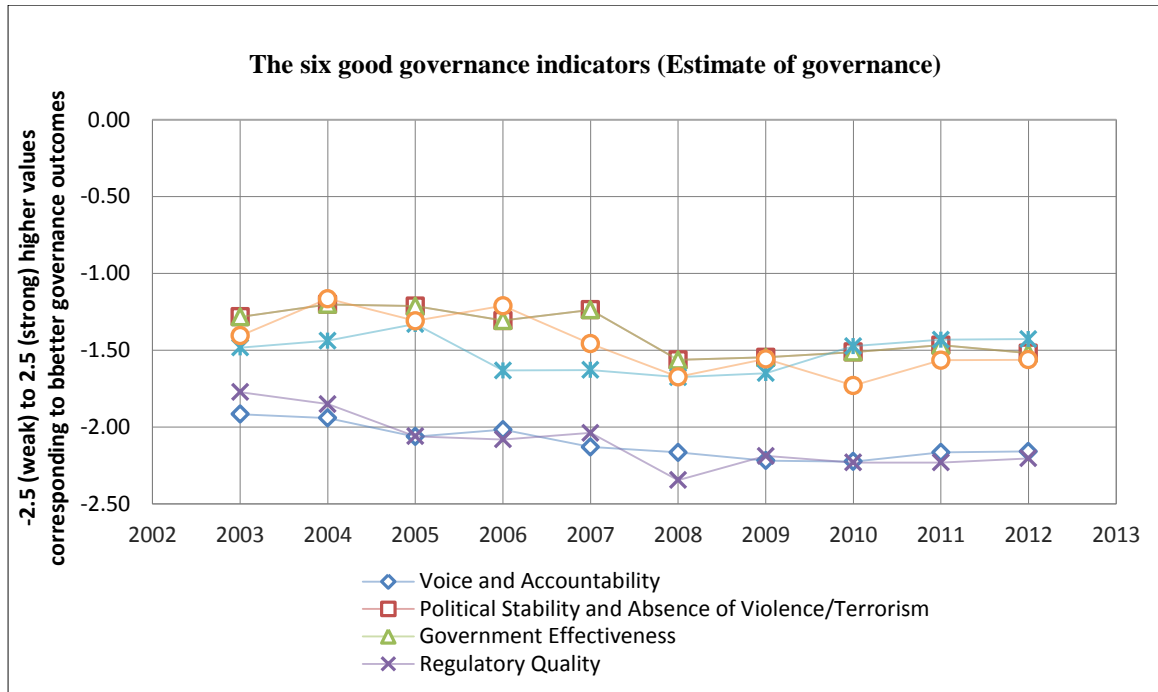
Figure 5 Summary of Myanmar six governance indicators
Source: The World Bank Group (2013) and author's summary of Worldwide Governance Indicators on Myanmar.

Overall, comparing Myanmar's six good governance measures over time, from 2008 we see slight drops in all perceptions. Thus, this figure confirms some weakening in Myanmar's institutional quality in recent years.
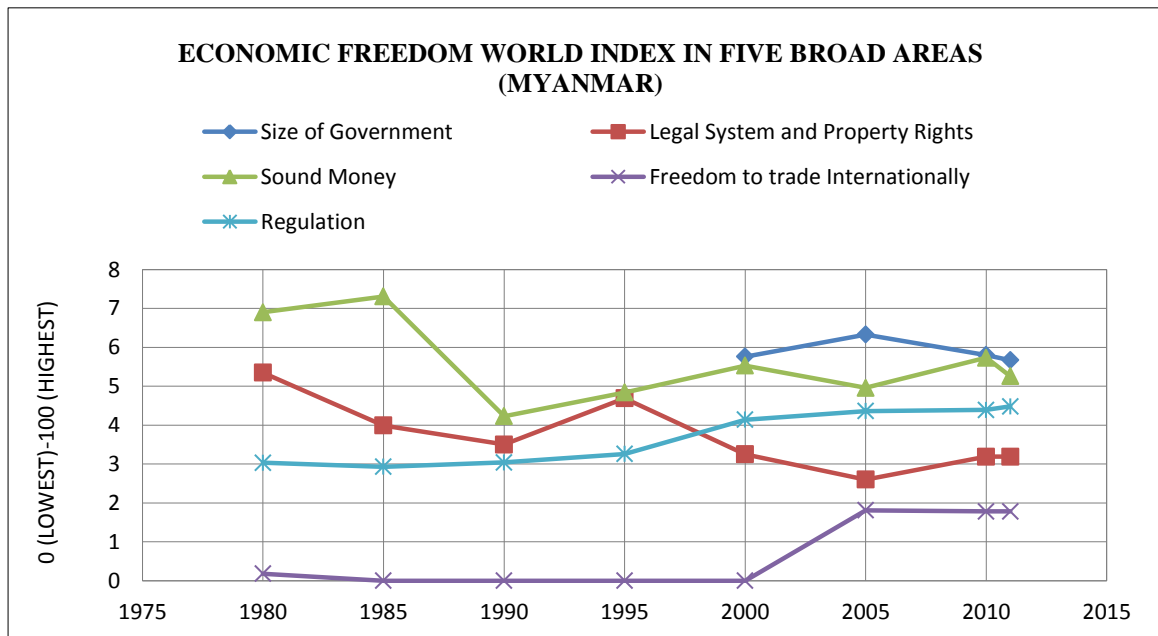
Figure 6 The Economic Freedom Index (EFW)
Source: The Fraser Institute's EFW 2013 annual report and author's summary of Myanmar Economic Freedom based on the data provided by the Fraser Institute annual report.

EFW studies have found that countries with institutions and policies more consistent with economic freedom have higher investment rates, rapid economic growth, higher income levels, and a more rapid reduction in poverty rates. However, the above EFW figures show a continuous lack of freedom in the five broad areas across three decades in Myanmar.

In summary, the above measures of the Economic Freedom Index, the Economic Freedom of the World and the Good Governance Indicators provide statistical measurement regarding several aspects of institutional quality, economic freedom and governance quality. These indicators enable us to have some general ideas on the overall aspects of institutional quality, economic freedom, governance quality and other aspects related to Myanmar's economic institutional environment (North refers to the polity, judiciary, laws of contract and property). Most indicators reveal that Myanmar's overall institutional quality remains low.

Furthermore, the study examines Myanmar's current institutional environment by looking at its polity, governance systems, rule of law, transparency, property rules, judiciary system and banking system, which all help determine economic performance. Riffle states that Myanmar has been rated as having one of the world's worst business climates and that its miserable macroeconomic management, a virtually useless banking system, inadequate infrastructure and several administrative obstacles contribute to high transaction costs, which contradicts the suggestions of the NIE that suggest better and proper institutional structures would to lower transaction costs, which in turn would aid economic development.

The examination indicates that shortcomings in Myanmar's institutional environment. Thus, the necessary institutions have not been established and existing ones operate ineffectively. With the problem of centralized political systems, concentration of resources in the hands of the military and its cronies, corruption, the absence of the rule of law, underdeveloped legal and regulatory frameworks, a lack of independent legislative and judicial systems, vague and unclear interpretation of laws that fail to provide legal and economical certainty as well as the protection of property rights and contracts, and weakness in economic institutions such as underdeveloped financial institutions all pose challenges to efficient economic performance. Several aspects of Myanmar's institutional environment remain poor, obviously creating an unfavorable environment for economic development.

NIE posits that a nation's institutional environment (polity, judiciary, laws of contract and property rules, and policies that define the conditions under which business occurs) is the first determinant of economic performance. Accordingly, fostering Myanmar's economic development would require a process of removing impediments to growth by enhancing its institutions. According to NIE, only the right kind of institutions can create the potential to boost a country's economic development.

One of the main obstacles to improving institutions in Myanmar concerns the judicial branch: it remains weak due to the military's influence and the way legal and judiciary bodies are structured according to the nation's constitution. Due to an incomplete regulatory framework and underdeveloped institutions, Myanmar's rule of law is weak. A lack of clear laws, regulations and enforcement mechanisms worsen corruption, provide virtually no transparency and discourage investment and economic activities.

5. Discussion and Policy Recommendations

According to NIE, the type of institutions that foster economic growth require formal rules that clearly define property rights to the goods or services that can be exchanged, promote trust and respect for the rule of law, and finally enforce rights and laws as objectively and fairly as possible. NIE economist Yeager suggests that for markets to exist and perform well, at least six criteria must be in place, including good information for consumers, a stable and trusted monetary system, legitimate and secure ownership of property rights, and access to an impartial legal system for both buyers and sellers (Boliari, 2007).

However, due to past experience of three currency demonetizations, people have lost trust in the Central Bank of Myanmar regarding its currency, the kyat. Moreover, the banking system is outdated and underdeveloped. Property rights are unprotected because of vaguely stated, outdated laws and regulations and an ineffective judicial system. Thus, Kim, Neo and Oeni (2012) state that regulatory and legislative restrictions with the lack of capacity within Myanmar's institutions may limit its ability to cope with the influx of foreign investment. Though Myanmar's legislative framework for investment is being revised, there are concerns about the effectiveness of the rule of law to implement this.

Thus, to create a decent institutional environment for economic development, the transformation of the role of military together with the eradication of corruption and the establishment of rule of law are the most urgent priorities for the reform that Myanmar's leaders should carry out. The policies of decentralization, investment support and policy initiatives that are designed to level the playing field and protect the rights of people and business entities are needed for local and international businesses to grow and prosper in Myanmar. Capacity building of the parliament and judiciary system is also needed. The banking sector needs to be reformed and upgraded to create a more favorable investment climate. All these issues should be addressed intensively and efficiently.

The current flawed constitution and weak rule of law are the primary cause of several problems such as corruption, the lack of transparency and protection of property rights, and the monopolization of resources and business by the military and its cronies. Thus to achieve prosperity in Myanmar, there needs to be: a) a constitutional amendment for allocation of power, b) protection of property rights, c) the rule of law with an impartial judicial system, and d) a trusted monetary system.

a)   Constitutional amendment for allocation of power

This study principally posits that the amendment of the constitution would allow Myanmar to obtain a proper solution to the aforementioned problems and help achieve economic prosperity. To create a business-friendly climate, attract foreign investment, and promote innovation and trust by reducing corruption and strengthening transparency, there needs to be a reduction in the domination of the military and its monopolization of resources and businesses. The allocation of power, opportunities and resources should not be monopolized and concentrated in the hands of a small group of people, but fairly distributed. Thus, a change in the country's power structure and constitutional amendment is essential. Once the constitution is amended and power is re-structured and equally distributed, corruption and a lack of transparency will be diminished.

b)   Protection of property rights

The NIE suggests that strong property rights institutions and various legal institutions comprise some of the key trade and development-facilitating institutions (Nugent, 2008). Thus, the government should develop rules and regulations that doesn't favor cronies, but rather promote the fair conduct of business among all parties. The government should also establish clear policies and laws addressing the protection of property rights for all citizens as well as for foreign investors, and give primary importance to further liberalizing trade and foreign direct investment.

c)   Strong financial institutions and trusted monetary system

The banking system is extremely underdeveloped and isolated from the international financial infrastructure. It will be impossible to build a competitive economy and raise living standards in Myanmar without a sound and efficient banking system. A process of ensuring macroeconomic stability; encouraging financial sector development, such as modernizing the banking system; and establishing a consistent monetary policy framework are also crucial for economic development. Additionally, due to past experience, public trust in Myanmar's currency and banking system remains low. Advocates of NIE, North and Yeager, state that to have well-functioning markets that drives economic development, institutions must promote trust. Overall, there needs to be changes in monetary policies to regain trust in the currency and approaches in renewing the banking system (private banks as well as state-owned banks) to make transactions easier and up to international standards in order to create a friendly environment for investment and business essential to economic growth.

d)   Improved judiciary capacity and rules and regulations

The current problem of dependent and structural disconnects in Myanmar's judicial system and courts render them incapable of delivering justice fairly and establishing the rule of law. Moreover, several rules and regulations are out of date; therefore, they are irrelevant and are unenforceable. In short, the enforcement of regulations needs to be strengthened, several policies and laws revised, and judicial systems and courts restructured and enhanced in their capacity so as to help build a friendly business atmosphere that attracts foreign investment and promotes free markets.

e) The role of international communities

Myanmar, together with donor countries and private and foreign investors, can collaborate to enhance the quality of the institutions across all sectors. Assistance can be provided via capacity building and training of personnel in regulatory agencies and financial institutions and provide the technological support and capital assistance. Foreign donors and investors as well as local firms could seek several opportunities and benefit from Myanmar's rich and abundant natural resources and young labor force while assisting and contributing to Myanmar's reformation process. A prosperous future in Myanmar needs enhancement and reformations in all sectors of the institutional environment: the polity, constitution, judiciary, contract law, property rights, and policies that define the conditions under which business occurs. It is hoped that the conclusions and analysis in this study will help inform government policies on promoting investment, productivity and economic growth through institutional reformations and changes.

Institutions (both formal and informal) are the first determinant of economic development. Thus, one of the constraints and limitation of this study is its inability to focus on analyzing the informal institutions or the unwritten constraints (such as social, culture, norms of behavior, customs, values, traditions, sanctions, and religion) due to limited time and length. The study thus focuses its examination and analysis on formal institutions and written rules including political systems, constitutions, and laws governing contracts, property rights, organizations, and banking regulation. Hence, this paper suggests further study on the informal constraints (such as social norms, culture, religion and history) to gain a better and fuller understanding of the current economic phenomena and provides more substantive recommendations for economic development in Myanmar.

Despite large numbers of theoretical studies as well as case studies and analysis of the importance of institutions on economic development under the perspective of the NIE, no single study examines Myanmar using the framework of institutional economic theory. The IMF Myanmar country report (2014) comments that if key institutional constraints are addressed the country's outlook is bright. Given Myanmar's significant economic potential, appropriate institutions and policies to manage the economy and supervise the financial system need to be built rapidly to achieve sustained growth and prosperity; thus, more academic study and research on Myanmar's institutions for economic development is needed.

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Parenting and Adolescent Adjustment in Asian-Russian Cultural Contexts:
How Different is it from the West?

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Abstract

The study is based on unique comparative data about the family life of 15-year-olds (n = 1,539) from the Asian region of the Russian Federation. The study asks: what forms do parent-adolescent relations take in the Asian-Russian cultural context, and which of those approaches support adolescent adjustment? The study separates the accounts of urban, ethnic Russian adolescents in the region's largest city, Novosibirsk; their rural, ethnic Russian counterparts in Novosibirsk Oblast; ethnic Russian and Buriiat adolescents in Ulan-Ude, capital city of the Republic of Buriiatia; and ethnic Russian and Altay adolescents in the rural Republic of Altai. Results make allowance for 15 year-olds' differing family make-up and socio-economic circumstances. The study finds parenting patterns are differentiated by location and ethnicity, including a permissive pattern as the norm in urban Novosibirsk, and an indigenous traditional pattern among rural Altay families. Indulgent or democratic parent-adolescent relations – represented by reports of responsive parenting combined with low-to-moderate control – appear to promote adolescent self-worth and psychological health. Authoritarian parenting – reports of unresponsive parenting with high behavioural control – appear detrimental to adolescent mental health. Those findings are more akin to what is found in Western European societies rather than Anglo-Saxon contexts in the United States and United Kingdom. The study also finds no evidence to support the notion that a strict collectivist-hierarchical parenting pattern benefits Asian-Russian adolescents, in the way the latter pattern is reported to benefit East Asian adolescents.

Keywords: parent child relations, adolescent adjustment, Siberia, democratic, permissive, traditional and authoritarian parenting; urban rural location, Asian Russian ethnicity.

1. Introduction

This study is based on unique comparative data about the family life of young people from the Asian region of the Russian Federation in Siberia. The social changes of late modernity have seen the individualization of young people's lives in Western societies, even if the effects of their family background remain substantial (Furlong and Cartmel, 1997; 2007). In Russia, there was much concern about the 'Westernization' of its youth in the 1990s, in the decade after the disintegration of the Soviet world, especially about the influences of global mass culture undermining Russian youth values (Pilkington, 1994; Pilkington, Umel'chenko, Flynn, et al., 2002).

By the time of Vladimir Vladimirovich Putin's election to president for a first term in 2000, the Russian state had already begun to re-assert its cultural difference from the West. And by the time of Putin's return to the president's office for a third term in 2012, the Russian state had rejected any idea of an identity and values shared with Western Europe[1]. It considered the European Union's enlargement agenda – to promote economic integration and trade with its Eastern neighbours along with the establishment of compatible political and social institutions – to be patently anti-Russian (Russia Today, 2014a; b).

The Russian state is clearly not alone in regarding Western institutions, viewpoints and influences as foreign, socially corrosive and conflicting with national culture. China, for example, also asserts its cultural separation from the West. In the particular case of Russia the claim to be different is that Russians

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[1] The controversy caused by the decision of Russia's lawmakers in mid-2013 to prohibit the distribution of 'propaganda of non-traditional sexual relationships' among minors was only one example of the divide that exists between the state's assertion of Russian family values and the European Union's institutionalization of individual rights and diversity.

look to the East to combine distinctively Asian and European values[2]. As with national pride elsewhere, the claim to be different extends to Russian family values and young people's socialization.

The argument that Russians are Eurasian in their culture and values is not so straightforward, however, because the Asian half of the Russian Federation is diverse. The region includes both a majority of ethnic Russians and minorities of indigenous Siberian peoples[3]. Instead of accepting claims about the primacy of traditional Eurasian family values as part of re-constructed Russian nationalism, we can reasonably ask if Asian-Russians even share a common culture and values. We can ask:

- What forms do parent-child relations actually take in diverse Asian-Russian cultural contexts; and,
- Which of those approaches to parenting is optimal for adolescent adjustment in diverse Asian-Russian cultural contexts?

The study answers those two questions about parenting in Siberia by examining the accounts of ethnic Russian adolescents from the region's largest city, Novosibirsk, compared with their ethnic Russian counterparts from the surrounding countryside of Novosibirsk Oblast; ethnic Russian and Buriiat adolescents from Ulan-Ude, the capital city of the Republic of Buriiatia; and ethnic Russian and Altay adolescents from the rural Republic of Altai. In Russian research terms, the study separates the accounts of adolescents from Asian-Russian 'ethno-social' groups in different regional locations (Popkov, 2012).

2. Models of parent-child relations

We begin with a review of models of parent-child relations, as developed in the West, and the claims made about which approaches to parenting identified in those models is optimal for adolescent adjustment. In brief, such models identify combinations of 'responsiveness-warmth' [parental support] and 'demandingness-strictness' [parental control] as representing distinctive patterns of parenting, where studies report:

- 'authoritative' parenting [high-support × high-control] is optimal among Anglo-American samples; whereas;

- 'indulgent' parenting [high-support × low-control] is optimal among Spanish, Swedish and other European samples; and therefore,

- 'democratic' parenting [high-support × moderate-control] offers a compromise between overly-demanding and overly-permissive approaches; and also,

- authoritarian' parenting [low-support × high-control] is detrimental among Anglo-American and Western European samples; but effective among East Asian samples on particular outcomes, for example Chinese and Japanese samples.

2.1 An optimal approach to parenting in Western contexts

Beginning with the early observational work of Diana Baumrind (1971) on parent-child interactions, child development studies in the United States went on to apply a range of methodologies to reach the general conclusion that among different approaches, authoritative parenting was the optimal one (Baumrind, 1991; Lamborn, Mounts, Steinberg, et al., 1991; Steinberg, Lamborn, Darling, et al., 1994). Authoritative parenting – characterised as warm and responsive, while providing at the same time firm

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[2] 'Our pride and self-importance are European, while our development and actions are Asiatic.' *Anton Pavlovich Chekhov (1860–1904), Complete Works and Letters in Thirty Volumes, Works, Notebook I, vol. 17, p. 87, 'Nauka' (1980).*
[3] It is also important to understand that the state's categorization of Siberia's indigenous peoples – for example, as Buriiat or Altay – rationally, scientifically, ideologically and bureaucratically in the Soviet era, assigned them to fixed locations and nations, itself a reconstruction of ethnicity (Anderson, 2000). Classifications are simplified into four groups of people, including Mongol (Buriiat) and Turkic (Altay) groups, of whom the one-half million Buriiats are most numerous.

behavioural control and appropriate maturity demands – was identified with better outcomes, as well as positive social and psychological adjustment for children and adolescents. A large-scale survey of adolescents aged 13-14 and 15-16 years old in the United Kingdom found that permissive parenting was the norm but similarly positive results for authoritative parenting were seen in respect of adolescents' wellbeing, mental health and school adjustment; importantly, those results were irrespective of each family's make-up and socio-economic circumstances (Shucksmith, Hendry and Glendinning, 1995). In summing up what was known from research about parent-adolescent relations and adolescents' socialization, Steinberg (2001) concluded that: the cross-cultural benefits of authoritative parenting transcended the boundaries of ethnicity; as well as those of family structure and socio-economic status.

2.2 Models of parent-child relations in Western contexts

Baumrind's original work had identified three parenting styles: authoritative, authoritarian and permissive. Unlike an authoritative style, she saw authoritarian parenting as distant, overly-demanding and too strict. On the other hand, permissive parenting lacked necessary boundaries. Maccoby and Martin (2003) developed that early model. They extended Baumrind's three styles to four by differentiating among permissive approaches in terms of parents' responsiveness so as to separate distinguish between those permissive parents who were indulgent and those who were neglectful. Maccoby and Martin saw neglectful parents as unresponsive, in addition to failing to set limits for adolescents; whereas, they saw indulgent parents as warm and responsive, even if they did not set limits. The subsequent empirical work of Lamborn, Steinberg and collaborators (1991; 1994), based on large-scale surveys in the United States, confirmed Maccoby and Martin's two-dimensional model with its four parenting styles[4].

In the Australian context, Parker, Tupling and Brown (1979) analysed instead adults' retrospective accounts of their relations with their parents in childhood, up to age 16 years. Their analysis identified two dimensions, parental 'care' and parental 'over-protection or control', and four approaches, indulgent parenting, characterised as 'high care and low protection', and three others, characterised as: 'affectionate constraint', 'affectionless control' and 'neglect'. Unlike studies in the United States and United Kingdom, Parker and his colleagues identified 'optimal parenting' as the approach that combines high care with fewer constraints; that is, they identified indulgent rather than authoritative parenting as optimal. Studies in Canada, the Netherlands and Sweden confirmed those conclusions with clinical and community samples of adults using the same methods. Later research developed a shortened eight-item 'parental bonding instrument' (PBI-BC) for use with adolescents in a self-completion survey format, to assess current adolescent-parent relations in the previous three months; rather than use adults' retrospective accounts of their childhood experiences up to age 16 years (Klimidis, Minas & Ata, 1992).

2.3 Other optimal approaches in Western contexts

Studies in North America, Western Europe and Australia had in fact been divided about whether authoritative or indulgent parenting was optimal. Conclusions appeared to be dependent on the cultural context. A comparative study of 12 to 16 year-olds from rural Scotland and Sweden provides an illustrative example. Glendinning, Kloep & Hendry (2000) observed considerable cross-cultural differences in adolescents' reports of their relations with parents between those two rural contexts in Northern Europe. Control was a notable feature of rural life in the Scottish context, and authoritative parenting was found to be optimal; and in contrast, control was largely absent from the Swedish rural context, where indulgent parenting was optimal. Studies in the Spanish cultural context in Southern Europe also favoured indulgent over authoritative parenting (Garcia & Garcia, 2009).

Baumrind (1996) re-considered the question of discipline within authoritative and indulgent parenting styles and discerned a pattern that provided a compromise between more demanding (American) and more permissive (European) parenting. She considered the benefits of a responsive, caring approach, combined with moderate control on the part of parents, as representing a 'democratic pattern of more

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[4] Barber, Stolz & Olsen (2005) distinguished across three dimensions – support, psychological control and behavioural control – in adolescent reports of their parents' behaviour. Psychological control was unidirectional and hypothesized as harmful. Behavioural control was bidirectional and greater control hypothesized as beneficial.

contentious and engaged commitment to the child' (Baumrind, 1991: 63) instead of parents' assertive demands or unrestricted indulgence. A more democratic approach offered a persuasive alternative that could be applied across different Western societies.

2.4 Optimal approaches in East Asian contexts

Research has also shown that authoritarian parenting has been associated with positive outcomes in East Asian cultural contexts[5]. American and European-American families, for example, demonstrate different educational outcomes in the United States, where Asian children of authoritarian parents obtain better academic results than children of authoritative parents (Chao, 1994; 2001). As another example, in a comparative study between families in China and America, Quoss and Zhao (1995) found that authoritarian but not authoritative parenting predicted satisfaction in the parent-child relationship among Chinese children. Based on research in Asia and the United States, Chao & Tseng (2002) identified three central themes of East Asian parenting: the centrality of the family and family interdependence, as set within collectivist and hierarchical social relations; the distinctive pattern of control and strictness used with children; and fostering educational achievement in children. Nelson, Hart, Yang and colleagues (2006) reviewed and discussed the meanings and benefits that have been attributed to authoritarian parenting in the Chinese cultural context. They argued that where strictness has positive results, Chinese children take strictness to indicate parents' support as well as control. They argue that what is interpreted as an authoritarian pattern, when seen from a Western viewpoint, is understood by Chinese parents and their offspring as strict, but supportive in practice. It is closer to a Western model of authoritative than authoritarian parenting. In other words, Asian authoritarian patterns can be associated with positive adolescent adjustment.

What works in East Asian contexts is different because social relations are structured differently. Parenting patterns are taken-for-granted in social interactions that would be incongruent in other cultures[6]. In terms of parent-child relations and educational outcomes, the school-family fit in East Asian societies is collectivist and hierarchical[7]. Children are therefore able to use family cultural capital to feel 'at home' in school; and to succeed. Where hierarchical relations are emphasized more, parental strictness will be more effective. Strictness does not have the same positive meaning in societies such as Sweden, where egalitarian rather than hierarchical, and individualist rather than collectivist social relations are emphasized[8]. Different patterns of parenting practices in Western and Asian cultural contexts are summarised in Figure 1 in terms of the two dimensions of responsiveness and strictness.

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[5] Research in other non-Western cultural contexts, such as in Middle Eastern societies, suggests that authoritarian parenting is an adequate parenting strategy, for example, Dwairy et al. (2006) found that in Arab societies, authoritarian parenting did not harm adolescent mental health as it did in Western societies.

[6] Rudy & Grusec (2001) analyse authoritarian parenting and the transmission of values in individualist and collectivist cultural contexts.

[7] Webber (1999) describes the Russian schooling system and implementation of reforms in the 1990s after the dissolution of the Soviet Union. Elliott & Tudge (2007) analyzed Western influences on reform. From their perspective, many teachers in Russian schools continued to rely on traditional practices and values.

[8] Nonetheless, we need to be careful about the claims we make when using cultural constructs such as collectivism and individualism in essentialist explanations of ethnic differences in parenting practices and their effects on child development (Sorkhabi, 2005).

	← Parents' Strictness →		
	High	Moderate	Low
High	(a) Authoritative	(b) Democratic	(c) Indulgent
Moderate / Low	(d) Traditional/ Authoritarian	Other Parenting	

↑ Parents' Responsiveness ↓

(d) Asian cultural contexts (Chao et al., 1994; 2001; 2002)
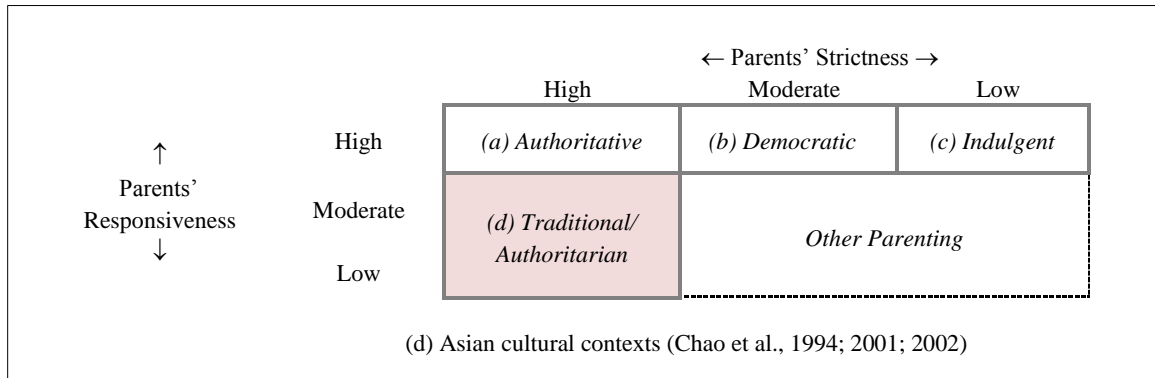
Figure 1 Model of optimal parenting in Western and Asian cultural contexts

2.5 Parenting in Russia

Soviet-era guidelines for childrearing emphasized parental responsiveness and protectiveness, alongside moderate parental control and use of reason and persuasion. The primary duty of parents was to provide 'love and warmth' for their children, whereas parents' authority was an adjunct to children's socialization at nursery and school (Makarenko, 1954). Soviet education emphasized group-mindedness and acceptance of authority, and importantly, the peer-group was regarded by educators as integral to the regulation of children's behaviour, and the socialization of norms and values for the 'collective good' (Elliot & Tudge, 2007: 100). Traditional Soviet parenting could be characterized as indulgent but also as controlling. First, it can be seen as indulgent because it prioritized parents' love and support of their children rather than control at home. However, when the hierarchical and collective dimension of social relations is emphasized, Soviet parenting can also be seen more as authoritative because it was supportive but also controlling within the state's socialization nexus of family, school and peers. In the latter case, differences between 'authoritative' parenting in Soviet and American society would be about what counted as intrusive, and about the use of either psychological or behavioural control, respectively, as legitimate methods for socializing children within a collectivist or an individualist society. The American social-psychologist Bronfenbrenner (1970) saw the peer group as operating in tandem with the school and family in children's socialization within Soviet society, unlike in American society, where the peer-group appeared to be at odds with the family.

After the dissolution of the Soviet Union, a number of studies of parenting and childrearing values came out of the new Russia in the 1990s. These were undertaken with relatively small samples of mostly ethnic Russian families from cities in Central and Western Russia. An early study in 1992 found that the majority of its participants from St Petersburg and Moscow continued to describe childrearing along Soviet lines, in terms of 'love and warmth' with an emphasis on promoting the 'collective good' (Goodwin & Emelyonova, 1995). Some entrepreneurial families mentioned a different pattern, whereby parents encouraged 'individuality' and acted as 'tutors' but it was not yet clear how parenting would change, if at all. By the end of the decade, an in-depth interview study found social-class differences (Tudge, Hogan, Snezhkova et al., 2000). Working-class parents emphasized conformity to rules, whereas middle-class parents supported children's self-direction. A quantitative study of parenting styles surveyed a more representative sample (Girgorenko & Sternberg, 2000). It also found that less-educated parents were more likely to report higher demands, along with higher acceptance, or continuity with Soviet authoritative parenting. Educated parents were more likely to report moderate acceptance and moderate demands, or more permissive, liberally-oriented and self-directed parenting, rather than continuity with Soviet indulgent parenting. Interestingly, the study found that parenting was unrelated to a family's financial circumstances. A decade of economic disruption meant that most educated professionals who worked for the state in provincial cities, such as nursery and school teachers, experienced economic hardship.

As to outcomes of parenting, an early study in 1992 explored the effects of the family environment on adolescents' adjustment in post-Soviet Moscow (Sheer & Unger, 1998). Non-supportive parenting

without close relations was associated with adolescent depression. The study concluded that in the midst of economic, social and political change the effects of family environment appeared to be the same as in U.S. samples, even when Russian families were under such severe stress. A study in the mid-1990s examined parenting styles in families of nursery-school-age children from a provincial city south of Moscow (Hart, Nelson, Robinson et al., 1998). Parental coercion and lack of responsiveness were the most important contributors to aggression with peers in younger Russian children. Authoritarian, non-supportive parenting that involved psychological control disrupted younger children's relations with their peers and socialization at nursery school. Elliot & Tudge (2007) found that most school teachers continued to use traditional methods with children rather than adopt foreign, Western innovations.

A summary of parenting studies in post-Soviet Russia concluded that 'outcomes associated with authoritative and authoritarian dimensions, at least for nursery children, appear consistent with outcomes found across diverse cultures [but] … little is known about how permissive parenting plays out in measures of adjustment for Russian children of any age [and also] … about ways that Russian parenting is associated with other aspects of development [beyond aggressive behaviour with peers]' (Nelson, Hart, Keister et al. 2010: 415-6). In other words, few studies of parenting have been undertaken in general, and little or no research about parenting has been done in rural locations of Asian Russia and among diverse ethno-social groups in particular.

3. Hypotheses

In terms of hypotheses:

- Traditional parenting will persist in Asian-Russian cultural contexts: both as parenting that emphasizes high parental support combined with low-to-moderate behavioural control, representing an indulgent traditional Soviet model; and as parenting that emphasizes low-to-moderate parental support combined with high control, representing an authoritarian traditional Asiatic model.

- New parenting patterns will also be evident, such as moderate parental support combined with moderate behavioural control; and permissive parenting that is congruent with social change.

- However, the persistence of traditional parenting and increased presence of new parenting patterns will depend on the family's urban-rural location and its ethnic background, because of the different ways in which circumstances have changed social relations for ethno-social groups from different locations in Asian Russia.[9]

- As to the effects of parenting, previous studies in Russia claim that parenting patterns associated with positive and negative outcomes for children and adolescents are similar to those found in the West; although the evidence base is limited and rural, Asian-Russian families are absent from those studies. Additionally, what has been found in the West is not the same everywhere. Therefore, it is hard to hypothesize about what patterns will be associated with positive adjustment in Asian-Russian cultural contexts.

4. Methods

The Siberian 15-year-olds who participated in the study grew up in the Russian Federation after the break-up and final dissolution of the Soviet Union in 1991. Their parents had grown up in the Soviet era. Many families experienced dramatic changes to their lives, and considerable hardship, due to the collapse of livelihoods and social supports (Humphrey, 2002). Study data come from ethnographic fieldwork, individual interviews, focus groups and questionnaire surveys with 15-year-olds from three distinctive locations in Siberia: Novosibirsk Oblast, the Republic of Buriiatia and the Republic of Altai[10].

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[9] Popkov (2012) argues globalization promotes local diversity and the values of indigenous ethnic groups in Siberia, rather than Western influences causing uniformity, which is separate from the state's use of Eurasian values as the basis of Russian national identity.

[10] Fieldwork for the study did not extend northwards to Altai Krai.

Table 1 provides a breakdown of locations in terms of ethnicity, religion, urban=rural mix and population sizes.

4.1 Locations

      Only the populations of European Russia's two major cities, Moscow and St Petersburg, are greater than the major Siberian city of Novosibirsk. It is the most populous city in Asian Russia. The Siberian city of Ulan-Ude is located some 2,000 km. to the east of Novosibirsk and it is less than one-third the size of Novosibirsk. Ulan-Ude is the capital of the Republic of Buriiatia. The republic shares a southern border with Mongolia. Its indigenous culture and religion have an Asiatic Buddhist-shamanist basis (Humphrey, 1993). However, Buriiats represent a minority of its population and the majority are ethnic Russians. The Republic of Altai lies in Western Siberia, some 1,000 km. south of Novosibirsk. The republic shares a southern border with Kazakhstan, China and Mongolia. Its indigenous culture reveres the homeland as sacred within Buddhist-shamanist traditions. Popular religious movements such as Burkhanism asserted Altay's independence (Halemba, 2006). Nonetheless, only a minority of the population claim to be ethnic Altay; the majority are ethnic Russian families. A far greater proportion of the population live in rural areas of the Republic of Altai compared with the Republic of Buriiatia.[11] The republic's administrative centre, Gorno' Altaisk, has a population of under 60,000.

Table 1 Ethnic profile of the sample of Siberian 15-year-olds from three locations

	Regional Location		
	Novosibirsk Oblast (n=507)	Ulan-Ude^ (n=322)	Republic of Altai (n=696)
Ethnicity			
Ethnic Russian	86% [93%]	45% [66%]	52% [57%]
Buriiat	—	45% [30%]	—
Altay	—	—	30% [34%]
Mixed/Others[+]	14% [7%]	10% [4%]	18% [9%]
Religion			
Russian-Orthodox	(25%)	(27%)	(28%)
Buriiat-Buddhist	—	(20%)	—
Altay-Shamanist	—	—	(13%)
Urban—rural			
Population $\times$ 1,000	[2,666k]	[973k]	[206k]
Capital $\times$ 1,000	[1,474k]	[404k]	[57k]
Percentage Urban	[77%]	[58%]	[28%]

Notes :
Figures in brackets[.] Census, 2010; (.) Atlas of Religion & Nationalities, 2012.
^ Census figures are for the Republic of Buriiatia. The study is restricted to its capital, Ulan-Ude.
[+] This category includes youth of mixed ethnic backgrounds, such as those with Russian and Altay, or Russian
  and Buriiat parents; and also, youth of other ethnic backgrounds, such as those with two Kazakh parents. National Census figures for ethnicity are broken down by the individual; not as in the study by 15-year-olds' parents.

4.2 Sample

      Samples of 15-year-olds were drawn from 78 schools to represent socio-economic diversity within study locations. The overall response rate to the survey, after follow-up, was 95 per cent. In terms of the numbers of schools by location: Novosibirsk City had 12 schools and Chulymskii and Dovolenskii in Novosibirsk Oblast had six schools each; Gorno' Altaisk, Turochaksii, Ongudiaskii and Ust'-Koksinskii in the Republic of Altai had nine, seven, eight and 16 schools respectively; Ulan-Ude City had 14 schools.

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[11] The proportions of urban-dwellers in the Republic of Altai compared with the Republic of Buriiatia are 28 and 58 per cent, respectively.

Cross-checks with external reference statistics show the sample provides good coverage of key socio-economic factors, family make-up, parents' education and employment status, and material circumstances.

4.3 Measures

4.3.1 Parent-adolescent relations: A module of 18 survey questions about parent-child relations was adapted for use in Siberia[12].

Table 2 Siberian 15-year-olds' responses to a set of questions about family relations: Two-factor solution, representing support and control, derived from data reduction [$]

Factor loadings for the survey questions[+]	Scoring	Factor 1 Parents' Support	Factor 2 Parents' Control
My parent/s are always on hand to listen to me^	1 to 4	0.774	—
Are good at helping me with problems^	1 to 4	0.770	—
Understanding parent/s [PBI]	1 to 3	0.721	—
I get on well with my parent/s^	1 to 4	0.691	—
Caring parent/s [PBI]	1 to 3	0.682	—
Helpful parent/s [PBI]	1 to 3	0.679	—
Loving parent/s [PBI]	1 to 3	0.677	—
Know when I'm worried or upset^	1 to 4	0.584	—
Support and encourage my interests and activities^	1 to 4	0.537	—
Permissive parent/s [PBI]	1 to 3	0.505	—
Are strict about the time I come home in the evening^	1 to 4	—	0.681
Controlling parent/s [PBI]	1 to 3	—	0.646
Have strong views about my appearance^	1 to 4	—	0.561
Disapprove of some of my friends^	1 to 4	—	0.552

Notes :
[$] Principal Components Analysis with Varimax Rotation: K-M-O = 0.904. A two-factor solution explains 49% of the total variance. Z-scores for factors are calculated via the regression method.
[+] Four questions are excluded as separate: PBI-BC questions about autonomy and disabling behaviour; and parents' unrealistic expectations and parents' conflict.
^ 1 'Wholly Disagree', 2 'Partially Disagree', 3 'Partially Agree', 4 'Wholly Agree'.
[PBI-BC] 1 'Never', 2 'Sometimes', 3 'Often'.

Table 2 provides details of the questions and an analysis of the Siberian 15-year-olds' replies. The analysis identified two dimensions to the replies – representing dimensions of responsiveness (parents' support) and strictness (parents' behavioural control) – in agreement with theoretical models. Standardized factor scores were calculated for each dimension. The first parenting dimension was skewed to the right, towards higher support scores (gamma = -1.081); whereas the second parenting dimension was more symmetrically distributed about moderate control scores (gamma = -0.270).

Additionally, the two dimensions were used to separate out traditional-authoritarian parenting among other patterns in Asian-Russian Siberia. Scores that were 'not high' in relative terms on the parental responsiveness scale – that is, the lower two-thirds of support scores in the sample – and scores that were relatively 'high' on the parental strictness scale – that is, along with the upper third of control scores in the sample – were separated and then combined. Parental responsiveness that was not high was combined with strictness that was high and classified as 'traditional-authoritarian' as in an Asian parenting style (see, Figure 1). In total, 21 per cent of 15-year-olds described the pattern in their replies to the 14 questions about parent-adolescent relations (321 out of 1,494 complete replies; n = 45 missing data).

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[12] Shucksmith et al. (1995); Glendinning et al. (2003) and Klimidis et al. (1992).

4.3.2 Family socio-economic status: Details of a household's composition and parents' education, economic activities and occupations, and the household's material circumstances, were collected[13]. Socio-economic status (SES) is a composite – incorporating occupations, income and education – but there are considerable difficulties in gauging SES in the Russian context. Indeed, the previous Russian national census in 2002 neither asked for household occupations nor attempted a classification using standard schema. Sample numbers of single-parent families and those households whose parents had tertiary-level education were in line with census figures. Few families saw themselves as 'well off', even in Novosibirsk City, where the figure was only one-in-ten. Most young people characterized their circumstances 'as the usual'.

4.3.3 Adolescent wellbeing and mental health: Assessment of adolescent self-worth was based on a 10-item self-report scale, with scores from 0 to 30, modified from Rosenberg's original scale (1965); depressive mood was based on a six-item scale from 10 to 30 (Kandel & Davies, 1982); and psychological distress based on a 12-item scale from 0 to 36 (Goldberg & Williams, 1988). Versions of those scales were modified from ones used with adolescent samples in Western contexts (Glendinning, Nuttall, Kloep et al., 2003).

4.3.4 School adjustment: Reliability analysis of 15-year-olds' replies to a set of five inter-related questions about schooling showed the replies could be combined to make a scale, representing school adjustment (alpha = 0.757, k = 5, n = 1527). The scale had been identified from data reduction of a larger module of 16 questions[14]. The scale was standardized with a mean of zero and a standard deviation one. It was skewed to the right (gamma = -0.556), indicating positive orientations to school.

4.4 Plan of analysis

The multivariate analysis used in the study is designed to address the two questions posed at the outset about: what the forms that parent-adolescent relations take, and the particular patterns of parenting that are associated with positive adolescent adjustment.

4.4.1 For the first question, a repeated measures multivariate design is used to test differences in 15-year-olds' mean scores on the dimensions of parental support and control, separated across the three locations – Novosibirsk Oblast, Ulan-Ude and the Republic of Altai – and family backgrounds – ethnic Russian, Buriiat and Altay – while controlling for effects of gender, family make-up and socio-economic status. Preliminary one-way ANOVAs are also conducted (see, Table 4).

4.4.2 For the second question, separate sets of four multivariate analyses are conducted for each location – Novosibirsk Oblast, Ulan-Ude and the Republic of Altai. Each of the four measures of adolescent adjustment – self-worth, depressive mood, psychological distress and school adjustment – is regressed against the parental support and control scales (see, Table 5). All regression analyses control for the effects of gender, family make-up and socio-economic status (Amato & Fowler, 2002), as well as for urban and rural families, and ethnicity, as appropriate (see, Table 5).

4.4.3 Another scale was introduced into the regression models for the second question to test whether a more moderate level of parental control – characteristic of more democratic parent-adolescent relations – was associated with positive adolescent adjustment (see, Table 5). Lower scores on the scale correspond to reports of moderate control, whereas higher scores correspond to reports of both high and low control[15]. The scale tests for what is called a curvilinear effect, whereby moderate, rather than too much or too little, control by parents is positive (Barber, Stolz & Olsen, 2005: 31).

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[13] Material circumstances were assessed using a measure developed for use in the WHO-HBSC study, which included some 8,000 11 to 15 year-olds from across the Russian Federation (Currie et al., 2004).

[14] The five statements were: I like my school and studies; I feel part of the my school; the rules at my school are fair; my teachers help me; and I find what I study at school interesting and useful; with the replies coded as 1, Wholly disagree; 2, Partially disagree; 3, Partially agree; and 4, Wholly agree. Questions about schooling were adapted from Shucksmith et al. (1995) and Glendinning et al. (2003).

[15] The scale is introduced into the final multivariate regression analysis as a quadratic term [Control $\times$ Control] derived as the square of the linear parents' control scale [Control].

4.4.4 Finally, for the second question additional comparisons were made of self-worth, mental health and school adjustment scores of 15-year-olds who reported traditional-authoritarian patterns of parenting in each of the three locations with their contemporaries from other families. The aim was to test the hypothesis that traditional-authoritarian, collectivist-hierarchical social relations – most often associated in the literature with an East Asian parenting style – can also be beneficial in the Asian-Russian cultural context.

5. Results

The results reported in Table 3 are intended to provide a brief non-technical summary of the much more detailed results about the two dimensions of parenting reported in Table 2. Results show that more than 60 per cent of the sample said their parents were responsive (and always on hand to listen), whereas 50 per cent of the sample said that their parents were strict (in setting a night-time curfew). In brief, study results characterize 15-year-olds' reports of the Siberian family as supportive with moderate parental control as the norm. Those general results are consistent with the traditional Soviet model of parenting but differentiation is evident when parenting is broken down by locality and ethnicity.

Table 3 Siberian 15-year-olds' responses to the survey question with the greatest loading on each of the two factors used to characterize parent-child relations (n=1,527)

Column %-ages	Factor 1 – Parents' Support My parent/s are always on hand to listen to me.	Factor 2 – Parents' Control My parent/s are strict about the time that I come home in the evening.
1. Wholly Disagree	5%	12½%
2. Partially Disagree	10%	12½%
3. Partially Agree	23%	25%
4. Wholly Agree	62%	50%
	100%	100%

The results reported in Table 4 illustrate the mean differences among ethno-social groups from the three locations[16] on the parental responsiveness and strictness scales (as set out in Table 2, both jointly and separately for each parenting dimension). Different combinations of perceived support and control can be seen among the city and rural samples in Novosibirsk Oblast, the sample as a whole in Ulan-Ude, and the ethnic Russian and Altay samples in the rural Republic of Altai. Importantly, results make allowances for gender, family make-up and family socio-economic status. One of five patterns of parenting is the norm among each ethno-social group in the three locations: firstly, permissive parenting among ethnic Russian families in Novosibirsk City; secondly, democratic parenting among ethnic Russian families in the rural Oblast; thirdly, indulgent parenting among ethnic Russian and Buriiat families in urban Ulan-Ude; fourthly, authoritarian parenting among ethnic Russian families in the rural Republic of Altai; and lastly, a non-Western indigenous pattern of moderate parental support combined with very strict control among Altay families.

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[16] As described by the 'Location & Ethnicity' variable in Table 4.

Table 4 Siberian 15-year-olds' accounts of parenting by location and ethnicity[$]

| Mean (S.D.) | Location & Ethnicity^ | | | | | | One-way ANOVA p-value |
| | Novosibirsk Oblast | | Ulan-Ude | | Republic of Altai | | |
	Big City Russian	Rural Russian	City Russian	City Buriiat	Russian	Altay	
Parents' Support	0.059[a]	0.157[b]	0.173[b]	0.231[b]	-0.199[c]	-0.018[a]	F=6.381
	(0.939)	(0.970)	(0.921)	(0.906)	(1.030)	(0.988)	p<.001**
Parents' Control	-0.166[d]	0.034[e]	-0.107[d]	-0.317[d]	0.106[f]	0.232[f]	F=8.023
	(0.943)	(1.022)	(1.017)	(1.003)	(0.964)	(0.951)	p<.001**
n =	276	146	146	144	365	204	
Parenting Approaches[+]	'Perm-issive'	'Demo-cratic'	'Indul-gent'	'Indul-gent'	'Author-itarian'	'Trad-itional'	
Support×Control	[Md×Lo]	[Hi×Md]	[Hi×Lo]	[Hi×Lo]	[Lo×Hi]	[Md×Hi]	

Notes :

[$] Reports of ethnic Russian youth from the major regional city of Novosibirsk and their rural ethnic Russian counterparts from surrounding Novosibirsk Oblast; of ethnic Russian and Buriiat youth from the regional city of Ulan-Ude, capital of the Republic of Buriiatia; and of ethnic Russian and Altay youth from settlements across the rural Republic of Altai.

^ Multivariate analysis of accounts of parenting, controlling for gender, family make-up, education and socio-economic circumstances: Parenting × Location & Ethnicity, p <0 .001**

[+] Differing combinations of lower, moderate and higher level of parental support and control.

'Neglectful' parenting [low support and control combined, Lo×Lo] is not the predominant approach reported by ethnic Russian, Buriiat or Alay youth in any of the locations.

[a, b, c; d, e, f] Homogeneous subsets from post-hoc multiple comparisons of means, Tukey's HSD-test.

The results reported in Table 5 demonstrate that parental support was positively associated with all four measures of adolescent adjustment across the three locations, consistent with a traditional Soviet model. However, the effects of parental control varied among locations. Self-worth and psychological wellbeing were consistently associated with moderate control in Ulan-Ude, where a democratic approach was optimal in the context of indulgent parenting norms. Positive self-worth was associated with low-to-moderate control and depressive mood scores were associated with high control in Novosibirsk Oblast. Thus, an indulgent or democratic approach was optimal in the context of permissive or democratic parenting norms. There was a negative association between high control and self-worth and psychological wellbeing in the Republic of Altai. Thus, an indulgent approach was optimal in the context of authoritarian parenting norms. School adjustment was unrelated to levels of parental control in Altai. Indeed, parental strictness was unrelated to school adjustment in all three locations.

Table 5 Multivariate regression analyses of Siberian 15-year-olds' social wellbeing and mental health against accounts of parenting from three locations

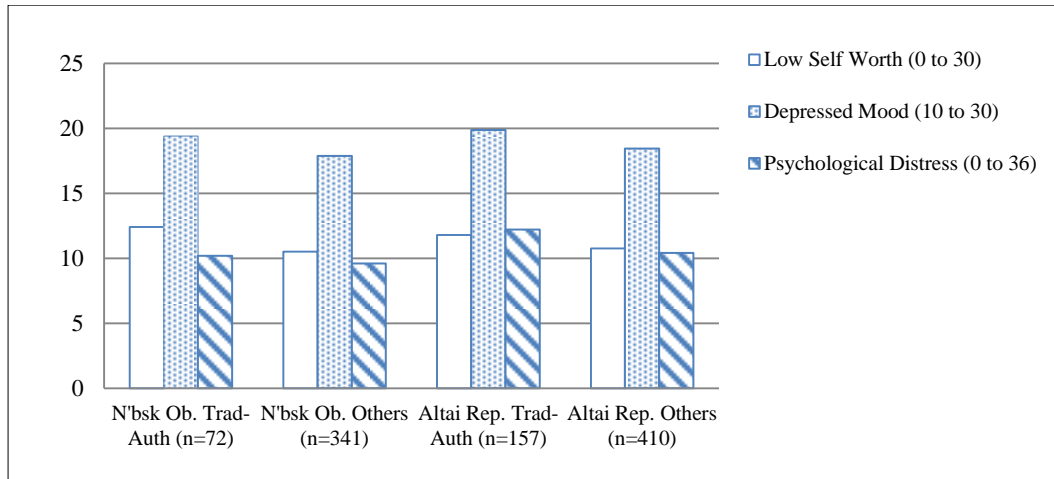| β-weights^ p-value	Wellbeing and mental health$			
	Self-worth	Depressive mood	Psychological distress	School adjustment
Novosibirsk, n=414				
Parents' Support	0.204 .001**	-0.179 .001**	-0.214 .001**	0.322 .001**
Parents' Control	-0.158 .001**	0.181 .001**	0.030 .546	-0.070 .154
Control×Control+	-0.123 .012*	-0.007 .885	-0.047 .347	-0.011 .825
Multiple R =	0.396	0.413	0.344	0.362
Ulan-Ude, n=290				
Parents' Support	0.150 .009**	-0.151 .010*	-0.129 .030*	0.218 .001**
Parents' Control	0.019 .753	0.070 .263	0.008 .895	0.046 .488
Control×Control+	-0.123 .048*	0.178 .005**	0.132 .046*	-0.071 .295
Multiple R =	0.291	0.284	0.232	0.267
Altai Republic, n=563				
Parents' Support	0.169 .001**	-0.144 .001**	-0.232 .001**	0.323 .001**
Parents' Control	-0.090 .045*	0.251 .001**	0.115 .005*	0.057 .152
Control×Control+	-0.047 .269	0.018 .651	0.006 .899	0.078 .055
Multiple R =	0.261	0.384	0.336	0.362

Notes

$ Of ethnic Russian youth from Novosibirsk City and surrounding rural Oblast; ethnic Russian and Buriat youth from Ulan-Ude City; and ethnic Russian and Altay youth from across the rural Republic of Altai.

^ Adjusted β-weights, after allowing for the effects of gender, family make-up, education, socio-economic circumstances and ethnicity on 15-year-olds' wellbeing and mental health.

+ Lower scores on this scale correspond to 15-year-olds' reports of moderate parental control, whereas higher scores correspond to reports of high or low levels of control.

Figure 2 illustrate the results of detailed multivariate regression analyses with a particular example that compares the traditional-authoritarian Asian pattern with other families[17]. The figure compares the mean scores of the two groups of adolescents on three measures, low self-worth, depressed mood and psychological distress. In Novosibirsk Oblast, higher scores on the low self-worth and depressed mood scales were more likely to be associated with the traditional-authoritarian pattern compared with other families (p = 0.002 and p = 0.003) but differences were statistically insignificant for psychological distress scores (p = .245). In the Republic of Altai, higher scores were more likely to be associated with the traditional-authoritarian pattern compared with other patterns on all three measures (p = 0.019, p < 0.001 and p = 0.003). Ulan-Ude had few reports of a traditional-authoritarian pattern to make comparisons (1-in-8, n = 35) but there were almost no differences between mental health scores using the available data. It is clear that reports of a traditional-authoritarian pattern of parenting were not associated with better adolescent adjustment scores, unlike results for East Asian adolescent samples.

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[17] Unlike the results of the detailed multivariate regression analyses, the illustrative results of the illustrative presented in Figure 2 do not allow for any effects of socio-economic status.

Figure 2 Siberian 15-year-olds' wellbeing and mental health, comparing traditional-authoritarian parenting with other patterns in Novosibirsk Oblast and Republic of Altai

6. Discussion

The study has well-rehearsed limitations. Two considerations, in particular, need to be taken into account. First, although the study results may have been influenced by having 15-year-olds report on their mothers' and fathers' behaviour in a self-completion questionnaire survey format, some adolescents also participated in focus-group discussions and one-to-one interviews about life in Siberia, including family life. Results were triangulated. In addition, adolescent self-reports have already contributed much to our understanding of family processes (Gray & Steinberg, 1999; Steinberg et al., 1994), and also, similar results have been obtained on the effects of different approaches to parenting in spite of different methods of data collection, including adolescents' self-reports (Baumrind, 1991; Lamborn et al., 1991; Steinberg et al., 1994). Second, the study was cross-sectional and causal relationships and issues of directionality cannot be tested. The first consideration relates to answers to the first question in the study. The second relates to answers to the second question.

As to first question, no general Russian parenting style as the norm was found across the region. The study finds instead that one of five patterns of parent-adolescent relations appears to represent the norm among different ethno-social groups from the three locations in Siberia. The first and third patterns relate to urban contexts, that is: relatively permissive parenting in the major regional capital of Novosibirsk; and indulgent parenting in the Buriat capital of Ulan-Ude. The second of the five local patterns is more democratic, combining parents' support with more moderate control, which is the norm in rural Novosibirsk (Glendinning et al., 2004). That rural pattern, and the urban pattern in Ulan-Ude, can be read as variants of the traditional Soviet model emphasizing support, whereas the moderate support reported by adolescents from urban Novosibirsk indicates change rather than continuity (Grigorenko & Sternberg, 2000). All three patterns are unlike a traditional-authoritarian Asian pattern. However, the fourth pattern suggests that strict, non-supportive authoritarian parenting is the norm among ethnic Russian families in the rural Republic of Altai (Glendinning et al., 2004: 46). The fifth and final pattern, which is the norm among ethnic Altay families, seems distinctively Asiatic. It combines moderate support with high levels of control in parenting through training (Chao, 1994).

As to our second question – about the effects of different parenting patterns on adolescent adjustment – the benefits of parental support were ubiquitous among all ethno-social groups across the three locations. However, the effects of parents' control varied among locations. In Novosibirsk Oblast, an indulgent or democratic pattern was optimal for wellbeing and positive mood in a context of relatively permissive or democratic parenting norms. In Ulan-Ude, a more democratic approach was optimal for adolescent wellbeing and mental health in a context of relatively indulgent parenting norms. In the Republic of Altai, an indulgent approach was again optimal for adolescent wellbeing and mental health in a cultural

context of traditional-authoritarian parenting norms. Thus, indulgent or democratic patterns were associated with positive social-psychological adjustment across groups and locations. School adjustment was unrelated to reports of parental control in the Republic of Altai where a connection between family strictness and school success in the Asian-Russian context might have most been expected. Studies of parenting in other Asian cultural contexts have found that authoritarian patterns had particular benefits for school adjustment (Chao, 2001; Chao & Tseng, 2002), though apparently not in Siberia. Parental strictness was unrelated to school adjustment in all three locations.

The finding that permissive parenting was the norm in the major regional centre of Novosibirsk is consistent with the liberalization of social relations, with moderate rather than high parental support, and emphasis on self-direction. Urban and rural diversity across the other study locations is consistent with the persistence of the traditional Soviet parenting model (high support) or a traditional Asian parenting model (high control). In that way the study shows that Westernization, or global cultural influences, where those were evident, has not led to the same patterns of social relations everywhere. In the case of the indigenous Altaic parenting pattern identified in the study, globalization may well support, rather than undermine, the maintenance of ethno-social cultural differences locally, such as among indigenous Altay families in remote rural locations (Popkov, 2012)[18]. Nonetheless, irrespective of regional diversity, the study found that adolescent adjustment throughout the region was associated with reports of more indulgent or democratic parenting. Notably, that was instead of Anglo-Saxon authoritative or Asian authoritarian parenting. Indulgent or democratic parenting that includes high parental support combined with low to moderate control is also found to be most effective in Western European societies rather than the United Kingdom and United States.

7. Conclusion

The study contains no historical data for direct comparison with parenting practices and their effects on adolescent socialization and adjustment in the Soviet or immediate post-Soviet era. Nonetheless, it finds that less controlling and more responsive parent-adolescent relations are associated with positive feelings of self-worth and psychological adjustment, compared with permissive, authoritative or authoritarian patterns, irrespective of location and ethnicity. Research says that indulgent or democratic patterns are also beneficial in Western Europe but less in Anglo-Saxon contexts of the United Kingdom or United States. To conclude, the study finds no evidence to suggest that strict parenting would benefit Asian-Russian adolescents – whether in the form of American authoritative or Asian authoritarian parenting. Importantly, the study's design and results have made allowances for the differing make-up and socio-economic circumstances of young people's families in post-Soviet Siberia.

The study could be adapted to undertake research with adolescents from urban and rural families in other Asian cultural contexts, such as in Thailand[19]. Arguments are current there about the influences of global 'mass' culture and children's lack of knowledge of traditional Thai Buddhist values. It would be interesting to know whether Thai (and Asian) family values have benefits over Western parenting patterns for adolescent adjustment and schooling in the Thai cultural context.

8. Acknowledgements

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[18] Global movements may also act to promote local identity and support ethnic nationalism among indigenous peoples in Siberia, such as Altay, as opposed to the state's version of Russian cultural identity and values, with which local versions may or may not agree (Popkov, 2012). The situation is complex in Siberia because local identity and ethnicity were re-constructed by the Soviet state (Anderson, 2000).

[19] Weisz, McCarty, Eastman et al. (1997) and Weisz, Weiss, Suwanlert et al. (2006) discuss issues of researching childrearing, development and problems of adjustment in Thailand.

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Technological Innovation, CEO Characteristics and Firm Cost Efficiency:
An Application of the Stochastic Cost Frontier Model to Thai Manufacturers

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Abstract

This study employs the World Bank's 2006 Enterprise Survey (Manufacturing Survey) and the stochastic cost frontier and cost inefficiency effects models to empirically examine the significant sources of technological innovation and CEO characteristics, as well as other factors related to the cost efficiency of Thai manufacturers. Technological innovation, CEO education and firm size are significantly and positively related to Thai manufacturers' cost efficiency. Their production costs also see decreasing returns to scale with a high level of cost inefficiency. In addition, the maximum likelihood tobit regression model is used to empirically investigate the determinants of CEO characteristics and other factors affecting Thai manufacturers' technological innovation. The results reveal that CEO education and gender, firm size, exports and the supply of professional workers have a significant and positive correlation with a firm's technological innovation. Empirically evidence-based policies and recommendations to enhance the cost efficiency and technological innovation of Thai manufacturers are provided.

Keywords: technological innovation, CEO characteristics, cost efficiency, Stochastic Frontier Analysis

1. Introduction

Thailand has become a middle-income country with a small, open economy. Its economic performance has been expanding through exports since the 1980s (OECD, 2013), but it now faces a middle-income trap as it comes under pressure from low-cost, more dynamic economies such as those in China, India, Viet Nam and Indonesia. It is also threatened by more technological, learning-intensive economies such as those in Singapore, Korea, Hong Kong, China and Taipei (OECD, 2013, p. 255). In addition, Thailand's economic performance, which is based on manufacturing exports, has been lower than that of other Southeast Asian countries, and its economic expansion is directly threatened by competition in labour-intensive manufactured goods from countries such as India, China, Viet Nam and Indonesia. Thailand's innovation performance is relatively below that of leading high-income countries and increasingly weaker than that of middle-income Southeast Asian nations (OECD, 2003, p. 262). Technological capabilities, research and development (R&D) spending, and the number of patents and science and technology workers in Thailand are relatively lower than those of its main competitors such as Malaysia and Singapore (OECD, 2013). More importantly, during the period 2005-2010 the growth rate in Thailand's labour productivity declined considerably, from 5.9 percent to 2.1 percent. Similarly, total factor productivity growth fell from 3.6 percent during 1975-1990 to 3.2 percent between 2005 and 2010 (see APO (2013)). The lack of a large, skilled workforce in Thailand worsens the problem of insufficient human capital, which ultimately constrains innovation. Moreover, education and entrepreneurs increasingly become an important factor in enhancing a country's productivity and efficiency, since the shortage of technological innovation, engineers, skilled technical workers and local entrepreneurs can limit future productivity growth as mentioned in Liefner and Schiller (2008) and OECD (2013). Focusing on Thailand's innovative performance, the OECD (2013, p. 262) suggests that the country is far below that of leading high-income economies and is falling further behind that of other middle-income nations in Southeast Asia because it has one of the lowest levels of R&D spending and workers in the region.

2. Objectives

Given the prominent problems mentioned above, this paper aims to empirically investigate: i) the significant factors that affect a firm's cost efficiency and ii) the significant sources of technological

innovation that have not been empirically examined in the context of Thai manufacturing enterprises. This study specifically examines the significant impact of technological innovation and CEO characteristics (education, gender, nationality and experience) on a firm's cost efficiency, as well as other significant factors such as firm size and age, domestic ownership and unskilled foreign labour. In contrast, studies such as Charoenrat et al. (2013) have focused on a firm's performance only as measured by technical efficiency. Finally, factors such as i) CEO characteristics, ii) exports, iii) professional workers, iv) firm size and v) domestic ownership affecting Thai manufacturers' technological innovation are also examined; these factors have not been investigated empirically in other studies of Thailand. This paper also provides evidence-based policy implications and recommendations to enhance Thai manufacturers' efficiency and competitiveness. This paper's structure is as follows: Section 3 provides the background of the Thai manufacturing sector and its importance; Section 4 reviews the literature; Sections 5 and 6 provide the methodology and empirical models used in this study, respectively; Section 7 examines the study's data source and data classification; Section 8 provides the hypothesis tests and empirical results; and the final section contains the conclusion and policy implications.

3. Thai Manufacturing Sector and Its Importance

Thailand is a lower middle-income country with a small, open economy (Punyasavasut, 2008). The economy's GDP structure has changed gradually over the past decades. The manufacturing sector contributed significantly to Thailand's economy, with its share of GDP gradually increasing from 27 percent in 1990 to 29 percent in 2012 (NESDB, 2014). The manufacturing sector has been one of the most important sectors among East and Southeast Asian countries, as a significant contribution to regional economic growth since the early 1980s arose from the rapid expansion in manufacturing exports (Jongwanich, 2007). Exports play a significant role in the Thai economy; its economic expansion before the Asian financial crisis was underpinned by rapid export growth[1] (Athukorala and Suphachalasai, 2004). Agricultural and processed food were the major goods exported from Thailand between 1981 and 1985, accounting for almost half of annual average export value (Athukorala and Suphachalasai, 2004). Between 1991 and 1995, a substantial shift occurred from traditional agricultural exports[2] toward manufactured exports. This upward trend continued with manufactured exports accounting for 86.31 percent of total export value during the period 1996 to 2012. According to the Ministry of Industry (2009), a significant contribution to economic growth has also resulted from export-oriented large enterprises. Goods manufactured with medium and high technology comprise the majority of Thailand's manufacturing exports. Manufacturers, however, still import large quantities of components, capital goods and technology from foreign markets for their export production processes. This implies that manufacturers in Thailand have a comparative advantage in using cheap labour and capital even though they must import components and technology to produce for export (ILO, 2012). Punyasavasut (2008) also points out that exports and foreign direct investment (FDI) are the main drivers of Thailand's industrialization. Manufacturing FDI accounted for 47.85 percent of FDI between 2006 and 2012 (BOT, 2014a).

Regarding the number of employees classified by economic activity in 2012, manufacturing contributed the most to Thailand's employment (OSMEP, 2013). The sector employed 4.62 million workers out of 14.66 million workers, or 31.53 percent of national employment, followed by wholesale, retail trade and repairs of motor vehicles (29.84 percent); hotels and restaurants (8.37 percent); and real estate activities (8.06 percent). As for the number of enterprises classified by economic activity, manufacturing had the second-largest share of enterprises at 17.52 percent, followed by hotels and restaurants (10.98 percent); real estate activities (9.55 percent); and other community, social and personal service activities (8.53 percent) (OSMEP, 2013). In terms of labour productivity, manufacturing enjoys a high level compared with other sectors. The labour index per employed persons in manufacturing averaged about 143 between 2006 and

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[1] A number of empirical studies of the region, however, fail to reveal a statistically significant association between trade/exports and economic growth (Sinha, 1999; Ekanayake, 1999).

[2] Even though manufacturing contributed most to this development, agricultural products still accounted for a fairly important share of exports even though its relative importance was diminishing significantly (Lombaerde, 2008, p. 250).

2012, followed by transport, storage, and communication (130.6); other community, social and personal service activities (125.6); and electricity, gas, and water supplies (122.2). Financial intermediation had the highest level of labour productivity, with the least level of labour productivity found in construction (BOT, 2014b).

In contrast, Thailand's productivity for value-creation production is still relatively low, since manufacturing development has relied heavily on value-added production rather than value-creation production. This is due to the lack of accumulated knowledge, endogenous efforts, a strong value chain and synergy. According to Thailand's industrial master plan (2012-2030), Thai manufacturing enterprises enjoy a comparative advantage with cheap labour and foreign direct investment without enhancing their productivity. They lack (i) new technology, (ii) product and process innovation, (iii) financial access, (iv) skilled labour, (v) raw materials, (vi) high value-added production and (vii) managerial skills (Ministry of Industry, 2012). More importantly, business segments have been under pressure from the so-called nut-cracker effect, implying that Thailand is now trapped between countries with lower price competitiveness, such as China, Viet Nam and Indonesia, and countries with higher value-added production and services (OSMEP, 2007). Similarly, the World Bank (2008) points out that with intensifying global competition and higher commodity prices, Thailand confronts a serious challenge to sustain its growth and become a higher-income country while escaping the middle income trap[3]. At present, Thailand is in a difficult competitive position as it cannot continue to depend on cheap labour for its competitiveness; therefore, it must move up the technology hierarchy and improve the efficiency and productivity of its enterprises. Measuring the sources of cost efficiency and inefficiency of firms will be emphasized: it is important to examine how firms can enhance their efficiency, which has a direct impact on the economy's growth and will be discussed in later sections. A review of empirical studies, however, is crucial to establish this study's foundational knowledge.

4. A Review of Literature

4.1 Innovation and firm performance

4.1.1 Definition of innovation

According to the OECD (2005, p. 46), an innovation is defined as "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations." It indicates that the minimum requirement for an innovation is that the product, process, marketing method or organizational method must be new or significantly improved by a firm (OECD, 2005, p. 48). Similarly, technological innovation comprises new products and processes and significant technological changes of products and processes (OECD, 2013). Innovation is essential for increasing productivity in most developing nations so as to increase per capita income levels similar to those of the richest nations, since it can lead to a more effective use of productive resources. In addition, the transformation of new ideas into new economic solutions through new products, processes and services is fundamental to a firm's sustainable competitive advantages (Crespi and Zuniga, 2011).

4.1.2 Innovation

According to Lee (2011), innovation plays a crucial role in modern growth theories such as those of Solow (1956), Romer (1986) and Romer (1990). Solow (1956) suggests that exogenous technological innovation augments labour productivity to sustain long-term growth. Romer (1986) states that technological innovations are modelled endogenously by incorporating spill-overs from investment in physical and human capital (see Lee (2011)). Focusing on firm-level analysis, several empirical studies such as Cohen and Klepper (1996), Griffith et al. (2006), Mairesse & Mohnen (2010), Díaz and Sánchez (2014), Sánchez and Díaz (2013), Lee (2011), Cassiman et al. (2010) and Crespi and Zuniga (2011) have

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[3] Thailand had moved rapidly from a low-income country to a middle-income country from the 1970s to mid-1990s due to rapid growth in per capita income. However, in recent years Thailand's real GDP growth has slowed and has lagged that of other developing countries in East Asia (World Bank Office-Thailand, 2008, p. 4).

found a positive association among R&D, innovation and productivity in different industrialized countries as follows: Griffith et al. (2006) use firm-level data from the internationally harmonized Community Innovation Surveys (CIS3) during 1998-2000 to examine the role of innovation on productivity across four European countries (France, Germany, Spain and the U.K.). Their econometric results suggest that the systems driving innovation and productivity are remarkably correlated across these countries. Díaz and Sánchez (2014) use a micro-panel data set of Spanish manufacturing enterprises for the years 2004 to 2009 to simultaneously estimate a stochastic frontier production function and inefficiency determinants. Their results reveal that innovative firms are more efficient than non-innovative firms. In addition, small and medium-sized enterprises tend to be more efficient than large enterprises. Cohen and Klepper (1996) employ sales data from the FTA's Line of Business Program. They find that process innovation is less saleable and has less growth than product innovation. Sánchez and Díaz (2013) use the 1990 Innovation Survey of French manufacturing firms covering 1986-1990 to study the links between productivity, innovation and research at the firm level. Their results suggest that firm productivity correlated positively with higher innovation output. Lee (2011), using firm-level datasets of three national surveys, found that process innovation and product innovation are not significantly correlated with productivity in the case of Malaysian manufacturing enterprises. Cassiman et al. (2010) use a panel of Spanish manufacturing small and medium-sized firms between 1990 and 1998 to investigate the relation between innovation, productivity and export decisions. They find strong evidence that product innovation affects productivity and induces small non-exporting firms to enter the export market. Crespi and Zuniga (2011) employ micro data from innovation surveys to examine the determinants of technological innovation and their impact on firm labour productivity across Latin American countries (Argentina, Chile, Colombia, Costa Rica, Panama and Uruguay). Their results reveal that firms in all countries that invest in knowledge are more likely to introduce new technological advances that can increase labour productivity than those that do not. The review of literature reveals that entrepreneurs, especially CEOs, can play a crucial role in determining an enterprise's progress, as discussed below.

4.2 CEO Characteristics and Firm Performance

The chief executive officer (CEO) plays an important role in leading an enterprise in line with its board of directors' objectives. A CEO's abilities can be characterized into factual attributes such as education, work experience, nationality and gender, as well as non-quantifiable characteristics such as leadership and team-building skills (Bhagat et al., 2010). Bhagat et al. (2010) point out that the measurement of a CEO's abilities is a difficult, imprecise and expensive process. Therefore, a number of empirical studies have examined the association between a firm's performance and the characteristics of its CEO's characteristics (education, experience, gender and nationality) as follows:

4.2.1 CEO education

Education is often used as a proxy for human capital in the literature, such as in Barro and Lee (2010), since it is a known driver of production and economic growth. Barro and Lee (2010) use a sample of the largest 1,500 U.S. firms between 1992 and 2007. They find no evidence of a systematic association between CEO education and long-term firm performance. Jalbert et al. (2002) use a large sample of firms obtained from the Forbes 800 list between 1987 and 1996 to examine firm performance (ROA and Tobin's Q) based on the CEO's educational background. They empirically reveal mixed results that the quality of a CEO's graduate school is negatively associated with return on assets, but positively associated with Tobin's Q.

4.2.2 CEO experience

Another CEO characteristic is the amount of experience as a CEO in a firm's business sector; an experienced CEO can help turn around a troubled firm (Elsaid et al., 2011). Wasserman et al. (2001) also pointed out that CEOs with long tenure are able to establish a management team who can enhance firm performance through capable, effective collaboration. Jalbert et al. (2002) reveal that a CEO with long tenure has a significant and positive association with return on assets, but a significant and negative correlation is found between a CEO with long tenure and Tobin's Q. Bhagat et al. (2010) also find that

CEO tenure has a significant positive association with firm performance as measured by Tobin's Q, but a significant negative association was found for firm performance measured by return on assets.

4.2.3 CEO gender

A CEO's gender can affect a firm's operations management, which in turn can affect its performance due to gender differences. A number of empirical studies have also examined the relationship between a CEO's gender and firm performance (Khan and Vieito (2013) and Lam et al. (2013)). For example, Khan and Vieito (2013) use a panel data of U.S. firms from 1992 to 2004 to evaluate whether firms managed by female CEOs show the same performance as firms managed by male CEOs. Their empirical results reveal that a firm's risk level is smaller when the CEO is a female, resulting in a performance increase as measured by return on assets. Lam et al. (2013), however, find no such performance link for Chinese-listed enterprises.

4.2.4 CEO nationality

More interestingly, a CEO's national origins can affect the manner in which the CEO operates a firm, which in turn can affect its performance due to differences in cultural backgrounds (Jalbert et al., 2007). Jalbert et al. (2007) use the Forbes 800 CEO compensation data from 1991 to 1997 to investigate the effect of a CEO's national origin on a firm's performance. They suggest that CEOs born in Central and South America and those born in Australian and New Zealand earn a higher return on assets than those born in other countries. Factors other than CEO characteristics that significantly affect a firm's performance are discussed in sections 4.3, 4.4 and 4.5.

4.3 Firm size and firm performance

Firm size can contribute to firm efficiency due to the economies of scale and scope of larger enterprises (Charoenrat et al., 2013). Several empirical studies have explored the effects of firm size and age on efficiency (Charoenrat et al. (2013); Kim (2003); Alvarez and Crespi (2003)). For instance, Charoenrat et al. (2013) use cross-sectional data from the 2007 manufacturing census to investigate the significant sources of SMEs' technical efficiency. They reveal that firm size is significantly and positively related to technical efficiency. Similarly, Kim (2003) finds that firm size has a significant and positive effect on the technical efficiency of Korean manufacturing industries.

4.4 Firm age and firm performance

Firm age can contribute significantly to firm efficiency, since older firms learn from past mistakes through the learning-by-doing process and improve managerial skills from accumulated experience (Charoenrat et al., 2013). Several empirical studies have also investigated the correlation between firm age and performance as measured by efficiency (Charoenrat et al. (2013); Tran et al. (2003); Le and Harvie (2010)). Charoenrat et al. (2013) reveal mixed results that firm age is positively related to technical efficiency of aggregate Thai SMEs and sub-manufacturing industries (SITC 0 and SITC 5). Estimates of firm-age coefficients in sub-manufacturing industries such as SITC 1, SITC 7 and SITC 8, however, are not significantly correlated with technical efficiency. Firm age is also negatively related to technical efficiency of SMEs in SITC 6. Similarly, Tran et al. (2003) reveal mixed results between firm age and technical efficiency in the case of non-state manufacturing industries in Viet Nam.

4.5 Foreign unskilled labour

Industrialization demands more foreign workers in a country's labour force; therefore, foreign labour is likely to affect the domestic labour market and productivity. Several studies have investigated the association between foreign workers and productivity, such as Noor et al. (2011), Llull (2008) and Peri (2009). Noor et al. (2011) find that foreign labour is positively and significantly associated with labour productivity in the Malaysian manufacturing sector. Llull (2008) also suggests that immigration has a significantly negative impact on productivity, but a positive impact on labour participation and employment in OECD countries. Peri (2009) finds no evidence across U.S. states that migrants crowd out domestic employment, but they help promote efficient task specialization that increases the total factor of production.

4.6 The Determinants of innovation

Several studies have empirically investigated the internal and external determinants of innovation (Romijn and Albalajejo (2002); Lee (2011); Bhattacharya and Bloch (2002); de Mel et al. (2009)). Romijn and Albalajejo (2002) identify possible internal and external sources of innovation capability as follows: potentially external sources can be classified by i) the networking intensity, ii) the proximity advantages related to networking and iii) the receipt of institutional support. Moreover, potentially internal sources can be, for instance, i) the professional background of founders or managers, ii) the workforce's skills and iii) the internal effort to improve technology. A number of empirical studies examined these internal and external sources of innovation capability.

Lee (2011) explores the relationship among trade, productivity and innovation in Malaysian manufacturing. He finds that capital intensity and human capital significantly affect the productivity of both innovating and non-innovating firms. Romijn and Albaladejo (2002) explore the determinants of innovation capability in small U.K. electronics and software firms. Focusing on internal determinants of innovation capability, an owner or entrepreneur with an academic degree is not associated with high innovation capability. Prior work experience in a scientific environment, however, is found to have a significant positive correlation with innovation capability as measured by the number of patents and the product innovation index. Research and development, as measured by R&D expenditure per employee and as a percentage of sales, is also found to have a significant and positive impact on innovation capability. With regard to external drivers of innovation, frequency of interaction and proximity advantage related to interaction with R&D institutions as well as suppliers are found to have a significantly positive association with innovation capability.

Bhattacharya and Bloch (2002) reveal that i) firm size, ii) R&D intensity, iii) market structure and iv) trade shares are significantly related to innovative activity in small to medium-sized Australian manufacturing businesses. De Mel et al. (2009) use the Sri Lanka Longitudinal Survey of Enterprise (SLLSE) of more than 2,800 firms to empirically investigate the determinants of innovation in micro, small and medium-sized firms. They classify innovation by i) product innovation, ii) process innovation, iii) marketing innovation and iv) organization innovation. The results in their study reveal that more than one-quarter of microenterprises engage in innovation. Firm size is strongly found to have a significant and positive correlation with process and organization innovations. More interestingly, they reveal that three measures of human capital (an owner's years of education, higher digit-span recalls and higher scores on the Raven test) have a significantly positive association with the likelihood of innovation. The owner's optimism is positively correlated with firm innovation. However, the owner's gender, age and marital status are not significantly related to firm innovation.

Several studies have found that firms participating in foreign markets are likely to be more innovative than those that do not export (Palangkaraya (2012); Damijan et al. (2010); Girma et al. (2008)). In other words, exporting firms can benefit from the learning-by-exporting hypothesis. For instance, Palangkaraya (2012) finds that exports are significantly and positively related with innovation in Australia's small and medium-sized enterprises. Damijan et al. (2010) find that exports improve a firm's efficiency by stimulating process innovations in Slovenia's manufacturing and non-manufacturing firms. Girma et al. (2008) find that past exporting experience improves the innovative capability of Irish firms, but not of British firms; the difference lies in cross-country exporting patterns that Irish firms have because of their greater interface with OECD markets. Skilled labour also plays a vital role in enhancing innovation. Several empirical studies have found that skilled labour relates significantly to innovation. For instance, Kerr et al. (2013) concludes that highly skilled immigrants play an important role in promoting U.S. innovation and entrepreneurship. Albaladejo and Romijn (2000) show that the skills of a workforce are significantly and positively associated with innovation capability in small U.K. firms.

All reviewed literature will be used to identify significant variables in the models used in this study, but a review of methodology is also important to identify the empirical models used for this study's analysis, as discussed in the next section.

5. Methodology

5.1 The Measurement of cost efficiency

In the presence of input price information obtained from the 2006 manufacturing survey, this paper can measure the cost efficiency that can be estimated by employing, for example, the Cobb-Douglas cost function. Cost efficiency can be estimated using input-orientated measures that analyze how much costs can be minimized by proportionally reducing all input prices without changing the output produced (Coelli et al., 2005). The concept of cost efficiency can be explained in the graphical presentation as shown in Figure 1.
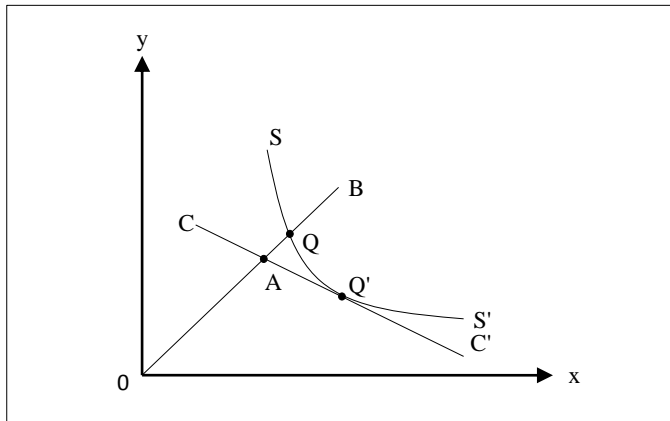
Figure 1 Technical and allocative efficiencies from an input orientation
Note: Point B is associated with the vector of input x; Point Q is associated with the vector of input $\hat{x}$; Point Q' (or A) is associated with the vector of input x*; the vector of input prices (w) is given to estimate cost efficiency, but it cannot be observed in Figure 1.
Source: Farrell (1957, p. 254)

When the information of input prices is available, the vector of input prices (w) is introduced and the observed vector of inputs (x, $\hat{x}$, and x*) is associated with point (B), the technical efficiency point (Q) and the cost-minimising point (Q'), respectively, as indicated in Figure 1 (Coelli et al., 2005, p. 53). Cost efficiency, therefore, is technically defined as the ratio of input costs (w) associated with input vectors, x (at point B) and x* (at point Q' or A). Therefore,

$$\text{Cost Efficiency} = \frac{w'x^*}{w'x} = \frac{OA}{OB} \tag{1}$$

Furthermore, the product of technical and allocative efficiency measures can equal the total cost efficiency (CE) as shown in Equation (2) (Coelli et al., 2005, p. 53):

$$TE \times AE = \left(\frac{0Q}{0B}\right) \times \left(\frac{0A}{0Q}\right) = \left(\frac{0A}{0B}\right) = CE \tag{2}$$

where, technical efficiency and allocative efficiency[4] can be estimated using the isocost line (CC') as follows:

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[4] Technical efficiency refers to the ability of a firm to obtain maximal output from a given set of inputs, and allocative efficiency reflects the ability of a firm to use the inputs in optimal proportions, given their respective prices and production technology (Coelli et al., 2005, p. 51).

$$\text{Technical Efficiency (TE)} \quad = \frac{w'\hat{x}}{w'x} = \frac{0Q}{0B} \tag{3}$$

$$\text{Allocative Efficiency (AE)} = \frac{w'x^*}{w'\hat{x}} = \frac{0A}{0Q} \tag{4}$$

According to Equations (1) and (2), the defined concept of cost efficiency will be used to measure a firm's performance in this study, but a stochastic cost frontier model must be discussed as it is needed to measure a firm's cost efficiency as discussed in section 5.2 below.

5.2 Stochastic cost frontier model

When price information is available and firms are assumed to minimize their costs, cost efficiency can be estimated using a cost frontier that can be written in the general form as follows (Coelli et al., 2005):

$$c_i \geq c(w_{1i}, w_{1i}, iw_{Ni}, q_{1i}, q_{2i}, ..., q_{Mi}) \tag{5}$$

where c_i is the observed firm's cost i; w_{ni} is the nth input price; q_{mi} is the mth output; and c(•) is a cost function that is non-decreasing, linearly homogeneous and concave in prices (Coelli et al., 2005). Equation (5) indicates that the observed cost is greater than or equal to the minimum cost. According to Equation (5), a functional form represents a cost function c(•). The Cobb-Douglas cost frontier model is applied in this study, which can be written in Equation (6) as follows (Coelli et al., 2005):

$$lnc_i \geq \beta_0 + \sum_{n=1}^{N} \beta_n lnw_{ni} + \sum_{n=1}^{M} \theta_n lnq_{mi} + v_i \tag{6}$$

where v_i is a symmetric random variable that indicates the estimation's errors and statistical noise. In addition, the inefficiency variable can be introduced in Equation (7) as follows (Coelli et al., 2005):

$$lnc_i \geq \beta_0 + \sum_{n=1}^{N} \beta_n lnw_{ni} + \sum_{n=1}^{M} \theta_n lnq_{mi} + v_i + u_i \tag{7}$$

where u_i is a non-negative variable indicating inefficiency. As shown in Equation (7), this function is non-decreasing, linearly homogenous and has concave inputs if $\beta_n \geq 0$ for all n and the constraint constraint, $\sum_{n=1}^{N} \beta_n = 1$, are substituted in Equation (7). This yields the homogeneity-constrained Cobb-Douglas cost frontier model indicated in Equation (8) as follows (Coelli et al., 2005):

$$\ln\left(\frac{c_i}{w_{ni}}\right) = \beta_0 + \sum_{n=1}^{N} \beta_n \ln\left(\frac{w_{ni}}{w_{ni}}\right) + \sum_{m=1}^{M} \theta_m \ln q_{mi} + v_i + u_i \tag{8}$$

Equivalently, Equation (8) can be written in the compact form indicated in Equation (9) as follows (Coelli et al., 2005):

$$\ln\left(\frac{c_i}{w_i}\right) = X_i' \beta + v_i + u_i \quad \text{or} \quad -\ln\left(\frac{c_i}{w_i}\right) = X_i' \beta + v_i + u_i \tag{9}$$

Moreover, cost efficiency is measured by the ratio of minimum cost to observed cost as follows (Coelli et al., 2005):

$$CE_i = \exp(-u_i) \tag{10}$$

With respect to the equations mentioned above, especially equations (9) and (10), a firm's cost efficiency can be measured, which is treated as a dependent variable for the study of the significant sources of a firm's cost efficiency. However, an inefficiency effects model is important as it can link a set of significant factors to a firm's cost efficiency, as discussed in section 5.3 below.

5.3 Inefficiency effects model

This study examines the significant sources that influence a firm's cost inefficiency as indicated in the following inefficiency effects model (see Coelli et al.(1995)):

$$m_i = z_i\delta + w_i \tag{11}$$

where m_i is a p×p vector of inefficiency effects that can be measured from Equations (9) to (10);

z_i is a p×1 vector of variables that may influence the efficiency of a firm;

and δ is a 1×p vector of parameters to be estimated.

Sections 5.2 and 5.3 can be estimated simultaneously using FRONTIER 4.1 as suggested by Collie et al. (1996) and Battese and Coelli (1995). Section 5.4 will discuss the simultaneous estimation of the stochastic cost frontier model and the inefficiency cost effects model, which will be used for this paper's analysis.

5.4 The estimation of the stochastic cost frontier model and the inefficiency cost effects model

The Battese and Coelli (1995) model specification, which conducts a single-step process in which the stochastic frontier production and the model of inefficiency effects are estimated simultaneously by the method of maximum likelihood estimation (Quasi-Newton methods) (Coelli (1996); Battese & Coelli (1995)), can be applied in a simultaneous estimation of these two models for cross-sectional data obtained from the 2006 manufacturing survey collected by the World Bank. It can be rewritten as follows (Coelli et al., 2005):

$$\ln\left(\frac{c_i}{w_i}\right) = x_i\beta + v_i + u_i \tag{12}$$

where c_i, w_i, x_i, and β are defined as cost, labour price, input prices and output, and unknown parameters, respectively;

v_i are random variables that are assumed to be iid. $N(0,\sigma_V^2)$, and independent of u_i, which are non-negative random variables that are assumed to account for cost inefficiency in production and are assumed to be independently distributed as truncations at zero of the $N(m_i,\sigma_U^2)$ distribution; where the following equation is the cost inefficiency effects model:

$$m_i = z_i\delta, \tag{13}$$

where z_i is a p×1 vector of variables that may influence the efficiency of a firm; and

δ is an 1×p vector of parameters to be estimated.

The parameterisation from Battese and Corra (1977) is used in this paper, replacing σ_V^2 and σ_U^2 with $\sigma^2 = \sigma_V^2 + \sigma_U^2$ and $\gamma = \sigma_U^2/(\sigma_V^2 + \sigma_U^2)$. The log-likelihood function of this model is presented in the appendix of the working paper Battese and Coelli (1993). FRONTIER Version 4.1 is used to conduct a single-step process in which the stochastic frontier production and the model of cost inefficiency effects are estimated simultaneously by employing maximum likelihood estimation (Quasi-Newton methods) (Coelli, 1996). This software uses the parameterisation from Battese and Corra (1977) by replacing σ_v^2 and σ_u^2 with $\sigma^2 = \sigma_v^2 + \sigma_u^2$ and $\Upsilon = \sigma_u^2/(\sigma_v^2 + \sigma_u^2)$ (Coelli (1996); Battese & Coelli (1995)).

5.5 The tobit model for the study of significant sources of technological innovation

This study empirically investigates the significant sources of technological innovation. The values of technological innovation are bounded between zero and one. Applying the method of ordinary least squares (OLS) will lead to biased and inconsistent estimators, since the OLS method is likely to predict values greater than one (Kumbhakar and Lovell, 2000; Coelli et al., 2005). Therefore, the maximum

likelihood estimation for a two-limit tobit model is adopted and given as follows (Hoff, 2006; McDonald, 2009):

$$\theta_i^* = \beta_0 + \sum_{j=1}^{j=n} \beta_i x_i + \varepsilon_i \tag{14}$$

$$\theta_i = \begin{cases} \theta_i^* & if \ 0 < \theta_i^* < 1 \\ 0 & if \ \theta_i^* \leq 0 \\ 1 & if \ \theta_i^* \geq 1 \end{cases}$$

where θ_i^* = Unobserved variables of firm i
         θ_i = Observed variables of firm i
         β_i = Unknown parameter to be estimated for each independent variable of firm i
         x_i = Independent variables of firm i
         ε_i = Random error ($\varepsilon_i \sim N(0, \sigma_\varepsilon^2)$)

6. Empirical Models

According to the methodology mentioned in Section 5, this paper estimates the stochastic frontier cost function and simultaneously estimates the inefficiency effects by the method of maximum likelihood (ML)[5], which has desirable large sample (or asymptotic) properties. More specifically, the ML estimator is consistent and asymptotically efficient (Coelli, 2005, p. 218). The stochastic frontier cost function in the Cobb-Douglas functional form is used in this study as follows (Coelli et al. (2005); Coelli (1996)):

$$\ln\left(\frac{c_i}{w_i}\right) = \beta_0 + \beta_1 \ln(R_i/W_i) + \beta_2 \ln(Q_i) + v_i + u_i \tag{15}$$

where C_i = the cost, represented by total cost of firm *i*
         Q_i = the output, represented by total revenue of firm *i*
         R_i = the capital price, represented by total fixed cost of firm *i*
         W_i = the labour price, represented by total wage and salary of firm *i*
         V_i = random variables, which are assumed to be iid. $N(0,\sigma_V^2)$ and independent of the U_i
         U_i = non-negative random variables, which are assumed to account for the cost of inefficiency in production and are assumed to be independently distributed as truncations at zero of the $N(m_i, \sigma_u)$ distribution; where: $m_i = z_i\delta$; where z_i is a p×1 vector of variables that may influence a firm's efficiency; and where δ is an 1×p vector of parameters to be estimated.

The Inefficiency Effects Model can be written as follows:

$$U_i = \delta_0 + \delta_1 Tech\_Innovation_i + \delta_2 CEO\_Gender_i +$$
$$\delta_3 CEO\_Nationality_i + \delta_4 CEO\_Experience_i +$$
$$\delta_5 CEO\_Education_i + \delta_6 Firm\_Size_i + \delta_7 Foreign\_Unskilled_i +$$
$$\delta_8 Domestic\_Ownership_i + \delta_9 Firm\_Age_i + w_i \tag{16}$$

where $Tech\_Innovation_i$ = Firm *i*'s capability to undertake technological innovation's initiatives, measured by the percentage in completing all technologically innovative initiatives;
         CEO_Gender_i = Dummy for the gender of a CEO in firm *i*;

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[5] According to Coelli et al. (2005, p.245), the method of maximum likelihood is preferred to other estimation techniques in computing measures of cost efficiency, such as ordinary least squares (OLS) and corrected ordinary least squares (COLS). The OLS estimates cannot be used to compute the firm's cost efficiency since the estimated "intercept" coefficient obtained from the OLS is "biased downwards" even though the estimated "slope" coefficients are consistent.

CEO_Gender_i = 1 if the gender of a CEO is male.

$\qquad\qquad$ = 0, otherwise;

$CEO\_Nationality_i$ = Dummy for the nationality of a CEO in firm i;

$CEO\_Nationality_i$ = 1 if the nationality of CEO is Thai.

$\qquad\qquad$ = 0, otherwise;

$CEO\_Experience_i$ = The working experience of a CEO, represented by the CEO's working years;

$CEO\_Education_i$ = Dummy for a CEO education of firm i;

$CEO\_Education_i$ = 1 if a CEO obtains at least a bachelor's degree.

$\qquad\qquad$ = 0, otherwise;

$Firm\_Size_i$ = Size of firm i, represented by total number of employees;

$Foreign\_Unskilled_i$ = Foreign unskilled workers at firm i, represented by number of foreign skilled workers;

$Domestic\_Ownership_i$ = Domestic ownership of firm i, represented by the percentage of domestic ownership of firm i;

W_i = Random error $((W_i \sim N(0, \sigma_W^2))$

Equations (15) and (16) are estimated simultaneously by the method of maximum likelihood estimation (Quasi-Newton methods) as previously mentioned in Section 5.4.

According to Equation (14), the significant sources of technological innovation can be examined using the maximum likelihood tobit model written as follows:

$$Tech\_Innovation_i^* = \beta_0 + \beta_1 CEO\_Nationality_i + \beta_2 CEO\_Education_i +$$
$$\beta_3 CEO\_Gender_i + \beta_4 CEO\_Experience_i + \beta_5 Exports_i + \beta_6 Professional_i +$$
$$\beta_7 Domestic\_Ownership_i + \beta_8 Firm\_SIZE_i + \varepsilon_i \qquad (17)$$

$$Tech\_Innovation_i = \begin{cases} Tech\_Innovation_i^* & if\ 0 < Tech\_Innovation_i^* < 1 \\ 0 & if\ Tech\_Innovation_i^* \leq 0 \\ 1 & if\ Tech\_Innovation_i^* \geq 1 \end{cases}$$

where $Tech\_Innovation_i^*$ = Unobserved technological innovation of firm i.

$Tech\_Innovation_i$ = Observed technological innovation of firm i.

$Exports_i$ = Dummy for exports of firm i;

$Exports_i$ = 1 if firm i exports.

$\qquad\qquad$ = 0, otherwise;

$Professional_i$ = Trained and certified specialists outside of management.

$CEO\_Nationality_i, CEO\_Education_i, CEO\_Gender_i, CEO\_Experience_i, and\ Firm\_SIZE_i$ are previously defined (see Equation (6))

ε_i = Random error $(\varepsilon_i \sim N(0, \sigma_\varepsilon^2))$

7. Data Source and Data Classification

This study employs the 2006 Enterprise Survey (Manufacturing Sector Survey) for Thailand collected by the Foundation of Thailand Productivity Institute (FTPI) in collaboration with the World Bank. Business owners and top managers in 1,043 firms were interviewed between April and November 2007. This survey contains three parts: i) a questionnaire administered to CEOs, general managers or business owners; ii) a questionnaire administered to the finance manager or accountant; and iii) a questionnaire administered to workers sampled from each establishment. Due to a number of missing data in the survey,

30 firms are deleted from the sample. Finally, 1,019 firms are used to conduct the empirical analysis in this paper. More importantly, the questionnaire administered to the CEOs, general managers or business owners makes this survey more useful than the 2007 Thai Industrial Census conducted by the National Statistical Office of Thailand because that census does not provide personal data regarding CEOs, general managers or business owners.

8. Hypothesis Tests and Empirical Results

8.1 Hypothesis tests of the stochastic frontier model and inefficiency effects model

With respect to Equations (15) and (16), three null hypothesis tests are required: (i) the absence of inefficiency effects, (ii) the absence of stochastic inefficiency effects and (iii) the insignificance of joint inefficiency variables (see Table 1). A likelihood-ratio test (LR test) is used to test these hypotheses as follows:

$$\lambda = -2\{\log[L(H_0)] - \log[L(H_1)]\} \tag{18}$$

where $\log r[L(H_0)]$ and $\log e[L(H_1)]$ are obtained from the maximized values of the log-likelihood function under the null hypothesis (H_0) and the alternative hypothesis (H_1), respectively. The LR test statistic has an asymptotic chi-square distribution with parameters equal to the number of restricted parameters imposed under the null hypothesis.

Table 1 Statistics for Hypothesis Tests of the Stochastic Frontier Model and Inefficiency Effects Model

	Thai manufacturing enterprises
Null hypothesis **(i) No cost inefficiency effects ($H_0:\gamma = \delta_0 = \cdots = \delta_9 = 0$)**	
LR statistics	160.86
Critical value	24.05*
Decision	Reject
Null hypothesis **(ii) Non-stochastic inefficiency ($H_0: \gamma = 0$)**	
LR statistics	151.54
Critical value	5.41*
Decision	Reject
Null hypothesis **(iii) No joint inefficiency variables ($H_0:\delta_1 = \delta_2 = \cdots = \delta_9 = 0$)**	
LR statistics	142.30
Critical value	21.67*
Decision	Reject

Note: All critical values of the test statistic indicated by * are presented at the 1% level of significance, obtained from a chi-square distribution, except those found in Hypotheses (i) and (ii), which contain a mixture of a chi-square distributions obtained from Table 1 of Kodde and Palm (1986).

From Table 1, the null hypothesis (i), which specifies that the inefficiency effects are absent from the model ($H_0:\gamma = \delta_0 = \cdots = \delta_9 = 0$), is strongly rejected at the one-percent level of significance, since the LR statistic test is greater than the critical value of approximately chi-square distribution at the one-percent level of significance. This result implies that the model of inefficiency effects exists in the case of Thai manufacturing enterprises. Furthermore, the estimate for the variance parameter γ in Table 2 is 0.9017, which is close to one and indicates that the inefficiency effects tend to be highly significant in the analysis for the value of production costs of Thai manufacturers (see Battese and Coelli (1995)). The null hypothesis (ii) that the inefficiency effects are not "stochastic" ($\gamma = 0$) is strongly rejected in the case of Thai manufacturing enterprises. The rejection of this hypothesis indicates that the model of inefficiency

effects is not reduced to a traditional mean response function since the variance of the inefficiency effects is not zero Battese & Coelli (1995). In other words, all the explanatory variables in the inefficiency effects model are not included in the cost function in this study, implying that the inefficiency effects model is applicable, and therefore the estimated parameters can be identified in the model of inefficiency effects.

The last null hypothesis examines the significance of the joint effects of all inefficiency variables on the inefficiencies of production costs. From Table 1, the last null hypothesis, which specifies inefficiency effects are not a linear function of all explanatory variables or all parameters of the explanatory variables equal zero, $(H_0 : \delta_1 = \delta_2 = \cdots = \delta_9 = 0)$ is strongly rejected at the 1 percent level of significant. Due to the rejection of the last null hypothesis test, it indicates that the inefficiency effects are a linear function of a set of explanatory variables, although the individual effects of one or more variables might be statistically insignificant Battese & Coelli (1995).

Table 2 Maximum Likelihood Estimates for Parameters of the Stochastic Cost Frontier Model and Inefficiency Effects Model

	Parameter	Coefficient	Standard error	t-ratio
Stochastic Cost Frontier Model				
Constant		-4.3813*	(0.5564)	-7.8750
$\ln(R_i/W_i)$	β_1	0.1587*	(0.0151)	10.5064
$\ln(Q_i)$	β_2	0.3177*	(0.0240)	13.2351
Inefficiency Effects Model				
Constant	δ_0	1.0729*	(0.2712)	3.9556
$Tech\_Innovation_i$	δ_1	-0.0097*	(0.0024)	-4.0579
CEO_Gender_i	δ_2	-0.0357	(0.0685)	-0.5207
$CEO\_Nationality_i$	δ_3	0.1022	(0.0880)	1.1615
$CEO\_Experience_i$	δ_4	-0.0006	(0.0057)	-0.1031
$CEO\_Education_i$	δ_5	-0.1837*	(0.0730)	-2.5165
$Firm\_Size_i$	δ_6	-0.0008*	(0.0000)	-25.5793
$Foreign\_Unskilled_i$	δ_7	0.0033**	(0.0020)	1.6876
$Domestic\_Ownership_i$	δ_8	0.0056	(0.0014)	3.8340
$Firm\_Age_i$	δ_9	-0.0014	(0.0046)	-0.3166
sigma-square	σ^2	0.5533*	(0.0737)	7.5125
Gamma	γ	0.9017*	(0.0140)	64.4805

Note: Standard errors are in brackets; * and ** indicate that the coefficients are statistically significant at 5% and 10%, respectively.

8.2 Empirical results, the maximum likelihood estimates for parameters of the stochastic cost frontier model and inefficiency effects model

From Table 2, the sum of significantly estimated coefficients of $\ln(R_i/W_i)$ and $\ln(Q_i)$ obtained from the stochastic cost frontier model is 0.4764, indicating that a high level of decreasing returns to scale exists in Thai manufacturing firms. This evidence also implies that a firm's average cost increases when its output increases. From the cost inefficiency models shown in Table 2, the estimated negative coefficient of technological innovation is statistically significant at the five percent level of significance, indicating a significant and negative association with a firm's cost inefficiency. In other words, technological innovation is significantly and positively correlated with a firm's cost efficiency, implying that technological innovation can reduce a firm's cost of production due to better productivity and efficiency. This empirical result is similar to the findings of Le & Harvie (2010), Griffith et al. (2006), Mairesse & Mohnen (2010), Díaz & Sánchez (2014), Sánchez & Díaz (2013), Cassiman et al. (2010) and Crespi & Zuniga (2011).

Focusing on the estimated coefficients of CEO characteristics such as education, gender, experience and nationality, a CEO with at least a bachelor's degree is found to be significant and negatively related with a firm's cost inefficiency. Alternatively, a CEO with at least a bachelor's degree has a significant and positive association with a firm's cost efficiency, indicating that a CEO's educational background plays a vital role in promoting the cost efficiency of Thai manufacturers. More specifically, a CEO who obtains at least a bachelor's degree performs better in the manner of controlling the firm's costs more efficiently than those who do not. This significant result is consistent with the findings of Jalbert et al. (2002), except their findings were measured by a financial ratio (Tobin's Q).

The results in Table 2 reveal that a CEO's gender has no significant impact on a firm's cost inefficiency due to an insignificant estimated coefficient of the CEO gender variable. This result reflects the findings of Lam et al. (2013), suggesting that male CEOs perform similarly to female CEOs. The estimated coefficient of the CEO experience is not found to be significantly related to a firm's cost inefficiency. An insignificant result of its estimated coefficient implies that the CEO's working years do not affect the cost efficiency of Thai manufacturing firms. This evidence contradicts the findings of previous studies such as Wasserman et al. (2001), Jalbert et al. (2002) and Bhagat et al. (2010). A CEO's nationality is not found to be significant with a firm's cost inefficiency, implying no significant evidence that Thai CEOs perform differently from foreign CEOs. This result differs from the findings of Jalbert et al. (2007).

Table 3 The cost efficiency estimation of Thai sub-manufacturing sectors

Sub-manufacturing sectors	Weighted* average cost efficiency	Max	Min	Stdev	Number of firms
Auto components	2.566	5.845	1.110	1.190	109
Electrical appliances	4.273	22.488	1.283	4.291	28
Electronic components	2.835	31.372	1.081	3.903	64
Food processing	4.293	30.517	1.072	3.964	103
Furniture and wood products	3.636	14.195	1.236	2.411	98
Garments	3.088	18.272	1.163	2.161	152
Machinery and equipment	3.605	13.808	1.066	2.110	81
Rubber and plastics	6.179	52.918	1.068	7.583	253
Textiles	4.249	23.925	1.071	3.240	131
All manufacturing sectors	**4.181**	**52.918**	**1.066**	**4.685**	**1019**

Note: *In the case of a cost frontier function, the cost efficiency will take a value between one and infinity (see Coelli (1996)). The levels of cost inefficiency are indicated by the increase in cost away from the cost frontier, and therefore cost efficiency that equals one indicates the highest efficiency (see Hughes (1988)).

The estimated coefficient of firm size is found to be significantly and negatively associated with a firm's cost inefficiency, indicating that firm size contributes significantly to a firm's cost efficiency, since larger firms can benefit from economies of scale and scope, reduced production costs, and improved efficiency and competitiveness (Phan (2004); Charoenrat et al. (2013)). This result is similar to the findings of Alvarez and Crespi (2003), Kim (2003) and Charoenrat et al. (2013). The estimated coefficient of firm age is not significantly correlated with its cost efficiency, suggesting no significant evidence to conclude that the learning-by-doing hypothesis exists in Thai manufacturing enterprises. This insignificant result is similar to the findings of Charoenrat et al. (2013) in two sub-manufacturing sectors.

Finally, foreign unskilled labour is found to be positively related to a firm's cost inefficiency, indicating that foreign unskilled labour has a significant and negative impact on a firm's cost efficiency. This result implies that Thai manufacturers do not benefit from hiring foreign unskilled labour, since it does not enhance cost efficiency despite what may appear to be an inexpensive source of workers. This finding is

consistent with the results of Llull (2008), but contradicts the empirical results of Peri (2009) and Noor et al. (2011).

8.3 The cost efficiency estimation of Thai manufacturers

Table 3 shows the weighted average cost efficiency estimation of Thai manufacturing firms in aggregation and sub-manufacturing sectors, which can be predicted by Equations (9) and (10) using FRONTIER 4.1. The weighted average cost efficiency score of Thai manufacturing enterprises is about 4.181, indicating that their weighted mean cost efficiency is about four times above the cost frontier. This result shows a high level of cost inefficiency existing in Thai manufacturers, since the weighted average cost efficiency is not close to one, indicating an increase in cost away from the cost frontier (Hughes, 1998). A cost efficiency equal to one indicates the highest cost efficiency (Hughes, 1988).

Comparing the weighted average cost efficiency among sub-manufacturing sectors, the weighted average cost efficiency ranges from 2.566 for auto components to 6.179 for rubber and plastics. The highest weighted average cost efficiency is found in auto components (2.566), followed by electronic components (2.835), garments (3.088), machinery and equipment (3.605), furniture and wood products (3.636), textiles (4.249), electrical appliances (4.273), food processing (4.293), and rubber and plastics (6.179). Furthermore, this finding is similar to the results of Charoenrat et al. (2013), except they focus on technical efficiency to measure a firm's performance, and also find that Thai manufacturing SMEs have high levels of technical inefficiency due to 50 percent of their weighted average technical efficiency. Focusing on sub-manufacturing sectors, the study's results support the OECD report (2013) indicating that electronics and automobiles are the leading manufacturing sectors to offer a strong base for the country's future development (see OECD (2013, p. 277)). The OECD (2013) also suggests that food processing is a growing industry for Thailand's development, but its weighted average cost efficiency found in this study is low compared with other sub-manufacturing sectors. Specific government policies, therefore, should focus on this industry as this can enhance their cost efficiency, which in turn can promote the country's development as suggested by the OECD (2013).

8.4 The determinants of innovation

According to the maximum-likelihood estimates for parameters of the tobit model obtained from Equation (17) in Table 4, the estimated coefficient of CEO education is found to be significantly and positively related with a firm's technological innovation, implying that CEOs who receive at least bachelor's degree tend to engage in more technological innovation than non-degree CEOs. This result is similar to the findings of Lee (2011) and de Mel (2009) that suggest human capital plays a vital role in promoting innovation. More interestingly, male CEOs are likely to engage more in a firm's technological innovation than female CEOs due to a significant and positive sign of CEO gender. This can be explained with analysis of the 2006 manufacturing survey data collected by the World Bank (2006) and used in this study. It is found that 29.29 percent of male CEOs who receive at least a bachelor's degree obtained a science or engineering education, but only 4.15 percent of female CEOs who obtain at least a bachelor's degree obtained a science or engineering education. Therefore, a male CEO is more likely to have a science or engineering background than a female CEO.

In addition, CEO experience is not significantly related to technological innovation, implying that CEO experience does not influence the technological innovation of Thai manufacturing enterprises. This result, however, differs from the findings of Romijn and Albaladejo (2002). Similarly, CEO nationality has no significant impact on a firm's technological innovation, implying no significant conclusion about the likelihood of engaging in a firm's technological innovation between Thai and foreign CEOs. Export is found to be significantly and positively related to a firm's technological innovation, since exporters can benefit from the learning-by-exporting hypothesis. Such firms become more innovative than firms that focus only on domestic markets (Palangkaraya, 2012). This evidence is consistent with the studies of Palangkaraya (2012), Damijan et al. (2007) and Girma et al. (2007).

Table 4 Maximum-likelihood estimates for parameters of the tobit model

Independent variable		Coefficient	(Std. error)	z-statistic
Tech_Innovation$_i$				
Left censored obs	43			
Right censored obs	0			
Uncensored obs	976			
Total obs	1019			
Dependent variables:	**Parameter**			
Constant	β_0	0.2292*	(0.0212)	10.7927
CEO_Nationality$_i$	β_1	-0.0023	(0.0117)	-0.1959
CEO_Education$_i$	β_2	0.0360*	(0.0109)	3.2877
CEO_Gender$_i$	β_3	0.0312*	(0.0102)	3.0450
CEO_Experience$_i$	β_4	0.0003	(0.0006)	0.4498
Export$_i$	β_5	0.0591*	(0.0112)	5.2658
Domestic_Ownership$_i$	β_6	-0.0002	(0.0002)	-1.3092
Professional$_i$	β_7	0.0011*	(0.0003)	3.5854
Firm_Size$_i$	β_8	0.00001**	(0.00001)	1.7487
Error Distribution				
SCALE: C(10)		0.1511*	(0.0039)	38.4906

Note: Huber/White robust standard errors (S.E.) are in parentheses; * and ** indicate that the coefficients are statistically significant at the 1% level and 10% levels, respectively.

Moreover, the variable for professionals is found to have a significant and positive association with a firm's technological innovation, implying that firms with more professionals are likely to engage in greater technological innovation than those that hire fewer professionals. According to the 2006 manufacturing survey collected by the World Bank and used in this paper, professionals are defined as workers who generally hold a university-level degree. They are trained and certified specialists outside of management, such as engineers, accountants, lawyers, chemists, scientists and software programmers. This result is similar to the findings of Kerr (2013) and Albaladejo and Romijn (2000). Firm size is found to be significantly and positively associated with a firm's technological innovation, implying that larger firms are likely to join more innovative activities due to better access to finance, technology, human resources and information. This result is also consistent with the findings of Bhattacharya and Bloch (2002) and de Mel et al. (2009). Finally, domestic ownership is not significantly related to innovation, implying no significant conclusion that more domestic ownership will lead to more technological innovation in the case of Thai manufacturers. This finding does not support the statement in the OECD (2013) that "Thai firms are mostly owned by ethnic Chinese interests throughout generations. Some of them are in a better position to learn and exploit technological developments in other parts of the world due to their trade links, expansion and diversification into foreign operations at the centers of technological innovation via direct investment and the establishment of foreign production plants" (OECD (2013, p. 271)).

9. Conclusion and Policy Implications

This study employs the 2006 manufacturing sector survey collected by the Foundation of Thailand Productivity Institute (FTPI) in collaboration with the World Bank to empirically investigate the significant importance of technological innovation and CEO characteristics, such as education, experience, gender and nationality, on the cost efficiency of Thai manufacturing firms. The effects of other factors, such as i) unskilled foreign labour, 2) firm size, 3) firm age and 4) domestic ownership on their cost efficiency, are also examined. The one-stage procedure introduced by Battese and Coelli (1995) are applied in this study, except the stochastic cost frontier model and the cost inefficiency effects models are estimated simultaneously and a firm's cost efficiency is predicted. More importantly, this study's analysis had never

been conducted previously, especially in the context of the Thai manufacturing sector. Previous empirical studies focusing on Thailand have employed only the stochastic production frontier and production inefficiency effects models, and have measured a firm's technical efficiency (see Charoenrat et al. (2013)). In addition, the maximum likelihood tobit regression model is applied to investigate the significant sources of technological innovation for Thai manufacturers.

This study finds that technological innovation plays an important role in enhancing the cost efficiency of Thai manufacturers. Innovative activities such as product innovation, process innovation and technological changes of products and processes, therefore, could be promoted for Thai manufacturers. More importantly, the government might promote ICT infrastructure and better coordinate and implement national science and technology policies as suggested by the OECD (2013). Examining CEO characteristics, education can be seen as helping to improve the cost efficiency of Thai manufacturing firms. Other CEO characteristics such as gender, experience and nationality, however, do not significantly influence cost efficiency. These results suggest that there is no significant difference in terms of cost efficiency performance between i) male and female CEOs, ii) more experienced and less experienced CEOs and iii) Thai and foreign CEOs. This study also reveals decreasing returns to scale and a high level of cost inefficiency in Thai manufacturers. Focusing the effects of significant sources of technological innovation for Thai manufacturing enterprises, CEO education and gender play a key role in promoting technological innovation. Government policy, which focuses on improving CEO knowledge and training, particularly for female CEOs, should be implemented to reduce cost inefficiency and increase technological innovation. In parallel with current government programs such as the Thai Woman Empowerment Fund, the government might establish a new program that focuses on developing female CEOs or entrepreneurs' knowledge on how to initiate technologically innovative businesses across Thailand. Firm size is significantly and positively correlated with the cost efficiency and technological innovation of Thai manufacturing enterprises, implying that economies of scope and scale of larger enterprises can reduce their cost inefficiency and increase their technological innovation. Increased firm size could be encouraged for Thai manufacturers, since larger firms can lead to economies of scale and scope, reduced production costs and enhanced efficiency and competitiveness (Pham, 2004; Charoenrat et al., 2013). For instance, the government can facilitate Thai manufacturing enterprises to obtain affordable interest payments or new equity via listings on the Market for Alternative Investment and the Stock Exchange of Thailand. In addition, government agencies such as the Board of Investment can encourage an increase in Thai manufacturing enterprises' investments by offering tax and non-tax incentives for potential investment projects. Enhancing the skills of workers, especially those of foreign unskilled workers through education and job training programs, is crucial to raise the cost efficiency and technological innovation of Thai manufacturers. More specifically, linkages between educational institutions and industry in Thailand could be encouraged to promote a skilled labour supply in the industry, especially those workers who have an educational background in science and engineering. This can help stimulate technological innovation among Thai manufacturers, since the study finds a significant and positive correlation between professionals and technological innovation of these firms. Government policies focusing on the export participation of Thai manufacturing enterprises, therefore, could be promoted due to a significant and positive association between exports and technological innovation. Government agencies such as the Department of International Trade Promotion can play an important role in encouraging more export participation of Thai manufacturing enterprises.

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Operational Liquidity in Thai Listed Corporations

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Abstract

Operational liquidity management explicitly demonstrates material influences on the decision making of executives, especially for the emerging markets, which are featured as the financial mechanisms with insufficient and immature capital flows. The study explores the importance and contributions of working capital management in the case of Thailand, which represents one of the typical emerging markets, by employing 104 listed companies in three different sectors covering the period of year 2002 to 2011 on a quarterly basis, through the incorporation of, working capital management ratios, leverage ratios, and profitability ratios. It results that, the inventory and credit management do contribute to the efficiency of working capital management and therefore impact the basic earning power, rather than financial leverage and profitability.

Keywords: _working capital, liquidity, operating efficiency, financial leverage_

1. Introduction

Starting with the terminology definitions of working capital by, Shin & Soenen (1998) who consider working capital as the result of the time lag between the expenditure for the purchase of raw materials and the collection for the sale of finished product, and Fazzari & Petersen (1993) who define working capital as current assets (chiefly accounts receivable, inventories, and cash) less current liabilities (primarily accounts payable and short-term debt), the crucial roles of working capital management in a enterprises' operation and the relationships to operating and finance, have been initially explored by Padachi (2006) and John (1993), whose studies both express the subjection of working capital management to the higher financial distress costs under the malfunction cases. It is further emphasized in the studies of, Shin & Soenen (1998) who show that the efficient working capital management is an integral component of the overall corporate strategy to create shareholder value, and Brigham & Ehrhardt (2008) who suggests that superior working capital management can dramatically reduce required investments in operations, which in turn, leads to the larger free cash flows and greater firm value. Therefore, following fore-mentioned researches, pertaining to the remarkable essences of working capital management, the numerous studies have been the contributions seeking the appropriate working capital management, among which, Smith (1973) cites the eight distinct approaches for working capital management, Gallinger & Ifflander (1986) recommend a scrutinized work on accounts receivable management by developing variance analysis model, while Gentry & De La Garza (1987) focus their interest toward the relationship between accounts receivables and accounts payables, and Gentry, Vaidyanathan, & Hei (1990) give a deeper appreciation in cash conversion cycle by identifying a weighted cash conversion cycle.

In addition, Shin & Soenen (1998)'s work shows the existences of strong negative associations, between firm's net trade cycle and its profitability, and the firms' liquidity and profitability for the developed market. Nevertheless, it also results the diverse findings, from the studies of, Chudson (1945) that cash-to-assets ratio tends to be higher among profitable companies, and Padachi (2006) that the operating efficiency of small firms is achieved when the cash conversion cycle is low as total assets turnover ratio negatively relates to cash conversion cycle. Consequently, for clarifying the controversial debates and better understanding the working capital management in emerging markets, the study aims the exploration how working capital management relates to enterprise operation and financial leverage, i.e. firms' liquidity, operating efficiency, capital structure, and profitability in the case of Thailand.

Furthermore, in terms of degree of leverage, working capital management affects firms' source of funds internally and externally which are chosen for minimizing the cost of capitalization, due to the necessaries of the financially constrained firms to derive an optimal cash policy that trades off current investments against potentially profitable future investments. It is evident that the self-generated funds represent more crucial resource due to the constraint accessibility and relative higher cost, resulted from the studies of Faulkender & Wang (2006) and Opler, Pinkowitz, Stulz, & Williamson (1999).

The exploration of the WCM, was conducted by numerous researchers, among which, Appuhami (2008) and Napompech (2012) demonstrated the relevant updated discoveries. It results that both firms' capital expenditure and operating cash flow has a significant relationship with working capital management, according to Appuhami (2008). Furthermore, Napompech (2012) examines the effects of working capital management on profitability, from which it revealed a negative relationship between the gross operating profits and inventory conversion period and the receivables collection period. In other words, managers can increase the profitability of their firms by shortening the cash conversion cycle, inventory conversion period, and receivables collection period. Nevertheless, the firm will not be able to increase profitability by lengthening the payables deferral period.

Stressed in the study, it is the significant role working capital management plays in a business operation, that the daily liquidity management determines the short term and long term operation efficiency and target capital structure, on the basis of synthesized framework rather than isolated discoveries. In differences from previous research, the study explores the synthetic relationship between working capital management with, not only the capital structure, but also the various aspects of firm's operation, addition to which, the decomposition of working capital management does elaborate how the contribution to management efficiency can be made for overall profitability. It addresses the comprehension of working capital management and integration of working capital management into overall business operation. In the study, there are four hypotheses of working capital management are stated to test the relations of working capital management with, firms' liquidity, operating efficiency, degree of leverage, and profitability. The conceptual framework relies on a proposition that firms, possessing an efficient working capital management, do have high liquidity, operating efficiency, low debt, and hence, are profitable. The multiple regression models are used to test the hypotheses, with the panel data from the audited financial statements that covers 104 listed companies in the Stock Exchange of Thailand in different sectors, for the period from year 2002 to 2011 on a quarterly basis. The study seeks to result the explanation about, how efficient working capital management links to firms' liquidity, operating efficiency, degree of leverage, and profitability.

The linkage of an efficient working capital management to firms' liquidity, operating efficiency, degree of leverage, and profitability should provide a deeper understanding for corporate management, the investors, and financial professionals. Corporate management may use it to notify the changes in firms' liquidity, operating activity and degree of leverage that may caused by working capital management, which in turn associate with internal and external fund raising allocation. It is the differentiated source of funds that deviates the valuation of firm's equity through diverse costs of capital resulting from the liquidity circumstance. The insight exploration of the linkage among working capital management and the considerable factors does not only dedicate to the facilitation to the decision makings of enterprises' operation by the executives, but also to the wise selection and valuation of equity investment for the investors through comprehension of the relationship of the elements.

2. Conceptual Framework

Working capital management (WCM) is the management of current assets and current liabilities, which involves especially cash, accounts receivable, inventory, and accounts payable management. The management of these accounts is implemented to generate internal financing which is relevant to serve the main operating purposes. It is not only about the capacity for a firm to serve its short-term debt obligations but also the ability to support the available investing opportunity through sufficient funds. It is worth to remind, an efficient WCM results a healthy financial status and contributes to the growth potential. Additionally, a diminishing required investment in working capital due to an efficient management can also increase the firm's value and definitely increase shareholder wealth due to the decreasing costs of capital.

The efficiency of WCM can be alternatively evaluated by three traditional ratios i.e. accounts receivables turnover days (AR days), inventory turnover days (INV days), and accounts payable turnover days (AP days), as cited by John (1993). According to the principles of working capital management, the executives of a firm do the best effort to minimize the AR days and INV days and lengthen AP days, meaning that the cash collection should be done fast while the cash payment is to be prolonged as far as a firm can. Managing a daily operation by employing this concept should help a firm to generate a consistent internal cash flow. However, a manager should be aware of a declining profitability that may occur from the tightened credit term granted to the customers. A penalty from a late accounts payable payment should also be taken into consideration before implementing such concept. In order to have an efficient WCM, a cost of losing sales and penalty of late payment should not exceed a benefit of internal cash flow generated.

Assuming that the firm operates with the efficient WCM, it is expected that the liquidity of the firm should be improved, with the traditional assessments of firms' liquidity of current and quick ratios. Therefore, the study cites the current ratio as the liquidity indicator. As mentioned earlier that an efficient WCM implies a low level of both accounts receivable and inventory with a high level of accounts payable, it contradictorily results that current ratio does not produce an intuitive presentation of firms' liquidity. Consequently, the cash conversion cycle does represent the better benchmark for firms' liquidity. Furthermore, the differences in firms' characteristics and industrial sectors imply it to be relatively subjective to identify an optimal level of cash conversion cycle for all enterprises. Therefore, current ratio is still applied to indicate firms' certain level of liquidity. At this point, the management of the corporate finance may have to face with the conflict between the dual goals of efficient WCM and a firm's liquidity. Despite a low liquidity being signified by a low current ratio, the management comprehends that the short-term debt obligation still can be met as long as the firm pursues an efficient WCM, which means that the firm prolongs the length of payment to their suppliers and fastens the cash collections to service short-term debts. The liquidity of a firm may be low in a point in time (current ratio is calculated in a-point-in-time basis) but should be high in terms of daily operation (operating liquidity). Therefore, it is expected that AR days and INV days should have a positive relation with current ratio while AP days should establish an opposite relationship. In terms of operating efficiency, it is expected that efficient WCM can help increase an operating efficiency of a firm. The basic earning power (BEP) is used to prove the hypothesis in the framework, in which the BEP is considered as the idea indicator due to the exclusion of the leverage and tax effects, in evaluating a firm's operating efficiency. In contrast, Return on Equity measures the combined effect of operation, finance and tax, which losses comparison intuitive in the case of differentiated tax and financial leverage across industries. It is hypothesized that AR days and INV days should have a negative relation with BEP while AP days should establish a positive relation with BEP. It is assumed that an appropriate credit term is granted to the customers and it does not affect the sales of the company. This means that a low AR days and INV days still produce generous sales with a certain amount of total assets. By taking extended AP days into consideration, a firm may prolong the payment term and uses the fund to subsidize a loosen credit term of accounts receivable. With this rationale, a firm will be able to generate additional sales.

In terms of the firms' degree of leverage, as mentioned earlier that firms need to serve two main purposes in their business survival i.e. servicing debt obligation and pursuing firm growth, it is evident that firms usually tend to rely firstly on the internal financing rather than the external financing that is considered as the last resort due to its cost of capitalization. Faulkender & Wang (2006) also emphasize that corporate liquidity enables firms to make investments without having to seek the external capital markets, and thereby to avoid the both transaction costs on either debt or equity issuance and information asymmetry costs that are often associated with equity issuance. It implies that an efficient WCM may lead to firms' improved liquidity and results the reduction of external financing necessaries. In the framework of study, it is assumed that firms choose to use debt financing instead of equity financing when external financing is truly needed due to the information asymmetry costs. Additionally, firms with operating efficiency can generate consistent sales where internal cash flows can be retrieved with an efficient WCM. This consistent cash flow from sales should help the firm to reduce the need of external funding.

In a summary, it hypothesizes that the firm with, efficient WCM, high operating liquidity and operating efficiency, tends to have a low debt to equity ratio. Therefore, AR days and INV days should have

a positive relation with debt to equity ratio while AP days express negatively with debt to equity ratio. It means that low AR days, low INV days, and high AP days result a low debt to equity ratio. Last but not least important, the framework incorporates the firms' profitability, which is measured by the return on equity (ROE), assuming that the consistent self-generated internal cash flows guarantee firms capital demand for the profitable investment opportunity with the positive net present value. In addition, with self-generated fund, firms do not seek for an external funding to fulfill its growth opportunity, as the result that the cost of capital of any certain project decreases. It implies that the net present value of the invested project should be higher compared to that of the project with a high external leverage. The positive net present value projects signal the profitability of the firms, i.e. ROE is expected to be high. It is presumed that AR days and INV days have a negative relation with ROE while AP days has the positive one with ROE, meaning that low AR days, low INV days, and high AP days give a high ROE.

3. Research Methodology

Conditioning on the efficient working capital management that is demonstrated in the low AR days, low INV days, and high AP days, firms are able to generate relatively high operating liquidity with a consistent level of internal cash flows. It consequently generates the operating efficiency, as firms are able to increase sales through simultaneous extending the accounts payable payment, from which to subsidize their accounts receivable and inventory investments. In addition, the firms that can exploit all opportunities to invest in positive net present value projects should be able to make a profitable income streams. Although the other variables do express the degree of firm's profitability, ROE nets of effects of financial leverage and tax, in addition, the purpose of working capital management serves the firm's business goal. Therefore ROE well represents finalized profitable capacity. The study employs the regression analysis to testify the relationship between working capital measures and other different variables related to corporate finance. The conceptual framework highlights four different determinations that stress the hypothesized relationship with working capital management. They are firms' liquidity, operating efficiency, degree of leverage, and profitability. Additionally, dummies for technology and agro industries are added into the model to neutralize the industry difference effect.

Hypothesis 1: An efficient working capital management will decrease firms' liquidity

$$Current\ ratio = \beta_0 + \beta_{AR}AR + \beta_{INV}INV + \beta_{AP}AP + D_{Tech} + D_{Agro} + u \qquad (1)$$

Hypothesis 2: An efficient working capital management will increase firms' operating efficiency

$$BEP = \beta_0 + \beta_{AR}AR + \beta_{INV}INV + \beta_{AP}AP + D_{Tech} + D_{Agro} + u \qquad (2)$$

Hypothesis 3: An efficient working capital management will decrease firms' level of debt

$$DE\ Ratio = \beta_0 + \beta_{AR}AR + \beta_{INV}INV + \beta_{AP}AP + D_{Tech} + D_{Agro} + u \qquad (3)$$

Hypothesis 4: An efficient working capital management will increase firms' profitability

$$ROE = \beta_0 + \beta_{AR}AR + \beta_{INV}INV + \beta_{AP}AP + D_{Tech} + D_{Agro} + u \qquad (4)$$

Where, AR is AR days, INV is INV days, AP is AP days, D_{Tech} is dummy for Technology industry, D_{Agro} is dummy for Agro industry.

The data selected to run the regression models comes from the audited financial statements of 104 listed companies in three different sectors, covering the time period of year 2002-2011 and are retrieved on a quarterly basis. Energy, technology, and agro sectors are selected because their market capitalizations represent a major combination of the total market capitalization of all the firms listed in the stock exchange of Thailand. Financial and property & construction sectors are not included in this data despite their huge market capitalization due the constraint nature of business that is inappropriate for WCM analysis. The companies that are manufacturing-oriented tend to be more appropriate for WCM analysis. Furthermore, some industries that have a larger market capitalization than those of the selected industries are excluded due to the dispersion of their sub-sectors. Figure 1 demonstrates the market capitalizations categorized by industrial sectors. Figure 2 shows the dispersion of sub-subsector in different industries and figure 3 illustrates the number of companies in each selected sectors.
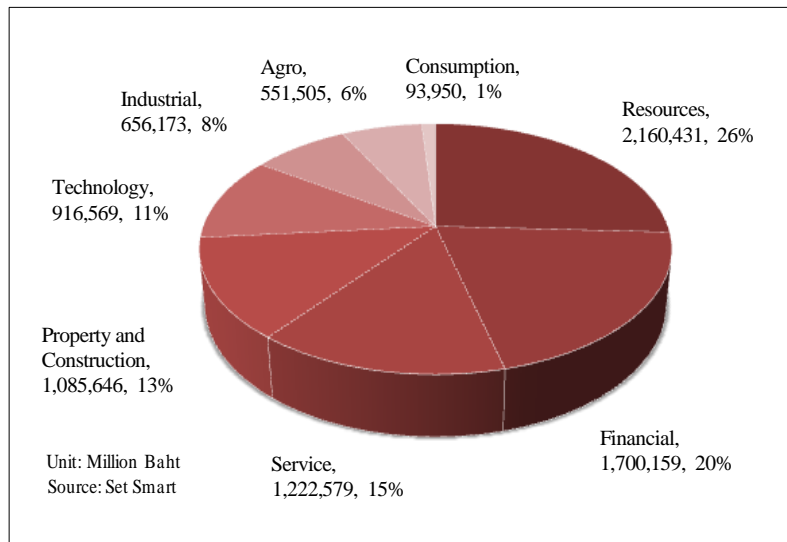
Figure 1 Industry categorized by market capitalization
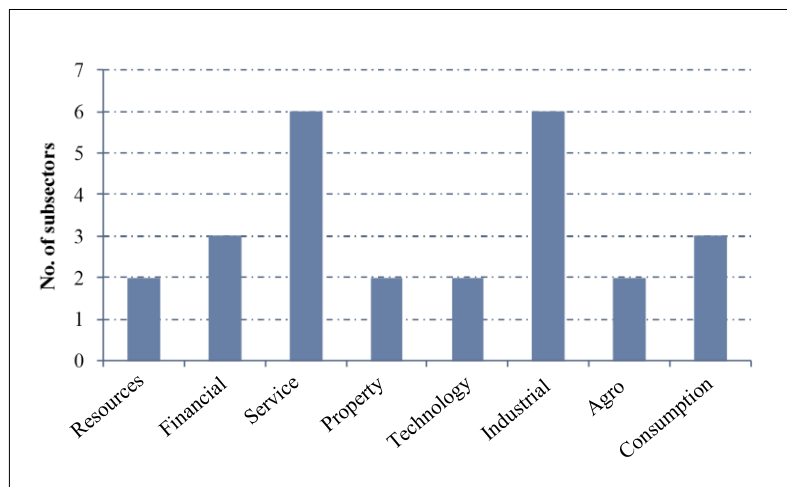
Figure 2 Number of sub-sector in each industry
Source: www.set.or.th
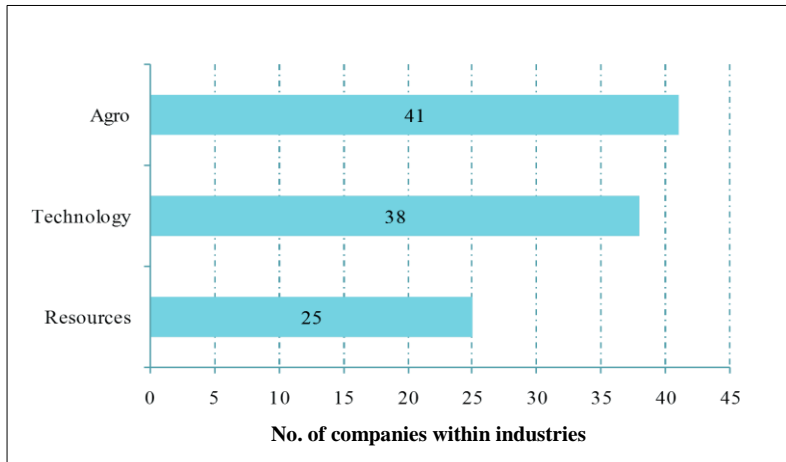
Figure 3 Number of companies in selected industries
Source: www.set.or.th

4. Empirical Results

It results from the regression for hypothesis 1 that the regression coefficients of AR days, INV days, and AP days have both the similar opposite movements with current ratio. By holding other independent variables constant, an increase in AR days by 1 unit will cause a decrease in current ratio by 0.7181 units. In terms of INV days, an increase in INV days by 1 unit will cause an increase in current ratio by 1.4938 units, holding other factors constant. By holding the influence of AR days and INV days unchanged, an increase in AP days by 1 unit will cause a decrease of current ratio by 1.8928 units. A p-value of nearly zero of INV days and AP days suggests that, holding other independent variables constant, either INV days or AP days will have an influence on the current ratio so that the null hypothesis can be rejected. In contrast, the insignificant value of p-value of AR days, 0.2143, indicates that the null hypothesis may not be rejected and hence, implying that AR days will not have an impact on current ratio holding other independent variables constant. The adjusted R-squared of approximately 25.3% indicates that AR days, INV days, and AP days have a relatively moderate explaining power to for the variation on current ratio even though there are additional independent variables to be added into the model. In addition, when the model is run on the fixing the time-period, the result suggests that the time-period is not significant in terms of model explanation. It is demonstrated in a slight incremental in R-squared value of 0.0298 (0.2940 to 0.2642). The restricted F-test confirms the insignificance of the time-period effect as the f-value is 1.5924. The regression results of hypothesis 2 illustrates that the regression coefficient of AR days, INV days, and AP days also have both the same and opposite movements with basic earning power (BEP). Holding other independent variables constant, an increase in AR days by 1 day causes a decrease in BEP by 0.0832 units. In terms of INV days, an increase in INV days by 1 day will also cause a decrease in BEP by 0.0400 units. Holding the influences of AR days and INV days unchanged, an increase in AP days by 1 day will cause an increase of BEP by 0.0035 units. The magnitude of change toward BEP caused by the changes in AR days, INV days, and AP days tends to be lower than that of current ratio.

Table 1 Regression result for hypothesis 1

Variable	Random		Fixed Time Period Effect	
	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	3.5840	3.4502	3.9347	3.7833
Accounts receivable days	-0.7181	-1.2442	-0.7682	-1.3385
Inventory turnover days	1.4938	5.3406	1.4478	5.2025
Accounts payable days	-1.8928	-5.2474	-2.0070	-5.5436
Dummy$_{Tech}$	-0.0797	-0.2362	-0.1339	-0.3987
Dummy$_{Agro}$	-0.0840	-0.2143	-0.1344	-0.3449
R-squared	0.2642		0.2940	
Adjusted R-squared	0.2532		0.2636	

Table 2 Regression result for hypothesis 2

Variable	Random		Fixed Time Period Effect	
	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	0.2617	5.1203	0.2645	5.1063
Accounts receivable days	-0.0832	-2.9303	-0.0831	-2.9058
Inventory turnover days	-0.0400	-2.9075	-0.0410	-2.9557
Accounts payable days	0.0035	0.1981	0.0025	0.1398
Dummy$_{Tech}$	-0.0110	-0.6641	-0.0111	-0.6635
Dummy$_{Agro}$	0.0280	1.4540	0.0279	1.4386
R-squared	0.0993		0.1142	
Adjusted R-squared	0.0858		0.0760	

Table 3 Regression result for hypothesis 3

Variable	Random		Fixed Time Period Effect	
	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	-1.6588	-0.1305	-1.2501	-0.0976
Accounts receivable days	-3.9180	-0.5547	-4.1792	-0.5913
Inventory turnover days	2.2063	0.6446	2.2088	0.6446
Accounts payable days	4.7070	1.0664	4.7366	1.0625
Dummy$_{Tech}$	-0.3661	-0.0887	-0.4406	-0.1065
Dummy$_{Agro}$	5.6831	1.1850	5.5824	1.1633
R-squared	0.0136		0.0417	
Adjusted R-squared	-0.0012		0.0005	

Table 4 Regression result for hypothesis 4

	Random		Fixed Time Period Effect	
Variable	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	0.0058	0.0119	-0.0332	-0.0675
Accounts receivable days	0.0628	0.2314	0.0744	0.2742
Inventory turnover days	-0.1019	-0.7753	-0.1012	-0.7694
Accounts payable days	0.0175	0.1034	0.0277	0.1617
Dummy$_{Tech}$	0.1227	0.7740	0.1312	0.8263
Dummy$_{Agro}$	-0.0199	-0.1079	-0.0119	-0.0644
R-squared	0.0042		0.0342	
Adjusted R-squared	-0.0107		-0.0074	

A low p-value of 0.0036 and 0.0039 of AR days and INV days, being lower than 5% suggests that, holding other independent variables constant, either AR days or INV days will have an influence on BEP as the null hypothesis can be rejected. In contrast, a significant value of p-value of AP days, 0.8431, indicates that the null hypothesis may not be rejected and hence, implying that AP days will not have the statistic impact on BEP holding other independent variables constant. The adjusted R-squared of approximately 8.6% indicates that AR days, INV days, and AP days have a relatively low explaining power for the variation on BEP even though there are additional independent variables to be added into the model. Additionally, when the model is run as fixing the time-period, the result suggests that the time-period is not significant in terms of model explanation. It is proved by a slight incremental in R-squared value of 0.0149 (0.1142-0.0993). The restricted F-test also confirms the insignificance of time-period effect as the f-value is only 0.6343. Given other independent variables constant, an increase in AR days by 1 day will cause a decrease in DE by 3.9178 units. In terms of INV days, an increase in INV days by 1 day will also cause an increase in DE by 2.2063 units, other things being equal. Holding the influences of AR days and INV days unchanged, an increase in AP days by 1 day will cause an increase of DE by 4.7070 units. The magnitude of change toward DE caused by the changes in AR days, INV days, and AP days, so far, has been the highest comparing to that of current ratio and BEP. High p-values of AR days, INV days, and AP days, indicate that the null hypothesis may not be rejected, and hence, imply that none of AR days, INV days, and AP days, have the significant influence on DE. The adjusted R-squared of approximately 0.1% indicates that AR days, INV days, and AP days have a very low explaining power to explain the variation on DE even though there are additional independent variables to be added into the model. It implies that working capital management does not demonstrate the significant influence on the firm's degree of leverage. Furthermore, when the model is run as fixing the time-period, the result suggests that the time-period is not significant in terms of explanation power, which can be observed by a slight incremental change in R-squared value of 0.0282 (0.0417 to 0.0136). The restricted F-test also confirms the insignificance of time-period effect. Holding other independent variables constant, an increase in AR days by 1 day will cause an increase in ROE by 0.0628 units. In terms of INV days, an increase in INV days by 1 day will also cause a decrease in ROE by 0.1019 units, other things being equal. Given the influences of AR days and INV days unchanged, an increase in AP days by 1 day will cause an increase of ROE by 0.0175 units. The high p-values of AR days, INV days, and AP days which are greater than 0.05 show that the null hypothesis may not be rejected and hence, implying that none of AR days, INV days, and AP days can have an statistic influence on ROE. The adjusted R-squared of approximately 1.1% indicates that AR days, INV days, and AP days have a very low explaining power to the variation on ROE. It implies that working capital management may not have any influence on a firm's ROE. Finally, when the model is run as fixing the time-period, the result suggests that the time-period is not significant in terms of model explanation. It is proved by a slight incremental in R-squared value of 0.0300 (0.0342-0.0042).

5. Conclusions

It results that current ratio is more relevant to INV days and AP days rather than to AR days. The operational increase in INV days is followed by the increase the current ratio while an increase in AP days will decrease the current ratio. The non-existing relationship between AR days and current ration may be due to the fact that most of the mature firms that have been established for at least 10 years tend to hold a constant level of accounts receivables. This may be due to the selective bias of the data as only well and long established survivor firms are selected for the empirical testing. It concludes that liquidity of the firm can be influenced by merely INV days and AP days, contradictory to the result for AR days.

In terms of operating efficiency, the empirical testing shows that only AR days and INV days have an influence on BEP. The result of AR days and INV days relative to BEP are similar to what is expected in the conceptual framework, which indicates a non-existing relationship between AP days and BEP. It may be caused by the fact that AR days and INV days can have an impact on sales and consequently on EBIT as well. However, accounts payables have more influence on the suppliers side instead of sales. In addition, the proportion of contribution from the delay in accounts payables, that generates the cash flows sufficiently for a daily operation, is immaterial to the overall investment in the total assets. Therefore, AP days expresses less impact on BEP and it can be concluded that only high AR days and INV days will lead to a firm's operating efficiency. Furthermore, the study indicates that none of the independent variables have a relationship with DE or ROE. It implies that efficient working capital management does not significant relevant to the degree of firm's leverage and firm's profitability in the case of Thailand. Considering the fact that working capital management is associated with the daily operation of the firm and the cash flows stream generated by an efficient working capital management is relative small in magnitude, the cash flows stream may not sufficient to contribute to an investment as well as returns. It is not wise to apply short-term generated fund for long-term financing, which results that the most of listed firms in Thailand tend to employ long-term finance in relative easier cases for listing firm comparing to non-listing ones.

It is worth to remind that the efficient working capital management relates mainly to the management of accounts receivables, inventories, and accounts payable, which results the impact on sales. Nevertheless, return on equity incorporates the overall determinations i.e. costs, selling and administrative expenses, interest expenses, and taxes, so that working capital management does not express decisive power on the profitability. Although the theoretical fundamentals provide the relative solid reasons that an efficient working capital management lead to a firm's degree of leverage and profitability, the empirical testing for the case of Thailand does not provide a confirmation for the concept, which is contradictory to the research of Napompech (2012). Napompech (2012) does address the importance of working capital management to gross profit. However, when the study examines overall resulted final profitability, it expresses insignificant relationships. Unfortunately, the lack of influences of working capital management on the leverage and enterprise profitability inexplicitly indicates the lag advancement in the managerial skills of Thai listing firms, which do not utilize the contribution of working capital management in a similar way in advanced economy.

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Economic Consequences of Corruption

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Abstract

Transparency International, a non-governmental organization dedicated to fighting corruption, created the Corruption Perception Index (CPI) to measure the degree of corruption for almost every country since 1995. From CPI score data by country, we find that the group of countries with high CPIs (low corruption) comprises those that are well developed and advanced. In contrast, countries with low CPIs (high corruption) are those with low income levels and are less developed. This paper explains how corruption can have a negative impact on the standard of living of people and economic development of a country. Our analysis focuses on market failure caused by corruption. The market failure may be in the form of monopoly, externalities, public goods and imperfect information. These market failures result in a welfare loss or efficiency loss to society, implying that the economic system is unable to perform to its potential. We claim that, through the channel of market failure, corruption can significantly hinder a country's economic development. Furthermore, it is claimed in this paper that the loss of economic efficiency caused by corruption through the channel of market failure is enormous, and the scale of the damage is much larger than the loss of public money that is generally the focus of existing literature.

Keywords: corruption, Corruption Perception Index (CPI), market failure.

1. Introduction

Transparency International, a non-governmental organization dedicated to fighting corruption, defines corruption as "the abuse of entrusted power for private gain". The abuse of power may be in the form of the government officials neglecting the enforcement of laws, awarding projects to unqualified bidders, enacting laws that benefit a certain group of people, and so on. In return, these government officials will receive bribes in the form of monetary "kick backs", physical gifts, and other gratuities such as all-expense-paid holidays.

The general view among lay people is that corruption results in a loss of government resources due to the cost of government projects being inflated by bribes. Those who gain from corruption are government officials receiving bribes, while the losers comprise every taxpayer. In addition, society as a whole will receive low-quality state infrastructure due to a contractor using substandard construction materials to cut costs in order to compensate for the payment of bribes.

However, from an economic viewpoint, the consequences of corruption are more complicated than the general view mentioned above. In particular, economists look at the loss from corruption in terms of slow economic development due to reduced government spending and a welfare loss resulting from the distortion of resource allocation caused by corruption.

In this paper, we will probe further to find the channels in which the effect of corruption will pass through to the economy's real output, as measured by Gross Domestic Product or simply GDP. At the outset, it is postulated that corruption has a negative impact on real output via the channel of market failure. This view will be discussed in detail in later sections.

2. Literature Reviews

Lambsdorff (1999) reviews a large variety of studies on the consequences and causes of corruption. Studies on corruption's impact examine investment, GDP, institutional quality, government expenditure, poverty and international flows of capital, goods and aid. Research on its causes focus on the absence of competition, policy distortions, political systems and public salaries, as well as an examination of colonialism, gender and other cultural dimensions.

Hodge et al. (2009) explicitly model the transmission channels through which corruption indirectly affects growth. Results suggest that corruption hinders growth through its adverse effects on investment in physical capital, human capital and political instability. Concurrently, corruption is found to foster growth by reducing government consumption and increasing trade openness. Overall, a total negative effect of corruption on growth is estimated from these channels.

Mo (2001) introduces a new perspective on corruption's role in economic growth and provides quantitative estimates of its impact on growth and the importance of its transmission channels. He uses least squares estimations to find that a 1% increase in the corruption level reduces the growth rate by about 0.72%. The most important channel through which corruption affects economic growth is political instability, which accounts for about 53% of the total effect. He also finds that corruption reduces the level of human capital and the share of private investment.

Mauro (1997) has analyzed a number of causes and consequences of public corruption. The paper presents evidence that corruption may have considerable adverse effects on economic growth, largely by reducing private investment, and perhaps by worsening the composition of public expenditure. Mauro also presents evidence of a negative and significant relationship between corruption and government expenditure on education, which is an important determinant of economic growth.

Most of reviewed literature attempts to find a link between corruption and economic growth and development and to analyze the channels through which the corruption transmits its negative effects to a country's economic performance. Under the existing framework, the channels under investigation include private investment, government spending, human capital and political stability.

In this paper, the author ventures to take a different approach by postulating that market failures are significant channels through which the corruption transmits its harm. The reason behind this is that, according to well-established microeconomic theory, market failure is a major factor that causes an economic system to perform at a sub-optimal level.

3. Corruption Perception Index (CPI)

This section examines the 2013 Corruption Perception Index (CPI) from Transparency International. A high CPI score indicates low corruption, while a low CPI score represents high corruption.

Table 1 Top 20 countries with high CPI scores (i.e., low corruption)

Country	CPI* Score	GDP per capita** (US$ per year)	GDP growth** (%)
1. Denmark	91	56,364	0.4
1. New Zealand	91	36,900	3.2
3. Finland	89	46,490	-0.8
3. Sweden	89	56,120	0.9
5. Norway	86	98,790	2.9
5. Singapore	86	47,210	1.3
7. Switzerland	85	80,970	1.0
8. Netherland	83	48,000	-1.2
9. Australia	81	59,260	3.4
9. Canada	81	51,570	1.7
11. Luxembourg	80	71,640	-0.2
12. Germany	78	45,070	0.7
12. Iceland	78	38,270	1.4
14. United Kingdom	76	38,500	0.3
15. Barbados	75	15,080	0.0
15. Belgium	75	44,720	-0.1
15. Hong Kong	75	36,560	1.5
18. Japan	74	47,870	2.0
19. United States	73	52,340	2.8
19. Uruguay	73	13,580	3.9

***Source:** Transparency International 2013; **Source: World Bank 2013

Table 2 Bottom 20 countries with low CPI scores (i.e., high corruption)

Country	CPI* score	GDP per capita** (US$ per year)	GDP growth** (%)
1. Kyrgyztan	24	990	-0.9
2. Guinea	24	440	3.9
3. Paraguay	24	3,400	-1.2
4. Angola	23	4,580	6.8
5. Congo Republic	22	2,550	3.8
6. Tajikistan	22	880	7.5
7. Burundi	21	240	4.0
8. Zimbabwe	21	650	4.4
9. Cambodia	20	880	7.3
10. Eritrea	20	450	7.0
11. Venezuela	20	12,460	5.6
12. Chad	19	770	8.9
13. Guinea-Bissau	19	510	-6.7
14. Haiti	19	760	2.8
15. Yemen	18	1,270	0.1
16. Turkmenistan	17	5,410	11.1
17. Iraq	16	6,130	9.3
18. Libya	15	12,930	2.1
19. Sudan	11	1,500	-10.1
20. Afghanistan	8	680	14.4

*__Source:__ Transparency International 2013; **Source: World Bank 2013

Tabulating the CPI scores of countries with their GDP per capita and GDP growth reveals that countries with high CPI scores (i.e., low corruption) are associated with high GDP per capita. The opposite applies for countries with low CPI scores (i.e., high corruption). Tables 1 and 2 illustrate these facts.

As for GDP growth rate, its association with CPI scores is inconclusive. Some countries with low CPI scores exhibit very high GDP growth. This may be due to the very low starting level of their base-year GDP data, thus yielding high growth rates.

It can be seen also that some countries with high CPI scores are associated with relatively low GDP growth rates. Most of these countries are in European Union (EU) and well developed economically. There is no doubt that some of them have been adversely affected by the public debt crisis that has spread throughout the EU since the beginning of this decade. Consequently, in recent years many of these high-CPI countries have encountered slow or even minus GDP growth as shown in Table 1.

Another way to explain why advanced countries have relatively slow economic growth is to apply microeconomic theory. Production theory states that marginal product will decline as factor inputs increase because, by nature and by assumption, the production function is increasing at a decreasing rate (i.e., a concave production function). Thus it can be deduced that advanced countries operating at a near fully utilized range of production will normally have low GDP growth rates compared with those of less-developed nations.

Table 3 Comparison among ASEAN countries

Rank	Country	CPI* score	GDP per capita** (current US$)	GDP growth** (%)
5	Singapore	86	47,210	1.3
38	Brunei	60	31,590	2.2
53	Malaysia	50	9,820	5.6
94	Philippines	36	2,500	6.8
102	Thailand	35	5,210	6.5
114	Indonesia	32	3,420	6.2
116	Vietnam	31	1,550	5.2
140	Laos	26	1,270	8.2
157	Myanmar	21	NA	NA
160	Cambodia	20	880	7.3

***Source:** Transparency International 2013; **Source: World Bank 2013

Table 3 lists all ASEAN countries. The data confirm a positive relation between CPI scores and per capita GDP. As can be seen, countries with high CPI scores such as Singapore, Brunei and Malaysia are associated with high GDP per capita, while the opposite applies for countries with low CPI scores.

This paper will attempt to explain the positive relation between CPI scores and GDP per capita by claiming that corruption causes an economy to perform at a sub-optimal or inefficient level of resource allocation. A further claim will assert that corruption will transmit its adverse impact to real output via the channel of market failures. In other words, corruption significantly hinders economic development because it aggravates the condition of market failures that, in turn, result in an economy operating below its optimally efficient level.

Note at this point that the question of causality between corruption and GDP per capita will not be addressed; to do so would require lengthy time series data for detailed analysis. Unfortunately, Transparency International's CPI Index dates back only to 1995.

4. Corruption and Market Failures

Market failure is defined as the condition under which a market cannot function to its full potential. In extreme cases, a market may fail completely. The case of a market unable to efficiently produce public goods illustrates this point.

When a market failure occurs, real output shrinks. A welfare loss will result and the economy as a whole cannot attain efficient resource allocation. Examples of market failure are monopolies, externalities, public goods and incomplete or asymmetric information. When one of these market failures occurs, the market outcome will be inefficient, and government intervention may be required as a corrective.

The following section will discuss each type of market failure in detail and analyze how corruption can aggravate the failure that consequently leads an economy to perform at a sub-efficient level.

It is worth noting that the welfare loss that occurs when a market performs inefficiently due to market failure stemming from corruption is much more severe than a loss of state revenue. The simple example of monopoly is adequate to clarify this point.

In a monopoly, a single producer or seller has complete control of a market. Consequently, the monopolist will tend to increase a product's price and lower the quantity and quality of the output to maximize profit. This will result in consumers paying higher prices and consuming lower quantities of the product. Most of all, though, they will lose freedom of choice because there exists no free competition in a monopoly, and no doubt that the society as a whole will lose. It is not hard to imagine that the damage to society caused by some forms of market failure is much more severe than mere state-revenue loss caused by corruption.
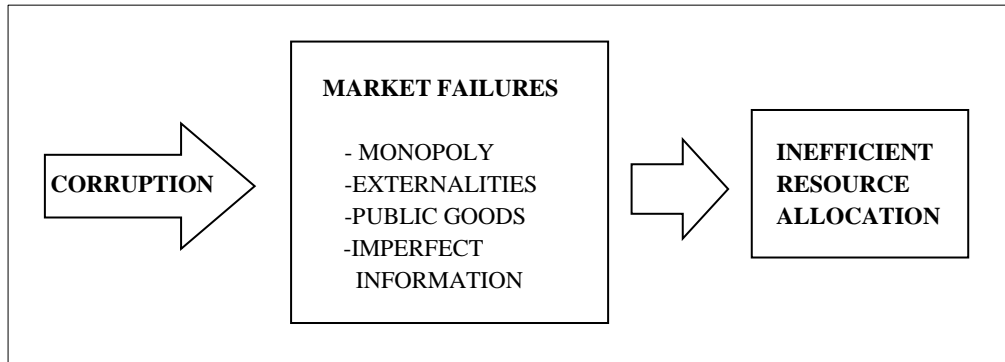
Figure 1 Conceptual Framework; Effects of Corruption on Resource Allocation

4.1 Monopoly

Monopoly is the situation under which there is only one producer or seller. In economic theory, a monopoly is undesirable because consumers lose freedom of choice. Moreover, the single producer (the monopolist) will likely cut production and increase product price to maximize profit. (Recalling microeconomic theory, the perfect competitive producer maximizes profit when product price equals marginal cost, while the monopolist maximizes profit when marginal revenue equals marginal cost, which will yield lower output and higher product price compared with what occurs in perfect competitive situation). Therefore, when a monopoly occurs, a welfare loss to society results because total output will be reduced and product prices will rise.

The question is this: how can corruption be linked to monopoly? The simple answer: the easiest way for a business operator to get rich quick is to set himself up as a monopolist whereby he can control the market without competitors. And the easiest way to become a monopolist is to bribe government officials so as to receive protection from the state in the form of a concession, regulations or laws that prevent competitors from entering the market.

It is quite obvious that corruption can be a primary stimulus for monopolies to develop. When a monopoly rules the market, society as a whole will lose by having less output and higher prices compared with the output and prices in a perfect competitive market.

4.2 Externalities

Externalities in economics refers to the effects of private actions that spill over unintentionally to society as a whole. This section focuses on negative externalities such as the emission of pollution into the atmosphere by factories and the deforestation that causes flash floods, landslides, global warming and other natural disasters.

It is obvious that the perpetrators who emit pollution and fell trees will tend to bribe government officials to avoid punishment. It is safe to conclude that corruption will aggravate the negative externalities that lead an economy to suffer from environmental problems and, hence, to perform at a sub-optimal level.

4.3 Public Goods

Public goods are those goods and services that cannot be provided efficiently by the market due to the free-rider problem. Examples of public goods are national defense, public highways, radio frequencies, national parks and other public infrastructure. Once produced, these public goods can be consumed by everyone without payment. Therefore, the private sector has no incentive to produce these goods. Hence, the government has the legitimacy to become the provider of these public goods.

Generally, the contractors who bribe government officials and politicians to win construction contracts are unqualified in terms of skills and knowledge. From the author's experience in developing countries, the government infrastructure projects that are found to be of bad quality are mostly involved with corruption scandal. Therefore, with corruption, society will have public goods of lower quality and less quantity than it would in a world without corruption. Consequently, an economy tends to perform inefficiently with public goods of low quality and quantity.

4.4 Imperfect Information

Economic theory states that an economic system will perform at its best in a perfect competitive environment. Perfect competition means that every market participant has equal opportunity in terms of entry and exit, equal access to public services and legal protection, and open access to information.

Certainly, business operators who bribe government officials tend to obtain more information more quickly (generally called "insider information") than those who do not offer bribes. As it turns out, those who give bribes are generally the ones who love cheating and are not good at doing things deemed useful to society. This will result in a situation called "Imperfect Information" that reduces the degree of competition and yields a sub-optimal outcome for an economy.

5. Conclusion

According to existing economic literature, corruption is considered a negative factor that causes lost government revenue, reduced investment and low-quality public infrastructure projects, though some researchers take a positive view of corruption as being a stimulus to economic growth.

In this paper, corruption is treated a factor that aggravates or worsens the situation of market failures that ultimately reduce an economy to perform sub-optimally. At this sub-optimal level, an economic system will experience social welfare loss and lose its ability to reach its full potential.

Examples of market failures are monopolies, externalities, public goods and imperfect information. Corruption increases the severity of these failures and hinder economic development.

In summary, corruption, working through the channel of market failures, results in an economy that performs inefficiently and unable to develop to its full potentiality. Certainly, the damage caused by corruption from the loss of economic efficiency is much greater and more severe than from the loss of state revenue. From the author's viewpoint, the loss of economic efficiency, as indicated by poor economic development, is much greater and more severe than the loss of state revenue, which accounts for only a small fraction of total national income.

Recommendation for future research is in order. In this paper, it is shown that countries with high corruption will be associated with a poor standard of living (i.e., low income per capita). It still remains to be shown or tested empirically that these poor countries also have a high degree of market failures due to high corruption. To achieve this goal, it is necessary that certain types of indices be constructed for each country to measure of the degree of monopoly, environment destruction, imperfect use of information, etc., in order to perform statistical analysis to determine the relationship between corruption and market failures.

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Data Breach Notification Laws as a Preventive Approach to Identity-Related Crimes: Lessons from the US for Thailand's Data Privacy Laws

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Abstract

Private sector organizations have increasingly collected the personal data of their customers in the course of conducting business. However, "data breach" can occur in cases of unauthorized access to personal data stored by business entities. The breach can lead to cybercrimes such as identity theft, identity fraud and identity-related crimes resulting in financial and reputational losses for both firms and customers. In response to data breach events, several U.S. states have enacted statutes or specific laws imposing responsibilities on firms to notify their customers when a data breach occurs. Although there are negative effects, data breach notification laws lead to positive results for both firms and individual customers. For instance, these laws cause firms to take preventive measures to protect personal data. In addition, they enable individuals to be aware of a breach and take preventive measures of their own that could reduce identity-related crimes. Contrary to these state laws, this paper found that Thailand's legal system provides no specific laws regarding "data breach notification". Although Thailand has several laws relating to the protection of personal data, e.g., the Credit Information Business Act and the Official Information Act, this paper indicates that these laws are insufficient and inappropriate as a preventive approach to identity-related crimes. Thus, this paper's main recommendation is to propose the enactment of a specific law that incorporates a "data breach notification" principle by using the state laws of the U.S. as a model to protect the right to privacy in case of personal data being abused by identity-related criminals.

Keywords: identity theft, personal data, data breach, data security, US data breach notification, Thailand laws

1. Introduction

Private organizations, and business entities in particular, have collected and maintained vast amounts of personal information including names, identification numbers, credit card numbers and other information associated with the name that can identify each person. Data breaches can occur during unauthorized access to the data, including when such data are accidentally lost or intentionally stolen. A breach can lead to other cybercrimes such as identity theft, identity fraud and identity-related crimes resulting in financial and reputational losses for both customers and business entities. The legal domain offers two levels of protection. The first level involves laws that impose responsibilities on firms and entities that collect personal information to disclose publicly or to notify individuals of unauthorized access to their personal information. These laws can be regarded as a "preventive approach" because notification can enable individuals to take action to prevent any impact from identity theft, identity fraud and identity-related crimes. For example, individuals may close financial accounts, change passwords for electronic financial services and have credit cards reissued with new numbers. These laws can be applied to firms or business entities at a deterrent stage, i.e., before identity-related crimes have been committed. In addition, laws exist that proscribe identity-related crime when it actually happens. Thus, the second level involves laws defining what constitutes an identity-related crime and imposes liability on the one who commits such a crime. Laws on this level can be considered as a "proactive approach".

As for the preventive stage, several U.S. states have enacted specific laws referred to as "data breach notification or data breach disclosure". Regarding the proactive stage, specific laws regulate identity-related crimes when personal data are abused or used to facilitate other crimes. On the contrary, this paper found that currently the Thai legal system provides insufficient protection on both levels. There is no law that specifies "identity theft" or "identity-related crimes" as specific criminal offences. In addition, no law imposes specific responsibilities on businesses that collect personal data to inform individuals when

their data are lost or stolen. However, this paper's scope is limited to discussing only the first level of protection; laws imposing liability for identity-related crimes are excluded from analysis. Hence, this paper focuses on the preventive approach by studying U.S. "data breach notification" laws and comparing such laws with current Thai statutes. This could lead to suggestions related to the enactment and amendment of Thai laws to protect personal information from identity-related crimes. Therefore, the paper will review literature on identity theft, identity fraud and identity-related crimes and their impact on e-businesses and the financial sector. Then this paper will study the U.S. data breach notification laws and compare them with Thailand's statutes.

2. Methodology

This paper is conducted with the aim of studying the application and interpretation of data breach notification laws in the United States which enacted to protect individuals from potential identity-related crimes. The qualitative method is introduced. The scope of analysis includes examining related documents, i.e., U.S. state laws, as well as court cases and opinions of legal scholars. Such documents are analyzed by employing the content analysis method. In addition, comparative analysis is conducted by comparing the U.S. state laws with the relevant Thai statutes.

3. Identity Theft, Identity Fraud and Identity-Related Crimes

The increasing use of personal information to make important decisions and the widespread transfer of information among a variety of public and private organizations facilitate identity theft to a much greater degree than traditional ways of privacy violation (Solove, 1997).Regarding "identity-related crimes", three terms, "identity theft", "identity fraud" and "identity crime" are interchangeably used in many countries despite their having differing characteristics (McNally et al., 2008).

The first term, identity theft, is basically regarded as a crime of stealing personal information to commit a range of further offences including various types of fraud (Jewkes,2010).The Organization for Economic Cooperation and Development (OECD) defines it as an illegal activity of "acquiring, transferring, possessing, or using personal information of a natural or legal person in an unauthorized manner with the intent to commit, or in connection with, fraud or other crimes"(OECD,2008). In the United States, a federal law proscribing "identity theft" is the U.S. Identity Theft and Assumption Deterrence Act (title 18, s. 1028 (a) (7) U.S.C.). This law imposes liability on anyone who "knowingly transfers or uses, without lawful authority, a means of identification of another person with the intent to commit, or to aid or abet, any unlawful activity that constitutes a violation of Federal law, or that constitutes a felony under any applicable State or local law". In Europe, Mitchison et al. (2004) demonstrated that it occurs "when one person obtains data or documents belonging to another,or the victim, and then passes himself off as the victim." Consequently, there are two main limitations regarding the scope of identity theft. Firstly, it covers only the abuse of a real person's identifying data. Koops and Leenes (2006) argued that the scope of identity theft is a narrow view because it covers only the unlawful use of identifying data from another person. However, some crimes can be committed without "stealing someone else's identity. For example, credit-card fraud can also be committed by generating a non-existing credit-card number". Secondly, identity theft is regarded as a subsidiary crime whereby identifying personal data are abused to commit another crime. In other words, the act of accessing or stealing data does not constitute a crime until another crime is committed.

Compared with identity theft, which is limited only to the theft of a person's identifying data, identity fraud has a broader scope because it includes the fraudulent use of any identity, real or fictitious. (Europol, 2006) A study by the UK Cabinet Office also demonstrated that "Identity fraud arises when someone takes over a totally fictitious name or adopts the name of another person with or without their consent" (UK Cabinet Office, 2002). Thus, using a fabricated identity of a non-existing person falls under the scope of identity fraud.

Identity-related crimes have broader scope, covering both identity theft and identity fraud because this category "concerns all punishable activities that have identity as a target or a principal tool" (Koops and Leenes, 2006). In this paper, the term "identity-related crimes" is used to cover all activities that target personal identity. Nevertheless, this paper's scope is limited to preventive legal measures in the stage before

such crimes have been committed. Thus, the discussion of laws penalizing identity-related crimes is beyond this study's scope.

4. The Impact of Identity Theft on E-businesses and the Financial Sector

Identity theft is a critical concern for financial institutions, other business sectors and their customers around the world. A consumer survey by the U.S. Federal Trade Commission revealed that 8.3 million people were identity-theft victims in 2005 with total losses of $15.6 billion (Conkey, 2007). Apart from financial losses of victims, this crime causes other losses such as time spent resolving problems that arise. Barker et al. (2008) found that it takes years to restore the damage done to an individual's credit ruined. In addition, Listerman and Romesberg (2009) also indicated that it takes an identity-theft victim an average of 58 to 231 hours of personal time to deal with all of the correcting and legal issues. Further damage from identity theft, identity fraud and other cybercrimes spreads to customers' growing distrust in modern payment methods, e.g., credit cards, online payments and electronic banking, which can lead customers to change their behavior of payments (Benton et al., 2007;Jonker 2007). Arango and Taylor (2009) also confirmed that perceived risk is a strong driver of consumer decisions in payment methods. As a result, customers may switch to less efficient payment forms such as cash (Cheney, 2010;Arango et al., 2011).The AARP Public Policy Institute found that 24 percent of its survey's respondents said they always pay restaurant bills with cash rather than debit or credit cards because they are worried about their cards being misused (Mayer, 2009). This perception could have a negative impact on the growth of the online business industry. Sproule and Archer (2010) found that 20% of participants in a Canadian Survey of Payments, who had been victims of fraud, stopped or reduced online shopping, and 9% stopped or reduced online banking activities. In addition, when consumers avoid modern payment and credit tools out of such fear, they can distort and restrict consumption, thus sending misleading signals throughout the economy (Crooks, 2004). Consequently, identity theft, identity-related crimes and other cybercrimes are critical obstacles to the expansion of online businesses and the financial sector. As for prevention through a technological approach, sophisticated payment instruments, such as smart cards (Sullivan, 2008) and EMV chip technology developed by VISA (VISA, 2011), were developed to restore consumer confidence. As for promoting prevention through legal means, this paper will explore U.S.data breach notification laws and compare them with Thailand's statutes.

5. Result

The results can be divided into three main findings.

5.1The U.S. data breach notification laws

According to the content analysis, this paper has findings on the data breach notification laws of the U.S. states as follows:

- The paper found that most U.S. states enacted statutes inhibiting data breach by imposing responsibilities on firms that collect personal data to notify individuals that unauthorized access to their personal information had occurred.
- The paper indicates that the content and element of data breach notification laws varies among states. For example, each state's law has its own definition of "personal information".
- The paper indicates that an important exception to data breach laws is that they exclude information that is available to the public.
- The paper indicates that the threshold requiring notification varies among states depending on two different concepts: the "strict liability model" and the "risk assessment model".
- According to a majority of statutes, the critical element for notification requirement is the resident of victim, not the location of the firms or the breach.

5.2 The impact of data breach notification laws

Regarding the impact of data breach notification laws, this paper indicates that these laws affect both firms and their customers as follows:

- With regard to the firms, this paper argues that a notification requirement can affect a breached firm positively and negatively.

- As for the impact on individual, this paper argues that notification is regarded as a measure to ensure "the right to know" of individuals. In addition, notification can lead individuals to make decisions regarding the protection of their personal data.

- The paper argues that positive effects of data breach notification on both firms and their customers could lead to a reduction in identity-related crimes.

5.3 The comparative study of U.S. and Thai laws

According to the comparative study of U.S. and Thai-related laws, the main findings are as follows:

In contrast to what exists in the U.S., the paper found that Thailand's current legal system provides no specific laws regarding "data breach notification".

Although Thailand has several laws related to the protection of personal data,e.g., the Credit Information Business Act and the Official Information Act, the paper indicates that these laws are insufficient and inappropriate as preventive approaches to identity-related crimes.

6. Discussion

The results of the content analysis are divided into three parts as follows:

6.1 The US data breach notification laws

Several U.S. states enacted statutes regulating data breach by imposing responsibilities on firms that collect personal data to notify individuals that an unauthorized access occurred to their personal information. Although most states enacted statutes based on the law approved in California, which was the first state to enact a data breach notification law, the content and element of data breach notification varies across states.

The scope of "personal information" differs among statutes. For example, California law defines personal information as "a person's first name…and his or her last name in combination with any one or more of the following pieces of data, when either the name or the data elements are not encrypted or redacted: social security number, driver's license number or state identification card number, account number, credit or debit card number, in combination with any required security code, access code or password that would permit access to an individual's financial account" (California Civil Code, section 1798.82). In 2007, two more elements were added to the definition: medical and health insurance information (California Civil Code, section 1798.29 (e) (4)-(5)).However, several states have added elements to their definitions ; for example, Wisconsin and Iowa include "unique biometric data, including fingerprint, voice print, retina or iris image" (Wisconsin Statutes Annotated, section 134.98; Iowa Code Annotated, section 715 C.1(11)). North Carolina includes an employee's digital signature (North Carolina Statutes Annotated, section 75-65). New York broadly defines the term to include "any information concerning a natural person which, because of name, number, symbol, mark or other identifier, can be used to identify that natural person" (New York General Business Law, section 899-aa(1)(a)). Regarding the nature of data, most states focus on the breach of electronic or computerized data. However, some states, such as Alaska, Indiana and Wisconsin, include both written and electronic data.

As for exceptions, most states, similar to California law, exclude information available to the public from the definition of "personal information". For example, Indiana law provides that "the term does not include information that is lawfully obtained from publicly available information…" (Indiana Code Annotated, section 24-4.9-2-10). Alaska law states that "the term does not include publicly available information containing names, address, telephone numbers, or other information an individual has voluntarily consented to have publicly disseminated"(Alaska Statutes, section 45.48.590 (5)). Ohio law also provides that "personal information does not include publicly available information…" (Ohio Revision Code Annotated, section 1349.19 (A) (7) (b)). Utah law provides that the term "does not include information regardless of its source…in widely distributed media that are lawfully made available to the general public" (Utah Code Annotated, section 13-44-102(3) (b)).

Although most state laws require notification when there is a breach related to personal information, the critical difference among state laws is the definition of data "breach". In other words, the threshold requiring notification varies across states depending on two concepts: the "strict liability model" and the"risk assessment model".

With regard to the strict liability model, a firm is required to notify whether or not there has been actual damage to customers. In other words, even though an identity-related crime may or may not have been committed, a firm must issue notification of a data breach. Several statutes define "breach" as "unauthorized access" to personal data. For example, California law defines a breach as "unauthorized acquisition" of data (California Civil Code, section 1798.82 (d)).North Dakota law also defines a security breach as "unauthorized access to" or "acquisition of" computerized data (North Dakota Code, section 51-30-01 (1)). Other states that fall within this model are Arizona, Delaware, Florida, Illinois and Texas.

Contrary to the strict liability model, the "risk assessment model" requires breached firms to notify only under certain conditions, particularly when a risk assessment or investigation has been done to demonstrate the risk of a breach to individuals. Some states, such as Kansas, Maine, New Hampshire and Utah, require firms to determine whether there has been a misuse of personal data. Other states, such as Alaska, Arkansas and Florida, provide that notification is not required if a firm has conducted an "appropriate investigation" and "reasonably" determined that such breach has not and will likely not affect individuals. However, these laws require firms to create and maintain documents related to the investigation. Some states such as New York provide certain factors for firms to consider in determining a breach, e.g., (1) indication that an unauthorized person has physical control of the information through means such as a lost or stolen computer, and (2) the data has been download or copied (New York General Business Law, section 899-aa (c)).However, these factors can only assist in determining a breach, not describing details of the "appropriate or adequate investigation" that firms must undertake. Thus, the critical problem for this model is that most states do not stipulate an explicit method of investigation. In addition, there are no prescriptions for how a firm should document the results of an investigation. Some scholars have proposed that firms should be able to answer certain questions, such as where the stolen data were stored and how and by whom the data were accessed (Lesemann, 2010).

For a majority of state laws, the critical element for notification requirement is the resident of the victim, not the location of the firm or the breach. This could also be regarded as an increased burden on breached firms because they must comply with the requirements of state laws for each of their affected customers. Thus, breached firms could face multiple requirements if their victims are dispersed across the country.

Despite the varied scope and elements, the common factor of those state laws is a notification requirement that enables individuals to be aware of unauthorized access to their personal data. This leads to effects that will be discussed in the next section.

6.2 The impact of data breach notification laws

Data breach notification laws affect both firms and their customers. Firms may find that the notification requirement affects them positively and negatively. One potentially positive effect would be an improvement in a firm's data security practices. The main function of data breach laws, requiring business entities to notify upon discovery of a breach, is to "transform private information about firm practices into publicly-known information" (Schwartz & Janger, 2007). This function can create an incentive for business entities to take appropriate measures to protect personal data they collected. Notification could affect reputation because customers may lose confidence in breached firms (Ponemon, 2005). Apart from reputational damage, financial and economic aspects of the damage are evident. Notification can lower a breached firm's stock price, especially after a data breach caused by unauthorized access (Campbell et al., 2003).

Cavusoglu et al. (2004) demonstrated that notification can result in the loss of $2.1 of a firm's market valuation per stock. Acquisti et al. (2006) studied the effect of data breaches on stock market prices of such firms and found a "short-lived, reduction of 0.6 percent on the day that the breach is disclosed." Comparing breached and non-breached firms, Ko & Dorantes (2006) found that the sales and overall performance of breached firms is lower than that of non-breached firms. In addition, other costs are

associated with notification such as the cost of notifying costumers. Thus, firms appear to make security and operational investments in response to the disclosure requirement (Samuelson Law, Technology & Public Policy Clinic, 2007). Consequently, these effects can lead to a reduction of data breach events, thus deterring identity-related crimes.

Nevertheless, the notification requirement can also affect business entities negatively. First of all, it is argued that the cost and time spent regarding notification can be burdensome. As indicated above, data breach laws on the state level differ and are based on the residence of the individual victims. Thus, firms operating in multiple states must comply with the state laws of each of their affected customers. This can increase costs to breached firms.

Secondly, in some cases the potential for identity-related crimes may be low. Hence, it is argued that such notifications are an unnecessary cost for businesses. In addition, individuals may become desensitized if they receive too many notices (Cate, 2005).

Thirdly, some argue that the notification requirement can be an obstacle to the growth of e-commerce and technological development (Lenard & Rubin, 2006).

As for the impact on individuals, notification is regarded as a measure to ensure "the right to know" of individuals by informing them when their personal data are lost or stolen. The awareness can lead them to make decisions concerning the protection of their information from their perspective. Thus, individuals can take appropriate actions to prevent any identity-related crimes that may follow. For example, they can inform banks and other financial institutions to block transactions or to cancel accounts. In addition, they may change passwords and have credit cards reissued with new numbers. As a result, notification could increase consumer awareness of a data breach and encourage victims to be prepared for identity-related crimes that may follow.

Consequently, although there are some negative effects, data breach notification causes firms to take preventive measures to protect personal data. In addition, it causes individuals to be aware of the situation, thus allowing them to take preventive measures. This could lead to a reduction in identity-related crimes.

6.3 The comparative study of US and Thai laws

Regarding the preventive stage, i.e., the period before an identity-related crime has committed, several Thai laws relate to the protection of personal data, e.g., the Credit Information Business Act and the Official Information Act. Nevertheless, this paper indicates that these laws are insufficient and inappropriate as preventive approaches to identity-related crimes.

The "Official Information Act", B.E. 2540 (1997) could be regarded as a specific law related to the protection of personal information. This law's main purpose is to entitle an individual the right to access to public information controlled by a state agency, which is a constitutional right as appears in section 56 of the Thai Constitution B.E. 2550 (2007). Hence, provisions of this Act mainly involve the disclosure of public information (sections 7, 9, 11). However, this law provides an exception to the access of information in the case of "personal information". In addition, this Act indicates the principles of protecting personal information in section 23, such as the collection limitation principle, data quality principle, purpose specification principle and use limitation principle. Similar to U.S. data breach notification laws, the term "personal information" in this Act is broadly defined to include "information relating to all the personal particulars of a person, such as education, financial status, health records, criminal records or employment records, which contain the name of such person or contain a numeric reference, code or such other indications identifying that person as fingerprints, tapes or diskettes in which a person's sound is recorded, or photographed…" Compared with the US data breach notification, this Act has several limitations in applying to prevent identity-related crimes. Firstly, although there are several principles of personal data protection, there is no requirement for notification when there is unauthorized access to personal data. Secondly, the scope of this Act merely covers personal information in possession or control of a state agency. Thus, this Act excludes information in possession of private sectors such as financial and business firms.

Regarding the financial sector, Thai law specifically related to the protection of personal data is the Credit Information Business Act B.E. 2545 (second edition, B.E.2549).This law's objective is to protect the

right to know of financial institutions, which are granted the right to access credit information for analyzing the credit worthiness of clients. However, this law protects the right to privacy of individuals by stipulating data protection principles.   According to the main principles of personal data, the "financial institutions" include commercial banks, finance companies, securities companies and insurance companies. They are required to submit client data to a "Credit Information Company", a firm that obtains a license to operate a credit information business that stores and processes the data. A financial institution that is a member of a credit information company is entitled to access personal information stored by the company.

The protection of data privacy consists of several principles as follows:

-Although a credit information company is required to disclose credit information to its members, which are financial firms, the disclosure can be done only under certain conditions set forth in section 20. The first condition reflects the "limitation of use" principle, i.e., the purpose of disclosure is allowed merely for analyzing the granting of credit and insurance. The second condition relates to the "consent" principle, i.e., a letter of consent from the owner of data should be obtained before disclosure. However, exceptions enable the disclosure without consent, such as a case whereby an order or summons is made by a court.

-The law excludes some sensitive data from being collected or stored, referred to as "prohibited information" (Section 3), and includes "physical handicaps, genetics, information of a person who is in the process of criminal proceedings."

-As for security in data processing, the law imposes a responsibility on credit information companies to prepare systems to protect the security of personal data, i.e., ways to secure the confidentiality and safety of information to prevent its abuse and to prevent unauthorized access to information, including systems to prevent information from being amended, damaged or destroyed illegally or without permission (Section 17).

Compared with U.S. data breach notification laws, this Act has several limitations that apply to preventing identity-related crimes. Firstly, the law's scope is limited merely to personal data of clients who apply for "credit", which includes, e.g., "a granting of loan or credit amount of loan, securities lending, hire-purchase, leasing". As a result, personal data possessed or stored by other business firms that are not engaged in a "credit" business fall out of the law's scope. Secondly, although it has several principles of personal data protection, including prevention of unauthorized access, this Act does not require financial firms to notify customers of an event of unauthorized access to their personal data.

Apart from these laws, in 2009 the Thai government adopted a draft of the Personal Data Protection Bill to protect information privacy. The bill aimed to protect personal information from being illegally used and disclosed without consent. A data controller was not allowed to transfer personal data to third countries having no data protection laws or having an inadequate level of protection without consent. The bill also would require businesses to develop preventive measures to protect personal information from being used without consent. However, the bill has not been enacted while it is in the process of revision by the Parliament. In addition, there is no "notification" principle in this draft bill.

Consequently, the lack of legal protection at the initial stage, i.e., when an unauthorized access of personal data or data loss occurs, exists in the current Thai legal environment. Individuals may even not know of a breach to their personal data in the possession of businesses. If there is a breach and a firm takes no action, it faces no legal liability. Thus, the risk of identity-related crimes is placed upon individuals who may or may not be victims. If an identity-related crime actually occurs, a second group of legal protections will be taken into consideration as proactive measures, which is beyond the scope of this paper.

7.   Conclusion and Recommendation

A personal data breach can lead to identity-related crimes resulting in financial and reputational losses for both customers and business entities. From a legal perspective, there are two levels of protection. The first level involves laws that impose requirements on firms to notify individuals of unauthorized access to their personal information. These laws, referred to in the U.S.as "data breach notification or data breach disclosure", can be considered as a preventive approach to identity-related crimes. Nevertheless, Thailand's current legal system provides no specific laws regarding "data breach notification". Although Thailand has several laws related to the protection of personal data, e.g., the Credit Information Business Act and the

Official Information Act, these laws are insufficient and inappropriate as preventive approaches due to several limitations.

Consequently, this paper proposes solutions as follows:

- Regarding alternative measures, self-regulated notifications should be introduced by the commercial sector as a code of conduct regarding data security. In the absence of a legal requirement, this voluntary approach would increase consumer confidence and result in a positive impact on a firm's image and reputation.

- As for legal measures, this paper proposes that the Thai government enact specific laws incorporating the "data breach notification" principle by adopting U.S. state laws as a model to deter identity-related crimes. Since the U.S. data breach notification laws in the US consist of comprise two approaches with no clear details of "adequate investigation", this paper suggests a "strict liability" approach for Thai law. Therefore, notification should be required upon unauthorized access to personal data. This principle would be incorporated into the Credit Information Business Act B.E. 2545 (second edition, B.E.2549) by amendment to this Act. Alternately, this principle could be added to the draft bill of "the Personal Data Protection Bill" as part of its data protection principles.

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APPENDIX A

RANGSIT JOURNAL OF SOCIAL SCIENCES AND HUMANITIES (RJSH)

ACKNOWLEDGEMENTS

APPENDIX B

RANGSIT JOURNAL OF SOCIAL SCIENCES AND HUMANITIES (RJSH)

NOTE FOR AUTHORS

1. Aims and Scope

Rangsit Journal of Social Sciences and Humanities (RJSH) is an international scholarly journal officially published biannually, in print and on-line. The months of publication are January and July. It is a multidisciplinary journal that aims to provide a high profile vehicle for publication of various new issues in different academic areas. The scope of the *Journal* encompasses, but is not limited to, social sciences, and humanities.

2. Submission Deadline

Submissions are to be permanently open. A manuscript submitted between July 1st and December 31st will be considered for publication in the January-June Issue of the subsequent year whereas a manuscript submitted between January 1st and June 30th will be considered for publication in the July-December Issue.

3. Categories of Articles

The *Journal* accepts the following types of articles:
1. **Research Articles:** A research article is a regular quantitative or qualitative article which aims to present new findings or interpretations.
2. **Notes or Address:** A brief record of something or speech written down that presents important issues.
3. **Review Articles:** There are two types of review articles: non-systematic (or journalistic) reviews and systematic reviews. Non-systematic or journalistic reviews provide a summary of evidence derived from primary studies that have been selected and synthesized according to the author's personal and professional perspective. Non-systematic reviews can cover a wide range of subject matter at various levels of totality and comprehensiveness. Systematic reviews, on the other hand, provide summaries of related primary studies that have been searched for, evaluated, and selected and reported according to a rigorous methodology.
4. **Innovations:** An innovation is an article which aims to present creative arts and designs, procedures or devices.
5. **Comments or Critiques:** A comment or critique is a short article that makes comments or replies to a comment on another article already published by this Journal.
6. **Book Reviews**: A book review is a short article that is written by a specialist and read by the general community. The aim of a book review is to give a brief summary of the book's strengths and weaknesses and to evaluate the book's overall usefulness to the audience it is intended for.

Research articles, review articles, and innovations should not exceed 15 pages of standard A4 paper using *RJSH* format. Notes, comments or critiques, and book review should not exceed 5 pages. Template for research articles is available at www.rsu.ac.th/rjsh. All categories of articles must coincide with manuscript preparation instruction (see Manuscript Preparation Section).

4. Editorial Policies

RJSH accepts only the work that has not been published; that is not under consideration for publication, elsewhere; and that its publication has been approved by all co-authors and the relevant authorities responsible at the institute where the work was conducted. Submission also implies that the authors have already obtained all necessary permissions for the inclusion of copyrighted materials, such as figures and tables from other publications. Previously published work will not be considered for publication. Submitting a copied piece of writing as one's own original work is considered plagiarism. The *Journal* is published by Rangsit University Press, Thailand. Contributions are in English. Copyright is by the publisher and the authors.

Authorship: *RJSH* expects that all of the authors listed on a manuscript have contributed substantially to the submitted paper. By submission of the manuscript, cover letter, and Copyright Transfer Agreement (CTA), the corresponding author affirms that all named authors have agreed to be listed as authors of the paper. Furthermore, by their signatures on the CTA, all authors affirm that they have both read and approved the manuscript, and that they take full responsibility for the content of the article.

Review Process: *RJSH* assumes responsibility for insuring that submitted manuscripts receive expert and unbiased reviews. *RJSH* strives to complete a peer review of all submitted papers and the publication of accepted manuscripts in a timely manner and to keep the authors informed of any problems with their manuscript. All submitted manuscripts are initially evaluated by the Editor-in-Chief in consultation with members of the Editorial Board before being sent for double-blind review. *RJSH* is under no obligation to submit every manuscript to formal peer review. Manuscripts that are judged by the editors to be inferior or inappropriate for publication in the *Journal* may, at the discretion of the Editor-in-Chief, be rejected without formal written reviews by referees. *RJSH* attempts to obtain at least two written reviews for each manuscript that is entered into the peer review process, although the Editor-in-Chief has the discretion to make final decisions about the disposition of a manuscript with fewer than two reviews. The reviewers' evaluations will be used by the editors to decide whether the paper should be accepted, revised or rejected. A copy of the referees' comments will be sent to the corresponding authors whose paper needs revision. All reviewers serve anonymously and their identities are protected by the confidentiality policy of *RJSH*.

Confidentiality: As is customary for the peer review process, *RJSH* holds the identity of authors and the contents of all submitted manuscripts in confidence until such time as the papers are published. This confidentiality extends to the comments of editors and reviewers that have evaluated the paper; these comments and reviews are released only to the corresponding author. Co-authors may have access to these documents either by obtaining them directly from the corresponding author or by submitting to *RJSH* a letter of request that has been signed by the corresponding author. Similarly, *RJSH* expects that editors and reviewers will maintain strict confidentiality of the authors' identities and the contents of manuscripts that they examine during the review process, and furthermore, will never disclose the contents (either orally or in writing) of documents related to the peer review of a manuscript. A violation of this policy is considered a serious breach of trust.

Research Involving Animals or Humans: Authors must state in the manuscript that the work was approved by, at least, their institutional ethical review board for any research involving human and animal subjects. These approvals are required for publication in *RJSH*.

5. **Manuscript Preparation**

General Instruction: Submit your manuscript in both PDF and MS word formats. Manuscripts are acceptable in both US and UK English, but the use of either must be consistent throughout the manuscript. Please note that the editors reserve the right to adjust style to certain standards of uniformity.

Format: Unless specified, type text with 10-point Times New Roman font on 12-point line spacing, with a 1.25 inch left margin, 1 inch bottom and right margin, 2 inch top margin, 1.2 inch header, and 0.6 inch footer. Main text is set in single column. First lines of paragraphs are indented 0.5 inch. For hard copy, use standard A4 paper, one side only. Use ordinary upper- and lower-case letters throughout, except where italics are required. For titles, section headings and subheadings, tables, figure captions, and authors' names in the text and reference list: use ordinary upper- and lower-case letters throughout. Start headings at the left margin. If you wish, you may indicate ranking of complicated section headings and subheadings with numerals (1, 1.1, 1.1.1). Try not to exceed three ranks. All pages must be numbered in the top right-hand corner.

Title: Use 11-point bold font on 12-point line spacing. The length of the title of the article must not exceed 2 lines. A title should be concise and informative. The alignment of the title is centered.

Author Names: Use 10-point font on 11-point line spacing. Centered alignment and leave one line space below the title of the article. Begin with the first name of the author followed by the last name. For more

than one author, separate each name by a comma (,), and identify each author's affiliation by superscript numbers at the end of the author's last name.

*Author Affiliations***:** Use 9-point font on 10-point line spacing. Centered alignment and leave one line space below the author names. Include institutional and e-mail addresses for all authors. Place superscript numbers at the beginning of each affiliation accordingly.

*Abstract***:** Use 10-point font on 11-point line spacing for heading and 9-point font on 11-point line spacing for abstract content. An abstract of up to 250 words must be included as and when appropriate. For research papers; the purpose and setting of the research, the principal findings and major conclusions, and the paper's contribution to knowledge should be briefly stated. For empirical papers the locations of the study should be clearly stated, as should the methods and nature of the sample, and a summary of the findings and conclusion. Please note that excessive statistical details should be avoided, abbreviations/acronyms used only if essential or firmly established.

*Keywords***:** List up to 6 keywords and separate each keyword by a comma (,). The keywords should accurately reflect the content of the article. The keywords will be used for indexing purposes.

*Main Text***:** Use 10-point font on 12-point line spacing. In the main body of the submitted manuscript the following order should be adhered to: introduction, methodology, results (if any), discussion (if any), conclusion, acknowledgements, and references. Please note that some article categories may not contain all components above. Tables or figures must be included in the text for the reviewing process. In addition, tables and figures must also be submitted individually in separate files. Refer in the text to each table or illustration included, and cite them in numerical order, checking before submission that all are cited and in correct sequence.

*References in the Text***:** To insert a citation in the text use the author-year system, i.e., the author's last name and year of publication. Examples are as follows: "Since Johnson (2008) has shown that..." or "This is in agreement with results obtained later (Benjamin, 2010)". For 2-3 authors; all authors are to be listed, with "and" separating the last two authors, for more than three authors, list the first author followed by et al. The list of references should be arranged alphabetically by authors' names. All publications cited in the text should be presented in a list of references following the text of the manuscript. The manuscript should be carefully checked to ensure that the spelling of authors' names and dates are exactly the same in the text as in the reference list. Responsibility for the accuracy of bibliographic citations lies entirely with the author(s). Citation of a reference as "in press" implies that the item has been accepted for publication. Authors are responsible for the accuracy of the content of the references.

*List of References***:** *RJSH* uses the American Psychological Association (APA) referencing style, details of which can be found at http://www.apastyle.org/. References should be listed at the end of article, arranged alphabetically according to the last names of the authors and then chronologically. The following are examples of the APA referencing style:

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Author./ (Year of publication)./Title of Abstract (abstract)./*Journal Title*,/*Volume*(Issue),/Page number.
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Clark, D.V., Hausen, P.H., & Mammen, M.P. (2002).Impact of dengue in Thailand at the family and population levels (abstract). *Am J Trop Med Hyg*, *67*(2 Suppl), 239.

Books
Author./(Year of publication)./*Book Title*./Edition (if any)./Place of publication:/Publisher.
Example:
Goodwin, C.J. (1995). *Research in psychology: Methods and design*. New York: John Wiley & Sons, Inc.

Book Articles
Author./(Year of publication)./Article Title./*Book Title* (Page Numbers)./Edition (if any)./Place of publication:/Publisher.

Example:
Holland, J.L. (1973). Making vocational choice.*A theory of career* (pp. 43-49). New Jersey: Prentice-Hall.

Conference and Seminar Proceedings
To cite proceedings that are published regularly, use the same format as for a journal article. To cite proceedings that are published in book form, use the same format as for an article in a book.

Dissertation or Thesis
Author./(Year of publication)./Title of dissertation or thesis./Type of Thesis./Awarding Institution.
Example:
Norasingha, A. (2009). Expression and distribution of mucorinic receptors in hepatic composite of the
    cirrhotic rats.A thesis for the degree of Master of Science in Biomedical Sciences.Rangsit
    University.

Editorials
Author./(Year of publication)./Title of Editorial (editorial)./*Journal Title,/ Volume*(Issue),/Page numbers.
Example:
    Fisher, R.I. (2003). Immunotherapy in Non-Hodgkin's lymphoma: Treatment advances (editorial).
    SeminOncol, *30*(2Suppl 4), 1-2.

Journal Articles
Author./(Year of publication)./Article Title./*Journal Title,/ Volume*(Issue),/Page numbers.
Example:
Leelawat, S., Leelawat, K., Narong, S., &Matangkasombut, O. (2010). The dual effects of delta 9-
    tetrahydrocannabinol on cholangiocarcinoma cells: Anti-invasion activity at low concentration and
    apoptosis induction at high concentration. *Cancer Investigation*, *28*(4), 357-363.
Polk, A., Amsden, B., Scarrtt, D., Gonzal, A., Oknamefe, O., &Goosen, M. (1994).Oral delivery in
    aquaculture. *Aquacult. Eng*, *13*, 311-323.
Seals, D.R., & Tanaka, H. (2000). Manuscript peer review: A helpful checklist for students and novice
    referees. *AdvPhysiolEduc*, *22*, 52-58.
Srichandum, S. & Rujirayanyong, T. (2010).Production scheduling for dispatching ready mixed concrete
    trucks using bee colony optimization. *American J. of Engineering and Applied Sciences*, *3*(1), 823-
    830.

Letters
Author./(Year of publication)./Title of Letter./*Journal Title./ Volume*(Issue),/Page number.
Example:
Enzensberger, W., & Fisher, P.A. (1996). Metronome in Parkinson's disease (letter). *Lancet*, *347*, 1337.

Notes
Author./(Year of publication)./Title of Note./*Journal Title./ Volume*(Issue),/Page number.
Example:
Haier, R.J., Schroeder, D.H., Tang, C., Head, K., & Colom, R. (2010). Gray matter correlates of cognitive
    ability tests used for vocational guidance. *Biomed Central*, *3*, 206.

Unpublished/In Press Articles
Author./(In press Year)./Article Title./*Journal Title./*(in press).
Example:
Veena, B. (2004). Economic pursuits and strategies of survival among Damor of Rajasthan. *J Hum Ecol.* (in
    press).

Internet periodicals
Author./(Year of publication)./Article Title./*Journal Title,/Volume*(issue),/ page numbers./Retrieved mm dd,
    year, from the full URL of the web page

Example:
Adams, P.J. (2000). Australian economic history. *Journal of Australian Economics, 5*(2), 117-132.
        Retrieved June 12, 2001, from http://jae.org/articles.html

<u>**Internet non-periodicals**</u>
Author./(Year of publication)./Article Title./Retrieved mm dd, year, from the full URL of the web page
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There are four editorial decisions: Accept, Accept with Minor Revision, Resubmit with Major Revision, and Reject. A Reject decision is definitive and authors may not submit a new version of the manuscript to the *RJSH*. A Resubmit with Major Revision requires a major re-write of the manuscript and/or inclusion of significant new data, and thus the creation of a new manuscript, which will thus be assigned a new submission date. An Accept with Minor Revision decision implies that the paper can, in principle, attain the required standard of the *Journal* without major change. Editors may or may not have a revised manuscript reviewed (generally, by the original reviewers), in order to ascertain whether changes to the original manuscript adequately responded to the criticisms. If changes made do not result in a paper of the required standard, the revised manuscript will be definitively rejected. If a revised manuscript of "Accept with Minor Revision" is accepted, the original submission date will be retained.

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9. Further Reading

The following resources will provide valuable guidelines for the preparation of manuscripts.

Anonymous. (n.d.). How to write abstract. Retrieved January 17, 2011, from
http://www.journal.au.edu/au_techno/2006/jan06/vol9num3_howto.pdf
Anonymous. (n.d.). How to write an abstract: Links and tips. Retrieved January 17, 2011, from
http://research.berkeley.edu/ucday/abstract.html
Koopman, P. (n.d.). How to write an abstract. Retrieved January 17, 2011, from
http://www.ece.cmu.edu/~koopman/essays/abstract.html
Lemire, D. (n.d.). Write good papers. Retrieved January 17, 2011, from http://lemire.me/blog/rules-to-write-a-good-research-paper/
Plonsky, M. (n.d.). Psychology with style: A hypertext writing guide. Retrieved January 17, 2011, from
http://www.uwsp.edu/psych/apa4b.htm
Seals, D.R., & Tanaka, H. (2000). Manuscript peer review: A helpful checklist for students and novice referees. *Adv. Physiol. Educ,22*, 52-58.
Jones, A., & Pham, H. (n.d.). Basic Referencing using the APA System, Teaching and learning unit, Faculty of Economics and Commerce, The University of Melbourne. Retrieved February 15, 2011, from
http://www.scribd.com/doc/57603066/A-Pa-Style

APPENDIX C

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Please note that the paper size is standard A4 size (approx 8.27 x 11.69 in)

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Author Names (Use 10-point Times New Roman font on 11-point line spacing.
Begin with the first name of the author followed by the last name. For more than one author, type 'and' before the last author's name. For more than two authors, also separate each name by a comma (,). Identify each author's affiliation by superscript numbers at the end of the author's last name.)

Author Affiliations (Use 9-point Times New Roman font on 10-point line spacing.
Include institutional and e-mail addresses for all authors. Place superscript number in front of author's affiliation corresponding to author's name.)

Abstract (10-point bold font on 11-point line spacing)
For abstract content, use 9-point Times New Roman font on 11-point line spacing. First line is indented 0.5 inch. An abstract of up to 250 words must be included. Include your major findings in a useful and concise manner. Include a problem statement, objectives, brief methods, results, and the significance of your findings.

Keywords: *List up to 6 keywords and separate each keyword by a comma (,). The keywords should accurately reflect the content of the article. The keywords will be used for indexing purposes.*

1. Introduction

The actual manuscript will be published in a single-column style in the RJSH journal. This single column template is adopted as a user friendly format. Thus, with this template, the main text is set in a single column. Type text with 10 point Times New Roman font on 12 point line spacing, with a 1.25 inch left margin, 1 inch bottom and right margin, 2 inch top margin, 1.2 inch header, and 0.6 inch footer. First lines of paragraphs are indented 0.5 inch. Please note that the paper size is standard A4 size (approx 8.27 x 11.69 in). In MS Word, select "Page Layout" from the menu bar, and under Paper Size select A4 Size.

The introduction should put the focus of the manuscript into a broader context. As you compose the introduction, think of readers who are not experts in this field. Include a brief review of the key literature. If there are relevant controversies or disagreements in the field, they should be mentioned so that a non-expert reader can find out about these issues further. The introduction should conclude with a brief statement of the overall aim of the experiments.

To insert a citation in the text use the author-year system, i.e., the author's last name and year of publication. Examples are as follows: "Since Johnson (2008) has shown that..." or "This is in agreement with results obtained later (Benjamin, 2010)". For 2-3 authors; all authors are to be listed, with "and" separating the last two authors, for more than three authors, list the first author followed by et al. The list of references should be arranged alphabetically by authors' names. All publications cited in the text should be presented in a list of references following the text of the manuscript. The manuscript should be carefully checked to ensure that the spelling of authors' names and dates are exactly the same in the text as in the reference list. Responsibility for the accuracy of bibliographic citations lies entirely with the author(s). Citation of a reference as "in press" implies that the item has been accepted for publication. Authors are responsible for the accuracy of the content of the references.

2. Objectives

The objectives of the study should be specified explicitly.

3. Materials and methods

This section should provide enough detail to allow full replication of the study by suitably skilled investigators. Protocols for new methods should be included, but well-established protocols may simply be referenced.

4. Results

The results section should provide details of all of the experiments that are required to support the conclusions of the paper. There is no specific word limit for this section. The section may be divided into subsections, each with a concise subheading. The results section should be written in past tense.

Tables must be cell-based without vertical lines. They should be produced in a spreadsheet program such as Microsoft Excel or in Microsoft Word. Type all text in tables using 9-point font on 10-points line spacing. Type the caption above the table to the same width as the table.

Tables should be numbered consecutively. Footnotes to tables should be typed below the table and should bereferred to by superscript numbers. Submit separate files of tables in their original file format and not as graphic files in addition to incorporating in the main text. Tables should not duplicate results presented elsewhere in the manuscript (e.g., in graphs).

Table 1 Table caption

C1	C2	C3	C4
R1			
R2			
R3			
R4			
R5			
R6			

If figures are inserted into the main text, type figure captions below the figure. In addition, submit each figure individually as a separate file. Figures should be provided in a file format and resolution suitable for reproduction, e.g., EPS, JPEG or TIFF formats, without retouching. Photographs, charts and diagrams should be referred to as "Figure(s)" and should be numbered consecutively in the order to which they are referred

Figure 1 Figure caption

Table 2 Table caption

C1	C2	C3	C4	C5	C6	C7
R1						
R2						
R3						
R4						
R5						
R6						
R7						
R8						
R9						
R10						

Figure 2 Figure caption

5. Discussion

The discussion should spell out the major conclusions of the work along with some explanation or speculation on the significance of these conclusions. How do the conclusions affect the existing assumptions and models in the field? How can future research build on these observations? What are the key experiments that must be done? The discussion should be concise and tightly argued. Conclusions firmly established by the presented data, hypotheses supported by the presented data, and speculations suggested by the presented data should be clearly identified as such. The results and discussion may be combined into one section, if desired.

6. Conclusion

The Conclusion section restates the major findings and suggests further research.

7. Acknowledgements

People who contributed to the work but do not fit criteria for authorship should be listed in the Acknowledgments, along with their contributions. It is the authors' responsibility to ensure that anyone named in the acknowledgments agrees to being so named. The funding sources that have supported the work should be included in the acknowledgments.

8. References

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Abstracts

Author./ (Year of publication)./Title of Abstract (abstract)./*Journal Title*,/*Volume*(Issue),/Page number.
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Clark, D.V., Hausen, P.H., &Mammen, M.P. (2002). Impact of dengue in Thailand at the family and population levels (abstract).*Am J Trop Med Hyg*, *67*(2 Suppl), 239.

Books

Author./(Year of publication)./*Book Title*./Edition (if any)./Place of publication:/Publisher.
Example:
Goodwin, C.J. (1995). *Research in psychology: Methods and design*. New York: John Wiley & Sons, Inc.

Book Articles

Author./(Year of publication)./Article Title./*Book Title* (Page Numbers)./Edition (if any)./Place of publication:/Publisher.
Example:
Holland, J.L. (1973). Making vocational choice. *A theory of career* (pp. 43-49). New Jersey: Prentice-Hall.

Conference and Seminar Proceedings

To cite proceedings that are published regularly, use the same format as for a journal article. To cite proceedings that are published in book form, use the same format as for an article in a book.

Dissertation or Thesis

Author./(Year of publication)./Title of dissertation or thesis./Type of Thesis./Awarding Institution.
Example:
Norasingha, A. (2009). Expression and distribution of mucorinic receptors in hepatic composite of the cirrhotic rats. A thesis for the degree of Master of Science in Biomedical Sciences. Rangsit University.

Editorials

Author./(Year of publication)./Title of Editorial (editorial)./*Journal Title*,/ *Volume*(Issue),/Page numbers.
Example:
Fisher, R.I. (2003). Immunotherapy in Non-Hodgkin's lymphoma: Treatment advances (editorial). *SeminOncol*, *30*(2Suppl 4), 1-2.

Journal Articles

Author./(Year of publication)./Article Title./*Journal Title*,/ *Volume*(Issue),/Page numbers.
Example:
Leelawat, S., Leelawat, K., Narong, S., & Matangkasombut, O. (2010). The dual effects of delta 9-tetrahydrocannabinol on cholangiocarcinoma cells: Anti-invasion activity at low concentration and apoptosis induction at high concentration. *Cancer Investigation*, *28*(4), 357-363.
Polk, A., Amsden, B., Scarrtt, D., Gonzal, A., Oknamefe, O., &Goosen, M. (1994).Oral delivery in aquaculture. *Aquacult.Eng*, *13*, 311-323.
Seals, D.R., & Tanaka, H. (2000). Manuscript peer review: A helpful checklist for students and novice referees. *AdvPhysiolEduc*, *22*, 52-58.
Srichandum, S. & Rujirayanyong, T. (2010). Production scheduling for dispatching ready mixed concrete trucks using bee colony optimization. *American J. of Engineering and Applied Sciences*, *3*(1), 823-830.

<u>Letters</u>
Author./(Year of publication)./Title of Letter./*Journal Title*./ *Volume*(Issue),/Page number.
Example:
Enzensberger, W., & Fisher, P.A. (1996). Metronome in Parkinson's disease (letter). *Lancet*, *347*, 1337.

<u>Notes</u>
Author./(Year of publication)./Title of Note./*Journal Title*./ *Volume*(Issue),/Page number.
Example:
Haier, R.J., Schroeder, D.H., Tang, C., Head, K., & Colom, R. (2010). Gray matter correlates of cognitive ability tests used for vocational guidance. *Biomed Central*, *3*, 206.

<u>Unpublished/In Press Articles</u>
Author./(In press Year)./Article Title./*Journal Title*./(in press).
Example:
Veena, B. (2004). Economic pursuits and strategies of survival among Damor of Rajasthan. *J Hum Ecol.* (in press).

<u>Internet periodicals</u>
Author./(Year of publication)./Article Title./*Journal Title*,/*Volume*(issue),/ page numbers./Retrieved mm dd, year, from the full URL of the web page
Example:
Adams, P.J. (2000). Australian economic history. *Journal of Australian Economics, 5*(2), 117-132. Retrieved June 12, 2001, from http://jae.org/articles.html

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Author./(Year of publication)./Article Title./Retrieved mm dd, year, from the full URL of the web page
Example:
Lemire, D. (n.d.). Write good papers. Retrieved July 1, 2010, from http//www.daniel-lemire.com/blog/rules-to-write-a-good-research-paper

APPENDIX D

RANGSIT JOURNAL OF SOCIAL SCIENCES AND HUMANITIES (RJSH) MANUSCRIPT SUBMISSION FORM

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