

## 学位論文及び審査結果の要旨

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## 論文の要旨

This research is conducted on the base of the highly disaggregated firm-level balance sheet, income statement, cash flow and management indices data of about 4300 Japanese both listed and unlisted companies for the period of 2006-2013. All data was collected by the author from the first hand financial statements of Japanese companies.

After giving detailed introduction in Chapter I, he analyzed how 2008-2009 Financial Crisis (hereinafter “FC”) emerged in United States has been transmitted to the Japanese manufacturing firms in Chapter II. On the base of this research the author wrote his first paper – “The Impact of 2008-2009 Financial Crises on Operational Performance of Japanese Firms through Different Channels<sup>1)</sup>”. This paper empirically investigates how the operating performance of Japanese firms changed after the 2008-2009 financial crisis. By using the data on liquidity and credit of 1,363 Japanese manufacturing firms, this paper employs the empirical methodology developed by Rajan and Zingales (1998) to distinguish the crisis effect on Japanese globally operating firms from that on other Japanese firms that are domestic market oriented. It is found that external trade and liquidity channels served as a gateway to the crisis impact on Japanese firms. The financial crisis tends to deteriorate the overall sales of globally operating firms more severely than other firms. Meanwhile, globally operating firms are relatively immune to the crisis effect if the ratio of overseas sales to total sales is smaller. Firms with bigger non-cash current ratio were hit more by the crisis than those with smaller ratio in generating profit through their equity, likely because the former employed more risk because of pre-crisis distributed liquid assets. Moreover, other findings suggest that shareholders preferred to sell their non-current assets during the crisis period to increase their working capital rather than borrowing from banks. Interestingly, the credit

<sup>1</sup> Earlier version of this paper was presented at the 14<sup>th</sup> East Asian Economic Association International Conference in Bangkok, Thailand, 1-2 November, 2014  
<http://www.eaeaweb.com/3-eaea-conventions.html> (Session CS2F2: CS2F2P206OlimovAshrafbekX)

channel did not play as significant role as other channels in crisis transmission in Japan, although the United States was first hit by the banking crisis.

In Chapter III, it is conducted similar analysis to examine the effects of **2011 Great East Japan Earthquake** (hereinafter, “GEJE”) through liquidity and credit crunches to the operational performances of both multinational and domestic Japanese manufacturing firms. Natural disaster differs in many ways from financial crises such as debt-crisis, currency crisis and banking crisis. On the basis of findings in this research, the author wrote his second paper – “Responses of Japanese multinational and domestic firms to the 2011 Great East Japan Earthquake - different shock analysis”<sup>2</sup>. This paper empirically investigates how the operating performance of Japanese firms changed after the 2011 Great East Japan Earthquake. By using the data on liquidity and credit of 1,606 Japanese manufacturing firms, this paper employs the empirical methodology developed by Rajan and Zingales (1998) to distinguish the natural disaster effect on Japanese globally operating firms from that on other Japanese firms that are domestic market oriented. We also widened our analysis creating two sub-samples according to the location of the firms and their branches that are closer to ground zero. First subsample captures 538 (of which 298 multinationals) manufacturing firms which have either headquarter or at least one branch in the Tohoku<sup>3</sup> and selected Kanto prefectures<sup>4</sup>, while the second sub-sample contains of firms only headquarter of which are located in those prefectures. It is found that multinational companies were affected significantly worse than domestic counterparts in all operational performances. Interestingly, another finding showed that firms which gave more trade credits to clients and kept additional inventories generated significantly better profit during supply shock despite meeting larger sales decline. Meanwhile, globally operating firms are relatively immune to natural disaster effect if the ratio of overseas sales to total sales is smaller. Moreover, internal shock blew the hardest impact the firms with more interest bearing loans. Especially, manufacturing firms closer to ground zero with headquarters or branches in Tohoku and selected Kanto area were affected severely through credit channels, while their significant coefficient through credit channel was more or less tripled than those in whole sample.

Primarily, in chapters II and III, the author attempted to examine the disturbance channels to Japanese firms during financial crisis and Great East Japan Earthquake by analyzing the changes in operating performance subsequent to particular shocks. The examined ex-post operating performance showed that the 2008-2009 financial crisis hit Japanese firms through trade and liquidity channels (Claessens et al. 2012, Hosono et al. 2012), while the Great East Japan Earthquake affected supply chain networks (MacKenzie et al. 2012). Therefore, findings of Chapter II and III also confirmed that liquidity channel which was directly linked to working capital management played substantial role to affect the operating performance of the Japanese companies which was why it was conducted further comprehensive analysis to the liquidity issues of Japanese firms in Chapter IV. By employing fixed effect LSDV model, it is examined the effects of components of working capital management like cash conversion cycle (CCC) on profitability of the firms during 2008-2013 years. Reason to select the sample period from 2008 to 2013 is to capture two consecutive shocks. Nevertheless, two subsamples were created to examine the relationship during two-shorter periods. To focus on how working capital management effected to the

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<sup>2</sup> This paper was presented at the 2<sup>nd</sup> International Conference on Finance and Economics, Ho-Chi-Minh, Vietnam, 4-6 July, 2015. Proceedings of ICFE 2015 Conference Pages: 120-141 <http://icfe2015.tdt.edu.vn/images/files/ICFE2015%20-%20Proceeding%20Final%2027-5-2015.pdf>

<sup>3</sup> All Tohoku prefectures are included: Akita, Aomori, Fukushima, Iwate, Miyagi and Yamagata.

<sup>4</sup> Selected Kanto Prefectures are Chiba, Gunma, Ibaraki, Saitama and Tochigi.

manufacturing firms' profitability after GEJE only, he ran regressions for the period 2011 to 2013 with first subsample. Moreover, observing that 2008 FC deteriorated firms' profitability much beyond the handling effective working capital policy, core financial crisis period - 2008<sup>5</sup> was omitted from the main sample and it was tested through regressions for the period 2009 to 2013. On the basis of the finding in this research, the author wrote his third paper "Effects of Liquidity Management on Operating Performance of multinational and domestic firms: Evidence from Japan"<sup>6</sup> which serves as a Chapter IV of the dissertation. Considering working capital management as a vital issue in explaining liquidity of firms, by employing a fixed effect LSDV model, the author analyzed the effects of components of working capital management like cash conversion cycle (CCC) on profitability of firms. The results revealed a significant negative relationship between firms' performance and cash conversion cycle. It revealed that excess inventory significantly bared extra costs for just-in-time accustomed Japanese manufacturing firms. Moreover, in addition to handling inventories skillfully, distributing trade credits proficiently among buyers (AR) had important effects to better profitability. Both components together resulted in days of cash conversion cycle (CCC) to take strongly negative relationship with profitability. Other findings explain that the 2008-09 financial crisis hit Japanese core manufacturing industries to a degree that profitability could not have been improved by managing payments to suppliers efficiently and by taking receivables as early as possible. However, it confirmed that dealing with inventories properly had significant effects even during the 2008-09 financial crisis. The fact that days of accounting payables (AP) did not show any significance demonstrates the cash abundancy of Japanese manufacturing firms.

In the last chapter, the author concluded his findings.

#### 審査結果の要旨

本論文は、日本の製造業企業の財務データに基づき、2008～09年の世界金融危機と2011年3月の東日本大震災がどのような波及経路を通じて日本経済に影響を与えたかを実証的に分析している。本論文の主たる各章の概要と評価は以下のとおりである。

第2章は、1,363社のデータに基づき、売上高やROA(総資産利益率)など企業業績を示す6つの変数を被説明変数とし、世界金融危機が貿易経路(海外売上高比率)、流動性経路(非現金流動資産の流動負債に対する比率)、信用経路(銀行借入比率)のどれを通じて企業業績に影響を及ぼしたかを分析している。また、第3章は、第2章と同じ分析モデルを用いて、東日本大震災が日本企業の業績にどのような経路で影響を与えたかを分析している。1,407社のデータを用いた分析に加えて、少なくとも1支店あるいは本社が東北と関東(東京、神奈川を除く)に所在する企業に絞って実証分析を行い、被災企業とそれ以外の企業の影響の違いも分析している。

第2章と第3章の実証分析の結果、いずれの危機においても貿易経路は有意に負の影響を及ぼしている。しかし、世界金融危機の場合は流動性経路が有意に負の影響を与えているのに対して、東日本大震災の場合は有意に正の影響を与えている。世界金融危機が海外からの需要ショックによるのに対して、東日本大震災が国内の供給ショックであるという2つの違いが推定結果に反映されていると考えられる。今後、この違いをさらに深く分析することで、本研究がより改善される可能性がある。また、東日本大震災の分析において全サンプル企業と被災企業を分けて分析した結果、海外売上高比率は全サンプル企業の場合に有意に負の影響を与えるのに対して、被災企業の場合は

<sup>5</sup> 2008 sample data captures financial statements by March31 of 2009 which is consistent with the core 2008-09 FC period.

<sup>6</sup> Olimov, Ashrafbek (2015). "Effects of Liquidity Management on Operating Performances of Manufacturing Firms: Evidence from Japan" in Yokohama Journal of Social Science, Vol.20, No.3 (forthcoming)

有意な影響がみられないことが確認された。この分析は本論文の独自の試みであり、一定の評価を与えることができる。

第4章は、企業の営業利益率を運転資本管理に関わる説明変数（売掛金回転期間、在庫期間、買入債務回転期間）とその他のコントロール変数に回帰し、企業の運転資本管理が企業業績に及ぼす影響を実証的に分析している。日本企業574社、2008年～2013年のデータを用いたパネル推定の結果、在庫期間と売掛金回転期間が企業の営業利益率に有意に負の影響を与えていること、買入債務回転期間は有意な影響を与えていないことが確認された。本章も企業の財務データに基づき運転資金管理の観点から危機の影響を分析した独自の分析であり、経済ショックに対処するために、日本企業は在庫期間と売掛金回転期間を適切に管理することが重要だと結論づけている。

以上のことから、本論文審査委員一同は、本研究科の博士号審査基準②に照らして、Ashrafbek Olimov氏の学位請求論文 “Analysis of Japanese Multinational and Domestic Firm’s Responses to 2008-09 Financial Crisis and 2011 Great East Japan Earthquake: Three Empirical Papers on the Analysis of Japanese Firm Level Data” が博士（経済学）の学位を授与するに値するものと判断する。

注 論文及び審査結果の要旨欄に不足が生じる場合には、同欄の様式に準じ裏面又は別紙によること。