



The impact of sustainability disclosure Quality on earnings quality

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Abstract

The current study examines the influence of the quality of sustainability disclosure on earnings quality using a sample of Libyan industrial companies for the period 2016-2020. In order to investigate this relationship, both quantity and quality of sustainability disclosure is measured using a multidimensional method, whereas, earnings quality is measured by adopting two approaches which are accrual-basis and real activities approach. The main results of this study show that the quality of sustainability disclosure is positively and significantly related to earnings quality suggesting that companies with high level of sustainability disclosure quality report higher level of earnings quality.

Article Information

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Libyan Industrial Companies.

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تأثير الإفصاح عن الاستدامة على جودة الأرباح

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المخلص:

تتناول الدراسة الحالية تأثير جودة الإفصاح عن الاستدامة على جودة الأرباح باستخدام عينة من الشركات الصناعية الليبية للفترة 2016-2020، ومن أجل التحقق من هذه العلاقة تم قياس كمية ونوعية الإفصاح عن التنمية المستدامة باستخدام نموذج متعددة الأبعاد، في حين تم قياس جودة الأرباح من خلال اعتماد منهجين هما منهج أساس الاستحقاق ومنهج الأنشطة الحقيقية. هذا وأظهرت النتائج الرئيسية لهذه الدراسة أن جودة الإفصاح عن التنمية المستدامة ترتبط بشكل إيجابي وكبير بجودة الأرباح مما يشير إلى أن الشركات التي تتمتع بمستوى عالي من جودة الإفصاح عن التنمية المستدامة تبلغ عن مستوى أعلى من جودة الأرباح.

الكلمات المفتاحية: الكشف عن الاستدامة؛ جودة الأرباح؛ الشركات الصناعية الليبية

ability.to.address.problems.in.th
e.short.term..In.order.to.enhance
.the.outlook.of.the.company's.fi
nancial.situation,.many.compani
es.have.resorted.to.manipulation
.of.their.financial.statements..Fo
r.instance,.it.is.believed.that.ma
nagers.are.prepared.to.provide.
misleading.results.to.show.interi

1.Introduction.

Earning.Quality.(EQ).is.an
.essential.element.of.the.financia
l.reporting.system,.which.is.vital
.for.the.operation.of.capital.mar
kets.(Saleh.et.al.,.2020)..Several
.studies.suggest.that.EQ.may.be.
affected.by.the.directives.of.the.
executive.departments.and.their.



sustainable.development.policie
s.and.companies.that.do.not.pro
mote.sustainable.development.(
Koh.et.al.,2023)..Companies.m
ay.show.SD.through.charitable.c
ontributions.and.the.use.of.resou
rces.and.expertise.to.serve.the.c
ommunity,.for.example.by.reduc
ing.waste,.employing.minorities,
.and.caring.for.the.environment.
(Mazereeuw-van.et.al.,2014)...

Based.on.the.moral.perspe
ctive,.it.is.assumed.that.compani
es,.that.are.socially.responsible.a
nd.publish.disclosures.about.the
sustainability,.are.less.likely.to.
manipulate.earnings.(Yip.et.al.,
2011)..Kim.et.al.(2012)..argue.t
hat.firms.that.spend.their.resour
ces.in.the.activities.of.corporate.
social.responsibility.and.conduct
.such.programs.from.a.moral.per
spective.for.the.interest.of.stake
holders.are.expected.to.be.less.e
ngaged.in.earnings.manipulation
.and.prepare.more.reliable.and.tr

m.gains.or.to.avoid.potential.pro
blems.(Omar.et.al.,2014),.whic
h.eventually.undermines.the.cre
dibility.of.financial.statements.(
Ghosh.&Olsen.,2009)..Thus,.sh
areholders.and.stakeholders.seek
.to.fight.against.earnings.manipu
lation.practices,.which.are.inco
mpatible.with.the.fairness.of.fin
ancial.statements.presented.with
.the.intention.of.serving.all.bene
ficiaries.(Amasiatu.et.al.,2023)..
Nevertheless,.Sun.et.al.(2010).ar
gue.that.some.managers,.who.us
e.earnings.manipulation,.may.att
empt.to.distract.stakeholders.by
exploiting.the.use.of.Sustainabili
ty.Disclosure.(SD).

The.concept.of.sustainabili
ty.has.become.a.global.tool.to.e
valuate.the.performance.of.com
panies.and.their.boards'.director
s.It.has.become.an.important.fac
tor.in.the.economic.classificatio
n.of.companies.in.order.to.differ
entiate.between.companies.with.



d.that.when.agency.conflicts.exi
st,.managers.manipulate.earning
s.opportunisticly.to.their.favou
r..Thus,.SD.may.be.used.to.distr
act.the.attention.of.the.sharehold
ers.and.other.stakeholders.from.
discovering.earnings.manipulati
on.(Khan.&.Azim,.2015)..Conse
quently,.this.study.seeks.to.meas
ure.the.level.of.EQ,.SD.and.to.in
vestigate.the.relationship.betwee
n.them.among.Libyan.industrial.
companies..

Previous.empirical.studies.
have.produced.contradictory.res
ults.on.the.relationship.between.
SD.and.EQ..For.instance,.while.
Laksmna.and.Yang.(2009).and.
Kim.et.al..(2012).found.a.negati
ve.relationship.between.SD.and.
EQ..Prior.et.al..(2008)..Salewski
.et.al..(2012).and.Grougiou.et.al.
(2014).report.a.positive.relative.
relationship.between.them..Thes
e.puzzling.results.may.be.due.to.
variations.in.their.measurement.

ansparent.financial.reporting..Ch
oi.et.al..(2013).point.out.that.sin
ce.earnings.manipulation.is.inco
nsistent.with.corporate.social.res
ponsibility.principles,.companie
s.with.higher.commitment.to.cor
porate.social.responsibility.are.s
eemingly.acting.in.a.responsible
.way.when.they.prepare.financia
l.statements..Owing.to.this,.man
y.empirical.studies.(Laksmna.
&.Yang,.2009;.Kim.et.al.,.2012)
.have.shown.evidence.of.a.positi
ve.relationship.between.SD.and.
EQ..However,.the.opportunistic.
perspective.suggests.that.manag
ers.who.engage.in.earnings.mani
pulation.are.more.likely.to.use.S
D.to.mask.their.opportunistic.be
havior.(sun.et.al.,.2010)..Based.
on.this.perspective,.SD.has.beco
me.an.important.incentive.for.bo
ards.of.directors.and.executive.
managers.to.achieve.financial.ga
in.and.personal.rewards.at.the.sa
me.time..Sun.et.al..(2010).argue



09;.Kim.et.al.,,2012).have.used.
more.than.one.attributes..This.li
mitation.in.measurement.caused.
by.absence.of.a.broader.frame
work.and.omission.of.certain.imp
ortant.variables.may.make.the.fi
ndings.of.these.empirical.studies
.inappropriate.in.establishing.the
.relationship.between.SD.and.E
Q.

Since.the.majority.of.resea
rch.is.conducted.in.western.coun
tries.(e.g..Sun.et.al.,,2010;.Yip.e
t.al.,,2011),.not.much.is.known.a
bout.the.relationship.between.S
D.and.EQ.in.developing.countri
es..Only.few.empirical.studies.in
.developing.countries.and.no.of.t
hem.have.conducted.in.Libya..F
or.example,.Belgacem.&.Omri.(
2015).in.Tunisia.and.Khan.&.Az
im.(2015).in.Bangladesh..In.add
ition,.evidences.found.by.previo
us.literature.in.the.developed.co
untries,.may.not.be.helpful.in.un
derstanding.the.relationship.in.d

of.SD.and.EQ..Previous.studies.
(e.g..Kansal.et.al.,,2014;.Oikono
mou.et.al.,,2015).have.measured
.SD.by.using.quantity.as.a.proxy
.for.quality..However,.Botosan.(
2004).argued.that.although.quan
tity.and.quality.of.information.ar
e.inseparable.and.difficult.to.me
asure,.information.quantity.disc
losed.does.not.necessarily.imply.
quality..Furthermore,.since.it.is.
difficult.to.measure.disclosure.q
uality.due.to.issues.of.objectivit
y,.measuring.SD.quantity.needs.
to.be.paralleled.by.quality.meas
urement.in.order.to.understand.c
learly.the.level.of.SD.

Another.important.gap.obs
erved.from.previous.literature.is
on.the.measurement.of.relations
hip.between.SD.and.EQ..While
many.previous.studies.(e.g.Yip.e
t.al.,,2011;.Muttakin.et.al.,,2015
)..have.used.one.earnings.attribut
e.in.their.measurement,.few.rese
arches.(Laksmana.and.Yang,,20



nagement.is.broadly.interpreted.
as.a.strategy.used.by.managers.t
o.mislead.some.stakeholders.abo
ut.the.underlying.economic.perf
ormance.of.the.company.or.to.in
fluence.contractual.outcomes.th
at.depend.on.reported.accountin
g.numbers.(Christensen,.2022)

In.this.context,.earnings.m
anipulation.is.considered.a.type.
of.agency.cost.because.manager
s.look.after.their.own.interests.b
y.providing.financial.reports.that
.do.not.reflect.an.accurate.econo
mic.picture.of.the.company...On
.the.other.hand,.the.sustainabil
ity.is.commonly.defined.as.the.ty
pe.and.scope.of.social.obligation
s,.which.should.be.considered.b
y.firms.in.the.course.of.their.rou
tine.business.activities.(Shamir,.
2005)..QSD,.which.is.the.focus
of.this.research,.includes.financi
al.and.non-
financial.information.relatng.to.
the.company's.interaction.with.t

eveloping.countries.due.to.differ
ences.in.environment.and.standa
rds.between.these.countries.(An
glin.et.al.,.2013)..Prior.research.
has.also.argued.that.several.fact
ors.such.as.culture,.religion.and.
other.societal.norms.may.influen
ce.SD.and.EQ.(Gautam.&.Singh
,.2010)..Therefore,.this.study.see
ks.to.examine.the.relationship.b
etween.the.Quality.of.sustainabil
ity.disclosure.(QSD).and.EQ.in.
Libya.using.a.broader.measurem
ent.framework.of.earnings.attrib
ute.and.multidimensional.proxy.
of.SD.

2. Literature.Review.

The.literature.review.indic
ates.that.earnings.management.
which.used.to.measure.EQ.in.thi
s.study).is.an.accounting.techniq
ues.used.by.managers.to.manipu
late.earnings.through.the.flexibil
ity.in.the.accounting.options.or.r
eal.transactions.decisions.(Zgarn
i.&.Fedhila,.2022)..Earnings.ma



Q.have.established.themselves.s
eparately.as.well-
researched.areas,.comparatively.
less.attention.has.been.paid.to.es
tablishing.a.link.between.QSD.a
nd.EQ..Since.earnings.manipula
tion.is.perceived.in.previous.lite
rature.as.an.ethical.problem,.pri
or.research.has.suggested.SD.as.
determinant.of.EQ.(Laksmana.a
nd.Yang,.2009;.Grougiou.et.al.,.
2014)...EQ.is.also.affected.throu
gh.the.incentives.and.choices.of.
the.manager,.who.is.involved.in.
formulating.and.making.decisio
ns.in.the.organization..Thus,.con
sideration.of.SD.could.be.import
ant.determinants.(Choi.et.al.,.20
13)..Much.research.has.been.con
ducted.on.the.link.between.susta
inability.practice.and.EQ.(e.g..P
rior.et.al.,.2008;.Chih.et.al.,.2008
;.Kim.et.al.,.2012;.Choi.et.al.,.20
13;.Scholtens.and..Kang,.2013;.
Gao.&.Zhang,.2015;.Shafer,.201
5)..However,.only.a.few.empiric

he.social.environment,.which.is.
presented.in.their.annual.reports.
..Moreover,.QSD.is.a.primary.to
ol.to.communicate.with.stakehol
ders.about.the.social.activities.of
the.company..In.this.regard,.Per
eira.et.al.(2023).suggest.that.co
mpanies.that.provide.high.qualit
y.sustainability.disclosure.report
s.tend.to.engage.in.less.earnings.
management.activities.such.as.e
arnings.smoothing.and.loss.reco
gnition,.and.then.they.act.in.a.m
ore.transparent.manner..Therefo
re,.it.is.a.key.tool.in.building.str
ong.relationships.and.creating.m
utual.understanding.as.well.as.to
manage.the.potential.conflicts.(
Hess,.2008)..A.large.number.of.
previous.empirical.studies.have
focused.on.the.factors.impacting
earnings.quality..Primarily,.ther
e.is.more.attention.being.giving
to.the.managerial.activities.whic
h.can.influence.the.manipulation
of.earnings..Although.SD.and.E



employing discretionary accruals as proxy of EQ. They use companies' websites and annual reports to measure SD through a sample of 120 US listed companies for the period 2005-2006. They found a positive association in the food industry and a negative relationship in the oil and gas industry between SD and earnings quality. They suggested that the relationship between SD and EQ is context-specific and is likely to be affected by the political environment of a company more than by moral considerations. Wang et al. (2016) examined the impact of mandatory SD on EQ using a subset of companies that, starting in 2008, have to report their corporate social responsibility activities. They found that mandatory SD companies are less likely to engage in earnings management after 2008... This result suggested that

al. studies have examined the association between sustainability disclosure and EQ (Sun et al., 2010; Yip et al., 2011; Belgacem & Omri, 2015; Muttakin et al., 2015; Liu & Lee, 2019; Gaio et al., 2022). Furthermore, the empirical evidence that was provided by those prior studies pointed out mixed results with respect to the relationship between SD and EQ. For instance, Sun et al. (2010) analysed the relationship between corporate environmental disclosure and discretionary accruals as proxy of EQ using a sample of 245 non-financial companies. They found that the discretionary accruals have an insignificant impact on environmental disclosures among the UK companies for fiscal year between the first of April 2006 and the end of March 2007. Yip et al. (2011) investigated the relationship between SD and EQ, e



n.accruals.earnings.management
...Belgacem.&.Omri.(2015).inve
stigate.whether.voluntary.SD.is.
related.to.EQ..Their.study.is.con
ducted.on.a.sample.of.Tunisian.l
isted.companies.from.2002.to.20
11..Content.analysis.was.used.to
.determine.the.level.of.SD,.wher
eas,.four.earning.attributes.(disc
retionary.accruals,.conservatism,
.value-
relevance.of.earnings.and.accrual
s.quality).were.used.to.measure.
EQ..They.provide.evidence.that.
SD.is.positively.related.to.the.de
gree.of.discretionary.accruals.an
d.negatively.related.to.the.degre
e.of.conservatism..

Based.on.above,.it.is.clear.
that.prior.empirical.studies.are.f
ew.and.have.provided.contradict
ory.results.on.the.relationship.be
tween.SD.and.EQ.by.using.diffe
rent.proxies.of.EQ..Moreover,.p
revious.studies.(e.g..Kansal.et.al
.,.2014;.Oikonomou.et.al.,.2015)

at.mandatory.SD.mitigates.infor
mation.asymmetry.through.impr
oving.the.quality.of.financial.rep
orting..Similarly,.Martinez.et.al..
(2015).examined.the.link.betwee
n.the.quality.of.financial.reporti
ng.and.the.QSD..To.do.so,.they.
examine.a.sample.of.747.interna
tional.non-
financial.firms.from.2002.to.201
0..Their.findings.show.that.cons
ervative.companies,.with.a.low.l
evel.of.earnings.management.pr
actices,.report.high.QSD..
By.contrast,.Muttakin.&.Azim.(
2015).investigated.the.relationsh
ip.between.SD.and.accruals.qual
ity.as.proxy.of.EQ,.using.a.samp
le.of.135.companies.listed.on.th
e.Dhaka.Stock.Exchange.from.2
005.to.2009...A.checklist.of.20.i
tems.was.constructed.in.order.to
.measure.SD.in.annual.reports..
Their.findings.indicate.that.man
agers.in.emerging.markets.provi
de.more.SD.when.they.engage.i



ng..Libyan.industrial.companies.
.To.achieve.the.aim.of.this.paper
,.the.study.hypotheses.are.built.a
s.follows..

SD.is.an.issue.of.growing.i
nterest.for.academics,.businesse
s,.and.stakeholders..In.practice,.t
hose.companies.who.implement.
and.report.corporate.social.respo
nsibility.activities.are.bound.to.p
rovide.reliable.and.transparent.fi
nancial.information.(Kim.et.al.,.
2012).and.demonstrate.a.commit
ment.to.ethical.and.accountable.
behaviour.to.stakeholders..Neve
rtheless,.there.is.an.argument.tha
t.SD.can.be.used.as.an.entrench
ment.mechanism.to.achieve.man
agers'.self-
interest.objectives.by.distorting.
earnings.information.(McWillia
ms.et.al.,.2006;.Choi.et.al.,.2013
)..Since.EQ.is.influenced.by.the.
choices.and.incentive.of.those.w
ho.are.involved.in.formulating.a
nd.making.decisions.in.the.orga

.have.also.used.different.quantit
ative.measurements.as.proxy.of.
QSD..Most.notably,.it.is.clear.al
so.from.the.above.previous.studi
es.that.no.study.has.examined.th
e.link.between.SD.and.real.activ
ities.earnings.management..Fina
lly,.the.majority.of.the.prior.stud
ies.have.applied.in.western.coun
tries,.just.few.studies.have.cond
ucted.in.developing.countries.an
d.no.of.them.have.conducted.in.
Libyan.context..

Thus,.this.study.will.enhance.the
.understanding.of.this.relationshi
p.by.using.AEM.and.REM.to.m
easure.earnings.management.pra
ctices.as.proxy.of.EQ.and.multid
imensional.proxy.of.sustainabilit
y.disclosure.to.measure.both.the
quality.and.quantity.of.SD.in.the
.Libyan.context..

Hypothesis.Development....

The.main.purpose.of.this.s
tudy.is.to.understand.the.relation
ship.between.EQ.and.QSD.amo



tunistic behaviour.. Those managers voluntarily issue SD to promote an impression of their corporate social responsibility values, which may or may not be substantiated. (Mahoney et al., 2013). Following this argument, the relationship between EQ and SD indicates that SD is used by companies with poor financial reporting quality as a mechanism to gain legitimacy for substitution of their low quality financial reporting. (Martinez-Ferrero et al., 2015). SD, in this sense, is used as window-dressing to distract the attention of the firms' stakeholders from their questionable and poor financial reporting practice. Nevertheless, according to the moral perspective, it is assumed that companies, which are socially responsible and disclose quality information of their corporate social responsibility, are less likely to ma-

nifest opportunistic behaviours, consideration of SD could be important determinants. (Choi et al., 2013; Wang et al., 2015). In order to explain the link between QSD and EQ, previous studies have suggested two perspectives, namely, the opportunistic perspective and the moral perspective. (Kim et al., 2012). The opportunistic perspective suggests that managers who engage in earnings management are more likely to use SD to mask their opportunistic behaviour. (Khan and Azim, 2015). According to this perspective, SD has become an important incentive for managers to achieve financial gain and personal rewards at the same time. Sun et al. (2010) argued that when agency conflicts exist, managers might manipulate earnings opportunistically in their favour. Managers, who use earnings management, may attempt to distract stakeholders about their oppor-



wing.to.this,.many.empirical.stu
dies.have.shown.evidence.of.a.p
ositive..relationship.between.cor
porate.social.responsibility.pract
ise.and.EQ.(Laksmana.&.Yang,.
2009;.Kim.et.al.,.2012)..

The.above.two.theoretical.persp
ectives.pose.an.important.resear
ch.question..A.closer.look.at.the.
arguments.behind.these.two.pers
pectives,.however,.reveals.that.t
hey.can.be.reconciled.if.one.can.
evaluate.the.informational.conte
nt.(i.e..quality).of.corporate.soci
al.responsibility.

The.prior.research.in.this.a
rea.has.substantiated.that.SD.is.a
ssociated.with.EQ..Empirical.fin
dings,.however,.remain.inconclu
sive.with.regard.to.whether.com
mitment.to.SD.has.a.positive.or.
negative.impact.on.EQ.and.vice.
versa.(e.g..Sun.et.al.,.2010;.Yip.
et.al.,.2011;.Muttakin.&.Azim,.2
015;.Wang.et.al.,.2015;.Belgace
m.&.Omri,.2015)..One.possible.

nipulate.earnings.(Yip.et.al.,.201
1)..Kim.et.al..(2012)..argue.that.
firms.that.spend.their.resources.i
n.the.activities.of.sustainability.
and.conduct.programs.in.moral.
perspective.for.the.interest.of.sta
keholders.are.expected.to.engag
e.in.less.earnings.management.a
nd.prepare.more.reliable.and.tran
sparent.financial.reporting..Ch
oi.et.al..(2013).point.out.that.sin
ce.EQ.is.consistent.with.sustaina
bility.principles,.companies.with
.a.higher.commitment.to.corpora
te.social.responsibility.are.seemi
ngly.acting.in.a.responsible.way.
when.they.prepare.the.financial.
statements..Given.that.managers
.are.more.likely.to.engage.in.ear
nings.manipulation.when.there.i
s.high.information.asymmetry,.s
ustainability.reporting.is.assume
d.by.signalling.theory.to.be.a.me
ans.of.mitigating.the.informatio
n.symmetry.between.manageme
nt.personnel.and.stakeholders..O



lders.will.be.reduced..Since.the.r
eduction.in.information.asymme
try.tends.to.constrain.earnings.m
anagement.(Wang.et.al.,2015),.t
he.current.study.expects.a.positi
ve.relationship.between.QSD.an
d.EQ.and.thus.supports.the.hypo
thesis:

H1:.there.is.a.negative.relations
hip.between accruals.earnings.m
anagement.and.QSD.

H2:.there.is.a.negative.relations
hip.between.real.earnings.manag
ement.and.QSD.

Research.Method

Sample.of.the.Study

Our.initial.sample.for.this.
study.is.Libyan.industrial.compa
nies.from.2016.to.2020...Firms.
with.missing.data.have.been.rem
oved.from.the.initial.sample..Th
e.final.sample.consists.of.55.fir
m-
year.observations.during.the.stu
dy.period..

reason.for.this.could.be.due.to.th
e.biased.measurement.of.SD..Gi
ven.the.conflicting.results.of.pri
or.studies.on.this.relationship.an
d.its.usefulness.for.market.partic
ipants.and.academics,.there.is.a.
need.to.explain.the.relationship.(
Kim.et.al.,2012)..It.is.not.possib
le.to.conclude.the.possible.effect
s.of.SD.on.EQ.without.knowing.
whether.sustainability.disclosure
.conveys.a.true.(as.in.the.stakeh
older.and.ethical.perspective).or.
a.false.information.(as.in.the.ma
nagerial.opportunism.or.legitima
cy.perspective)..Chih.et.al.,(200
8).argue.that.it.will.be.unlikely.t
hat.managers.will.engage.in.ear
nings.management.in.companies
.that.provide.high.quality.disclos
ure.of.their.social.activities.that.t
argets.all.stakeholders.because,.
when.the.transparency.of.inform
ation.is.increased,.the.expectatio
n.of.the.information.asymmetry.
among.management.and.stakeho



.Where:

TA_{it} = total accruals

A_{it} =

1. = the book value of total assets of company i at the end of year t-1

ΔREV_{it} = revenues of company i in year t deducted revenues in year t-1.

ΔREC_{it} = change in accounts receivables.

PPE_{it} = gross property, plant and equipment of company i at the end of year t.

α, β₁, β₂ = estimated parameters
ε_{it} = the residual.

We then employed the coefficient estimates from equation (1) to calculate normal accruals (NA_{it}) for every firm-year observations in the sample:

$$NA_{it} = \alpha + \beta_1 \left(\frac{1}{TA_{it-1}} \right) + \beta_1 (\Delta REV_{it-1}) + \beta_2 \left(\frac{PPE_{it-1}}{A_{it-1}} \right) + \varepsilon_{it} \quad (2)$$

Measuring EQ (dependent variable).

To measure EQ, this study uses AEM and REM as proxy for the dependent variable of this study as following:

Measuring AEM.

Following prior studies, the existence of AEM was tested by examining discretionary accruals through differentiating them from non-discretionary accruals. We employed Modified Jones model (Dechow et al., 1995) to estimate current Discretionary Accruals. The following cross-sectional regression equation is used to estimate current accruals. The cross-sectional Modified Jones Model (1995):

$$TA_{it} / A_{it-1} = \alpha + \beta_1 \left(\frac{1}{A_{it-1}} \right) + \beta_1 (\Delta REV_{it-1}) + \beta_2 \left(\frac{PPE_{it-1}}{A_{it-1}} \right) + \varepsilon_{it} \quad (1)$$



ectional.regression.for.every.ind
ustry.and.year:

$$\text{CFO}_{it} / A_{it-1} = \alpha + \alpha_1 (1 / A_{it-1}) + \beta_1 (\text{Sales}_{it} / A_{it-1}) + \beta_2 (\Delta \text{Sales}_{it} / A_{it-1}) + \varepsilon_{it} \quad (3)$$

..Where.

CFO_{it} = cash flow from operation
n.for.the.company.i.in.the.curren
t.year,

A_{it-1}

A_{it-1} = the total assets in the previous year,

Sales_{it} = the company's sales in a current year,

ΔSales_{it} = changes in the company's sales in the current year..

ε_{it} = the residual..

We then employed the coefficient estimates from equation (3) to calculate normal CFO..For every firm-

year, abnormal cash flow from operations (ACFO) is the actual CFO minus the "normal" CFO calculated using estimated coefficients from the corresponding ind

AEM.measured.by.the.diff
erence.between.TA.and.the.fitted.NA.

The lower level of AEM indicates a less level of earnings manipulations in accruals-based (higher level of EQ).

Measuring.REM

Following Roychowdhury (2006), we consider three metrics to develop our proxies for REM: the abnormal levels of cash flow from operations (ACFO), abnormal production costs (APROD), and discretionary expenses (ADIS). Previous literature (Cohen and Zarowin, 2010) offer evidence of the validity of these three proxies suggested by Roychowdhury (2006).

Following Roychowdhury (2006), we express normal cash flow from operations as a function of sales and change in sales in the current period.. To estimate the model, we run the following cross



“normal”. PROD. calculated. using estimated coefficients from equation (6).

The third proxy is abnormal discretionary expenses (ADISX), which is estimated by using the following equation:

$$DISX_{it}/A_{t-1} = \alpha + \alpha_1(1/A_{t-1}) + \beta_1(Sales_{it}/A_{t-1}) + \varepsilon_{it} \quad (7)$$

Where $DISX_{it}$ = expenses such as administration, R&D and sales expenses. All other variables are defined above.

We then employed the coefficient estimates from equation (7) to calculate normal DISX. For every firm year, abnormal production cost from operations (ADISX) is the actual DISX minus the “normal” DISX calculated using estimated coefficients from equation (7).

Following Roychowdhury (2006), we add ACFO to ADISX and APROD, using the following equation:

industry-year model and the firm-year's sales and lagged assets. We defined Production costs as the sum of Cost of Goods Sold and the change of inventory for firm i in year t .

$$COGS_{it}/A_{t-1} = \alpha + \alpha_1(1/A_{t-1}) + \beta_1(Sales_{it}/A_{t-1}) + \varepsilon_{it} \quad (4)$$

$$\Delta INV_{it}/A_{t-1} = \alpha + \alpha_1(1/A_{t-1}) + \beta_1(\Delta Sales_{it}/A_{t-1}) + \beta_2(\Delta Sales_{it-1}/A_{t-1}) + \varepsilon_{it} \quad (5)$$

Using above equations (4) and (5), we estimate the abnormal level of production costs (APROD) as:

$$PROD_{it}/A_{it-1} = \alpha + \alpha_1(1/A_{it-1}) + \beta_1(Sales_{it}/A_{it-1}) + \beta_2(\Delta Sales_{it}/A_{it-1}) + \beta_3(\Delta Sales_{it-1}/A_{it-1}) + \varepsilon_{it} \quad (6)$$

We then employed the coefficient estimates from equation (6) to calculate normal PROD. For every firm year, abnormal production cost from operations (APROD) is the actual PROD minus the



e.framework.of.BFM.to.measure
.forward.looking.information.dis
closure.and.compared.with.mag
nitude.measurement.of.forward.l
ooking.information..They.confir
m.that.by.using.multidimensiona
l.measurement.of.disclosure,the
.new.framework.improves.the.di
sclosure.measurement.and.offers
.more.thorough.understanding.of
.disclosure.quality..Therefore,,th
is.study.estimated.the.quality.of.
SD.by.using.the.framework.of.B
MF.which.is.improved.by.Beretta
&.Bozzolan,in.2008..The.curr
ent.study.measure.both.quantity.
and.quality.dimensions.of.SD.by
.the.same.framework.that.has.be
en.used.by.Beretta.&.Bozzolan.i
n.2008..This.framework.consist
of.two.phases.to.measure.the.qu
ality.of.disclosure,.the.second.ph
ases.is.divided.to.two.steps..The
first.phase.and.the.first.step.in.th
e.second.phase.which.have.been
.applied.by.Beretta.&.Bozzolan.i

REM.=.ACFO.+ .ADISX.+ .APR
OD.(8)

.The.lower.level.of.REM.indicat
es.a.less.level.of.earnings.manip
ulations.in.real.activities.(higher
.level.of.EQ).

The.Quality.of.CSRD

Prior.literature.has.indicate
d.that.there.is.controversy.on.the
.measurement.of.SD.(HASSAN,
.2010)..Botosan.(2004).argued.t
hat.although.quantity.and.qualit
y.are.inseparable.and.difficult.to
.measure,.information.quantity.d
isclosed.does.not.necessarily.im
ply.quality..Beattie,.McInnes.an
d.Fearnley,. (2004).(BMF).create
.new.framework.to.measure.bot
h.magnitude.and.width.of.volunt
ary.disclosure..BMF.suggested.t
hat.this.framework.can.be.impro
ved.by.adding.the.depth.in.additi
on.to.the.width.in.order.to.meas
ure.the.richness.of.voluntary.dis
closure..Beretta.&.Bozzolan,. (20
08).used.this.improvement.in.th



words,.text,.sentences,.paragrap
hs.or.pages.of.SD.(Each.techniq
ue.has.its.own.pros.and.drawbac
ks)..Coding.by.sentences,.paragr
aphs.and.words.have.been.critici
sed.by.prior.studies..Due.to.diffe
rent.information.may.be.Include
d.into.the.same.paragraphs.or.se
ntence.related.to.the.SD.also.ind
ividual.words.are.meaningless..
As.a.result,.a.text.unit.was.empl
oyed.to.measure.SD.in.this.stud
y,.which.was.identified.by.Beatt
ie.and.Thomson.(2007).as.“part
of.sentence.captures.a.piece.of.i
nformation”’..

BMF.suggested.that.“the.standar
dized.residuals.of.an.ordinary.le
ast.squares.(OLS).regression.can
.be.used.as.a.good.proxy.of.discl
osure.quantity.using.industry.an
d.size.as.independent.variables”.
.In.this.context,.several.studies.h
ave.supported.the.impact.of.indu
stry.and.size.on.disclosure.quant
ity.(Urquiza.et.al.,.2009;.Beretta

n.2008.can.be.used.to.measure.a
ll.kinds.of.disclosure.(Beretta.&
Bozzolan,.2008)..However.the.s
econd.step.of.the.second.phase.
was.designed.to.measure.the.for
ward.looking.information..Thus,
.this.study.followed.the.same.of.
first.phase.and.first.step.of.the.s
econd.phase.of.Beretta.&Bozzo
lan.in.2008.and.adjusted.the.sec
ond.step.of.the.second.phase.to
be.suitable.for.measuring.the.us
efulness.of.SD.as.following..

The.first.phase.The.curre
nt.study,.use.content.analysis.to
measure.the.frequency.of.items.t
hat.is.disclosed.in.the.annual.rep
orts,.we.use.a.checklist.consists
of.25.items.classified.into.6.key
categories,.which.are.communit
y.development,.human.resources
,.products.and.services,.custome
rs,.environment.and.others.(see
Appendix.1)..The.techniques.us
ed,.in.previous.studies,.in.conten
t.analysis.unit.of.disclosure.are.



$$RQ_{it} = D_{it} - d_{it}$$

Where RQ_{it} is the relative quantity index, D_{it} is the disclosure for company i in year t and d_{it} is the estimated disclosure by the residual for the same company in the same year. The RQ index is standardized (STRQ) using the minimum and the maximum of the relative quantity index of the sample.

The second phase, Beretta & Bozzolan, 2008, determine the Richness (RIC) as a function of the Width (WID) and Depth (DEP) of the disclosures. This study applied the same method of Beretta & Bozzolan, 2008, to measure WID of SD using the concentration of SD and the coverage of disclosure as proxy for WID, whereas, the current study utilizes the characteristics of Information suggested by Global Reporting Initiative (GRI) guidelines. IASB (2010) as proxy for DEP.

& Bozzolan, 2008). Thus, the dimension of quantity measured by the method of Beretta & Bozzolan in 2008 as following:

$$D_{it} = \beta_0 + \beta_1 \text{SIZE}_{it} + \beta_2 \text{Type}_{it} + \varepsilon_{it} \quad (1)$$

Where, $\dots_{it}$

D_{it} = the disclosure for company i in year t measured by the content analysis as frequency of items that is disclosed in the annual reports,

SIZE_{it} = size of companies, the natural logarithm of firms' total assets is used to measure the size of company

Type_{it} = industry type.

ε_{it} = the residual for the same company in the same year.

We then employed the coefficient estimates from equation (1) to calculate estimated disclosure (d_{it}) for every firm-year observations in the sample:

$$d_{it} = \beta_0 + \beta_1 \text{SIZE}_{it} + \beta_2 \text{Type}_{it} \quad (2)$$



1.to.be.used.as.second.proxy.for.
quality.of.disclosure.

Coverage.(COV),.indicate
s.that.SD.quality.is.better.when.t
he.distribution.of.information.re
ported.between.the.items.taken.i
nto.consideration.is.high.instead
.of.only.a.few.of.disclosure.units
.about.some.of.them....

$$COV = \dots \frac{1}{st} \cdot \sum_{j=1}^{st} INF$$

Where,.INF.=.1.if.company.i.dis
closes.information.about.the.ite
m.j.in.the.annual.report,.otherwi
se.=.0,.and.st.=.number.of.subca
tegory..The.value.of.WID.is.obt
ained.as.the.mean.of..CON.and.
COV.dimensions:

$$WID = \dots \frac{1}{2} \cdot (CON + COV)$$

2.In.order.to.be.able.to.eval
uate.the.usefulness.of.SD,.the.G
RI.guidelines.suggested.eleven.p
rinciples.which.should.be.taken
into.an.account:.transparency,.su
stainability.context,.completeness,
comparability,.relevance,.accu

xplained.in.the.second.step.in.thi
s.phase.

1.To.measure.the.WID,.this.
study.determine.the.concentratio
n.(CON).of.SD.across.items.as.a
.function.of.CON.at.Subcategor
y.Level.(Sub.CON).and.determi
ne.the.spread.of.disclosure.using
.the.Coverage.(COV).

.Sub.CON.is.a.concentration.me
asure.at.subcategory.level,.whic
h.is.defined.by:.

$$CON = \dots \sum_{j=1}^n P_j^2$$

Where,.Pi.=.proportion.of.disclo
sure.of.item.i.measured.by.the.c
ontent.analysis.as.frequency.of.i
tem..The.maximum.value.of.CO
N.is.1.when.all.SD.text.units.fall
.in.one.category.and.the.value.is.
smaller.when.SD.text.units.are.s
pread.between.categories..The.h
igher.value.of.CON.index.is.the
poorest.quality.of.disclosure..Th
us,.the.results.are.multiplied.by.-



tion.to.be.useful.for.making.deci
sions.(IASB,.2010,.A33)..The.u
nderstandability.and.comparabili
ty,.which.enhance.qualitative.att
ributes,.are.complementary.to.th
e.fundamental.attributes.and.dist
inguish.between.more.useful.inf
ormation.than.the.less.useful.inf
ormation..Due.to.above,.this.stu
dy.flowing.previous.studies.(Alo
taibi.&.Hussainey,.2016.).define
s.the.Depth.as:

$$\text{Usefulness} = \dots \frac{1}{4} \cdot (\text{Relevant} + \text{Faithfully} + \text{Understandability} + \text{Comparability})$$

Where,

Relevance = .0.if.no.SD,.1.
if.SD.descriptive.information.is.
disclosed,.2.if.descriptive.and.fi
nancial.information.of.SD.is.incl
uded,.3.if.descriptive.disclosure.
including.financial.and.forward-
looking.information.is.reported..

racy,.auditability,.neutrality,.clar
ity,.inclusiveness,.and.timeliness
..(Clarkson.et.al,.2008)..Similar
ly,.both.the.International.Accou
nting.Standards.Board.(IASB).in
.2010.and.the.Financial.Account
ing.Standards.Board.FASB.in.2
008a;.2008b;.2010.explicitly.ind
icate.the.desirability.of.creating.
a.comprehensive.measurement.t
ool.that.take.in.account.all.chara
cteristics.of.information..IASB.2
010.provides.a.conceptual.frame
work.for.selecting.the.characteri
stics.of.information.that.should.
be.comprised.in.such.an.index.o
f.quality..That.is,.the.conceptual.
framework.indicate.that.the.leve
l.of.disclosure.is.beneficial.by.re
lying.on.its.qualitative.characteri
stics..In.order.to.contribute.the.d
ecision.usefulness,.fundamental.
and.enhancing.qualitative.attribu
te.should.be.taken.in.an.account.
.The.disclosure.must.be.relevant
.and.faithfully.represent.informa



Comparability. = 0. if no ratios is found in annual report, 1. if few ratios are found (less than 5), 2. if some ratios are found (from 5 to 10), 3. if enough ratios are found (more than 10). (Hussainey, & Alotaibi, 2016).
The average of WID and DEP is used to measure RIC as following:

$$RIC = \dots \frac{1}{2} \cdot (WID + usefulness)$$

2- Finally, the overall index of quality is the average of RIC and RQ as following:

$$\text{The Quality Index of disclosure (QSD)} = \dots \frac{1}{2} \cdot (RIC + RQ)$$

To capture the relationship between the quality of SD and EQ, we employ the following models:

$$EQ(REM, AEM, CFO, PROD, and DISX) = \alpha + \beta_1 \cdot QSD + \beta_2 \cdot REM/AEM + \beta_3 \cdot Size + \beta_4 \cdot Growth + \beta_5 \cdot Leverage + \beta_6 \cdot Industry + \beta_7 \cdot ROA + \beta_8 \cdot BEFS \dots$$

(e.g., Jonas and Blanchet, 2000; McDaniel et al., 2002).

Faithfully representation

= 0. if no disclosure on sustainability practice, 1. if the positive events only mentioned (less than 10 sentences), 2. if emphasize on more positive events (more than 10 sentences), 3. if more positive and negative events are disclosed. (Razaee, 2003; Chakroun et al., 2013; Hussainey, & Alotaibi, 2016).

Understandability. = 0. if

no disclosure on sustainability practice, 1. if poor presentation (nonfinancial information only, without any table, pictures or graphs), 2. if financial and nonfinancial information without any table are provided, pictures or graphs, 3. if a good presentation (text, financial information and graphs, tables or pictures). (Jonas and Blanchet, 2000).



o.manage.earning..The.trade-
off.between.REM.and.accruals-
based.is.a.function.of.their.relati
ve.costs.(Zang,,2012)..Therefore
,,following.Kim.(2012),.we.inclu
de.REM.as.a.control.variable.in.
the.first.equation.and.AEM.as.c
ontrol.variable.in.second,,third,,f
ourth.and.fifth.equations.

2.Independent.variables:

QSD.=.The.Quality.Index.of.dis
closure

SIZEit.=.size.of.companies,,the
natural.logarithm.of.firms'.asset
s.Total.assets.is.used.to.measure
.the.size.of.company.

GROWTH.=.Growth.ratio.meas
ured.through.the.change.of.sale.

LEV...=.financial.leverage.meas
ured.by.total.liabilities.to.total.as
sets.ratio..

ROA...=.the.profitability.of.com
pany,,the.income.from.operation
.to.total.asset.

BEF.=.board.effectiveness..We.
award.1.if.the.company.comply.

Where,

1.Dependent.variable:

AEM...=.absolute.value.or.discr
etionary.accruals.for.company.i.
and.period.t.,discretionary.accru
als.are.used.as.dependent.variabl
e.in.the.first.equation..

REM...=.combined.proxy,,whic
h.is.calculated.by.aggregating.of
.CFO,.PROD.and.DISX.of.com
pany.i.and.period.t.,REM.is.used
.as.dependent.variable.in.the.sec
ond.equation.

CFO.=.abnormal.cash.flows.fro
m.operations,,which.is.used.as.d
ependent.variable.in.the.third.eq
uation.

PROD.=.abnormal.production.c
osts,,which.is.used.as.dependent
.variable.in.the.fourth.equation.

DISX.=.abnormal.discretionary.
expenses;which.is.used.as.depe
ndent.variable.in.the.fifth.equati
on..

Managers.are.likely.to.use.a.
mix.of.AEM.and.REM.as.tools.t



ows.that.the.mean.for.the.three.i
ndividual.proxies.of.real.earning
s.management.(ACFO,.APROD.
and.ADISX).are.0.0031,.0.0022.
and..0015.respectively..These.re
sults.are.similar.with.the.finding
s.of.Ferentinou.(2014),.who.fou
nd.that.the.mean.values.of.ACF
O,.APROD.and.ADISX.are.0.00
5,.0.002.and.0.003.respectively..
With.respect.to.the.independent.
variables,.25%.of.the.sample.ha
ve.less.than.0.160.with.the.mean
.value.of.QSD.at.0.300..This.fig
ure.is.relatively.higher.than.the.r
esults.reported.by.Hussainey.an
d.Alotaibi.(2016),.who.found.th
at.the.average.value.of.quality.of
.SD.is.0.334.in.Saudian.compani
es.

with.Libyan.code.for.corporate.
governance,.otherwise.zero.

3.DESRIPTIVE.STAT ISTICS

Table.1.describes.the.total.
observations,.mean,.standard.de
viation,.25.percentiles.(Q1).and.
75.percentiles.(Q3).values.and.
median.for.all.variables.used.in.t
his.study..The.descriptive.statisti
cs.indicate.that.the.mean.value.o
f.current.AEM.is.0.041..This.res
ult.is.consistent.with.the.average
.reported.by.Rao.&.Dandale.(20
08),.who.found.that.the.mean.v
alue.of.AEM..is.around.0.05..Re
garding.real.earning.management
t,.table.2.shows.that.the.mean.va
lue.of.real.activity.earning mana
gement.is.0.002..Table.2.also.sh



Table.1:..Descriptive.statistics

variable	Mean	Sd	p25	p50	p75
AEM	.041	.106	.007	.021	.049
REM	-.002	.128	-.037	.002	.048
CFO	-.0031	.107	-.037	-.002	.029
PROD	-.0022	.102	-.032	-.001	.025
DISX	-.0015	.113	-.043	-.003	.034
QSD	.300	.136	.160	.508	.62
ROA	.112	.124	.041	.090	.15
SIZE	7.48	.663	7.00	7.39	7.8
GROWTH	.255	.325	.088	.189	.32
LEV	.546	.224	.392	.583	.71
BEF	.367	.482	0.....	0.....	1
ACEF.	.621	.485	0	1	1.

*Significance.at.the.0.10.level,

**Significance.at.the.0.05.level,

***Significance.at.the.0.01.level

is.between.AEM.and.BEF, .whic

h.is.-

0.22..Thus,.the.correlation.coeffi

cients.of.all.other.study.variable

s.are.less.than.conventional.thre

sholds.and.there.is.no.multi-

collinearity.problem.between.th

e.study.independent.variables.

The.current.study.uses.the.

correlation.matrix.to.examine.w

hether.there.is.high.correlation.b

etween.the.independent.variable

s..Table.2.and.3.report.the.correl

ation.coefficients.between.indep

endent.variables..It.shows.that.th

e.highest.correlation.coefficient.



Table.2:.correlation.matrix.

	CSR	AEM	Type	ROA	Size	Growth	Lev	BEF	ACEF
CSR	1.000								
AEM	.093** *	1.000							
Type	.0824* **	.0184	1.000						
ROA	.0184	-.0497*	.045**	1.000					
SIZE	.103** *	-.0481*	.074** *	.113** *	1.000				
GROWTH	.058**	-.052**	-.034	.0137	.0091	1.000			
Lev	.006	-.0114	.007	.072** *	0.059* **	-.0127	1.000		
BEF	.023	-.221** *	-.044**	.044**	-.079**	-.034**	-.0099	1.000	
ACEF	-.019	.066** *	.002	-.0105	.0183	-.0109	-0.016	.089** *	1.000

Table.3:.correlation.matrix.

	CSR	REM	Type	ROA	Size	Growth	Lev	BEF	ACEF
CSR	1.000								
REM	-.015**	1.000							
Type	.0816* **	.009	1.000						
ROA	.0172	-.091** *	.045*	1.000					
SIZE	.112** *	.0084	.074** *	.113** *	1.000				
GROWTH	.056**	-.0152	-.035	.0127	.0091	1.000			



Lev	.006	-.006	.006	.071** *	0.059* **	-.0117	1.000		
BEF	.032	.022	-.042*	.045**	.078** *	.032** *	-.0089	1.000	
ACEF	-.027	.053**	.001	-.0106	.0183	-.0108	-0.006	.098** *	1.000

5). suggest. that. if. the. p-
value. is. less. than. 0.05, . the. fixed.
effect. method. is. most. appropriat
e. for. examining. the. relationship.
. In. order. to. determine. the. most. a
ppropriate. effect. to. use. in. this. st
udy, . the. Hausman. test. was. cond
ucted. for. the. regression. models.
used. in. the. study. . Since. the. p-
value. for. the. regression. models.
used. in. this. study. is. at. the. 0.001.
level. (see. Appendix. 3), . the. fixed
. effect. method. is. more. appropria
te. in. examining. the. relationship.
between. the. QSD. and. QE. in. this
. study. (Kim. et. al., 2012). . Furthe
rmore, . Gujarati. (2003). suggests.
that. normality. problems. should.
be. investigated. in. order. to. ensur
e. an. appropriate. regression. mod

4. Multivariate Analysis

In. order. to. choose. the. mos
t. appropriate. model. (panel. or. po
oled. data. model), . a. Chow. test. is.
conducted. for. the. regression. mo
dels. to. examine. the. relationship.
between. the. QSD. and. QE. . Twu
masi. et. al. . (2015). indicate. that. if
. the. F. value. of. the. Chow. test. is. l
ess. than. 0.05, . the. preferred. mod
el. is. the. panel. data. model. . Since.
the. results. of. the. Chow. test. for. t
his. study. showed. that. the. F. valu
e. of. the. Chow. test. was. less. than.
0.01. for. the. . models. used. in. the.
study, . the. panel. data. model. is. m
ore. appropriate. (see. Appendix. 2
) . The. panel. data. model. can. be. cl
assified. by. random. effect. or. fixe
d. effect... Clark. and. Linzer. . (201



managers are less likely to manipulate earnings with less information asymmetry. Signalling theory assumes that QSD is a useful tool to reduce the information asymmetry between management personnel and stakeholders, which would decrease earnings manipulation as a result.

Table 4 in column 2, 4 and 5 also show that the estimated coefficients for the regressions of REM, ACFO and APROD are 1.57, -0.099, and -0.101 respectively, which are negatively and significantly related to the quality of SD at level .05 for REM and .10 for both ACFO and APROD. Although there is no significant impact of QSD on ADISX, the relationship between them is still negative (coef. = -0.069, $p < 0.114$), **thus, the second sub-hypothesis of the current study is accepted.** These figures are consistent with previous

research. The normality of the study data was verified using a histogram test (see Appendix 3), the results of the regression model are shown in Table 4.

Table 4 column 1 indicates that the QSD is negatively and significantly associated to AEM (coef. = .388, $p < 0.01$), **thus, the first sub-hypothesis of the current study is accepted.** These findings are consistent with previous findings reported by Wang et al. (2015), suggesting that firms with higher QSD report less discretionary accruals compared to those companies with a lower QSD. These results are consistent with the ethical perspective which suggests that companies that are socially responsible are more likely to prepare reliable and transparent financial reporting (Choi et al., 2013). These findings are also in line with signaling theory, given that



p.<.0.01.respectively)..Company
.size.also.is.significantly.and.ne
gatively.related.to.AEM,.DISX,.
CFO,.and.PROD.at.level..0.05,.i
ndicating.that.less.profitable.and
.smaller.company.may.have.a.hi
gher.incentive.to.manage.earnin
gs.compared.to.high.profitable.a
nd.large.companies..This.is.also.
consistent.with.previous.studies.
(Kim.et.al.,.2012)..In.the.context
.of.corporate.governance.mecha
nisms.as.control.variables,.table.
4.shows.that.board.effectiveness
.is.negatively.and.significantly.r
elated.with.AEM.(Coef.=.011,.p
.<.0.05).which.suggest.that.com
panies.with.less.effective.board.
have.more.flexibility.to.engage.i
n.AEM..

esults.found.by.Kim.et.al..(2012
)..indicating.that.companies.with
.less.level.of.QSD..are.more.like
ly.to.using.real.transactions.to.m
anipulate.earnings..Additionally,
.table.4.column.1.and.2.indicate
s.that.the.combined.proxy.for.re
al.activities.earnings.manageme
nt.is.negatively.and.significantly
.associated.with.absolute.value.o
f.discretionary.accruals..This.ind
icates.that,.companies.that.use.le
ss.accrual.based.earnings.manag
ement.are.more.likely.to.engage.
in.real.activities.earnings.manag
ement..and.vice.versa..This.findi
ngs.is.in..line.with.previous.stud
ies.(Ho,.L..et.al.,.2015)..With.re
spect.to.the.company.characteris
tics.as.control.variables,.table.4.
shows.that.there.is.a.negative.an
d.significant.effect.of.profitabilit
y.on.both.AEM.and.REM.(Coef.
=.0.078,.p.<.0.01;.Coef.=.0.090.,



Table.7:..Results.of.panel.regression:..the.relationship.between.QSD.and.E

M

	AEM.(1)		REM.(2)		DISX.(3)		CFO.(4)		PROD..(5)	
	Coef	t	Coef	..T	Coef	T	Coef	t	...Coef	t
QSD	-.388***	-12.47	...-.157**	-3.02	-.101	-1.49	-.099*	-1.93	-.101*	-1.88
REM/AE M	-.212**	-12.76	-.391***	..-12.76	-.406***	-13.23	-.380***	-13.19	-.394***	-14.68
ROA	-.087***	-4.47	-.096***	-4.43	.013	0.18	.011	0.14	-.013	-0.65
size	-.015**	-2.36	..-.011	-0.26	-.031**	-2.69	-.028**	-2.03	-.018**	-2.79
Growth	.005	0.86	-.011***	-0.37	-.013	-0.53	.013	0.62	.001	0.00
type	.014	0.77	.012	0.89	-.017	-0.23	-.019	-0.46**	-.006	-0.33
Leverage	-.021*	-1.81	014	0.31	.014	0.37	.012	0.21	.003	0.19
BEF	-.011**	-1.36	..023*	1.73	-.013	-0.57	-.014	-0.53*	-.007	-1.03

.*Significance.at.the.0.10.level,

**Significance.at.the.0.05.level,

***Significance.at.the.0.01.level.

.,several.studies.have.investigate
d.whether.corporate.social.respo
nsibility.companies.behave.diffe
rently.in.delivering.more.transpa
rent.financial.statement.to.share
holders.and.stakeholders..Howe
ver,.contradictory.results.have.b
een.produced.by.previous.studie
s.on.the.association.between.SD.
and.EQ..These.puzzling.findings
.may.be.due.to.difference.in.thei
r.measurement.of.SD.and.EQ..T
his.study.employ.multidimensio
nal.proxy.to.measure.both.qualit

Conclusion

This.study.examines.the.ef
fect.of.QSD.on.EQ.using.a.samp
le.of.Libyan.industrial.companie
s..Although.earnings.quality.is.c
onsidered.as.an.important.comm
unication.tool.among.manageme
nt.and.stakeholders,.many.comp
anies.attempt.to.manipulate.their
.financial.statements,.which.wou
ld.undermine.the.credibility.of.fi
nancial.information..Since.previ
ous.literature.perceives.earnings.
management.as.a.moral.problem



X)..Whereas,.this.study.employ.
multidimensional.proxy.to.meas
ure.the.quality.of.SD..The.result
s.of.this.study.indicate.that.the.q
uality.of.SD.is.Positively.and.sig
nificantly.associated.to.EQ..Con
sistent.with.the.signalling.theory
..agency.theory.and.ethical.pers
pective,.these.results.support.the
..assumption.that.companies.whi
ch.show.QSD.are.more.likely.to.
provide.high.EQ.and.less.likely.
to.use.aggressive.EM.through.A
EM.and/or.REM..This.study.pro
vides.insights.for.academics.and
..policy.makers..To.the.academic
s,.the.study.results.on.the.impact
..of.QSD.on.real.earnings.manip
ulation.may.present.stepping.sto
ne.for.future.studies.so.that.futur
e.research.can.consider.the.role
of.voluntary.disclosure.in.reduci
ng.REM.to.protect.investors..Se
condly,.this.research.has.policy.i
mplications.for.regulators.and.st
andard.setters.to.continue.impro

y.and.quantity.of.SD,.whereas.E
Q.is.measured.by.both.real.activ
ities.and.accruals.based.measure
ment..By.employing.these.meas
urements,.this.study.contributes.
to.the.existing.literature.by.provi
ding.new.evidence.on.the.associ
ation.between.EQ.and.SD.in.Lib
yan.context.as.developing.coun
try..This.study.examines.whether
..companies.that.disclose.higher.l
evel.of.SD.quality.behave.in.diff
erent.way.when.making.their.ac
counting.and.operating.decision
s..Real.and.accruals.based.earn
ings.management.are.used.as.pro
xy.for.EQ..Modify.Jones.model.
is.used.as.main.measure.of.accru
als.based.earnings.management..
Following.Kim.et.al..(2012),.thi
s.study.uses.REM,.which.is.the
combination.of.three.individual
proxy,.as.main.proxy.of.real.acti
vities.earnings.management.as.
well.as.the.three.individual.prox
ies.(ACFO,.APROD,.and.ADIS



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Appendix: 1 Sustainability disclosure checklist items

Community development

- 1- Education,
- 2- Contribution to national economy
- 3- Charity and donation,
- 4- Social activities support
- 5- Other Community investment

Human resources

- 1- Safety and health,
- 2- Employee equal opportunities
- 3- Employee training and development
- 4- Retirement benefits.
- 5- Other employee Data

Products and services

- 1- Products/ Services quality
- 2- Products safety.
- 3- Product or service development,
- 4- ISO or other awards received by company.
- 5 - Other products data

Customer

- 1- Customer service information.
- 2- customer feedback
- 3- Others customer data

Environment

- 1- Pollution
- 2- Recycling
- 3- Waste management
- 4- Water usage
- 5- Emission of carbon and harmful gases
- 6- Energy policy statement
- 7- ISO or other awards received by company
- 8- Other environmental policy statement

Others sustainability Information

- 1- General sustainability Information

Appendix 2: The results of Chow Test

The relationship between AEM and QSD

sigma u	.74368149	
sigma e	.06596534	
rho	.99219354	(fraction of variance due to u_i)
F test that all u_i=0: F(211, 1683) = 11.35		
Prob > F = 0.0000		

The relationship between REM and QSD



sigma u	.60755348	
sigma e	.09836472	
rho	.97445697	(fraction of variance due to u_i)

F test that all u_i=0: F(211, 1683) = 4.95 Prob > F = 0.0000

Appendix 3: The results of Hausman test

The relationship between AEM and QSD

Hausman fixed random, sigmamore

	Coefficients		(b-B) Difference	sqrt(diag(V b-V B)) S.E.
	(b) fixed	(B) random		
Q S_D	-.0789183	-.0724977	-.0064206	.0183782
AEM	-.4253807	-.5751781	.1497974	.023567
ROA	-.0908497	-.1111477	.020298	.0140013
size	-.0031786	-.0044941	.0013155	.0069975
Growth	-.0015186	.0000682	-.0015868	.0017334
type	.0104279	.0008485	.0095795	.0153842
Lev	.0061509	.00113	.0050209	.007993
BEF	.0080937	.0010664	.0070273	.0030711

b = consistent under Ho and Ha; obtained from
xtreg B = inconsistent under Ha, efficient under Ho; obtained
from xtreg

Test: Ho: difference in coefficients not

systematic chi2(12) = (b-B)'[(V_b-
V_B)^(-1)](b-B)
= 135.59
Prob>chi2 = 0.0000

The relationship between REM and QSD

Hausman fixed random, sigma more

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) random		
QCSR	-.0556525	-.0696031	.0139505	.0099255
REM	-.1913069	-.3323943	.1410874	.0082962
ROA	-.0916874	-.0853776	-.0063098	.0072167
size	-.0266205	-.015718	-.0109025	.004014
Growth	.0068861	.008436	-.0015499	.0008615
type	.0041342	.000314	.0038203	.0109872
Lev	-.0146606	-.0118602	-.0028004	.0041047
BEF	-.0109498	-.0126401	.0016903	.0015651

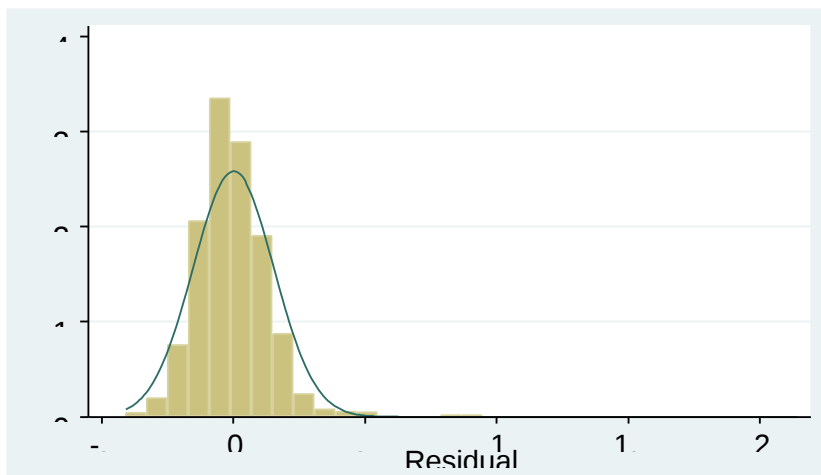
b = consistent under Ho and Ha; obtained from
xtreg B = inconsistent under Ha, efficient under Ho; obtained
from xtreg

Test: Ho: difference in coefficients not

systematic $\chi^2(12) = (b-B)'[(V_b - V_B)^{-1}](b-B)$
= 361.22
Prob> χ^2 = 0.0000

Appendix 4: The results of normality test

The relationship between AEM and QSD





The relationship between REM and QSD

