EFFECTS OF INCREASED COMPETITION ON SMALL-SIZED AUDITORS IN TAIWAN: FIGHT OR FLIGHT?

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ABSTRACT

Taiwan established the Certified Public Bookkeepers Act to regulate tax agents in providing services to small and medium-sized enterprises in 2004. The Act enhances the capabilities of tax agents in competing business with auditors. Auditors face increased competition in rendering services to the same target clients as tax agents. What is the responding measure, fight or flight, for auditors? Based on both economic theory and business competitive strategy theory, this study investigates the effects of the Certified Public Bookkeepers Act in 2004 on small-sized auditors in Taiwan. Empirical results indicate that both businesses and operating performance of auditors are better after the regulation, consistent with the responding measure of fight. This study contributes knowledge to the literature and conveys managerial implication to the practitioners.

INTRODUCTION

Both tax agents and auditors provided tax and accounting related services to small and medium-sized enterprises in Taiwan over the past six decades. Before 2004, auditors provided these services with a legal license, certified public accountants. But tax agents have no professional qualifications. This leads to an inferior situation for tax agents to compete the services with auditors. To establish a sound tax and accounting agency system, Taiwanese Ministry of Finance initiated a draft to regulate tax agents in 1987. Soon after announcement of the draft, tax agents held a parade to express their strong support of it. In contrast, auditors claimed that the approved businesses in the draft will result in over 80% business overlap between tax agents and auditors. Auditors also held a parade to express their deep concerns about the draft in the same year. After more than one decade of controversy, the Legislative Yuan in Taiwan passed the Certified Public Bookkeepers Act in 2004 (hereafter "the 2004 ACT"). The 2004 ACT entitles tax agents a legal professional designation, Certified Public Bookkeeper, and enhances their capabilities in soliciting and expanding businesses (Ma 2001).

Article 13 of the 2004 ACT stipulates that tax agents may provide the following services: (1) declarations and applications related to tax assessment, and tax-related consulting services; (2) corporate registrations related to business operations, changes, suspension, discontinuation and other registered matters; (3) accounting and bookkeeping. Because both tax agents and auditors can offer these services to the same target clients, small and medium-sized enterprises (SMEs), this study defines the services above as "common businesses".

Passage of the 2004 ACT directly enhanced the competitiveness of tax agents in serving common businesses. What are the effects of the 2004 ACT on auditors? What are the responding measures taken by

auditors, fight or flight, to the new economic landscape? In economic theory, auditors will flight due to the inexpensive service fees charged by tax agents and easy accessibility by clients of tax agents. In terms of business competitive strategy, auditors will fight to survive by measures such as upgrading service quality or expansions of common businesses. Few researches examine the effects of increased competition from two conflicting theories. We reconcile both perspectives to fill the research gap, a motivation of this study.

According to the 2019 White Paper on Small and Medium Enterprises in Taiwan, SMEs account for 97.64% of Taiwanese enterprises in 2018 (Ministry of Economic Affairs, 2019). Examining the effects of the 2004 ACT on auditors is an issue worthy of exploration for both regulators and practitioners. In Taiwan, SMEs are served mainly by proprietorship public accounting firms and tax agents. Accordingly, this study defines auditors as proprietorship public accounting firms, a small-sized firm. To investigate the effects on auditors, this study defines the years before 2004 as the pre-act period and the years after 2004 as post-act period. We utilize accounting profits and economic productivities to measure the operating performance of auditors. Based on the Article 13 of the 2004 ACT, this study groups common businesses into three categories, tax and consultation, corporate registration and accounting and bookkeeping services.

Empirical results show that both total common businesses and operating performance of auditors are better in the post-act period. For the three components of common businesses, both tax and consultation, and accounting and bookkeeping services are better in the post-act period. Furthermore, common businesses contribute more to the operating performance in the post-act period. With results, this study fills the research gap and contributes knowledge to the literature. Further, our results convey managerial implications to the practitioners of public accounting profession, especially the auditors of proprietorship public accounting firms. The remainder of this study is organized as follows. In the next section, we review the relevant literature and develop hypotheses. We then describe our data and methodology and discuss the empirical results in the following sections. This study closes with conclusions and future research suggestions.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Prior to passage of the Certified Public Bookkeepers Act in 2004 (hereafter the 2004 ACT), relevant researches focused on legal aspects or suggestions to regulators (Ma, 1998; Liu, 1998; Yang, 1999). In the first year after the implementation of the 2004 ACT, Yu (2005) investigates its impacts on the businesses of public accounting firms and tax agents using a questionnaire survey. Results indicate the 2004 ACT benefits tax agents in their accounting and tax-related services and has a limited impact on the small-sized public accounting firms. Chen, Huang, and Wang (2010) also conduct a questionnaire survey to examine the effects of 2004 ACT on auditors, including auditors in large, medium, and small-sized public accounting firms. They find a negative impact on the common businesses of public accounting firms. Particularly, small-sized public accounting firms are the most affected firms.

The previous studies noted here examine the impacts of the 2004 ACT on public accounting firms by questionnaires. Using a questionnaire to investigate an issue has the advantage of few restrictions on time and space and can allow collection of information from a large number of respondents simultaneously. However, its major defect is that respondents with vested interests in the issue will answer the questions by subjective perceptions or feelings in context of the time. We argue that prior studies examining the impacts of 2004 ACT by questionnaire encounter similar dilemma. Instead of using a questionnaire, this study takes an official long-term data set to reexamine the issue.

In practice, public accounting firms have provided the common businesses for decades and maintain a long-term partnership with their clients. However, the 2004 ACT entitles the tax agents as a professional, which benefits them in the provision of the common businesses and in competing with the auditors. Under the new operating landscape, auditors face increased competition in businesses. To respond, they will take

some countermeasures, such as improving service quality, providing more value-added services or actively expanding businesses.

When firms have a competitive marketplace and several similar products available for consumers, Porter (1980) claims that taking a competitive strategy is important for firms to achieve above average position and generate a superior return on investment. Porter (1980) establishes four different types of competitive strategy, including cost leadership strategy, differentiation leadership strategy, cost focus strategy, and differentiation focus strategy. The driving factor of differentiation leadership strategy is to identify a product attribute which is unique from competitors in the industry. When a product can differentiate itself from other similar products or services in the market through superior brand quality and value-added features, it will be able to charge premium prices to cover higher cost.

Klein and Leffler (1981) state that provision of high-quality products is the only way for companies to earn a continual stream of rental income. The rental stream will be lost if low quality output is deceptively produced. Further, the present discounted value of this rental stream will be greater than the one-time wealth increase obtained from low quality production. When product attributes are difficult to observe prior to purchase, Shapiro (1983) infers that consumers may use the quality of products produced by the firm in the past as an indicator of present or future quality. Under the situation, the benefits of producing high quality items will accrue in the future through the effect of building up a reputation. Reputation formation is a type of signaling activity, the quality of items produced in previous periods serves as a signal of the quality of those produced during the current period.

In tough economic conditions, quality differentiation separates from competitors by reducing customer sensitivity to price and protecting products from other competition that lowers profits. High-quality products allow companies to avoid price-based competition that undermines profits (Gale and Swire, 1977). In other words, better quality ensures that companies can receive premium prices and generate higher profits (Porter, 1980; Klein and Leffler, 1981; Shapiro, 1983). From the business competitive strategy theory, what is the action taken by auditors, fight or flight? Auditors will fight and actively expand the common businesses and improve service quality to face the increased competition situation. Hence, this study expects that common businesses and operating performance will be better in the post-act period and establishes the following hypotheses.

Hypothesis 1-1: Common businesses of auditors are better in the post-act period.

Hypothesis 1-2: Operating performance of auditors is better in the post-act period.

For auditors, common businesses are their primary services and referred to as non-audit services. Prior researches indicate that non-audit services positively relate to the operating performance of auditors (Chen, Chang, and Lee, 2008; Donohoe and Knechel, 2014; Frankel, Johnson, and Nelson, 2002). Passage of the 2004 ACT leads to increased competition of the common businesses for auditors. This will push auditors to improve the service quality of common businesses due to awareness of crisis. We expect that the performance effects of common businesses in the post-act period will be higher. Namely, common businesses contribute more to operating performance in the post-act period and the following hypothesis is formed.

Hypothesis 1-3: Common businesses contribute more to the performance of auditors in the post-act period.

Tax and consultation services, one of the three components of common businesses, include business tax and business income tax filing services. In addition, auditors help owners of enterprises to handle their individual income tax filings and estate tax declaration, as well as the declaration of tax related to labor

insurance or Taiwanese second-generation national health insurance. Like a doctor of an enterprise and a guardian for public investors, auditors often give advices to their clients for services regarding Company Act, Income Tax Act, Business Entity Accounting Act and financial regulations. Auditors establish long-term and close relationship with clients and familiarize their daily operation and businesses. Auditors provide professional services to clients and make feasible management advices to them (Lai, 2000). Based on the market niches, auditors integrated and expanded tax and consultation services to SMEs after the 2004 ACT. Instead of flight, auditors fight to improve service quality to respond to the increased competition in operating environment. This study expects that tax and consultation services will be better after the 2004 ACT. Further, we predict that effects of tax and consultation service on performance will be higher after the 2004 ACT. As a result, this study establishes the following hypotheses:

> *Hypothesis 2-1: Tax and consultation services of auditors are better in the post-act period.*

> *Hypothesis 2-2: Tax and consultation services contribute more to the performance of auditors in the post-act period.*

The next component of common businesses is corporate registration services. In practice, they include the registration of a new company, a branch of a foreign company or individual company, a home-based worker (such as, SOHO), a direct selling or franchise chain store, a labor union or trade union, an academic association, a cram school, and a clinic. Corporate registration services also cover the set-up of a company or its subsidiary in Taiwan, China, Hong Kong, and Southeast Asia. In addition, auditors provide the attestation of registered capital, but tax agents are not allowed to serve. Before the 2004 ACT, tax agents provided most corporate registration services in Taiwan (Lai, 2000). We argue that auditors, after the 2004 ACT, will take the action of fight to improve their service quality. Under the increasingly competitive environment and crisis awareness, this study expects that corporate registration services increase in the post-act period and performance effects in the post-act period will be higher, and establishes the following hypotheses:

> *Hypothesis 3-1: Corporate registration services of auditors are better in the post-act period.*

> *Hypothesis 3-2: Corporate registration services contribute more to the performance of auditors in the post-act period.*

The final component of common businesses is accounting and bookkeeping services. Tax agents have rendered these services for the past six decades from the authorization of Business Entity Accounting Act in Taiwan. Article 5 of this Act is the legal source basis for tax agents before 2004. SMEs are the primary clients of auditors and tax agents. Accounting and bookkeeping businesses of SMEs are relatively simple and easy to treat. Auditors do not have advantage in rendering the services. In addition, tax agents charge lower service fees than auditors. Auditors therefore compete at lower service fees, resulting in lower revenues. However, crisis awareness of auditors motivates them to improve service quality under the increasingly competitive operating environment (Gale and Swire, 1977; Porter, 1980; Klein and Leffler, 1981; Shapiro, 1983). This study argues that auditors will fight to respond. Thus, we expect that accounting and booking services will increase in the post-act period and their performance effect will be higher after the 2004 ACT. We establish hypotheses as follows:

> *Hypothesis 4-1: Accounting and bookkeeping services of auditors are better in the post-act period.*
> *Hypothesis 4-2: Accounting and bookkeeping services contribute more to the performance of auditors in the post-act period.*

DATA AND METHODOLOGY

This study takes empirical data from the 1992-2016 Census Report of Public Accounting Firms in Taiwan. The Financial Supervisory Commission (FSC) administers the survey annually to collect business information about all registered public accounting firms for macro-economic analysis and industrial policy development. The FSC publishes the survey annually with average response rate of over eighty percent. Items surveyed include quantitative information on total revenues and their composition, and total expenses and their composition. It also includes the demographics of various levels of auditors, consisting of partners, managers, and assistants. For information privacy, the FSC discloses no identity information about individual public accounting firms, resulting in a pooled cross-sectional data which contains cross-sectional and time-series information.

Increasing research utilize pooled data because it enables investigators to exploit the entire available sample. Further, statistics obtained from pooled data reflect the mean effects of independent variables during the sampling period and are more accurate than the yearly estimates (Geletkanycz and Hambrick, 1997). Pooled data, however, suffers from the econometric problem of correlation between residual terms. To verify the problem, we conduct Durbin-Watson (DW) test and obtain DW statistics between 1.42 and 2.11, which implied a low correlation between residual terms. The sample period of this study covers 25 years. This study deflates all monetary variables by the yearly Consumer Price Index to account for inflation. After deleting outliers, this study reaches the final number of observations 13,049, including 6,135 in pre-act period and 6,914 in post-act period.

Based on the structure-conduct-performance (S-C-P) theoretical framework from the industrial organization literature (Cowling and Waterson, 1976; Ballas and Fafaliou, 2008), this study establishes the following equations to test the hypotheses.

$$COMMONBIZ\ (TCS, CRS, ABS) = \beta_0 + \beta_1 DVTIME + \beta_2 TRAIN + \beta_3 EXP + \beta_4 MKS + \beta_5 EDU + \beta_6 TAIEX + \varepsilon \tag{1}$$

$$PROFIT\ (PRODUC) = \beta_0 + \beta_1 DVTIME + \beta_2 COMMONBIZ + \beta_3 DVTIME * COMMONBIZ + \beta\_4\ TRAIN + \beta\_5\ EXP + \beta\_6\ MKS + \beta\_7\ EDU + \beta\_8\ TAIEX + \varepsilon \tag{2}$$

Where:

COMMONBIZ	=	Total common businesses;
TCS	=	Tax and consultation services;
CRS	=	Corporate registration services;
ABS	=	Accounting and bookkeeping services;
PROFIT	=	Accounting profits;
PRODUC	=	Economic productivities;
DVTIME	=	1 if the year is after 2004, and 0 otherwise;
TRAIN	=	Training expenses of auditors;
EXP	=	Work experience of auditors;
MKS	=	Market share of individual auditors;
EDU	=	Education level of auditors;
TAIEX	=	Economic indicator;
ε	=	Error term.

Equation (1) investigates the impacts of the 2004 ACT on common businesses and Equation (2) examines the relationship between common businesses and operating performance of auditors. Based on the hypotheses, β_1 in Equation (1), and β_1 and β_3 in Equation (2) are predicted to be positive.

The first dependent variable is revenues of total common businesses (*COMMONBIZ*). Further, its three components include revenues of tax and consultation (*TCS*), revenues of corporate registration (*CRS*), and revenues of accounting and bookkeeping (*ABS*). Another dependent variable is operating performance of proprietorship public accounting firms. This study measures it by accounting profits (*PROFIT*) and economic productivities (*PRODUC*). Accounting profits are defined as total revenues minus total expenses. In a proprietorship public accounting firm, annual income of the sole owner included salaries and operating profits sharing of the firm. In calculating accounting profits, salaries are a component of total expenses; the higher the salaries the sole owner receives, the less accounting profits the firm has. Taiwanese laws and regulations require the allocation of accounting profits to the sole owners annually. Hence, it makes no difference to sole owners whether they receive salaries or not in terms of their total annual income. In addition, the criteria for salary payment to sole owners vary across firms. Following previous studies (Chen, Chang, and Lee, 2008), we add the sole owners' salaries back into accounting profits to reduce the artificial noise. In addition, human capital is the key input of a public accounting firm. We follow prior studies and define another indicator of operating performance as economic productivity of proprietorship public accounting firms (Chen, Yang, and Yang, 2012). Operational definitions of the two dependent variables are as follows.

PROFIT = total revenues - total expenses + annual salaries of sole owners

PRODUC = total revenues ÷ ending numbers of auditors

The research variable of this study is a dummy variable of the time period, *DVTIME*, to distinguish the periods before and after the 2004 ACT. *DVTIME* is defined as 1 if the year is after 2004 and 0 otherwise.

In econometrics, factors affecting the common businesses and operating performance of public accounting firms should be controlled to increase the credibility of empirical results. This study incorporates variables discussed or empirically documented in previous literature as control variables. Public accounting firms are a knowledge and labor-intensive professional organization. In a typical public accounting firm, its human capital includes academic education level, work experience and professional training of auditors (Boynton, Johnson, and Kell, 2001).

The Certified Public Accountant Act in Taiwan requires a bachelor's degree or above to be an employee of public accounting firms. Education level (EDU) is an explicit knowledge of an organization and positively contributes to the operating performance of public accounting firms (Lee, Liu, and Wang, 1999; Liu 1997; Brocheler, Maijoor, and Witteloostuijn, 2004). Work experience (EXP) is an implicit knowledge of a professional organization, which contributes positively to the profitability or operating performance of public accounting firms (Fasci and Valdez, 1998; Aldhizer, Miller, and Moraglio, 1995; FRC, 2006). Work experience could indirectly improve job performance through the accumulation of work knowledge (Schmidt, Hunter, and Outerbridge ,1986). Continuing professional education is a world-wide requirement for auditors to maintain professional competence and keep knowledgeable about the professional skill, accounting, and auditing standards. Prior studies indicate a positive relationship between professional training and operating performance (e.g., Russell, Terborg, and Powers, 1985; Delaney and Huselid, 1996; Creter and Summey, 2003; Nafukho and Hinton, 2003). Specifically, professional training (TRAIN) improves audit quality (Meinhardt, Moraglio, and Steinberg, 1987; FRC, 2006) and financial performance of public accounting firms (e.g., Chen, Goan, and Chen, 2011; Chen, Yang, and Yang, 2012; Yang, Chen, and Yang, 2013).

In addition, size has a material impact on performance of public accounting firms and is defined as annual market share (MKS). Local economy affects the financial performance of public accounting firms (Reynolds and Francis, 2001). This study includes the Taiwan Stock Exchange Capitalization Weighted Stock Index (TAIEX) as an economic indicator to control the effect of operating environment. Previous researchers identify some drivers of audit quality, including the education level of auditors (Lee, Liu, and Wang, 1999; Liu, 1997), the professional training of auditors (Meinhardt, Moraglio, and Steinberg, 1987; FRC, 2006), and the work experience of auditors (Aldhizer, Miller, and Moraglio, 1995; FRC, 2006). We include them as control variables in the regression equations, an audit-quality-controlled model.

EMPIRICAL RESULTS

Table 1 displays descriptive statistics of proprietorship public accounting firms for the sample period, pre-act, and post-act periods, respectively. Mean accounting profits (PROFIT) and economic productivities (PRODUC) are $851,281 and $693,666. Mean total common businesses (COMMONBIZ) are $1,504,669 and its three components average $747,966 for tax and consultation (TCS), $217,977 for corporate registration (CRS) and $538,726 for accounting and bookkeeping (ABS) services. Mean professional training (TRAIN) equals 5.83 and its amount before logarithm transformation is $26,797. Average work experience (EXP) is 38.87, indicating the average age of employees is about 39 years old. Average education level (EDU) is 14.90, meaning that the average education level of employees lies between junior college degree and bachelor degree. Mean market share (MKS) of 0.023 percent represents the size of proprietorship public accounting firms is relatively small.

This study estimates standardized regression coefficients for each independent variable to increase comparisons between variables. The standardized coefficient is the standardized correlation coefficient with values lying between -1 and +1. The higher absolute value of standardized coefficients predicts more variations in the dependent variable. We also conduct some checks for econometric problems, such as White's (1980) robust standard error to correct for heteroscedasticity, variance inflation factors (VIFs) for multi-collinearity between independent variables. The VIF for independent variable X_i was defined as $1/(1-RSQ_i)$, where RSQ_i was the R^2 from the regression of X_i on the remaining $k-1$ predictors. If X_i was highly correlated with the remaining predictors, its VIF was very large. In econometrics, a VIF greater than 10 implies serious multi-collinearity existing between independent variables. All the VIEs in this study are less than 10.

Results of the relationship between the 2004 ACT and total common businesses are displayed in Table 2. The coefficient on the dummy variable of time period, DVTIME, is significantly positive (t = 21.714, p < 0.01), indicating that common businesses are better in the post-act period. Hypothesis 1-1 is supported.

Table 1: Descriptive Statistics

Variables	Mean Pre-act Post-act	S.D. Pre-act Post-act	Min. Pre-act Post-act	Max. Pre-act Post-act	Q1 Pre-act Post-act	Median Pre-act Post-act	Q3 Pre-act Post-act
PROFIT	851,281	1,009,210	5,270,741	19,067,226	189,311	613,515	1,234,161
	872,105	1,089,628	3,430,687	19,067,226	178,708	630,052	1,277,355
	830,141	931,632	5,270,741	9,709,118	194,151	600,209	1,200,549
PRODUC	693,666	538,848	31	12,488,032	399,119	612,128	871,954
	674,749	535,876	676	12,488,032	384,480	584,874	839,499
	710,451	540,956	31	9,807,934	416,119	644,855	904,773
COMMONBIZ	1,504,669	1,896,909	0	24,552,783	219,825	830,891	2,107,287
	1,374,259	1,932,804	0	24,552,783	186,849	690,476	1,861,593
	1,620,387	1,856,967	0	17,872,309	252,704	986,607	2,335,192
TCS	747,966	1,429,396	0	24,546,904	0	74,890	856,638
	610,996	1,343,844	0	24,546,904	0	46,838	603,790
	869,505	1,490,827	0	11,330,200	0	107,371	1,166,418
CRS	217,977	375,139	0	7,754,280	12,167	101,419	274,861
	254,720	446,795	0	7,754,280	22,593	117,247	309,138
	185,374	293,647	0	3,923,886	4,501	88,349	250,907
ABS	538,726	1,234,476	0	16,895,438	0	0	472,672
	508,544	1,251,151	0	16,311,216	0	0	387,900
	565,508	1,218,955	0	16,895,438	0	3	535,892
TRAIN	5.83	4.84	0	15.69	0	8.15	9.94
	4.80	5.01	0	15.69	0	0	9.83
	6.75	4.50	0	14.50	0	8.57	10.02
EXP	38.87	7.40	25	65	33.33	37.50	43.00
	36.52	6.81	25.63	65	31.67	35	40.00
	40.96	7.28	25	65	35.38	40	45.00
EDU	14.90	1.73	0	30	14.10	15.00	16.00
	14.30	2.03	0	30	13.78	14.46	15.17
	15.44	1.17	9.00	23	14.67	15.50	16.00
MKS	0.023	0.024	0	0.502	0.007	0.016	0.030
	0.031	0.030	0	0.502	0.011	0.023	0.040
	0.016	0.014	0	0.108	0.005	0.012	0.022
DVTIME	0.51	1	0	1	1	1	1
	0	0	0	0	0	0	0
	1	0	1	1	1	1	1

This table shows the descriptive statistics of variables for the sample period, pre-act period, and post-act period, respectively. The number of sample observations is 13,049 including 6,135 in the pre-act period and 6,914 in the post-act period. Variable definitions are as follows: PROFIT: accounting profits; PRODUC: economic productivities; COMMONBIZ: total common businesses; TCS: tax and consultation services; CRS: corporate registration services; ABS: accounting and bookkeeping services; TRAIN: professional training; EXP: work experience of auditors; EDU: education level of auditors; MKS: market share (in percentage); DVTIME: dummy variable of time period.

Table 2: Regression Results of Total Common Businesses

$COMMONBIZ = \beta_1 + \beta_1 DVTIME + \beta_2 TRAIN + \beta_3 EXP + \beta_4 MKS + \beta_5 EDU + \beta_6 TAIEX + \varepsilon_1$	
Variables (Pred. Sign)	**Std. Coe.**
	(t-statistics)
Research Variable	
DVTIME (+)	0.205***
	(21.714)
Control Variables	
TRAIN (+)	0.014*
	(1.818)
EXP (+)	-0.034***
	(-4.291)
MKS (+)	0.602***
	(72.79)
EDU (+)	0.013
	(1.613)
TAIEX (?)	0.078***
	(8.738)
Adjusted R^2	0.344
F-statistic	1044.795***
Durbin-Watson	1.865
N	13,049

This table reports the regression results of the relationship between the 2004 ACT and total common businesses. N = the number of observations. ***,**,* denote significance at the 1%、5% and 10% levels, respectively. The t-value of each coefficient is shown in brackets. See Table 1 for variable definitions.

Next, we examine the effects of total common businesses on the operating performance of proprietorship public accounting firms. Empirical results of research variables are shown in Table 3 and control variables are omitted to save space. Operating performance is defined as accounting profits (*PROFIT*) and economic productivities (*PRODUC*). A dummy variable of time period, *DVTIME*, appears as a research variable and an interaction. In econometrics, the interaction term should be taken into account when determining the relationship between DVTIME and dependent variable. We take a first-order differentiation over *DVTIME* and have a value of 228,709 (-0.011 + 0.152*1,504,669) when dependent variable is *PROFIT*. If the dependent variable is *PRODUC*, we have a value of 164,009 (-0.077 + 0.109*1,504,669). Both positive values indicate that operating performance of proprietorship public accounting firms is better in the post-act period and support Hypothesis 1-2.

As shown, we have significantly positive coefficients on total common businesses (*COMMONBIZ*) either the dependent variable is *PROFIT* or *PRODUC* (t = 13.359, p<0.01 and t = 11.419, p < 0.01). Consistent with previous studies, it indicates that the association between common businesses and operating performance is positive. The interaction terms of dummy variable and common businesses, *DVTIME*COMMONBIZ*, are positive significantly for *PROFIT* and *PRODUC* (t = 8.392, p < 0.01 and t = 14.288, p < 0.01). It represents that total common businesses contribute more to the operating performance in the post-act period than in the pre-act period. Namely, performance effects of common businesses are higher in the post-act period, which lends a support to Hypothesis 1-3.

Table 3: Regression Results of the Effects of Total Common Businesses on Operating Performance

$PROFIT\ (PRODUC) = \beta_0 + \beta_1 DVTIME + \beta_2 COMMONBIZ + \beta_3 DVTIME{*}COMMONBIZ + \beta_4 TRAIN + \beta_5 EXP + \beta_6 MKS + \beta_7 EDU + \beta_8\ TAIEX + \varepsilon_3$		
Variables (Pred. Sign)	**PROFIT**	**PRODUC**
	(t-statistics)	**(t-statistics)**
Research Variables		
DVTIME (+)	-0.077***	-0.011
	(-6.487)	(-1.141)
COMMONBIZ (+)	0.174***	0.121***
	(13.359)	(11.419)
DVTIME*COMMONBIZ (+)	0.109***	0.152***
	(8.392)	(14.288)
(Results of control variables are omitted for save of space)		
Adjusted R^2	0.273	0.514
F-statistic	566.592***	1590.061***
Durbin-Watson	1.975	1.981
N	12,043	12,043

*This table reports the regression results of the effects of total common businesses on operating performance as operating performance is defined as accounting profit and economic productivities, respectively. N = the number of observations. ***,**,* denote significance at the 1%、5% and10% levels, respectively. The t value of each coefficient is shown in brackets. See Table 1 for variable definitions.*

To examine the common businesses in further, this study divides them into three components, including tax and consultation services (TCS), corporate registration services (CRS), and accounting and bookkeeping services (ABS). We display empirical results in Table 4 with control variables omitted to save space. As shown, the coefficients on the dummy variable of time period, DVTIME, are significantly positive (t = 15.694, p < 0.01 and t = 10.906, p < 0.01) in Panel A and C but insignificantly positive in Panel B. The results indicate that both tax and consultation services (TCS), and accounting and bookkeeping services (ABS) are better in the post-act period. Consistent with expectations, the results lend support to both hypotheses 2-1 and 4-1. There is no significant difference in corporation registration services (CRS) between pre-act and post-act periods. Hypothesis 3-1 received no support.

Given the results of three items of common businesses above, we explore their effects on operating performance and present empirical results in Tables 5. Column A displays the association between tax and consultation services (*TCS*) and operating performance, accounting profits (*PROFIT*) and economic productivities (*PRODUC*). As the dummy variable of time period, DVTIME, appears in itself and in the interaction term, the first-order differentiations of *DVTIME* show a value of 53,106 (= 0.053 + 0.071* 747,966) for PROFIT and 19,447 (= -0.020 +0.026*747,966) for *PRODUC*. Results above represent that operating performance of proprietorship public accounting firms in the post-act period is better than that in the pre-act period. Consistent with expectation and the results in Table 3, Hypothesis 1-2 receive support. Finally, the interaction terms of *DVTIME*TCS* are significantly positive for performance of PROFIT and *PRODUC* (t =6.783, p < 0.01 and t = 2.084, p < 0.05). This implies that performance effects of tax and consultation services are higher in the post-act period. That is, tax and consultation services contribute more to the performance of auditors in the post-act period and hypothesis 2-2 is supported. Further, the coefficients on tax and consultation services (*TCS*) are significantly positive for performance of PROFIT and *PRODUC*. The results indicate that the association between tax and consultation services and operating performance is positive, consistent with prior researches.

Table 4 Regression Results of the Three Individual Items of Common Businesses

$TCS\ (CRS)\ (ABS) = \beta_0 + \beta_1 DVTIME + \beta_2 TRAIN + \beta_3 EXP + \beta_4 MKS + \beta_5 EDU + \beta_6 TAIEX + \varepsilon$	
Variable (Pred. sign)	**Std. Coefficients**
	(t-statistics)
Panel A: Tax and Consultation Services *(TCS)*	
DVTIME (+)	0.169***
	(15.694)
(Results of control variables are omitted for save of space)	
Adjusted R^2	0.144
F-statistic	337.835***
Durbin-Watson	1.947
N	12,043
Panel B: Corporation Registration Services *(CRS)*	
DVTIME (+)	0.002
	(0.219)
(Results of control variables are omitted for save of space)	
Adjusted R^2	0.155
F-statistic	367.524***
Durbin-Watson	1.958
N	12,043
Panel C: Accounting and Bookkeeping Services *(ABS)*	
DVTIME (+)	0.119***
	(10.906)
(Results of control variables are omitted for save of space)	
Adjusted R^2	0.122
F-statistic	280.269***
Durbin-Watson	1.965
N	12,043

This table reports the regression results of the relationship between the 2004 ACT and three individual items of common businesses. Panel A shows results of tax and consultation services (TCS). Panel B shows results of corporate registration services (CRS), and Panel C is results of accounting and bookkeeping services (ABS). N = the number of observations. ***,**,* denote significance at the 1%、 5% and 10% levels, respectively. The t value of each coefficient is shown in brackets. See Table 1 for variable definitions.

Regression results of the association between corporate registration services (*CRS*) and operating performance are shown in Column B. The first-order differentiations over *DVTIME* show positive, which are 12,643 (= 0.078+0.058*217,977) for performance of PROFIT and 11,989 (= -0.002+0.055*217,977) for performance of *PRODUC*. This indicates that operating performance of proprietorship public accounting firms is better in the post-act period and Hypothesis 1-2 receives a support. The coefficients on interaction terms of *DVTIME*TCS* are significantly positive for performance of *PROFIT* and *PRODUC* (t = 6.710, p < 0.01 and t = 5.259, p < 0.01). It represents that performance effects of corporate registration services are higher in the post-act period and Hypothesis 3-2 is supported. Consistent with prior studies, the positive coefficients on corporate registration services (*CRS*) for performance of *PROFIT* and *PRODUC* indicate a positive association between corporate registration services and operating performance.

Column C lists the results of the relationship between accounting and bookkeeping services (ABS) and operating performance. We conduct a first-order differentiation over *DVTIME* and obtain positive values that are 59,799 (= 0.070 + 0.111*538,726) for performance of PROFIT and 51,718 (= -0.005 + 0.096*538,726) for performance of *PRODUC*. Consistent with expectation, results above indicate that

operating performance of proprietorship public accounting firms in the post-act period is better and Hypothesis 1-2 receives support. Coefficients on the interaction terms of *DVTIME*ABS* are significantly positive for performance of *PROFIT* and *PRODUC* (t = 11.346, p < 0.01 and t = 8.097, p < 0.01). It represents that performance effects of accounting and bookkeeping services are higher in post-act period and Hypothesis 4-2 receives support. However, this study has negative coefficients on accounting and bookkeeping services (ABS) for performance of *PROFIT* and *PRODUC*. Inconsistent with prior studies, it indicates a negative association between accounting and bookkeeping services and operating performance.

Table 5 Regression Results of the Effects of Three Individual Items on Operating Performance

PROFIT (PRODUC) $= \beta_0 + \beta_1 DVTIME + \beta_2 TCS (CRS, ABS) + \beta_3 DVTIME*TCS (CRS, ABS) + \beta_4 TRAIN + \beta_5 EXP + \beta_6 MKS + \beta_7 EDU + \beta_8 TAIEX + \varepsilon$		
Variables (Predicted sign)	*PROFIT*	*PRODUC*
	(t-statistics)	**(t-statistics)**
Panel A: Tax and Consultation Services *(TCS)*		
DVTIME (+)	0.053***	-0.020*
	(5.960)	(-1.875)
TCS (+)	0.134***	0.201***
	(13.078)	(16.262)
*DVTIME*TCS* (+)	0.071***	0.026**
	(6.783)	(2.084)
(Results of control variables are omitted for save of space)		
Adjusted R^2	0.504	0.271
F-statistic	1526.487***	559.142***
Durbin-Watson	1.976	1.977
N	12,043	12,043
Panel B: Corporation Registration Services *(CRS)*		
DVTIME (+)	0.078***	-0.002
	(8.258)	(-0.147)
CRS (+)	0.021***	0.019*
	(2.556)	(1.883)
*DVTIME*CRS* (+)	0.058***	0.055***
	(6.710)	(5.259)
(Results of control variables are omitted for save of space)		
Adjusted R^2	0.476	0.232
F-statistic	1370.385***	456.292***
Durbin-Watson	1.955	1.973
N	12,043	12,043
Panel C: Accounting and Bookkeeping Services *(ABS)*		
DVTIME (+)	0.070***	-0.005
	(7.847)	(-0.498)
ABS (+)	-0.040***	-0.041***
	(-4.115)	(-3.504)
*DVTIME*ABS* (+)	0.111***	0.096***
	(11.346)	(8.097)
(Results of control variables are omitted for save of space)		
Adjusted R^2	0.479	0.233
F-statistic	1385.016***	459.178***
Durbin-Watson	1.949	1.966
N	12,043	12,043

*This table reports the regression results of the effects of three individual items on operating performance as operating performance is defined as accounting profit and economic productivities, respectively. Panel A show results of tax and consultation services (TCS). Panel B provides results of corporate registration services (CRS), and Panel C indicates results of accounting and bookkeeping services (ABS). N = the number of observations. ***,**,* denote significance at the 1%、 5% and 10% levels, respectively. The t value of each coefficient is shown in brackets. See Table 1 for variable definitions.*

Empirical results above confirm our expectations that auditors fight to respond to the increased competition in the operating environment of common businesses. We summarize the testing results of hypotheses in Table 6 as follows.

Table 6 Testing Results of Hypotheses

Hypotheses	Statement and Testing Results
H1-1	Common businesses of auditors are better in the post-act period. Results: Supported.
H1-2	Operating performance of auditors is better in the post-act period. Results: Supported.
H1-3	Common businesses contribute more to the performance of auditors in the post-act period. Results: Supported.
H2-1	Tax and consultation services of auditors are better in the post-act period. Results: Supported.
H2-2	Tax and consultation services contribute more to the performance of auditors in the post-act period. Results: Supported.
H3-1	Corporate registration services of auditors are better in the post-act period. Results: Not supported.
H3-2	Corporate registration services contribute more to the performance of auditors in the post-act period. Results: Supported.
H4-1	Accounting and bookkeeping services of auditors are better in the post-act period. Results: Supported.
H4-2	Accounting and bookkeeping services contribute more to the performance of auditors in the post-act period. Results: Supported.

CONCLUDING COMMENTS

Passage of the Certified Public Bookkeepers ACT (hereafter "the 2004 ACT") in Taiwan enhanced the capabilities of tax agents in providing services to small and medium-sized enterprises. In contrast, auditors face increased competition in rendering services to the same target client as tax agents. What is the responding measure, fight or flight, for auditors? Based on both economic theory and business competitive strategy theory, this study investigates the effects of the 2004 ACT on auditors in Taiwan. To conduct the research, this study utilizes data from 1992 to 2016 Census Report of Public Accounting Firms in Taiwan collected by the Financial Supervisory Commission annually. Regression equations are developed to investigate the impacts of the 2004 ACT on businesses and their relationship to operating performance of auditors. The services both bookkeepers and auditors can offer to the same target clients are defined as "common businesses" including tax and consultation services, corporate registration services and accounting and bookkeeping services.

Given the control of audit quality, both common businesses and operating performance of auditors are better in the post-act period. Common businesses have higher performance effects after the 2004 ACT. Main results above indicate that auditors take the action of fight to face the increased competition in rendering common businesses. The results are consistent with the competitive strategy theory, such as Porter (1980), Klein and Leffler (1981), Shapiro (1983), and Gale and Swire (1977). Our findings that fight is an appropriate solution to respond to an increased competition situation contribute additional knowledge to the economic theory and competitive strategy theory.

In terms of the three components of common businesses, tax and consultation, and accounting and bookkeeping services are better in the post-act period and contribute more to the operating performance of auditors in the post-act period. Corporate registration services have higher performance effects in the post-

act period but their association with operating performance is negative. With findings, this study extends Yu (2005) and Chen, Huang, and Wang (2010) and contributes knowledge to accounting literature.

In total, common businesses and operating performance of auditors are better in the post-act period and common businesses have higher performance effects after the 2004 ACT. Positive effects of the 2004 ACT on auditors suggest that practitioners, such as auditors or other service providers, take a positive strategy to respond to the increased competition in operating environment.

Common businesses include tax, consultation, accounting and bookkeeping services. They are also referred to as non-audit services in accounting. Provision of non-audit services leads to subsequent improvements in operating performance and reductions in operating risk (Donohoe and Knechel, 2014; Banker, Chang, and Natarajan, 2005. Long-lasting relationship between auditors and their clients results in a low turnover of auditors (Lai 2000; Chang and Lin, 2000). Auditors own a better professional image than tax agents and provide a wider range of services including attestation/audit services.

Auditors are suggested to expand their businesses from the traditional, low-margin audit services to the relatively new, high-margin non-audit services. Specifically, auditors are advised to expand their businesses of tax and consultation services. Both tax and consultation services are knowledge-intensive businesses. Further, auditors render tax attestation and appeals or administrative litigation services but tax agents are not allowed. Focusing on the tax and consultation services results in a natural market segmentation from tax agents.

This study includes some factors in the regression model to control service quality of auditors, including education level of auditors, professional training of auditors, and work experience of auditors. Instead of direct testing service quality of auditors, we control the drivers of audit quality, a limitation of this study. Because tax agents compete for common businesses with auditors, the number of tax agents theoretically affects the operating performance of proprietorship public accounting firms. This study does not include it in the regression model due to data unavailability, another limitation of this study.

The owners of proprietorship public accounting firms are either males or females. Future studies are advised to investigate the role of gender in the proprietorship public accounting firms. Namely, exploring the effects of the 2004 ACT on the common businesses of male-owned and female-owned public accounting firms is an interesting and implicative issue.

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