

# Earmarking Tax: Can it Increase Public Trust in the Indonesian Government?

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**Abstract:** Earmarking tax supports a sustainable budget for a particular programme. In this way, the Earmarking Tax Policy has the potential to reduce inefficiency and corruption. The Earmarking Tax Policy in Indonesia is the government's budget allocation for the education sector (20%) and health sector (5%). Based on that information, the financial market should react positively while the government is implementing an Earmarking Tax Policy. Using event study methodology, this research found a positive effect on the Cumulative Abnormal Return (CAR) of the top ten government corporation stocks. The difference in the method is used for robustness checks. The results show an increase in the value of CARs from the shares owned by the government companies when the Earmarking Tax Policy is applied. This is in accordance with the wishes of the government in implementing the Earmarking Tax Policy. This research could be presented to the Indonesian government in order for them to be able to implement earmarking tax policies in other sectors.

**Keywords:** Indonesia tax policy; earmarking tax; financial market; event study; difference in difference Model

**JEL Classification:** E62; G14; H51; H5

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## 1. Introduction

In general, people do not want to pay for anything that is futile and does not produce results. Using tax money, they pay for something useful that must be able to make people believe in paying their taxes (Sælen & Kallbekken, 2011; Stark & Kirchler, 2017). Earmarking tax is the right policy to increase public trust as a taxpayer in the government as a tax revenue manager (McCleary, 1991). The Earmarking Tax Policy creates certainty in the budget allocation for the supply of public goods (Deran, 1965). It promises to

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suppress acts of corruption and inefficiency, thereby increasing the level of public trust in the government (Michael, 2015; Sælen & Kallbekken, 2011; Wright, Smith, & Hellowell, 2017).

Financial market performance can be used as a benchmark for government trust (Fama, 1970; Fama, 1991; Ng, Ibrahim, & Mirakhor, 2016). Based on signalling theory, the period of implementation for the Earmarking Tax Policy can affect investment activity in the stock market (Fama et al., 1969). More specifically, it affects the shares of government-owned companies. If the Earmarking Tax Policy can increase government trust, then the value and volume of trading in the shares of government-owned companies will increase.

The embodiment of the Earmarking Tax Policy in Indonesia is the fixed stipulation of the percentage allocation of funds for education and health from the total government budget. Following this, 20% of the government budget is for education and 5% is for health. The budget allocation for education is outlined in Article 49 of Law Number 20 of 2003 Article 1, while the budget for health is mandated in Law Number 9 of the Year 2009 on Health.

This paper examines if the Indonesia Earmarking Tax Policy can increase public trust in the government as represented by the price of stocks. Using the event study approach, this research analysed the market reaction of a change in the stock price (closing price) as measured using the return as a value of the price changes or with abnormal returns obtained by investors as a result of information or an event. By using the market-adjusted model<sup>1</sup>, we recognise that Cumulative Abnormal Return (CAR) in the Jakarta Stocks Exchange Composite Index (JKSE) represents the Indonesian financial market and the top ten government company stock returns as an indicator of government trust. The Difference in Differences (DID) method is used for a robustness check of the results from the case study.

The main result of this research is that the CAR of JKSE has increased in response to the Earmarking Tax Policy. Furthermore, there is a difference between the average abnormal return of stocks before and after the implementation of the Earmarking Tax Policy.

We organised this paper as follows. We began with a literature review and discussed the Earmarking Tax Policy. Section 2 is related to the financial market reaction using signalling theory. Section 3 describes the event study methodology. Section 4 discusses the main results and its interpretations, while Sequence 5 concludes the study.

## **2. Literature Review**

### **2.1 What is Earmarking?**

Earmarking is the practice of designating or dedicating specific revenue to the financing of a specific public service. The earmarked approach is intended to design a policy for specific income sources of funding for public service activities (Buchanan, 1963; Buchanan, 1980). Another notion of earmarking is that it is used to cover the funds for the provision of public goods and services (Eklund, 1972). Studies concluded that earmarking tax refers to the funds collected from the public that are returned to the community in the form of the provision of public goods. Earmarking exists because every public good has its source of financing (Michael, 2015).

Earmarking tax can be divided as substantive and symbolic (Bird & Jun, 2005). Substantive earmarking tax is the practice of strongly linking the source of funds to their expenses. If the funds increase, then the expenditure will also increase proportionally to the increase. Symbolic earmarking tax is the practice of linking funding sources with expenditure with loose rules, and the proportion of funds spent on taxed expenditure item earmarking depends on the policymakers (flexible).

There are eight categories of earmarking tax as follows (Table 1):

**Table 1:** Earmarking Tax Categories

Varieties of Earmarking	Expenditure	Linkage	Rationale	Example
A	Specific	Tight	Benefit	Public enterprise
B	Specific	Loose	Benefit	Gasoline tax and road finance
C	Broad	Tight	Benefit	Social security
D	Broad	Loose	Benefit	Tobacco tax and health finance
E	Specific	Tight	None	Environmental taxes and clean-up programmes
F	Specific	Loose	None	Payroll tax and health finance
G	Broad	Tight	None	Revenue sharing to localities
H	Broad	Loose	None	Lottery revenues to health

Source: Bird & Jun (2005)

The efficiency gains of earmarking rely on whether there is full or partial earmarking (Bhatt, Rork, & Walker, 2011). When compared, partial earmarking is more efficient than full earmarking. In partial earmarking, not all proceeds from the taxes are reserved for certain expenses (Mcclary, 1991). Based on the types and categories described above, the earmarking tax in this research is the substantive and partial type of earmarking tax. If categorised, category C is included in this earmarking tax.

National legislation regulates the determination of the amount of earmarking, and it has to go through the process of ratification through the House. Based on Article 49 of Law Number 20 of 2003 Article 1, namely the Education Fund, other than the educators' salaries and official education

expenses, at least 20% of the State Budget in the education sector and at least 20% of the Revenue and Expenditure Budget Regional Expenditure will be allocated while the budget for health is mandated in Law Number 9 the Year 2009 on Health.

## ***2.2 Earmarking Tax Policy in Other Countries***

Not many studies have examined the earmarking tax. However, no one has examined the Earmarking Tax Policy in Indonesia. Moreover, it analyses its relationship with government trust.

Some researchers state that the implementation of earmarked tax policies in other countries has been successful (Baranzini & Carattini, 2017; Bhatt et al., 2011; Ding, 2007; Kimenyi, Tollison, & Wagner, 1990; Sælen & Kallbekken, 2011; Stratmann, 2013; Widodo et al., 1999; Wright et al., 2017). There are various reasons why some countries have successfully implemented this particular tax policy. The primary reason is that earmarking applies the benefit principle of taxation. Earmarking tax ensures that people will receive better education and health. Earmarking tax provides more assurance of minimum levels of financing for public services the government considers beneficial. With the fulfilment of the minimum level of financing for public services, the government can provide public services, albeit at a minimum, such as establishing schools and hospitals in remote areas. Third, it will reduce corruption. This is because earmarking tax sets the budget allocation to avoid periodic haggling within the bureaucracy and eradicates the need to legislate for an appropriate level of funding. The fourth reason is that earmarking provides stability and continuity in the funding. The fifth reason is that earmarking tax may lead to lower costs due to the rapid speed at which the projects are completed. The sixth reason is that earmarking links taxation with spending (for example, vehicle tax is used to finance the highway construction). Furthermore, earmarking may overcome resistance to taxes and help generate new sources of revenue. Earmarking tax garners political support leads to increased funding. It also constrains the overall public spending and taxing.

Several researchers have argued that the implementation of the Earmarking Tax Policy in some countries was unsuccessful due to several problems (Bauhoff et al., 2018; Bird & Jun, 2005; Carattini, Carvalho, & Fankhauser, 2018; Cremer, Goulão, & Roeder, 2016; Mccleary, 1991). Some of these problems include the rigidity of budget allocations, uneven budget distribution, income distribution function failure, manipulation and compliance issues, the substitution of revenues, tax policy implications, increased tax administration, and compliance costs.

### **2.3 Market Reactions and Earmarking Tax Policy Relationship**

Signalling theory is useful for describing behaviour when two parties (individuals or organisations) have access to different information (Connelly et al., 2011). Information published as an announcement will provide a signal for investors when making investment decisions (Ahlers et al., 2015). If the published announcement has a positive value, then the market is predicted to react when the market receives the announcement. Information, notes or images of the past, present, and future will be an essential element for investors as well as for the business actors involved in making investment decisions. Investors need complete, relevant and accurate information as an analytical tool for decision-making (Brigham & Houston, 2007).

An informationally efficient market is a market in which the prices always adequately reflect the available information (Fama, 1970). When the government announces a policy, all market participants have received that information. The market participants will analyse and interpret the information received as good or bad news. This way, investors can decide to conduct transactions on the stocks or delay them. Changes in the volume of stock trading can be used to see the reaction of market participants (Malkiel, 1991). Therefore the financial market reaction can be used as a benchmark when measuring government trust (Fama, 1991; Ng et al., 2016).

The Earmarking Tax Policy Announcement Event is a government effort to provide certainty on the allocation of funds for the education and health sectors. This announcement allegedly will be a positive signal for investors. This is because the implementation of the Earmarking Tax Policy can reduce corruption and the misappropriation of funds due to provisions in the allocation of funds (Baranzini & Carattini, 2017; Michael, 2015; Sælen & Kallbekken, 2011; Stark & Kirchner, 2017). If the announcement carries information, then the market will react when obtaining the information. Price changes in the relevant securities will reflect the market reaction. Using a return as a price change value or using abnormal returns can measure the reaction. When using an abnormal return, it can be said that an announcement that has statistical content material will provide an abnormal return to the marketplace. Conversely, this does not contain information which then does not provide an abnormal return for the market.

### **3. Event Study Methodology**

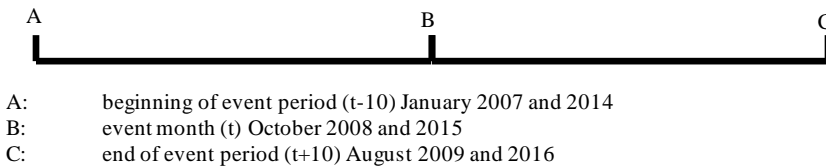
An event study is a research technique related to empirical finances. It helps researchers measure the impact of an event that occurs on the stock price of a company as seen from the market reaction in order to observe specific announcements or events. If the assertion includes any information, then the market will react when the shareholders obtain the statement. Changes in

security prices reflect the market reaction (Ball & Brown, 1968; Brown & Warner, 1980; Fama, 1970). In this research, an abnormal return as the value of changes in stock prices and changes in the trading volume activity is a reflection of the market reaction which demonstrates the activity of stock trading in the Indonesian Stock Exchange as one indicator reflecting the investment decisions of the investor.

### 3.1 *Timeline*

The observation period of the study consists of the estimated period and window period also called the period of events (Campbell, Lo, & MacKinlay, 1997). The event period (event period) is also called the observation period, and the event window can vary. The length of the most commonly used window ranges from three days to 121 exchange days, i.e., Mondays to Fridays every week and Saturdays, with the closing of exchanges on Sundays and public holidays (Figure 1).

**Figure 1:** Observation Period



The observation period in this study was carried out during the event window of 21 months around the announcement and ten months before the pre-event announcement marked with  $t-10$ ,  $t-9$ ,  $t-8$ ...  $T-1$ .  $T_0$  and ten months afterwards (post-event) mark the day of the announcement (event date), which is indicated as  $t + 1$ ,  $t + 2$ ,  $t + 3$ ...  $T + 10$ . In an event study, there is the problem of determining the length of the period of observation. We have described the length of the window period selection as follows (Armitage, 1995):

1. A shorter observation period will further reduce the strength of the statistical test.
2. A longer observation period will make it more difficult to control the confounding effect.

The 21 months around the date of the announcement comprises the observation period in this study, i.e., ten months before the pre-event window, one month for the event date, and ten months after for the post-

event period. This period was selected to avoid the confounding effect with the presence of other events of the period was extended.

Event study was used to test the information content of the announcement of the Earmarking Tax Policy event in October 2008 and 2015. Although in October 2003 there was the announcement of the Earmarking Tax Policy for the education sector and in October 2008 there was an announcement for the health sector, only in October 2008 and 2015<sup>2</sup> did the Indonesian government implement the policy. This is the reason why this research used different event studies between the announcements of the Earmarking Tax Policy with its implementation.

Monthly data was used rather than daily data because the implementation of the state budget takes approximately three months. The President submits the State Budget Draft at the House of Representatives Plenary Meeting in mid-August, and it is approved by the House of Representatives at the end of September. The President then approves the State Budget Draft in mid-October through the Law on State Revenue and Expenditure Budget. If there are changes in the State Budget Draft in mid-January, then the Government is represented by the Minister of Finance who submits the State Budget Revenue Amendment to the House of Representatives. The State Budget Revenue Amendment was then approved unanimously in the plenary session of the House of Representative in mid-February. If there are no changes in January, then the implementation of the state budget is carried out. To avoid the January effect<sup>3</sup> due to the window dressing that was issued in December and the after-effect in January, this research used October 2008 and 2015 as the event months.

### **3.2 Identification Abnormal Return**

Abnormal return is the result of the difference between the actual return with the expected return (Basdas & Oran, 2014). A positive abnormal return indicates that the received return is higher than the expected return. Otherwise, if the received return is less than expected, then it is called a negative abnormal return. In this study, abnormal return is measured using a market-adjusted model. This research uses this model because it does not require an estimation period, which is commonly used and more reliable than the others (Campbell, Cowan, & Salotti, 2010; Campbell & Wesley, 1993; MacKinlay, 1997). It is formulated as follows (Equation 1):

$$AR_{it} = R_{it} - E(R_{it}) \quad (1)$$

where  $AR_{it}$  is the abnormal return of stocks  $i$  in the period of the  $t$ -event.  $R_{it}$  is the actual return that occurs for the stocks  $i$  to the period of the  $t$ -event.

$E(R_{it})$  is expected return of the stocks  $i$  for the period of the  $t$ -event. Calculating the actual return or the actual rate of return on each daily stocks is done with the formulation of the following actual return calculation (Equation 2):

$$R_{i,t} = \frac{P_{it} - P_{it-1}}{P_{it-1}} \quad (2)$$

where  $R_{i,t}$  is the actual return of stocks,  $i$  in the period of the  $t$ .  $P_{it}$  is the closing price of stocks  $i$  on day  $t$ .  $P_{it-1}$  is the closing price of stocks  $i$  on 1 day before day  $t$ . The calculation of the expected return was done using the market-adjusted model. With this model, it is not necessary to use the estimation period since the estimated security return equals the market index return. The calculation of the return of exposure in this model is done using the following formula (Equation 3):

$$E(R_{i,t}) = \frac{JKSE_t - JKSE_{t-1}}{JKSE_{t-1}} \quad (3)$$

where  $E(R_{i,t})$  is the return of stock  $i$  expectations on day  $t$ .  $JKSE_t$  is the Jakarta Stock Exchange (JKSE)<sup>4</sup> in the  $t$  period.  $JKSE_{t-1}$  is the JKSE in the  $t - 1$  period. Abnormal return testing is not only done for each stock but is also done in aggregate by testing the average abnormal return of all stocks in cross-section for each day during the period of events with the following formula (Equations 4 and 5):

$$AAR_{i,t_{before}} = \frac{\sum_{t=-5}^{t=-1} AR_{after}}{n} \quad (4)$$

$$AAR_t = \frac{\sum_{i=1}^n AAR_{i,t}}{n} \quad (5)$$

where  $AAR_{before}$  is the average abnormal return before the event.  $AAR_{after}$  is the average abnormal return after event.  $AR_{i,t}$  is the abnormal return of stocks  $i$  on day  $t$ .  $AAR_{N,t}$  is the average abnormal return of all samples on day  $t$ .

#### 4. The Difference in Difference Method

Difference in Differences (DID) is a statistical technique used in econometrics and quantitative research in the social sciences that attempts to mimic an experimental research design using observational study data by



studying the differential effect of a treatment on a ‘treatment group’ versus a ‘control group’ in a natural experiment (Angrist & Pischke, 2008). To test the treatment effect of a given policy or government intervention in economics, we used the DID model (Yan & Hongbing, 2018). This research used the DID method to test the null hypothesis as to whether the Earmarking Tax Policy increases the CAR of the top ten government companies in the treatment group (refer Equation 6):

$$CAR_{it} = \beta_i + \beta_t + \gamma Treated_i X Post_t + u_{it} \quad (6)$$

where the dependent variable is the CAR of company  $i$  at date  $t$ ;  $\beta_i$  are company-specific, time-invariant fixed effects and  $\beta_t$  are the time-specific, company-invariant fixed effects.  $Treated_i$  denotes a vector of the dummy variables:  $Treated_i = 1$  for the treatment group, and  $Treated_i = 0$  for the control group. The treatment group includes the top ten government companies. The control group includes government companies.  $Post_t$  denotes a vector of dummy variables:  $Post_t = 1$  in the post-treatment periods when the Earmarking Tax Policy was implemented at date  $t \geq 0$ , and  $Treated_i = 0$  otherwise.  $u_{it}$  are the error terms.  $\gamma$  is the coefficient of enthusiasm for Specification. This research utilises two wellsprings of variety to distinguish  $\gamma$ . Initially,  $\gamma$  is recognised utilising the variety between the treatment group and the control group. Second,  $\gamma$  is likewise distinguishes utilising the variety inside each group before and after the Earmarking Tax Policy is implemented.

## 5. Data

This study used market reaction to measure government trust (Fama et al., 1969). It uses the data on the shares of government-owned companies. The period used was when the Earmarking Tax Policy was applied (2008 - 2009 for the education sector and 2015 - 2016 for the health sector).

### 5.1 Sample and Population

The population in this study consisted of the stocks of government companies listed on the Indonesian Stock Exchange, including from IDXBUMN20<sup>5</sup>. Purposive sampling was used with the following sample criteria:

1. The stocks used in the study were the top ten stocks of the state-owned companies listed in IDXBUMN20.

2. Banking companies do not take corporate actions, such as dividends, stocks split, delisting, and so on.
3. There was data completeness during the day of observation.
4. The registered company actively trades on the Exchange during the observation period.

**Table 1:** Listed IDXBUMN20 and LQ45

Number	Issuer Name	Code	Issuer Name	Code
1.	PT Bukit Asam Tbk	PTBA	PT Gudang Garam	GGRM
2.	PT Perusahaan Gas Negara (Persero) Tbk	PGAS	PT Unilever Indonesia	UNVR
3.	Bank Negara Indonesia Tbk	BBNI	PT United Tractors	UNTR
4.	Bank Rakyat Indonesia Tbk	BBRI	PT Indotambangraya Megah	ITMG
5.	Bank Mandiri Tbk	BMNI	PT Bank Central Asia	BBCA
6.	PT Adhi Karya Persero	ADHI	PT Indocement Tunggul Prakarsa	INTP
7.	PT Bank Rakyat Indonesia Agrianiaga	AGRO	PT Indah Kiat Pulp & Paper	INKP
8.	PT Aneka Tambang	ANTM	PT Indofood CBP Sukses Makmur	ICBP
9.	PT Bank Tabungan Negara (Persero)	BBTN	PT Astra International	ASII
10.	PT Bank Pembangunan Daerah Jawa Barat dan Banten	BJBR	PT Matahari Department Store	LPPF
11.	PT Elsanusa	ELSA	PT Indofood Sukses Makmur	INDF
12.	PT Jasa Marga	JSMR	PT Chandra Asri Petrochemical	TPIA
13.	PT Pembangunan Perumahan	PTPP	PT AKR Corporindo	AKRA
14.	PT Semen Baturaja	SMBR	PT Hanjaya Mandala Sampoerna	HMSP
15.	PT Semen Indonesia	SMGR	PT Vale Indonesia	INCO
16.	PT Timah	TINS	PT Indika Energy	INDY
17.	PT Telekomunikasi Indonesia	TLKM	PT XL Axiata	EXCL
18.	PT Wijaya Karya	WIKA	PT Adaro Energy	ADRO
19.	PT Waskita Beton Precast	WSBP	PT Barito Pacific	BRPT
20.	PT Waskita Karya	WSKT	PT Surya Citra Media	SCMA

Monthly stock prices and the monthly data of the Jakarta Stock Exchange (JKSE) during the observation period were adjusted regarding their closing price<sup>6</sup> during the observation window period. This data was accessed from the Bloomberg database (bloomberg.com), Yahoo Finance database (www.finance.yahoo.com) and the Indonesian Stock Exchange (www.idx.co.id). This research also used Indonesian Private Company Stocks listed in LQ45<sup>7</sup> as a Robustness Check or Placebo test<sup>8</sup>.

## 5.2 Normality Test

The study only used a normality test because linear regression analysis aims to calculate the value on a particular variable such as stock returns, and this can be calculated using the market-adjusted model. The calculation of the expected return can be done using a regression equation or by using a market index return in a specified period. It does not require classical assumption tests such as the multicollinearity test, heteroscedasticity test and the linearity test (Brown & Warner, 1980; Corrado & Truong, 2008; MacKinlay, 1997). Normality testing was performed to test whether the data used in the study can be normally distributed or not.

The data is said to be of a normal distribution if the asymptotic sig > confidence level is 0.05 (5%) and the reverse is not normal if the asymptotic sig < confidence level is 0.05 (5%). If the test results show that there are normally distributed samples, then a different test was used, namely a parametric statistical test (Paired Sample T-Test). If the sample is not normally distributed, then we used a different test, namely a non-parametric statistical test (Wilcoxon Signed Rank Test).

This study assumed that there was a significant average abnormal return difference in relation to the stocks of the government companies before and after the implementation of the Earmarking Tax Policy in October. The difference in the average abnormal return is then a reflection that there was a change in the level of investor confidence in the government during the implementation period of the Earmarking Tax Policy. In the results, where the average abnormal return calculation shows the appropriate results, in order to increase the strength of the prediction of this study, this will be used with the addition of a different test (Table 2).

**Table 2:** Tests of Normality

	2008-2009						2015-2016						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk			Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.	Statistic	df	Sig.	Statistic	df	Sig.	
pre	.431	5	.003	.664	5	.004	pre	.386	5	.014	.721	5	.016
post	.211	5	.200*	.935	5	.632	post	.163	5	.200*	.967	5	.858

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Normality testing was performed to ascertain the most appropriate statistical tool to use for data testing. This was determined using the one-sample Kolmogorov Smirnov test. The criterion used in this test was a two-

tailed test to compare the mean of the sample of the two variables before and after. They belonged to the same group with a specified significance level of 0.05. The data were normally distributed if the probability was  $>0.05$  and not normally distributed if the probability was  $<0.05$ . Here is a summary of the results of the normality data test on the average abnormal return (Table 3).

**Table 3:** Wilcoxon Signed Ranks Test

		2008-2009			2015-2016				
		N	Mean Rank	Sum of Ranks			N	Mean Rank	Sum of Ranks
post - pre	Negative Ranks	0 <sup>a</sup>	.00	.00	post - pre	Negative Ranks	0 <sup>a</sup>	.00	.00
	Positive Ranks	5 <sup>b</sup>	3.00	15.00		Positive Ranks	5 <sup>b</sup>	3.00	15.00
	Ties	0 <sup>c</sup>				Ties	0 <sup>c</sup>		
	Total	5				Total	5		

a. post < pre

b. post > pre

c. post = pre

From the table above, whether in the period of 2008 - 2009 or 2015 - 2016, it shows that the probability value (Asymp Sig 2 Tailed) is smaller than  $\alpha$  (0.05). Thus the average value distribution of the abnormal return before and after the event is considered to be of an abnormal distribution. Therefore for testing the hypothesis of abnormal return, using the non-parametric Wilcoxon Signed Rank Test is necessary because the data is not normally distributed.

Both results from the above output show positive ranks, in which the difference of the abnormal return after the announcement is higher than the abnormal return before the implementation of earmarking tax by as much as five issuers. Moreover, the negative ranks show that the abnormal return after the event is lower than the abnormal return before the implementation of earmarking tax and that it is equal to 0 issuers. This means that no issuers recorded an abnormal return of stocks after a high event. Ties in Table 4 show that the difference in the abnormal return and after earmarking tax announcement is 0. This means that no issuers have the same value between the abnormal return before and the abnormal return after the event.

**Table 4:** Test Statistics<sup>a</sup>

2008-2009		2015-2016	
		post - pre	post - pre
Z		-2.032 <sup>b</sup>	Z
Asymp. Sig. (2-tailed)		.042	Asymp. Sig. (2-tailed)
			-2.023 <sup>b</sup>
			.043

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks

The Wilcoxon Signed-Rank Test conducted on the abnormal return before and after the implementation of the Earmarking Tax Policy shows the probability value (Asymp Sig 2 Tailed), which is smaller than  $\alpha$  (0.05). This is where the abnormal return of stocks before and after the event has a significant relationship. This means that the null hypothesis is rejected and the original allegation is accepted, meaning that there is a significant average abnormal return difference in the government companies' stocks before and after the implementation of the Earmarking Tax Policy.

#### 4. Abnormal Return Analysis

The abnormal return of negative value identifies that the return on the realisation of the stocks can be smaller than the expected return. Moreover, vice versa, the abnormal return of the positive value indicates that the return realisation of the stocks acquired is higher than the expected return. The following table results indicate the abnormal calculation of the daily stock returns.

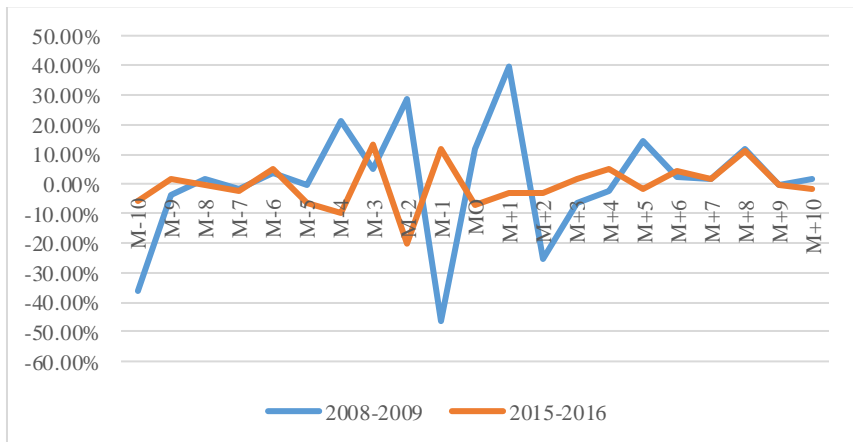
In the year 2008 - 2009, the highest positive abnormal return was within the month after (M+1) the implementation of the Earmarking Tax Policy, which reached the value of 39.59%. The lowest abnormal return occurred in the first month before (M-1) the implementation of the Earmarking Tax Policy that was equal to -46.40%. In the year 2015 - 2016, the highest positive abnormal return was within the third month prior (M-3) to the implementation of earmarking tax which reached the value of 13, 23%. The lowest abnormal return occurred in the second month before (M-2) the implementation of the Earmarking Tax Policy that was equal to -20.24% (Table 5).

**Table 5:** Abnormal Calculation Result Daily Stocks Return during the Research Period

Event	Average Abnormal Return		Event	Average Abnormal Return	
	2008-2009	2015-2016		2008-2009	2015-2016
M-10	-36.14%		M-10		
M-9	-3.55%	1.92%	M+1	39.59%	-3.07%
M-8	1.53%	-0.33%	M+2	-25.50%	-3.39%
M-7	-1.96%	-2.26%	M+3	-6.68%	1.42%
M-6	3.91%	4.84%	M+4	-2.33%	5.17%
M-5	-0.59%	-6.18%	M+5	14.66%	-1.78%
M-4	21.22%	-9.93%	M+6	2.16%	4.43%
M-3	5.02%	13.23%	M+7	1.51%	1.67%
M-2	28.68%	-20.24%	M+8	11.68%	10.88%
M-1	-46.40%	11.87%	M+9	-0.62%	-0.57%
			M+10	1.65%	-1.50%

In the M-1 before the implementation of the Earmarking Tax Policy in October 2009, the decrease in the negative abnormal return was quite sharp. This means that in M-1 before the event, the return on the realisation of stocks by the investor was smaller than the expected return. However, after the abnormal return event, there was a significant increase. A significant decrease occurred in M + 2, and the increase in M + 3 was the result of the January effect. M + 4 to M + 10 shows the actual trend (Figure 2).

**Figure 2:** Abnormal Movement Daily Stocks Return during the Research Period



The different events happen in M-1 before the implementation of the Earmarking Tax Policy in October 2015; there was an increase in the positive abnormal return. This means that in M-1 before the event, the return on the realisation of stocks by the investor was larger than the expected return.

However, after the abnormal return event, there was a slight decrease. Then there was an increase until the end of the event period. The impact on M+2 and M+3 is reflected in the January effect results.

## **5. Result**

There was a positive capital market reaction indicated by the significant difference in the average abnormal return before and after applying the earmarking tax. From 2008 - 2009, there was a decrease in the value of the abnormal return in the top ten government companies' stocks a month before the implementation of the Earmarking Tax Policy. This may have occurred due to the government's Earmarking Tax Policy (especially the proportion of 20% of the education sector from the state budget) since 2003. In 2009, this was fully realised and made investors pessimistic. However, when the implementation of the earmarking tax complies with the mandate of the law, then the response of the investor changes. This caused an increase in the value of the abnormal return drastically in the month after the implementation of the Earmarking Tax Policy.

From 2015 - 2016, the results showed a different value of abnormal return in the top ten government stocks, which increased before the implementation of the Earmarking Tax Policy. Although it was announced since October 2009 and fully implemented in October 2016, the impact of the implementation of the Earmarking Tax Policy of the previous period in line with expectations created a positive signal for investors. Investors showed a positive reaction to the top ten government companies' stocks in October where the implementation of the Earmarking Tax Policy at 5% to the health budget from the state budget was the same as the implementation of the Earmarking Tax Policy of 20% to the education budget from the state budget. The period after the implementation of the Earmarking Tax Policy showed the same increasing trend as the previous period, especially after the Earmarking Tax Policy was implemented at the beginning of the fiscal year. An announcement was said to contain information when giving an abnormal return on the market (Erzurumlu, 2011). In this research, the stocks' changing reaction was shown from the results of the abnormal return calculation before the Earmarking Tax Policy was implemented, thus indicating that the event of applying the earmarking tax in October 2008 and 2015 contained relevant information, causing the stock price to change.

Investor behaviour intends to analyse the information received before making a decision (Yazici & Muradoglu, 2002). The increased abnormal returns that occur tend to be temporary. Investors are therefore likely to wait or see whether the proportion of 20% of the education sector and 5% for the health sector from the state budget can be sustainable and in line with the mandate of the Constitution.

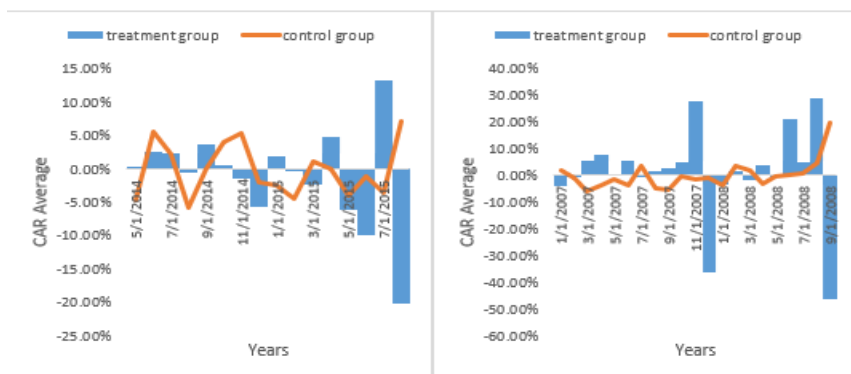
Based on these results, the implementation of the earmarking tax in Indonesia in the form of a budget allowance of 20% for the education sector and 5% for the health sector can increase the level of government trust. The increasing level of government trust is evident in the increase in the abnormal returns from the stocks of government companies shortly after the implementation of the tax earmarking policy. This is because, according to the efficient market hypothesis (EMH), stock prices fully reflect all available information (Fama, 1970). The rise in the value of the abnormal return of the stocks of government companies during the implementation period of the Earmarking Tax Policy shows that the information trust that the investor has in the government increases.

### 6. Robustness Checks

The application of the Earmarking Tax Policy will affect the price movements of stocks, especially concerning the shares of state-owned companies. This research used the Difference in Difference method in order to see the presence or absence of these influences. From IDXBUMN20, this study used the top ten shares of government-owned companies as a treatment group, and the remaining ten shares were the control group. The use of the top ten shares of the state-owned company as a control group was because the financial markets are trading these stocks actively.

The DID methodology uses the common trend assumption, commonly known as a parallel assumption. The common trend assumption is the assumption set where no treatment results from the treatment group and the control group will have the same trend (Shu & Cai, 2017). Common trend assumption usually uses pre-treatment data to show the same trend (Figure 3).

**Figure 3: Average CAR Plot for the Common Trend Inspection**





The figures above are the average CAR results from both the treatment group and the control group. These results indicate the similarity of the trends both in the education sector and the health sector before the implementation of the Earmarking Tax Policy. It shows that the common trend assumption applies in this study.

The following is the result of the analysis of the DID method (Table 6):

**Table 6:** Difference in Differences Results

Sector	Coef.	Std. Err	T	P> t	95% Conf. Interval	Sector
Health	.033362	.0169512	1.97	0.050	.0000413	Health
Education	.0460899	.0431811	1.07	0.287	-.038926	Educati on
Placebo	-.0063019	.031156	-0.20	0.840	-.0675447	Placebo

The results of the calculation of the DID method above shows that there is compatibility with the results of calculations with the event study method. The results of the coefficient show there to be a positive number, which means that there is an increase in the value of CAR from the shares owned by government companies when the Earmarking Tax Policy is applied. This proves that the application of earmarking tax policies can enhance government trust.

The inequality of the results from the placebo test also strengthens the results of the analysis. Only the shares of state-owned companies on IDXBUMN20 are affected by the policy while the shares of privately-owned companies on LQ45 have no impact on the existence of the Earmarking Tax Policy.

## 7. Conclusion

This research shows how the event study methodology can be used as an indirect method to measure government trust. The information that is reflected through the financial market can be a measurement to indicate how much trust that government can get after implementing the earmarking policy. The higher the abnormal return that the government company stocks can get, the higher the level of trust that the government can achieve.

The findings of this research are that the Earmarking Tax Policy can increase the public's trust in the government. There is a significant increase in the abnormal return of the top ten government company stocks while in the period of implementing Earmarking Tax Policy. Moreover, the statistic non-parametric Wilcoxon Signed Rank Test result showed that all of the top ten government company stocks recorded a higher abnormal return after the implementation of an Earmarking Tax Policy and none recorded a negative

abnormal return. The Wilcoxon signed test also showed that there is a significant relationship between the abnormal return of the stocks before and after the event. There is a significant average abnormal return difference in the government companies' stocks before and after the implementation of the Earmarking Tax Policy.

Based on the research results above, the recommendation for the Indonesian government is to continue implementing the Earmarking Tax Policy. Besides that, it is hoped that the government can implement the Earmarking Tax Policy for other sectors to increase the public's confidence in the government further. As a result, public compliance with tax payments will increase. This is because the public knows for certain that their tax funds are allocated for the supply of public goods whose benefits can be enjoyed.

Several questions remain. The first is that despite our findings that measure the government trust using a financial market are reflected in the government companies and stock price movements. Future exploration could measure the government trust using a different perspective that can enrich the economic and political sciences. The second is by using a different study case from a different country as a comparison to this study in order to ascertain whether the results will be the same or different.

## Notes

1. According to Brown and Warner (1985), there are three ways to estimate the expected return; the mean adjusted model, the market model, and the market-adjusted model.
2. See the Indonesian state budget in 2003 until 2009 and 2008 until 20015 at [www.anggaran.depkeu.go.id](http://www.anggaran.depkeu.go.id)
3. The January effect is a seasonal increase in stock prices during the month of January. Analysts generally attribute this to an increase in buying, which follows the drop in price that typically happens in December when investors, engaging in tax-loss harvesting, offset their realized capital gains, prompting a sell-off.
4. The JKSE (formerly: JSX (Jakarta Stocks Exchange), JCI (Jakarta Composite Index), IDX, Indonesian: Indeks Harga Saham Gabungan, IHSG) is an index of all stocks listed on the Indonesian Stocks Exchange.
5. IDXBUMN20 is Issuers of State-Owned Enterprises (BUMN), Regional-Owned Enterprises (SOEs) and affiliates, which include a subsidiary or share ownership by the Government, which has been recorded for six months. Other criteria are selected based on liquidity criteria, number of days traded and market capitalization.
6. An adjusted closing price is a stocks' closing price on any given day of trading that has been amended to include any distributions and corporate actions that occurred at any time prior to the next day's open. The adjusted closing price is often used when examining historical returns or performing a detailed analysis on historical returns.
7. LQ45 is a stock market index for the Indonesia Stock Exchange (IDX) (formerly known as the Jakarta Stock Exchange). The LQ45 index consists of

45 companies that have been included in the top 60 companies with the highest market capitalization in the last 12 months with the highest transaction value in a regular market in the last 12 months and listed on the Indonesian Stock Exchange for at least 3 months. They had a good financial condition, the prospect of growth, and high transaction value and frequency. It is calculated semi-annually by the research and development division of the Indonesian Stock Exchange.

8. A second way to test the assumption of equal trends would be to perform what is known as a “placebo” test.

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## Appendices

### Appendix 1: Data

#### Appendix 1.1: Health Sector

Date	jkse	antm	bbni	bbri	bmri	pgas	ptba	smgr	tins	tlkm
12/31/2006	1757.206	811.7852	1243.86	53.50886	667.1158	1140.522	95.29031	2198.288	61.2835	400.7055
1/31/2007	1740.919	947.0869	1196.019	47.95605	602.3485	1085.923	100.6266	2232.997	74.94545	377.3841
2/28/2007	1830.87	1233.296	1202.853	50.98486	647.6874	1134.456	105.2005	2302.417	92.51083	417.6667
3/31/2007	1999.108	1623.576	1503.566	53.00406	796.6553	1273.988	118.9223	2221.427	93.29155	445.2285
4/30/2007	2084.262	1509.09	1708.605	61.58566	841.9939	1243.655	160.0877	2542.494	90.94942	404.9458
5/31/2007	2139.215	1306.144	1691.519	58.05206	809.6077	1146.589	223.6588	2985.043	124.3483	417.6667
6/30/2007	2348.603	1647.881	1743.295	89.08451	955.0901	1261.449	227.0735	3094.958	144.3056	474.9103
7/31/2007	2194.274	1373.234	1373.499	88.37748	880.5817	1397.822	196.3417	3594.56	125.8836	518.2285
8/31/2007	2359.136	1693.657	1408.717	93.32663	955.0901	1643.293	223.6588	3848.721	135.6063	525.393
9/30/2007	2643.408	2044.589	1401.673	109.5881	1022.831	1909.22	309.0248	4502.277	199.5708	513.4523
10/31/2007	2688.252	2853.271	1296.02	110.2951	961.8631	2304.702	413.1712	4320.734	255.8607	484.7945
11/30/2007	2745.744	2731.209	1387.586	104.639	948.317	2093.323	2048.783	4066.573	293.7285	496.2435
12/31/2007	2627.173	2181.916	1225.584	98.9828	900.9007	1827.396	389.2688	4030.264	294.7523	452.2416
1/31/2008	2721.863	2502.338	1169.235	101.8109	887.3547	1881.946	390.976	3848.721	333.1305	479.1316
2/29/2008	2447.227	2044.589	979.0583	89.08451	853.4844	1929.676	343.1712	3630.869	296.2865	471.798

3/31/2008	2304.448	2136.14	845.2302	84.13538	778.976	1650.112	361.9517	3068.084	329.0369	432.6851
4/30/2008	2444.277	1983.555	880.4481	82.01431	785.7491	1909.22	498.5373	3195.164	347.4589	396.017
5/31/2008	2349.035	1937.786	852.2736	72.11602	704.4622	1772.847	560.0008	3005.783	383.2791	356.9042
6/30/2008	2304.439	1510.554	1054.313	140.2499	931.5647	1663.749	492.2962	3080.928	326.9909	376.4605
7/31/2008	2165.879	1270.865	917.1082	134.502	884.6	1863.871	522.952	3043.356	1183.492	489.5425
8/31/2008	1832.453	981.7268	700.47	124.1556	829.8013	1589.772	1686.069	2573.702	762.9527	437.5285
9/30/2008	1256.667	699.3103	368.2883	79.32166	488.4858	1023.302	197.4595	2254.338	533.1472	330.4411
10/31/2008	1241.504	685.8616	404.3949	78.17206	466.5663	1344.911	248.853	2442.199	482.5898	357.9779
11/30/2008	1355.368	732.9311	491.0508	105.1874	634.0921	1359.53	1244.265	3137.287	496.3786	422.2303
12/31/2008	1332.627	746.3789	556.0435	104.6126	569.8998	1608.045	266.8859	2611.274	500.9742	385.5146
1/31/2009	1285.438	806.8945	505.4935	85.6444	544.8493	1388.767	259.6727	2630.061	487.186	385.5146
2/28/2009	1434.031	732.9311	519.937	96.56551	681.0601	1571.499	243.4432	2799.136	487.186	462.0056
3/31/2009	1722.715	961.5541	902.6656	133.3523	868.9385	1900.417	342.6237	3080.928	652.6451	480.3635
4/30/2009	1916.774	1331.376	1133.748	143.6986	931.5647	2101.423	405.7386	3513.01	905.4311	455.8863
5/31/2009	2026.72	1361.635	1242.068	144.8483	1064.159	2302.429	418.3616	3682.085	930.711	458.946
6/30/2009	2323.167	1527.353	1372.067	228.7876	1399.333	2558.254	582.4596	4471.104	1061.206	547.6755
7/31/2009	2341.468	1579.424	1408.365	238.1899	1374.191	2571.318	556.7628	4651.455	1048.576	623.5881
8/31/2009	2467.518	1700.913	1542.668	235.0558	1575.292	2700.808	603.8735	4925.069	1086.474	642.1472
9/30/2009	2367.631	1579.424	1343.029	222.5195	1566.914	2682.31	650.9842	5355.035	985.4027	623.5881
10/31/2009	2415.765	1527.353	1470.072	231.9217	1491.502	2700.808	704.5191	5706.826	955.0875	668.13
11/30/2009	2534.281	1527.353	1437.403	239.7569	1575.292	2885.794	3693.907	5902.265	1010.671	701.5365



## Appendix 1.2: Health Sector

Date	jkse	bbni	bbri	bmri	pgas	ptba
4/30/2014	4893.763	4172.313	1271.157	4226.35	5016.483	1195.371
5/31/2014	4878.437	4163.575	1286.735	4039.435	5155.188	1198.164
6/30/2014	5088.651	4456.292	1395.781	4257.502	5455.715	1301.502
7/31/2014	5136.71	4674.738	1377.087	4309.423	5363.245	1491.421
8/31/2014	5137.426	4827.65	1299.197	4184.813	5548.185	1474.664
9/30/2014	5089.396	5199.007	1380.203	4299.039	5501.95	1446.734
10/31/2014	5149.735	5264.541	1436.283	4371.728	5501.95	1469.078
11/30/2014	5226.792	5330.074	1451.861	4475.569	5548.185	1396.462
12/31/2014	5289.247	5461.143	1454.977	4569.027	4669.722	1270.78
1/31/2015	5450.132	6007.256	1604.524	4984.393	4808.427	1192.578
2/28/2015	5518.511	6313.081	1654.374	5181.691	4438.548	1200.957
3/31/2015	5086.274	5730.727	1632.031	4627.017	3791.26	1044.553
4/30/2015	5216.224	6132.101	1653.089	4637.777	4095.546	1286.07
5/31/2015	4910.512	4727.292	1453.034	4325.722	4114.617	1099.541
6/30/2015	4802.386	4245.644	1403.897	4099.752	3814.245	785.3865
7/31/2015	4509.473	4415.113	1491.641	7747.563	2650.9	765.7519
8/31/2015	4223.783	3688.18	1214.371	3411.08	2412.51	736.2999
9/30/2015	4455.048	4241.185	1477.602	3744.655	2860.684	955.5536
10/31/2015	4446.326	4254.563	1512.7	3658.571	2531.705	733.0274
11/30/2015	4592.872	4450.79	1603.953	3981.386	2617.526	592.3123
12/31/2015	4615.026	4379.435	1575.875	4132.034	2293.315	582.4951
1/31/2016	4770.814	4526.605	1554.817	4110.512	2512.634	664.3061
2/29/2016	4845.227	4638.099	1603.953	4433.328	2493.563	821.3834
3/31/2016	4838.439	4184.959	1453.034	4377.991	2498.331	922.8292
4/30/2016	4796.727	4381.2	1682.52	4094.442	2364.832	1027.849
5/31/2016	5016.499	4746.3	1755.673	4321.282	2231.334	1241.48
6/30/2016	5215.839	4883.212	1873.531	4582.146	3137.217	1588.127
7/31/2016	5385.922	5362.406	1893.851	5092.534	2879.755	1600.22
8/31/2016	5364.645	5065.762	1983.26	5081.192	2736.721	1551.85
9/30/2016	5422.381	5088.581	1983.26	5205.954	2441.117	1918.651
10/31/2016	5148.91	4723.48	1771.929	4763.617	2526.938	1902.528
11/30/2016	5296.711	5042.943	9489.576	5251.321	2708.114	2015.39

12/31/2016	5294.103	5202.675	1906.043	4945.088	2746.257	1870.282
1/31/2017	5386.692	5704.688	1942.62	5126.56	2698.579	1801.759
2/28/2017	5568.106	5910.056	2109.246	5308.031	2412.51	2128.252
3/31/2017	5685.298	6197.917	2503.498	5558.907	2317.154	2043.605
4/30/2017	5738.155	6368.056	2809.158	5986.515	2288.547	1757.42
5/31/2017	5829.708	6416.667	2959.562	6057.783	2213.149	2171.246
6/30/2017	5840.939	7243.056	14336.89	6485.391	2213.149	2380.194
7/31/2017	5864.059	7145.833	14676.51	6224.075	2085.278	2248.466
8/31/2017	5900.854	7194.445	2964.413	6390.368	1549.204	1898.704
9/30/2017	6005.784	7388.889	3027.486	6699.195	1809.864	2084.941
10/31/2017	5952.138	7875	3114.817	7031.779	1672.157	2044.06
11/30/2017	6355.654	9625	3532.067	7601.924	1721.338	2234.839
12/31/2017	6605.631	9138.89	3590.288	7744.46	2567.253	3088.801
1/31/2018	6597.218	9454.861	3667.916	7886.996	2626.27	2879.853
2/28/2018	6188.987	8434.028	3493.253	7293.096	2262.33	2670.905
3/31/2018	5994.595	8050	3124.521	7125	1952.489	2943.446
4/30/2018	5983.587	8650	3140	7250	2095.115	3780
5/31/2018	5799.237	8475	3080	7050	2070	3800

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## Appendix 1.3: BUMN15

Date	JKSE	ADHI	AGRO	ANTM	BBTN	BJBR	ELSA	JSMR	PTPP	SMBR	SMGR	TINS	TLKM	WIKA	WSBP	WSKT
12/31/2006	1757.2059	541.1227	205.8405	811.7852	1285.471	362.5577	154.4219	484.2185	-2097.14	-2334.78	3800	530.484	403.2561	-537.42	-287.185	-3304.5
1/31/2007	1740.9193	474.3172	169.584	947.0869	1286.417	368.1238	156.6734	534.1719	-2048.58	-2304.78	3860	648.745	379.7862	-509.403	-280.347	-3255.39
2/28/2007	1830.8696	501.0395	169.3157	1233.296	1287.363	373.6899	158.9249	584.1254	-2000.02	-2274.78	3980	800.795	420.3252	-481.387	-273.51	-3206.27
3/31/2007	1999.1077	581.2059	169.0473	1623.576	1288.309	379.2559	161.1763	634.0789	-1951.45	-2244.77	3840	807.553	448.0623	-453.37	-266.672	-3157.15
4/30/2007	2084.2622	674.7329	168.7789	1509.09	1289.255	384.822	163.4278	684.0324	-1902.89	-2214.77	4395	787.279	407.5233	-425.354	-259.834	-3108.04
5/31/2007	2139.2146	734.8577	168.5105	1306.144	1290.201	390.3881	165.6793	733.9858	-1854.33	-2184.76	5160	821.068	420.3252	-397.338	-252.996	-3058.92
6/30/2007	2348.6033	1015.441	168.2422	1647.881	1291.147	395.9541	167.9307	783.9393	-1805.77	-2154.76	5350	952.845	477.9332	-369.321	-246.159	-3009.8
7/31/2007	2194.2739	829.1073	167.9738	1373.234	1292.093	401.5202	170.1822	833.8928	-1757.21	-2124.75	4950	831.205	521.527	-341.305	-239.321	-2960.69
8/31/2007	2359.136	842.5894	167.7054	1693.657	1293.039	407.0862	172.4337	883.8462	-1708.65	-2094.75	5300	895.404	528.7371	-313.288	-232.483	-2911.57
9/30/2007	2643.4084	1051.556	167.437	2044.589	1293.985	412.6523	174.6851	933.7997	-1660.08	-2064.74	6200	1317.76	516.7205	481.7419	-225.646	-2862.46
10/31/2007	2688.2522	923.4813	167.1687	2853.271	1294.931	418.2184	176.9366	1546.203	-1611.52	-2034.74	5950	1689.44	487.8802	412.9221	-218.808	-2813.34
11/30/2007	2745.7444	959.9073	205.8405	2731.209	1295.877	423.7844	179.188	1522.168	-1562.96	-2004.73	5600	1939.48	499.4022	435.8621	-211.97	-2764.22
12/31/2007	2627.1729	754.9619	205.8405	2181.916	1296.823	429.3505	181.4395	1401.997	-1514.4	-1974.73	5550	1946.24	455.1202	389.9814	-205.132	-2715.11
1/31/2008	2721.8633	660.5918	205.8405	2502.338	1297.769	434.9166	354.8556	1337.908	-1465.84	-1944.73	5300	2199.65	482.1813	340.2784	-198.295	-2665.99
2/29/2008	2447.2266	525.7773	205.8405	2044.589	1298.715	440.4826	305.3408	1121.599	-1417.27	-1914.72	5000	1956.37	474.8011	305.8677	-191.457	-2616.87
3/31/2008	2304.4475	404.4441	205.8405	2136.14	1299.662	446.0487	255.8261	1089.55	-1368.71	-1884.72	4225	2172.62	435.4392	286.7516	-184.619	-2567.76
4/30/2008	2444.2766	471.8517	157.8276	1983.555	1300.608	451.6147	317.7195	1129.613	-1320.15	-1854.71	4400	2294.26	398.5377	302.0446	-177.781	-2518.64
5/31/2008	2349.0352	404.4441	205.8405	1937.786	1301.554	457.1808	284.7097	939.085	-1271.59	-1824.71	4000	2530.78	359.1759	271.4578	-170.944	-2469.52
6/30/2008	2304.4395	384.2219	205.8405	1510.554	1302.5	462.7469	274.3355	1020.044	-1223.03	-1794.7	4100	2159.11	378.8567	291.7002	-164.106	-2420.41

7/31/2008	2165.8789	278.1284	205.8405	1270.865	1303.446	468.3129	236.9261	963.3715	-1174.47	-1764.7	4050	1740.12	492.6585	248.9168	-157.268	-2371.29
8/31/2008	1832.4525	247.5421	205.8405	981.7268	1304.392	473.879	166.2639	817.6513	-1125.9	-1734.69	3425	1121.79	440.3134	206.1341	-150.43	-2322.18
9/30/2008	1256.6666	120.9855	205.8405	699.3103	1305.338	479.4451	127.1919	647.6447	-1077.34	-1704.69	3000	783.901	332.5444	139.2379	-143.593	-2273.06
10/31/2008	1241.5042	118.2042	205.8405	685.8616	1306.284	485.0111	97.26441	663.8358	-1028.78	-1674.68	3250	709.565	360.2564	135.3489	-136.755	-2223.94
11/30/2008	1355.3678	196.5773	221.2733	732.9311	1307.23	490.5772	97.26441	736.696	-980.219	-1644.68	4175	729.839	424.9179	171.1304	-129.917	-2174.83
12/31/2008	1332.6274	180.783	221.2733	746.3789	1308.176	496.1433	98.09572	777.1736	-931.657	-1614.67	3475	736.596	387.9685	159.4625	-123.079	-2125.71
1/31/2009	1285.4377	191.2128	221.2733	806.8945	1309.122	501.7093	118.0474	744.791	-883.095	-1584.67	3500	716.323	387.9685	167.2414	-116.242	-2076.59
2/28/2009	1434.0314	191.2128	221.2733	732.9311	1310.068	507.2754	144.6496	728.6001	-834.533	-1554.67	3725	716.323	464.9464	171.1304	-109.404	-2027.48
3/31/2009	1722.7148	236.4091	221.2733	961.5541	1311.014	512.8414	249.3959	955.2734	-785.972	-1524.66	4100	959.602	483.421	237.2489	-102.566	-1978.36
4/30/2009	1916.7742	285.081	221.2733	1331.376	1311.96	518.4075	324.2147	1181.953	-737.41	-1494.66	4675	1331.28	458.7881	260.5855	-95.7284	-1929.24
5/31/2009	2026.7198	295.5108	221.2733	1361.635	1312.906	523.9736	282.6488	1254.813	-688.848	-1464.65	4900	1368.45	461.8672	260.5855	-88.8906	-1880.13
6/30/2009	2323.167	316.3704	221.2733	1527.353	1313.852	529.5396	298.0361	1406.661	-640.286	-1434.65	5950	1419.13	551.1616	283.4799	-82.0529	-1831.01
7/31/2009	2341.4675	323.0382	221.2733	1579.424	1314.799	535.1057	293.8384	1490.394	-591.725	-1404.64	5950	1402.24	627.5573	279.4876	-75.2152	-1781.89
8/31/2009	2467.5178	330.2172	221.2733	1700.913	1315.745	540.6718	298.0361	1565.751	-543.163	-1374.64	6300	1452.92	646.2344	279.4876	-68.3774	-1732.78
9/30/2009	2367.6306	290.7344	221.2733	1579.424	1316.691	546.2378	268.6523	1498.77	-494.601	-1344.63	6850	1317.76	627.5573	251.5385	-61.5397	-1683.66
10/31/2009	2415.7651	279.9665	123.5045	1527.353	1317.637	551.8039	247.6638	1574.127	-446.039	-1314.63	7300	1277.22	672.3828	243.5529	-54.7019	-1634.55
11/30/2009	2534.2808	308.1838	132.7638	1527.353	807.498	557.37	298.0361	1515.513	-397.478	-1284.62	7550	1351.55	706.0018	259.524	-47.8642	-1585.43
12/31/2009	2610.7185	290.7344	110.3659	1475.283	1018.99	562.936	272.8499	1507.137	-348.916	-1254.62	8000	1503.6	708.7969	251.5385	-41.0264	-1536.31
1/31/2010	2548.9573	293.1508	119.125	1440.569	1018.99	568.5021	268.6523	1490.394	476.9792	-1224.61	7600	1452.92	629.1994	267.5096	-34.1887	-1487.2
2/28/2010	2777.2185	315.8593	109.4896	1666.199	1278.54	574.0681	394.583	1498.77	542.7692	-1194.61	7300	1604.97	610.2477	279.4876	-27.3509	-1438.08
3/31/2010	2971.1638	423.5387	137.5195	1700.913	1490.03	579.6342	436.5599	1737.397	592.1115	-1164.61	8200	1824.6	595.0861	339.3773	-20.5132	-1388.96
4/30/2010	2796.874	351.753	117.3734	1405.856	1307.38	585.2003	373.5946	1649.484	559.2164	-1134.6	8450	1503.6	587.5055	283.4799	-13.6755	-1339.85

5/31/2010	2913.5977	445.0746	169.0516	1346.852	1634.22	590.7663	331.6176	1695.534	592.1115	-1104.6	8750	1452.92	583.7151	354.4859	-6.83771	-1290.73
6/30/2010	3069.189	466.6104	153.286	1480.012	1874.55	781.4768	285.4431	2334.348	633.2305	-1074.59	9250	1672.55	640.5704	445.1682	3.36E-05	-1241.61
7/31/2010	3081.7925	500.6866	161.1688	1462.393	1739.97	793.8811	246.9442	2552.514	651.6478	-1044.59	8700	1604.97	785.7335	486.3868	6.837778	-1192.5
8/31/2010	3501.1921	728.2715	157.6656	1673.829	1749.58	967.5428	289.5208	2792.488	751.9012	-1014.58	9900	2128.7	835.6935	552.3376	13.67552	-1143.38
9/30/2010	3635.2161	758.6156	162.9204	1797.158	1913	1079.182	285.2632	3272.451	743.5465	-984.578	9800	1925.96	826.6099	593.5573	20.51327	-1094.26
10/31/2010	3531.1062	675.1681	144.526	1638.589	1682.29	899.3186	263.9749	3032.469	710.1287	-954.573	9200	1773.91	722.148	519.3624	27.35101	-1045.15
11/30/2010	3703.4021	690.3401	147.1539	1726.68	1576.54	899.3186	276.7478	2988.839	668.3562	-924.569	9450	1858.39	722.148	560.5818	34.18875	-996.032
12/31/2010	3409.0659	599.3071	134.8915	1532.871	1278.54	694.6461	255.4595	2617.959	526.3312	-894.564	7750	1858.39	697.6247	502.875	41.0265	-946.915
1/31/2011	3470.2449	629.6511	123.5045	1550.491	1278.54	707.0504	251.2019	2770.673	484.5587	-864.559	8650	1824.6	688.3846	544.0936	47.86424	-897.799
2/28/2011	3678.5649	637.2376	149.7818	1620.97	1615	787.679	251.2019	2967.025	593.1669	-834.555	9100	1875.28	679.1446	552.3376	54.70199	-848.683
3/31/2011	3819.5046	622.0646	140.1464	1603.35	1643.84	787.679	251.2019	2879.756	584.8121	-804.55	9500	1942.86	711.4848	552.3376	61.53973	-799.566
4/30/2011	3836.8533	591.7206	149.7818	1515.252	1595.77	797.6099	246.9442	3032.469	568.1028	-774.546	9700	1757.02	711.4848	568.8259	68.37747	-750.45
5/31/2011	3888.4536	606.8926	148.0302	1462.393	1624.61	771.6714	225.6559	3163.368	559.749	-744.541	9600	1689.44	679.1446	544.0936	75.21522	-701.333
6/30/2011	4130.6772	538.6172	155.913	1409.534	1634.22	804.0945	246.9442	3468.795	534.6851	-714.536	9450	1655.65	847.6011	575.7552	82.05296	-652.217
7/31/2011	3841.6169	439.9977	141.0227	1378.959	1499.64	680.8865	206.4398	3594.948	389.1663	-684.532	9100	1503.6	836.069	491.0857	88.89071	-603.101
8/31/2011	3548.9265	386.8943	120.0003	1100.235	1163.18	583.6169	170.3128	3572.481	282.2528	-654.527	8300	1196.12	876.4311	414.8824	95.72845	-553.984
9/30/2011	3790.7344	402.0663	120.0003	1312.944	1384.28	641.9787	180.6348	3460.137	295.0824	-624.523	9500	1344.8	853.367	440.2832	102.5662	-504.868
10/31/2011	3714.9697	348.9638	104.2337	1202.917	1201.63	577.1324	176.334	3482.613	269.4232	-594.518	9250	1169.09	847.6011	397.948	109.4039	-455.751
11/30/2011	3821.8787	439.9977	103.3584	1188.247	1163.18	590.1016	197.8382	3774.702	414.8263	-564.513	11450	1128.55	813.0051	516.4865	116.2417	-406.635
12/31/2011	3941.5762	523.4452	112.9938	1378.959	1153.57	667.9172	210.7406	3931.98	487.5274	-534.509	11300	1270.46	789.9411	601.156	123.0794	-357.518
1/31/2012	3985.0918	538.6172	139.2711	1437.631	1172.8	732.7635	210.7406	4224.07	547.399	-504.504	11250	1331.28	813.0051	618.0905	129.9172	-308.402
2/29/2012	4121.4282	606.8926	138.3948	1320.279	1153.57	719.7943	197.8382	4628.503	538.8464	-474.5	12250	1256.94	807.2391	770.4961	136.7549	-259.286

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3/31/2012	4180.6079	751.03	142.7743	1261.598	1326.6	667.9172	167.7324	4808.249	598.718	-444.495	12150	1229.91	980.2188	829.7648	143.5927	-210.169
4/30/2012	3832.7102	735.8571	116.497	843.5101	1153.57	623.1972	167.7324	4628.503	513.1865	-414.49	10950	925.814	899.4949	778.9633	150.4304	-161.053
5/31/2012	3955.4595	751.03	112.9938	982.8738	1240.09	630.0456	145.368	4853.182	521.7398	-384.486	11300	932.571	939.8569	906.0417	157.2681	-111.936
6/30/2012	4142.2139	718.2479	109.4896	1016.995	1316.99	643.7422	147.0883	5202.676	526.9354	-354.481	12950	898.783	1318.412	862.8967	164.1059	-62.8199
7/31/2012	4060.2104	710.3557	108.6133	985.2126	1259.31	671.1355	161.7112	5248.311	500.5888	-324.477	12400	878.509	1347.388	906.0417	170.9436	-13.7035
8/31/2012	4262.4346	820.855	106.8617	1072.613	1384.28	753.3154	149.6689	5339.589	641.105	-294.472	14450	1047.45	1369.121	1044.107	177.7814	35.41289
9/30/2012	4350.1616	1112.892	122.6282	1016.995	1461.19	753.3154	154.8298	5293.955	676.234	-264.467	14900	966.36	1412.585	1182.168	184.6191	84.52931
10/31/2012	4276.0142	1491.745	131.3873	985.2126	1610	719.0737	153.1095	5202.676	816.7501	-234.463	14800	885.267	1303.924	1406.522	191.4569	133.6457
11/30/2012	4316.5586	1397.036	127.8841	1016.995	1470	719.0737	148.8087	5065.764	720.1454	-204.458	15700	1027.18	1296.68	1285.717	198.2946	438.64
12/31/2012	4453.5708	1578.565	129.6357	1080.559	1620	821.7986	150.529	5020.128	764.0569	-174.454	15750	1115.03	1405.34	1423.779	205.1324	458.135
1/31/2013	4795.6465	2032.405	131.3873	1024.94	1630	835.4953	169.4527	5065.764	807.9677	-144.449	17350	993.391	1557.465	1527.328	211.9701	594.6
2/28/2013	4940.8394	2446.783	140.1464	1088.504	1700	883.4335	163.4315	5430.868	1053.871	-114.444	17700	966.36	1593.685	1747.368	218.8078	701.823
3/31/2013	5033.9214	2348.122	129.6357	1096.45	1490	835.4953	210.7406	6115.433	1247.086	-84.4398	18400	959.602	1695.102	2070.957	225.6456	750.561
4/30/2013	5068.4775	3078.208	124.3798	1016.995	1420	881.9423	219.3423	6115.433	1536.894	-54.4352	18000	844.721	1600.929	2437.686	232.4833	1023.49
5/31/2013	4818.752	2648.213	109.4896	830.048	1150	853.026	225.2342	5600.513	1201.049	545.4345	17100	696.05	1914.885	1784.501	239.3211	750.561
6/30/2013	4610.2397	2449.097	102.0089	962.8553	1040	766.2776	225.2342	4952.523	1263.332	397.1146	15200	777.143	2025.523	1806.262	246.1588	770.056
7/31/2013	4194.9644	1576.979	85.9021	1103.964	950	563.8647	238.2284	5045.097	943.0433	344.485	12600	871.752	1872.332	1514.652	252.9966	536.115
8/31/2013	4316.0474	1612.818	82.32285	1178.671	930	650.613	242.5599	4813.667	996.4247	349.2695	13000	1088	1787.226	1671.337	259.8343	575.105
9/30/2013	4510.4971	1553.089	102.0089	1328.074	970	657.8421	268.5484	4859.949	1165.461	363.623	14350	1094.76	1999.991	1671.337	266.6721	584.853
10/31/2013	4256.3101	1274.332	106.4827	1045.859	970	607.2388	281.5427	4721.092	1023.12	330.1314	12800	1088	1851.056	1436.305	273.5098	443.513
11/30/2013	4274.0498	1202.644	105.5881	904.7524	870	643.3841	285.8742	4373.957	1032.012	315.7779	14150	1081.24	1829.779	1375.376	280.3475	394.776
12/31/2013	4418.6255	1417.691	102.9034	854.9492	900	661.4566	351.7118	4790.526	1201.049	333.959	14200	864.994	1936.161	1697.45	287.1853	526.368

1/31/2014	4620.0786	1863.704	102.9034	863.2498	1080	733.7469	375.9678	4975.664	1249.984	356.9247	15000	1091.38	1978.715	1867.201	294.023	648.212
2/28/2014	4768.1353	2385.387	102.0089	942.1046	1285	755.4341	424.4798	5554.23	1628.091	413.382	15800	1317.76	1885.098	2080.472	300.8608	740.814
3/31/2014	4840.0024	2377.417	100.2188	975.3065	1155	697.6018	441.8055	5461.656	1641.438	441.1321	14850	1500	1927.651	1971.66	307.6985	726.192
4/30/2014	4893.7632	2554.308	98.88029	1005.703	1090	671.0859	498.1141	5584.964	1725.699	422.4416	14725	1425	2292.22	2095.971	314.5363	701.823
5/31/2014	4878.437	2272.764	84.36547	913.5162	1040	640.0531	550.0912	5680.032	1671.487	377.6667	15075	1260	2194.3	1979.776	321.374	662.833
6/30/2014	5088.6509	2537.986	93.43699	1064.371	1080	643.9321	597.507	6107.817	2041.92	395.1873	16575	1420	2358.984	2368.58	328.2118	789.551
7/31/2014	5136.71	2505.342	114.3016	1001.513	1115	674.9651	606.4249	5893.92	2227.141	398.1074	16225	1430	2372.336	2565.221	335.0495	882.153
8/31/2014	5137.4263	2256.442	105.2296	930.2775	1170	616.7784	561.8349	6131.582	1942.536	365.0129	15425	1225	2594.882	2328.362	341.8872	813.92
9/30/2014	5089.396	2248.285	94.34419	812.9459	1120	585.7455	463.7368	6036.515	2376.221	364.0396	15875	1235	2448.002	2556.284	348.725	945.512
10/31/2014	5149.7354	2268.686	98.88029	821.326	1130	620.6575	597.507	6416.772	2764.724	370.8531	16000	1225	2514.765	2685.885	355.5627	1018.62
11/30/2014	5226.7915	2839.931	93.43699	892.5635	1205	566.35	610.884	6701.963	3230.035	370.8531	16200	1230	2550.373	3289.203	362.4005	1432.89
12/31/2014	5289.2466	3015.386	90.71549	892.5635	995	640.0531	508.3268	6844.559	3537.226	362.0928	14575	1175	2519.217	3347.306	369.2382	1671.7
1/31/2015	5450.1323	2807.286	91.62268	842.2788	1070	760.3055	503.8678	6749.493	3668.235	356.2526	14875	1020	2612.686	3271.329	376.076	1769.18
2/28/2015	5518.5107	2493.098	92.52979	724.9462	1255	775.8218	472.6548	6844.559	3428.802	340.6787	13650	950	2572.628	3123.853	382.9137	1735.06
3/31/2015	5086.2739	2288.633	88.90118	666.2804	1115	678.8442	530.6219	5954.644	3546.266	311.4777	12500	815	2327.828	2668.01	389.7514	1676.58
4/30/2015	5216.2241	2073.428	86.0118	636.9465	1205	745.8189	499.4088	6218.765	3632.094	331.9784	13450	880	2599.274	2842.634	396.5892	1657.08
5/31/2015	4910.5122	1671.983	86.92687	569.8997	1190	687.159	461.3023	5258.34	3153.275	305.0612	12000	710	2676.932	2267.766	403.4269	1520
6/30/2015	4802.3862	1903.742	82.35174	398.0919	1170	674.589	367.8981	5498.441	3548.574	300.0766	10100	605	2686.069	2403.56	410.2647	1770
7/31/2015	4509.4731	1651.292	73.20158	419.0436	1065	569.8392	236.3698	4946.202	3007.876	262.1932	9250	605	2622.115	2503.145	417.1024	1605
8/31/2015	4223.7832	1862.36	72.28651	407.3111	995	515.3693	318.3367	4634.064	3148.734	272.1625	9050	640	2416.548	2344.72	423.9402	1550
9/30/2015	4455.0479	2175.46	92.41695	377.15	1185	632.6891	327.8677	4648.466	3462.24	295.0919	9800	625	2448.525	2661.579	430.7779	1630
10/31/2015	4446.3262	2146.194	89.67186	314.2917	1270	594.9792	264.9629	4321.926	3294.124	313.0367	10625	525	2676.932	2548.416	437.6157	1605

11/30/2015	4592.8716	2087.662	88.75689	313.2939	1295	632.6891	235.4167	5018.229	3521.307	290.1073	11400	505	2836.817	2389.982	444.4534	1670
12/31/2015	4615.0259	2487.634	84.18176	328.2602	1365	729.059	219.2139	5522.451	3544.023	304.0643	11050	520	3051.52	2534.837	451.2911	1735
1/31/2016	4770.8145	2546.167	81.43668	363.1815	1660	770.9589	264.0098	5090.267	3353.191	328.9876	10250	570	2969.293	2358.299	458.1289	1930
2/29/2016	4845.2271	2624.21	82.35174	462.9567	1745	808.6689	317.3836	5186.303	3507.683	398.7729	10175	740	3037.816	2362.825	464.9666	2005
3/31/2016	4838.4395	2609.577	152.8079	758.2911	1760	787.7189	469.8802	5234.331	3330.474	487.4998	9900	775	3243.382	2399.034	471.8044	2345
4/30/2016	4796.7266	2507.145	141.1075	648.5384	1705	868.2028	567.0969	5227.58	3362.283	508.4354	9000	655	3380.426	2172.718	478.6421	2510
5/31/2016	5016.4985	2712.009	278.525	723.3698	1715	1033.575	502.1634	5106.569	3576.344	598.1593	9350	700	3718.857	2703.446	485.4799	2550
6/30/2016	5215.8394	2760.786	383.6638	793.2124	1975	1309.195	521.6649	5154.979	3539.672	807.5151	9375	835	3952.454	2721.711	492.3176	2770
7/31/2016	5385.9224	2604.699	291.4372	718.381	2010	1479.16	487.5373	4704.82	3989.005	1550.23	9900	800	3933.766	2959.177	499.1554	2790
8/31/2016	5364.645	2302.281	304.3494	818.1562	1920	1479.16	444.634	4453.124	3842.28	1605.061	10100	815	4027.205	2557.316	469.5251	2620
9/30/2016	5422.3813	2214.482	267.4578	892.9875	1910	1460.786	442.6839	4385.365	3778.092	1968.941	9850	930	3943.11	2347.248	565.2535	2620
10/31/2016	5148.9102	1863.287	440.8449	967.8188	1650	1382.693	413.4316	4026.903	3897.302	2582.054	8875	1205	3531.98	2396.55	524.2271	2550
11/30/2016	5296.7109	2029.129	355.9963	892.9875	1740	3114.505	448.5343	4191.86	3675.863	2781.441	9175	1075	3718.857	2327.513	505.9931	2550
12/31/2016	5294.103	2048.64	448.223	798.2011	1905	2113.086	421.2322	4094.827	3463.608	2392.637	9025	970	3634.04	2534.623	533.3441	2560



## Appendix 1.4: LQ45

Date	JKSE	ADRO	AKRA	ASII	BBCA	BRPT	EXCL	GGRM	HMSP	ICBP	INCO	INDF	INDY	INKP	INTP	ITMG	LPPF	SCMA	TPIA	UNTR	UNVR	
12/31/2006	1757.2 06		322.91 684	131.76 2	2084.8 94	287.60 75	2011.7 24	7586.1 93	450.31 4	627.99 52	2595.2 05	1234.6 31		788.65 73	3911.6 73		60148. 42	3.3566 28		4291.2 23	4326.6 31	
1/31/2007	1740.9 19		395.02 448	124.66 37	2013.3 53	305.14 47	1967.0 19	7952.6 76	452.19 8	579.68 78	3051.3 31	1139.6 59		806.78 74	4204.1 34		60148. 42	3.3566 28		4418.3 7	4141.7 32	
2/28/2007	1830.8 7		376.21 381	117.12 18	2084.8 94	287.60 75	1944.6 66	7769.4 34	493.65	564.82 41	4274.2 24	1110.4 37		788.65 73	3728.8 85		60148. 42	3.9859 98		4704.4 53	4215.6 92	
3/31/2007	1999.1 08		416.97 022	127.76 92	2166.6 55	245.51 83	2123.4 87	7952.6 76	561.48 55	609.41 55	4781.4 68	1198.1 03		969.95 78	4167.5 77		60148. 42	3.9859 98		5022.3 2	4178.7 11	
4/30/2007	2084.2 62		511.02 368	145.51 5	2146.2 14	284.1	2145.8 4	8135.9 17	480.46 1	642.85 9	4384.3 41	1263.8 53		1033.4 13	4057.9 04		60148. 42	3.0209 66		4799.8 1	4659.4 47	
5/31/2007	2139.2 15		514.15 888	149.95 14	2227.9 75	652.37 74	1928.2 63	8172.5 65	520.02 8	752.47 94	4364.6 79	1479.3 66		1024.3 48	4569.7 11		60148. 42	3.9859 98		5244.8 3	4955.2 88	
6/30/2007	2348.6 03		749.10 565	202.10 42	2690.0 32	1192.5 17	2152.4 82	7329.6 56	516.26	743.18 96	4435.4 58	1461.1 02		1024.3 48	4774.8 82		55852. 09	4.0279 56		5532.0 38	5682.6	
7/31/2007	2194.2 74		728.67 542	192.40 32	2561.9 36	833.00 87	1816.1 54	7156.7 68	503.07 1	691.16 63	4238.8 51	1380.2 18		843.04 74	4701.4 22		90222. 62	3.6922 92		5210.4 09	5118.1 03	
8/31/2007	2359.1 36		796.77 588	207.49 36	2625.9 85	990.84 22	1860.9 97	7044.3 57	521.91 2	717.17 8	4993.8 22	1432.1 62		852.11 25	4481.0 43		3.4319 150371	51		5274.7 35	5118.1 03	
9/30/2007	2643.4 08		789.96 57	275.93 95	3117.0 22	999.61 33	1816.1 54	7493.9 97	535.10 1	817.50 85	6881.2 51	1632.5 16		833.98 24	6023.6 97		150371	4.0431 21		7043.6 69	5005.2 03	
10/31/2007	2688.2 52		824.01 593	286.78 77	3031.6 24	1470.9 07	1726.4 66	6294.9 58	523.79 6	938.27 69	7412.0 92	1873.6 83		761.46 22	5656.3 99		150371	4.2311 74		7284.9 05	5005.2 03	
11/30/2007	2745.7 44		939.78 687	313.17 21	3165.7 25	2768.7 65	1950.6 85	6369.8 97	538.87 66	956.85 66	7569.3 78	1910.7 85		761.46 22	6023.6 97	7591.1 58		150371	4.4192 25		7376.9 1	5153.5 11
12/31/2007	2627.1 73		837.63 641	312.59 86	3078.9 93	1087.7 29	1578.4 87	6107.6 07	527.56 5	1049.7 55	6252.1 09	2096.2 99		833.98 24	5693.1 29	11366. 65	99674. 51	4.5602 64		8612.3 78	5268.0 34	
1/31/2008	2721.8 63		898.92 658	319.48 15	3100.6 76	1001.2 05	1816.1 54	5957.7 27	523.79 6	1086.9 15	7431.7 51	2170.5 04		833.98 24	5509.4 8	11085. 5	42963. 15	4.7013 03		8579.9 98	5191.6 86	
2/29/2008	2447.2 27		932.97 693	278.18 4	2818.7 96	761.41 05	1860.9 97	5732.9 08	489.88 2	863.95 79	5505.0 01	1725.2 72		843.04 74	5178.9 11	8233.7 95	42963. 15	4.4192 25		8126.7 36	5268.0 34	
3/31/2008	2304.4 48		783.15 601	229.43 01	2601.9 66	657.58 18	1838.5 75	5695.4 38	474.80 8	845.37 82	5229.7 5	1688.1 7		1060.6 08	4113.7 45	9318.2 46	42963. 15	3.8080 56		7802.9 29	5191.6 86	
4/30/2008	2444.2 77		844.44 647	240.90 17	2406.8 19	1025.9 26	1924.6 48	5545.5 59	452.19 8	1040.4 65	4797.2 17	2077.7 47		2538.2 08	4517.7 73	14057. 7	4.5602 64	175.36 36		9357.0 66	5153.5 11	
5/31/2008	2349.0 35		824.01 593	220.82 65	2146.6 23	944.34 67	1969.9 34	4833.6 28	414.51 5	891.82 76	4757.8 95	1780.9 27	2795.5 73	2288.9 19	4003.5 55	13603. 15	42963. 15	4.4192 25	131.20 72	7867.6 89	5153.5 11	
6/30/2008	2304.4 39	1248.1 64	808.78 137	341.26 97	2688.6 9	786.13 16	2105.7 93	4983.5 07	414.51 5	845.37 82	3617.5 74	1688.1 7	2688.8 72	2787.4 96	4548.0 94	11844. 96	42963. 15	4.3722 11	119.85 29	7479.6 2	5401.6 76	

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7/31/2008	2165.8 79	1137.3 8	857.16 998	314.78 54	2822.0 13	766.35 47	2219.0 09	5026.9 74	410.74 7	836.08 84	2929.4 48	1669.6 19	2411.4 49	2130.2 81	4732.9 76	11137. 5	42963. 15	4.4192 25	176.34 68	7097.2 39	5675.6 73
8/31/2008	1832.4 53	1033.9 82	870.99 506	258.78 99	2799.7 92	978.95 63	1743.5 03	4598.3 17	384.36 9	728.32 59	2418.2 69	1486.3 8	1749.9 01	1441.3 39	4437.1 65	8893.8 27	42963. 15	3.6200 03	959.46 51	6480.0 85	5871.3 87
9/30/2008	1256.6 67	502.21 98	428.58 499	141.50 21	2399.8 22	202.71 32	815.14 54	3351.3 16	301.46 6	405.03 83	1329.0 65	826.60 95	1135.3 02	743.33 21	2588.3 46	3112.8 39	42963. 15	2.4551 25	816.56 6	2160.0 31	5832.2 43
10/31/2008	1241.5 04	384.05 04	359.45 834	262.06 3	2399.8 22	212.60 16	760.80 18	3370.8 9	339.14 7	360.44 7	1549.2 65	735.60 66	981.65 17	725.20 21	2588.3 46	4072.5 42	42963. 15	1.7185 88	689.99 82	2807.4 27	6027.9 56
11/30/2008	1355.3 68	358.20 09	513.51 196	271.05 54	2888.6 75	296.65 34	860.43 07	3312.3 47	305.23 4	345.58 32	1517.8 08	705.27 24	930.43 52	670.81 2	3401.8 26	4363.4 39	42963. 15	1.8413 44	800.23 46	3107.5 95	6184.0 54
12/31/2008	1332.6 27	546.53 34	477.85 132	334.00 18	2444.2 63	257.09 96	1104.9 78	4208.6 29	384.36 9	364.16 29	1946.4 12	743.19 02	1084.0 85	797.72 23	3327.8 73	4250.3 9	42963. 15	3.7027 74	136.26 81	3566.6 73	6263.3 37
1/31/2009	1285.4 38	568.69 01	427.92 661	290.32 47	2115.4 15	266.98 81	996.28 87	4052.7 53	384.36 9	327.00 34	1710.4 83	667.35 44	1288.9 52	824.91 74	3069.0 39	4078.6 55	42963. 15	3.7027 74	136.26 81	3778.5 56	6382.2 61
2/28/2009	1434.0 31	649.93 16	385.13 394	366.11 75	2790.5 48	262.04 39	996.28 87	4598.3 17	406.97 9	349.29 91	1749.8 05	712.85 58	1331.6 32	806.78 74	3882.5 2	4250.3 9	42963. 15	4.2183 51	128.25 23	4767.3 38	6302.9 78
3/31/2009	1722.7 15	753.32 97	435.05 866	462.46 43	3015.5 92	336.20 72	1222.7 49	5806.3 2	395.67 4	475.64 13	2693.5 2	970.69 75	1899.2 83	1024.3 48	4326.2 36	6482.9 17	42963. 15	4.3589 62	188.37 03	6356.4 48	6144.4 13
4/30/2009	1916.7 74	989.66 83	520.64 398	534.40 31	3038.0 97	652.63 75	1222.7 2	8845.9 12	391.90 5	661.43 88	2831.1 44	1349.8 76	2326.0 88	1504.7 94	4917.8 57	8371.9 79	42963. 15	7.1243 26	188.37 03	7168.6 57	6223.6 96
5/31/2009	2026.7 2	886.27 03	584.83 313	611.48 05	3173.1 23	618.02 8	1132.1 47	9781.1 65	350.45 4	702.31 43	3263.6 81	1433.2 95	1984.6 44	1577.3 15	5731.3 38	8899.3 77	42963. 15	6.6556 21	186.36 65	7027.4 02	7333.6 54
6/30/2009	2323.1 67	945.35 49	621.22 449	996.59 01	3398.1 67	662.52 15	1095.9 15	10989.2 9	333.49 6	845.37 82	3381.6 45	1725.2 63	2092.4 22	1640.7 7	7028.2 1	11821. 23	42963. 15	25.724 13	188.37 03	9339.6 36	9423.3 72
7/31/2009	2341.4 68	1004.4 4	599.80 292	1025.5 01	3825.7 5	771.29 89	1186.4 87	11460.0 92	386.25 3	928.98 69	3322.6 63	1944.7 73	2158.4 99	1604.5 1	7595	10884. 45	42963. 15	21.900 27	188.37 03	9736.3 1	8204.8 32
8/31/2009	2467.5 18	1065.1 81	749.75 36	1134.3 44	4163.3 17	756.46 62	1168.3 71	11941.0 8	384.36 9	1124.0 74	3263.6 81	2353.1 75	2158.4 99	1649.8 35	8010.6 48	10817. 54	42963. 15	21.900 27	206.40 58	11250. 84	8692.2 47
9/30/2009	2367.6 31	1147.1 18	814.01 825	1064.6 17	4118.3 09	687.24 71	1494.4 28	11460.0 92	376.83 2	1142.6 54	3185.0 38	2392.0 7	1982.2 94	1631.7 05	8350.7 21	10148. 41	167.63 45	20.857 4	198.39 09	10818. 09	8204.8 32
10/31/2009	2415.7 65	1296.0 95	821.15 881	1209.9 85	4320.8 48	632.86 07	1702.7 43	13825.0 24	380.6 54	1142.6 54	2713.1 8	2392.0 7	1960.2 69	1577.3 15	8388.5 09	13170. 08	171.85 26	20.162 16	226.44 52	10782. 01	8976.5 72
11/30/2009	2534.2 81	1288.6 46	835.43 976	1297.8 82	4365.8 57	657.58 18	1748.0 3	17271.0 53	391.90 5	1319.1 62	2870.4 66	2761.5 77	1960.2 69	1577.3 15	10353. 38	14592. 63	601.48 41	20.857 4	898.22 24	11178. 68	8976.5 72
12/31/2009	2610.7 19	1417.5 47	842.58 032	1344.6 36	4500.8 83	608.13 95	2422.7 97	19235.0 12	508.72 3	1337.7 41	2892.8 09	2800.4 72	2136.4 73	1971.6 43	10202. 24	14409. 07	2577.7 89	25.376 51	237.98 21	12152. 37	9179.6 63
1/31/2010	2548.9 57	1372.5 46	728.33 209	1355.8 57	4388.3 62	598.25 11	2762.4 35	20878.0 12	495.53 6	1412.0 4	3054.6 44	2956.0 54	1960.2 69	1858.3 3	10353. 38	14500. 85	2255.5 66	29.200 37	1294.8 09	12368. 71	9342.1 36
2/28/2010	2777.2 19	1470.0 49	664.06 751	1567.1 84	4950.9 72	647.69 33	3170.0 11	19836.0 22	525.68 1	1402.7 7	3823.3 62	2936.6 06	2048.3 71	2016.9 68	10769. 03	17460. 68	2341.4 92	31.286 1	270.43 44	13234. 14	9870.1 7
3/31/2010	2971.1 64	1650.0 56	735.47 26	1763.5 49	4905.9 63	622.97 22	3373.7 99	22120.0 38	527.56 5	1449.2 2	4169.4 46	3033.8 45	2709.1 36	2107.6 19	11940. 56	17919. 21	2191.1 21	39.629 06	254.20 8	14063. 5	11251. 18
4/30/2010	2796.8 74	1500.0 5	692.62 952	1613.9 38	4995.9 8	514.19 93	3147.3 68	27009.0 31	552.05 9	1356.3 21	3293.8 63	2839.3 68	2510.9 06	1677.0 3	11335. 82	17070. 13	2277.0 47	38.933 82	257.15 69	13234. 14	12672. 81

5/31/2010	2913.5 98	1492.5 5	777.80 286	1806.5 63	5356.0 52	509.25 5	3690.7 94	2741.0 04	702.79 2	1542.1 18	3127.0 85	3228.3 23	2510.9 06	1677.0 3	11940. 4	17615. 43	2277.0 47	38.933 82	251.10 65	13522. 65	13810. 12
6/30/2010	3069.1 89	1532.2 98	873.19 367	2308.8 99	5424.4 69	524.08 77	4302.1 58	2805.1 21	719.74 9	1718.6 26	3439.7 93	3597.8 29	2978.9 42	1595.4 45	12947. 18	17781. 39	2277.0 47	158.39 82	240.82 02	14802. 6	14001. 43
7/31/2010	3081.7 92	1437.7 11	902.54 486	2167.7 24	5287.7 17	529.03 19	4528.5 81	32178. 69	746.12 7	1690.7 56	3564.8 76	3616.3 6	2888.6 71	1835.6 68	13521. 76	18587. 48	2191.1 21	190.07 78	287.41 13	13517. 01	13299. 29
8/31/2010	3501.1 92	1532.2 98	1108.0 022	2582.1 42	6108.2 26	622.97 22	4890.8 7	42142. 65	829.03 92	2025.1 1	4065.2 84	4331.6 1	3001.5 19	2107.6 34	14096. 49	19725. 49	2191.1 21	321.32 2	396.32 44	15022. 96	13918. 83
9/30/2010	3635.2 16	1589.0 5	1108.0 022	2595.8 28	6381.7 64	627.91 74	5207.8 45	38957. 5	808.30 9	2118.0 74	3960.9 82	4132.9 9	3294.8 93	1880.9 73	14019. 13	21852. 13	2191.1 21	298.69 37	411.45 12	16308. 55	14414. 45
10/31/2010	3531.1 06	1759.3 05	1071.3 132	2576.7 66	5515.6 37	583.41 84	5072.0 16	33240. 43	1036.2 9	1895.1 33	3869.7 59	3636.2 3	3520.5 68	1631.7 05	12717. 35	23713. 42	2191.1 21	298.69 37	332.79 18	17029. 27	12390. 65
11/30/2010	3703.4 02	1937.7 7	1293.3 843	2708.3 36	5870.6 21	578.47 42	4800.2 98	32668. 72	1060.7 8	1737.2 06	4215.6 8	3874.6 71	4318.4 54	1486.6 64	12219. 38	24535. 29	2191.1 21	351.92 41	459.93 18	17621. 63	13712. 56
12/31/2010	3409.0 66	1709.7 97	1076.5 743	2427.8 21	5182.6 58	499.36 66	4755.0 11	30422. 75	960.92 2	1700.0 46	3977.8 52	3735.5 8	3724.3 81	1432.2 74	10380. 73	22383. 93	2191.1 21	342.01 08	510.28 91	15807. 64	12507. 52
1/31/2011	3470.2 45	1861.7 79	1166.2 889	2584.2 14	5778.8 93	489.47 81	5162.5 88	29851. 04	968.45 8	1700.0 46	4366.9 89	3775.3 21	3473.0 42	1396.0 14	11031. 92	22093. 86	2191.1 21	376.70 75	496.86 03	17177. 35	13463. 25
2/28/2011	3678.5 65	1671.8 02	1099.0 029	2829.9 75	6375.1 28	474.64 55	4936.1 57	34179. 65	1969.4 52	4129.1 83	4291.9 44	3610.1 36	1541.0 54	12525. 82	22335. 58	2320.0 8	2191.1 09	401.49 19	530.43 78	16066. 29	12715. 29
3/31/2011	3819.5 05	1671.8 02	1394.6 531	2787.7 74	6787.9 06	524.08 77	6158.8 76	33477. 59	1055.1 3	2006.6 12	4302.1 34	4411.1 64	3701.5 31	1459.4 69	13023. 79	22625. 65	2191.1 21	416.36 09	587.50 39	17214. 39	12715. 29
4/30/2011	3836.8 53	1861.7 79	1500.6 793	2916.8 6	6512.7 21	519.14 35	5570.1 56	35910. 07	1090.9 3	1876.5 54	4129.1 83	4291.9 44	3930.0 21	1359.7 54	12947. 18	22917. 89	2191.1 21	490.71 11	584.14 7	17712. 5	12216. 65
5/31/2011	3888.4 54	1877.8 18	1733.1 213	3899.5 05	7017.2 27	489.47 81	5667.7 45	41063. 64	1077.7 4	2006.6 12	3991.7 19	4570.1 25	3518.7 4	1169.3 88	13062. 1	21820. 76	2062.2 31	565.06 12	527.07 48	19175. 71	12382. 86
6/30/2011	4130.6 77	2031.1 1	2490.2 456	4325.9 65	7688.7 37	499.36 66	5299.1 17	41970. 67	1205.8 6	2255.8 97	3769.9 57	5047.0 07	3404.4 95	1160.3 23	12023. 44	24624. 54	2351.6 1	860.35 12	483.43 48	21273. 7	13265. 83
7/31/2011	3841.6 17	1552.0 74	2163.6 565	4059.0 44	7410.8 3	420.25 9	4654.0 01	46126. 05	1168.1 8	2061.4 24	3237.7 28	4955.4 73	2922.4 94	1051.5 43	11828. 54	21040. 88	2351.6 1	788.11 17	517.00 31	18390. 46	14371. 31
8/31/2011	3548.9 27	1318.3 05	2104.6 887	3905.6 41	7132.9 24	415.31 48	4584.8 82	44029. 41	1134.2 6	1915.5 68	2683.3 23	4102.4 82	2071.0 59	815.85 24	10895. 03	19138. 88	2363.8 67	788.11 17	490.14 62	17143. 64	14031. 16
9/30/2011	3790.7 34	1552.0 74	2652.7 842	4233.9 23	7503.4 66	405.42 64	4607.9 22	49145. 21	1192.6 7	2061.4 24	3237.7 28	4264.9 57	2623.3 41	924.63 27	12723. 83	22418. 54	2363.8 67	834.08 51	392.78 8	19169. 71	13308. 34
10/31/2011	3714.9 7	1463.9 32	2499.3 181	4768.8 28	7318.1 94	395.53 79	4285.3 74	54512. 61	1469.6 4	2003.0 82	2705.4 99	3818.1 51	2002.0 24	1105.9 33	11673. 24	19154. 92	2626.5 19	1209.1 4	315.56 61	18331. 56	15476. 8
11/30/2011	3821.8 79	1372.0 45	2652.7 842	4977.3 38	7410.8 3	380.70 52	4170.1 74	52038. 57	1469.6 4	2022.5 29	2910.8 42	3736.9 15	2002.0 24	1114.9 98	13268. 58	19405. 97	2101.2 15	1257.1 86	356.72 64	20686. 8	15987. 02
12/31/2011	3941.5 76	1403.0 52	3200.8 806	5306.9 18	7451.8 63	380.70 52	4124.0 94	47803. 36	1601.5 4	1983.6 34	3638.5 52	3899.3 89	2255.1 53	1160.3 23	13190. 76	18426. 88	2013.6 65	1489.4 05	315.56 61	22256. 96	16902. 07
1/31/2012	3985.0 92	1488.3 21	3157.0 327	4765.4 64	7079.2 71	360.92 83	4354.4 93	47593. 7	1997.2 1	2197.5 56	3297.4 38	4143.1 01	2439.2 47	1169.3 88	13579. 87	21765. 81	2013.6 65	1393.3 14	308.70 56	22767. 25	16600. 25
2/29/2012	4121.4 28	1496.0 72	3770.9 004	4973.9 75	7451.8 63	390.59 37	4654.0 01	46167. 98	2004.7 5	2119.7 66	3070.0 28	3940.0 07	2324.1 88	1051.5 43	14358. 09	21816. 03	2013.6 65	1289.2 16	301.84 57	25907. 56	17247. 01

36 *Faishal Fadli, Ghozali Maski, Vietha Devia Sagita Sumantri*

3/31/2012	4180.6 08	1441.8 1	3617.4 329	4775.5 54	7451.8 63	351.03 99	4976.5 59	49648. 4	2042.4 3	2197.5 56	2819.8 78	3940.0 07	2025.0 35	960.89 28	14046. 8	19958. 27	2013.6 65	1361.2 84	298.41 58	23238. 3	17117. 66
4/30/2012	3832.7 1	1449.5 62	2959.7 183	4324.9 03	6520.3 79	286.76 5	5577.2 35	45371. 25	1989.6 7	2197.5 56	2274.0 95	3838.4 61	1712.0 75	951.82 78	13852. 25	18039. 54	2188.7 66	1433.3 52	260.68 47	18135. 3	17721. 3
5/31/2012	3955.4 59	1171.8 87	3047.4 141	5771.9 09	6799.8 24	247.21 12	5813.5 51	51577. 31	1874.7 4	2236.4 5	2508.7 33	3940.0 07	1712.0 75	951.82 78	13502. 05	19187. 02	2188.7 66	1521.4 35	256.56 92	17043. 91	19747. 83
6/30/2012	4142.2 14	1179.9 69	3223.1 091	5898.3 5898.3	7526.5 94	257.09 96	5813.5 51	47258. 23	1959.5 3	2567.0 56	2274.2 72	4386.8 13	1583.2 09	1114.9 98	17021. 61	18973. 53	2188.7 66	1785.8 58	240.10 44	16764. 5	21182. 25
7/31/2012	4060.2 1	1107.2 31	3090.6 523	5687.6 47	7291.3 89	222.49 01	6806.1 08	42748. 64	1959.5 3	2681.9 02	2157.0 42	4533.7 39	1453.2 66	951.82 78	16031. 88	20387. 88	2276.3 17	1708.2 12	332.71 63	16006. 1	23671. 72
8/31/2012	4262.4 35	1212.2 96	3752.9 348	6235.3 46	7432.5 13	242.26 7	6286.2 02	39634. 21	1982.1 4	2600.0 12	2766.6 41	4743.6 34	1538.7 53	924.63 27	16111. 15	22496. 04	2363.8 67	1898.0 13	329.28 64	16525. 01	22754. 54
9/30/2012	4350.1 62	1107.2 31	3929.5 435	6783.0 45	7714.7 59	247.21 12	6475.2 63	41938. 03	2034.8 9	2927.5 72	2532.1 79	4785.6 63	1472.2 26	888.37 44	16942. 47	21695. 47	2363.8 67	1682.3 3	353.29 65	16844. 33	22754. 54
10/31/2012	4276.0 14	1082.9 85	3797.0 869	6158.5 23	8279.2 55	185.40 84	4868.2 59	45095. 11	2178.0 9	3029.9 36	1946.0 27	4911.5 5	1225.3 03	616.42 18	18407. 09	21807. 16	2363.8 67	1876.4 45	415.03 77	13758. 59	23016. 59
11/30/2012	4316.5 59	1293.1 16	3576.3 262	6413.3 58	8655.5 84	202.71 32	5246.3 8	47782. 9	2223.3 1	3316.5 51	2180.4 88	4911.5 5	1329.7 86	643.61 69	17932. 07	22973. 91	2363.8 67	1919.5 81	480.20 89	15816. 33	18518. 1
12/31/2012	4453.5 71	1342.4 62	3455.9 26	6243.4 69	9120.7 17	197.76 63	4726.4 86	44241. 8	2385.3 5	3275.6 06	2607.5 62	5079.4 68	1396.2 76	652.68 18	17219. 54	23029. 47	2363.8 67	2048.9 92	425.32 82	15937. 37	19485. 84
1/31/2013	4795.6 46	1277.3 73	3991.0 376	6753.1 39	10396. 67	195.29 68	5151.8 5	41212. 75	2822.4 7	3480.3 31	2560.1 51	6128.9 44	1329.7 86	815.85 24	17377. 87	22362. 76	2954.8 34	2221.5 38	370.44 68	15574. 24	20192. 81
2/28/2013	4940.8 39	1065.8 33	4459.2 598	6710.6 66	10774. 73	215.07 37	4962.7 89	41767. 38	3184.2 3	3930.7 27	2251.9 85	6254.8 8	1158.8 14	797.72 23	18446. 67	19723. 67	9630.5 69	2394.0 85	377.30 73	14686. 59	20148. 62
3/31/2013	5033.9 21	1000.7 44	4593.0 381	6243.4 69	10160. 39	200.24 11	4820.9 94	42151. 35	3176.6 9	4688.2 11	2702.3 82	6170.9 22	1063.8 29	788.65 73	20900. 95	20418. 17	10593. 63	2415.6 53	411.60 79	14323. 46	23197. 42
4/30/2013	5068.4 78	756.66 05	4771.4 072	5988.6 32	9782.3 25	190.35 26	4726.4 63	45649. 73	3297.2 8	5363.8 05	2417.9 21	6170.9 22	883.35 8	1513.8 59	18802. 94	17331. 23	11381. 58	2501.9 26	353.29 65	13153. 37	26953. 2
5/31/2013	4818.7 52	708.55 35	4726.8 154	6072.6 73	9513.4 91	192.82 47	4697.8 45	43175. 27	3203.0 7	4995.2 99	1937.4 45	6170.9 22	731.38 24	1015.2 83	19357. 13	16262. 48	10155. 87	2393.4 99	377.30 73	15049. 55	27174. 13
6/30/2013	4610.2 4	576.72 96	3875.3 689	5638.9 12	9894.0 3	210.12 95	4381.4 07	36135. 82	3090.0 2	4585.8 48	1693.4 7	5457.2 78	588.90 53	942.76 27	16841. 6	13980. 53	10900. 05	2349.5 82	363.58 69	13891. 89	28102. 02
7/31/2013	4194.9 64	766.22 66	3561.7 554	5248.5 25	8609.7 08	210.12 95	4357.0 65	32948. 3	2468.2 5	4237.8 23	2200.5 54	5600.1 8	519.99 89	988.08 79	15912. 69	18515. 54	10900. 05	2195.8 71	356.72 64	13064. 99	27874. 56
8/31/2013	4316.0 47	741.50 96	3584.1 558	5595.5 36	9513.4 91	262.04 39	4137.9 93	30387. 1	2464.4 8	4343.7 68	2152.7 16	6074.0 41	739.99 85	1096.8 68	14539. 51	15193. 72	9192.8 15	2239.7 88	535.09 04	13478. 44	26936. 48
9/30/2013	4510.4 97	840.37 74	4397.0 249	5769.0 4	9941.5 98	237.32 27	4357.0 65	32036. 69	2521.0 1	4746.3 61	2367.9 88	5729.4 15	779.99 84	1396.0 14	16881. 99	17273. 46	10768. 73	2064.1 18	452.76 89	14470. 72	26802. 46
10/31/2013	4256.3 1	931.00 64	4238.8 516	5473.5 45	9180.5 17	217.54 59	4868.2 25	32123. 51	2449.4 1	4237.8 23	2296.2 31	5729.4 15	649.99 87	1386.9 49	15226. 1	17140. 89	10112. 1	2503.2 92	411.60 79	15251. 68	23764. 85
11/30/2013	4274.0 5	898.05 05	3966.8 396	5955.2 18	9175.2 99	202.71 32	5062.9 56	36464. 53	2351.4 3	4322.5 79	2535.4 22	5686.3 36	589.99 88	1269.1 04	16155. 01	17021. 44	9630.5 69	2318.3 1	408.17 79	15878. 46	23228. 8
12/31/2013	4418.6 25	793.54 5	3989.5 066	5626.8 06	9485.9 2	182.44 19	4722.1 86	36377. 7	2526.6 6	4661.6 05	2233.3 86	6009.4 24	539.99 89	1164.8 56	18093. 62	16006. 13	10177. 76	2340.3 89	397.88 75	16129. 17	25822. 04

1/31/2014	4620.0 79	831.13 4	4134.5 806	6086.5 83	9772.6 47	176.50 88	4527.4 55	4141.3 28		4735.7 67	2315.7 45	6181.7 37	559.99 88	1241.9 09	18134	15528. 33	12257. 09	2477.2 8	347.80 85	15857. 57	25844. 64
2/28/2014	4768.1 35	818.60 42	4383.9 243	6458.7 84	10131. 06	168.10 36	4284.0 42	42889. 22	2600.1 4	4280.2 01	2732.3 85	6289.4 32	584.99 88	1350.6 89	18881. 17	14542. 88	12169. 54	2826.1 3	321.05 4	17340. 95	26455. 14
3/31/2014	4840.0 02	989.84 28	4324.9 888	6502.5 73	10513. 36	155.74 3	5038.6 14	49053. 47	2634.0 6	4237.8 23	3439.7 05	6074.0 41	619.99 87	1223.7 79	17730. 13	15853. 5	13132. 59	2781.9 72	343.00 67	18134. 87	26455. 14
4/30/2014	4893.7 63	1023.2 55	3740.1 626	6196.0 54	10369. 01	149.31 56	5330.7 1	45189. 96	2596.3 7	4322.5 79	3793.3 65	5880.1 88	684.99 86	1264.5 71	18295. 72	18531. 72	12716. 73	2799.6 35	362.21 51	18113. 98	26342. 09
5/31/2014	4878.4 37	991.29 64	3926.0 378	6501.2 32	10585. 54	146.34 9	5030.5 9	46448. 86	2536.0 8	4237.8 23	3444.5 5	5772.4 93	629.99 87	1214.7 14	18214. 78	17464. 45	12081. 99	3166.1 49	358.09 9	19601. 73	26477. 76
6/30/2014	5088.6 51	999.73 29	4003.3 276	6903.3 69	11162. 93	140.91 04	5326.5 1	47056. 6	2626.5 2	4428.5 24	3899.9 47	6095.5 81	694.99 85	1241.9 09	20930. 17	16914. 64	12839. 73	3356.0 3	377.28 52	19432. 02	28162. 44
7/31/2014	5136.7 1	1109.4 08	4776.6 982	6769.3 24	10778	140.41 6	5869.0 2	46882. 96	2662.3 2	4619.3 12	4050.1 32	6045.0 25	734.99 85	1214.7 14	20342. 95	18224. 48	14411. 49	3629.8 11	453.44 09	18795. 59	28414. 29
8/31/2014	5137.4 26	1100.9 72	4958.6 67	6300.1 63	12582. 35	134.97 73	6115.6 2	49941. 19	2713.1 9	4993.2 56	3633.4 91	6154.9 35	739.99 85	956.36 04	18077. 96	16801. 45	14367. 22	3422.8 69	447.15 34	16886. 33	29124. 08
9/30/2014	5089.3 96	957.55 02	4523.4 712	6054.4 12	12558. 29	132.50 52	5449.8 1	50888. 46	2679.2 8	4861.2 76	3672.2 49	6001.0 62	634.99 87	1042.4 78	20133. 23	13696. 66	12950. 42	3024.6 53	447.15 34	15592. 28	27841. 88
10/31/2014	5149.7 35	911.14 9	4270.8 916	6431.5 01	12606. 41	151.78 77	5030.5 9	53906. 52	2632.1 7	4949.2 63	3861.1 9	5891.1 52	559.99 88	1090.9 93	20699. 48	12958. 34	13282. 48	2872.5 25	419.20 62	15708. 36	29124. 08
11/30/2014	5226.7 92	877.40 28	3784.1 023	6702.3 01	12630. 47	149.81	4798.7 9	53487. 96	2586.9 5	5763.1 42	3512.3 75	5935.1 16	509.99 89	970.28 78	20972. 12	10472. 24	13282. 48	3132.0 37	419.20 62	14872. 58	29582
12/31/2014	5289.2 47	853.09 69	4312.2 231	7085.9 35	12919. 8	151.78 77	4734.6 8	50932. 52	2532.3 1	6379.0 5	3450	6638.5 37	491.99 9	1012.0 71	19294. 35	11408. 78	13747. 37	3055.9 73	419.20 62	15344. 04	33166. 7
1/31/2015	5450.1 32	818.97 3	4472.9 561	7085.9 35	13620. 13	145.85 46	4729.7 4	47077. 33	2456.9 4	6291.0 63	3525	6506.6 45	453.99 91	863.50 97	20175. 17	11510. 95	15806. 15	3266.2 67	423.39 82	17787. 09	33328. 71
2/28/2015	5518.5 11	818.97 3	4707.1 66	7740.3 67	14320. 46	138.43 83	4290.8 46	44940. 46	2768.7 7	6456.0 38	3235	6550.6 08	433.99 91	923.86 25	18392. 54	11510. 95	17444. 32	3038.0 75	419.20 62	18687. 16	36707. 88
3/31/2015	5086.2 74	793.38 01	4776.0 513	6183.2 68	13016. 4	132.01 08	3980.0 9	44059. 27	2769.7 2	5807.1 34	2795	5935.1 16	289.99 94	1039.9 26	17616. 58	8582.1 32	15496. 23	2595.1 17	440.16 61	18344. 28	39438. 98
4/30/2015	5216.2 24	733.66 33	5028.6 304	6589.4 68	13734. 61	136.95 5	4231.6 2	41503. 83	2732.0 3	6203.0 76	3120	6418.7 17	369.99 92	928.50 51	18791. 02	9562.2 62	15451. 95	2830.4 23	490.47 14	18286. 31	40087. 04
5/31/2015	4910.5 12	662.37 32	5474.1 436	6521.2 28	13126. 89	119.65 02	3634.8 5	39741. 46	2713.1 9	5671.3 14	2710	5967.4 6	314.99 93	831.01 2	18591. 21	9101.8 57	14655	2633.4 84	468.11 35	18353. 87	36569. 01
6/30/2015	4802.3 86	514.21 08	5312.4 604	6129.4 94	12737. 94	109.76 18	2924.6 5	43618. 68	3144.6 6	5591.7 57	1960	5536.3 52	289.99 94	891.36 49	17834. 2	6888.3 72	15759	2702.1 83	503.06 33	18196. 23	37418. 16
7/31/2015	4509.4 73	518.56 84	5289.3 628	5461.2 461	12543. 47	80.590 85	2959.1 7	39884. 85	2863.9 2	11524. 47	1545	4810.2 72	228.99 95	744.69 26	17477. 96	6622.7 52	15781. 51	2500.6 65	501.62 62	17227. 87	37160. 91
8/31/2015	4223.7 83	466.27 59	5498.0 376	4816.0 31	11935. 74	62.297 22	2579.4 1	37644. 13	2862.9 8	5637.2 18	2185	4991.7 92	192.99 96	754.23 99	14650. 32	6994.6 18	14498. 28	2509.8 25	521.02 97	15741. 54	35547. 25
9/30/2015	4455.0 48	518.56 84	5545.0 298	5501.6 39	12543. 47	65.263 76	3072.6 1	38495. 6	6000.9 6	3679	2235	5014.4 82	181.99 96	787.65 56	16030. 74	6002.9 76	14926. 02	2679.2 83	492.28 38	16555. 25	34611. 8
10/31/2015	4446.3 26	479.34 91	5732.9 971	5524.9 52	12032. 98	62.791 64	3412.9 1	43828. 52	5739.5 6	1645	1645	4424.5 43	130.99 97	906.99 74	16654. 16	5140.7 44	14093. 05	2775.4 63	488.68 99	14908. 87	34377. 94

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11/30/2015	4592.8 72	448.84 51	6743.3 208	5594.8 88	12987. 47	64.274 91	3600.3 3	49295. 88		3760	6125.9 29	1635	4696.8 23	109.99 98	911.77 1	19882. 57	4360.1 13	15849. 05	2839.5 83	495.15 8	15503. 39	34611. 8
12/31/2015	4615.0 26	471.70 23	6907.7 915	6014.5 04	12792. 17	104.81 75	3624.9 9	52298. 45	4140		6569.1 78	1445	5627.1 11	113.99 98	892.67 64	17544. 75	3663.2 56	14408. 23	2518.3 01	503.06 33	15914. 99	34648
1/31/2016	4770.8 14	543.58 08	7307.2 217	6340.8 73	13158. 36	194.80 24	3846.9 2	57093. 59	4398		7160.1 76	1535	6398.5 69	129.99 97	844.93 97	17834. 2	5140.7 44	14408. 16637	2704.8 42	503.06 33	14200. 01	42035. 48
2/29/2016	4845.2 27	579.52	6696.3 286	6760.4 9	12987. 47	232.37 85	3945.5 6	58527. 65	3936		6910.1 39	1750	6557.3 99	344.99 93	916.54 47	17567. 02	5045.5 45	16524. 43	2928.6 91	510.25 04	13994. 21	40524. 94
3/31/2016	4838.4 39	673.86 04	6249.9 067	6270.9 37	12743. 34	254.62 75	62067. 3472.1		3995		6944.2 35	1860	6466.6 4	481.99 9	954.73 41	17567. 02	5940.4 16	17109. 77	2984.6 53	675.54 25	13719. 82	40194. 51
4/30/2016	4796.7 27	652.39 57	6014.9 478	6154.3 76	12694. 52	235.34 5	62023. 3530		3800		7364.7 53	1655	6285.1 2	609.99 87	859.26 07	14828. 44	6724.9 41	17087. 26	3124.5 59	646.79 6	12988. 09	40690. 16
5/31/2016	5016.4 99	781.03 7	5987.7 5	7019.6 43	13011. 88	239.30 04	61843. 3670		3800		7830.7 33	1820	6580.0 89	539.99 89	878.35 53	15415. 37	7205.2 93	18010. 28	3102.7 46	661.16 93	13945. 97	42554. 73
6/30/2016	5215.8 39	955.62 19	6364.9 312	7327.9 38	14110. 44	318.90 24	62901. 3710		3630		8072.5 46	2560	7733.7 4	604.99 87	1002.4 71	15598. 07	9664.7 01	18353. 89	2971.1 14	921.15 7	14841. 15	42946. 86
7/31/2016	5385.9 22	1056.6 97	6294.2 095	7731.0 93	14696. 34	531.50 4	59990. 2840		3980		9363.2 16	2640	7362.1 49	674.99 86	1020.6 59	16169. 01	8742.4 24	18422. 97	2848.8 85	1646.0 07	17668. 03	43518. 85
8/31/2016	5364.6 45	1107.2 35	6146.0 19	7825.9 53	15331. 07	482.06 18	57754. 2700		3950		8893.8 81	2950	8082.1 07	614.99 87	966.68 16	15849. 28	8377.3 54	17018. 22	2632.6 33	2083.9 41	16678. 63	42470. 21
9/30/2016	5422.3 81	1249.6 59	6765.3 853	7853.5 08	15160. 18	702.07 98	63250. 2200		3950		8823.4 81	2720	7896.3 12	654.99 87	1040.2 87	15027. 13	11009. 69	16603. 71	2491.5 99	3062.3 26	20538. 06	42398. 71
10/31/2016	5148.9 1	1405.8 67	6360.4 146	7208.9 95	13963. 97	776.24 31	60549. 2300		3800		8119.4 8	3380	7037.0 06	779.99 84	956.86 76	14593. 21	12297. 04	13264. 54	2359.9 67	3426.8 82	19944. 47	38633. 11
11/30/2016	5296.7 11	1557.4 8	5717.2 271	7901.2 49	15135. 77	724.32 88	59524. 2310		3830		8049.0 8	2820	7362.1 49	804.99 83	947.05 35	14067. 95	13317. 98	13932. 38	2632.6 33	3542.6 91	20181. 91	36988. 65
12/31/2016	5294.1 03	1581.4 54	6360.4 146	7590.9 28	15013. 96	892.43 24	57522 2910		3850		7884.8 13	2370	7362.1 49	774.99 84	1025.5 66	13725. 39	11838. 97	13609. 2	2709.1 91	3804.3 17	20751. 75	39628. 54
1/31/2017	5386.6 92	1581.4 54	6050.7 314	7829.6 36	15161. 16	1097.6 18	61341. 2990		3870		7814.4 13	2550	7547.9 45	739.99 85	1236.5 67	13839. 57	13890. 16	12573. 68	2834.0 83	4044.5 01	23411. 35	40566. 35
2/28/2017	5568.1 06	1632.7 7	5955.4 443	8235.4 41	16240. 59	1433.8 25	61038. 3060		3900		7650.1 46	2390	7431.8 22	709.99 85	1285.6 37	15164. 15	15942. 12	12136. 13	2593.9 06	4113.1 21	25168. 03	41672. 49
3/31/2017	5685.2 98	1656.0 95	6455.7 017	8545.7 62	17418. 16	1557.4 31	61853. 3210		3820		8236.8 14	2220	7780.1 89	899.99 81	2041.3 18	15483. 88	15093. 71	13448. 77	2747.6 2	4550.5 98	25547. 92	42802. 67
4/30/2017	5738.1 55	1418.1 77	6312.7 715	8354.7 96	16956. 43	1596.9 84	68886. 2960		3930		8166.4 14	1905	8128.5 56	799.99 84	2482.9 49	16899. 81	12667. 86	13909. 35	2795.6 55	4529.1 54	26774. 52	44413. 78
5/31/2017	5829.7 08	1489.6 35	6263.7 109	8630.8 62	17945. 14	1448.6 58	72938. 3410		3840		8260.2 8	1850	7989.2 09	784.99 84	2502.5 77	17731. 5	14418. 02	13485. 1	2504.3 86	4904.1 76	26461. 23	46938. 66
6/30/2017	5840.9 39	1682.9 11	6623.6 938	7712.1 7	18488. 94	1646.4 27	70889. 3360		3550		7984.2 57	2420	8001.4 05	824.99 83	2753.4 87	16818. 5	16668. 24	12058. 1	2281.9 89	5096.9 6	29015. 77	47082. 94
7/31/2017	5864.0 59	1720.6 23	6503.6 997	7615.4 66	18736. 11	1952.9 68	66591. 3600				8342.8 52	2970	8001.4 05	1269.9 97	3061.6 39	19028. 93	16209. 86	9513.2 98	2136.9 47	4052.2 7	29208. 57	49087. 49
8/31/2017	5900.8 54	1720.6 23	6915.1 846	7639.6 43	20070. 88	1972.7 45	63319. 3740		3860		8342.8 31	2590	8049.1 74	1939.9 96	4165.0 22	18163. 98	16876. 59	8823.5 84	2117.6 08	4564.7 92	30847. 33	47558. 05

9/30/2017	6005.7 84	1720.6 23	7256.0 737	7736.3 47	20664. 1	1997.4 66	3380	67361. 36	3980	8414.5 46	2940	7834.2 11	2249.9 95	5243.5 55	21575. 73	18501. 74	8181.4 36	2078.9 31	5441.3 46	33425. 98	48164. 97
10/31/2017	5952.1 38	1602.7 72	6184.7 07	7766.0 67	20120. 31	2244.6 77	3080	73640. 41	4100	8079.8 77	3040	6998.2 44	2799.9 94	5193.8 53	17707. 47	16668. 24	10084. 1	2127.2 78	5411.7 88	32578. 84	47873. 65
11/30/2017	6355.6 54	1753.6 21	6184.7 07	8082.5 53	21734. 45	2234.7 89	2960	80641. 17	4730	8510.1 66	2890	7284.8 61	3059.9 94	5367.8 09	21095. 2	18309. 51	9513.2 98	2398.0 22	5930.7 27	34426. 6	54729. 47
12/31/2017	6605.6 31	2362.6 95	6062.9 609	8277.3 13	22553. 21	2610.5 5	2990	77994. 84	4900	8342.8 31	3750	7404.2 85	4469.9 91	9319.1 13	20951. 04	26800. 87	10583. 54	2645.1 67	6449.6 66	37830. 36	53260. 88
1/31/2018	6597.2 18	2266.2 58	5941.2 148	7863.4 48	22999. 81	2590.7 73	2950	76743. 84	4820	8581.8 81	3390	7237.0 91	4319.9 91	10685. 92	21119. 23	27243. 13	10131. 66	2802.5 95	6078.9 1	34621. 1	52771. 35
2/28/2018	6188.9 87	2054.0 98	5527.2 778	7108.7 51	23123. 87	2284.2 31	2520	69743. 07	3980	7912.5 42	2790	6878.8 19	3529.9 93	10934. 43	15376. 91	25208. 74	10417. 06	2664.8 33	6153.1 29	31120. 09	48487. 96
3/31/2018	5994.5 95	1769.6 1	4772.4 512	6962.6 82	21932. 94	2442.4 47	2120	66711. 8	3540	8295.0 21	3160	6663.8 56	3409.9 93	13121. 31	17034. 74	20918. 83	9846.2 63	2517.3 33	5980.1 49	33162. 34	45379. 45
4/30/2018	5983.5 87	1817.8 28	4791.9 307	6719.2 31	22700 51	2096.3 51	2100	65917. 91	3790	8318.9 27	3860	6759.3 95	3739.9 92	18588. 53	16938. 63	24411. 84	8704.6 67	2419 59	5782.4 27	34649. 27	44645. 15
5/31/2018	5799.2 37	1790	4188.0 693	6544.0 28	21475 28	1957.9 13	2520	64715. 02	3580	8462.3 56	4040	6353.3 54	18489. 3420	12 12	13650 63	21150. 8800	2025.6 67	5572.7 51	31238. 71	45134. 68	
6/30/2018	5936.4 43	1905	4100.4 121	7089.3 64	23275 1815	1815 2750	2750	72317. 23	3840	8668.6 15	4370	6280.9 2	19085. 3600	54 54	14125 83	26916. 8025	2015.8 33	4975.6 71	34846. 98	42818. 55	
7/31/2018	6018.4 6	1865	3610	7188.5 16	24800 1715	1715 3180	3180	73000 8	3830	8618.9 38	3800	6305.6 48	3270 3270	19100 19100	17725 17725	26751. 41	7500 7500	2100 2100	5473.2 38	34006. 7	43412. 57
8/31/2018	5976.5 53	1835	3670	7287.6 68	24150 1840	1840 2760	2760	74050 74050	3850	8767.9 7	3710	5835.8 16	2800 2800	17350 17350	18500 18500	24435. 47	6925 6925	1875 1875	4896.0 6	32622. 71	46555. 89
9/30/2018	5831.6 5	1650	3460	7833.0 04	23650 1875	1875 2620	2620	72300 72300	3730	8867.3 23	2920	5910 5910	2240 2240	12725 12725	17300 17300	23537. 46	4850 4850	1570 1570	4786.5 95	33116. 99	42793. 8
10/31/2018	5990.8 1	1295	3980	8400 8400	25100 2030	2030 2220	2220	80500 80500	3520	8867.3 23	2890	6182.0 08	1945 1945	13300 13300	20325 20325	20025 20025	4460 4460	1845 1845	5200 5200	31850 31850	41729. 53
11/23/2018	6006.2 02	1295	3980	8400 8400	25100 2030	2030 2220	2220	80500 80500	3520	8925 8925	2890 2890	6250 6250	1945 1945	13300 13300	20325 20325	20025 20025	4460 4460	1845 1845	5200 5200	31850 31850	42150. 53

**Appendix 2: Difference in difference results**

**Appendix 2.1: Health Sector**

Source	SS	df	MS			
Model	.089259339	3	.029753113	Number of obs = 420		
Residual	6.38490516	416	.01534833	F( 3, 416) = 1.94		
Total	6.4741645	419	.015451467	Prob > F = 0.1227		
				R-squared = 0.0138		
				Adj R-squared = 0.0067		
				Root MSE = .12389		

car	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
et	.0224106	.0169512	1.32	0.187	-.0109101	.0557312
bumn5	.0001029	.0174351	0.01	0.995	-.034169	.0343748
etbumn5	.033362	.0169512	1.97	0.050	.0000413	.0666826
_cons	-.008887	.0122679	-0.72	0.469	-.0330017	.0152277

**Appendix 2.1: Education Sector**

Source	SS	df	MS			
Model	.273836812	3	.091278937	Number of obs = 273		
Residual	15.9004522	269	.059109488	F( 3, 269) = 1.54		
Total	16.1742891	272	.059464298	Prob > F = 0.2034		
				R-squared = 0.0169		
				Adj R-squared = 0.0060		
				Root MSE = .24312		

car	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
et	.013044	.0417943	0.31	0.755	-.0692416	.0953295
bumn10	-.0422482	.0425844	-0.99	0.322	-.1260892	.0415929
etbumn10	.0460899	.0431811	1.07	0.287	-.038926	.1311058
_cons	-.0046728	.0311289	-0.15	0.881	-.0659601	.0566144

**Appendix 2.3: Placebo**

Source	SS	df	MS			
Model	.149456437	3	.049818812	Number of obs = 420		
Residual	21.2621586	416	.051110958	F( 3, 416) = 0.97		
Total	21.411615	419	.051101706	Prob > F = 0.4045		
				R-squared = 0.0070		
				Adj R-squared = -0.0002		
				Root MSE = .22608		

car	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
et	-.0168719	.0312243	-0.54	0.589	-.0782489	.0445052
lq45	-.0498661	.0318929	-1.56	0.119	-.1125575	.0128253
et5lq45	-.0063019	.031156	-0.20	0.840	-.0675447	.0549408
_cons	.0272624	.0224955	1.21	0.226	-.0169567	.0714814