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**MODEL AGRESIVITAS PAJAK BERBASIS *MAQASHID SYARIAH*
DAN *SOCIAL DISCLOSURE* PADA ENTITAS SYARIAH YANG
TERDAFTAR DI INDEKS SAHAM SYARIAH INDONESIA (ISSI) DAN
JAKARTA ISLAMIC INDEX (JII)**

Tahun ke-2 dari rencana 2 tahun

Oleh :

Kautsar Riza Salman, SE. MSA. Ak. BKP. SAS. CA. NIDN: 0726117702
Drs. Ec. Mochammad Farid, MM. NIDN: 0027115301
Kartika Marta Budiana SS.,M.Pd. NIDN: 0713038801

Dibiayai oleh:

Direktorat Riset dan Pengabdian Masyarakat
Direktorat Jenderal Penguatan Riset dan Pengembangan
Kementerian Riset, Teknologi, dan Pendidikan Tinggi
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HALAMAN PENGESAHAN

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JAKARTA ISLAMIC INDEX (JII)

Peneliti/Pelaksana
Nama Lengkap : KAUTSAR RIZA SALMAN, S.E.
Perguruan Tinggi : Sekolah Tinggi Ilmu Ekonomi Perbanas Surabaya
NIDN : 0726117702
Jabatan Fungsional : Lektor
Program Studi : Akuntansi
Nomor HP : 08563084408
Alamat surel (e-mail) : kautsar@perbanas.ac.id

Anggota (1)
Nama Lengkap : Drs.Ec. MOCHAMMAD FARID MM
NIDN : 0027115301
Perguruan Tinggi : Sekolah Tinggi Ilmu Ekonomi Perbanas Surabaya

Anggota (2)
Nama Lengkap : KARTIKA MARTA BUDIANA S.S., M.Pd
NIDN : 0713038801
Perguruan Tinggi : Sekolah Tinggi Ilmu Ekonomi Perbanas Surabaya

Institusi Mitra (jika ada)
Nama Institusi Mitra : -
Alamat : -
Penanggung Jawab : -
Tahun Pelaksanaan : Tahun ke 2 dari rencana 2 tahun
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Biaya Keseluruhan : Rp 146,500,000

Mengetahui,
Ketua STIE Perbanas Surabaya



(Dr. Yudi Sutarso, SE., M.Si.)
NIP/NIK 36950154

Kota Surabaya, 3 - 11 - 2018
Ketua,

(KAUTSAR RIZA SALMAN, S.E.)
NIP/NIK 36010197

Menyetujui,
Ketua PPPM STIE Perbanas Surabaya



(Dra. Ec. Rr. Iramani, M.Si.)
NIP/NIK 36900082

RINGKASAN

Penelitian ini bertujuan untuk menguji prediksi kekuatan dari indeks maqashid syariah, indeks pengungkapan tanggung jawab sosial perusahaan, dan karakteristik perusahaan. Sampel dari data penelitian adalah perusahaan yang sahamnya terdaftar di Indeks Saham Syariah Indonesia (ISSI) dalam periode 2011-2015. Total diperoleh 71 perusahaan yang memenuhi persyaratan. Data diperoleh dari Indonesia Stock Exchange. Teknik penentuan sampel digunakan purposive sampling. Variabel independen yang digunakan adalah indeks maqashid syariah, indeks pengungkapan tanggung jawab sosial perusahaan, ukuran perusahaan, profitabilitas, leverage, intensitas persediaan, dan intensitas modal. Teknik analisis yang digunakan adalah regresi berganda, regresi logistik, dan neural network. Pada pengujian awal, digunakan metode regresi berganda dimana semua variabel independen digunakan tahun t dan variabel dependen digunakan tahun $t+1$. Pada tahap awal ini akan diketahui variabel independen lainnya yang mampu memprediksi tingkat agresivitas pajak. Pada pengujian tahap kedua membandingkan model prediksi agresivitas pajak yang memberika tingkat keakuratan yang lebih tinggi antara analisis regresi logistic dan neural network. Berdasarkan hasil analisis dan pembahasan, dapat disimpulkan bahwa metode *Neural Network* memberikan tingkat ketepatan prediksi yang lebih baik dibandingkan dengan regresi logistik baik untuk data *training* dan data *testing*.

Keywords: tingkat agresivitas pajak, indeks maqashid syariah, tingkat pengungkapan tanggung jawab social, karakteristik perusahaan, regresi logistik, neural network

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Ketua Peneliti,

Dr. Kautsar Riza Salman, SE. MSA. BKP. SAS. CA.

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BAB I

PENDAHULUAN

1.1 Latar Belakang

Praktik agresivitas pajak mengacu pada upaya yang dilakukan oleh wajib pajak baik orang pribadi maupun badan yang bertujuan untuk meminimalkan beban pajak yang terutang. Sumarsan (2013) mengemukakan bahwa tindakan agresivitas pajak yang dilakukan melalui strategi perencanaan pajak pada umumnya berusaha untuk menghindari sanksi akibat dari penerapan pajak yang melanggar peraturan dan perundang-undangan perpajakan di Indonesia. Perencanaan pajak merupakan penerapan kegiatan-kegiatan perusahaan terhadap peraturan dan perundang-undangan perpajakan yang berlaku untuk mengecilkan beban pajak perusahaan. Praktik agresivitas pajak bisa dilakukan dalam bentuk praktik perencanaan pajak yang diperbolehkan (tax avoidance) dan praktik yang dilarang oleh perundang-undangan perpajakan (tax evasion).

Penelitian ini merupakan penelitian tahun kedua yang meneruskan penelitian tahun sebelumnya dimana sama-sama menggunakan sampel entitas syariah yang terdaftar di Indeks Saham Syariah Indonesia (ISSI). Penelitian tahun pertama telah memberikan hasil yaitu indeks maqashid syariah, ukuran perusahaan, dan profitabilitas berpengaruh secara signifikan terhadap tingkat agresivitas pajak. Adapun variabel independen lainnya seperti leverage, intensitas modal, dan intensitas persediaan tidak berpengaruh terhadap tingkat agresivitas pajak.

Penelitian tahun kedua ini berupaya untuk memprediksi agresivitas pajak dengan memasukkan variabel indeks maqashid syariah, tingkat pengungkapan tanggung sosial perusahaan, dan karakteristik perusahaan. Model prediksi yang akan dikembangkan ini dinamakan dengan Model Agresivitas Pajak Berbasis Maqashid Syariah dan Social Disclosure. Pada model tersebut, juga dimasukkan beberapa variabel independen lainnya seperti ukuran perusahaan, profitabilitas, leverage, intensitas modal, dan intensitas persediaan. Selanjutnya, penelitian ini selanjutnya penelitian akan mencari dan membandingkan model prediksi yang lebih akurat untuk memprediksi tingkat agresivitas pajak perusahaan. Penelitian ini dimaksudkan untuk membandingkan antara model klasik yang diwakili oleh regresi logistik dengan model yang lebih baru yaitu neural network.

Analisis regresi logistik dapat digunakan untuk memprediksi agresivitas pajak. Pada regresi logistik akan diperoleh suatu model logistik yang digunakan untuk menjelaskan hubungan antara prediktor dan respon (yang bersifat dikotomis atau ada dua kategori/kelompok), serta untuk mengelompokkan obyek ke dalam salah satu dari dua kategori respon. Dalam perkembangannya, regresi logistik dapat juga digunakan untuk respon kategori lebih dari dua kelompok, yang dikenal dengan regresi logistik polikotomis. Regresi logistik dalam beberapa literatur disebut sebagai model klasik.

Salah satu metode klasifikasi yang berkembang dari kelompok machine learning adalah Neural Network (NN). Model ini tidak mensyaratkan skala pengukuran dan distribusi tertentu dari prediktor atau input dalam terminologi NN. Secara umum, ada dua kelompok besar dalam NN dikaitkan dengan ada tidaknya respon, yaitu supervised dan unsupervised NN. Dalam kasus analisis klasifikasi ini, NN yang digunakan adalah termasuk dalam kelompok supervised NN, karena proses pembelajarannya (optimisasi fungsi) terawasi oleh suatu respon (output klasifikasi). Dalam beberapa literature klasifikasi, NN ini seringkali disebut sebagai bagian dari model klasifikasi modern.

Tujuan dari penelitian ini adalah menerapkan dan membandingkan regresi logistic dan Neural Network pada data prediksi agresivitas pajak (tax aggressiveness). Kedua metode tersebut diaplikasikan dengan menggunakan paket statistika yang menyediakan fasilitas untuk analisis data dengan menggunakan software SPSS versi 16 dan MINITAB (digunakan hanya untuk mengambil sampel secara acak). Masing-masing data dibagi menjadi dua kelompok yaitu data untuk pemodelan (training) dan evaluasi (testing) dimana perbandingan training dan testing adalah 3:2, dan 2:2. Selanjutnya akan dibandingkan ketepatan klasifikasi dari masing-masing metode pengklasifikasian.

1.2 Rumusan Masalah

Berdasarkan latar belakang masalah di atas, rumusan masalah dari penelitian ini adalah:

1. Apakah indeks maqashid syariah, tingkat pengungkapan tanggung jawab sosial perusahaan, ukuran perusahaan, profitabilitas, leverage, intensitas modal, dan intensitas persediaan mempengaruhi tingkat agresivitas pajak pada entitas syariah yang terdaftar pada ISSI dan JII?
2. Metode mana yang akan memberikan kekuatan prediksi yang lebih tinggi antara metode regresi logistik dan Neural Network (NN)?

BAB 2

TINJAUAN PUSTAKA

2.1 Penelitian Terdahulu

Beberapa penelitian empiris mengenai hubungan antara pengungkapan tanggung jawab sosial perusahaan dengan agresivitas pajak telah dilakukan oleh Lanis and Richardson (2011), Hanum and Zulaikha (2013), Richardson, Taylor and Lanis (2013) dan Boussaidi and Hamed (2015) dengan hasil yang berbeda. Studi Lanis and Richardson (2011) membuktikan bahwa semakin tinggi tingkat pengungkapan CSR dari suatu perusahaan, semakin rendah tingkat agresivitas pajak perusahaan. Sementara studi Hanum and Zulaikha (2013) membuktikan bahwa ukuran perusahaan berpengaruh negatif terhadap agresivitas pajak; ROA, intensitas modal, dan intensitas persediaan tidak berpengaruh, dan leverage berpengaruh positif. Studi yang hampir mirip adalah studi Richardson, Taylor and Lanis (2013) menjelaskan bahwa perusahaan yang menerapkan sistem manajemen risiko dan pengendalian internal yang efektif, melibatkan auditor big-4, jasa auditor eksternal mempunyai proporsi lebih sedikit pada jasa non-audit dan auditor internal yang lebih independen berakibat pada menurunnya agresivitas pajak. Studi Boussaidi and Hamed (2015) menemukan bahwa diversitas gender dalam dewan dan kepemilikan manajerial mempunyai hubungan yang positif dengan Effective Tax Rate (ETR). Sementara meningkatnya konsentrasi kepemilikan berpengaruh negative terhadap ETR.

Kajian empiris mengenai hubungan antara variabel rasio keuangan dengan agresivitas pajak dilakukan oleh Noor, Fazillah and Mastuki (2010), Khaoula and Ali (2012), Hsieh (2012), Wang, Campbell and Johnson (2014), dan Zemzem and Ftouhi (2013). Studi Noor, Fazillah and Mastuki (2010) menemukan bahwa perusahaan yang lebih besar memikul ETR yang lebih besar. ETR yang lebih rendah berhubungan secara signifikan dengan leverage yang tinggi, investasi yang lebih besar dalam aset tetap, dan investasi yang lebih rendah dalam persediaan. Studi ini juga membuktikan bahwa perusahaan dengan ROA yang tinggi menunjukkan ETR yang lebih rendah. Studi Khaoula and Ali (2012) membuktikan secara empiris bahwa diversitas gender dalam dewan tidak mempunyai pengaruh pada aktivitas perencanaan pajak perusahaan. ROA berpengaruh secara signifikan terhadap perencanaan pajak, sementara ukuran perusahaan dan ukuran dewan tidak mempunyai pengaruh yang

signifikan.

Studi Hsieh (2012) menunjukkan bahwa semua variabel mempunyai pengaruh yang signifikan terhadap agresivitas pajak: ukuran perusahaan dan intensitas modal berpengaruh negatif sementara ROA, leverage, dan intensitas persediaan berpengaruh positif. Adapun studi Wang, Campbell and Johnson (2014) tidak menemukan pengaruh auditor big-4 dan kepemilikan internasional terhadap ETR. Sebaliknya, faktor industri, campuran asset, ukuran perusahaan, leverage dan kepemilikan Negara berpengaruh terhadap ETR. Selain itu, studi Zemzem and Ftouhi (2013) membuktikan bahwa ukuran dewan dan persentase wanita dalam dewan menurunkan aktivitas agresivitas pajak, sementara ukuran perusahaan dan ROA berhubungan secara signifikan dan positif.

2.2 Landasan Teori

2.2.1 Teori Keagenan (*Agency Theory*)

Teori dasar (*grand theory*) yang mendasari penelitian ini adalah teori keagenan (*agency theory*). Teori ini telah banyak digunakan dalam bidang akuntansi dan manajemen. Secara umum, teori ini mengenai hubungan antara dua pihak yaitu prinsipal (pemilik) dan agen (manajer). Hubungan antara prinsipal dan agen dinamakan dengan hubungan keagenan. Secara lebih khusus, teori ini meneliti hubungan keagenan dalam perspektif keprilakuan dan struktural. Teori ini menyatakan bahwa agen akan berperilaku yang mementingkan diri sendiri dan bertentangan dengan kepentingan prinsipal (Jensen dan Meckling, 1976; Eisenhardt, 1989). Dengan demikian, prinsipal akan menerapkan mekanisme struktural yang memantau agen dalam rangka untuk mengekang perilaku oportunistik dari agen dan menyelaraskan kepentingan semua pihak secara lebih baik (Fama dan Jensen, 1983; Eisenhardt, 1989).

Asumsi yang mendasari teori keagenan didasarkan pada model ekonomi (Jensen dan Meckling, 1976; Eisenhardt, 1989; Davis dkk., 1997). Model ekonomi ini mengasumsikan bahwa setiap individu akan berusaha untuk mengoptimalkan utilitasnya masing-masing. Dalam hubungan keagenan prinsipal dan agen, agen dikontrak untuk memaksimalkan utilitas prinsipal. Namun, teori keagenan mengasumsikan agen sebaliknya tidak berperilaku untuk memaksimalkan utilitas prinsipal akan tetapi agen berperilaku secara

oportunis untuk mementingkan kepentingannya sendiri. Hal inilah yang menimbulkan konflik kepentingan. Konflik kepentingan tersebut terjadi karena kedua pihak berupaya untuk memaksimalkan kepentingan dan *return* masing-masing. Oleh karena itu, prinsipal memberlakukan mekanisme untuk meminimalkan kerugian atas utilitas mereka (Jensen dan Meckling, 1976; Eisenhardt, 1989; Davis dkk., 1997).

2.2.2 Konsep Agresivitas Pajak

Agresivitas pajak merupakan suatu tindakan yang mempunyai tujuan untuk mengurangi penghasilan kena pajak melalui perencanaan pajak (*tax planning*) serta menggunakan metode yang diklasifikasikan atau tidak diklasifikasikan sebagai penggelapan pajak. Meskipun, tidak semua tindakan yang dilakukan adalah melanggar aturan, lebih banyak metode yang digunakan oleh perusahaan akan membuat perusahaan sedang diasumsikan lebih agresif (Frank et al., 2009). Agresivitas pajak dapat dilakukan dalam bentuk yang tidak melanggar undang-undang maupun yang melanggar aturan (*tax evasion*), tetapi lebih banyak agresivitas pajak mengarah ke tindakan melawan hukum.

Hite dan McGill (1992) dan Murphy (2004) juga menyatakan bahwa agresivitas pajak pelaporan adalah situasi ketika perusahaan melakukan kebijakan pajak tertentu dan suatu hari adanya kemungkinan bahwa kebijakan pajak tidak akan diaudit atau akan menimbulkan sengketa hukum, namun tindakan ini masih memiliki potensi risiko penyelesaian akhir yang tidak pasti yaitu kepatuhan atau ketidakpatuhan hukum (Sari dan Martani, 2010).

Dari beberapa definisi ini dapat dipahami bahwa agresivitas pajak mempunyai konsep yang luas dan mencakup baik praktik perencanaan pajak yang tidak melanggar (*tax planning* atau *tax avoidance*) maupun praktik yang melanggar undang-undang (*tax evasion*). Studi ini menggunakan konsep ini sehingga dapat dikatakan bahwa perusahaan yang berperilaku agresif dalam pajaknya tidak berarti telah melakukan kecurangan pajak dan praktik pelaporan akuntansi yang menyimpang.

2.2.3. Konsep Maqashid Syariah

Ghazali (1991) menguraikan 5 unsur yang ada dalam konsep *maqashid syariah* yaitu guarding religion, soul, mind, family and wealth. Bentuk apapun yang dapat menjamin

adanya keempat unsur ini dinamakan *maslahah* dan setiap yang menghilangkannya dinamakan *mafsadah*. Pandangan lain tentang *maqashid syariah* dikemukakan oleh Zahrah (1958) dalam Antonio et. al (2012), yang membagi *maqashid syariah* menjadi 3 kategori yaitu *tahdzib al-fard (education for individuals)*, *iqamah al-adl (justice)*, dan *maslahah (benefit/welfare)*. Nilai-nilai Islam tidak hanya diterapkan dalam ladang fiqh berupa legalitas produk dan jasa yang sesuai dengan nilai-nilai Islam namun lebih dari itu seharusnya mempunyai dampak yang lebih luas pada aspek ekonomi dan social sebagai konsekuensi dari upaya untuk mencapai *Maqashid Syariah* (Sanrego, 2010).

Mohammed dan Taib (2009) telah membuat formula evaluasi kinerja berdasarkan konsep *maqashid Syariah*. Variabel-variabel yang digunakan meliputi *Tahdzib al-Fard (Educating the individual)*, *Iqamah al-Adl (Establishing justice)*, dan *Maslahah (Welfare)*. *Maqashid* yang pertama (*tahdzib al-fard*) mempunyai arti pengembangan pengetahuan dan keahlian setiap individu sehingga nilai-nilai spiritual meningkat. *Maqashid* pertama mempunyai beberapa rasio yaitu *education grant, research, training* dan *publicity*.

Dalam *maqashid* yang kedua (*iqamah al-adl*), entitas syariah seharusnya jujur dan wajar dalam semua transaksi dan aktivitas bisnis yang dijalankan. *Maqashid* yang kedua ini mempunyai beberapa rasio yaitu *PER (Profit Equalization Reserve) ratio* dan *interest free incoma ratio*. Adapun dalam *maqashid* yang ketiga (*maslahah*), entitas syariah seharusnya mengembangkan proyek investasi dan jasa social untuk memperbaiki kesejahteraan masyarakat. *Maqashid* ini dapat dilihat dari rasio zakat yang dikeluarkan oleh entitas syariah dan investasi dalam sektor riil. Rasio-rasio yang dapat dimasukkan ke dalam *maqashid* yang ketiga ini adalah *Profit Returns, Personal Income Transfer (Zakah)*, dan *Investment Ratios in Real Sector*.

2.2.4 Konsep Pengungkapan Tanggung Jawab Sosial Perusahaan

Konsep akuntabilitas dari perspektif Islam tidak terlepas dari tanggung jawab individu dan perusahaan kepada Allah. Selain bertanggung jawab kepada para *stakeholder*, sebuah entitas harus mempertanggungjawabkan aktivitas bisnisnya kepada Allah. Maali dkk. (2006) menjelaskan bahwa akuntabilitas kepada Allah merupakan aplikasi dari konsep ketauhidan. Dalam Islam, semua individu dan bisnis bertanggungjawab kepada Allah dan ummat dengan mengetahui dan memberikan hak-hak para *stakeholder*. Baydoun

dan Willet (2000) menjelaskan bahwa dalam konteks pelaporan perusahaan, terdapat 2 (dua) prinsip yang mendasari konsep akuntabilitas dalam Islam yaitu prinsip pengungkapan penuh dan konsep akuntabilitas sosial. Akuntabilitas sosial dari perspektif Islam berkaitan dengan prinsip pengungkapan penuh, dimana akuntan harus mengungkapkan segala sesuatu yang penting bagi para *stakeholder* sebagai bagian dari perintah dari agama Islam.

Issalih dkk. (2015) menggambarkan hubungan antara syariah Islam dan pengungkapan akuntansi sosial sebagaimana dalam gambar di bawah ini. Syariah Islam sebagai titik awal dapat dihubungkan dengan sasaran pertanggungjawaban sosial dari organisasi bisnis. Tujuan utama pengungkapan informasi sosial adalah sebagai bentuk pelaksanaan akuntabilitas organisasi bisnis kepada para *stakeholder*. Komitmen organisasi bisnis dengan syariah Islam, terutama mengadopsi sasaran tanggung jawab sosial tertentu berdasarkan syariah dan memastikan kesejahteraan kelompok *stakeholder*.

2.2.5 Regresi Logistik

Regresi logistik adalah bentuk khusus dimana variabel dependennya menjadi dua bagian atau kelompok (binary). Walaupun formulanya dapat saja lebih dari dua kelompok. Regresi logistik adalah regresi yang digunakan untuk mencari persamaan regresi jika variabel dependennya merupakan variabel yang berbentuk skala. Regresi logistik binary digunakan untuk menemukan persamaan regresi dimana variabel dependennya bertipe kategorial dua pilihan seperti: ya atau tidak, atau lebih dari dua pilihan seperti: tidak setuju, setuju, sangat setuju.

Banyak variabel respon kategorik yang hanya mempunyai dua nilai kategorik. Pengamatan untuk tiap-tiap subjek perusahaan dapat diklasifikasikan sebagai bangkrut (default) atau tidak bangkrut (non default), dengan nilai probabilitas yang akan terjadi dimisalkan dengan 1 dan 0. Variabel respon yang menjadi pengamatan tersebut mengikuti sebaran Bernoulli dengan variabel acak biner yang mempunyai $P(Y=1)$.

2.2.6 Neural Network (NN)

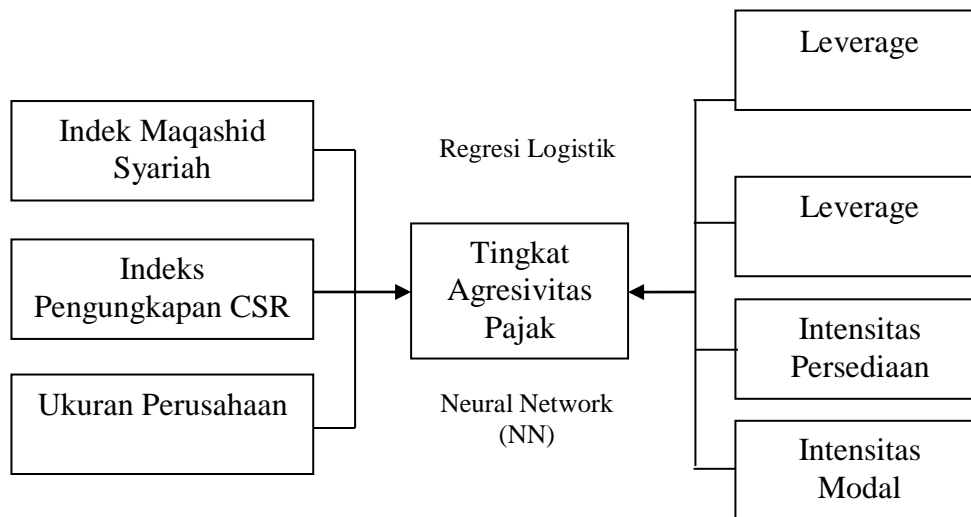
Neural Networks (NN) merupakan adaptif model statistik berdasarkan pada suatu analogi dengan struktur otak. Dari NN ini dapat belajar untuk memperkirakan parameter

dari beberapa populasi menggunakan sejumlah kecil contoh-contoh (satu atau beberapa) pada satu waktu. NN pada dasarnya tidak berbeda dari model statistik standar. NN digunakan sebagai alat statistik dalam berbagai bidang, termasuk psikologi, statistik, teknik, ekonometri, dan bahkan fisika. NN digunakan juga sebagai model proses kognitif oleh ilmuwan saraf dan kognitif.

Pada dasarnya, NN dibangun dari unit yang sederhana, kadang-kadang disebut neuron atau sel oleh analogi dengan hal yang nyata. Unit-unit ini dihubungkan oleh serangkaian koneksi terbobot. Pembelajaran biasanya dilakukan dengan modifikasi dari sambungan terbobot. Setiap unit kode bersesuaian dengan fitur atau karakteristik sebuah pola yang kita ingin analisis atau yang ingin kita gunakan sebagai prediksi. Networks ini biasanya mengorganisasikan unit mereka menjadi beberapa lapisan. Lapisan pertama ini disebut lapisan input, yang terakhir lapisan output. Lapisan menengah (jika ada) disebut lapisan tersembunyi (hidden layers). Informasi yang akan dianalisis diumpungkan ke neuron lapisan pertama dan kemudian disebarkan ke neuron lapisan kedua untuk diproses lebih lanjut. Hasil pengolahan ini kemudian disebarkan ke lapisan berikutnya dan seterusnya sampai lapisan terakhir. Setiap unit menerima beberapa informasi dari unit lain (atau dari dunia luar melalui beberapa perangkat) dan proses informasi ini, yang akan dikonversi ke dalam output unit.

Tujuan dari jaringan adalah untuk mempelajari atau untuk menemukan beberapa hubungan antara pola input dan output, atau untuk menganalisis atau menemukan struktur pola input. Proses pembelajaran dicapai melalui modifikasi dari sambungan terbobot antara unit. Secara statistik, ini setara dengan menginterpretasi nilai hubungan antara unit-unit sebagai parameter (misalnya, seperti nilai-nilai a dan b dalam persamaan regresi oleh untuk diestimasi). Proses belajar menentukan "algoritma" yang digunakan untuk mengestimasi parameter (Abdi, 2003).

2.3 Kerangka Pemikiran



Gambar 2.1 Kerangka Konseptual

2.4 Hipotesis Penelitian

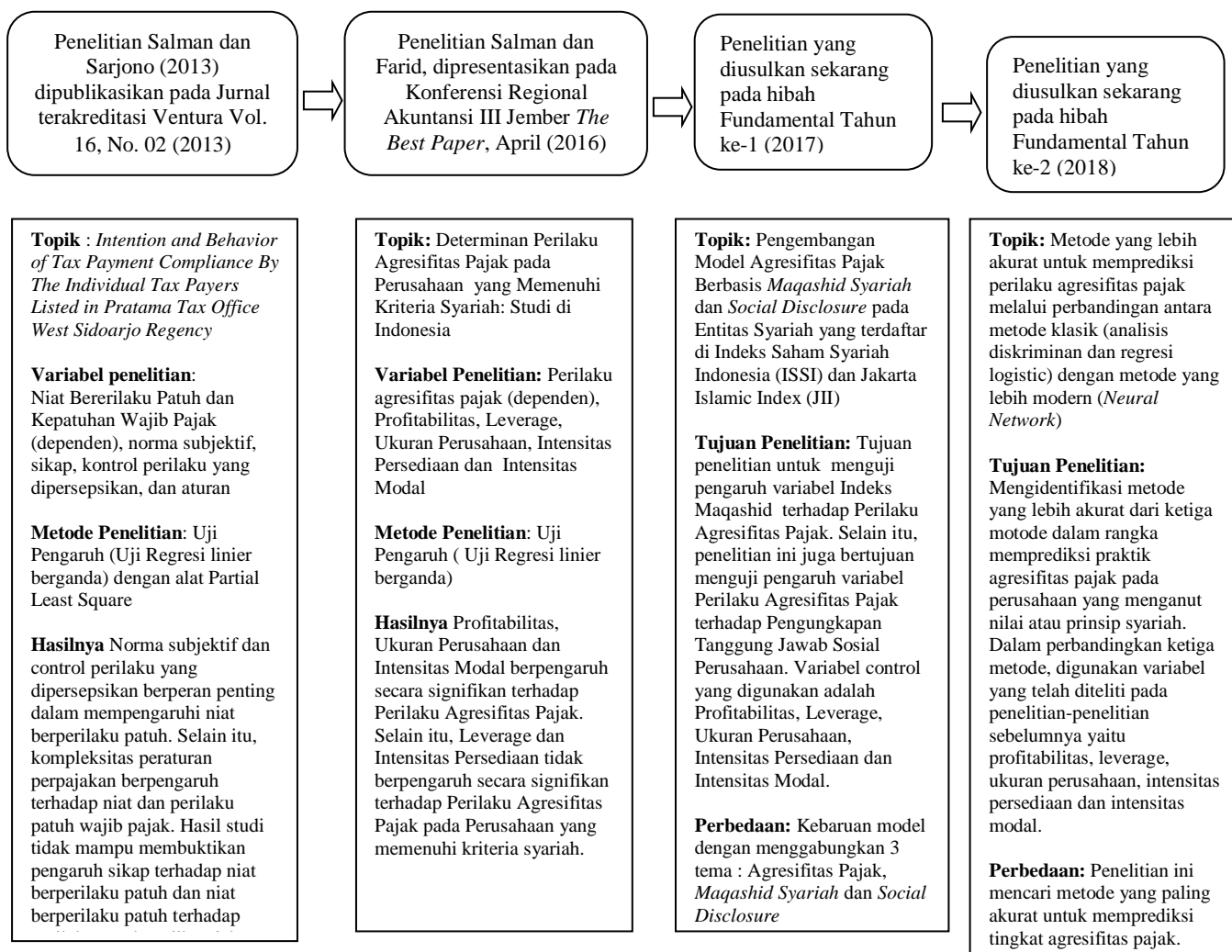
Hipotesis penelitian yang akan diuji dijelaskan sebagai berikut:

- H1: Indeks Maqashid Syariah berpengaruh pada Tingkat Agresivitas Pajak
- H2: Indeks Pengungkapan Tanggung Jawab Sosial Perusahaan berpengaruh pada Tingkat Agresivitas Pajak
- H3: Ukuran Perusahaan berpengaruh pada Tingkat Agresivitas Pajak
- H4: Profitabilitas berpengaruh pada Tingkat Agresivitas Pajak
- H5: Leverage berpengaruh pada Tingkat Agresivitas Pajak
- H6: Intensitas Modal berpengaruh pada Tingkat Agresivitas Pajak
- H7: Intensitas Persediaan berpengaruh pada Tingkat Agresivitas Pajak

2.5 Peta Penelitian

Tujuan penelitian tahun kedua ini adalah membangun model agresivitas pajak yang memberikan tingkat keakuratan yang lebih tinggi dalam rangka memprediksi tingkat agresivitas pajak pada entitas syariah yang terdaftar pada indeks saham syariah Indonesia (ISSI) dan Jakarta Islamic Index (JII). Adapun variabel yang digunakan untuk memprediksi tingkat agresivitas pajak meliputi indeks maqashid syariah, tingkat pengungkapan tanggung jawab sosial perusahaan, ukuran perusahaan, profitabilitas,

ukuran perusahaan, intensitas modal, dan intensitas persediaan. Roadmap penelitian dapat digambarkan seperti Gambar 2.2.



Gambar 2.2
Peta Penelitian

BAB 3

TUJUAN DAN MANFAAT PENELITIAN

3.1 Tujuan Penelitian

Penelitian ini secara umum bertujuan untuk mengembangkan model agresivitas pajak berbasis maqashid syariah dan *social disclosure*. Penelitian tahun kedua ini secara khusus bertujuan untuk mengetahui tingkat kekuatan model prediksi untuk memprediksi tingkat agresivitas pajak pada entitas syariah yang terdaftar di Indeks Saham Syariah Indonesia (ISSI). Dalam analisis model prediksi, penelitian ini menggunakan beberapa variabel independen variabel independen terhadap tingkat agresivitas pajak. Variabel independen yang akan diuji untuk memprediksi tingkat agresivitas pajak adalah indeks maqashid syariah, indeks pengungkapan tanggung jawab sosial perusahaan, ukuran perusahaan, profitabilitas, leverage, intensitas modal, dan intensitas persediaan.

Selain itu, penelitian ini bertujuan untuk mengetahui pengaruh signifikan dari variabel independen terhadap variabel dependen tingkat agresivitas pajak.

1. Memperoleh bukti empiris pengaruh indeks maqashid syariah terhadap tingkat agresivitas pajak pada entitas syariah yang terdaftar di Indeks Saham Syariah Indonesia (ISSI) dan Jakarta Islamic Index (JII); dan
2. Memperoleh bukti empiris pengaruh tingkat pengungkapan tanggung jawab sosial perusahaan terhadap tingkat agresivitas pajak pada entitas syariah yang terdaftar di Indeks Saham Syariah Indonesia (ISSI) dan Jakarta Islamic Index (JII).
3. Memperoleh bukti empiris pengaruh ukuran perusahaan terhadap tingkat agresivitas pajak pada entitas syariah yang terdaftar di Indeks Saham Syariah Indonesia (ISSI) dan Jakarta Islamic Index (JII).
4. Memperoleh bukti empiris pengaruh profitabilitas terhadap tingkat agresivitas pajak pada entitas syariah yang terdaftar di Indeks Saham Syariah Indonesia (ISSI) dan Jakarta Islamic Index (JII).
5. Memperoleh bukti empiris pengaruh leverage terhadap tingkat agresivitas pajak pada entitas syariah yang terdaftar di Indeks Saham Syariah Indonesia (ISSI) dan Jakarta Islamic Index (JII).

6. Memperoleh bukti empiris pengaruh intensitas modal terhadap tingkat agresivitas pajak pada entitas syariah yang terdaftar di Indeks Saham Syariah Indonesia (ISSI) dan Jakarta Islamic Index (JII).
7. Memperoleh bukti empiris pengaruh intensitas persediaan terhadap tingkat agresivitas pajak pada entitas syariah yang terdaftar di Indeks Saham Syariah Indonesia (ISSI) dan Jakarta Islamic Index (JII).

3.2 Manfaat Penelitian

Hasil penelitian ini diharapkan dapat memberikan kontribusi teori dan kebijakan di bidang perpajakan. Riset ini diharapkan dapat memperkaya teori dan literature dalam konteks agresivitas pajak karena hasil penelitian diharapkan dapat mengembangkan Model Prediksi Agresivitas Pajak Berbasis *Maqashid Syariah* dan *Social Disclosure* bagi entitas yang memenuhi kriteria syariah yang sahamnya terdaftar di Indeks Saham Syariah Indonesia (ISSI) dan Jakarta Islamic Index (JII). Kontribusi kebijakan ditujukan bagi fiskus selaku otoritas pajak dalam upaya menetapkan kebijakan pajak yang dapat mengurangi praktik agresivitas pajak.

3.3 Luaran Penelitian

Luaran penelitian ini dalam bentuk luaran wajib dan luaran tambahan.

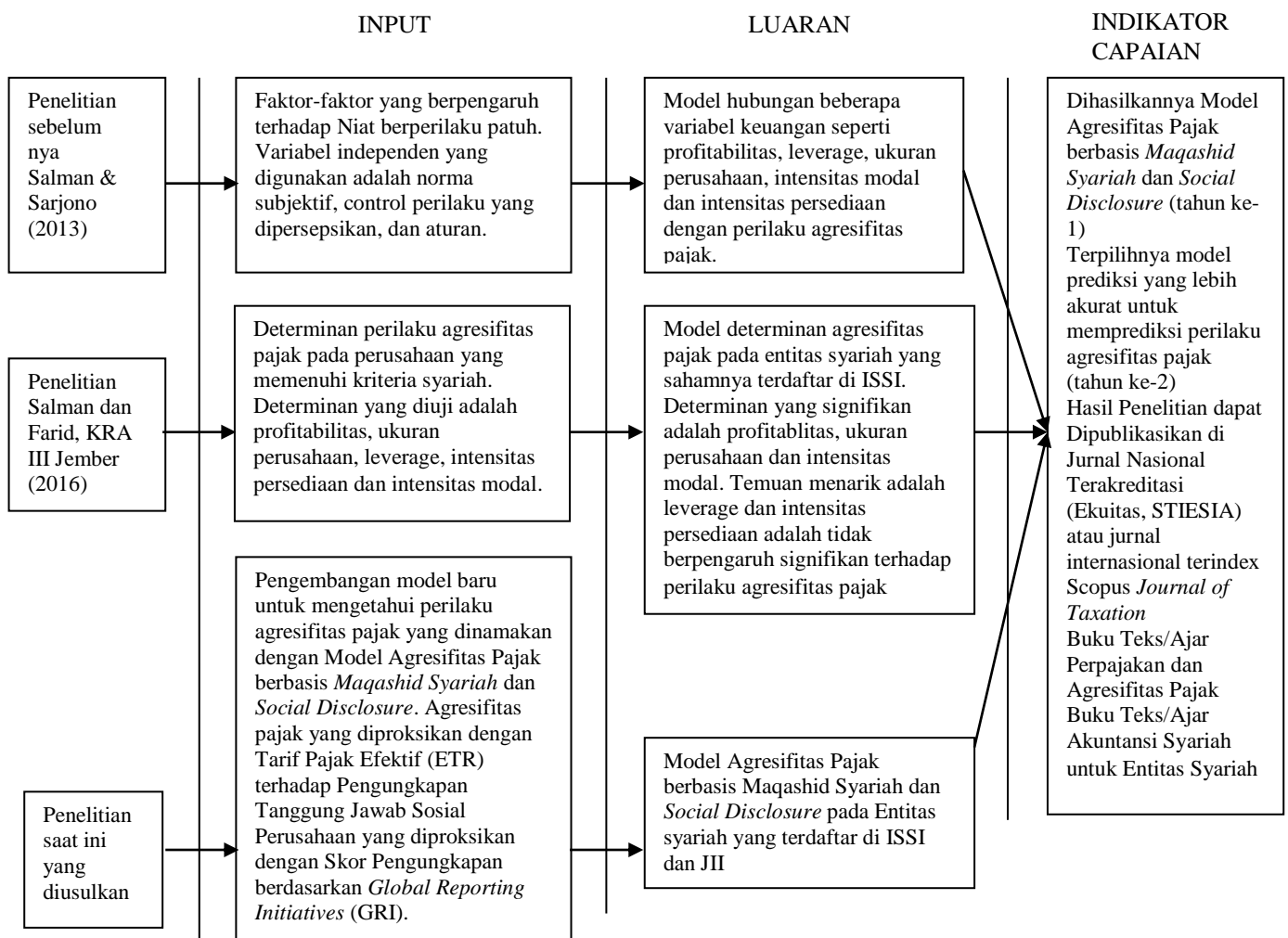
1. **Luaran Wajib:** Publikasi dalam *International Journal of Business and Management Invention* (ISSN: 2319-8028) yang terindeks Copernicus, Ultrichs Web, dan Google Scholar, Cabell's Directories. Selain, hasil penelitian ini juga dalam proses publikasi pada *International Journal of Research Science & Management* yang terindeks Thomson Reuters, DOAJ, Global Impact Factor (GIF), CiteFactor, Academia.edu, Copernicus, Ultrichs Web, Google Scholar, CiteSeer, dan lain-lain. Hasil penelitian juga dipublikasikan pada *International Journal of Civil Engineering and Technology* (IJCIET) Volume 9, Issue 9, September 2018 yang terindeks Scopus Q3. Hasil penelitian juga *International Journal of Engineering Research & Technology* (IJERT) yang terindeks Scopus.
2. **Luaran Tambahan:** Luaran tambahan adalah dihasilkannya buku ajar Perpajakan. Buku ajar yang dihasilkan akan berbeda dengan buku ajar Perpajakan selama ini yang

hanya menekankan pada aspek teknis perhitungan dan pelaporan pajak. Pada buku ajar ini akan dimasukkan teori dan konsep agresivitas pajak serta hasil empiris dari penelitian ini. Buku ajar ini diberi judul “Pengantar Perpajakan dalam Konteks Kepatuhan dan Agresivitas Pajak”. Buku dalam proses finalisasi akhir sebelum submit ke Penerbit Indeks Jakarta dan masih dalam proses review oleh editor. Buku sudah dilengkapi dengan materi dan segala kelengkapannya seperti prakata (pendahuluan), daftar pustaka, indeks, glosarium, riwayat hidup, dan resensi buku.

BAB 4 METODE PENELITIAN

4.1 Tahapan Penelitian

Pada bagian ini akan digambarkan apa yang sudah dilaksanakan, yang akan dikerjakan dan peluang untuk melakukan penelitian selanjutnya dengan penahapan yang jelas bagaimana input, luaran dan indikator capaian seperti yang nampak pada gambar 4.1.



Gambar 4.1. Gambar Fishbone Input, Luaran dan Indikator Capaian Penelitian

4.1 Populasi, Pemilihan Sampel, dan Pengumpulan Data

Populasi penelitian adalah perusahaan yang tercatat di Bursa Efek Indonesia (BEI). Sampel dipilih menurut kriteria tertentu (dengan metode *purposive sampling*) dari tahun 2011 sampai dengan tahun 2015. Data yang digunakan dalam penelitian ini diambil dari *Indonesian Capital Market Directory* (ICMD), maupun yang tercantum di *idx.co.id*. Selain itu, indikator mengenai pengungkapan tanggung jawab sosial perusahaan diperoleh dari website www.globalreporting.org. Kriteria yang digunakan dalam pemilihan sampel meliputi:

1. Perusahaan yang menerbitkan laporan keuangan dan laporan tahunan secara berturut-turut periode 2011 – 2015.
2. Perusahaan yang mempunyai laba positif secara berturut-turut periode 2011 – 2015 karena laba negatif dapat mendistorsi perhitungan tingkat agresivitas pajak.
3. Perusahaan yang mempunyai *Effective Tax Rate* (ETR) kurang dari satu secara berturut-turut periode 2011 – 2015 karena ETR yang lebih dari satu akan menyebabkan masalah dalam estimasi model.
4. Perusahaan yang memiliki data yang memadai tentang pengungkapan tanggung jawab sosial perusahaan secara berturut-turut periode 2011 – 2015.

4.2 Pengukuran Variabel Penelitian

Variabel penelitian terbagi menjadi 2 (dua) yaitu variabel dependen dan variabel independen. Variabel dependen adalah tingkat agresivitas pajak (Y). Adapun variabel independen meliputi: indeks maqashid syariah (X_1), indeks pengungkapan tanggung jawab sosial perusahaan (X_2), ukuran perusahaan (X_3), profitabilitas (X_4), leverage (X_5), intensitas modal (X_6), dan intensitas persediaan (X_7).

Agresivitas pajak merupakan suatu tindakan yang mempunyai tujuan untuk mengurangi penghasilan kena pajak melalui perencanaan pajak (*tax planning*) serta menggunakan metode yang diklasifikasikan atau tidak diklasifikasikan sebagai penggelapan pajak. (Frank et al., 2009). Agresivitas pajak diproksikan dengan ETR. ETR diukur dengan beban pajak penghasilan berjalan dibagi dengan penghasilan sebelum pajak. Perusahaan yang melakukan agresivitas pajak diberi kode 1 dan perusahaan yang tidak melakukan agresivitas pajak diberi 0.

Entitas syariah menjalankan nilai atau prinsip syariah (Salman, 2012). Maqashid syariah merupakan konsep yang meliputi *guarding religion, soul, mind, family* dan *wealth* (Ghazali, 1991). Indikator indeks maqashid syariah dalam penelitian ini menggunakan indikator yang dikemukakan oleh Zahrah (1958) dalam Antonio et. al (2012), yang membagi *maqashid syariah* menjadi 3 kategori yaitu *tahdzib al-fard (education for individuals)*, *iqamah al-adl (justice)*, dan *maslahah (benefit/welfare)*.

Tanggung jawab sosial perusahaan merupakan komitmen usaha untuk bertindak secara etis, beroperasi secara legal dan berkontribusi untuk meningkatkan kualitas hidup dari karyawan dan keluarganya, komunitas lokal, dan komunitas luas (Anatan, 2013). Pada penelitian ini, indeks pengungkapan tanggung jawab social perusahaan digunakan indikator pedoman dari *Global Reporting Initiatives (GRI)*. GRI terdiri dari kategori ekonomi (9 indikator), lingkungan (34 indikator), praktek ketenagakerjaan dan kenyamanan bekerja (16 indikator), hak asasi manusia (12 indikator), masyarakat (11 indikator), dan tanggung jawab atas produk (9 indikator). Skor dari setiap *items* pengungkapan dijumlahkan dan dibagi dengan total *items* pengungkapan yang diharapkan untuk setiap indikator sehingga diperoleh skor pengungkapan per indikator.

Karakteristik perusahaan dalam penelitian ini meliputi ukuran perusahaan, profitabilitas, leverage, intensitas modal, dan intensitas persediaan. Ukuran perusahaan adalah suatu skala dimana dapat diklasifikasikan besar kecil perusahaan menurut berbagai cara, antara lain: total aktiva, log size, nilai pasar saham, dan lain- lain (Sari, 2013). Ukuran Perusahaan pada penelitian diukur dengan total penjualan. Profitabilitas merupakan ukuran yang digunakan untuk mengetahui kemampuan perusahaan dalam menghasilkan laba selama periode tertentu dan juga memberikan gambaran tentang tingkat efektifitas manajemen dalam melaksanakan kegiatan operasinya (Zulaikha dan Ardiyansah, 2014). Profitabilitas pada penelitian ini diukur dengan ROA, yaitu perbandingan profitabilitas sebelum pajak terhadap total aset. Leverage mencerminkan risiko keuangan perusahaan karena dapat menggambarkan struktur modal perusahaan dan mengetahui resiko tak tertagihnya suatu utang (Sari, 2013). Leverage perusahaan diukur dengan total kewajiban dibagi dengan total aset. Intensitas modal merupakan ukuran perusahaan yang diinvestasikan dalam bentuk aset tetap untuk mengetahui seberapa besar aset perusahaan yang digunakan untuk mengetahui prospek di masa mendatang melalui

investasi. Intensitas modal pada penelitian ini diukur dengan aset tetap dibagi dengan total aset. Adapun intensitas persediaan diukur dengan persediaan dibagi dengan total aset.

4.3 Teknik Analisis Data

Teknik analisis data yang digunakan dalam penelitian ini adalah statistik deskriptif, uji regresi berganda, dan metode prediksi tingkat agresivitas pajak dengan melakukan perbandingan metode regresi logistik dan neural network

4.4.1 Statistik Deskriptif

Analisis deskriptif digunakan untuk menggambarkan karakteristik data dalam penelitian. Statistik deskriptif dalam penelitian ini meliputi mean, median dan modus yang merupakan ukuran tendensi sentral; standar deviasi atau varians yang merupakan ukuran variabilitas; nilai minimum dan maksimum, serta kurtosis dan skewness.

4.4.2 Uji Regresi Berganda

Uji ini bertujuan untuk memprediksi tingkat agresivitas pajak dengan menggunakan variabel independen yang meliputi: indeks maqashid syariah, tingkat pengungkapan tanggung jawab sosial perusahaan, ukuran perusahaan, *return on asset* (ROA), leverage, intensitas modal, dan intensitas persediaan. Variabel independen menggunakan data tahun ke-t, sedangkan variabel dependen (tingkat agresivitas pajak) menggunakan data tahun ke-t+1. Berikut adalah persamaan regresi berganda:

$$ETR_{t+1} = \alpha_0 + \beta_1 IMS_t + \beta_2 TCSR_t + \beta_3 SIZE_t + \beta_4 ROA_t + \beta_5 LEV_t + \beta_6 CAPINT_t + \beta_7 INVINT_t + e \dots (1)$$

Keterangan:

ETR_{t+1} = tarif pajak efektif (*effective tax rate*) pada tahun $t+1$

IMS_t = indeks maqashid syariah pada tahun t

$TCSR_t$ = tingkat pengungkapan tanggung jawab sosial perusahaan pada tahun t

$SIZE_t$ = ukuran perusahaan (*company size*) pada tahun t

ROA_t = *return on investment* pada tahun t

LEV_t = leverage pada tahun t

$CAPINT_t$ = intensitas modal (*capital intensity*) pada tahun t

$INVINT_t$ = intensitas persediaan (*inventory intensity*) pada tahun t

4.4.3 Metode Prediksi Tingkat Agresivitas Pajak

Dalam penelitian ini, masing-masing data dibagi menjadi dua kelompok yaitu data untuk pemodelan (*training*) dan evaluasi (*testing*) dimana perbandingan *training* dan *testing* adalah 2:2. Selanjutnya akan dilakukan pengklasifikasian dengan regresi logistik dan Neural Networks. Kedua metode tersebut diaplikasikan dengan menggunakan *software* statistika SPSS versi 19 yang menyediakan fasilitas untuk analisis data dengan ketiga metode tersebut. Periode penelitian adalah tahun 2011 – 2015. Data untuk pemodelan (*training*) dan evaluasi (*testing*) terbagi menjadi 2 (dua) yaitu:

1. Perbandingan 2:2 menggunakan data tahun yang sama antara variabel X dan Y. Kedua variabel tersebut (X dan Y) masing-masing menggunakan data pemodelan (*training*) tahun 2011 – 2012. Adapun data evaluasi (*testing*) menggunakan tahun 2013 – 2014.
2. Perbandingan 2:2 menggunakan data tahun yang berbeda antara variabel X dan Y. Variabel X digunakan untuk memprediksi variabel Y sehingga variabel X menggunakan data tahun sebelumnya sedangkan variabel Y menggunakan data tahun berikutnya. Sehingga data untuk pemodelan (*training*) pada variabel X menggunakan tahun 2011 – 2012 sedangkan variabel Y menggunakan data tahun 2012 – 2013. Adapun untuk evaluasi (*testing*), variabel X menggunakan data tahun 2012 – 2013 sedangkan variabel Y menggunakan data tahun 2013 -2014.

BAB 5

HASIL DAN LUARAN YANG DICAPAI

5.1 Populasi dan Sampel Penelitian

Berdasarkan *screening* data diketahui bahwa seluruh entitas syariah yang terdaftar di *Jakarta Islamic Index* (JII) juga terdaftar di Indeks Saham Syariah Indonesia (ISSI). Jumlah entitas syariah yang terdaftar di JII berjumlah 30 entitas. Sedangkan ISSI meliputi seluruh saham syariah di Bursa Efek Indonesia (BEI). Proses identifikasi data, dihasilkan 144 perusahaan yang secara berturut-turut sahamnya terdaftar pada Indeks Saham Syariah Indonesia (ISSI) pada periode 2011 sampai 2014. Namun, dari jumlah tersebut akhirnya diperoleh sampel sebesar 83 perusahaan per tahun sehingga total data panel selama 4 (empat) tahun sebanyak 332 (83 x 3 tahun). Tabel 5.1 menunjukkan sampel dari penelitian ini.

Tabel 5.1
Sampel Penelitian

No	Keterangan	Jumlah
1	Berturut-turut masuk indeks saham periode 2011-2014	144
2	Laporan keuangan tidak lengkap	(5)
3	Nilai persediaan tidak ada	(6)
4	Penghasilan sebelum pajak negative	(49)
5	Beban pajak penghasilan negative	(7)
6	Tidak lengkap data lainnya	(7)
	Jumlah sampel penelitian	70
	Jumlah data panel yang digunakan	284

Sumber : Data diolah

5.2 Statistik Deskriptif

Berikut adalah hasil statistic deskriptif

Tabel 5.2
Statistik Deskriptif

	N	Minimu m	Maximu m	Mean	Std. Deviation
IMS	284	.00	.62	.0927	.06781
ETR	284	.00	.66	.2538	.09274
ICSR	284	.01	.65	.2742	.10997
SIZE	284	10.74	15.56	12.4519	.70700
ROA	284	.01	.96	.1457	.11563
LEV	284	.10	.92	.3928	.15936
CAPINT	284	.00	.92	.2683	.19631
INVINT	284	.00	.95	.1789	.13113
Valid N (listwise)	284				

Sumber: olahan data SPSS

Hasil statistik deskriptif menunjukkan bahwa:

1. Nilai rata-rata (*mean*) dari indeks maqashid syariah adalah 0.0927 dengan standar deviasi sebesar 0.06781.
2. Nilai rata-rata (*mean*) dari tarif pajak efektif (*effective tax rate*) adalah 0.2538 atau dengan standar deviasi sebesar 0.09274.
3. Nilai rata-rata (*mean*) dari tingkat pengungkapan tanggung jawab sosial perusahaan adalah 0.2742 dengan standar deviasi sebesar 0.10997.
4. Nilai rata-rata (*mean*) dari ukuran perusahaan (*size*) adalah 12.4519 dengan standar deviasi sebesar 0.70700.
5. Nilai rata-rata (*mean*) dari ROA adalah 0.1457 atau 14.57% dengan standar deviasi sebesar 11.56%.
6. Nilai rata-rata (*mean*) dari Leverage adalah 39.28% dengan standar deviasi sebesar 15.936%.
7. Nilai rata-rata intensitas modal (*capital intensity*) adalah 0.2683 atau 26.83% dengan standar deviasi sebesar 0.1963 atau 19.63%.
8. Nilai rata-rata intensitas persediaan (*inventory intensity*) adalah 0.1789 atau 17.89% dengan standar deviasi sebesar 0.13113 (13.11%).

5.3 Analisis Regresi Berganda

Hasil analisis regresi dapat dilihat pada Tabel 5.3 berikut.

Tabel 5.3
Analisis Regresi

	Unstandardized Coefficients		Standardized	T	Sig.
	B	Std. Error	Coefficients Beta		
(Constant)	.500	.088		5.677	.000
IMS	-.920	.085	-.674	-10.840	.000
ICSR	.022	.047	.027	.476	.634
SIZE	-.015	.007	-.117	-2.055	.041
ROA	.176	.052	.219	3.401	.001
LEV	-.017	.030	-.029	-.560	.576
CAPINT	.022	.025	.046	.875	.382
INVINT	-.013	.036	-.018	-.355	.723

Berdasarkan hasil olah SPSS pada Tabel 5.3 dapat dibuat persamaan regresi untuk model regresi yaitu:

$$\text{ETR} = 0.500 - 0.920 \text{ IMS} + 0.022 \text{ ICSR} - 0.015 \text{ SIZE} + 0.176 \text{ ROA} - 0.017 \text{ LEV} + 0.022 \text{ CAPINT} - 0.013 \text{ INVINT}$$

Berdasarkan persamaan regresi di atas, dapat diuraikan sebagai berikut:

1. β_0 sebesar 0.500 menunjukkan bahwa jika nilai semua variabel X adalah 0 maka nilai ETR sebesar 0.500.
2. β_1 sebesar -0.920 menunjukkan bahwa nilai ETR akan menurun sebesar 9.2% apabila variabel IMS naik sebesar 10%. Koefisien regresi adalah negatif menunjukkan adanya hubungan negatif antara ETR dan IMS yaitu semakin naik IMS maka semakin turun ETR.
3. β_2 sebesar 0.022 menunjukkan bahwa nilai ETR akan naik sebesar 0.22% apabila variabel ICSR naik sebesar 10%. Koefisien regresi adalah positif menunjukkan adanya hubungan positif antara ETR dan ICSR yaitu semakin tinggi ICSR maka semakin tinggi ETR.
4. β_3 sebesar -0.015 menunjukkan bahwa nilai ETR akan menurun sebesar 0.0015 atau 0,15% apabila variabel Ukuran Perusahaan naik sebesar 10% satuan. Koefisien regresi adalah negatif.

5. β_4 sebesar 0.176 menunjukkan bahwa nilai ETR akan naik sebesar 0.0176 atau 1.76% apabila ROA naik sebesar 10%. Koefisien regresi adalah positif menunjukkan adanya hubungan positif antara ETR dan ROA yaitu semakin naik ROA semakin naik ETR.
6. β_5 sebesar -0.017 menunjukkan bahwa nilai ETR akan turun sebesar 0.0017 atau 0,17% apabila leverage naik sebesar 10%. Koefisien regresi adalah negatif.
7. β_6 sebesar 0.022 menunjukkan bahwa nilai ETR akan naik sebesar 0.0022 atau 0.22 % bila intensitas modal naik sebesar 10 %. Koefisien regresi adalah positif.
8. β_6 sebesar -0.013 menunjukkan bahwa nilai ETR akan turun sebesar 0.13% bila Intensitas Persediaan naik sebesar 10%. Koefisien regresi adalah negatif.

5.3 Hasil Pengujian Hipotesis

Berdasarkan Tabel 5.3 dapat diketahui bahwa terdapat 3 (tiga) variabel yang secara signifikan mempengaruhi variabel tingkat agresivitas pajak yaitu indeks maqashid syariah, ukuran perusahaan, dan profitabilitas. Adapun keempat variabel independen lainnya seperti Islamic CSR, leverage, intensitas modal, dan intensitas persediaan tidak signifikan karena nilai p nya dibawah 0,05 atau 0,10.

5.3.1 Pengaruh Indeks Maqashid Syariah terhadap Tingkat Agresivitas Pajak

Berdasarkan analisis sebelumnya, dapat disimpulkan bahwa indeks maqashid syariah memiliki pengaruh negatif dan signifikan terhadap agresivitas pajak. Hasil ini menunjukkan bahwa semakin tinggi indeks maqashid syariah maka tarif pajak efektif (ETR) lebih rendah. Tingkat pajak efektif yang rendah menunjukkan tingkat agresivitas pajak yang lebih tinggi. Temuan ini membuktikan secara empiris bahwa indeks maqashid syariah yang tinggi menghasilkan tingkat agresivitas pajak yang lebih tinggi. Temuan empiris ini didukung oleh ketentuan undang-undang perpajakan Indonesia yang diatur dalam Undang-undang Nomor 36 Tahun 2008 tentang Pajak Penghasilan yang mengkategorikan biaya penelitian, pendidikan, pelatihan dan iklan sebagai biaya yang dapat dikurangkan dari penghasilan sebagaimana diatur dalam Pasal 6 ayat (1) . Dengan demikian, perusahaan yang membayar biaya penelitian dan pengembangan yang lebih tinggi, pendidikan, pelatihan, dan iklan dalam laporan keuangan mereka mendapat manfaat dari pengurangan dalam beban pajak penghasilan.

5.3.2 Pengaruh Tingkat Pengungkapan Tanggung Jawab Sosial Islami terhadap Tingkat Agresivitas Pajak

Berdasarkan analisis sebelumnya, disimpulkan bahwa *Islamic CSR* tidak berpengaruh terhadap tingkat agresivitas pajak. Hal ini membuktikan bahwa tingkat agresivitas pajak pada entitas syariah tidak dipengaruhi dari tingkat pengungkapan tanggung jawab sosial perusahaan. Hal ini membuktikan bahwa pada penelitian ini teori keagenan tidak berlaku pada entitas syariah dalam hubungan antara tingkat pengungkapan tanggung jawab sosial dan tingkat agresivitas pajak. Berbeda menurut teori keagenan, dimana teori ini menjelaskan bahwa perusahaan yang melakukan pengungkapan tanggung jawab sosial yang lebih besar cenderung tidak melakukan agresivitas pajak.

5.3.3 Pengaruh Ukuran Perusahaan terhadap Tingkat Agresivitas Pajak

Berdasarkan hasil analisis, diketahui bahwa terdapat 3 (tiga) variabel yang berpengaruh secara signifikan terhadap tingkat agresivitas pajak yaitu indeks maqashid syariah, ukuran perusahaan, dan profitabilitas. Ukuran perusahaan berpengaruh negatif terhadap tingkat pajak efektif (*effective tax rate*), sedangkan profitabilitas berpengaruh positif terhadap tingkat pajak efektif (*effective tax rate*). Semakin besar ukuran perusahaan menghasilkan pajak yang dibayar semakin kecil. Perusahaan dengan ukuran perusahaan yang besar memiliki ketersediaan kompetensi SDM yang cukup tinggi sehingga perusahaan tersebut mampu melakukan upaya-upaya yang dapat memperkecil jumlah pajak penghasilan. Hasil studi ini sejalan dengan Hsieh (2012) yang menemukan bahwa perusahaan yang memiliki ukuran perusahaan yang lebih besar dapat memanfaatkan insentif pajak yang lebih banyak sehingga dapat memperkecil jumlah pajak yang dibayar perusahaan. Perusahaan yang seperti ini melakukan tingkat agresivitas pajak yang tinggi.

5.3.4 Pengaruh Profitabilitas terhadap Tingkat Agresivitas Pajak

Hasil penelitian ini menunjukkan bahwa profitabilitas berpengaruh positif terhadap tingkat pajak agresif (*effective tax rate*). Hal ini mengindikasikan bahwa perusahaan yang memiliki tingkat profitabilitas yang tinggi cenderung membayar pajak penghasilan yang lebih besar pula. Hasil studi ini sejalan dengan ketentuan yang terdapat dalam Undang-Undang Perpajakan Nomor 36 Tahun 2008 tentang Pajak Penghasilan Pasal 31 E. Dalam ketentuan tersebut dinyatakan bahwa Wajib Pajak Badan Nalam Negeri (WPBDN) yang mempunyai peredaran bruto sampai dengan Rp50.000.000.000 (lima puluh miliar rupiah) mendapatkan

fasilitas berupa pengurangan tarif sebesar 50% (lima puluh persen) dari tarif sebagaimana dimaksud dalam Pasal 17 ayat (1) huruf b dan ayat (2a) yang dikenakan atas Penghasilan Kena Pajak dari bagian peredaran bruto sampai dengan Rp4.800.000.000 (empat miliar delapan ratus juta rupiah). Ketentuan ini mengindikasikan bahwa WPBDN yang peredaran bruto melebihi 50M tidak mendapatkan fasilitas pengurangan pajak. Hasil studi ini juga mendukung studi sebelumnya yang dilakukan Zemzem dan Ftouhi (2013) dan Hsieh (2012) yang membuktikan secara empiris pengaruh negatif profitabilitas terhadap tingkat agresivitas pajak.

5.3.5 Pengaruh Leverage terhadap Tingkat Agresivitas Pajak

Hasil penelitian menunjukkan bahwa leverage tidak berpengaruh terhadap tingkat agresivitas pajak pada entitas syariah di Indonesia. Hasil studi ini bertentangan dengan hasil studi sebelumnya sebagaimana yang dilakukan Gupta & Newberry (1997); Buijink & Janssen (2000); Adhikari et al. (2006) dan Richardson & Lanis (2007) yang membuktikan adanya pengaruh negative terhadap tingkat agresivitas pajak. Demikian pula hasil studi ini berbeda dengan studi Hanum dan Zulaikha (2013); Wang, Campbell and Johnson (2014); dan Hsieh (2012) yang berhasil membuktikan secara empiris pengaruh positif leverage terhadap tingkat agresivitas pajak. Hasil penelitian ini didukung dengan data empiris rata-rata rasio leverage yang rendah yang dimiliki entitas syariah di Indonesia karena entitas syariah yang terdaftar di Jakarta Islamic Index (JII) dan Indeks Saham Syariah Indonesia (ISSI) memiliki batasan jumlah beban atau kewajiban bunga. Hal ini menyebabkan entitas syariah tidak melakukan praktik agresivitas pajak yang berkaitan dengan beban atau kewajiban bunga.

5.3.6 Pengaruh Intensitas Modal terhadap Tingkat Agresivitas Pajak

Sebagaimana leverage, hasil penelitian ini juga tidak berhasil menemukan pengaruh intensitas modal terhadap tingkat agresivitas pajak. Hasil penelitian ini sejalan dengan Hanum dan Zulaikha (2013), tetapi bertentangan dengan studi Gupta dan Newberry (1997) dan Hsieh (2012) yang keduanya berhasil membuktikan secara empiris pengaruh negatif intensitas modal terhadap tingkat agresivitas pajak. Hal yang membedakan penelitian ini dengan penelitian-penelitian sebelumnya adalah pada objek yang diteliti karena penelitian ini menggunakan entitas syariah yang terdaftar di Indeks Saham Syariah Indonesia (ISSI) dan Jakarta Islamic Index (JII). Hasil penelitian ini mengindikasikan bahwa entitas syariah tidak melakukan praktik penghindaran atau agresivitas pajak melalui pemanfaatan celah atau

loopholes UU Perpajakan yang berkaitan dengan metode penyusutan aktiva tetap.

5.3.7 Pengaruh Intensitas Persediaan terhadap Tingkat Agresivitas Pajak

Penelitian ini tidak berhasil membuktikan secara empiris pengaruh intensitas persediaan terhadap tingkat agresivitas pajak. Hasil penelitian ini sejalan dengan penelitian sebelumnya yang dilakukan Hanum dan Zulaikha (2013) yang tidak menemukan pengaruh intensitas persediaan terhadap tingkat agresivitas pajak. Hasil penelitian saat ini tetapi kontras dengan hasil penelitian Hsieh (2012) yang berhasil membuktikan pengaruh intensitas persediaan terhadap tingkat agresivitas pajak. Hasil penelitian mengindikasikan bahwa entitas syariah tidak melakukan agresivitas pajak melalui jumlah persediaan yang dimilikinya. Hal ini disebabkan karena tuntutan dari prinsip syariah agar sebuah entitas syariah menyajikan dan melaporkan persediaan barang dagang secara jujur serta menentukan nilai penjualan dengan margin yang wajar sehingga entitas syariah tidak mempunyai insentif atau dorongan untuk melakukan agresivitas pajak melalui persediaan barang dagang-nya.

5.4 Regresi Logistik

5.4.1 Perbandingan Data Training dan Testing 2:2 (tahun yang sama)

Dilakukan pengolahan terhadap data tingkat agresivitas pajak yaitu tarif pajak efektif (*effective tax rate*) dengan data untuk pemodelan (*training*) dan evaluasi (*testing*) dengan perbandingan 2:2. Selanjutnya, dianalisis dengan metode regresi logistik dengan menggunakan bantuan *software* SPSS versi 20. Uji Hosmer and Lemeshow test digunakan sebagai uji *goodness of fit* untuk mengetahui apakah model dapat digunakan untuk menginterpretasikan hubungan antara *effective tax rate* (ETR) dengan ketujuh variabel independen. Hipotesis penelitian dari uji Hosmer and Lemeshow adalah

H_0 : Model Fit (model mampu menjelaskan data empiris)

H_1 : Model tidak Fit

Kriteria H_0 bila *p-value* uji Hosmer and Lemeshow yang berdistribusi Chi square lebih dari 0.05. hasil dari model tersebut dapat diketahui bahwa *p-value* $0.537 > 0.05$ sebagaimana dalam Tabel 5.4 maka dapat disimpulkan bahwa hipotesis nol tidak dapat ditolak yang artinya bahwa model fit.

Tabel 5.4
Hasil Uji Hosmer and Lemeshow

Step	Chi-square	Df	Sig.
1	6.993	8	.537

Model Summary menggunakan Cox and Snell R Square dan Nagelkerke R Square. Dari hasil model dapat diketahui bahwa nilai Cox and Snell R Square sebesar 0.207 dan Nagelkerke R Square sebesar 0.280. Variabel *Effective Tax Rate* (ETR) dapat dijelaskan oleh variabel independen dalam model sebesar 20.7% (Cox and Snell) dan 28% (Nagelkerke) sebagaimana dalam Tabel 5.5, sedangkan sisanya dijelaskan oleh faktor-faktor di luar model.

Tabel 5.5
Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	156.713 ^a	.207	.280

Hasil olahan statistik disajikan dalam tabel berikut ini:

Tabel 5.6
Hasil SPSS versi 20 untuk Pemodelan (*Training*) 2:2

	B	S.E.	Wald	df	Sig.	Exp(B)
IMS	24.906	6.378	15.251	1	.000	0.956
ICSR	-4.717	2.126	4.923	1	.027	.009
SIZE	.830	.355	5.462	1	.019	2.293
ROA	-8.136	2.884	7.956	1	.005	.000
LEV	-.198	1.388	.020	1	.887	.820
CAPINT	-.918	1.165	.620	1	.431	.399
INVINT	1.065	1.718	.385	1	.535	2.902
Constant	-9.541	4.087	5.450	1	.020	.000

Berdasarkan Tabel 5.6 di atas, dapat disimpulkan bahwa variabel IMS, ICSR, SIZE, dan ROA yang berpengaruh secara signifikan terhadap *effective tax rate* (ETR) sedangkan ketiga variabel lainnya (LEV, CAPINT, dan INVINT) tidak signifikan. Hal tersebut dapat dilihat pada nilai Wald yang lebih besar dari nilai tabel atau dengan melihat nilai signifikansi keduanya yang lebih

kecil dari 0.05.

Model regresi logistik untuk data *effective tax rate* (ETR) dengan perbandingan *training* dan *testing* 2:2 adalah sebagai berikut:

$$P(y = 1|x) = \frac{1}{1 + e^{-(-9,541 + 24,906x_1 - 4,717x_2 + 0,830x_3 - 8,136x_4 - 0,198x_5 - 0,918x_6 + 1,065x_7)}}$$

atau dapat juga dibuat dengan persamaan berikut ini:

$$\ln\left(\frac{p}{1-p}\right) = -9,541 + 24,906x_1 - 4,717x_2 + 0,830x_3 - 8,136x_4 - 0,198x_5 - 0,918x_6 + 1,065x_7$$

Dari model di atas, dapat diterjemahkan atau ditafsirkan sebagai berikut (dengan menggunakan nilai Exp B):

- a. IMS dengan nilai B=24,906 dan Exp (B)=0,956 menunjukkan bahwa setiap kenaikan 1 indeks maqashid syariah maka kemungkinan perusahaan melakukan agresivitas pajak akan meningkat sebesar 0.956. Arah hubungan positif antara kedua variabel tersebut sebagaimana dalam hasil output SPSS mendukung teori keagenan (*agency theory*) yang menjelaskan bahwa semakin tinggi indeks maqashid syariah akan kemungkinan terjadinya agresivitas pajak akan semakin besar.
- b. ICSR dengan nilai B=-4,717 dan Exp (B)= 0,009 menunjukkan bahwa setiap kenaikan 1 *Islamic CSR* maka kemungkinan perusahaan melakukan agresivitas pajak akan menurun sebesar 0,009. Arah hubungan negatif antara kedua variabel tersebut sebagaimana dalam hasil output SPSS mendukung teori keagenan (*agency theory*) yang menjelaskan bahwa semakin tinggi ICSR akan kemungkinan terjadinya agresivitas pajak akan semakin kecil.
- c. Ukuran Perusahaan (SIZE) dengan nilai B=0,830 dan Exp (B)=2,293 menunjukkan bahwa setiap kenaikan 1 ukuran perusahaan maka kemungkinan perusahaan melakukan agresivitas pajak akan naik sebesar 2,293. Arah hubungan positif antara kedua variabel tersebut sebagaimana dalam hasil output SPSS mendukung teori keagenan dimana perusahaan yang besar memiliki sumber daya manusia yang memadai untuk melakukan agresivitas pajak.
- d. ROA dengan nilai B=-8.136 dan Exp (B)=0,000 menjelaskan bahwa semakin tinggi

profitabilitas semakin kecil kemungkinan perusahaan melakukan agresivitas pajak. Hal ini disebabkan karena perusahaan yang memiliki tingkat profitabilitas yang tinggi cenderung akan membayar pajak yang lebih tinggi.

- e. Leverage dengan nilai $B = -0,198$ dan $Exp(B) = 0,820$ menjelaskan bahwa semakin tinggi leverage semakin kecil kemungkinan perusahaan melakukan agresivitas pajak.
- f. Intensitas Modal dengan nilai $B = -0,918$ dan $Exp(B) = 0,399$ menunjukkan bahwa setiap kenaikan 1 intensitas modal maka kemungkinan terjadinya agresivitas pajak akan menurun sebesar 0,918. Hubungan antara *financial distress* dengan Kepemilikan manajemen adalah negative seperti ditunjukkan oleh nilai B sebesar -0,918.
- g. Intensitas Persediaan dengan nilai $B = 1,065$ dan $Exp(B) = 2,902$ menunjukkan adanya hubungan positif antara intensitas persediaan dengan agresivitas pajak. Artinya setiap kenaikan 1 intensitas persediaan maka terjadinya agresivitas pajak meningkat sebesar 1,065 kali.

Berikut akan ditunjukkan ketepatan hasil klasifikasi pada model regresi seperti ditunjukkan pada Tabel 5.7.

Tabel 5.7.
Hasil Klasifikasi Data dengan metode Regresi Logistik untuk Pemodelan (*Training*) 2:2

Observed			Predicted		Percentage Correct
			ETR		
			.00	1.00	
Step 1	ETR	.00	37	20	64.9
		1.00	22	61	73.5
Overall Percentage					70.0

a. The cut value is .500

Tabel 5.7 di atas menunjukkan bahwa hasil klasifikasi data untuk pemodelan (periode tahun 2011 – 2012) dengan perbandingan *training* dan *testing* 2:2 dengan regresi logistik yaitu sebesar 70%. Dari hasil observasi sebanyak 57 perusahaan yang *non-default* ternyata secara tepat diprediksi sebanyak 37 perusahaan sehingga tingkat ketepatan prediksi-nya sebesar 64,9%. Sebaliknya dari hasil observasi sebanyak 83 perusahaan yang *default* ternyata secara tepat diprediksi sebanyak 61 perusahaan sehingga tingkat ketepatan prediksi-nya sebesar 73,5%.

Selanjutnya dilakukan klasifikasi data untuk data testing (periode 2013 – 2014)

dengan regresi logistik. Hasil yang diperoleh dimana ketepatan klasifikasinya adalah 75%. Tabel 5.8 berikut adalah hasil olahan SPSS.

Tabel 5.8
Hasil Klasifikasi Data dengan metode Regresi Logistik Data untuk Evaluasi (*Testing*) 2:2

Observed		Predicted		
		ETR		Percentage Correct
		.00	1.00	
ETR	.00	37	20	64.9
Step 1	1.00	15	68	81.9
Overall Percentage				75.0

a. The cut value is .500

5.4.2 Perbandingan Data Training dan Testing 2:2 (tahun yang berbeda)

Analisis di atas dilanjutkan untuk data dengan perbandingan *training* dan *testing* adalah 2:2 untuk periode tahun yang berbeda antara variabel X dan variabel Y. Variabel Y menggunakan data periode tahun berikutnya sedangkan variabel X menggunakan data tahun sebelumnya. Dari Uji Hosmer diketahui bahwa model yang digunakan dalam penelitian ini adalah fit karena nilai signifikansi sebesar 0.946 di atas 0.05. Hasil uji Hosmer dijelaskan dalam tabel berikut ini.

Tabel 5.9
Hasil Uji Hosmer and Lemeshow

Step	Chi-square	df	Sig.
1	2.809	8	.946

Dari *model summary*, dapat dilihat pada Cox and Snell R Square dan Nagelkerke R Square sebesar 22,3% dan 29,8% variabel agresivitas pajak dapat dijelaskan oleh variabel-variabel independen sedangkan sisanya dijelaskan oleh faktor-faktor di luar model. Hasil *model summary* dijelaskan pada Tabel 5.10 berikut ini.

Tabel 5.10
Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	157.731 ^a	.223	.298

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Hasil uji signifikansi pada tabel di bawah ini dapat ditemukan bahwa terdapat beberapa variabel yaitu IMS, ICSR, SIZE, ROA, dan CAPINT yang secara statistik signifikan mempengaruhi agresivitas pajak. Nilai signifikansi dari variabel-variabel tersebut dibawah 0.05 atau 0,1. Adapun variabel-variabel independen lainnya tidak berpengaruh secara signifikan terhadap agresivitas pajak adalah leverage (LEV) dan intensitas persediaan (INVINT). Tabel 5.11 berikut menjelaskan informasi tersebut.

Tabel 5.11
Hasil SPSS pada Data untuk Pemodelan (*Training*) 2:2

	B	S.E.	Wald	df	Sig.	Exp(B)
IMS	17.916	5.754	9.695	1	.002	60384966.134
ICSR	-4.003	2.165	3.418	1	.064	.018
SIZE	.840	.347	5.843	1	.016	2.315
ROA	-9.814	3.064	10.257	1	.001	.000
LEV	-1.000	1.517	.435	1	.510	.368
CAPINT	-3.783	1.209	9.786	1	.002	.023
INVINT	1.874	1.620	1.339	1	.247	6.514
Constant	-8.271	3.961	4.361	1	.037	.000

a. Variable(s) entered on step 1: IMS, ICSR, SIZE, ROA, LEV, CAPINT, INVINT.

Dari Tabel 5.11 di atas dapat dibuat model regresi logistic sebagai berikut:

$$\ln\left(\frac{p}{1-p}\right) = -8,271 + 17,916IMS - 4,003ICSR + 0,840SIZE - 9,814ROA - 1LEV - 3,783CAPINT + 1,874INVINT$$

Dari model di atas, dapat diterjemahkan atau ditafsirkan sebagai berikut (dengan menggunakan nilai Exp B):

a. IMS dengan nilai B=17,916 dan Exp (B)=0,134 menunjukkan bahwa setiap kenaikan 1

IMS maka kemungkinan perusahaan melakukan agresivitas pajak akan meningkat sebesar 60384966,134. Arah hubungan positif antara kedua variabel tersebut sebagaimana dalam hasil output SPSS mendukung teori yang menjelaskan bahwa semakin tinggi indeks maqashid syariah kemungkinan terjadinya agresivitas pajak akan semakin meningkat.

- b. ICSR dengan nilai $B=-4,003$ dan $\text{Exp}(B)=0,018$ menunjukkan bahwa setiap kenaikan 1 ICSR maka kemungkinan perusahaan melakukan agresivitas pajak akan menurun sebesar 0.018. Arah hubungan negatif antara kedua variabel tersebut sebagaimana dalam hasil output SPSS mendukung teori yang menjelaskan bahwa semakin banyak pengungkapan informasi tanggung jawab sosial perusahaan kemungkinan terjadinya agresivitas pajak akan semakin kecil.
- c. SIZE dengan nilai $B=0,840$ dan $\text{Exp}(B)=2,315$ menunjukkan bahwa setiap kenaikan 1 ukuran perusahaan maka kemungkinan perusahaan mengalami agresivitas pajak akan meningkat sebesar 2,315. Arah hubungan positif antara kedua variabel tersebut sebagaimana dalam hasil output SPSS mendukung teori keagenan yang menyatakan bahwa semakin besar ukuran perusahaan kemungkinan terjadinya agresivitas pajak semakin besar karena perusahaan memiliki sumber daya manusia yang memadai.
- d. ROA dengan nilai $B=-9,814$ dan $\text{Exp}(B)=0,000$ menjelaskan bahwa terdapat hubungan negatif antara agresivitas pajak dengan profitabilitas artinya semakin besar profitabilitas semakin kecil kemungkinan terjadinya agresivitas pajak karena perusahaan membayar pajak dalam jumlah yang lebih besar.
- e. LEV dengan nilai $B=-1,000$ dan $\text{Exp}(B)=0,368$ menjelaskan bahwa terdapat hubungan negatif antara agresivitas pajak dengan leverage artinya semakin tinggi leverage semakin rendah kemungkinan terjadinya agresivitas pajak sebesar 0,368 kali.
- f. CAPINT dengan nilai $B=-3,783$ dan $\text{Exp}(B)=0,023$ menunjukkan bahwa setiap kenaikan 1% tingkat intensitas modal maka kemungkinan terjadinya agresivitas pajak akan menurun sebesar 0,023 kali. Hubungan antara *financial distress* dengan Kepemilikan manajemen adalah negative seperti ditunjukkan oleh nilai $B=-3,783$.
- g. INVINT dengan nilai $B=1,874$ dan $\text{Exp}(B)=6,514$ menunjukkan adanya hubungan positif antara intensitas persediaan dengan agresivitas pajak. Artinya setiap kenaikan 1% intensitas modal maka terjadinya agresivitas pajak dapat meningkat sebesar 6,514

kali.

Berikut akan ditunjukkan ketepatan hasil klasifikasi pada model regresi seperti ditunjukkan pada Tabel 5.12.

Tabel 5.12
Hasil Klasifikasi Data dengan Regresi Logistik Data untuk Pemodelan (*Training*) 2:2

Observed			Predicted		
			ETR		Percentage Correct
			.00	1.00	
Step 1	ETR	.00	42	22	65.6
		1.00	23	53	69.7
Overall Percentage					67.9

a. The cut value is .500

Berdasarkan Tabel 5.12 di atas menunjukkan bahwa hasil klasifikasi data dengan perbandingan data *training* dan *testing* 2:2 pada tahun yang berbeda dengan regresi logistik adalah sebesar 67,9%. Dari hasil observasi sebanyak 64 perusahaan yang *non-default* ternyata secara tepat diprediksi sebanyak 42 perusahaan sehingga tingkat ketepatan prediksi-nya sebesar 65,6%. Sebaliknya dari hasil observasi sebanyak 76 perusahaan yang *default* ternyata secara tepat diprediksi sebanyak 53 perusahaan sehingga tingkat ketepatan prediksi-nya sebesar 69,7%.

Selanjutnya dilakukan klasifikasi data FD untuk data *testing* 2:2 (dimana variabel X menggunakan periode 2012-2013 sedangkan variabel Y menggunakan periode 2013 – 2014) dengan regresi logistik. Hasil yang diperoleh dimana ketepatan klasifikasinya adalah 72,1% sebagaimana ditunjukkan dalam Tabel 5.13.

Tabel 5.13
Hasil Klasifikasi Data dengan metode Regresi Logistik Data untuk Evaluasi (*Testing*) 2:2

Observed			Predicted		
			ETR		Percentage Correct
			.00	1.00	
Step 1	ETR	.00	32	25	56.1
		1.00	14	69	83.1
Overall Percentage					72.1

a. The cut value is .500

Berdasarkan Tabel 5.14 diketahui bahwa rata-rata tingkat ketepatan klasifikasi data *Financial Training* untuk pemodelan (*training*) dengan Regresi Logistik sebesar 74.5%. Sedangkan, untuk data *Financial Distress* untuk evaluasi (*testing*) diperoleh bahwa rata-rata tingkat ketepatan klasifikasi sebesar 79.4%.

Tabel 5.14
Ketepatan Klasifikasi Data *Financial Distress* dengan metode Regresi Logistik

Perbandingan <i>Training</i> : <i>Testing</i>	Tahun yang sama		Tahun yang berbeda		Rata2 Tingkat Ketepatan	
	2	2	2	2	Training	Testing
Ketepatan Klasifikasi	70	75	67,9	72,1	68,95	73,5

5.5 Neural Network

Metode NN merupakan metode kedua yang diterapkan untuk pengelompokan data pada laporan ini. Analisis Neural Network dengan menggunakan *software* SPSS versi 20, sebagaimana dalam analisis regresi logistik digunakan pada Data Agresivitas Pajak dengan perbandingan data untuk pemodelan (*training*) dan evaluasi (*testing*) adalah 2:2.

5.5.1 Perbandingan Data Training dan Testing 2:2 (Tahun yang Sama)

Hasil output tingkat ketepatan hasil klasifikasi dengan Neural Network ditunjukkan pada Tabel 5.15 berikut ini.

Tabel 5.15
Hasil Klasifikasi Data Metode Neural Network Data untuk Pemodelan (*Training*) 2:2

Sample	Observed	Predicted		
		.00	1.00	Percent Correct
Training	.00	52	5	91.2%
	1.00	11	72	86.7%
Overall Percent		45.0%	55.0%	88.6%

Dependent Variable: ETR

Berdasarkan Tabel 5.15 di atas menunjukkan bahwa secara keseluruhan hasil klasifikasi data Agresivitas Pajak untuk pemodelan (periode tahun 2011–2012) dengan perbandingan *training* dan *testing* 2:2 dengan Neural Network yaitu sebesar 88.6%. Dari

hasil observasi sebanyak 57 perusahaan yang *non-default* ternyata secara tepat diprediksi sebanyak 52 perusahaan sehingga tingkat ketepatan prediksi-nya sebesar 91.2%. Sebaliknya dari hasil observasi sebanyak 83 perusahaan yang *default* ternyata secara tepat diprediksi sebanyak 72 perusahaan sehingga tingkat ketepatan prediksi-nya sebesar 88.6%. Adapun untuk data testing periode tahun 2013–2014 menunjukkan tingkat keakuratan prediksi sebesar 95% sebagaimana ditunjukkan dalam Tabel 5.16.

Tabel 5.16

Hasil Klasifikasi Data dengan metode Neural Network Data untuk Evaluasi (*Testing*) 2:2

Sample	Observed	Predicted		
		.00	1.00	Percent Correct
Testing	.00	54	3	94.7%
	1.00	4	79	95.2%
	Overall Percent	41.4%	58.6%	95.0%

Dependent Variable: ETR

5.5.2 Perbandingan Data Training dan Testing 2:2 (Tahun yang Berbeda)

Hasil output tingkat ketepatan hasil klasifikasi dengan Neural Network dengan menggunakan data *training* periode 2011-2012 untuk variabel X dan periode 2012-2013 untuk variabel Y adalah ditampilkan pada Tabel 5.17 sebagai berikut.

Tabel 5.17

Hasil Klasifikasi Data metode Regresi Logistik Data untuk Pemodelan (*Training*) 2:2

Sample	Observed	Predicted		
		.00	1.00	Percent Correct
Training	.00	38	26	59.4%
	1.00	5	71	93.4%
	Overall Percent	30.7%	69.3%	77.9%

Dependent Variable: ETR

Berdasarkan Tabel 5.17 di atas, dapat diketahui bahwa tingkat ketepatan prediksi hasil observasi secara total adalah sebesar 77.9%. Dari hasil observasi sebanyak 64 perusahaan yang *non-default* ternyata secara tepat diprediksi sebanyak 38 perusahaan sehingga tingkat ketepatan prediksi-nya sebesar 59.4%. Sebaliknya dari hasil observasi sebanyak 76 perusahaan yang *default* ternyata secara tepat diprediksi sebanyak 71 perusahaan sehingga tingkat ketepatan prediksi-nya sebesar 93.9%.

Adapun untuk data testing menggunakan periode 2012 – 2013 untuk variabel X dan periode 2013 – 2014 untuk variabel Y menunjukkan tingkat keakuratan prediksi sebesar 80.7% sebagaimana ditampilkan pada Tabel 5.18. Berikut adalah hasil klasifikasinya dengan NN.

Tabel 5.18
Hasil Klasifikasi Data dengan metode Neural Network Data untuk Evaluasi (*Testing*) 2:2

Sample	Observed	Predicted		
		.00	1.00	Percent Correct
Testing	.00	36	21	63.2%
	1.00	6	77	92.8%
Overall Percent		30.0%	70.0%	80.7%

Dependent Variable: ETR

Dari hasil analisis data dengan menggunakan Neural Network sebagaimana dijelaskan sebelumnya, maka dihasilkan rata-rata tingkat ketepatan untuk data *training* dan *testing* (3:2 dan 2:2) adalah sebesar 91.4% dan 100%. Hal ini ditunjukkan oleh tabel 15.

Tabel 15
Ketepatan Klasifikasi Data *Financial Distress* dengan Neural Network

Perbandingan <i>Training</i> : <i>Testing</i>	Tahun sama		Tahun berbeda		Rata2 Tingkat Ketepatan	
	Training	Testing	Training	Testing	Training	Testing
Ketepatan Klasifikasi	88.6	95	77.9	80.7	83.25	87.85

Secara rata-rata, diperoleh bahwa ketepatan klasifikasi data Agresivitas Pajak *training* dan *testing* dengan NN lebih baik dibanding dengan regresi logistik.

BAB 6

KESIMPULAN DAN SARAN

6.1 Kesimpulan

Berdasarkan hasil analisis dan pembahasan dapat disimpulkan beberapa temuan sebagai berikut:

1. Rata-rata tingkat ketepatan klasifikasi data Agresivitas Pajak untuk data pemodelan (*training*) sebesar 68,95% untuk regresi logistik dan 83.25% untuk NN. Hasil ini menunjukkan bahwa secara metode, NN merupakan metode pengklasifikasian yang paling baik untuk data *training*.
2. Rata-rata tingkat ketepatan klasifikasi data Agresivitas Pajak untuk data evaluasi (*testing*) sebesar 73.5% untuk regresi logistik dan 87.85% untuk NN. Hasil ini menunjukkan bahwa secara metode, NN merupakan metode pengklasifikasian yang paling baik juga untuk data *testing*. Kedua temuan ini memberikan bukti bahwa secara metode, NN memberikan tingkat ketepatan prediksi yang lebih baik dibandingkan dengan Regresi Logistik.
3. Temuan ketiga adalah hasil pengklasifikasian data *testing* dengan rata-rata 80.675% lebih baik dibanding data *training* yang sebesar 76.1%.

6.2 Saran

Penelitian selanjutnya dapat memperluas penelitian ini dengan menambahkan variabel lainnya seperti tata kelola Islami dalam hubungannya dengan tingkat agresivitas pajak dan tingkat pengungkapan tanggung jawab sosial perusahaan. Selain itu, penelitian selanjutnya dapat lebih memfokuskan pada entitas perbankan syariah sebagai objek penelitian sehingga variabel tingkat pengungkapan tanggung jawab sosial dan indeks maqashid syariah dapat disesuaikan dengan kondisi pada perbankan syariah.

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LAMPIRAN-LAMPIRAN

Lampiran 1

Artikel telah dipublikasikan pada *International Journal of Business and Management Invention* (IJBMI) Terindeks Copernicus

New Insights Of Shariah Maqashid Index As Determinant Of Tax Aggressiveness Level

Kautsar Riza Salman¹, Muslich Anshori², Heru Tjaraka³

¹Airlangga University and STIE Perbanas Surabaya

²Airlangga University

³Airlangga University

Correspondence Author: Kautsar Riza Salman

ABSTRACT: *The practice of tax aggressiveness refers to the practice of allowable tax planning and tax planning practices prohibited by the Taxation Act. This practice aims to minimize the income tax expense. The weakness of the previous study is still limited to examine the effect of financial ratios on tax aggressiveness such as profitability ratios, leverage, firm size, capital intensity, and inventory intensity. The novelty offered in this study is the use of syariah maqashid index as a new insight that determines the level of tax aggressiveness. This study aims to obtain empirical evidence about the new influence of the index of syariah maqashid against the level of tax aggressiveness. The population used in this study is the sharia entity listed in the Indonesia Sharia Shares Index. Sampling method in this research used purposive sampling method. Samples are selected according to certain criteria such as successive companies listed in the index from 2011-2014. Other independent variables used in this study are profitability, firm size, leverage, capital intensity, and inventory intensity. This research has proved empirically the positive influence of maqashid syariah index toward tax aggressiveness level. The larger index of maqashid syariah results in a greater level of tax aggressiveness. In addition, this study also found the effect of firm size and profitability on the level of tax aggressiveness. In contrast, the results of this study also indicate that leverage, inventory intensity, and capital intensity do not affect the level of tax aggressiveness.*

KEYWORDS: *index of maqashid sharia, tax aggressiveness rate, firm size, leverage, capital intensity, inventory intensity*

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I. INTRODUCTION

The behavior of tax aggressiveness refers to the efforts made by the taxpayer to minimize the tax burden to be paid. The act of tax aggressiveness can be done in a form that violates the law and that does not violate the Act (Chen et al., 2008). The infringing act is done in the form of tax evasion in violation of Indonesian tax laws and regulations. The non-infringing action is done in the form of tax planning. Tax planning is an effort by the company to shrink the corporate tax burden that is not contrary to the tax regulations.

Sharia principles are adopted by sharia entities as guidelines in carrying out its operational activities. This sharia principle is oriented towards material and spiritual success, as well as lawful and good (thoyyib). Maqashid syariah refers to the goal to be achieved by the entity of sharia. Sharia entities are not allowed to be profit-oriented but also required to achieve the maqashid of syariah. The elements of maqashid sharia include keeping the mind or mind (al-aql), preservation of religion (ad-diin), guarding the soul (an-nafs), custody (an-nasb), and securing property or wealth (maal). In the context of Islamic business, Mohammed and Taib (2009) explain that the achievement of maqashid sharia can be seen from 3 (three) objectives which include: educating individuals (tahdzibul fard), building justice (iqamatul 'adl), and reaching public interest (jalbul maslahah). In this context, the existing studies are still limited to studying the use of the syariah maqashid index as a performance measurement system such as Mohammed et al. (2008), Mohammed

and Taib (2009), Jazil and Syahrudin (2013), and Kasri (2016). This is the basic idea of this research that is the new insight of syariah maqashid index in other contexts besides performance measurement system.

This study offers novelty over previous studies because current research would like to test whether the syariah maqashid index can be used as a new determinant of tax aggressiveness. The index of maqashid syariah in this study refers to the indicators made by Mohammed et al. (2008) and Mohammed and Taib (2009). In the study of Mohammed et al. (2008), it is explained that one element of cost calculated in measuring the performance of the syariah maqashid index is the cost of advertising. One of the empirical studies examining the effect of advertising costs on tax aggressiveness was conducted by Desai and Dharmapala (2006). Desai and Dharmapala (2006) find that companies that are intensive in advertising costs are more likely to build brand equity and company reputation so that companies tend to be less aggressive in tax planning.

Studies Mohammed et al. (2008) indicate that one of the important cost elements in the syariah maqashid index is the cost of research and development. One of the empirical studies examining the effect of research and development costs on tax aggressiveness was carried out by Hanlon and Heitzman (2010). Hanlon and Heitzman (2010) show that the imposition of research and development costs is highly dependent on tax policies adopted by a country. Tax policies made by the Government may affect the company's investment policy in research and development activities.

This study aims to examine the influence of the index of syariah maqashid against the level of tax aggressiveness. In this study, used several other independent variables such as profitability, leverage, firm size, capital intensity, and inventory intensity. Based on the previous background, the research problem is whether the index of maqashid sharia affects the level of tax aggressiveness?

II. LITERATURE REVIEW

The concept of Maqashid Sharia

Ghazali (1991) describes five elements in the concept of maqashid sharia that is guarding religion, soul, mind, family, and wealth. Anything that can guarantee the existence of these five elements is called *maslahah* and every that omits it is called *mafsadah*. Another view of the maqashid of shari'ah was proposed by Zahrah (1958) in Antonio et. al (2012), which divides the index of maqashid sharia into three categories namely education for individuals (*tahdzib al-fard*), justice (*iqamah al-adl*), and welfare (*maslahah*). The principles of Islam are not only applied in the field of *fiqh* solely in the form of legality of products and services in accordance with Islamic Shari'a. The principles of Islam should have a broader impact on economic and social aspects as a consequence of efforts to achieve the maqashid of sharia (Sanrego, 2010).

Mohammed and Taib (2009) developed a performance evaluation formula based on the concept of maqashid Sharia. Indicators used include educating the individual (*tahdzib al-fard*), establishing justice (*iqamah al-adl*), and welfare (*maslahah*). The first maqashid (*tahdzib al-fard*) is intended to develop the knowledge and expertise of each individual so that individual spiritual values are increased. The first maqashid has several ratios: education grant, research, training and publicity.

The second maqashid sharia (*iqamah al-adl*) indicates that Sharia entities should be honest and fair in carrying out all transactions and business activities. The second maqashid has several ratios: PER (profit equalization reserve) ratio and interest free income ratio. As for the third maqashid sharia (*maslahah*), sharia entities should develop investment projects and social services to improve the welfare of the people. This third maqashid can be seen from the ratio of zakat issued by sharia entity and investment entity sharia in real sector. The ratios that can be included in the third maqashid sharia are profit returns, personal income transfers (*zakah*), and investment ratios in real sector.

The concept of Tax Aggressiveness

Tax aggressiveness is an action that aims to reduce taxable income through tax planning and using methods that are classified or not classified as tax evasion. Even though not all tax aggressiveness is against the rules, more methods are used to make the company more assertive in its tax planning (Frank et al., 2009). Tax aggressiveness can be done in the form of actions that do not violate the law (tax avoidance) as well as acts that violate the rules (tax evasion), but more tax aggressiveness leads to unlawful acts. Thus it can be understood that tax aggressiveness has a very broad concept and includes tax planning or tax avoidance practices as well as tax evasion practices. This concept is used in this study so that companies that behave aggressively in taxes do not mean have committed fraud or tax evasion and irregularities in accounting reporting practices.

Empirical Studies Research Accomplished

Based on a review of a study by Saylor (1998); Desai and Dharmapala (2006); Dhanani and Solanji (2011); and Segarra (2012), there is no research that clearly and firmly examine the influence of maqashid syariah index toward tax aggressiveness level. Several existing studies tested one indicator of the maqashid syariah index towards the level of tax aggressiveness as did Saylor (1998), Dhanani and Solanji (2011) and Segarra (2012). The studies examined the level of tax aggressiveness in relation to research and development activities. Research and development is one component of ratio in syariah maqashid index variables. The results of their study found that the burden of research and development costs are only utilized by large companies in order to obtain tax breaks. Their study shows that the more aggressive the company has on action to reduce income taxes, the less the drive to invest in research and development in order to avoid tax oversight.

In contrast to previous studies, Desai and Dharmapala (2006) examined the effect of advertising costs on the level of tax aggressiveness. Advertising costs in Indonesian tax laws are provided for in Article 6 paragraph (1) of Law Number 36 Year 2008 regarding Income Tax as a cost that can be deducted from income. Advertising cost is one component of the ratio of syariah maqashid index variables. The results of both studies prove empirically that companies that have a large portion of advertising costs are not involved in tax aggressiveness. This is due to two reasons: (1) intensive companies in advertising are more likely to build brand equity and company reputation than by tax evasion; and (2) intensive firms in advertising and promotion are linked to a more transparent information environment that can hinder tax planning activities.

In contrast to previous research (Saylor, 1998; Desai and Dharmapala, 2006; Dhanani and Solanji, 2011; Segarra, 2012), the current study seeks to examine the effect of the maqashid syariah index on tax aggressiveness. The index of maqashid syariah in this study refers to Mohammed et al. (2008) and Mohammed and Taib (2009) covering three indicators of educating individuals, building justice, and public interest. Each indicator has several performance measurement ratios.

III. RESEARCH HYPOTHESIS

Relationship between Tax Aggressiveness Level and Maqashid Sharia Index

Mohammed et al. (2008) developed a formula for operationalizing maqashid sharia index variables. In the formula there are three objectives of educating individuals, building justice, and public interest. Each goal has several elements or ratios to measure performance. One element or ratio is the cost of publication or promotion. The study examining the effect of publication cost (promotion) on tax aggressiveness was done by Desai and Dharmapala (2006). The results of Desai and Dharmapala (2006) study proved empirically that companies that have a large portion of advertising costs are less involved in tax aggressiveness. This is due to two reasons: (1) intensive companies in advertising are more likely to build brand equity and company reputation; and (2) intensive firms in advertising and promotions reinforced by a more transparent information environment may hinder tax planning activities.

H₁: Maqashid Sharia Index affects the level of tax aggressiveness

The Relationship between Tax Aggressiveness Level and Company Size

Company size has been a major concern of most studies on tax aggressiveness and gives inconsistent results. Studies by Hsieh (2012) and Salman and Farid (2016) proved empirically that firm size has a positive effect on tax aggressiveness. Firms that have larger firm sizes can record more depreciation expenses than smaller firms so that firms can take advantage of tax incentives to lower taxable income and income taxes so that the effective tax rate (ETR) becomes lower. A low ETR shows companies are more likely to be aggressive in their tax planning. Studies conducted Hanum and Zulaikha (2013), Zemzem and Ftouhi (2013), Noor et al. (2010) and Wang et al. (2014) found a negative effect of firm size on tax aggressiveness. In contrast, Khaoula and Ali (2012) studies do not succeed in proving the effect of firm size on the level of tax aggressiveness.

H₂: The size of the company affects the level of tax aggressiveness

The Relationship between Tax Aggressiveness Level and Profitability

Studies by Derashid and Zhang (2003), Adhikari et al. (2006), Rohaya et al. (2008), Noor et al. (2010), and Salman and Farid (2016) provide empirical evidence that ETR and ROA are negatively related. Firms with high profitability tend to be high in tax aggressiveness, because companies can take advantage of tax incentives and tax provisions to reduce income taxed and income taxes so that the effective tax rate becomes low. A low effective tax rate shows the company's aggressive tendency in its tax planning. In contrast, the study of Zemzem and Ftouhi (2013) and Hsieh (2012) provide a different finding that profitability has a positive effect on the effective tax rate. The results of other studies obtained Hanum and Zulaikha (2013) who did not find the effect of profitability affect the level of tax aggressiveness.

H₃: Profitability affects the level of tax aggressiveness

The Relationship between Tax Aggressiveness Level and Leverage

Studies by Gupta and Newberry (1997), Buijink and Janssen (2000), Adhikari et al. (2006) found a negative relationship between effective tax rates and leverage (Noor et al., 2010). Noor et al. (2010) and Lanis and Richardson (2011) support the studies by complementing the negative relationship between leverage and the effective tax rate. These studies show that higher leverage can increase the level of tax aggressiveness. This is because companies with large liabilities can charge interest expenses in their fiscal financial statements. Such efforts may decrease income to be taxed and income taxes resulting in a declining effective tax rate. Declining effective tax rates indicate that firms tend to be more aggressive in tax-aggressive behavior. In contrast Hanum and Zulaikha (2013); Wang et al. (2014); and Hsieh (2012) gave different results of leverage have a positive effect on the effective tax rate. The Salman and Farid (2016) study failed to prove empirically the effect of leverage on the level of tax aggressiveness.

H₃: Leverage affects the level of tax aggressiveness

The Relationship between Tax Aggressiveness Level and Capital Intensity

The negative effect of capital intensity on the effective tax rate has been investigated by Gupta and Newberry (1997), Hsieh (2012) and Noor et al. (2010). Negative effects occur because firms with large fixed assets proportions tend to produce low effective tax rates (Noor et al., 2010). Large amounts of fixed assets enable firms to charge a larger depreciation of fixed assets. It may lower taxable income and subsequently result in a low effective tax rate. A low effective tax rate indicates that taxpayers are more likely to have higher tax aggressiveness behavior. In contrast, Hanum and Zulaikha (2013) studies were unable to prove empirically the effect of capital intensity on the level of tax aggressiveness.

H₄: The intensity of capital affects the level of tax aggressiveness

The Relationship between Tax Aggressiveness Level and Inventory Intensity

Studies by Hanum and Zulaikha (2013) were unable to prove the effect of inventory intensity on the level of tax aggressiveness. In contrast, the Hsieh study (2012) found a positive relationship of effective tax rates with inventory intensity. Firms that are stocked have higher effective tax rates (Noor et al., 2010). This can be explained because a company with multiple inventories has the potential to generate large amounts of sales so that the company can increase taxable income. Increasing the amount of taxable income indicates an increasing effective tax rate. While Salman and Farid's (2016) study failed to prove empirically the effect of inventory intensity on the level of tax aggressiveness.

H₅: Intensity of inventory affects the level of tax aggressiveness

IV. METHODOLOGY

Research Design

This research is designed as a study that aims to test the hypothesis based on the study of theory and concepts relevant to the formulation of hypotheses (Jogiyanto, 2004). The research that tested the hypothesis as explained by Sekaran and Bougie (2010) aims to examine the nature of relationships, or differences between groups, or variable independence in certain situations. This study aims to test empirically the influence of maqashid sharia index and firm characteristics to the level of tax aggressiveness. The

characteristics of the company in this study include firm size, profitability, leverage, capital intensity, and inventory intensity.

Population and Sample

The population of this study is a company listed on the Indonesia Stock Exchange (BEI). Samples are selected according to certain criteria based on purposive sampling method, ie public company whose shares are listed in Indonesia Sharia Shares Index (ISSI) for 5 years period from 2011 to 2014. The data used in this research is taken from Indonesian Capital Market Directory (ICMD), and Indonesian Stock Exchange website (idx.co.id).

Model of the Research

The study used research model that uses index of maqashid sharia, company size, ROA, leverage, capital intensity, and inventory intensity as independent variables and tax aggressiveness as the dependent variable. The following was the statistical formula:

$$ETR_t = \alpha_0 + \beta_1 IMS_t + \beta_2 SIZE_t + \beta_3 ROA_t + \beta_4 LEV_t + \beta_5 CAPINT_t + \beta_6 INVINT_t + e$$

Description

ETR_t = effective tax rate in year t

IMS_t = index of maqashid sharia in year t

SIZE_t = firm size in year t

ROA_t = return on investment in year t

LEV_t = leverage in year t

CAPINT_t = capital intensity in year t

INVINT_t = inventory intensity in year t

Variable Descriptions and Indicators

Tax aggressiveness is an action that has a purpose to reduce taxable income through tax planning and using methods that are classified or not classified as tax evasion. (Frank et al., 2009). The level of tax aggressiveness in this study is defined as the level of tax aggressiveness actions undertaken by the company. The level of tax aggressiveness is proxied at the effective tax rate. The effective tax rate is measured against current income tax expense divided by pre-tax income.

Sharia entities have sharia principles and must be run in their operational activities (Salman, 2012). Maqashid shari'a is a goal to be achieved by a sharia entity. Objectives to be achieved by entities of sharia include guarding religion, soul, mind, family, and wealth. Maqashid sharia in this study is measured by the index of maqashid sharia proposed by Zahrah (1958) in Antonio et. al (2012). The maqashid sharia index is divided into three categories: education for individuals (tahdzib al-fard), justice (iqamah al-adl), and benefit/welfare (maslahah). Tahdzib al-fard means the entity of sharia should develop the knowledge and expertise of each individual so that spiritual values increase. Iqamah al-adl implies that sharia entities should be honest and fair in all transactions and business activities undertaken. Maslahah implies that Sharia entities should develop investment projects and social services to improve people's welfare.

Profitability is a measure used to determine the company's ability to generate profits during a certain period and also provides an overview of the effectiveness of management in carrying out its operations. Profitability in this study is measured by return on assets (ROA) where ROA is the ratio of profitability before tax to total assets.

The size of a company is a scale by which it can be classified by small companies in various ways, including total assets, total sales, logarithms of total sales, total revenues, stock market values, and so on. The size of the firm in this study is measured by the log of total sales.

Leverage reflects the company's financial risk that describes the company's capital structure and knows the risk of uncollectible debt. Leverage in this study is measured by total liabilities divided by total assets.

The capital intensity describes the size of the company invested in fixed assets. Capital intensity is used to identify future prospects through fixed asset investment. The intensity of capital in this study is measured by fixed assets divided by total assets.

The inventory intensity is measured by inventory divided by total assets.

V. RESULTS

Based on the data screening, it is known that 144 companies are listed in the Indonesia Sharia Share Index (ISSI) in the period 2011 to 2014. However, from that number, the final sample is 71 companies per year so the total panel data for 4 years is 284 (71 x 4 years). Table 1 shows the sample of this study.

Table 1 Population and Sample

No	Information	Quantity
1	consistently listed in Indonesia's Sharia stock index 2011-2014	144
2	incomplete financial report	(5)
3	inventory value is missing	(6)
4	earning before tax is negative	(49)
5	corporate income tax expense is negative	(7)
6	incomplete other data	(6)
Number of sample companies		71
The amount of panel data used		284

Multiple Regression Analysis

Based on SPSS results, the regression equation is presented as follows:

$$ETR = 0.476 - 0.930 IMS - 0.013 SIZE + 0.175 ROA - 0.011 LEV + 0.024 CAPINT - 0.009 INVINT$$

Based on the regression equation above, it can be described as follows:

1. The coefficient of β_0 is 0.476 indicates that if the value of all independent variables is 0 then the value of the effective tax rate is 0.476.
2. The coefficient of β_1 is -0.930 indicates that the effective tax rate will decrease by 9.3% if the variable of maqashid sharia index rises by 10%. Regression coefficient is negative indicating a negative relation between effective tax rate and index of maqashid sharia that is higher index of maqashid sharia hence lower value of effective tax rate and vice versa.
3. The coefficient of β_2 is -0.013 indicates that the value of the effective tax rate will decrease by 0.013 or 1.3% if the firm size variable increases by 1 unit. The regression coefficient is negative indicating a negative relationship between the effective tax rate and the firm size. The larger the size of the company the lower the effective tax rate and vice versa.
4. The coefficient of β_3 is 0.175 indicates that the effective tax rate will increase by 0.0175 or 1.75% if the ROA rises by 10%. The regression coefficient is positive indicating a positive relationship between the effective tax rate and ROA that the higher the ROA, the higher the effective tax rate and vice versa.
5. The coefficient of β_4 is -0.011 indicates that the effective tax rate will decrease by 0.0011 or 0.11% if leverage rises by 1%. The regression coefficient is negative indicating a negative relationship between effective tax rate and leverage that is the higher leverage the lower the effective tax rate and vice versa.
6. The coefficient of β_5 is 0.024 indicates that the effective tax rate will increase by 0.0024 or 0.24% if the capital intensity rises by 10%. Regression coefficient is positive indicates a positive relationship between effective tax rate and capital intensity that is the higher the intensity of the capital the higher the effective tax rate and vice versa.
7. The coefficient of β_6 is -0.009 indicates that the value of the effective tax rate will decrease by 0.9% if the inventory intensity increases by 1 unit. The regression coefficient is negative indicating a negative relationship between the effective tax rate and the inventory intensity ie the higher the inventory intensity the lower the effective tax rate and vice versa.

Simultaneous and Partial Test

Table 2 presents the results of the F test. Based on Table 2 it is known that the fit model means that this model can be used for further testing of t test because it has a significance of 0.000 below the 5% significance level.

Table 2 Simultaneous Test Results

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	.849	6	.142	24.737	.000 ^b
Residual	1.585	277	.006		
Total	2.434	283			

Table 3 shows there are two independent variables that significantly influence the level of tax aggressiveness ie index of maqashid sharia (IMS) and return on asset (ROA) at 5% significant level. The size of the firm significantly affects the maqashid sharia index at a significant level of 10%. The other independent variables such as leverage, capital intensity, and inventory intensity have no effect on tax aggressiveness because it has significance above 5%.

Table 3 Individual Test Results

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
	B		Beta		
(Constant)	.476	.084		5.683	.000
IMS	-.930	.084	-.680	-11.038	.000
SIZE	-.013	.007	-.099	-1.909	.057
ROA	.175	.052	.219	3.400	.001
LEV	-.011	.030	-.019	-.366	.715
CAPINT	.024	.024	.050	.965	.335
INVINT	-.009	.036	-.012	-.245	.807

Based on Table 4 can be seen that the coefficient of determination adjusted R-square of this research model of 0.335 which means that the level of tax aggressiveness can be explained by factors in the current research model of 33.5%, while the remaining 66.5% influenced by other factors in outside model.

Table 4 R-Square Ajusted

R	R Square	Adjusted Square	R	Std. Error of the Estimate
.591 ^a	.349	.335		.07564

VI. DISCUSSION

Maqashid Sharia Index towards Tax Aggressiveness Level

Based on the previous analysis, it is concluded that the maqashid sharia index has a negative and significant effect on tax aggressiveness. These results indicate that the higher the maqashid sharia index then the effective tax rate (ETR) is lower. A low effective tax rate shows a higher level of tax aggressiveness. These findings prove empirically that the high index of maqashid sharia resulted in higher levels of tax aggressiveness. This empirical finding is supported by the provisions of the taxation laws of Indonesia stipulated in Law Number 36 Year 2008 regarding Income Tax categorizing the costs of research, education, training and advertising as a deductible expense of income as provided in Article 6 paragraph (1) . Thus, firms that pay higher research and development fees, education, training, and advertising in their financial statements benefit from a reduction in income tax expense.

Company Size towards Tax Aggressiveness Level

Based on the result of data analysis, company size has negative and significant effect to effective tax rate. The larger the size of the company, the less tax paid. Firms with large corporate size have a high availability of human resource competencies so that the company is capable of making efforts that minimize the amount of income tax. The results of this study are in line with Hsieh's (2012) study which found that firms with larger firm sizes could benefit from more tax incentives to reduce the amount of taxes paid by companies. Such companies perform higher levels of tax aggressiveness.

Profitability towards Tax Aggressiveness Level

Based on the result of data analysis, it is known that profitability have positive and significant effect to effective tax rate. This shows that firms with high profitability tend to pay higher income taxes as well. The results of this study also support the results of previous studies conducted Zemzem and Ftouhi (2013) and Hsieh (2012) who successfully proved empirically effects of profitability to the level of tax aggressiveness. The results of this study are in line with the taxation provisions in Indonesia contained in Article 31 E of Taxation Law Number 36 Year 2008 regarding Income Tax. In the said provision, it is stated that the Taxpayer who has gross income up to fifty billion rupiah receive a tariff reduction facility of 50% from the original tariff of 25%. This provision indicates that a Taxpayer whose gross income exceeds fifty billion rupiah does not receive a tax deduction facility.

Leverage towards Tax Aggressiveness Level

Based on the results of data analysis, it is known that leverage does not affect the level of tax aggressiveness. The results of this study provide interesting findings because it is different from the results of previous studies. The results of this study confirm that leverage does not affect the level of tax aggressiveness in Islamic entities in Indonesia. The results of Gupta and Newberry (1997); Buijink and Janssen (2000); Adhikari et al. (2006) and Lanis and Richardson (2011) all succeeded in proving a negative influence on the level of tax aggressiveness. The results of this study are also different from those of Hanum and Zulaikha (2013); Wang et al. (2014); and Hsieh (2012) who successfully proved empirically that leverage has a positive effect on the level of tax aggressiveness. The results of this study are supported by empirical data showing the low average leverage ratio owned by sharia entities in Indonesia. This is because Islamic entities listed in the Indonesia Sharia Shares Index (ISSI) have low interest or interest liabilities when compared to other entities. Thus, the sharia entity does not engage in tax-aggressive practices relating to interest expenses or liabilities.

Capital Intensity towards Tax Aggressiveness Level

As the results of data analysis, this study also failed to prove empirically the effect of capital intensity on the level of tax aggressiveness. The results of this study are in line with Hanum and Zulaikha (2013), but contrary to the study of Gupta and Newberry (1997) and Hsieh (2012). Gupta and Newberry (1997) and Hsieh (2012) succeeded in proving empirically the negative effect of capital intensity on the level of tax aggressiveness. The findings of this study differ from previous studies due to differences in the object under study. This study uses sharia entity listed in Indonesia Sharia Shares Index (ISSI) while the previous studies are still using conventional entities. The results of this study indicate that the entity of sharia does not practice tax aggressiveness through the utilization of loopholes Tax Law especially relating to the method of depreciation of fixed assets.

Inventory Intensity towards Tax Aggressiveness Level

The results of this study are not able to prove empirically the effect of inventory intensity to the level of tax aggressiveness. The results of this study support previous research conducted Hanum and Zulaikha (2013), but contrary to the results of studies Hsieh (2012) which successfully proved empirically the effect of inventory intensity to the level of tax aggressiveness. The results of this study indicate that the entity of sharia does not conduct tax aggressiveness through the amount of inventory it has. This is due to the demands of sharia principles for a sharia entity to present and report the merchandise inventory honestly and determine the value of sales with a reasonable margin. Thus, the Sharia entity has no incentive or incentive to tax aggressiveness through its merchandise inventory.

VII. CONCLUSIONS

Still at least research using sharia entity as the object of research become the basis of this research. In addition, this study is the first study to examine the effect of maqashid sharia index on the level of tax aggressiveness. Research on maqashid sharia index has been done is limited in context as performance appraisal system. Therefore, this study aims to determine the influence of maqashid sharia index to the level of tax aggressiveness. The result of this research has proven empirically the influence of maqashid sharia index toward tax aggressiveness level. The higher the index of maqashid sharia the higher the level of tax aggressiveness. This indicates that companies that have large tuition, training, research and advertising costs

can significantly reduce the amount of income tax payable. In addition, the results of this study also shows that firm size and profitability affect the level of tax aggressiveness. The larger the size of the company, the higher the level of tax aggressiveness the company undertakes. Conversely, the higher level of profitability generated by the company results in lower tax aggressiveness. The other independent variables such as leverage, inventory intensity, and capital intensity have no effect on the level of tax aggressiveness.

Further research can expand this research by adding other independent variables such as Islamic governance and corporate social responsibility disclosure levels. In addition, further research can focus more on sharia banking entity, sharia insurance, baitul maal wa tamwil (BMT) as the object of research so that variable level of social responsibility disclosure and index of maqashid sharia can be adjusted with condition at special sharia entity.

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Lampiran 2

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Lampiran 3

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THE NEW INFLUENCE OF THE LEVEL OF ISLAMIC GOVERNANCE TO THE LEVEL OF TAX AGGRESSIVENESS AND LEVEL OF CORPORATE SOCIAL RESPONSIBILITY

Kautsar Riza Salman*, Muslich Anshori & Heru Tjaraka

*Airlangga University and STIE Perbanas Surabaya

Airlangga University

Airlangga University

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Keywords: the level of Islamic governance, the level of tax aggressiveness, the level of corporate social responsibility disclosure.

Abstract

Research on Islamic governance is still relatively little discussed since most previous studies used conventional governance. One important organ in the mechanism of Islamic governance that distinguishes it from conventional corporate governance is the existence of a Shariah supervisory board. The novelty offered from this study is the use of Islamic governance as a new determinant affecting the level of tax aggressiveness and the level of corporate social responsibility disclosure. This study aims to obtain empirical evidence of the influence of the level of Islamic governance on the level of tax aggressiveness and the level of corporate social responsibility disclosure. The object of research is sharia banks in Indonesia in the period 2010-2016. The finding of this research is to successfully prove empirically the influence of the level of Islamic governance on the level of tax aggressiveness and the level of corporate social responsibility disclosure. The better implementation of Islamic governance run by sharia banks can have an impact on the decreasing level of tax aggressiveness. In addition, better implementation of Islamic governance impacts on the wider disclosure of corporate social responsibility. The findings of this study have successfully confirmed agency theory and legitimacy.

Introduction

Governance is a management system to improve banking performance, protect stakeholders, improve compliance with applicable laws and ethics (Kholid & Bachtiar, 2015). Compliance with Sharia principles is a characteristic of Islamic governance that distinguishes it from corporate governance in general. One of the most important organs in Islamic governance is the Sharia Supervisory Board (DPS). The Sharia Supervisory Board serves to oversee the management of sharia entities in order to ensure the compliance of Islamic entities to the principles of sharia. With the Sharia Supervisory Board, the management of sharia banks can avoid breach of contract with customers so that sharia banks can operate maximally and improve their performance (Kholid & Bachtiar, 2015).

Based on agency theory, good governance mechanisms can play a role to monitor opportunistic behavior of agents (Chrisman et al., 2007). In the tax context, good governance mechanisms can control the manager's opportunistic behavior in minimizing the income tax burden. Several previous studies have been conducted to examine the effect of governance mechanisms on tax aggressiveness as the Lanis & Richardson study (2011); Cheng et al. (2012); Badertscher et al. (2013); Sartaji & Hassanzadeh (2014); and Hadi & Mangoting (2014). The downside of previous studies is that no studies have specifically examined the effect of Islamic governance on tax aggressiveness. This is the motivation for the current research.

Research on the disclosure of the Islamic entity's social responsibility in most researches still uses a global reporting initiative. Current research uses a more suitable measure to be applied in Islamic entities that are Islamic social reporting. To date, few studies have used Islamic social reporting as an indicator to measure corporate social responsibility disclosure. Islamic social reporting is considered more in line with Islamic

principles because it contains a compilation of standard items set by the Accounting and Auditing Organization for Islamic Financial Institution (Sunarto 2016). This provides motivation for research in order to test the effect of Islamic governance levels on corporate social responsibility disclosure. The theory of legitimacy explains that firms with better Islamic governance will engage in wider disclosure of social responsibility in order to gain a positive response from society and ultimately the company can maintain its viability.

Problem formulation of this research are: (1) whether the level of Islamic governance affect the level of tax aggressiveness and (2) whether the level of Islamic governance affect the level of corporate social responsibility disclosure. Thus, this study aims to obtain empirical evidence regarding the effect of Islamic governance levels on the level of tax aggressiveness. In addition, this study also aims to obtain empirical evidence on the influence of Islamic governance levels on the level of corporate social responsibility disclosure.

Literature review

Agency Theory

This research uses agency theory as the basic theory. This theory has been widely used in the field of accounting and management. In general, this theory describes the relationship between the principal party (owner) and the agent (manager). This theory states that the agent will behave self-interested and contrary to the interests of the principal (Jensen & Meckling, 1976; Eisenhardt, 1989). Thus, the principal will apply structural mechanisms that can monitor agents in order to control the opportunistic behavior of agents and align with the interests of all parties better (Fama & Jensen, 1983; Eisenhardt, 1989).

Agency theory explains the existence of two options for principals to reduce agency problems in order to control opportunistic behavior of agents (Eisenhardt, 1989). The first way is to create a governance structure that allows monitoring and assessment of the actual behavior of agents (Anderson & Reeb, 2004; Chrisman et al., 2007). This governance structure includes reporting procedures, additional management, and board of directors (Donaldson & Davis, 1991). The second way is to create a governance structure where the contract is based on the actual results of agency behavior (Eisenhardt, 1989). An example of this type is salary in the form of incentives, where salaries are given as incentives for high performing agents (Chrisman et al., 2007). The risk is transferred to the agent and this way can create motivation for the agent to behave in accordance with the principal's interests (Davis et al., 1997; Eisenhardt, 1989). The bottom line of both ways, the principal can make a choice between building a governance structure based on the agent's actual behavior or providing incentives based on the outcome of agent behavior (Eisenhardt, 1989). Both options are generating agency costs that the principal must bear for monitoring and assessing agency behavior.

Legitimation Theory

The theory of legitimacy is based on the idea that the company has a social contract with the community, in which the company agrees to take actions desired by the community in order to maintain the sustainability of the company's business. The theory of legitimacy states that the disclosure of the environmental, economic, social, and political aspects that the company undertakes can legitimize the company (Hogner, 1982; Lehman, 1983; Lindblom, 1983). In legitimizing its actions through such disclosure, the company hopes to continue its business presence (Lehman, 1983). Lindblom (1983) adds that the theory of legitimacy shows that the organization aims to generate harmony between the social values inherent in corporate activities and social norms. Thus, the disclosure of corporate social activities can be understood as a reaction of the company to the environment around the company to legitimize the sustainability of the company's business.

Research Hypothesis

The Relationship between the Level of Islamic Governance and the Level of Tax Aggressiveness

The agency theory is used to explain the relationship between Islamic governance and tax aggressiveness. Agency theory suggests that governance structures allow monitoring to control the opportunistic behavior of agents (Eisenhardt, 1989; Anderson & Reeb, 2004; Chrisman et al., 2007). In the context of this study, Islamic banking Islamic governance can serve as an effective way to control opportunistic behavior of the

taxpayer. This may have an impact on the decreasing tax aggressiveness of the taxpayer as indicated by the increase in income tax payments.

The study on the influence of corporate governance on tax aggressiveness has been done by Khaoula & Ali (2012); Hanum & Zulaikha (2013); Zemzem & Ftouhi (2013); and Richardson, Taylor, & Lanis (2013); and Boussaidi & Hamed (2015). Boussaidi & Hamed (2015) found that (1) gender diversity in councils and managerial ownership positively affected the Effective Tax Rate (ETR); and (2) increased concentration of ownership negatively affect the ETR. Zemzem & Ftouhi (2013) support the findings of the Boussaidi & Hamed study (2015) in which the second study found that the number of board sizes and the percentage of women on the board decreased the degree of tax aggressiveness. In addition, Richardson, Taylor, & Lanis (2013) found that the interaction effects between the composition of the board of directors, the application of risk management systems, and effective internal controls can reduce the degree of tax aggressiveness. Different results are obtained from Hanum & Zulaikha (2013) where they do not find any influence on the three characteristics of governance (independent commissioners, audit committees, and institutional shareholders) on the level of tax aggressiveness. In line with Hanum & Zulaikha (2013), Khaoula & Ali's study (2012) also found no effect of board size and gender diversity on the board of directors against tax aggressiveness.

H₁: The level of Islamic Governance affects the level of tax aggressiveness

The Relationship between the Level of Islamic Governance and the Level of Corporate Social Responsibility

Corporate governance plays an important role in controlling the behavior of managers who benefit their own interests. Corporate governance can control the behavior of managers so that managers can take actions that can benefit the owner of the company (investor) or in other words align the interests of management and owners of the company (Gunarsih, 2003: 156). In the context of this study, the theory of legitimacy is used to explain the relationship between corporate governance and corporate social responsibility. In order to gain legitimacy from society, companies need to take action in accordance with norms, values, and belief systems of society. The company's effort to disclose social responsibility information is an action that conforms to the system of norms, values, and public trust. Thus, companies that implement good governance will give greater disclosure of corporate social responsibility (Indrawaty & Wardayati, 2015).

Several previous studies have been conducted to examine governance mechanisms for disclosure of social responsibility performed by Nurkhin (2010); Badjuri (2011); and Wiyuda & Pramono (2017). Nurkhin (2010) found that the composition of independent board of commissioners positively affects the level of corporate social responsibility disclosure. Wiyuda & Pramono (2017) support the Nurkhin (2010) study. Wiyuda & Pramono (2017) found that the board of commissioners positively influences the level of corporate social responsibility disclosure, on the contrary the audit committee negatively affects the level of social responsibility disclosure. In addition, Othman et al. (2009) found that the proportion of Muslim and non-Muslim councils affected the level of corporate social responsibility disclosure. Different results obtained Badjuri (2011) where the study did not find the influence of the board of commissioners and audit committee on the disclosure of social responsibility.

Islamic governance from several studies that have been conducted previously still mostly uses three indicators, namely the number of members of the Board of Directors, members of the Sharia Supervisory Board (SSB), and the number of members of the Audit Committee. Several previous studies that examined the influence of the Sharia Supervisory Board (SSB) on corporate social responsibility disclosure levels were conducted by Farook & Lanis (2005); Sunarto (2016); and Dienes & Velte (2016). Indrawaty & Wardayati (2015) explained that the results of empirical studies on the influence of Sharia Supervisory Board (SSB), Board of Commissioners, and Audit Committee showed inconsistent results. Sunarto (2016) found a positive influence of the number of members of the Board of Directors and the Sharia Supervisory Board (SSB) on corporate social responsibility disclosure, but failed to prove empirically the influence of the number of audit committee members on the disclosure of corporate social responsibility. The results of Sunarto's study (2016) support the results of previous studies conducted by Farook & Lanis (2005). Farook & Lanis (2005) obtained empirical evidence that Islamic governance as measured by the number of Sharia Supervisory Board (SSB)

has a positive effect on the level of corporate social responsibility disclosure. The more the number of SSB members in overseeing the operations of sharia banks, the increased level of corporate social responsibility disclosure. In contrast, Dienes & Velte (2016) in their study with samples of firms in Germany failed to find a significant effect of the expertise, frequency of meetings, and the size of the Sharia Supervisory Board (SSB) on the level of corporate social responsibility disclosure.

H₂: The level of Islamic Governance affects the level of corporate social responsibility disclosure

Methodology

Research Design

This study was conducted to test empirically the influence of Islamic governance level on the level of tax aggressiveness. In addition, this study was also conducted to test empirically the influence of Islamic governance levels on the level of corporate social responsibility disclosure. Thus, this study is categorized as quantitative research. Quantitative research is an approach that aims to test the theory through testing the influence of independent variables to the dependent variable. Quantitative approaches rely on collecting and analyzing numerical data (Barete, 2011). In addition, quantitative research aims to examine the nature of relationships, or differences between groups, or independence of variables in certain situations (Sekaran & Bougie, 2010).

Population and Sample

The population of this study is the Sharia Commercial Bank in Indonesia. Sharia commercial banks are used in this study because sharia banks have different characteristics than conventional banks. These characteristics include: (1) the existence of an organ of Islamic governance is the Sharia Supervisory Board as mentioned in Bank Indonesia Regulation no. 11/33/2009 on the Implementation of Good Corporate Governance in Sharia Commercial Banks and Sharia Business Units; (2) the purpose of sharia bank not only maximizes profit but also maximizes the performance of maqashid shariah; (3) the level of liabilities and non-halal income ratio of sharia banks is lower than in conventional banks; and (4) there is little research that analyzes the tax aggressiveness of Sharia Banks in Indonesia.

This study uses secondary data collected through the website of Indonesia Stock Exchange, Bank Indonesia, and the website of each Sharia Commercial Bank. Secondary data include financial reports, annual reports, good corporate governance (GCG) reports and corporate social responsibility (CSR) reports. The total number of Sharia Commercial Banks in Indonesia is 11 sharia commercial banks. The research period is 7 years 2010-2016. The study period was selected from 2010 as Bank Indonesia Regulation Number 11/33 / PBI / 2009 on GCG for Sharia Commercial Banks was implemented on January 1, 2010.

Research Model

Regression equation used in this research:

$$ETR_t = \alpha_0 + \beta_1 IG_t + e$$

$$ISR_t = \alpha_0 + \beta_1 IG_t + e$$

ETR_t = Effective Tax Rate in year _t

IG_t = the Level of Islamic Governance in year _t

ISR_t = the Level of Islamic Social Reporting in year _t

Variable Descriptions and Indicators

1. The level of Islamic Governance is defined as the degree to which the governance of the shari'a entity is in accordance with Islamic sharia. This variable is measured by 11 indicators compiled based on Law Number 21 Year 2008 concerning Sharia Banking and Bank Indonesia Regulation no. 11/33/2009 on the Implementation of Good Corporate Governance at Sharia Commercial Bank and Sharia Business Unit which became effective on January 1, 2010. The eleven indicators include: Implementation of duties and responsibilities of the Board of Commissioners (X1.1); Implementation of duties and responsibilities of the Board of Directors (X1.2); Completeness and execution of Committee duties (X1.3); Implementation

of duties and responsibilities of the Sharia Supervisory Board (X1.4); Implementation of sharia principles in fund raising activities and channeling of funds and services (X1.5); Handling of conflict of interest (X1.6); Implementation of Bank's compliance function (X1.7); Implementation of internal audit function (X1.8); Implementation of external audit function (X1.9); Maximum Channel of Funds Distribution (X1.10); and Transparency of financial and non financial condition (X1.11). The higher score of Islamic governance levels indicates poor implementation of Islamic governance, while the lower the Islamic governance level score shows better implementation of Islamic governance.

2. Tax aggressiveness is defined as an act aimed at reducing taxable income through tax planning and using methods classified or not classified as tax evasion (Frank et al., 2009). The level of tax aggressiveness in this study is defined as the level of tax aggressiveness actions undertaken by the company. This research uses 5 indicators to measure tax aggressiveness variable including Current Tax Expense (Y1.1), Tax Expense (Y1.2), GAAP effective tax rate (Y1.3), Cash effective tax rate (Y1.4), and Fiscal effective tax rate (Y1.5). Higher tax burdens and effective tax rates indicate low tax aggressiveness.
3. The level of disclosure of social responsibility is defined as the degree to which the company processes the social and environmental disclosure of the economic actions of the company to certain groups. By disclosing the information, the company can gain trust from the community. The company not only focuses on the benefits alone but also considers the impact it has on the environment, nature, and on society as a whole (Gray et al., 1987). The corporate social responsibility disclosure indicator in this study refers to the index of Islamic Social Reporting (ISR) developed by Othman et al. (2009) and Othman & Thani (2010). The Islamic social reporting index consists of 6 themes and 43 items of disclosure. The six themes include: Finance & Investment, Products, Employee, Society, Environment, and Corporate Governance. The higher the score shows the wider disclosure of social responsibility, the lower the score indicates less disclosure level of social responsibility.

Results and discussion

The subjects of this study are all Sharia Commercial Banks domiciled in Indonesia which include: Bank Mega Syariah, Bank Panin Syariah, Bank Syariah Bukopin, Bank Victoria Syariah, Bank BCA Syariah, Bank BNI Syariah, Bank BRI Syariah, Bank Muamalat Indonesia, Bank Syariah Mandiri, Bank Jabar Banten Syariah, and Bank Maybank Syariah Indonesia. The eleven syariah banks in Indonesia are sampled in this study because Sharia Commercial Banks have issued financial statements, annual reports and corporate governance reports for the period 2010-2016.

Convergent Validity Test

Summary of convergence validity test results are presented in Table 1. Results show that all indicators meet convergent validity with loading factor scores above 0.4.

Table 1. Convergent Validity Test Results

Variable	Indicator	Loading Factor
Level of Islamic Governance (X ₁)	Implementation of duties and responsibilities of the Board of Commissioners (X _{1.1})	0.700
	Implementation of duties and responsibilities of the Board of Directors (X _{1.2})	0.781
	Completeness and execution of the Committee's duties (X _{1.3})	0.612
	Implementation of sharia principles in the activities of fund raising and channeling of funds and services (X _{1.5})	0.622
	Handling of conflict of interest (X _{1.6})	0.586
	Implementation of Bank's compliance function (X _{1.7})	0.811
	Implementation of internal audit function (X _{1.8})	0.603
	Implementation of external audit function (X _{1.9})	0.805

	Maximum Channel of Funds Distribution (X _{1.10})	0.709
	Transparency of financial and non-financial conditions, GCG implementation reports and internal reporting (X _{1.11})	0.629
Level of Tax Aggressiveness (Y ₁)	Current Tax Expense (Y _{1.1})	0.928
	Tax Expense (Y _{1.2})	0.933
	Cash effective tax rate (Y _{1.4})	0.460
Level of Corporate Social Responsibility (Y ₂)	Finance & Investment (Y _{2.1})	0.640
	Products (Y _{2.2})	0.665
	Employee (Y _{2.3})	0.891
	Society (Y _{2.4})	0.824
	Environment (Y _{2.5})	0.861
	Corporate Governance (Y _{2.6})	0.725

Reliability Test

Reliability testing in this study using cronbach alpha and composite reliability. Cronbach alpha and composite reliability are used to measure the relative model of measurement. The summary of reliability test results is shown in Table 2.. For the reliability test, the rule of thumbs in the study is 0.4. Based on the results of reliability test, the results obtained that all variables have a score of more than 0.40.

Table 2. Reliability Test Results

Variables	Cronbach alpha	Composite Reliability
Level of Islamic Governance (X ₁)	0.876	0.900
Level of Tax Aggressiveness (Y ₁)	0.676	0.836
Level of Corporate Social Reporting Disclosure (Y ₂)	0.865	0.898

Hypothesis Testing

Hypothesis testing is done by looking at coefficients path value which shows parameter coefficient and p-value value. The research hypothesis is accepted if the probability value (p-value) is less than 0.05. The test results are shown in table 3.

Table 3. Hypothesis Testing Results

Influence of independent variable to dependent variable	Hypothesis	Inner Weight	T Statistics	P Values	Results
Level of Islamic Governance (X ₁) → Level of Tax Aggressiveness (Y ₁)	H ₁	-0.375	4.049	0.000	Significant
Islamic Governance (X ₁) → Level of Corporate Social Reporting Disclosure (Y ₂)	H ₂	-0.535	9.790	0.000	Significant

- Table 3 shows that the t value of statistics is 4049 with p value of 0.000 (<0.05). This means that H1 is accepted. The value of inner weight coefficient of -0.375 indicates that the score of Islamic governance level negatively affects the effective tax rate. The results of the table indicate that the higher level of Islamic governance level will result in a lower current tax burden, lower tax burden, and lower effective tax rate which indicates an increasing level of tax aggressiveness. The results of this study found that the lower level of implementation of Islamic governance levels will result in higher levels of tax aggressiveness. On the contrary, the better implementation of Islamic governance will have an impact on the decreasing level of tax aggressiveness by sharia banks.
- Table 3 shows that the statistical t value is 9.790 with p value of 0.000 (<0.05). This means that H2 is accepted. The value of inner weight coefficient of -0.535 indicates that the score of Islamic governance level negatively affects the level of social responsibility disclosure (Y2). The results of this study indicate that the better implementation of Islamic governance, the more disclosure of corporate social

responsibility undertaken by sharia banks. Conversely, the worse the implementation of Islamic banking governance, the less disclosure of corporate social responsibility information is done sharia bank.

The Influence of the Level of Islamic Governance on the Level of Tax Aggressiveness

The result of this research proved empirically the influence of Islamic governance level to the level of tax aggressiveness. The results of the current study found that the worse Islamic governance indicated by a high level of Islamic governance would result in higher tax burdens, current tax burdens, and lower effective tax rates. A low effective tax rate indicates a high level of tax aggressiveness. Conversely, the better Islamic governance indicated by low Islamic governance scores will have an impact on the decreasing level of tax aggressiveness by sharia banks.

The results of this study are in line with agency theory which states that governance structures allow monitoring to control opportunistic behavior of agents (Eisenhardt, 1989; Anderson & Reeb, 2004; Chrisman et al., 2007). In the context of this research, Islamic governance run by sharia banks can serve as an effective medium to control the opportunistic behavior of taxpayers so that taxpayers become not aggressive in minimizing the income tax burden.

The results of this study also confirmed the role of the theory of legitimacy in explaining the relationship between the level of Islamic governance and the degree of tax aggressiveness. The theory of legitimacy states that in order for a company to be accepted and approved by society, the company must take action in accordance with the system of norms, values, and public trust (Bitektine, 2011). In the context of this study, companies with good levels of governance seek to pay a greater tax burden to gain legitimacy from society because it is in accordance with socially constructed norms, values, and trust systems. The legitimacy gained in relation to this tax is termed socio-political legitimacy as described by Aldrich & Fiol (1994) and Suchman (1995). The socio-political legitimacy refers to whether the organizational characteristics, attributes and outcomes of their activities to social norms are acceptable or not socially and cause the organization to be sanctioned to change their behavior.

The results of this study are in line with previous studies by Boussaidi & Hamed (2015); Zemzem & Ftouhi (2013); and Richardson, Taylor, & Lanis (2013). Boussaidi & Hamed (2015) found that managerial ownership positively affects effective tax rates on companies listed on the Tunisian Stock Exchange. If Boussaidi & Hamed (2015) use managerial ownership indicators to measure levels of governance, current research uses indicators of Islamic governance. The results of this study also support Zemzem & Ftouhi (2013) who successfully proved empirically that the size of the board can reduce the level of tax aggressiveness.

The results of this study indicate that the better the implementation of the duties and responsibilities of the Sharia Supervisory Board will have an impact on the current tax burden, tax burden, and higher effective tax rate. The larger effective tax rate shows that sharia banks are less aggressive in minimizing income taxes. On the contrary, the worse the implementation of the duties and responsibilities of the Sharia Supervisory Board will result in a lower current tax burden, lower tax burden, and lower effective tax rate, which means that sharia banks are more aggressive in minimizing income taxes. The results of this study support Richardson, Taylor, & Lanis (2013) who have found the influence of the board's characteristics on the degree of tax aggressiveness of companies listed on the Australian Stock Exchange.

The results of this study differ from previous studies that failed to find the effect of governance mechanisms on tax aggressiveness levels such as Hanum & Zulaikha (2013) and Khaoula & Ali (2012). If the research on Hanum & Zulaikha (2013) examines the influence of the three characteristics of governance that include: independent commissioner, audit committee, and institutional shareholder while in this study adds elements of board of directors, syariah supervisory board, and compliance to sharia principles. Similarly, Khaoula & Ali's study (2012) failed to prove empirically the effect of board size and gender diversity on the level of tax aggressiveness.

The Influence of the Level of Islamic Governance on the Level of Corporate Social Responsibility Disclosure

The effectiveness of Islamic governance is demonstrated by Islamic social reporting (Indrawaty & Wardayati, 2015). Companies that implement good governance will provide corporate social responsibility disclosures at a broader level. The theory of legitimacy explains that in order to gain acceptance and endorsement from society, the company must take action in accordance with the system of norms, values, and beliefs of society. Disclosure of social responsibility information is an action that conforms to the system of norms, values, and beliefs of society. The results of this study successfully confirm the theory of legitimacy. The better implementation of Islamic governance run by sharia banks, the wider the disclosure of corporate social responsibility. Conversely, the worse the implementation of Islamic banking governance, the less information on corporate social responsibility disclosed by sharia banks.

The results of this study support previous studies conducted Nurkhin (2010); and Wiyuda & Pramono (2017). Wiyuda & Pramono (2017) found the influence of the size of the board of commissioners towards the disclosure of corporate social responsibility. The larger number of members of the board of commissioners impacts on the wider disclosure of social responsibility. The current study does not use the size of the board of commissioners, but uses self assessment scores on the duties and responsibilities of the board of commissioners. Nurkhin (2010) found a positive influence of the composition of independent commissioners on the level of corporate social responsibility disclosure. Instead, this study contradicts Badjuri (2011) where Badjuri (2011) found no influence of the board of commissioners on the disclosure of corporate social responsibility.

One of the governance mechanisms in sharia banks that distinguishes them from conventional banks is the existence of sharia supervisory boards. The results of this study are in line with Farook & Lanis (2005) and Sunarto (2016). Farook & Lanis (2005) found a positive influence of the number of Sharia supervisory boards on the level of corporate social responsibility disclosure. Sunarto (2016) found a positive influence of the number of members of the board of directors and the Sharia supervisory board on the disclosure of corporate social responsibility. The more the number of members of the board of directors and the supervisory board of sharia, the wider the disclosure of corporate social responsibility.

The results of this study contradict Dienes & Velte (2016) who found no empirical evidence of the effect of expertise, frequency of meetings, and the size of the Shariah supervisory council on the level of corporate social responsibility disclosure. The research object of the Dienes & Velte (2016) study is a sharia bank in Germany. Instead, the results of this study prove that the implementation of duties and responsibilities of the Sharia Supervisory Board affect the level of disclosure of social responsibility by Islamic banks in Indonesia.

Conclusion

The results of this study proved the effect of Islamic governance level on the level of tax aggressiveness. The better implementation of Islamic governance is run by Islamic banks, the higher the amount of tax burden and the current tax burden to be paid Islamic banks, in other words the lower the level of aggressiveness of taxes that are run sharia banks. Conversely, the worse the implementation of Islamic governance run by sharia banks, the lower the amount of tax burden and the current tax burden to be paid by Islamic banks, in other words the higher the level of tax aggressiveness. The results of this study confirm the role of agency theory which states that good governance is a mechanism to control taxpayer opportunistic behavior.

In addition, the results of this study also proved empirically the influence of the level of Islamic governance on the level of corporate social responsibility disclosure. The results showed that the better implementation of Islamic banking governance Shariah banks have an impact on increasing levels of corporate social responsibility disclosure. Conversely, the worse implementation of Islamic banking governance impacts on the declining level of corporate social responsibility disclosure. This finding has successfully confirmed the role of the theory of legitimacy in explaining the relationship between Islamic governance and the level of corporate social responsibility disclosure.

Future research is expected to expand the scope of current research on aspects of research objects and research variables. Future research can expand the object on other sharia entities such as sharia business units, sharia cooperatives, baitul maal wat tamluk (BMT), sharia insurance, and sharia pawnshops. In addition, future research can add other variables such as financial performance and maqashid shariah and

tested its influence on the level of tax aggressiveness and the level of corporate social responsibility disclosure.




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Lampiran 4

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Lampiran 5

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Lampiran 6

Artikel yang telah dipresentasikan di International Conference of Business, Accounting, and Economic (ICBAE) 2018, 3-4 Agustus 2018

New evidence of the effect of tax aggressiveness and corporate characteristics on the level of corporate social responsibility disclosure

Kautsar Riza Salman¹, Amir², Mochammad Farid³, Kartika Marta Budiana⁴

¹ STIE Perbanas Surabaya
(email: kautsar@perbanas.ac.id)

² Universitas Muhammadiyah Purwokerto
(email: amirriset@yahoo.com)

³ STIE Perbanas Surabaya
(email: farid@perbanas.ac.id)

⁴ STIE Perbanas Surabaya
(email: kartika@perbanas.ac.id)

ABSTRACT

Disclosure of corporate social responsibility is an issue that is still relevant to be raised in an empirical research especially if the issue is applied to a sharia entity. This is because sharia entities have sharia objectives (maqashid) which emphasize the importance of providing benefits to other parties. This benefit can be measured on how much a sharia entity contributes to society where it can be seen from the disclosure of corporate social responsibility. This study aims to obtain empirical evidence about the effect of tax aggressiveness and company characteristics on the level of corporate social responsibility disclosure. The novelty of the current research lies in the object of research used that is different from the object of previous research. If the previous research still used the population in the form of conventional entities, the population used in this study is the sharia entity listed in the Sharia Sharia Index of Indonesia in the period 2011-2014. The results of this study prove empirically that firm size, leverage, and capital intensity affect the level of corporate social responsibility disclosure. Thus, this study has successfully confirmed the role of the theory of legitimacy in explaining the effect of firm size and leverage on the level of corporate social responsibility disclosure. Firm size and leverage have a positive effect on the level of corporate social responsibility disclosure. Furthermore, the results of this study also showed that the level of tax aggressiveness and profitability did not affect the level of corporate social responsibility disclosure.

Keywords: *tax aggressiveness, firm size, leverage, corporate social responsibility disclosure*

INTRODUCTION

Research on corporate social responsibility disclosure is still dominated by the influence of company performance, stock return and capital cost to corporate social responsibility disclosure. There is little empirical research that examines the relationship of corporate social responsibility disclosure to the level of tax aggressiveness (Zeng, 2016). Therefore, the current study will examine the effect of tax aggressiveness and firm characteristics on the level of corporate social responsibility disclosure. The basic theory used in this study is the theory of legitimacy where this theory explains the influence of tax aggressiveness and corporate characteristics on the level of corporate social responsibility disclosure. While the characteristics of the company in this study is represented by three variables, namely firm size, profitability, and leverage.

An empirical study that examines the effect of firm size on the level of corporate social responsibility disclosure has been largely undertaken by researchers with inconsistent results. Most studies have proven empirically the effect of firm size on the level of corporate social responsibility disclosure as research conducted by Khasharmeh & Desoky (2013); Lestari (2013); Rama & Meliawati (2014); Istianingsih (2015); Abdulhaq & Muhamed (2015); Al-Ajmi, Al-Mutairi, & Al-Duwaila (2015); Rufino & Machado (2015); Habbash (2016); and Sunarsih & Ferdiyansyah (2017). In contrast, Juhmani (2014) and Wiyuda & Pramono (2017) failed to prove empirically the influence of firm size on corporate social responsibility disclosure.

There is a close relationship between profitability and corporate social responsibility disclosure. This is as expressed by Belkaoui & Karpik (1989) that the company's concern for society through social responsibility requires management to make the company more profitable (Ismail, 2015, Ismail & Ghozali, 2015; Meutia & Ismail, 2015; and Meutia, 2015) . This explanation is a supportive argument that profitability affects the degree of disclosure of corporate social responsibility. Nevertheless, there is a different view from Vence (1975) in Belkaoui & Karpik (1989) which explains that disclosure of corporate social responsibility is a disservice to the company, since companies have to incur costs to carry out disclosure of social responsibility.

Empirical studies that examine the effect of leverage on corporate social responsibility disclosure levels show inconsistent results. Habbash (2016) found that leverage levels negatively affect the extent of corporate social responsibility disclosure. In contrast, Juhmani (2014) found a positive influence of leverage on the level of corporate social responsibility disclosure. However, more studies have found no leverage effect on corporate social responsibility disclosure.

This research is motivated to overcome the research gap from two aspects, namely variables and research findings. The first motivation is related to research variables. Previous research is still dominated by determinants of financial performance, stock returns, and capital costs, while still little is testing the effect of tax aggressiveness on corporate social responsibility disclosure level. The second motivation relates to the findings of previous research results that show inconsistent results.

The novelty offered in this research lies in the subject of analysis and research models. The subject of analysis in this study is the sharia entity listed in the Sharia Indonesia Shares Index (ISSI). The model of this research is a model to examine the effect

of tax aggressiveness and firm characteristics on the level of corporate social responsibility disclosure. This model is used to test the theory of legitimacy.

LITERATURE REVIEW

Theory of Legitimacy

The legitimacy of a company can be interpreted as something the community gives to the company and something the company seeks out of society (O'Donovan, 2000). Suchman (1995) defines legitimacy as a common perception or assumption that the action of an entity is desirable, appropriate or appropriate in accordance with socially constructed norms, values, beliefs and definitions. In addition, legitimacy can be understood as the perception of organizational actors, as an assessment of the organization, or as a consequence of the behavior of perceptions and judgments so as to reveal the actions of the organizers, in particular, the acceptance and endorsement of society (Bitektine, 2011). From some of these definitions, it can be said that legitimacy is the acceptance and endorsement of the society because an entity performs actions that are in accordance with the system of norms, values, and beliefs of the community. This legitimacy is indispensable for the company to support the sustainability of the company's business in the future.

The Concept of Tax Aggressiveness

Tax aggressiveness is an action that has the purpose to reduce taxable income through tax planning and using methods that are classified or not classified as tax evasion. Although not all actions are in violation of the rules, more methods used by the company will make the company more assumed to be more aggressive (Frank et al., 2009). Tax aggressiveness can be done in a form that does not violate the law nor that violates the rules, but more tax aggressiveness leads to unlawful acts. Hite and McGill (1992) and Murphy (2004) also argue that tax aggressiveness is a situation where companies make certain tax policies that have an uncertain future risk of uncertainty, whether compliance or noncompliance (Sari and Martani, 2010).

From some of these definitions it can be understood that tax aggressiveness has a broad concept and includes both non-breaking tax planning practices and unlawful practices. This study uses this concept so that it can be said that companies that behave aggressively in taxes do not mean to have committed tax fraud and accounting practices that deviate.

The Concept of Corporate Social Responsibility Disclosure

The concept of accountability from an Islamic perspective is inseparable from individual and corporate responsibility to God. In addition to being accountable to stakeholders, an entity must take account of its business activities to God. Maali et al. (2006) explains that accountability to God is an application of the concept of *ketauhidan*. In Islam, all individuals and businesses are accountable to God and the *ummah* by knowing and granting the rights of stakeholders. Baydoun and Willet (2000) explain that in the context of corporate reporting, there are two principles underlying the concept of accountability in Islam namely the principle of full disclosure and the concept of social

accountability. Social accountability from an Islamic perspective is related to the principle of full disclosure, in which accountants must disclose everything that is important to stakeholders as part of the orders of Islam.

Issalih et al. (2015) describes that Islamic Shari'a as a starting point may be linked to the social responsibility objectives of the business organization. The main purpose of disclosure of social information is as a form of implementing accountability of business organizations to stakeholders. The commitment of business organizations to Islamic sharia, especially adopting specific social responsibility targets based on sharia and ensuring the welfare of stakeholder groups.

Research Hypothesis

Tax Aggressiveness Level towards Corporate Social Responsibility Disclosure Level

The effect of the degree of tax aggressiveness on the level of disclosure of social responsibility can be explained by the theory of legitimacy. Based on this theory, more aggressive companies tend to disclose social responsibility information in order to gain legitimacy from society. Legitimacy is needed by the company in order to maintain the company's survival. Empirical research that examines the effect of tax aggressiveness on corporate social responsibility disclosure is done by Deegan et al. (2002) and Lanis & Richardson (2013). Deegan et al. (2002) succeeded in proving the positive influence of tax aggressiveness on the disclosure of social responsibility. Lanis & Richardson (2013) also found a positive effect of tax aggressiveness on corporate social responsibility disclosure rates. Results Deegan et al. (2002) and Lanis & Richardson (2013) successfully supported the theory of legitimacy.

H₁: Tax aggressiveness level affects corporate social responsibility disclosure level

Company Size towards Corporate Social Responsibility Disclosure Level

The influence of firm size on the level of social responsibility disclosure can be described in terms of the theory of legitimacy. According to the theory of legitimacy, the existence of a company depends on the acceptance of the society in which the company operates. This is possible because the company can be influenced by society, and vice versa companies also have influence to the community. The legitimacy of the community is assumed to be an important resource for the company in determining the sustainability of its business (Deegan et al., 2002). Some empirical studies by Khasharmeh & Desoky (2013); Lestari (2013); Rama & Meliawati (2014); Istianingsih (2015); Abdulhaq & Muhamed (2015); Al-Ajmi, Al-Mutairi, & Al-Duwaila (2015); Rufino & Machado (2015); Habbash (2016); and Sunarsih & Ferdiansyah (2017) support the argument of the theory of legitimacy. The results of their empirical studies found a positive effect of firm size on corporate social responsibility disclosure.

H₂: Company size affects corporate social responsibility disclosure level

Profitability towards Corporate Social Responsibility Disclosure Level

The effect of profitability on the level of disclosure of social responsibility can be explained in the context of the theory of legitimacy. Deegan et al. (2002) argue that the theory of legitimacy has the hypothesis that companies are bound by an unwritten social

contract with the communities in which the company operates. If a company fails to meet its legitimacy it can threaten the company's performance and the company's survival. Therefore, more profitable companies seek to disclose social and environmental information more broadly than less profitable companies. Empirical research conducted by Nurkhin (2010); Badjuri (2011); Al-Ajmi, Al-Mutairi, & Al-Duwaila (2015); Lestari (2013); Dienes & Velte (2016); and Wiyuda & Pramono (2017) confirm the positive effect of profitability on the level of corporate social responsibility disclosure.

H₃: Profitability affects corporate social responsibility disclosure level

Leverage towards Corporate Social Responsibility Disclosure Level

The influence of leverage on the level of disclosure of social responsibility can be explained in the context of the theory of legitimacy. The theory of legitimacy explains the relationship between the disclosure of corporate social responsibility and society, where corporate management reacts to the expectations and changes of society (Juhmani, 2014). Roberts (1992) observes that a high degree of dependence on debt will encourage companies to increase social activity and disclose broader social and environmental information in order to meet creditor expectations on environmental issues. The results of empirical research conducted by Christopher & Filipovic (2008) and Juhmani (2014) support the theory of legitimacy. Their results found a positive leverage effect on corporate social responsibility disclosure rates. The higher the leverage, the greater the company's tendency to disclose social information.

H₄: Leverage affects corporate social responsibility disclosure level

METHODOLOGY

Population and Sample

The study population is sharia entity registered in Indonesia Sharia Shares Index (ISSI). Samples are selected according to certain criteria based on purposive sampling method. The data used in this study were taken from Indonesian Capital Market Directory (ICMD), and idx.co.id website. The criteria used in the selection of samples include: (1) the existence of annual reports for the period 2011-2014; (2) positive earnings during the period 2011-2014 because negative earnings can distort the calculation of the degree of tax aggressiveness; (3) the effective tax rate (ETR) is less than one during the period 2011-2014 because more than one ETR will cause problems in model estimation; and (4) adequate data on disclosure of corporate social responsibility during the period 2011-2014.

Variable Descriptions and Indicators

Tax aggressiveness is an action to reduce income tax through tax avoidance and tax evasion (Frank et al., 2009). In this study, this variable is measured by an effective tax rate indicator (ETR). ETR is calculated from current income tax expense divided by pre-tax income.

The characteristics of firms in this study are represented by firm size, profitability, and leverage. Company size is a classification according to the size of the company based on various ways, including: total assets, log size, stock market value, and others. The size

of the Company in this study is measured by total sales. Profitability is a measure used to determine the company's ability to generate profits during a certain period and also provides an overview of the effectiveness of management in carrying out its operations. Profitability in this study is measured by ROA. ROA is calculated from pre-tax profit divided by total assets. Leverage describes the company's capital structure and knows the risk of uncollectible debt. The leverage of firms in this study is measured by total liabilities divided by total assets.

Corporate social responsibility is a business commitment to act ethically, operate legally, and contribute to improving the quality of life of employees and their families, local communities and the wider community (Anatan, 2013). In this study, the corporate social responsibility disclosure index is used guidance indicators from Global Reporting Initiatives (GRI). GRI consists of economic category (9 indicators), environment (34 indicators), labor and comfort (16 indicators), human rights (12 indicators), community (11 indicators), and product responsibility (9 indicators). The score of this variable is measured from the number of items disclosed divided by the total items of available disclosure.

Model of the Research

This study uses a research model in which the independent variables include the level of tax aggressiveness, firm size, profitability, and leverage. The dependent variable is the level of corporate social responsibility disclosure. The empirical model of this research is formulated as follows:

$$CSR\text{D} = \alpha_0 + \beta_1\text{ETR} + \beta_2\text{SIZE} + \beta_3\text{ROA} + \beta_4\text{LEV} + e$$

Description

CSR_D = corporate social responsibility disclosure

ETR = effective tax rate

SIZE = company size

ROA = return on assets

LEV = leverage

Data Analysis Technique

The required data is taken from the source of the company's annual report for the period of 2011-2015. Then performed the data analysis phase using SPSS software. Results and discussion are presented in the framework of hypothesis testing. The final stage is to draw conclusions to answer the research problem.

RESULTS

Shariah entities listed in the Indonesia Sharia Shares Index (ISSI) are all Sharia shares listed on the Indonesia Stock Exchange (IDX). From the data identification process, 144 companies are listed in a row, listed on the Indonesia Sharia Sharia Index (ISSI) in the period 2011 to 2014. However, from that number finally obtained a sample of 71 companies per year so that the total panel data for 4 years as much 284 (71 x 4 years).

Simultaneous and Partial Test

The F test results as shown in Table 1 show that the fit model has a significance of 0.000 below the 5% significance level. The results of this test also shows that all independent variables simultaneously affect the level of corporate social responsibility disclosure.

Table 1. Results of F-Test

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.823	6	.137	14.617	.000 ^b
	Residual	2.599	277	.009		
	Total	3.422	283			

Partial test results as shown in Table 2 show that there are two independent variables that affect the level of corporate social responsibility disclosure of company size (SIZE) and leverage (LEV). The leverage variable influences the corporate social responsibility disclosure level at a significant level of 10%.

Table 2. Results of t-Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.606	.108		-5.611	.000
ETR	.088	.064	.074	1.371	.172
SIZE	.065	.009	.418	7.476	.000
ROA	-.030	.054	-.032	-.565	.572
LEV	.072	.038	.104	1.890	.060

Based on Table 3 it can be seen that the Adjusted R-Square of 0.224 shows that the contribution of all independent variables to the aggressiveness of the tax is 22.4%, while the rest of 77.6% is influenced by other variables outside the model.

Table 3. Coefficient of Determination

R	R Square	Adjusted R Square	Std. Error of the Estimate
.490 ^a	.240	.224	.09687

DISCUSSION

Tax Aggressiveness Level towards Corporate Social Responsibility Disclosure Level

The results of this study proves that the level of tax aggressiveness in Islamic entities does not give effect to the level of corporate social responsibility disclosure. This proves that the theory of legitimacy does not apply in the relationship between the level of tax

aggressiveness with the level of disclosure of social responsibility to the entities of sharia. The results of this study is different from research conducted by Deegan et al. (2002) and Zeng (2016). Deegan et al. (2002) found a positive influence of tax aggressiveness toward corporate social responsibility disclosure in the sense that the higher level of tax aggressiveness done by the company, the maximum is also the level of corporate social responsibility disclosure. Furthermore, Zeng (2016) found that socially responsible companies are less involved in tax aggressiveness whereas companies with low levels of social involvement are more likely to be involved in tax aggressiveness. In addition, the results of Zeng (2016) also show that firms with favorable tax treatment will implement higher-level CSR.

Company Size towards Corporate Social Responsibility Disclosure Level

The results of this study prove empirically about the positive effect of firm size on the level of social responsibility disclosure. The larger the size of the company, the higher the level of disclosure of social responsibility. The results of this study support the theory of legitimacy in explaining the effect of firm size on the level of corporate social responsibility disclosure. Deegan et al. (2002) revealed that based on the theory of legitimacy, the existence of a company depends on the acceptance of the community where the company is located. This is due to the mutual influence between companies and communities where companies are affected by society and vice versa. This legitimacy is very important for the company in maintaining its survival. The results of this study support the results of previous empirical research conducted Suttipun and Standton (2011); Dhaliwal et al. (2011); Cormier et al. (2011); Khasharmeh and Desoky (2013); Al-Ajmi, Al-Mutairi, and Al-Duwaila (2015); Rufino and Machado (2015); Habbash (2016) all of which found a positive effect of firm size on the level of corporate social responsibility disclosure.

Profitability towards Corporate Social Responsibility Disclosure Level

The results show that profitability does not affect the level of social responsibility disclosure. The theory of legitimacy explains that a more profitable company will disclose social and environmental information with a broader level of disclosure than a less profitable company (Deegan et al., 2002). The results of this study are not in line with the theory of legitimacy. The results show that the profitability of sharia entities does not affect the level of corporate social responsibility disclosure. This is due to corporate social responsibility is a form of implementation of the maqashid syariah so that sharia entities continue to disclose corporate social responsibility regardless of the level of profitability. Despite the profitability of sharia banks down, Islamic banks continue to disclose corporate social responsibility. The results of this study support the results of previous research from Sembiring (2006); Haniffa and Cooke (2005); Juhmani (2014); Rama and Meliawati (2014); Istianingsih (2015); Abdulhaq and Muhamed (2015); Habbash (2016); and Sunarsih and Ferdiyansyah (2017) who did not find the effect of profitability on the disclosure of social responsibility.

Leverage towards Corporate Social Responsibility Disclosure Level

The results of the current study find the effect of leverage on the level of corporate social responsibility disclosure. The higher the leverage, the greater the company's tendency to disclose social information. The results of this study support the theory of legitimacy. A high degree of dependence on debt can encourage a sharia entity to engage in a wider level of disclosure of social responsibility in order to fulfill the creditor's expectations (Roberts, 1992). In the context of Islamic entities, the meaning of stakeholders is broader than the general meaning because it includes creditor, shohibul mal, mudharib, muzakki, mustahik, and other interested parties. The increased interest of these stakeholders resulted in an increasingly widespread disclosure of corporate social responsibility. The results of this study support previous studies from Christopher and Filipovic (2008) and Juhmani (2014) who found a positive leverage impact on corporate social responsibility disclosure rates.

CONCLUSIONS

The results of the current study show that firm size and leverage affect the level of corporate social responsibility disclosure. These findings have successfully confirmed the role of the theory of legitimacy in explaining the effect of firm size and leverage on the level of corporate social responsibility disclosure. Furthermore, the results of the current study also indicate that the level of tax aggressiveness and profitability does not affect the level of corporate social responsibility disclosure. This condition is possible because Sharia entities should still strive to disclose information about corporate social responsibility as a contribution to stakeholders irrespective of the amount of taxes paid to the State Treasury.

Further research may extend to a wider scope of both the object of the study and the research variables. The object of research can be more specifically directed at sharia entities in the banking, insurance and cooperative industries. The determinants of the corporate social responsibility disclosure level can be expanded by incorporating other variables that specifically meet Islamic criteria such as Islamic governance and maqashid sharia.

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Lampiran 6

Artikel yang accepted di International Journal of Engineering Research & Technology (IJERT) terindeks Scopus

Tax Aggressiveness Prediction Method with Neural Network and Logistic Regression

KAUTSAR RIZA SALMAN

kautsar@perbanas.ac.id

STIE Perbanas Surabaya, Indonesia

ABSTRACT

This study aims to examine the predictive power of tax aggressiveness using neural network and logistic regression methods. This research sample is a company whose shares are listed in the Indonesian Sharia Stock Index (ISSI) in the period 2011-2015. A total of 71 public companies in Indonesia were obtained. Data obtained from Indonesia Stock Exchange. The technique of determining the sample was used purposive sampling. The independent variables used are maqashid sharia index, disclosure index of corporate social responsibility, company size, profitability, leverage, inventory intensity, and capital intensity. The analysis technique used is multiple regression, logistic regression, and neural networks. In the initial test, multiple regression method was used. At this initial stage, other independent variables will be known that can predict the level of tax aggressiveness. In the second stage of the test comparing the prediction model of tax aggressiveness that gives a higher level of accuracy between logistic regression analysis and neural network. Based on the results of the analysis and discussion, it can be concluded that the Neural Network method provides a better level of prediction than logistic regression for training data and testing data.

Keywords: *level of tax aggressiveness, maqashid sharia index, level of disclosure of social responsibility, company characteristics, logistic regression, neural network*

INTRODUCTION

This research attempts to predict the tax aggressiveness by entering the maqashid sharia index variable and the level of corporate social responsibility disclosure. The prediction model that will be developed is called the Sharia-based Islamic Tax Aggressive Prediction Model and Social Disclosure. In this model, several control variables are also included, such as company size, profitability, leverage, capital intensity, and inventory intensity. Furthermore, this study will find and compare which prediction models are more accurate to predict the level of tax aggressiveness. This study is intended to compare between the classical models represented by logistic regression with the new model represented by the neural network.

Logistic regression analysis can be used to predict tax aggressiveness. In logistic regression, a logistic model is used to explain the relationship between predictors and responses and to group objects into one of two response categories. In its development, logistic regression can also be used for responses in more than two groups, known as polychotomous logistic regression. Logistic regression in some literature is referred to as a classic model.

One classification method developed from the machine learning group is the Neural Network (NN). This model does not require a measurement scale and certain distribution of predictors or inputs in NN terminology. In general, there are two major groups in NN associated with the presence or absence of responses, namely supervised and unsupervised NN. In the case of this classification analysis, the NN used is included in the supervised NN group, because the learning process (function optimization) is supervised by a response (output classification). In some classification literature, this NN is often referred to as part of the modern classification model.

The novelty offered in this study is on new methods to predict tax aggressiveness using neural networks and logistic regression. There have been no previous studies comparing neural network methods and logistic regression in order to predict tax aggressiveness. Based on the background of the above problems, the formulation of the problem from this study is which method will provide higher predictive power between logistic regression methods and Neural Network (NN)?

OBJECTIVES OF THE STUDY

The purpose of this study is to compare logistic regression and Neural Network. Both methods are applied using statistical packages that provide facilities for data analysis using SPSS version 20 software. Each data is divided into two groups, namely data for modeling (training) and evaluation (testing) where training and testing comparisons are 2: 2. Next will be compared the classification accuracy of each classification method.

FRAMEWORK

Logistic Regression

Logistic regression is a special form where the dependent variable becomes two parts or groups (binary). Although the formula can be more than two groups. Logistic regression is a regression that is used to find a regression equation if the dependent variable is a scale-shaped variable. Binary logistic regression is used to find a regression equation where the dependent variable is categorical type two choices such as: yes or no, or more than two choices such as: disagree, agree, strongly agree.

Many categorical response variables have only two categorical values. Observations for each subject of the company can be classified as bankrupt (default) or not bankrupt (non default), with the probability value that will occur is calculated

with 1 and 0. The response variables that become observations follow the Bernoulli distribution with binary random variables that have $P(Y = 1)$.

Neural Network

Neural Networks (NN) are adaptive statistical models based on an analogy with brain structures. From this NN can learn to estimate the parameters of several populations using a small number of examples (one or several) at a time. NN is basically no different from the standard statistical model. NN is used as a statistical tool in various fields, including psychology, statistics, engineering, econometrics, and even physics. NN is also used as a cognitive process model by neural and cognitive scientists.

Basically, NN is built from simple units, sometimes called neurons or cells by analogy with real things. These units are connected by a series of weighted connections. Learning is usually done by modification of the weighted connection. Each unit of code corresponds to the features or characteristics of a pattern that we want to analyze or what we want to use as a prediction. These networks usually organize their units into several layers. This first layer is called the input layer, the last is the output layer. Middle layers (if any) are called hidden layers. The information to be analyzed is fed to the first layer neuron and then propagated to the second layer neuron for further processing. The results of this processing are then distributed to the next layer and so on until the last layer. Each unit receives some information from another unit (or from the outside world through several devices) and processes this information, which will be converted into the unit output.

Literature Review

The study of the influence of the Islamic maqashid index on tax aggressiveness is still relatively rarely investigated. Until now only Salman, Anshori et al. () which examines the effect of the Islamic maqashid index on the level of tax aggressiveness. Salman et al. (2008) found a positive influence on the Islamic maqashid index on the level of tax aggressiveness on public companies listed on the Indonesia Stock Exchange on the Indonesian sharia stock index (ISSI).

The study of the influence of corporate governance characteristics on tax aggressiveness was carried out by Zemzem & Ftouhi (2013); Hanum & Zulaikha (2013); Richardson et al. (2013); Kawor et al. (2014); Boussaidi & Hamed (2015); and Salman, et al. (2018). Their study results show inconsistent results. The study of Boussaidi & Hamed (2015) and Zemzem & Ftouhi (2013) obtained empirical evidence regarding the effect of board size in reducing the level of tax aggressiveness. Salman et al. (2018) found the influence of Islamic governance in reducing the level of tax aggressiveness in Islamic public banks in Indonesia. The results of different studies were obtained by Hanum & Zulaikha (2013) and Khaoula & Ali (2012) which showed no influence of the size of independent commissioners and audit committees on the level of tax aggressiveness.

Company characteristics are also variables that affect the level of tax aggressiveness. The characteristics of the company are represented by company size, profitability, and leverage. Empirical research examining the effect of firm size on the level of tax aggressiveness was carried out by Noor et al. (2010); Hsieh (2012); Hanum & Zulaikha (2013); Zemzem & Ftouhi (2013); Wang et al. (2014); and Salman, et al. (2018). The results of the study prove that the larger the size of the company results in greater levels of tax aggressiveness as well as Hsieh (2012) and Salman et al. (2018). Hsieh (2012) and Salman et al. (2018) found that companies that have a larger size tend to be more able to utilize tax incentives so as to reduce taxable income and income tax payable. Most other researchers like Noor et al. (2010); Hanum & Zulaikha (2013); Zemzem & Ftouhi (2013); and Wang et al. (2014) produce different study results, namely the size of the company negatively affects the level of tax aggressiveness. The results of their study explain that companies that have a larger size and in this case indicated by the total value of assets or large sales will result in taxable income and a higher income tax payable.

Empirical research examining the effect of profitability on the level of tax aggressiveness has been carried out by Derashid & Zhang (2003); Adhikari et al. (2006); Noor et al. (2008); Noor et al. (2010); Hsieh (2012); Zemzem & Ftouhi (2013); Hanum & Zulaikha (2013); and Salman et al. (2018). Their study shows contradictory results. Most of their research proves that there is a negative influence of profitability on the effective tax rate (ETR), in other words it shows a positive influence of profitability on the level of tax aggressiveness. In contrast, different results were obtained by Hsieh (2012), Zemzem & Ftouhi (2013), and Salman et al. (2018). The results of their study found that companies that have a higher level of profitability, have a tendency to lower tax aggressiveness. This is in accordance with the concept of income tax regarding progressive tax rates where companies that have higher taxable income will be charged a higher tax rate as well.

Many researchers have examined the effect of leverage on the level of tax aggressiveness as done by Gupta & Newberry (1997); Buijink & Janssen (2000); Adhikari et al. (2006); Richardson & Lanis (2007); Noor et al. (2010); Hsieh (2012); Hanum & Zulaikha (2013); Wang et al. (2014); and Salman et al. (2018). Their study shows different results. Most of the study results show that companies that have high leverage are more likely to do higher tax aggressiveness. Companies that have greater total liabilities can charge higher interest costs in their fiscal correction report. Thus, it will have an impact on the amount of income tax paid by the company to be smaller. Conversely, Hsieh (2012), Hanum & Zulaikha (2013), and Wang et al. (2014) found the negative influence of leverage on the level of tax aggressiveness. This is because the company is bound by an agreement with the creditor so it is less inclined to do tax aggressiveness.

METHODOLOGY

Population and Sample

The population of this study is a company listed on the Indonesia Stock Exchange (IDX). Samples were selected according to certain criteria (with purposive sampling method) from 2011 to 2015. The data used in this study were taken from the Indonesian Capital Market Directory (ICMD), as well as those listed on idx.co.id. In addition, indicators regarding corporate social responsibility disclosures are obtained from the website www.globalreporting.org. Criteria used in sample selection include:

5. Companies that issue financial statements and annual reports in a row for the period 2011 - 2015.
6. Companies that have positive earnings in a row for the period 2011 - 2015 because negative earnings can distort the calculation of the level of tax aggressiveness.
7. Companies that have an Effective Tax Rate (ETR) of less than one in a row in the period 2011 - 2015 because more than one ETR will cause problems in the model estimation.
8. Companies that have adequate data on the disclosure of corporate social responsibility for the period 2011 - 2015.

Variable Descriptions and Indicators

The research variable is divided into dependent variables and independent variables. Dependent variable is the level of tax aggressiveness (Y). The independent variables include: maqashid syariah index (X_1), index of corporate social responsibility disclosure (X_2), company size (X_3), profitability (X_4), leverage (X_5), capital intensity (X_6), and inventory intensity (X_7).

1. The level of tax aggressiveness is the level of how much the company reduces the amount of income tax every year. Tax aggressiveness in this study is proxied by an effective tax rate (ETR). ETR is measured by the tax burden divided by income before tax. Companies that carry out tax aggressiveness are given code 1 and companies that do not carry out tax aggressiveness are given 0.
2. Maqashid sharia is the goal to be achieved by sharia entities. Maqashid sharia in this study was proxied by the maqashid sharia index. The indicator of the maqashid sharia index in this study uses the indicators proposed by Mohammed et al. (2008), Mohammed & Taib (2009) and Salman et al. (2018) which divides into three objectives, namely tahdzib al-fard (education for individuals), iqamah al-adl (justice), and maslahah (benefit / welfare).
3. Corporate social responsibility is a business commitment to act ethically, operate legally and contribute to improving the quality of life of employees and their families, local communities and the wider community. In this study, the index of

disclosure of corporate social responsibility is used as a guideline indicator from the Global Reporting Initiatives (GRI). GRI consists of economic categories (9 indicators), environment (34 indicators), employment practices and work comfort (16 indicators), human rights (12 indicators), community (11 indicators), and responsibility for products (9 indicators). The scores for each item of disclosure are summed and divided by the total items of disclosure expected for each indicator to obtain the disclosure score per indicator.

4. The characteristics of the company in this study include company size, profitability, leverage, capital intensity, and inventory intensity. Company size is measured by total sales. Profitability is measured by return on assets (ROA). ROA is a comparison of pre-tax profitability to total assets. Leverage is measured by total liabilities divided by total assets. Capital intensity is measured by fixed assets divided by total assets. Inventory intensity is measured by inventory divided by total assets.

Data Analysis Technique

In this study, each data is divided into two groups, namely data for modeling (training) and evaluation (testing) where the comparison of training and testing is 2: 2. Further classification will be carried out with logistic regression and Neural Networks. Both methods are applied using SPSS version 20 statistical software which provides facilities for data analysis with both methods. The research period is 2011 - 2015. Data for modeling (training) and evaluation (testing) are divided into 2 (two), namely:

1. Comparison 2: 2 uses the same year data between variables X and Y. Both of these variables (X and Y) each use modeling data (training) in 2011 - 2012. The evaluation data uses 2013 - 2014.
2. Comparison of 2: 2 uses different year data between variables X and Y. Variable X is used to predict variable Y so that variable X uses the data of the previous year while variable Y uses data for the following year. Data for modeling (training) on X variables using 2011 - 2012 while the Y variable uses data from 2012 - 2013. Data for evaluation (testing) on the X variable uses data in 2012 - 2013 while the Y variable uses data 2013-2014.

RESULTS AND DISCUSSION

Logistic Regression

Comparison of Data Training and Testing 2: 2 (same year)

The Hosmer and Lemeshow test is used as a goodness of fit test to determine whether the model can be used to interpret the relationship between the level of tax aggressiveness and the seven independent variables. The research hypothesis of the Hosmer and Lemeshow test is

H_0 : Fit model (the model is able to explain empirical data)

H_1 : The model is not Fit

H_0 criteria if the p-value of the Hosmer and Lemeshow test is Chi square distribution of more than 0.05. The results of the model can be seen that the p-value is $0.537 > 0.05$ as in Table 1, it can be concluded that the null hypothesis cannot be rejected which means that the model is fit.

Table 1. Hosmer and Lemeshow Test Results

Chisquare	Df	Sig.
6.993	8	.537

Summary model using Cox and Snell R Square and Nagelkerke R Square. The model results show that the value of Cox and Snell R Square is 0.207 and Nagelkerke R Square is 0.280. Variable level of tax aggressiveness can be explained by independent variables in the model of 20.7% (Cox and Snell) and 28% (Nagelkerke) as in Table 2, while the rest is explained by factors outside the model.

Table 2. Model Summary

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
156.713	.207	.280

Statistical results are presented in Table 3.

Table 3. SPSS Results for Modeling (Training) 2: 2

	B	S.E.	Wald	df	Sig.	Exp(B)
IMS	24.906	6.378	15.251	1	.000	0.956
ICSR	-4.717	2.126	4.923	1	.027	.009
SIZE	.830	.355	5.462	1	.019	2.293
ROA	-8.136	2.884	7.956	1	.005	.000
LEV	-.198	1.388	.020	1	.887	.820
CAPINT	-.918	1.165	.620	1	.431	.399
INVINT	1.065	1.718	.385	1	.535	2.902
Constant	-9.541	4.087	5.450	1	.020	.000

Based on Table 3, it can be concluded that the variables of IMS, ICSR, SIZE, and ROA significantly influence the level of tax aggressiveness while the other three variables (LEV, CAPINT, and INVINT) are not significant. This can be seen in the Wald

value which is greater than the table value or by looking at the significance value of both of which are smaller than 0.05.

Logistic regression model for data effective tax rate (ETR) with comparison of training and testing 2: 2 is as follows:

$$P(y = 1|x) = \frac{1}{1 + e^{-(-9,541 + 24,906x_1 - 4,717x_2 + 0,830x_3 - 8,136x_4 - 0,198x_5 - 0,918x_6 + 1,065x_7)}}$$

or it can also be made with the following equation:

$$\ln\left(\frac{p}{1-p}\right) = -9,541 + 24,906x_1 - 4,717x_2 + 0,830x_3 - 8,136x_4 - 0,198x_5 - 0,918x_6 + 1,065x_7$$

The accuracy of the classification results in the regression model is shown in Table 4.

Table 4. Data Classification Results with Logistic Regression for Modeling (Training) 2:

Observed		Predicted		
		ETR	Percentage	Correct
		.00	1.00	
ETR	.00	37	20	64.9
	1.00	22	61	73.5
Overall				70.0
Percentage				

Table 4 above shows that the results of data classification for modeling (period 2011 - 2012) with a comparison of 2: 2 training and testing with logistic regression is 70%. From the observation results, 57 companies which were non-defaults were precisely predicted to be 37 companies so that the level of prediction accuracy was 64.9%. On the contrary, from the observation results, 83 companies that defaulted correctly were predicted as many as 61 companies so that the level of accuracy of their predictions was 73.5%.

Furthermore, data classification is carried out for data testing (2013-2014 period) with logistic regression. The results showed that the accuracy of the classification was 75% as shown in table 5.

Table 5. Data Classification Results with Data Logistic Regression for Evaluation (Testing) 2: 2

Observed		Predicted	
		ETR	Percentage

		.00	1.00	Correct
ETR	.00	37	20	64.9
	1.00	15	68	81.9
Overall Percentage				75.0

Comparison of Data Training and Testing 2: 2 (different years)

The analysis was continued for data with comparison of training and testing was 2: 2 for different year periods between variables X and variable Y. Variable Y used data for the following year period while variable X used data from the previous year. From the Hosmer Test it is known that the model used in this study is fit because the significance value is 0.946 above 0.05. The results of the Hosmer test are described in Table 6 below.

Table 6. Hosmer and Lemeshow Test Results

Chi-square	Df	Sig.
2.809	8	.946

From the summary model, can be seen in Cox and Snell R Square and Nagelkerke R Square by 22.3% and 29.8% variables of tax aggressiveness can be explained by independent variables while the rest is explained by factors outside the model. The results of the summary model are shown in Table 7.

Table 7. Model Summary

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
157.731 ^a	.223	.298

The significance test results in table 8 show that there are several variables, namely IMS, ICSR, SIZE, ROA, and CAPINT which significantly influence the tax aggressiveness. The significance value of these variables is below 0.05 or 0.1. LEV and INVINT variables have no significant effect on tax aggressiveness.

Table 8. SPSS Results on Data for Modeling (Training) 2: 2

	B	S.E.	Wald	Df	Sig.	Exp(B)
IMS	17.916	5.754	9.695	1	.002	0.603
ICSR	-4.003	2.165	3.418	1	.064	.018
SIZE	.840	.347	5.843	1	.016	2.315
ROA	-9.814	3.064	10.257	1	.001	.000
LEV	-1.000	1.517	.435	1	.510	.368
CAPINT	-3.783	1.209	9.786	1	.002	.023
INVINT	1.874	1.620	1.339	1	.247	6.514
Constant	-8.271	3.961	4.361	1	.037	.000

From Table 8 the logistic regression model can be made as follows:

$$\ln\left(\frac{p}{1-p}\right) = -8,271 + 17,916IMS - 4,003ICSR + 0,840SIZE - 9,814ROA - 1LEV - 3,783CAPINT + 1,874INVINT$$

The accuracy of the classification results in the regression model is shown in Table 9.

Table 9.
Data Classification Results with Logistic Regression for Modeling (Training) 2: 2

Observed	Predicted		
	ETR	Percentage	Correct
	.00	1.00	
ETR .00	42	22	65.6
1.00	23	53	69.7
Overall Percentage			67.9

Table 9 shows that the results of data classification by comparing training and testing data 2: 2 in different years with logistic regression is 67.9%. From the results of observations as many as 64 companies that were non-defaults were precisely predicted as many as 42 companies so that the level of accuracy of the prediction was 65.6%. On the contrary, from the observation of 76 companies that defaulted, it was precisely predicted that there were 53 companies, so the accuracy of the prediction was 69.7%.

Furthermore, the classification of FD data is carried out for testing data 2: 2 (where the X variable uses the 2012-2013 period while the Y variable uses the period 2013 - 2014) with logistic regression. The results showed that the accuracy of the classification was 72.1% as shown in Table 10.

Table 10. Data Classification Results with Logistic Regression for Evaluation (Testing) 2:

Observed	Predicted		
	ETR	Percentage	Correct
	.00	1.00	
ETR .00	32	25	56.1
1.00	14	69	83.1
Overall Percentage			72.1

Based on Table 11 it is known that the average level of accuracy of data classification for modeling (training) with Logistic Regression is 68.95%. The average level of data classification accuracy for testing is 73.5%.

Table 11. Accuracy of Financial Distress Data Classification with Logistic Regression method

Comparison Training : Testing	The same year		Different year		Average Level of Accuracy	
	Training	Testing	Training	Testing	Training	Testing
Classification Accuracy	70	75	67,9	72,1	68,95	73,5

Neural Network

Comparison of Data Training and Testing 2: 2 (Same Year)

Output results of the accuracy level of the classification results with Neural Network are shown in Table 12.

Table 12. Classification Results with Neural Network for Modeling (Training) 2: 2

Sample	Observed	Predicted		
		.00	1.00	Percent Correct
Training	.00	52	5	91.2%
	1.00	11	72	86.7%
	Overall Percent	45.0%	55.0%	88.6%

Table 12 shows that overall the results of the data classification of Tax Aggressiveness for modeling (period 2011-2012) with a comparison of training and testing 2: 2 with Neural Network that is equal to 88.6%. From the results of observations as many as 57 companies that were non-defaults were precisely predicted as many as 52 companies so that the level of accuracy of the prediction was 91.2%. On the contrary, from the observation results, there were 83 companies that defaulted correctly, predicted as many as 72 companies so that the accuracy of the prediction was 88.6%. As for the testing data for the 2013-2014 period, the prediction accuracy is 95% as shown in Table 13.

Table 13. Classification Results with Neural Network for Evaluation (Testing) 2: 2

Sample	Observed	Predicted		
		.00	1.00	Percent Correct

	.00	54	3	94.7%
Testing	1.00	4	79	95.2%
	Overall Percent	41.4%	58.6%	95.0%

Comparison of Data Training and Testing 2: 2 (Different Years)

Output results of the level of accuracy of the results of classification with Neural Network using training data for the period 2011-2012 for the X and 2012-2013 periods for Y variables are shown in Table 14.

Table 14. Classification Results with Neural Network for Modeling (Training) 2: 2

Sample	Observed	Predicted		Percent Correct
		.00	1.00	
Training	.00	38	26	59.4%
	1.00	5	71	93.4%
	Overall Percent	30.7%	69.3%	77.9%

Based on Table 14, it can be seen that the level of accuracy of the prediction of total observations is 77.9%. From the observations of as many as 64 companies that were non-defaults were precisely predicted to be as many as 38 companies so that the level of accuracy of their predictions was 59.4%. On the contrary, from the results of observation, there were 76 companies that defaulted correctly, predicted as many as 71 companies so that the accuracy of the prediction was 93.9%.

Furthermore, for testing data using the period 2012-2013 for variables X and 2013 - 2014 for variable Y shows the level of accuracy of the prediction of 80.7% as shown in Table 15.

Table 15. Classification Results with Neural Network for Evaluation (Testing) 2: 2

Sample	Observed	Predicted		Percent Correct
		.00	1.00	
Testing	.00	36	21	63.2%
	1.00	6	77	92.8%
	Overall Percent	30.0%	70.0%	80.7%

Table 15 shows that the average level of accuracy for training and testing data (3: 2 and 2: 2) is 91.4% and 100%.

Tabel 16. Ketepatan Klasifikasi Data *Financial Distress* dengan Neural Network

Comparison	Same year		Different year		Average Level of Accuracy	
	Training	Testing	Training	Testing	Training	Testing
Classification Accuracy	88.6	95	77.9	80.7	83.25	87.85

On average, it was found that the accuracy of data classification Tax Aggressiveness training and testing with Neural Network was better than Logistic Regression.

CONCLUSIONS

The tax aggressiveness is part of tax planning applied by the companies in order to minimize or reduce the amount of taxes they are supposed to pay. This tax aggressiveness can be done by either lowering the amount of income or increase the amount of load that taxable income (taxable income) is reduced. Then, ultimately, it can reduce the amount of income tax that must be paid by the companies. Tax aggressiveness is a form of tax that is illegal tax evasion or tax avoidance which do not violate the law by exploiting loopholes in tax regulation. The researchers for more than 20 years have struggled to do empirical studies on the determinants that determine tax aggressiveness and provide different findings. The study does not justify that the entire practice of tax aggressive for it is unlawful as described by Frank et al. (2009). The study refers to previous studies which explain that the smaller the tax burden paid by the company, the more the company does tax aggressiveness in the practice of taxation.

This study found that the average level of accuracy of data classification Tax Aggressiveness for data modeling (training) was 68.95% for logistic regression and 83.25% for neural networks. These results indicate that methodically, neural networks are the best classification method for data training. The results also showed that the average level of accuracy of data classification Tax Aggressiveness for evaluation data was 73.5% for logistic regression and 87.85% for neural networks. This result shows that by method, neural network is the best classification method for testing data. Both of these findings provide evidence that by method, neural networks provide a better level of predictive accuracy than Logistic Regression.

Future research can expand this research by adding other variables such as Islamic governance in relation to the level of tax aggressiveness. In addition, further research can focus more on Islamic bank entities as objects of research so that the variable level of disclosure of social responsibility and the maqashid sharia index can be adjusted to the conditions in Islamic banking.

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Lampiran 8
Data Setiap Variabel Tahun 2011

Kode	TA	SIZE	ROA	LEV	CAPINT	INVINT	IMS	ICSR
AALI	0.2503402	13.0323198	0.3266141	0.1742700	0.3355574	0.0753681	0.1661007	0.278481
ACES	0.2463450	12.3849692	0.2554605	0.1514594	0.2489270	0.0360901	0.1030618	0.21519
AKPI	0.2773515	12.1776978	0.0504811	0.5088292	0.4990656	0.1371578	0.0242397	0.265823
AMFG	0.2455240	12.4143500	0.1660083	0.2027042	0.4284476	0.2209102	0.0895401	0.202532
ARNA	0.2614572	11.9650535	0.1562438	0.4189184	0.6793573	0.0428306	0.0760993	0.21519
ASGR	0.2335722	12.2366985	0.1616067	0.5057497	0.1546621	0.3309670	0.0690764	0.278481
ASII	0.1821745	14.2110244	0.1678728	0.5060089	0.1863198	0.0781001	0.0929722	0.316456
ASRI	0.1019261	12.1402081	0.1117166	0.5361049	0.0568475	0.3987006	0.2080340	0.126582
BCIP	0.5585952	10.7432667	0.0227749	0.2294710	0.0573499	0.4139942	0.0205953	0.037975
BISI	0.2250286	11.9994159	0.1258773	0.1575072	0.1688141	0.3446080	0.0891070	0.189873
BKSL	0.1300828	11.6607071	0.0296489	0.1315306	0.0085746	0.2125975	0.1296739	0.088608
BMTR	0.2710652	12.8544843	0.1056496	0.2842726	0.1922425	0.0689414	0.0215894	0.151899
BRAM	0.4224800	12.2788021	0.0740953	0.2761212	0.4292885	0.2112800	0.0277375	0.253165
BSDE	0.1351844	12.4481401	0.0915145	0.3542675	0.0380782	0.2355661	0.1708075	0.253165
BTON	0.2180838	11.1865213	0.2062569	0.2239883	0.0829627	0.0885559	0.0978641	0.21519
COWL	0.2137885	11.2582253	0.1098911	0.5752407	0.0126529	0.3751770	0.1004397	0.012658
CPIN	0.2057712	13.2542573	0.3361790	0.3004829	0.3614975	0.2644088	0.1313692	0.101266
CTRA	0.2016329	12.3381239	0.0536907	0.3364406	0.2068564	0.2321257	0.1054123	0.050633
DILD	0.2576412	11.9727400	0.0348851	0.3325611	0.0301540	0.2774826	0.0718612	0.227848
DVLA	0.2730137	11.9877989	0.1791733	0.2158526	0.2153183	0.1275936	0.0887620	0.189873
EKAD	0.2575598	11.5164825	0.1482331	0.3785776	0.3132765	0.3073125	0.0645571	0.227848
EMDE	0.6639552	10.9981939	0.0084603	0.4088996	0.0361392	0.2536037	0.0111991	0.227848
FAST	0.2331688	12.5207193	0.1929622	0.4633542	0.1526516	0.0832729	0.0712254	0.151899
GMTD	0.1608828	11.2770152	0.1200672	0.6440001	0.0055768	0.3518229	0.1355618	0.227848
HRUM	0.2326458	12.8631224	0.4990874	0.2342588	0.2320202	0.1348751	0.2110249	0.202532
ICBP	0.2472012	13.2870658	0.1803150	0.2964676	0.1701413	0.1070681	0.0831095	0.265823
INCO	0.2621119	13.0518271	0.1868048	0.2693496	0.6522573	0.0674294	0.1501041	0.278481
INTP	0.2350474	13.1426363	0.2593835	0.1331792	0.4207991	0.0731473	0.1638650	0.151899
ITMG	0.2518186	13.3344305	0.4624327	0.3152856	0.2181582	0.0677686	0.1943417	0.278481
JRPT	0.1278846	11.9509341	0.0973305	0.5347392	0.0136220	0.2473402	0.1837645	0.341772
KAEF	0.2596646	12.5417247	0.1293064	0.3019308	0.2378275	0.2541848	0.0479915	0.151899
KDSI	0.2365181	12.0720682	0.0526731	0.5248729	0.3066442	0.3109450	0.0198687	0.101266
KIJA	0.1022300	12.0600539	0.0649001	0.3744006	0.3281822	0.0989781	0.1333423	0.177215
KKGI	0.2985291	12.3278906	0.6563090	0.3279960	0.0866813	0.0705599	0.2202671	0.189873
KLBF	0.2336399	13.0378988	0.2401651	0.2125334	0.2248203	0.2060762	0.1105987	0.265823
LION	0.2181561	11.4288052	0.1836852	0.1742816	0.0507140	0.2842385	0.1218941	0.253165
LMSH	0.2805651	11.3170662	0.1545415	0.4164091	0.2062661	0.3456983	0.0537707	0.202532

LPKR	0.1733492	12.6221705	0.0539351	0.4846963	0.0115162	0.4322305	0.0925986	0.35443
LSIP	0.1860787	12.6708446	0.3077969	0.1402319	0.2686496	0.0542184	0.2215103	0.21519
MAPI	0.2561993	12.7701012	0.1097473	0.5936592	0.3366853	0.3120700	0.0487626	0.35443
MBTO	0.2159137	11.8118263	0.1004405	0.2605479	0.1244254	0.0979353	0.0498146	0.341772
MDLN	0.2074856	11.7029791	0.0481841	0.5077269	0.0517271	0.1920963	0.0858582	0.227848
MDRN	0.1899682	11.9527600	0.0659226	0.6009622	0.2154353	0.1668085	0.0414113	0.21519
MNCN	0.2551121	12.7316270	0.1716850	0.2231957	0.1104510	0.1016467	0.1226676	0.202532
MPPA	0.2681296	12.9498100	0.0159458	0.4486462	0.1594371	0.1228269	0.0089209	0.493671
MTDL	0.3454704	12.6443117	0.0834727	0.5428629	0.1034925	0.2041984	0.0223188	0.392405
PJAA	0.2237758	11.9698584	0.1201037	0.3211265	0.4766291	0.0055123	0.0982028	0.240506
PTBA	0.2392245	13.0245501	0.3527477	0.2904382	0.0991097	0.0056038	0.1974771	0.43038
RDTX	0.1462839	11.4711567	0.1233373	0.2346095	0.7612105	0.0144545	0.1884354	0.177215
SGRO	0.2598781	12.4972586	0.2176691	0.2672263	0.2884109	0.0978917	0.1184182	0.455696
SKLT	0.2544593	11.5371085	0.0321006	0.4815452	0.4073298	0.2434153	0.0140546	0.151899
SMAR	0.2432059	13.5007333	0.1678832	0.5017252	0.3084964	0.1928515	0.0582900	0.291139
SMCB	0.3063394	12.8764467	0.1400171	0.3126104	0.7523174	0.0520943	0.0861222	0.632911
SMGR	0.2229255	13.2142819	0.2588778	0.2566681	0.5920520	0.1020598	0.1573484	0.443038
SMRA	0.2678559	12.3727889	0.0655519	0.6941540	0.0375874	0.3384397	0.0814668	0.139241
SONA	0.2191821	11.8889956	0.1372799	0.3571500	0.1997270	0.2440691	0.0695339	0.21519
SQBB	0.2568107	11.4846571	0.3895220	0.1592761	0.2340019	0.0717542	0.2700545	0.164557
SRSN	0.2905268	11.5881080	0.0936121	0.3016263	0.2371104	0.3366834	0.0446505	0.139241
SSIA	0.2776338	12.4592077	0.1310749	0.5911592	0.1643772	0.0028122	0.0670765	0.443038
TCID	0.2635069	12.2187117	0.1681394	0.0976704	0.3681500	0.2462124	0.0706110	0.379747
TINS	0.2927872	12.9419890	0.1930171	0.3001629	0.2306855	0.3725187	0.0816098	0.379747
TMPO	0.2703501	11.3779725	0.0806719	0.5058919	0.4289797	0.0584823	0.0348924	0.139241
TOTL	0.2828735	12.1957483	0.0907738	0.6449287	0.0444298	0.0002972	0.0511445	0.278481
TOTO	0.2556181	12.1277289	0.2187471	0.4322499	0.3555820	0.2097516	0.1138647	0.202532
TRST	0.2018966	12.3066109	0.0846111	0.3779826	0.5778124	0.1772276	0.0487265	0.126582
TURI	0.2496479	12.9189489	0.1687485	0.4233411	0.3615879	0.2376749	0.0526451	0.278481
ULTJ	0.3538816	12.3227120	0.0719619	0.3564342	0.4908888	0.1690988	0.0332436	0.177215
UNTR	0.2421546	13.7407775	0.1676263	0.4077538	0.2943624	0.1535196	0.0807763	0.253165
UNVR	0.2530127	13.3704986	0.5318291	0.6488430	0.5069789	0.1729410	0.1879573	0.329114
WIKA	0.3790619	12.8888435	0.0756468	0.7333436	0.0904902	0.1048633	0.0343260	0.291139

Lampiran 9
Data Setiap Variabel Tahun 2012

Kode	TA	SIZE	ROA	LEV	CAPINT	INVINT	IMS	ICSR
AALI	0.2850092	13.0631201	0.2838119	0.2459302	0.3960342	0.1005691	0.1482009	0.35443
ACES	0.2018622	12.5082995	0.2803004	0.1559349	0.2321772	0.0161436	0.1194276	0.21519
AKPI	0.4638685	12.1787425	0.0338447	0.5082521	0.4712415	0.1669089	0.0137154	0.265823
AMFG	0.2526951	12.4559574	0.1488762	0.2113140	0.4445611	0.2155933	0.0819997	0.316456
ARNA	0.2524450	12.0467542	0.2264573	0.3547751	0.6385220	0.0555731	0.1075138	0.291139
ASGR	0.2454846	12.3147211	0.1829866	0.4894780	0.1990085	0.2129722	0.0740445	0.303797
ASII	0.1848161	14.2742803	0.1530553	0.5072583	0.1883209	0.0838573	0.0857657	0.316456
ASRI	0.0953009	12.3885300	0.1227977	0.5677239	0.0646898	0.1517477	0.2360251	0.151899
BCIP	0.3721638	11.0206016	0.0442580	0.4360312	0.0157188	0.2508717	0.0451685	0.063291
BISI	0.2364046	11.9376528	0.1066992	0.1315814	0.1594637	0.4690908	0.0848483	0.21519
BKSL	0.1104069	11.7942824	0.0403535	0.2173826	0.0205168	0.2037070	0.1558721	0.126582
BMTR	0.2217162	12.9506286	0.1280982	0.2850523	0.1867857	0.0818244	0.1204854	0.164557
BRAM	0.1093650	12.2263155	0.1100967	0.2622937	0.5678031	0.1600586	0.0815211	0.253165
BSDE	0.1283211	12.5714540	0.1012468	0.3714936	0.0247883	0.2013999	0.1882448	0.265823
BTON	0.2355284	11.1903485	0.2232307	0.2199985	0.1014466	0.0670981	0.1149865	0.21519
COWL	0.1830717	11.4934288	0.0479575	0.3624289	0.1922315	0.0101803	0.1030748	0.037975
CPIN	0.2060202	13.3286023	0.2734311	0.3378645	0.3719442	0.2726066	0.1145358	0.139241
CTRA	0.1748845	12.5214871	0.0685205	0.4354973	0.0825443	0.2203320	0.1212053	0.113924
DILD	0.2744136	12.1010717	0.0453466	0.3514287	0.0455836	0.2715093	0.0746578	0.227848
DVLA	0.2717567	12.0363813	0.1902659	0.2169414	0.2031235	0.1235918	0.0963290	0.189873
EKAD	0.2447945	11.5855025	0.1749953	0.2990803	0.3116582	0.2981055	0.0768715	0.240506
EMDE	0.6449417	11.0375141	0.0132596	0.4088996	0.0361392	0.2536037	0.0170587	0.227848
FAST	0.2346471	12.5513873	0.1510837	0.4440094	0.1712537	0.0859619	0.0572668	0.164557
GMTD	0.1594328	11.3800502	0.0850369	0.7402223	0.0026416	0.2906816	0.1307400	0.227848
HRUM	0.2410200	13.0038362	0.3954589	0.2042181	0.2275616	0.1891841	0.1505758	0.227848
ICBP	0.2460430	13.3339466	0.1705125	0.3248198	0.2162819	0.1021145	0.0806555	0.278481
INCO	0.2617390	12.9709998	0.0391855	0.2621625	0.6963203	0.0655138	0.0369967	0.291139
INTP	0.2365815	13.2378035	0.2742037	0.1466227	0.3487220	0.0646141	0.1736590	0.240506
ITMG	0.2690975	13.3726278	0.3963918	0.3277891	0.2249897	0.1012417	0.1566488	0.278481
JRPT	0.1291239	12.0421110	0.0983088	0.5555596	0.0064787	0.2275725	0.1840640	0.35443
KAEF	0.2590913	12.5723300	0.1305842	0.3092887	0.2153163	0.2529629	0.0501525	0.177215
KDSI	0.2266821	12.1143884	0.0834876	0.4461515	0.3011739	0.2559117	0.0303290	0.126582
KIJA	0.1698788	12.1463178	0.0646797	0.4383296	0.3021199	0.0882018	0.1268142	0.227848
KKGI	0.3382802	12.3176669	0.3434373	0.2938558	0.3427718	0.1029090	0.1109110	0.189873
KLBF	0.2308986	13.1346999	0.2450656	0.2172779	0.2394111	0.2246224	0.1080304	0.265823
LION	0.1763401	11.5236450	0.2391066	0.1422570	0.0701827	0.2319393	0.1619382	0.253165
LMSH	0.0840452	11.3484587	0.3506161	0.2413340	0.1846548	0.2674176	0.1690077	0.202532
LPKR	0.1612091	12.7895958	0.0634151	0.5387844	0.0893623	0.4224048	0.1034692	0.35443

LSIP	0.1869741	12.6244448	0.1816896	0.1684477	0.2952845	0.0855365	0.1514368	0.240506
MAPI	0.2758978	12.8799605	0.0997628	0.6373185	0.3357113	0.3201568	0.0443408	0.379747
MBTO	0.2355904	11.8559962	0.0977220	0.2870102	0.1330005	0.0867556	0.0476690	0.35443
MDLN	0.1640913	12.0243904	0.0678598	0.5152324	0.0917488	0.0954716	0.1174125	0.253165
MDRN	0.1685789	12.0040246	0.0386457	0.4309728	0.1983203	0.1407349	0.0319549	0.227848
MNCN	0.2201474	12.7969391	0.2522846	0.1856702	0.1100325	0.1271614	0.1724284	0.202532
MPPA	0.1966225	13.0361562	0.0362409	0.5324428	0.0942378	0.2031042	0.0174777	0.506329
MTDL	0.3057231	12.7137422	0.1012518	0.5786556	0.1343224	0.2061904	0.0296484	0.405063
PJAA	0.2563162	12.0227326	0.1001339	0.4514524	0.4163562	0.0026170	0.0907951	0.253165
PTBA	0.2562045	13.0642354	0.3072977	0.3318264	0.1456084	0.0601748	0.1691700	0.43038
RDTX	0.1574833	11.5179319	0.1226495	0.2108833	0.7695059	0.0125912	0.1852518	0.177215
SGRO	0.2645289	12.4751243	0.1105066	0.3554610	0.3235312	0.0880924	0.0697409	0.468354
SKLT	0.3173011	11.6039278	0.0467035	0.4815452	0.4073298	0.2434153	0.0173735	0.151899
SMAR	0.2534052	13.4397479	0.1774336	0.4497952	0.3557091	0.1646229	0.0704749	0.35443
SMCB	0.2786980	12.9547767	0.1538981	0.3082102	0.7879993	0.0564643	0.0936524	0.64557
SMGR	0.2164332	13.2922172	0.2365565	0.3165733	0.6318545	0.8596629	0.1568202	0.443038
SMRA	0.1969890	12.5394729	0.0906914	0.6492034	0.0259662	0.2592556	0.1148938	0.253165
SONA	0.2348171	11.9328389	0.1279569	0.4329626	0.2618196	0.2150127	0.0574263	0.227848
SQBB	0.2546838	11.5337911	0.4452891	0.1638010	0.2166046	0.0771376	0.2626656	0.164557
SRSN	0.3417957	11.5844952	0.0640647	0.3305198	0.2001224	0.4476448	0.0303259	0.139241
SSIA	0.1587140	12.5520101	0.1808505	0.6560751	0.1251825	0.0337443	0.1290786	0.443038
TCID	0.2601998	12.2674423	0.1611187	0.1305917	0.3488764	0.2066991	0.0678721	0.379747
TINS	0.3325673	12.8933489	0.1059889	0.2528774	0.2823778	0.2651020	0.0431353	0.43038
TMPO	0.1539998	11.4208746	0.1649313	0.4503309	0.3609341	0.0665393	0.0865781	0.177215
TOTL	0.2458207	12.2633837	0.1167345	0.6580361	0.0482784	0.0647750	0.0661567	0.303797
TOTO	0.2983686	12.1977664	0.2208511	0.4101358	0.3028784	0.2179332	0.1062894	0.202532
TRST	0.2389627	12.2898459	0.0369032	0.3816672	0.5789819	0.1740738	0.0210711	0.126582
TURI	0.2303557	12.9983970	0.1647819	0.4661554	0.3522957	0.2953808	0.0540661	0.341772
ULTJ	0.2282639	12.4486833	0.1891818	0.3074505	0.4046244	0.1380411	0.0939107	0.177215
UNTR	0.2274028	13.7478305	0.1480450	0.3578499	0.3021130	0.1426166	0.0753273	0.316456
UNVR	0.2516900	13.4362143	0.5395725	0.6688884	0.5242795	0.1720403	0.1897649	0.367089
WIKA	0.3747803	12.9919384	0.0738146	0.7429008	0.1067825	0.1039797	0.0344817	0.303797

Lampiran 10
Data Setiap Variabel Tahun 2013

Kode	TA	SIZE	ROA	LEV	CAPINT	INVINT	IMS	ICSR
AALI	0.2694679	13.1029479	0.1740986	0.3137921	0.4339791	0.0536636	0.0984842	0.405063
ACES	0.1926022	12.5905572	0.2513168	0.2268812	0.1797550	0.0100766	0.1117864	0.21519
AKPI	0.4787329	12.2209928	0.0318613	0.5062111	0.4778215	0.1398041	0.0133497	0.303797
AMFG	0.2493494	12.5073809	0.1273532	0.2199999	0.4176273	0.1946924	0.0708533	0.35443
ARNA	0.2483389	12.1515660	0.2786623	0.3230624	0.6216817	0.0494616	0.1294656	0.392405
ASGR	0.2492277	12.3543492	0.1918568	0.4924536	0.1830933	0.1944398	0.0796678	0.35443
ASII	0.1898776	14.2875330	0.1286158	0.5037805	0.1769302	0.0674458	0.0773681	0.341772
ASRI	0.1776699	12.5663479	0.0749771	0.6304578	0.0555637	0.0649534	0.1168766	0.151899
BCIP	0.2305338	11.2549636	0.0982932	0.4786832	0.0117464	0.2021276	0.0964472	0.088608
BISI	0.1868595	12.0238124	0.0912224	0.1383432	0.1455290	0.4046756	0.0708190	0.278481
BKSL	0.0547295	11.9831697	0.0600176	0.3549571	0.1224009	0.4753125	0.2743447	0.177215
BMTR	0.3187753	13.0008667	0.0717371	0.3662377	0.2328574	0.0855952	0.0563034	0.202532
BRAM	0.3397446	12.3902388	0.0351174	0.3186532	0.0348883	0.1759698	0.0180764	0.265823
BSDE	0.1138491	12.7590075	0.1452654	0.4056706	0.0193986	0.1682062	0.2448315	0.278481
BTON	0.2220786	11.0551795	0.1888995	0.2118761	0.0845597	0.0911966	0.1360733	0.21519
COWL	0.3641727	11.5196141	0.0393909	0.3919592	0.1826060	0.0110144	0.0676310	0.063291
CPIN	0.2673295	13.4093073	0.2195198	0.3670796	0.4064028	0.2572628	0.0870415	0.177215
CTRA	0.1732111	12.7056125	0.0849865	0.5145128	0.0884494	0.2431926	0.1345158	0.113924
DILD	0.1836314	12.1789784	0.0536439	0.4557815	0.0544520	0.0697433	0.1021961	0.227848
DVLA	0.2842561	12.0420570	0.1476883	0.2313769	0.2042386	0.1736745	0.0774707	0.240506
EKAD	0.2411710	11.6218708	0.4538059	0.9243541	0.9121683	0.9547748	0.1385001	0.253165
EMDE	0.2849302	11.3524430	0.0506661	0.4055205	0.0350524	0.2762022	0.0724294	0.227848
FAST	0.2305117	12.5977229	0.1001462	0.4571479	0.1644618	0.0881948	0.0385285	0.177215
GMTD	0.1426118	11.4786891	0.0819079	0.6915358	0.0033261	0.2807760	0.1454352	0.240506
HRUM	0.2139397	13.0116114	0.1312345	0.1781977	0.2414612	0.0587663	0.0542002	0.227848
ICBP	0.2472873	13.3995817	0.1395084	0.3762431	0.2277848	0.1348878	0.0669930	0.291139
INCO	0.3030528	13.0534049	0.0243122	0.2484978	0.7241016	0.0661938	0.0221086	0.291139
INTP	0.2400035	13.2716392	0.2478706	0.1364123	0.3497165	0.0553851	0.1645769	0.303797
ITMG	0.2818649	13.4270546	0.2305429	0.3076451	0.2274003	0.0868253	0.0913852	0.329114
JRPT	0.1351905	12.1191503	0.1024900	0.5645675	0.0057683	0.2210527	0.0001959	0.35443
KAEF	0.2410312	12.6382969	0.1149401	0.3428825	0.2017217	0.2592737	0.0456324	0.202532
KDSI	0.2368365	12.1418619	0.0554859	0.5859857	0.4032807	0.1818558	0.0229278	0.151899
KIJA	0.4882717	12.4376868	0.0247318	0.4929198	0.2626720	0.0851536	0.0193061	0.253165
KKGI	0.3141559	12.3754681	0.2369493	0.3085843	0.3367207	0.0912479	0.0836627	0.202532
KLBF	0.2340387	13.2041778	0.2273539	0.2487926	0.2585534	0.2698611	0.1009879	0.291139
LION	0.2383478	11.5233224	0.1705424	0.1660435	0.1212292	0.2641285	0.1172440	0.291139
LMSH	0.2600576	11.4085978	0.1371791	0.2203983	0.1644766	0.2667222	0.0524526	0.278481

LPKR	0.1726589	12.8238793	0.0614955	0.5470476	0.0898038	0.4438929	0.1126994	0.35443
LSIP	0.2290552	12.6163367	0.1250165	0.1706470	0.3481966	0.0469581	0.1041867	0.240506
MAPI	0.3242872	12.9883020	0.0621271	0.6890637	0.3213507	0.3767472	0.0259807	0.379747
MBTO	0.2974441	11.8070511	0.0376056	0.2622734	0.2201317	0.0870638	0.0179955	0.367089
MDLN	0.0380252	12.2657480	0.2641633	0.5153617	0.1183831	0.1080818	0.6188251	0.253165
MDRN	0.2290924	12.1049955	0.0344660	0.4533314	0.3541271	0.1099683	0.0238498	0.278481
MNCN	0.2438604	12.8144039	0.2489297	0.1946595	0.1604402	0.1386050	0.1683536	0.202532
MPPA	0.2395059	13.0760125	0.0889155	0.4992080	0.1651727	0.3455493	0.0349219	0.506329
MTDL	0.2930313	12.8648256	0.1048284	0.5949908	0.0360445	0.2780397	0.0310199	0.405063
PJAA	0.2744195	12.0939946	0.0997322	0.4402393	0.4512313	0.0020894	0.0837599	0.278481
PTBA	0.2466443	13.0495754	0.2107844	0.3533040	0.2400750	0.0772407	0.1138748	0.443038
RDTX	0.1445057	11.6212999	0.1495243	0.2596777	0.8464317	0.0082639	0.2314768	0.189873
SGRO	0.3074246	12.4083597	0.0385172	0.4019848	0.3104405	0.0602271	0.0270104	0.481013
SKLT	0.3107603	11.7536206	0.0549623	0.5375659	0.4173397	0.2336410	0.0192574	0.177215
SMAR	0.2586157	13.3790373	0.0655127	0.6471976	0.4107803	0.1830880	0.0293781	0.506329
SMCB	0.2874891	12.9861562	0.0897314	0.4110136	0.8303009	0.0396816	0.0588502	0.64557
SMGR	0.2263021	13.3891881	0.2247402	0.2919151	0.6125609	0.0859255	0.1400235	0.443038
SMRA	0.1694200	12.6121255	0.0965965	0.6590072	0.0257580	0.2238989	0.1330221	0.278481
SONA	0.3921941	12.0026830	0.0920007	0.4187420	0.2302402	0.2487313	0.0649690	0.227848
SQBB	0.2523466	11.5883109	0.4554973	0.1807531	0.2137587	0.0889627	0.1656626	0.177215
SRSN	0.5103928	11.5936360	0.0766844	0.2497858	0.2776407	0.4524581	0.0276031	0.139241
SSIA	0.1767647	12.6611253	0.1559789	0.5508121	0.1620957	0.0789246	0.1040349	0.455696
TCID	0.2663744	12.3070463	0.1489121	0.1930227	0.4669048	0.2253266	0.0640597	0.405063
TINS	0.3207740	12.7673379	0.1016710	0.3794333	0.2395703	0.3122116	0.0550349	0.443038
TMPO	0.2789649	11.4185615	0.0412510	0.5010129	0.4022562	0.0496775	0.0201300	0.189873
TOTL	0.2651296	12.3593275	0.1302887	0.6321490	0.0418942	0.0831771	0.0659764	0.35443
TOTO	0.2680868	12.2333279	0.1850928	0.4069041	0.3200035	0.2061571	0.0959621	0.202532
TRST	0.5456350	12.3081692	0.0222495	0.4757069	0.6108497	0.1713851	0.0095796	0.202532
TURI	0.2087360	13.0419347	0.1121857	0.4265568	0.3880873	0.2670793	0.0371941	0.35443
ULTJ	0.2555253	12.5391051	0.1553268	0.2832793	0.3435652	0.1902735	0.0720587	0.253165
UNTR	0.2715147	13.7076756	0.1148375	0.3785303	0.2540763	0.1076748	0.0383553	0.35443
UNVR	0.2523022	13.4879501	0.9563888	0.8231412	0.9183632	0.2784585	0.2787271	0.392405
WIKA	0.3858787	13.0749871	0.0807220	0.7437897	0.1302340	0.0887966	0.0359159	0.316456

Lampiran 11
Data Setiap Variabel Tahun 2014

Kode	TA	SIZE	ROA	LEV	CAPINT	INVINT	IMS	ICSR
AALI	0.2878359	13.2123429	0.1983817	0.3623820	0.4490998	0.0907781	0.1069017	0.392405
ACES	0.1950290	12.6571968	0.2313530	0.1985513	0.1570974	0.4396093	0.1035610	0.21519
AKPI	0.4332255	12.2890051	0.0274831	0.5348783	0.4762959	0.1302777	0.0118286	0.303797
AMFG	0.2328042	12.5649247	0.1525644	0.1872577	0.3906797	0.1901413	0.0851502	0.35443
ARNA	0.2489473	12.2067608	0.2766724	0.2755336	0.5846736	0.0462033	0.1269024	0.405063
ASGR	0.2361337	12.3583598	0.2085685	0.4475697	0.1744261	0.1466162	0.0929507	0.379747
ASII	0.1911012	14.3047081	0.1158841	0.4902152	0.1747667	0.0719657	0.0721579	0.379747
ASRI	0.1506833	15.5600160	0.0818800	0.6235491	0.0565907	0.0549859	0.1530681	0.177215
BCIP	0.2744263	11.3344156	0.0712398	0.5761218	0.0394999	0.1326445	0.0729143	0.126582
BISI	0.2097661	12.0627925	0.1117836	0.1421769	0.1472622	0.2855333	0.0842592	0.278481
BKSL	0.4055060	11.8527680	0.0069933	0.3659876	0.0140875	0.5490793	0.0246426	0.177215
BMTR	0.3272613	13.0276412	0.0755975	0.3741615	0.2483384	0.0803761	0.0643776	0.202532
BRAM	0.2711789	12.4121528	0.0707022	0.4205261	0.5922718	0.1719029	0.0463006	0.278481
BSDE	0.0719551	12.7460011	0.1530609	0.3433940	0.0216028	0.1862118	0.3352691	0.291139
BTON	0.2034447	10.9823074	0.0550075	0.1580002	0.0817534	0.0521653	0.0452907	0.240506
COWL	0.2003626	11.7531125	0.0561700	0.6339375	0.0969617	0.0077838	0.1327545	0.075949
CPIN	0.1709855	13.4646427	0.1009897	0.4754550	0.4341919	0.2077052	0.0488460	0.189873
CTRA	0.1644925	12.8023793	0.0922271	0.5094646	0.1010038	0.2761146	0.1382939	0.113924
DILD	0.1817518	12.2632738	0.0586868	0.5035842	0.0285906	0.1794330	0.1106229	0.227848
DVLA	0.2355525	12.0428990	0.0856349	0.2214895	0.2160084	0.1836606	0.0490447	0.253165
EKAD	0.3059501	11.7214594	0.1427547	0.3358462	0.2560988	0.3941641	0.0604663	0.265823
EMDE	0.2819597	11.4931512	0.0531832	0.4885875	0.0278401	0.2575777	0.0703767	0.227848
FAST	0.2808003	12.6241673	0.0977558	0.4482820	0.1671722	0.0794628	0.0352000	0.177215
GMTD	0.1175043	11.5005644	0.0892059	0.5628554	0.0029535	0.6064191	0.1782122	0.240506
HRUM	0.6460076	12.7737850	0.0165764	0.1849513	0.2399710	0.0379950	0.0039386	0.278481
ICBP	0.2529105	13.4774463	0.1360376	0.3962337	0.2343956	0.1132715	0.0640471	0.303797
INCO	0.2729065	13.1109124	0.1015046	0.2351295	0.6891140	0.0596725	0.0894430	0.291139
INTP	0.2232227	13.3009489	0.2350565	0.1419483	0.4204135	0.0576613	0.1610875	0.303797
ITMG	0.2358966	13.3830764	0.2004286	0.3126360	0.2185248	0.1146275	0.0866693	0.329114
JRPT	0.1313722	12.2869816	0.1230643	0.5209747	0.0063383	0.2509352	0.1822949	0.367089
KAEF	0.2505616	12.6552368	0.1063313	0.3898143	0.1879731	0.2315917	0.0445601	0.21519
KDSI	0.2326572	12.2111828	0.0608899	0.5835879	0.3967172	0.1943273	0.0247662	0.189873
KIJA	0.2961494	12.4470130	0.0658246	0.4518885	0.2619771	0.0776327	0.0711561	0.303797
KKGI	0.3733802	12.2274746	0.1282583	0.2749290	0.1807555	0.0867904	0.0474729	0.253165
KLBF	0.2325179	13.2397631	0.2224301	0.2098632	0.2739999	0.2487353	0.0995765	0.341772
LION	0.2204334	11.5770584	0.1047454	0.2601620	0.1693143	0.2543947	0.0768836	0.341772
LMSH	0.3274280	11.3963249	0.0786686	0.2329255	0.2109980	0.2216544	0.0275301	0.303797

LPKR	0.1514929	13.0665138	0.0978512	0.5326833	0.0849751	0.4383607	0.1343683	0.35443
LSIP	0.2289754	12.6745432	0.1373669	0.1659489	0.3741996	0.0439461	0.1102329	0.278481
MAPI	0.6180001	13.0726949	0.0220797	0.6995156	0.2933634	0.3687933	0.0049868	0.392405
MBTO	0.4867521	11.8269807	0.0092011	0.2674177	0.2404877	0.1210640	0.0031557	0.392405
MDLN	0.1604740	12.4532833	0.0810918	0.4896953	0.1082805	0.0884886	0.1224261	0.278481
MDRN	0.3503689	12.1577408	0.0256093	0.4343535	0.4432750	0.1043533	0.0161218	0.329114
MNCN	0.2595929	12.8238639	0.1869184	0.3097810	0.1953998	0.1201284	0.1559778	0.202532
MPPA	0.2419428	13.1332324	0.1254164	0.5111477	0.2183863	0.4556185	0.0442849	0.506329
MTDL	0.2384052	12.9265775	0.1289241	0.5739453	0.0341652	0.2884384	0.0415346	0.417722
PJAA	0.2345257	12.0419309	0.1047479	0.4433528	0.4360790	0.0026219	0.1100241	0.278481
PTBA	0.2450763	13.1165401	0.1805780	0.4146078	0.2692114	0.0697649	0.1028368	0.455696
RDTX	0.0001512	11.6348952	0.1599151	0.1774734	0.7904360	0.0013113	0.2621400	0.189873
SGRO	0.3140111	12.5108642	0.0933552	0.4480683	0.3120917	0.0544370	0.0628423	0.481013
SKLT	0.2999915	11.8334149	0.0710066	0.5374561	0.5049205	0.2226103	0.0243309	0.189873
SMAR	0.2484211	13.5097489	0.0921466	0.6268189	0.4201804	0.1786529	0.0387791	0.506329
SMCB	0.3360423	13.0223757	0.0585854	0.4906419	0.8431488	0.0428601	0.0373270	0.64557
SMGR	0.2139669	13.4311552	0.2066395	0.2713771	0.5892835	0.0819388	0.1317799	0.443038
SMRA	0.1761072	12.7270199	0.1095030	0.6103486	0.0238475	0.2017787	0.1328236	0.278481
SONA	0.2502317	12.0026830	0.1324491	0.3972291	0.2776376	0.2154421	0.0729697	0.240506
SQBB	0.2512354	11.6967945	0.4791668	0.1969593	0.1897775	0.0944232	0.2398684	0.177215
SRSN	0.5158417	11.6747096	0.0644398	0.2903029	0.2621621	0.3941517	0.0215827	0.151899
SSIA	0.2350181	12.6497631	0.1120341	0.4929362	0.1552217	0.0585305	0.0720248	0.455696
TCID	0.2719554	12.3632742	0.1291952	0.3074251	0.4985617	0.2264462	0.0582401	0.405063
TINS	0.3379272	12.8675389	0.1049069	0.4249418	0.2068260	0.3469914	0.0544544	0.455696
TMPO	0.1447538	11.5005301	0.0553055	0.5712006	0.4538729	0.0542180	0.0328969	0.189873
TOTL	0.3207917	12.3235303	0.0970675	0.6782143	0.0285822	0.0979134	0.0509935	0.405063
TOTO	0.2306439	12.3125222	0.1883713	0.3926899	0.3981263	0.2230131	0.1006851	0.278481
TRST	0.5246585	12.3993076	0.0193488	0.4598776	0.6071297	0.1563491	0.0075934	0.202532
TURI	0.1552664	13.0424431	0.0758811	0.4566490	0.4150875	0.2285526	0.0280339	0.35443
ULTJ	0.2450893	12.5929302	0.1286754	0.2235061	0.3439150	0.2449059	0.0578317	0.253165
UNTR	0.2690918	13.7254360	0.1098297	0.3601686	0.2259836	0.1288742	0.0606213	0.35443
UNVR	0.2524774	13.5379643	0.5375604	0.6779716	0.5145434	0.1628767	0.1847073	0.392405
WIKA	0.3447923	13.0956301	0.0719999	0.6871688	0.1681443	0.0513540	0.0383795	0.316456

Lampiran 12
Data Gabungan Setiap Variabel Tahun 2011-2014

No	IMS	ETR	ICSR	SIZE	ROA	LEV	CAPINT	INVINT
1	0.1661	0.250340	0.278481	13.032320	0.326614	0.174270	0.335557	0.075368
2	0.1031	0.246345	0.215190	12.384969	0.255460	0.151459	0.248927	0.036090
3	0.0242	0.277351	0.265823	12.177698	0.050481	0.508829	0.499066	0.137158
4	0.0895	0.245524	0.202532	12.414350	0.166008	0.202704	0.428448	0.220910
5	0.0761	0.261457	0.215190	11.965053	0.156244	0.418918	0.679357	0.042831
6	0.0691	0.233572	0.278481	12.236698	0.161607	0.505750	0.154662	0.330967
7	0.093	0.182174	0.316456	14.211024	0.167873	0.506009	0.186320	0.078100
8	0.208	0.101926	0.126582	12.140208	0.111717	0.536105	0.056847	0.398701
9	0.0206	0.558595	0.037975	10.743267	0.022775	0.229471	0.057350	0.413994
10	0.0891	0.225029	0.189873	11.999416	0.125877	0.157507	0.168814	0.344608
11	0.1297	0.130083	0.088608	11.660707	0.029649	0.131531	0.008575	0.212597
12	0.0216	0.271065	0.151899	12.854484	0.105650	0.284273	0.192242	0.068941
13	0.0277	0.422480	0.253165	12.278802	0.074095	0.276121	0.429289	0.211280
14	0.1708	0.135184	0.253165	12.448140	0.091515	0.354267	0.038078	0.235566
15	0.0979	0.218084	0.215190	11.186521	0.206257	0.223988	0.082963	0.088556
16	0.1004	0.213789	0.012658	11.258225	0.109891	0.575241	0.012653	0.375177
17	0.1314	0.205771	0.101266	13.254257	0.336179	0.300483	0.361498	0.264409
18	0.1054	0.201633	0.050633	12.338124	0.053691	0.336441	0.206856	0.232126
19	0.0719	0.257641	0.227848	11.972740	0.034885	0.332561	0.030154	0.277483
20	0.0888	0.273014	0.189873	11.987799	0.179173	0.215853	0.215318	0.127594
21	0.0646	0.257560	0.227848	11.516482	0.148233	0.378578	0.313277	0.307313
22	0.0112	0.663955	0.227848	10.998194	0.008460	0.408900	0.036139	0.253604
23	0.0712	0.233169	0.151899	12.520719	0.192962	0.463354	0.152652	0.083273
24	0.1356	0.160883	0.227848	11.277015	0.120067	0.644000	0.005577	0.351823
25	0.211	0.232646	0.202532	12.863122	0.499087	0.234259	0.232020	0.134875
26	0.0831	0.247201	0.265823	13.287066	0.180315	0.296468	0.170141	0.107068
27	0.1501	0.262112	0.278481	13.051827	0.186805	0.269350	0.652257	0.067429
28	0.1639	0.235047	0.151899	13.142636	0.259384	0.133179	0.420799	0.073147
29	0.1943	0.251819	0.278481	13.334430	0.462433	0.315286	0.218158	0.067769
30	0.1838	0.127885	0.341772	11.950934	0.097330	0.534739	0.013622	0.247340
31	0.048	0.259665	0.151899	12.541725	0.129306	0.301931	0.237827	0.254185
32	0.0199	0.236518	0.101266	12.072068	0.052673	0.524873	0.306644	0.310945
33	0.1333	0.102230	0.177215	12.060054	0.064900	0.374401	0.328182	0.098978
34	0.2203	0.298529	0.189873	12.327891	0.656309	0.327996	0.086681	0.070560
35	0.1106	0.233640	0.265823	13.037899	0.240165	0.212533	0.224820	0.206076
36	0.1219	0.218156	0.253165	11.428805	0.183685	0.174282	0.050714	0.284239
37	0.0538	0.280565	0.202532	11.317066	0.154541	0.416409	0.206266	0.345698

38	0.0926	0.173349	0.354430	12.622170	0.053935	0.484696	0.011516	0.432231
39	0.2215	0.186079	0.215190	12.670845	0.307797	0.140232	0.268650	0.054218
40	0.0488	0.256199	0.354430	12.770101	0.109747	0.593659	0.336685	0.312070
41	0.0498	0.215914	0.341772	11.811826	0.100440	0.260548	0.124425	0.097935
42	0.0859	0.207486	0.227848	11.702979	0.048184	0.507727	0.051727	0.192096
43	0.0414	0.189968	0.215190	11.952760	0.065923	0.600962	0.215435	0.166809
44	0.1227	0.255112	0.202532	12.731627	0.171685	0.223196	0.110451	0.101647
45	0.0089	0.268130	0.493671	12.949810	0.015946	0.448646	0.159437	0.122827
46	0.0223	0.345470	0.392405	12.644312	0.083473	0.542863	0.103493	0.204198
47	0.0982	0.223776	0.240506	11.969858	0.120104	0.321126	0.476629	0.005512
48	0.1975	0.239224	0.430380	13.024550	0.352748	0.290438	0.099110	0.005604
49	0.1884	0.146284	0.177215	11.471157	0.123337	0.234610	0.761210	0.014455
50	0.1184	0.259878	0.455696	12.497259	0.217669	0.267226	0.288411	0.097892
51	0.0141	0.254459	0.151899	11.537109	0.032101	0.481545	0.407330	0.243415
52	0.0583	0.243206	0.291139	13.500733	0.167883	0.501725	0.308496	0.192852
53	0.0861	0.306339	0.632911	12.876447	0.140017	0.312610	0.752317	0.052094
54	0.1573	0.222925	0.443038	13.214282	0.258878	0.256668	0.592052	0.102060
55	0.0815	0.267856	0.139241	12.372789	0.065552	0.694154	0.037587	0.338440
56	0.0695	0.219182	0.215190	11.888996	0.137280	0.357150	0.199727	0.244069
57	0.2701	0.256811	0.164557	11.484657	0.389522	0.159276	0.234002	0.071754
58	0.0447	0.290527	0.139241	11.588108	0.093612	0.301626	0.237110	0.336683
59	0.0671	0.277634	0.443038	12.459208	0.131075	0.591159	0.164377	0.002812
60	0.0706	0.263507	0.379747	12.218712	0.168139	0.097670	0.368150	0.246212
61	0.0816	0.292787	0.379747	12.941989	0.193017	0.300163	0.230685	0.372519
62	0.0349	0.270350	0.139241	11.377972	0.080672	0.505892	0.428980	0.058482
63	0.0511	0.282873	0.278481	12.195748	0.090774	0.644929	0.044430	0.000297
64	0.1139	0.255618	0.202532	12.127729	0.218747	0.432250	0.355582	0.209752
65	0.0487	0.201897	0.126582	12.306611	0.084611	0.377983	0.577812	0.177228
66	0.0526	0.249648	0.278481	12.918949	0.168748	0.423341	0.361588	0.237675
67	0.0332	0.353882	0.177215	12.322712	0.071962	0.356434	0.490889	0.169099
68	0.0808	0.242155	0.253165	13.740778	0.167626	0.407754	0.294362	0.153520
69	0.188	0.253013	0.329114	13.370499	0.531829	0.648843	0.506979	0.172941
70	0.0343	0.379062	0.291139	12.888843	0.075647	0.733344	0.090490	0.104863
71	0.1482	0.285009	0.354430	13.063120	0.283812	0.245930	0.396034	0.100569
72	0.1194	0.201862	0.215190	12.508300	0.280300	0.155935	0.232177	0.016144
73	0.0137	0.463868	0.265823	12.178742	0.033845	0.508252	0.471242	0.166909
74	0.082	0.252695	0.316456	12.455957	0.148876	0.211314	0.444561	0.215593
75	0.1075	0.252445	0.291139	12.046754	0.226457	0.354775	0.638522	0.055573
76	0.074	0.245485	0.303797	12.314721	0.182987	0.489478	0.199008	0.212972
77	0.0858	0.184816	0.316456	14.274280	0.153055	0.507258	0.188321	0.083857
78	0.236	0.095301	0.151899	12.388530	0.122798	0.567724	0.064690	0.151748

79	0.0452	0.372164	0.063291	11.020602	0.044258	0.436031	0.015719	0.250872
80	0.0848	0.236405	0.215190	11.937653	0.106699	0.131581	0.159464	0.469091
81	0.1559	0.110407	0.126582	11.794282	0.040354	0.217383	0.020517	0.203707
82	0.1205	0.221716	0.164557	12.950629	0.128098	0.285052	0.186786	0.081824
83	0.0815	0.109365	0.253165	12.226316	0.110097	0.262294	0.567803	0.160059
84	0.1882	0.128321	0.265823	12.571454	0.101247	0.371494	0.024788	0.201400
85	0.115	0.235528	0.215190	11.190349	0.223231	0.219998	0.101447	0.067098
86	0.1031	0.183072	0.037975	11.493429	0.047957	0.362429	0.192231	0.010180
87	0.1145	0.206020	0.139241	13.328602	0.273431	0.337865	0.371944	0.272607
88	0.1212	0.174884	0.113924	12.521487	0.068521	0.435497	0.082544	0.220332
89	0.0747	0.274414	0.227848	12.101072	0.045347	0.351429	0.045584	0.271509
90	0.0963	0.271757	0.189873	12.036381	0.190266	0.216941	0.203124	0.123592
91	0.0769	0.244794	0.240506	11.585502	0.174995	0.299080	0.311658	0.298105
92	0.0171	0.644942	0.227848	11.037514	0.013260	0.408900	0.036139	0.253604
93	0.0573	0.234647	0.164557	12.551387	0.151084	0.444009	0.171254	0.085962
94	0.1307	0.159433	0.227848	11.380050	0.085037	0.740222	0.002642	0.290682
95	0.1506	0.241020	0.227848	13.003836	0.395459	0.204218	0.227562	0.189184
96	0.0807	0.246043	0.278481	13.333947	0.170512	0.324820	0.216282	0.102114
97	0.037	0.261739	0.291139	12.971000	0.039186	0.262162	0.696320	0.065514
98	0.1737	0.236581	0.240506	13.237803	0.274204	0.146623	0.348722	0.064614
99	0.1566	0.269098	0.278481	13.372628	0.396392	0.327789	0.224990	0.101242
100	0.1841	0.129124	0.354430	12.042111	0.098309	0.555560	0.006479	0.227573
101	0.0502	0.259091	0.177215	12.572330	0.130584	0.309289	0.215316	0.252963
102	0.0303	0.226682	0.126582	12.114388	0.083488	0.446152	0.301174	0.255912
103	0.1268	0.169879	0.227848	12.146318	0.064680	0.438330	0.302120	0.088202
104	0.1109	0.338280	0.189873	12.317667	0.343437	0.293856	0.342772	0.102909
105	0.108	0.230899	0.265823	13.134700	0.245066	0.217278	0.239411	0.224622
106	0.1619	0.176340	0.253165	11.523645	0.239107	0.142257	0.070183	0.231939
107	0.169	0.084045	0.202532	11.348459	0.350616	0.241334	0.184655	0.267418
108	0.1035	0.161209	0.354430	12.789596	0.063415	0.538784	0.089362	0.422405
109	0.1514	0.186974	0.240506	12.624445	0.181690	0.168448	0.295284	0.085536
110	0.0443	0.275898	0.379747	12.879960	0.099763	0.637319	0.335711	0.320157
111	0.0477	0.235590	0.354430	11.855996	0.097722	0.287010	0.133000	0.086756
112	0.1174	0.164091	0.253165	12.024390	0.067860	0.515232	0.091749	0.095472
113	0.032	0.168579	0.227848	12.004025	0.038646	0.430973	0.198320	0.140735
114	0.1724	0.220147	0.202532	12.796939	0.252285	0.185670	0.110033	0.127161
115	0.0175	0.196622	0.506329	13.036156	0.036241	0.532443	0.094238	0.203104
116	0.0296	0.305723	0.405063	12.713742	0.101252	0.578656	0.134322	0.206190
117	0.0908	0.256316	0.253165	12.022733	0.100134	0.451452	0.416356	0.002617
118	0.1692	0.256204	0.430380	13.064235	0.307298	0.331826	0.145608	0.060175
119	0.1853	0.157483	0.177215	11.517932	0.122650	0.210883	0.769506	0.012591

120	0.0697	0.264529	0.468354	12.475124	0.110507	0.355461	0.323531	0.088092
121	0.0174	0.317301	0.151899	11.603928	0.046703	0.481545	0.407330	0.243415
122	0.0705	0.253405	0.354430	13.439748	0.177434	0.449795	0.355709	0.164623
123	0.0937	0.278698	0.645570	12.954777	0.153898	0.308210	0.787999	0.056464
124	0.1568	0.216433	0.443038	13.292217	0.236556	0.316573	0.631855	0.859663
125	0.1149	0.196989	0.253165	12.539473	0.090691	0.649203	0.025966	0.259256
126	0.0574	0.234817	0.227848	11.932839	0.127957	0.432963	0.261820	0.215013
127	0.2627	0.254684	0.164557	11.533791	0.445289	0.163801	0.216605	0.077138
128	0.0303	0.341796	0.139241	11.584495	0.064065	0.330520	0.200122	0.447645
129	0.1291	0.158714	0.443038	12.552010	0.180851	0.656075	0.125182	0.033744
130	0.0679	0.260200	0.379747	12.267442	0.161119	0.130592	0.348876	0.206699
131	0.0431	0.332567	0.430380	12.893349	0.105989	0.252877	0.282378	0.265102
132	0.0866	0.154000	0.177215	11.420875	0.164931	0.450331	0.360934	0.066539
133	0.0662	0.245821	0.303797	12.263384	0.116734	0.658036	0.048278	0.064775
134	0.1063	0.298369	0.202532	12.197766	0.220851	0.410136	0.302878	0.217933
135	0.0211	0.238963	0.126582	12.289846	0.036903	0.381667	0.578982	0.174074
136	0.0541	0.230356	0.341772	12.998397	0.164782	0.466155	0.352296	0.295381
137	0.0939	0.228264	0.177215	12.448683	0.189182	0.307450	0.404624	0.138041
138	0.0753	0.227403	0.316456	13.747830	0.148045	0.357850	0.302113	0.142617
139	0.1898	0.251690	0.367089	13.436214	0.539572	0.668888	0.524280	0.172040
140	0.0345	0.374780	0.303797	12.991938	0.073815	0.742901	0.106783	0.103980
141	0.0985	0.269468	0.405063	13.102948	0.174099	0.313792	0.433979	0.053664
142	0.1118	0.192602	0.215190	12.590557	0.251317	0.226881	0.179755	0.010077
143	0.0133	0.478733	0.303797	12.220993	0.031861	0.506211	0.477822	0.139804
144	0.0709	0.249349	0.354430	12.507381	0.127353	0.220000	0.417627	0.194692
145	0.1295	0.248339	0.392405	12.151566	0.278662	0.323062	0.621682	0.049462
146	0.0797	0.249228	0.354430	12.354349	0.191857	0.492454	0.183093	0.194440
147	0.0774	0.189878	0.341772	14.287533	0.128616	0.503780	0.176930	0.067446
148	0.1169	0.177670	0.151899	12.566348	0.074977	0.630458	0.055564	0.064953
149	0.0964	0.230534	0.088608	11.254964	0.098293	0.478683	0.011746	0.202128
150	0.0708	0.186860	0.278481	12.023812	0.091222	0.138343	0.145529	0.404676
151	0.2743	0.054730	0.177215	11.983170	0.060018	0.354957	0.122401	0.475313
152	0.0563	0.318775	0.202532	13.000867	0.071737	0.366238	0.232857	0.085595
153	0.0181	0.339745	0.265823	12.390239	0.035117	0.318653	0.034888	0.175970
154	0.2448	0.113849	0.278481	12.759008	0.145265	0.405671	0.019399	0.168206
155	0.1361	0.222079	0.215190	11.055179	0.188899	0.211876	0.084560	0.091197
156	0.0676	0.364173	0.063291	11.519614	0.039391	0.391959	0.182606	0.011014
157	0.087	0.267329	0.177215	13.409307	0.219520	0.367080	0.406403	0.257263
158	0.1345	0.173211	0.113924	12.705612	0.084986	0.514513	0.088449	0.243193
159	0.1022	0.183631	0.227848	12.178978	0.053644	0.455782	0.054452	0.069743
160	0.0775	0.284256	0.240506	12.042057	0.147688	0.231377	0.204239	0.173674

161	0.1385	0.241171	0.253165	11.621871	0.453806	0.924354	0.912168	0.954775
162	0.0724	0.284930	0.227848	11.352443	0.050666	0.405521	0.035052	0.276202
163	0.0385	0.230512	0.177215	12.597723	0.100146	0.457148	0.164462	0.088195
164	0.1454	0.142612	0.240506	11.478689	0.081908	0.691536	0.003326	0.280776
165	0.0542	0.213940	0.227848	13.011611	0.131235	0.178198	0.241461	0.058766
166	0.067	0.247287	0.291139	13.399582	0.139508	0.376243	0.227785	0.134888
167	0.0221	0.303053	0.291139	13.053405	0.024312	0.248498	0.724102	0.066194
168	0.1646	0.240003	0.303797	13.271639	0.247871	0.136412	0.349717	0.055385
169	0.0914	0.281865	0.329114	13.427055	0.230543	0.307645	0.227400	0.086825
170	0.0002	0.135191	0.354430	12.119150	0.102490	0.564568	0.005768	0.221053
171	0.0456	0.241031	0.202532	12.638297	0.114940	0.342883	0.201722	0.259274
172	0.0229	0.236837	0.151899	12.141862	0.055486	0.585986	0.403281	0.181856
173	0.0193	0.488272	0.253165	12.437687	0.024732	0.492920	0.262672	0.085154
174	0.0837	0.314156	0.202532	12.375468	0.236949	0.308584	0.336721	0.091248
175	0.101	0.234039	0.291139	13.204178	0.227354	0.248793	0.258553	0.269861
176	0.1172	0.238348	0.291139	11.523322	0.170542	0.166044	0.121229	0.264128
177	0.0525	0.260058	0.278481	11.408598	0.137179	0.220398	0.164477	0.266722
178	0.1127	0.172659	0.354430	12.823879	0.061495	0.547048	0.089804	0.443893
179	0.1042	0.229055	0.240506	12.616337	0.125016	0.170647	0.348197	0.046958
180	0.026	0.324287	0.379747	12.988302	0.062127	0.689064	0.321351	0.376747
181	0.018	0.297444	0.367089	11.807051	0.037606	0.262273	0.220132	0.087064
182	0.6188	0.038025	0.253165	12.265748	0.264163	0.515362	0.118383	0.108082
183	0.0238	0.229092	0.278481	12.104996	0.034466	0.453331	0.354127	0.109968
184	0.1684	0.243860	0.202532	12.814404	0.248930	0.194660	0.160440	0.138605
185	0.0349	0.239506	0.506329	13.076013	0.088915	0.499208	0.165173	0.345549
186	0.031	0.293031	0.405063	12.864826	0.104828	0.594991	0.036045	0.278040
187	0.0838	0.274419	0.278481	12.093995	0.099732	0.440239	0.451231	0.002089
188	0.1139	0.246644	0.443038	13.049575	0.210784	0.353304	0.240075	0.077241
189	0.2315	0.144506	0.189873	11.621300	0.149524	0.259678	0.846432	0.008264
190	0.027	0.307425	0.481013	12.408360	0.038517	0.401985	0.310440	0.060227
191	0.0193	0.310760	0.177215	11.753621	0.054962	0.537566	0.417340	0.233641
192	0.0294	0.258616	0.506329	13.379037	0.065513	0.647198	0.410780	0.183088
193	0.0589	0.287489	0.645570	12.986156	0.089731	0.411014	0.830301	0.039682
194	0.14	0.226302	0.443038	13.389188	0.224740	0.291915	0.612561	0.085925
195	0.133	0.169420	0.278481	12.612125	0.096597	0.659007	0.025758	0.223899
196	0.065	0.392194	0.227848	12.002683	0.092001	0.418742	0.230240	0.248731
197	0.1657	0.252347	0.177215	11.588311	0.455497	0.180753	0.213759	0.088963
198	0.0276	0.510393	0.139241	11.593636	0.076684	0.249786	0.277641	0.452458
199	0.104	0.176765	0.455696	12.661125	0.155979	0.550812	0.162096	0.078925
200	0.0641	0.266374	0.405063	12.307046	0.148912	0.193023	0.466905	0.225327
201	0.055	0.320774	0.443038	12.767338	0.101671	0.379433	0.239570	0.312212

202	0.0201	0.278965	0.189873	11.418561	0.041251	0.501013	0.402256	0.049678
203	0.066	0.265130	0.354430	12.359327	0.130289	0.632149	0.041894	0.083177
204	0.096	0.268087	0.202532	12.233328	0.185093	0.406904	0.320003	0.206157
205	0.0096	0.545635	0.202532	12.308169	0.022250	0.475707	0.610850	0.171385
206	0.0372	0.208736	0.354430	13.041935	0.112186	0.426557	0.388087	0.267079
207	0.0721	0.255525	0.253165	12.539105	0.155327	0.283279	0.343565	0.190274
208	0.0384	0.271515	0.354430	13.707676	0.114838	0.378530	0.254076	0.107675
209	0.2787	0.252302	0.392405	13.487950	0.956389	0.823141	0.918363	0.278458
210	0.0359	0.385879	0.316456	13.074987	0.080722	0.743790	0.130234	0.088797
211	0.1069	0.287836	0.392405	13.212343	0.198382	0.362382	0.449100	0.090778
212	0.1036	0.195029	0.215190	12.657197	0.231353	0.198551	0.157097	0.439609
213	0.0118	0.433226	0.303797	12.289005	0.027483	0.534878	0.476296	0.130278
214	0.0852	0.232804	0.354430	12.564925	0.152564	0.187258	0.390680	0.190141
215	0.1269	0.248947	0.405063	12.206761	0.276672	0.275534	0.584674	0.046203
216	0.093	0.236134	0.379747	12.358360	0.208568	0.447570	0.174426	0.146616
217	0.0722	0.191101	0.379747	14.304708	0.115884	0.490215	0.174767	0.071966
218	0.1531	0.150683	0.177215	15.560016	0.081880	0.623549	0.056591	0.054986
219	0.0729	0.274426	0.126582	11.334416	0.071240	0.576122	0.039500	0.132644
220	0.0843	0.209766	0.278481	12.062793	0.111784	0.142177	0.147262	0.285533
221	0.0246	0.405506	0.177215	11.852768	0.006993	0.365988	0.014087	0.549079
222	0.0644	0.327261	0.202532	13.027641	0.075598	0.374162	0.248338	0.080376
223	0.0463	0.271179	0.278481	12.412153	0.070702	0.420526	0.592272	0.171903
224	0.3353	0.071955	0.291139	12.746001	0.153061	0.343394	0.021603	0.186212
225	0.0453	0.203445	0.240506	10.982307	0.055008	0.158000	0.081753	0.052165
226	0.1328	0.200363	0.075949	11.753113	0.056170	0.633937	0.096962	0.007784
227	0.0488	0.170986	0.189873	13.464643	0.100990	0.475455	0.434192	0.207705
228	0.1383	0.164493	0.113924	12.802379	0.092227	0.509465	0.101004	0.276115
229	0.1106	0.181752	0.227848	12.263274	0.058687	0.503584	0.028591	0.179433
230	0.049	0.235552	0.253165	12.042899	0.085635	0.221490	0.216008	0.183661
231	0.0605	0.305950	0.265823	11.721459	0.142755	0.335846	0.256099	0.394164
232	0.0704	0.281960	0.227848	11.493151	0.053183	0.488588	0.027840	0.257578
233	0.0352	0.280800	0.177215	12.624167	0.097756	0.448282	0.167172	0.079463
234	0.1782	0.117504	0.240506	11.500564	0.089206	0.562855	0.002953	0.606419
235	0.0039	0.646008	0.278481	12.773785	0.016576	0.184951	0.239971	0.037995
236	0.064	0.252910	0.303797	13.477446	0.136038	0.396234	0.234396	0.113272
237	0.0894	0.272907	0.291139	13.110912	0.101505	0.235130	0.689114	0.059673
238	0.1611	0.223223	0.303797	13.300949	0.235057	0.141948	0.420413	0.057661
239	0.0867	0.235897	0.329114	13.383076	0.200429	0.312636	0.218525	0.114627
240	0.1823	0.131372	0.367089	12.286982	0.123064	0.520975	0.006338	0.250935
241	0.0446	0.250562	0.215190	12.655237	0.106331	0.389814	0.187973	0.231592
242	0.0248	0.232657	0.189873	12.211183	0.060890	0.583588	0.396717	0.194327

243	0.0712	0.296149	0.303797	12.447013	0.065825	0.451889	0.261977	0.077633
244	0.0475	0.373380	0.253165	12.227475	0.128258	0.274929	0.180756	0.086790
245	0.0996	0.232518	0.341772	13.239763	0.222430	0.209863	0.274000	0.248735
246	0.0769	0.220433	0.341772	11.577058	0.104745	0.260162	0.169314	0.254395
247	0.0275	0.327428	0.303797	11.396325	0.078669	0.232925	0.210998	0.221654
248	0.1344	0.151493	0.354430	13.066514	0.097851	0.532683	0.084975	0.438361
249	0.1102	0.228975	0.278481	12.674543	0.137367	0.165949	0.374200	0.043946
250	0.005	0.618000	0.392405	13.072695	0.022080	0.699516	0.293363	0.368793
251	0.0032	0.486752	0.392405	11.826981	0.009201	0.267418	0.240488	0.121064
252	0.1224	0.160474	0.278481	12.453283	0.081092	0.489695	0.108280	0.088489
253	0.0161	0.350369	0.329114	12.157741	0.025609	0.434354	0.443275	0.104353
254	0.156	0.259593	0.202532	12.823864	0.186918	0.309781	0.195400	0.120128
255	0.0443	0.241943	0.506329	13.133232	0.125416	0.511148	0.218386	0.455619
256	0.0415	0.238405	0.417722	12.926578	0.128924	0.573945	0.034165	0.288438
257	0.11	0.234526	0.278481	12.041931	0.104748	0.443353	0.436079	0.002622
258	0.1028	0.245076	0.455696	13.116540	0.180578	0.414608	0.269211	0.069765
259	0.2621	0.000151	0.189873	11.634895	0.159915	0.177473	0.790436	0.001311
260	0.0628	0.314011	0.481013	12.510864	0.093355	0.448068	0.312092	0.054437
261	0.0243	0.299992	0.189873	11.833415	0.071007	0.537456	0.504920	0.222610
262	0.0388	0.248421	0.506329	13.509749	0.092147	0.626819	0.420180	0.178653
263	0.0373	0.336042	0.645570	13.022376	0.058585	0.490642	0.843149	0.042860
264	0.1318	0.213967	0.443038	13.431155	0.206640	0.271377	0.589284	0.081939
265	0.1328	0.176107	0.278481	12.727020	0.109503	0.610349	0.023847	0.201779
266	0.073	0.250232	0.240506	12.002683	0.132449	0.397229	0.277638	0.215442
267	0.2399	0.251235	0.177215	11.696794	0.479167	0.196959	0.189777	0.094423
268	0.0216	0.515842	0.151899	11.674710	0.064440	0.290303	0.262162	0.394152
269	0.072	0.235018	0.455696	12.649763	0.112034	0.492936	0.155222	0.058531
270	0.0582	0.271955	0.405063	12.363274	0.129195	0.307425	0.498562	0.226446
271	0.0545	0.337927	0.455696	12.867539	0.104907	0.424942	0.206826	0.346991
272	0.0329	0.144754	0.189873	11.500530	0.055305	0.571201	0.453873	0.054218
273	0.051	0.320792	0.405063	12.323530	0.097067	0.678214	0.028582	0.097913
274	0.1007	0.230644	0.278481	12.312522	0.188371	0.392690	0.398126	0.223013
275	0.0076	0.524658	0.202532	12.399308	0.019349	0.459878	0.607130	0.156349
276	0.028	0.155266	0.354430	13.042443	0.075881	0.456649	0.415087	0.228553
277	0.0578	0.245089	0.253165	12.592930	0.128675	0.223506	0.343915	0.244906
278	0.0606	0.269092	0.354430	13.725436	0.109830	0.360169	0.225984	0.128874
279	0.1847	0.252477	0.392405	13.537964	0.537560	0.677972	0.514543	0.162877
280	0.0384	0.344792	0.316456	13.095630	0.072000	0.687169	0.168144	0.051354