

# Tax Impact on the Value of Japanese Captive Insurers

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## Abstract

This study identifies whether or not, or to what extent, tax regulations on captives have impact on the firm value and also on managerial decisions of where captives should be incorporated. Many Japanese captive owners choose their captive domicile to reduce tax liabilities with captives in non-tax haven countries such as Hawaii and Micronesia. This study finds that the tax haven status of domicile does not have material impact on net value created. Our hypothetical captives in tax haven countries create positive net value while captives in non-tax haven countries create negative. We conclude that managerial decision should be not only based on tax regulations but also other factors surrounding captive.

## I Introduction

*“Captive insurance company owners carefully consider domiciles based on their business plans and how the captive ultimately will be used,”* reported by Mr. Mike Tsikoudakis, an expert of captive insurance company in *Business Insurance*. His statement illustrates the recent movement that captives are carefully and strategically planned and, as a result, the domicile is selected. The fact appears to contradict Japanese captive owners’ conventional purpose that the establishment of a captive is to reduce taxes.

This study aims to investigate whether or not, or to what extent, tax regulations on a captive have impact on the value of setting up a Japanese captive insurer and influence decision making of a risk manager on captive finance especially for selecting a domicile where the captive is to be incorporated.

According to Doherty (1985), a captive insurer is defined as a retention fund that is graced by having its own corporate identity as a subsidiary of a noninsurance parent firm. He also suggested that a captive insurance company is an insurance company that is owned by a non-

insurance parent company or companies, and that underwrites the insurance business of its parents either directly or by means of retention. With captives, most of multi-national corporations establish their own insurance vehicle to finance their losses rather than transferring losses with insurance.

The practice of captive finance in risk management has become common among multi-national companies in U.S., UK and recently European Union Countries. In fact, the number of captive insurance companies has been growing steadily. As of March 11, 2013, there are 6,052 captives in the world. Contrary, Marsh Broker Japan reported that there are currently 70 to 100 Japanese captives and the number appears to be rather stable over many years. *Special Report of Business Insurance* on March 11, 2013 reported that Bermuda is the top in the number of captives, 856 captives; Vermont is the third, 586; Guernsey is the fourth, 333; Luxembourg is the eighth, 238; Hawaii is 11<sup>th</sup>, 179; Dublin is 15<sup>th</sup>, 141; Federated States of Micronesia is 43<sup>rd</sup>, 9. Micronesia, however, indicates that most of its captives are owned by Japanese firms. It promotes that Micronesia provides favorable business environment for Japanese captives, especially with its 21 percentage corporate tax rate where disadvantageous tax haven law does not apply to the captive.

Various reasons have been presented by researchers on why companies use their captives rather than traditional insurance to manage risks. One is to have it a key driver to encourage risk management and controls within the organization. Other reasons include, but not limited to, to obtain investment income on the loss fund, to offer an arbitrage opportunity for difference in insurance premiums, and to have flexibility of the insurance program (Lenrows et al. (1982)).

Risk management practitioners argue that many Japanese captive owners, however, point out reducing tax liability to be the primary reason for establishing their captives overseas. This fact appears to contradict the reasons for captive finance presented by risk managers of other countries. Therefore, our study attempts to find whether or not Japanese risk managers should consider the tax regulations for domicile selection from the standpoint of value. The result of the study will ultimately provide an answer to the important questions for risk management practice of Japanese corporations.

## **II Brief Literature Review**

Despite the existence of more than 6,052 captives worldwide, 70 to 100 of which are

reported to be owned by Japanese firms, there is a paucity of research on Japanese captives compared to U.S. and European firms. The results from the studies of U.S. and European captives can be applied partially to Japanese captives. Differences exist in the Japanese business environment and also there are pronounced differences in the legal liability exposure of Japanese corporations. Morimiya (1997) and Ikeuchi et al. (2013), for example, have examined the benefits and challenges of captives worldwide, the global trends that fuel captive growth, and the captive dynamic with respect to other financing methods. Maeda (2005) demonstrated through qualitative analysis the corporate demand for Japanese captives.

The lack of publically available data with respect to the performance of captives regardless of their nationalities have resulted in conflicting conclusions from the empirical findings concerning the ability of captives to generate value for parent firms. Diallo and Kim (1989) and Adams and Hillier (2000) use event study methods to examine whether the establishment of a captive insurer creates value for its shareholders. The studies demonstrate that although the share value of the captive parent remains unchanged, the non-significant negative drift of the cumulative abnormal return on the parent's stock may indicate that an amount considered negligible to all stockholders might be significant for certain managers. They thus contend that the welfare gain derived from the creation of captives is likely to benefit the managers of the parent firm rather than the shareholders. This conclusion is similar to the conclusion of Scordis and Porat (1998) who demonstrate that firms with captive insurers are more likely to experience manager-owner conflicts than firms that do not form captives. Adams and Hillier (2000) partially attribute their results to captive formation by managers for their own benefits. They provide evidence that the incorporation of captive insurers is somewhat detrimental to value. The study uses a sample of 120 captives of United Kingdom (U.K.) corporations. They find negative stock reaction to the news that a captive insurer has been formed, however, the reaction amounted to less than a percentage point.

The study of Scordis et al. (2007) employed Monte Carlo simulations on general captives in Bermuda and British Virgin Island to identify sustainable conditions where captives exhibit a high probability of creating positive shareholder value. The study finds that, on average, captives have a low probability of generating shareholders value. Well-managed captives, however, have a high probability of generating shareholder value. The study also finds that the captives of parents with low systematic risk have the highest probabilities of creating the value. Maeda et al. (2011) studied shareholder value creation by applying a similar methodology of Scordis et al. (2007) to a Japanese captive established in Guernsey, Bermuda and Hawaii but

expanded further into enterprise risk management and finite risk schemes into captives.

Maeda et al (2011) found a high likelihood that a captive generates economic value for its Japanese parent firm especially when it operated over multiple years. They find that when the captive reinsurers its entire book of business, thus acting as a vehicle for access the global re-insurance market, it delivers approximate break-even economic value. The captive can generate a high level of economic value but only by adopting a higher level of operating risk. They find that the value-maximizing strategy is for a Japanese corporation to establish its captive in Bermuda while the risk-minimizing strategy is to establish its captive in Guernsey. They also demonstrate that Bermuda offers favorable risk-return tradeoffs for Japanese captives compared to Hawaii. Maeda (2013) also demonstrated the research with respect to Japanese captives established in European domiciles, namely Guernsey, Luxembourg and Dublin, Ireland. The study demonstrates that Japanese captive domiciles in Europe bring incremental positive value to the parent.

### **III Research Methodology**

This study uses a scenario approach and the discounted present value method in order to seek an answer to this important research question for risk managers of Japanese corporations. Realistic business environment and hypothetical situation using the latest information obtained from various reliable sources are assumed, and then we forecast income statements and cash flow statements on MS Excel spreadsheets for each domicile. The latest domicile tax regulations, capital requirement and costs are fully reflected in the scenario.

We assume that the risk manager wishes to set up a captive to finance product liability losses occurred in Japan. The captive is to be established and maintained over fourteen years and then liquidated at the end the period. The liability for outstanding losses at the end is to be transferred by Loss Portfolio Transfer to another insurance company. Using the conventional discounted cash flow method, we come up the net present value of a captive less the value of purchasing traditional insurance. Since each domicile has distinct tax regulations, i.e. difference in corporate tax rates and premium taxes on captives, we compare the value added by the captives reflecting these local tax regulations and consolidated taxes paid in accordance with Japanese "Tax Haven Law."

## 1 Assumption

A hypothetical pure captive is assumed to be established in the following popular domiciles; 1) Bermuda; 2) Vermont in U.S.; 3) Hawaii in U.S.; 4) Luxembourg; 5) Guernsey; 6) Dublin and 7) Federated States of Micronesia. A “pure” captive is defined as one which insures only the parent’s and/or its subsidiaries’ risk. It does not cover the third party risk.

The captive is established by a Japanese company to finance losses occurred in Japan. Because of Japanese Insurance Law which does not allow the risk existed in Japan to be directly insured by non-licensed insurers, we have to consider a captive to act as a reinsurance vehicle offshore; that is, the risk in Japan is to be first insured by a licensed Japanese insurance company which then transfers 100 percentage of the risk for fee to the captive overseas. For simplicity, we assume the fronting insurer does not cover risk at all. The licensed insurance company, therefore, acts as a fronting servicer by issuing insurance policy and providing claim services. The fixed percentage for such fronting services is deducted from the premium ceded to the captive.

## 2 Data

This study uses the information from the database of IRMI (International Risk Management Institute (2015)). It provides domicile regulations such as corporate tax rate, premium tax rate, value of equity capital required for establishment, licensing fee and annual renewal fee among others. The capital and fees also differ among classes of captives. We use the requirement for a pure reinsurance captive.

## 3 Tax Regulation in Japan and at Domiciles

Tax arbitrage is a big problem among country’s tax authorities. Tax arbitrage is the practice of multi-national corporations to avoid tax liabilities by taking advantage of differences in corporate tax rates among countries.

Like those of other countries, Japanese tax authority has implemented so-called “Tax Haven Law” (Tax Treatment No. 66 and Corporate Tax Law No. 11) where corporations whose head office are located in Japan must consolidate into the parent’s the net income of their subsidiary companies located in tax haven countries. National Tax Authority defines a tax haven country where the local corporate tax rate is equal to or below 20 percent. Corporations are therefore discouraged to set up their subsidiaries in a tax haven country only to reduce tax liabilities. In other words, if the corporate tax rate is above 20 percent, the country is not recognized as a

tax haven country. The tax liability is reduced by the difference between the tax rate at the domicile and the effective tax rate in Japan if the tax rate is above 20 percent.

For example, at Micronesia captive where the corporate tax rate is 21 percent, the income at the captive is not consolidated in Japan where the effective corporate tax rate is approximately 35 percent. The difference of 14 percentage is thus reduced as a result of the captive. Among our targeted domiciles, Bermuda, Guernsey and Dublin are treated as tax haven countries while Vermont, Hawaii, Luxembourg and Micronesia are not.

Captives in Hawaii are taxed at the rate of 0.25 percentage for the first 25 million dollar of premiums.

Table 1 illustrates the difference of tax regulations on captives among the domiciles, the tax haven status in Japan, and whether or not net income of the captive is taxed on the consolidated basis in Japan.

**Table 1: Tax Regulations of Domiciles and the Tax Haven Status in Japan**

Domicile	Corporate Tax Rate	Premium Tax Rate	Tax Haven Status	Income Consolidated in Japan
1 Bermuda	0%	NA	YES	YES
2 Vermont	36.0%	NA	NO	NO
3 Hawaii	36.0%	0.25%	NO	NO
4 Luxembourg	22.47%	NA	NO	NO
5 Guernsey	0%	NA	YES	YES
6 Dublin	12.5%	NA	YES	YES
7 Micronesia	21.0%	NA	NO	NO

#### 4 Product Liability Losses

This study assumes that the captive finances the product liability losses of its parent company. According to IRMI (1996), the term, product liability, is defined as *the liability for bodily injury or property damage incurred a merchant or manufacturer as a consequence of some defect in product sold or manufactured*. Unlike fire risk that has a short tailed loss, product liability risk is typically characterized to have a long tailed loss pattern. The long tailed loss pattern means that the losses are paid out over a long period of time after an incident occurred since a considerable time is required from the claims are noted until payments are settled.

This study uses the payout profile of general liability including product liability as of August, 2014 from the information showed by the IRMI database. The payout profile here is provided by SIGMA Actuarial Consulting Group, Inc. According to its payout profile, over thirteen year

after an incident occurs, 10 percentage is paid in that incident year, 23 percentage in the second, 39 percentage in the third, 54 percentage in the fourth, 65 percentage in the fifth, 74 percentage, 79 percentage, 83 percentage, 86 percentage, 88 percentage, 90 percentage, 91 percentage, 93 percentage for the thirteenth year. These values are cumulative percentages. Therefore, we assume that losses of a year are completely paid off in the fourteenth years.

## 5 Fees

Various fees are considered for establishing a captive and maintaining the company. For example, the captive pays a fee to the fronting insurance company who issues the insurance policy and provides services of claim payments.

This study considers the fee to be 5 percentage of the premium ceded to the captive. The 5 percentage is indicated typical according to Marsh Broker Japan, a subsidiary of the largest captive management company. The captive pays also licensing fee for incorporation, licensing, annual renewal fee to the local regulator, fee for management service, auditing, actuary, legal, loss control advices, etc. Besides the indicated fees paid to the regulators, we assumed the 15 percentage of the premium income for fees of management, auditing, actuary, legal and loss control services.

**Table 2: Fees on Captives at Domiciles**

Domicile	Licensing Fee	Annual Renewal Fee	Actuary Review Fee
1 Bermuda	\$ 971	\$ 971	NA
2 Vermont	\$ 500	\$ 500	\$ 5,000
3 Hawaii	\$ 6,000	\$ 300	NA
4 Luxembourg	\$ 1,500	\$ 7,500	NA
5 Guernsey	£ 5,140	£ 5,140	NA
6 Dublin	€ 5,709	€ 16,189	NA
7 Micronesia	\$ 500	\$ 500	NA

## 6 Capital Requirement

To maintain the financial stability of captives at the domicile, the local regulator requires the captive to keep the capital at least as illustrated in Table 3. We use these values for the initial investment when established.

**Table 3: Minimum Capital Required  
for Captives at Domiciles**

<b>Domicile</b>	<b>Minimum Capital required</b>
1 <b>Bermuda</b>	\$ 120,000
2 <b>Vermont</b>	\$ 250,000
3 <b>Hawaii</b>	\$ 100,000
4 <b>Luxembourg</b>	€ 1,225,000
5 <b>Guernsey</b>	£ 100,000
6 <b>Dublin</b>	€ 635,000
7 <b>Micronesia</b>	\$ 100,000

## **7 Loss Portfolio Transfer**

This study considers the use of loss portfolio transfer when the captive is to be liquidated at the end of its fourteenth year. A loss portfolio transfer often used to transfer the loss portfolio to another insurance company by paying the value of the portfolio and additional fee for transaction.

Loss portfolio transfer is one of financial insurance called “finite risk.” The finite risk can be categorized into two forms in general: prospective and retrospective. Prospective finite covers losses that have not yet occurred while retrospective finite covers losses that have occurred and are known. Loss portfolio transfer is one of the retrospective finite risk. The major difference between the retrospective finite risk and the loss portfolio transfer is that the retrospective finite risk is designed to cover gaps in loss funding while the loss portfolio transfer is designed to identify, quantify and transfer a portfolio of losses which have already occurred but not paid yet.

This study assumes that the loss portfolio transfer is priced at a combination of present value of outstanding unpaid losses discounted at the discount rate and an additional 5 percentage of the present value.

## **8 Exchange Rate**

For the Bermuda captive, we use U.S. dollar in the calculation because Bermudian dollar is pegged to U.S. dollar. The exchange rate we use for this study is JPY 121.19 per U.S. dollar noted on August 31, 2015 when JPY 135.79 per Euro and JPY 186.39 per Sterling (pound). From January 31, 2005 until August 31, 2015, the monthly ten-year data from Thompson Reuters *Datastream* shows that the yen-dollar exchange rate is averaged at JPY 100.56 per U.S.



dollar and its standard deviation is JPY 14.53 while the yen-Euro is JPY 132.93 and 18.54, and the yen-pound is 171.65 and 37.29, respectively.

## 9 Discount Rate

For this study, we used the rate of return on 10 year maturity Japanese Government Bonds (JGB) as risk free rates. According to Doherty (1985), the value of discount factor should be determined by risk factors. The two sources of risk in the cash flows derive from risk investment returns and from random incident of loss events.

Losses from product liability are assumed uncorrelated with market indices and therefore free of systematic risk. Investment income, however, exhibits systematic risk which have the effect of pulling the discount rate above the risk free rate. The 10 year maturity JGBs have had an average of 1.138 percentage from Thompson Reuters *Datastream*. We use 2.0 percentage for the discount rate by adding marginal systematic risk factor to the risk free rate.

## 10 Reinsurance

Purchase of reinsurance (retro) by the captive is not considered in this scenario for simplicity and also for which the study aims to figure out the tax impact on the value of captive finance. All the risk is therefore retained and financed by the captive.

## 11 Premiums

The fronting insurance company charges the premium for the product liability risk according to the rate in the Japanese insurance market. The insurance rate is tightly regulated by the Ministry of Finance. The rate is determined basically by pure loss ratios and operating expense ratios. The most recent *Statistics of Japanese Non-Life Insurance Business, 2013* indicates the 32.4 percentage as the percentage for overall operating expense ratio (denoted as *OER*) in the non-life insurance business. For the sake of simplicity, the expected losses for the beginning year is assumed to be JPY 100 million as an annual cumulative value (denoted as *EL*).

Accordingly, we come up the premium (denoted as *P*) to be calculated by the following formula:

$$P = \frac{EL}{1 - OER}$$

The premium is assumed to grow at the rate of 5 percentage as a year passes while the accumulated annual loss amount grows at the same rate.

**Figure 1: Income Statement of Bermuda Captive**

<b>Income Statement of Bermuda Captive</b>							
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>Underwriting Income</b>							
Premium	¥ 147,928,994	¥ 155,325,444	¥ 163,091,716	¥ 171,246,302	¥ 179,808,617	¥ 188,799,048	¥ 198,239,000
Tax shield value	¥ 51,775,148	¥ 54,363,905	¥ 57,082,101	¥ 59,936,206	¥ 62,933,016	¥ 66,079,667	¥ 69,383,650
Fronting fee	¥ 7,396,450	¥ 7,766,272	¥ 8,154,586	¥ 8,562,315	¥ 8,990,431	¥ 9,439,952	¥ 9,911,950
Net ceding premium	¥ 140,532,544	¥ 147,559,172	¥ 154,937,130	¥ 162,683,987	¥ 170,818,186	¥ 179,359,095	¥ 188,327,050
in the local currency	\$ 1,159,652.96	\$ 1,217,635.61	\$ 1,278,517.39	\$ 1,342,443.26	\$ 1,409,565.42	\$ 1,480,043.70	\$ 1,554,045.88
<b>Premium Income</b>	<b>\$ 1,159,652.96</b>	<b>\$ 1,217,635.61</b>	<b>\$ 1,278,517.39</b>	<b>\$ 1,342,443.26</b>	<b>\$ 1,409,565.42</b>	<b>\$ 1,480,043.70</b>	<b>\$ 1,554,045.88</b>
<b>Underwriting Expense</b>							
Ultimate Incurred Losses	\$ 825,184.64	\$ 866,443.87	\$ 909,766.06	\$ 955,254.36	\$ 1,003,017.08	\$ 1,053,167.94	\$ 1,105,826.33
Cost of LPT							
LPT fee							
Initial set-up costs	\$ 971.00						
Operating costs	\$ 173,947.94	\$ 182,645.34	\$ 191,777.61	\$ 201,366.49	\$ 211,434.81	\$ 222,006.55	\$ 233,106.88
Annual cost		\$ 971.00	\$ 971.00	\$ 971.00	\$ 971.00	\$ 971.00	\$ 971.00
Premium tax	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
<b>Total Expenses</b>	<b>\$ 1,000,103.58</b>	<b>\$ 1,050,060.21</b>	<b>\$ 1,102,514.67</b>	<b>\$ 1,157,591.85</b>	<b>\$ 1,215,422.90</b>	<b>\$ 1,276,145.49</b>	<b>\$ 1,339,904.21</b>
<b>Underwriting Profit</b>	<b>\$ 159,549.38</b>	<b>\$ 167,575.40</b>	<b>\$ 176,002.72</b>	<b>\$ 184,851.41</b>	<b>\$ 194,142.53</b>	<b>\$ 203,898.21</b>	<b>\$ 214,141.67</b>
<b>Invest. Income</b>	<b>\$ 1,560.00</b>	<b>\$ 13,288.80</b>	<b>\$ 24,210.11</b>	<b>\$ 33,961.74</b>	<b>\$ 42,592.46</b>	<b>\$ 50,475.34</b>	<b>\$ 57,787.53</b>
<b>EBIT</b>	<b>\$ 161,109.38</b>	<b>\$ 180,864.21</b>	<b>\$ 200,212.84</b>	<b>\$ 218,813.15</b>	<b>\$ 236,734.99</b>	<b>\$ 254,373.55</b>	<b>\$ 271,929.20</b>
<b>Income Tax Exp.</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>
<b>Net Income</b>	<b>\$ 161,109.38</b>	<b>\$ 180,864.21</b>	<b>\$ 200,212.84</b>	<b>\$ 218,813.15</b>	<b>\$ 236,734.99</b>	<b>\$ 254,373.55</b>	<b>\$ 271,929.20</b>
<b>Divident payments</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Earned Surplus</b>	<b>\$ 161,109.38</b>	<b>\$ 180,864.21</b>	<b>\$ 200,212.84</b>	<b>\$ 218,813.15</b>	<b>\$ 236,734.99</b>	<b>\$ 254,373.55</b>	<b>\$ 271,929.20</b>

## IV Results

Figure 1 and Figure 2 show a portion of income statement and cash flow statement of the Bermuda captive. Figure 3 illustrates the cash flows of the parent company using the Bermuda captive and comes up the present value of establishing the Bermuda captive. Figure 4 illustrates the cash flows using traditional insurance and calculates the present value of using traditional insurance. The value of the captive minus the value of traditional insurance bring us the net present value of the Bermuda captive.

These figures show the seven year time frame only but in the actual platforms the calculation has extended to the fourteen years.

The study examines the present value of having the captive from the viewpoint of the parent company to compare with the present value of purchasing traditional insurance. In the case of Bermuda captive, the cost in value for the parent is approximately JPY 1,580 million. The cost in value of traditional insurance is approximately JPY 1,604 million. Therefore, the net present value of using captive finance is positive and approximately JPY 24 million.

**Figure 2: Cash Flow Statement of Bermuda Captive****Cash Flow Statement of Bermuda Captive**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Initial investment	\$ 120,000.00						
Premium received	\$ 1,159,652.96	\$ 1,217,635.61	\$ 1,278,517.39	\$ 1,342,443.26	\$ 1,409,565.42	\$ 1,480,043.70	\$ 1,554,045.88
Losses paid	\$ 82,518.46	\$ 193,918.39	\$ 335,643.85	\$ 476,203.74	\$ 590,784.23	\$ 694,590.06	\$ 770,578.80
Underwriting expenses paid	\$ 174,918.94	\$ 183,616.34	\$ 192,748.61	\$ 202,337.49	\$ 212,405.81	\$ 222,977.55	\$ 234,077.88
Expenses paid for LPT	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Dividend paid	0	0	0	0	0	0	0
Income tax paid	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Net Cash Flow from Operation	\$ 902,215.56	\$ 840,100.88	\$ 750,124.93	\$ 663,902.03	\$ 606,375.38	\$ 562,476.08	\$ 549,389.20
Invested Assets at beginning	\$ 120,000.00	\$ 1,022,215.56	\$ 1,862,316.44	\$ 2,612,441.37	\$ 3,276,343.40	\$ 3,882,718.78	\$ 4,445,194.86
Net Cash Flow	\$ 902,215.56	\$ 840,100.88	\$ 750,124.93	\$ 663,902.03	\$ 606,375.38	\$ 562,476.08	\$ 549,389.20
Invested Assets at end	\$ 1,022,215.56	\$ 1,862,316.44	\$ 2,612,441.37	\$ 3,276,343.40	\$ 3,882,718.78	\$ 4,445,194.86	\$ 4,994,584.06

**Figure 3: Cash Flow Statement of the Parent Company****Parent's Cash Flow Statement**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Initial Investment	-14,542,200						
Divident income	0	0	0	0	0	0	0
Premium payments	-147,928,994	-155,325,444	-163,091,716	-171,246,302	-179,808,617	-188,799,048	-198,239,000
Tax shield benefit	51,775,148	54,363,905	57,082,101	59,936,206	62,933,016	66,079,667	69,383,650
Consolidated tax payment in Japan	-6,833,414	-7,671,310	-8,491,977	-9,280,905	-10,041,056	-10,789,191	-11,533,809
Liquidation of Captive							
Tax on income from captive liquidation							
Net Cash Flow	-117,529,460	-108,632,849	-114,501,593	-120,591,001	-126,916,657	-133,508,572	-140,389,159
NPV @ discount rate	-1,580,308,665 in JPY						

**Figure 4: Parent's Cash Flows with Insurance and Net Value of Bermuda Captive****Parent's Cash Flow with Traditional Insurance**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Premium payments	-147,928,994	-155,325,444	-163,091,716	-171,246,302	-179,808,617	-188,799,048	-198,239,000
Tax shield value	51,775,148	54,363,905	57,082,101	59,936,206	62,933,016	66,079,667	69,383,650
Net Cash Flow	-96,153,846	-100,961,538	-106,009,615	-111,310,096	-116,875,601	-122,719,381	-128,855,350
NPV of traditional insurance	-1,604,297,146 in JPY						
Net value of captive	¥ 23,988,481 in JPY						

Since the Bermuda captive creates a positive value, the management decision making for whether or not it establishes a Bermuda captive should therefore be “go ahead.” Interestingly, Bermuda has been treated as a tax haven country under the Japanese Law and the corporate

**Table 4: Captive Cost in Value, Net Value of Captive and Income Consolidation Status**

Domicile	Captive Cost in Value	Insurance Cost in Value	Net Value for Captive	Income Consolidated in Japan	Decision of Captive Finance	Ranking in Value of Captive Finance
1 Bermuda	¥ 1,580,308,665	¥ 1,604,297,146	¥ 23,988,481	YES	YES	1
2 Vermont	¥ 1,630,870,511	¥ 1,604,297,146	-¥ 26,573,365	NO	NO	5
3 Hawaii	¥ 1,613,153,104	¥ 1,604,297,146	-¥ 8,855,958	NO	NO	3
4 Luxembourg	¥ 1,764,040,801	¥ 1,604,297,146	-¥ 159,743,655	NO	NO	7
5 Guernsey	¥ 1,581,647,092	¥ 1,604,297,146	¥ 22,650,054	YES	YES	2
6 Dublin	¥ 1,649,528,139	¥ 1,604,297,146	-¥ 45,230,993	YES	NO	6
7 Micronesia	¥ 1,613,320,902	¥ 1,604,297,146	-¥ 9,023,756	NO	NO	4

tax is taxed in Japan on the net income of the Bermuda captive in the consolidated basis. The result implies that the income consolidation because of tax haven law is irrelevant to the decision making of the captive finance for Bermuda captive.

The similar process is conducted with captives in other domiciles. The net costs in value are illustrated in Table 4. The decision makings favorable for captive finance are in the cases of Bermuda and Guernsey captives where both have the net incomes consolidated and taxed in Japan; the result is contrary to our conventional belief. Other domiciles provide negative net value by establishing a captive; therefore, the management should not go for captive finance in those domiciles. The result contradicts our belief that a captive creates value because the firm can reduce tax liabilities when one is established in a non-tax haven country.

Interestingly, the Dublin captive shows a negative net cost in value even though the income from the captive is consolidated and taxed in Japan. This evidence is the only case that supports the belief that tax regulations are relevant to the value of captive. All the captives in non-tax haven countries, however, show negative net cost in value; that is not favorable result for captive finance. The result demonstrates that the tax regulation at domicile is rather irrelevant to the management decision on whether or not captive should be established.

However, we have to recognize that the value of captive finance is determined not only by tax regulations but by others such as minimum capital requirement, licensing costs, annual fees, actuarial review fee among others factors. The result implies that the management should include those various factors into consideration in value calculations, not solely tax benefits.

## V Discussion and Conclusion

This study investigated whether or not, or to what extent, the tax regulations have impact on the decision making of a Japanese risk manager about whether or not, or where a pure

captive should be established. We have selected seven popular captive domiciles for Japanese firms, namely Bermuda, Vermont, Hawaii, Luxembourg, Guernsey, Dublin and Federated States of Micronesia. Their distinct tax regulations and difference in application for tax haven law in Japan appear to influence the decision making of many Japanese risk managers in choosing the domicile. For this important research question especially for risk management practice, we used a scenario approach and discounted cash flow method, in which a captive is to be set up in these domiciles with the identical losses but different tax regulations applied in accordance with the latest domicile information.

As a result of our study, Bermuda and Guernsey captives have created net positive values even though those countries are treated as “Tax Haven” countries for which the net income at captives are consolidated in Japan in accordance with the law. Other captives provide negative net value with captive finance. The implication is that a captive should not be established only because the domicile reduces the corporate tax liability. The result contradicts our conventional belief that tax haven status of the domicile where corporate tax rate is equal to or below twenty percentage would have a negative impact on captives. Our study shows that these captives are followed by Hawaii, Micronesia, Vermont, Dublin and Luxembourg captive in net value ranking. The selection based on its net value created to the parent is irrelevant to the tax regulations surrounding the captive.

The result provides us an important conclusion; that is, the captive does not necessarily provide the positive net value from the reduction in tax liabilities. Japanese risk managers should consider all the business situation surrounding the captive finance in selecting the best domicile for their firms, for example, its capital requirement, minimum solvency needed to be maintained, regulatory burden such as licensing, annual renewal and actuary review fees among other factors.

Use of captive is becoming strategically important. An evidence is demonstrated by Mr. Alan Kubitz, manager of finance and captive operations at the American Automobile Association Northern California who is currently looking to form a new U.S.-based captive for employee benefits-related coverage such as group life insurance and long-term disability. We can say that captive finance could be more widely utilized than before and therefore become critically important for the organization. Japanese firms are also expected to follow such trend of captive finance as they become more globally operated. Risk managers of Japanese firms should strategically plan a captive and carefully select a domicile by which the business plan can be effectively achieved.

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### References

- Adams, M. and D. Hillier, "The Effect of Captive Formation on Stock Returns: An Empirical Test from the UK," *Journal of Banking and Finance*, 24(11), 2000, pp. 1787-1807.
- Bawcutt Paul updated by Colin Hadley, "European Captive Scene," *International Risk Management Institute's Risk Financing Volume I*, 2011, IV. J. I-11.
- Business Insurance, "Special Report: Captives Grow as Economy Recovers," March 11, 2013 issue, pp 19-24.
- Captive Insurance Companies Association, "CICA: 40 years of captive leadership," Newton Media Limited, 2012.
- Diallo, A. and S. Kim, "Asymmetric Information Captive Insurers' Formation, and Managers' Welfare Gain," *Journal of Risk and Insurance*, 56(2), 1989, pp. 233-251.
- Doherty, Neil, "Corporate Risk Management-A Financial Exposition," McGraw Hill, 1985.
- Ikeuchi M., Y. Maeda and F. Sugino, "Japanese Corporations and Captives: Theory and Practice of Risk Financing (in Japanese)," Hoken Mainichi Shimbun, 2014.
- International Risk Management Institute Inc., "IRMI's Risk Financing, Strategies for Insurance Cash Flow and Alternative Funding," 2015. Data in www.IRMI.com is accessed on September 1, 2015.
- International Risk Management Institute Inc., "Glossary of Insurance and Risk Management Terms, Sixth Edition," 1996.
- KPMG Japan, "Foreign Dividend Exclusion," [http://www.kpmg.or.jp/knowledge/glossary/tax\\_fde.html](http://www.kpmg.or.jp/knowledge/glossary/tax_fde.html), Web Accessed Sept 3, 2013.
- Lenrow G. I., J. H. Brainerd, J. Hall and M. S. Heritz, "Captive Insurers: Pitfalls and Practicabilities," *Best's Review*, Vol. 82, 12, 1982.
- Luxembourg for business, <http://www.luxembourgforbusiness.lu/headquarters>, Web Accessed Sept 3, 2013.
- Maeda, Yuji. "Risk Financing through Captive Insurer (in Japanese)," *Journal of Insurance Science of Japan*, Number 590, 2005, pp 72-89.
- Maeda, Yuji and Y. Sakai, "Risk Financing through Captive Insurer: Economic Influences of Captives on Corporations and the First Domicile in Japan," *Journal of Risk Research*, Vol. 10, Issue 6, 2007, pp 793-803.
- Maeda, Y., Y. Suzawa and N. Scordis, "Shareholder Value: The Case of Japanese Captive Insurers," *Asia-Pacific Journal of Risk and Insurance*, Volume 5 Issue 1 Article 3, 2011.
- Maeda, Yuji. "Demand for Captives and Domiciles: Why are Countries and States Rushing into Captives?" *Kwansei Gakuin University Social Sciences Review*, Vol. 17, 2012, pp 45-62.
- Maeda, Yuji. "Creating Value with a Captive Insurer in Europe," *Kwansei Gakuin University Social*

- Sciences Review*, Vol 18, 2013, pp 101-118.
- Maeda, Yuji. *“Role of Corporate Risk Management and Captives (in Japanese),”* Kwansei Gakuin University Press, 2015.
- Morimiya, Yasushi. *“Captive Research (in Japanese).”* Songai Hoken Jigyō Kenkyūsho, 1997.
- Scordis, N. and J. Barrese and M. Yokoyama, “Conditions for Captive Insurer Value: A Monte Carlo Simulation,” *Journal of Insurance Issues*, 30(2), 2007, pp. 79-101.
- Scordis, N. and M. Porat, “Captive Insurance Companies and Manager-Owner Conflicts,” *Journal of Risk and Insurance*, 365(2), 1998, pp. 319-330.