

Taiwan Cement Corp. (1101)

Construction Materials | TW

Increasing investments in carbon mitigation to support stronger emissions reduction target

MSCI
ESG RATINGS

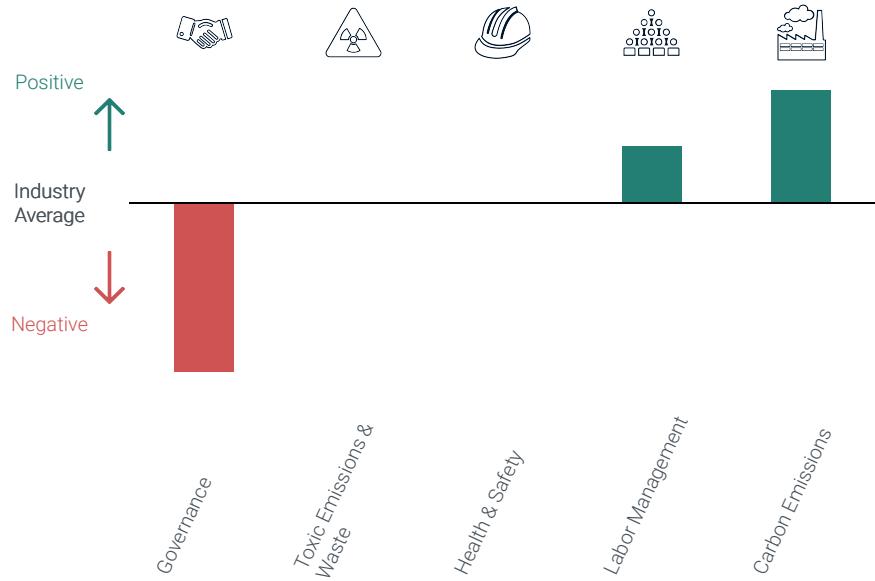


CCC B BB BBB A AA AAA

LAST UPDATE: November 05, 2020

Score attribution by key issue

This chart highlights the company's positioning relative to the industry average for each Key Issue that contributed to its ESG Rating as of November 05, 2020.



Last ESG Rating action

Rating action date: August 31, 2020

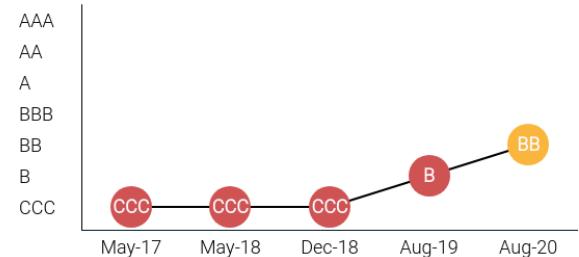
Taiwan Cement has been upgraded to 'BB' from 'B'.

In 2019, TCC formally adopted TCFD recommendations and set an SBTi-verified GHG emissions target of 10.8% reduction by 2025 vs. 2016 levels. For FY 2019, TCC reduced its GHG emissions by 34% against a 2013 baseline, meeting its 2030 target ahead of schedule. In addition to equipment upgrades and renewable energy sourcing, its emissions management is supported by life cycle modeling, R&D and programs in carbon capture, fuel-efficient shipping vessels, and product carbon footprint surveys.

- TCC has also refreshed its reduction targets for NOx (-50%), SOx (-30%), and particulate matter (-30%) come 2025 over 2016 figures. With its erstwhile target of 20% air emissions reduction by 2030 vs. 2013 levels, it recorded significant decreases for NOx (-13%), SOx (-29%), and particulate matter (-25%) as of 2019. Its waste strategy, certified to BS 8001 circular economy standard, is driven by co-processing of industrial by-products as alternative materials and fuels for manufacturing cement.
- In 2019, TCC broadened its labor management efforts to include engagement surveys and stock option plans. Further, with additional safety risks posed by COVID-19, it established a pandemic response center and enacted protocols, including shift staggering and deep-cleaning, across its sites.
- Even as a family firm, TCC has an independent-majority board, and neither has a controlling shareholder nor a special capital structure. However, potential board entrenchment and limited executive pay disclosures place it behind leading global peers.

Analysts: Kathryn Eunice Salonga, Morgan Ellis

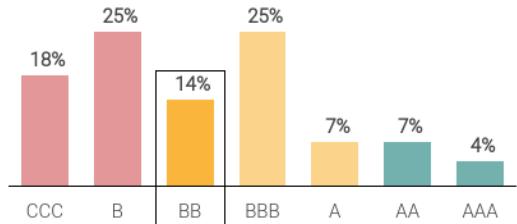
ESG Rating history



ESG Rating history shows five most recent rating actions

ESG Rating distribution

Universe: MSCI ACWI Index constituents, Construction Materials, n=28



Key scores

	Weight	Score (0-10)
Industry-Adjusted Score		4.0
Weighted-Average Key Issue Score		3.6
Environmental Pillar Score	39%	3.7
Social Pillar Score	28%	4.5
Governance Pillar Score	33%	2.7

Report table of contents

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What is an ESG Rating? MSCI ESG Ratings aim to measure a company's resilience to long-term ESG risks. Companies are scored on an industry-relative AAA-CCC scale across the most relevant Key Issues based on a company's business model.

ESG Rating scorecard

As of November 05, 2020

Key issue	Weight	Industry average	Score (0-10)	Change	Explanation
Weighted-Average Key Issue Score		3.7	3.6		
Governance	33%	3.6	2.7	▼0.6	
<u>Corporate Governance</u>		4.9	3.6	▲0.3	<ul style="list-style-type: none"> The company falls into the lower scoring range relative to global peers, reflecting key areas of concern related to the board.
<u>Corporate Behavior</u>		3.9	4.0	▼1.1	<ul style="list-style-type: none"> Involved in moderate <u>controversy</u> Evidence of detailed policies on business ethics and corruption
Carbon Emissions	20%	3.2	4.1		<ul style="list-style-type: none"> Carbon Intensity 73% lower than industry average
Toxic Emissions & Waste	19%	3.3	3.3		<ul style="list-style-type: none"> 100% of revenues from business lines with relatively high toxic emissions and waste intensities
Health & Safety	14%	3.5	3.2		<ul style="list-style-type: none"> 100% of revenues from regions with historically high rates of industrial fatalities Limited evidence of efforts to reduce employee injuries/fatalities
Labor Management	14%	4.9	5.8		<ul style="list-style-type: none"> Robust compensation practices including variable performance-based components to pay

* denotes company-specific Key Issue

This table shows the Key Issue scores and weights contributing to the company's ESG Rating and any changes to those scores since the last ESG Rating action. The range of possible scores is 0-10, where 10 is best and 0 is worst.

Rating model details

Taiwan Cement was rated based on a standard version of the Construction Materials Industry ESG Rating Model.

Company response

Response in last 12 months? Yes

Date of last interaction Sep 2020

Frequency of interactions* High

All companies are provided the opportunity to review their data. For details, see Appendix in full ESG Rating report.

*Frequency of interactions represents interactions over the past two years: High = Ten or more incoming communications; Medium = Between 3 and 9 incoming communications; Low = Between 1 and 2 incoming communications

Recent developments affecting ESG scores

This table shows the last 10 score changes* and rating actions that have occurred in the past 12 months. (*Score changes will be captured starting 06 November 2019)

Date ▲	Type	Score (0-10)	Change	Explanation
	Current Weighted-Average Key Issue Score	3.6		
Nov 05, 2020	Methodology Update: ESG Ratings	3.6	▼0.4	Methodology Enhancements: scores recalculated to reflect enhancements to the ESG Ratings model.
Oct 23, 2020	Data Update: Governance		▲0.1	Governance Score changed based on the listed Key Metric(s): Asset-Liability Valuation, Expense Recognition, Revenue Recognition
Aug 31, 2020	ESG Rating action	3.9	▲0.1	Taiwan Cement has been upgraded to 'BB' from 'B'.
Aug 31, 2020	Data Update: Governance			Flags Added: Revenue Recognition Governance Score changed based on the listed Key Metric(s): Asset-Liability Valuation, Expense Recognition
Aug 18, 2020	Data Update: Carbon		▲0.3	Increase in practices score, management score, exposure score
Aug 14, 2020	Data Update: Governance		▲0.2	Flags Removed: Revenue Recognition Governance Score changed based on the listed Key Metric(s): Asset-Liability Valuation, Expense Recognition
Jun 26, 2020	Data Update: Governance		▼0.1	Flags Removed: Asset-Liability Valuation, Expense Recognition Governance Score changed based on the listed Key Metric(s): Revenue Recognition
Jun 23, 2020	Data Update: Governance		▲0.2	Flags Added: Asset-Liability Valuation, Expense Recognition Flags Removed: Leadership Concerns Governance Score changed based on the listed Key Metric(s): Revenue Recognition
Jun 19, 2020	Data Update: Governance		▼0.1	Flags Added: Leadership Concerns
Jun 16, 2020	Data Update: Governance		▲0.1	Flags Added: Audit Committee Industry Expert, Business Combination Provision, Combined CEO/Chair Flags Removed: Director Removal Without Cause, Leadership Concerns Governance Score changed based on the listed Key Metric(s): Cross Shareholdings, Asset-Liability Valuation, Expense Recognition, Revenue Recognition

This table outlines the latest changes to specific data points that have occurred, the trigger for change (e.g. issuer feedback, data update or methodology enhancements) and the overall impact on the company's Weighted Average Key Issue Score. Companies are monitored on a continuous basis and significant score changes may trigger an ESG Rating action.

[View additional recent developments affecting the ESG score](#)

Most recent controversies

Last update	Headline	Assessment	Type
Sep-20	China: CNY 300,000 SAMR penalty for the alleged failure to declare joint venture with OYAK	Moderate	Anticompetitive Practices

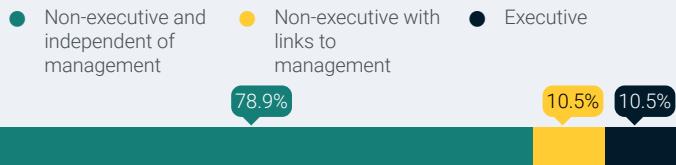
This table shows the most recently updated controversies facing the company. Controversies are considered alongside other factors when assessing a company and may or may not impact the company's ESG Rating. For further details, See [Controversies Detail section](#) in full ESG Rating report appendix.

Corporate governance summary



Board of directors

Board type: Unitary Board



Board diversity



Male



Female



Ownership summary

Capital structure	Single Equity Class	Top shareholders
Ownership classification	Principal Shareholder	Koo Family and Chang Family -9.8% (1.78% through Heng Qiang Investment Co., Ltd.; 4.22% through Chinatrust Investment Co., Ltd. Chia Hsin Cement Corporation-3.80%, Chia Hsin International -1.85)
Key Owner Types	Family Firm	
Complex Ownership Structures	Cross Shareholdings	
CEO		
Name: An Ping Chang		Total realized pay*:N/A
Tenure: 1 Year		Total summary pay*:N/A

*CEO pay figures are sourced from listed company annual reports and proxy filings. When a new CEO is named the pay figures for the previous CEO will be displayed until this information has been updated for the new CEO

Peer benchmarking

LARGEST 5 INDUSTRY PEERS (CONSTRUCTION MATERIALS)	Carbon Emissions	Toxic Emissions & Waste	Health & Safety	Labor Management	Corporate Governance	Corporate Behaviour	Rating & Trend
CRH PUBLIC LIMITED COMPANY	●●●●	●●●●	●●●●	●●●	●●●●	●●	AAA ▲▲
LafargeHolcim Ltd	●●●●	●●●●	●●●●	●●	●●●●	●●	BBB ▲▲
VULCAN MATERIALS COMPANY	●●	●●●●	●●●●	●●●	●●●	●●●●	BB ▲▲
Taiwan Cement Corp.	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	BB ▲
ULTRATECH CEMENT LIMITED	●●	●●●●	●●●●	●●●●	●●●●	●●●●	B ▲▲
ANHUI CONCH CEMENT COMPANY LIMITED	●●	●●●●	●●●●	●●●●	●●●●	●●●●	CCC ▲▲

QUARTILE KEY : Bottom Quartile ● Top Quartile ●●●●

RATING TREND KEY : Maintain ▲▲ Upgrade ▲▲ Upgrade by two or more notches ▲▲▲ Downgrade ▼▼ Downgrade by two or more notches ▼▼▼

This table shows the company's positioning relative to the largest MSCI ACWI Index constituents in the Construction Materials ESG Ratings Industry based on market capitalization, sorted by ESG Ratings (best to worst), as of November 05, 2020.

Analyst insights

Brother-in-law holds onto chairmanship until Koo's successors are named

October 19, 2020
Sophia Cheng

In 2017, Leslie Koo, the third-generation Taiwanese cement scion, passed away from injuries sustained from a fall at age of 62. Following his sudden death, his brother-in-law Nelson Chang was appointed to be the acting chairman of Taiwan Cement Corp (TCC), the island's top cement maker founded by Koo's family. The family controls Taiwan Cement Group and its 17 affiliate companies across various sectors, including construction, biotech and chemical products. TCC is the group's flagship company, in which the family holds 9.8% voting rights.

The family has delegated Leslie Koo's responsibilities to other family members but a succession plan is still not apparent. Chang officially became the chairman and CEO of TCC, while Koo's nephew Koo Kung-yi, from the family's fourth generation, became the deputy chairman after the company's annual general meeting in June 2018. Koo Kung-yi was also appointed as chairman of two other affiliated companies in the TCC Group, China Synthetic Rubber Corp. and Taiwan Prosperity Chemical Corp. While it appears that some of the family's fourth generation has been given key roles in the companies, Koo's family has not announced a succession plan for TCC yet. (Leslie Koo's son Koo Gung-kai and daughter Koo Hsuan-hui, both in their 30s, do not hold any positions at TCC.) Besides, TCC has an entrenched board, based on MSCI's definition, with 26% of the board directors' tenure over 15 years and six out of 19 board members over age 70. TCC has the most directors older than 70 among the MSCI ACWI Taiwan Index constituents. In January 2020, the younger-generation Koo Kung-yi resigned as deputy chairman of TCC, citing too many work commitments. This led to speculation that this potential succession candidate would rather focus on the other two TCC Group companies where he serves. As a result of his resignation, his uncle, Chang, who has served on TCC's board for more than 26 years, is expected to continue to lead the board for the foreseeable future.

ESG Rating drill down

Description	As of last rating action date: Aug 31, 2020		As of last update date: Nov 05, 2020		Difference	
	Score	Weight	Score	Weight	Score	Weight
ESG Rating Letter Grade	BB		BB		-	-
Industry Adjusted Score	4.0		4.0		-	-
Industry Minimum Score	2.1		1.5		-0.6	-
Industry Maximum Score	6.6		6.4		-0.2	-
Weighted Average Key Issue Score	3.9		3.6		-0.3	-
Environmental Pillar Score	3.7	44.0%	3.7	39.0%	-	-5.0%
Carbon Emissions Key Issue Score	4.1	22.0%	4.1	20.0%	-	-2.0%
Exposure Score	9.9		9.9		-	-
Business Segment Exposure Score	9.1		9.1		-	-
Geographic Exposure Score	5.9		5.9		-	-
Management Score	7.0		7.0		-	-
Management Score - Excluding Controversies	7.0		7.0		-	-
Practices Score	7.0		7.0		-	-
Performance Score	7.0		7.0		-	-
Toxic Emissions & Waste Key Issue Score	3.3	22.0%	3.3	19.0%	-	-3.0%
Exposure Score	9.4		9.4		-	-
Business Segment Exposure Score	9.4		9.4		-	-
Management Score	5.7		5.7		-	-
Management Score - Excluding Controversies	5.7		5.7		-	-
Practices Score	6.0		6.0		-	-
Performance Score	5.0		5.0		-	-
Controversy Deduction	0.0		0.0		-	-
Social Pillar Score	4.5	34.0%	4.5	28.0%	-	-6.0%
Health & Safety Key Issue Score	3.2	17.0%	3.2	14.0%	-	-3.0%
Exposure Score	8.3		8.3		-	-
Business Segment Exposure Score	7.1		7.1		-	-
Geographic Exposure Score	6.7		6.7		-	-
Management Score	4.5		4.5		-	-
Management Score - Excluding Controversies	4.5		4.5		-	-
Practices Score	4.3		4.3		-	-
Performance Score	5.0		5.0		-	-
Controversy Deduction	0.0		0.0		-	-
Labor Management Key Issue Score	5.8	17.0%	5.8	14.0%	-	-3.0%
Exposure Score	6.1		6.1		-	-
Business Segment Exposure Score	7.1		7.1		-	-
Geographic Exposure Score	6.2		6.2		-	-
Company-Specific Exposure Score	3.8		3.8		-	-
Management Score	4.9		4.9		-	-
Management Score - Excluding Controversies	4.9		4.9		-	-
Practices Score	4.9		4.9		-	-
Controversy Deduction	0.0		0.0		-	-

Description	As of last rating action date: Aug 31, 2020		As of last update date: Nov 05, 2020		Difference	
	Score	Weight	Score	Weight	Score	Weight
Governance Pillar Score*	3.3	22.0%	2.7	33.0%	-0.6	11.0%
Corporate Governance Key Issue Score	3.3	22.0%	3.6		0.3	-
Board	4.1				-	-
Pay	2.3				-	-
Ownership & Control	7.2				-	-
Accounting	5.5				-	-
Governance Pillar Deductions**			-7.3		-	-
Corporate Governance Deductions			-5.0		-	-
Board			-2.7		-	-
Pay			-1.3		-	-
Ownership & Control			-0.6		-	-
Accounting			-0.4		-	-
Corporate Behavior Deductions			-2.3		-	-
Business Ethics			-2.3		-	-
Tax Transparency			0.0		-	-

*Companies last rated prior to November 2020 will continue to show legacy Governance Key Issues (Corruption & Instability, Financial System Instability, Business Ethics & Fraud, and Anticompetitive Practices) in the ESG Rating drill down. These key issues will be removed from the drill down and replaced with Corporate Behavior and Corporate Governance Deductions at the next re-rating.

**Beginning November 2020, the Environmental Pillar Score and Social Pillar Score are calculated based on the weighted average of underlying Key Issue Scores, while the Governance Pillar Score is calculated based on 10 minus the sum of Corporate Governance and Corporate Behavior deductions. In the ESG Rating drill-down, deductions are scaled to indicate impact on the overall Governance Pillar Score. In subsequent sections of the report, deductions are scaled to show impact on the Corporate Behavior and Corporate Governance Theme Scores.

Overflow table: Recent developments affecting ESG scores

Date ▲	Type	Score (0-10)	Change	Explanation
	Current Weighted-Average Key Issue Score	3.6		
Nov 05, 2020	Methodology Update: ESG Ratings	3.6	▼0.4	Methodology Enhancements: scores recalculated to reflect enhancements to the ESG Ratings model.
Oct 23, 2020	Data Update: Governance		▲0.1	Governance Score changed based on the listed Key Metric(s): Asset-Liability Valuation, Expense Recognition, Revenue Recognition
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Aug 18, 2020	Data Update: Carbon		▲0.3	Increase in practices score, management score, exposure score
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Jun 19, 2020	Data Update: Governance		▼0.1	Flags Added: Leadership Concerns
Jun 16, 2020	Data Update: Governance		▲0.1	Flags Added: Audit Committee Industry Expert, Business Combination Provision, Combined CEO/Chair Flags Removed: Director Removal Without Cause, Leadership Concerns Governance Score changed based on the listed Key Metric(s): Cross Shareholdings, Asset-Liability Valuation, Expense Recognition, Revenue Recognition
Dec 20, 2019	Data Update: Governance		▼0.3	Flags Added: Overboarded Audit Committee Members, Overboarded Non-Exec Directors Governance Score changed based on the listed Key Metric(s): Related Party Transactions
Aug 05, 2019	ESG Rating action	3.1		Taiwan Cement has been upgraded to 'B' from 'CCC'.



Corporate Governance

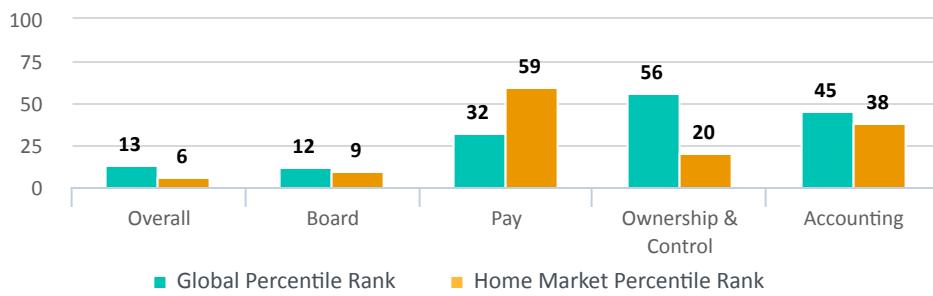
Market Cap: 8,877,507,957 USD

Home Market: Taiwan

Last Data Update:

Oct 22, 2020

GOVERNANCE THEMES AND RANKINGS



SUMMARY

Taiwan Cement falls into the lower scoring range for all the companies we assess relative to global peers, indicating the presence of significant risks in one or more areas. The key areas of concern relate to: the board.

KEY DATES

Financial Year End	December 31
Annual Filing Date	May 29, 2020
AGM Date	Jun 09, 2020

WEBSITE

<https://www.taiwancement.com/>

*Key areas of concern include flagged key metrics within the three sub-issues that represent the largest scoring deductions. Please review the full report to see the complete set of flagged key metrics.

KEY AREAS OF CONCERN*

SCORING DEDUCTIONS

Pay Figures

(-1.20)

🚩 Executive Pay Disclosure

Board Independence

(-1.00)

🚩 Related Party Transactions

Board Skills & Diversity

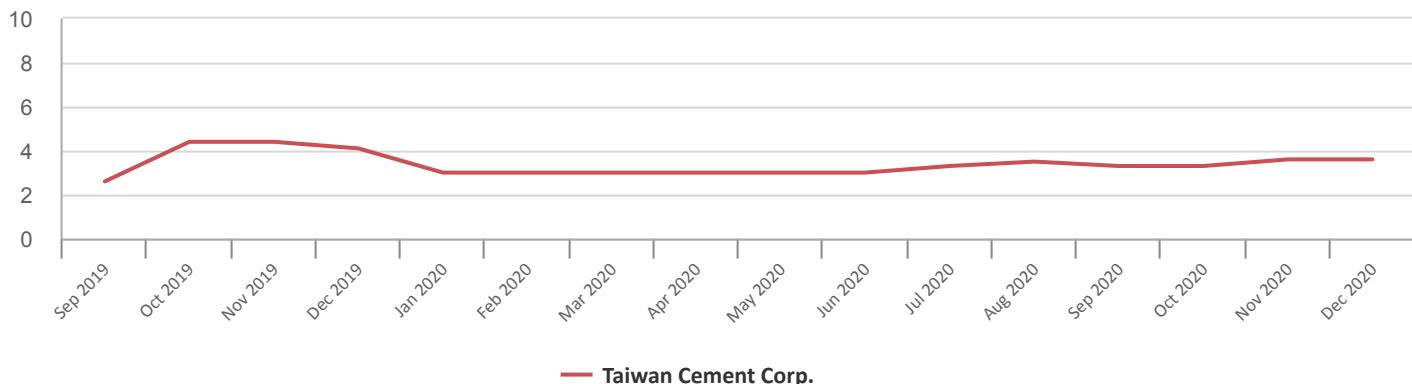
(-0.90)

🚩 Entrenched Board

🚩 Risk Management Expertise

🚩 Not 30% Female Directors

CORPORATE GOVERNANCE SCORE HISTORY



— Taiwan Cement Corp.

CHANGES TO FLAGGED KEY METRICS (SINCE AUGUST 2019)

Key Metric	Key Metric Change	Date	Score Change*	Change Notes
Revenue Recognition	Flag Added	Aug 24, 2020	-0.60	Updates to data for accounting peer group member(s)
Revenue Recognition	Flag Removed	Aug 13, 2020	0.43	Updates to data for accounting peer group member(s)
Pay Linked to Sustainability	Flag Removed	Jul 10, 2020	0.20	
Expense Recognition	Flag Removed	Jun 25, 2020	-0.16	Updates to data for accounting peer group member(s)
Asset-Liability Valuation	Flag Removed	Jun 25, 2020	-0.05	Updates to data for accounting peer group member(s)
Leadership Concerns	Flag Removed	Jun 22, 2020	0.30	
Expense Recognition	Flag Added	Jun 22, 2020	0.16	Updates to data for accounting peer group member(s)
Asset-Liability Valuation	Flag Added	Jun 22, 2020	0.05	Updates to data for accounting peer group member(s)
Leadership Concerns	Flag Added	Jun 18, 2020	-0.30	
Leadership Concerns	Flag Removed	Jun 05, 2020	0.30	
Director Removal Without Cause	Flag Removed	Jun 05, 2020	0.10	
Combined CEO/Chair	Flag Added	Jun 05, 2020	-0.20	
Business Combination Provision	Flag Added	Jun 05, 2020	-0.10	
Audit Committee Industry Expert	Flag Added	Jun 05, 2020	-0.10	
Overboarded Non-Exec Directors	Flag Added	Dec 17, 2019	-0.50	
Overboarded Audit Committee Members	Flag Added	Dec 17, 2019	-0.10	
Pay Committee Concerns	Flag Added	Dec 03, 2019	-0.30	
Controlling Shareholder Concerns	Flag Removed	Sep 19, 2019	1.00	
Controlling Shareholder	Flag Removed	Sep 19, 2019	0.00	
Executive Misconduct	Flag Removed	Sep 13, 2019	0.30	Event now time expired

Note: A full list of score changes (including where there is no Key Metric Change) is included in the Appendix.

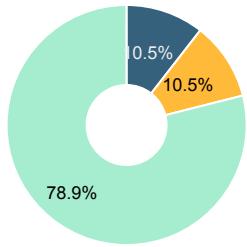
*Score change available in respect of changes dated on or after 13 December 2017.

BOARD OVERVIEW

Board Type: Unitary Board

Board of Directors

Chair An Ping (Nelson) Chang Since: Jan 24, 2017
CEO An Ping (Nelson) Chang Since: Jul 17, 2019



■Executive ■Links to Management ■Independent of Management

BOARD

Certain aspects of the Taiwan Cement board may not be well aligned with sustainable shareholder interests. We have flagged this board for potential concerns regarding the presence of certain related party transactions, possible board entrenchment and some non-executives may have too many other public board commitments.

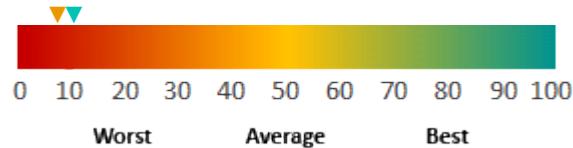
0-10 Score	Global Percentile Rank	Home Market Percentile Rank
4.1	12th (Below Average)	9th (Below Average)

KEY METRICS SCORING

	Deduction
AUDIT OVERSIGHT	
Audit Committee Industry Expert	-0.10
Overboarded Audit Committee Members	-0.10
Auditor Tenure	-0.10
BOARD EFFECTIVENESS	
Overboarded Non-Exec Directors	-0.50
BOARD INDEPENDENCE	
Related Party Transactions	-1.00
BOARD LEADERSHIP	
Combined CEO/Chair	-0.20
Independent Chair	-0.10
Chair not Independent & No Independent Lead Director	-0.10
BOARD SKILLS & DIVERSITY	
Entrenched Board	-0.60
Risk Management Expertise	-0.20
Not 30% Female Directors	-0.10
PAY OVERSIGHT	
Pay Committee Concerns	-0.30
STRATEGIC OVERSIGHT	

BOARD PERFORMANCE VS.

▼ Global ▼ Home Market



LEADERSHIP

CHIEF EXECUTIVE OFFICER

History	CEO Since	Until	Name	Gender	Age
Current	Jul 2019		An Ping (Nelson) Chang	M	69
Former	Jul 1998	Jan 2017	Cheng-Yun Koo	M	

CHAIR

History	Chair Since	Until	Name	Gender	Age
Current	Jan 2017		An Ping (Nelson) Chang	M	69
Former	Apr 1988	Jan 2017	Cheng-Yun Koo	M	

BOARD OF DIRECTORS

The Taiwan Cement board currently has an independent majority, which enables it to more effectively fulfill its critical function of overseeing management on behalf of shareholders.

Number of Board Meetings: 19

Non-executives meet in absence of Executives: No

Name	M/F	Age	Tenure (Years)	Boards	Independent of Mgmt	of Other Interests	Management Link/Designation Reason	Nationality
An Ping (Nelson) Chang <small>COB CEO</small> !	M	69	26	1	No	No	Family Firm Director; Executive	Taiwan
Chi Chia Hsieh	M	77	4	2	Yes	No	Special Shareholder Representative	Taiwan
Chi-Wen Chang \$	M	63	4	1	Yes	No	Special Shareholder Representative	Taiwan
Chien (James) Wen \$	M	70	2	1	Yes	No	Special Shareholder Representative	Taiwan
Chih-Chung Tsai \$	M	53	2	1	Yes	No	Special Shareholder Representative	Taiwan
Chin Jen Sheng	M	53	3	1	Yes	Yes		Taiwan
Chun Ying Liu	F	45	2	1	Yes	No	Special Shareholder Representative	Taiwan
Jong-Peir (John) Li !	M	57	2	1	No	No	Special Shareholder Representative; Executive	Taiwan
Kang Lung (Jason) Chang	M	38	8	1	No	No	Family relationship; Family Firm Director	Taiwan
Kenneth C.M. Lo \$	M	79	15	1	Yes	No	Special Shareholder Representative	Taiwan
Kung Yi Koo	M	38	2	1	No	No	Non-Executive Employee; Family relationship; Family Firm Director	Hong Kong
Ling Tai Chou \$	F	66	2	1	Yes	Yes		Taiwan
Nan-Chou Lin	M	50	22	1	Yes	No	Special Shareholder Representative	Taiwan
Por-yuan Wang	M	79	11	1	Yes	No	Special Shareholder Representative	Taiwan
Qi-De Chen	M		4	1	Yes	No	Special Shareholder Representative	Taiwan
Tung Sheng (Eric) Wu	M	68	35	1	Yes	No	Special Shareholder Representative	Taiwan
Tzun-yen Yu	M	73	18	1	Yes	No	Special Shareholder Representative	Taiwan
Victor Wang \$	M	71	8	1	Yes	Yes		Taiwan
Yu-Cheng (Arthur) Chiao	M	65	8	5	Yes	Yes		Taiwan
	F	# >= 70	# >= 15 yrs	# >= 4				
Total (of 19)	2	6	5	1	15	4		
Percentage	10.5%	31.6%	26.3%	5.3%	78.9%	21.1%		

Note: Board count includes the membership of this board.

\$ - Financial Expert (6) ! - Industry Expert (2) CEO - Chief Executive Officer cob - Chair of the Board

RELATED PARTY TRANSACTIONS

The risk to minority shareholders arising from related party transactions is a function of the nature of the related party, the relative size of the transaction and the pricing of the transaction. The board, and in particular the independent directors or audit committee, should play a key role in the protection of minority shareholders, monitoring and managing potential conflicts of interest of management, board members and shareholders.

Reported Transactions

RPT with affiliated companies, major investors, merged company with significant influence includes operating income, purchase

For the two most recently reported fiscal years, these value of these transactions can be summarised as follows :

Fiscal Year	Related Party Types	Aggregate Transaction Value		Type
		Value (CUR)	% of Total	
Dec 31, 2019	Other	2,574,739 TWD	0.002% of Total Revenue	Recurring income from related party
		4,797,365 TWD	0.005% of Expenses	Recurring purchases from related party
Dec 31, 2018	Other	2,288,062 TWD	0.002% of Total Revenue	Recurring income from related party
		4,180,669 TWD	0.004% of Expenses	Recurring purchases from related party
		25,000 TWD	0.000% of Total Assets	Purchase of assets from related party

Sources : 2019 AR p.70, 2018 AR p.164

BOARD EFFECTIVENESS

Director overboarding may be a problem for this board, with at least one non-executive director sitting on too many boards. MSCI ESG Research considers a non-executive director to be overboarded when they sit on three or more additional boards (i.e. four total boards, including the rated company) in MSCI ESG Research's corporate governance research universe. For CEOs and other executive directors the limit is two additional boards (i.e. three boards including the rated company).

Nomination Committee

No details on this committee has been identified

BOARD SKILLS & DIVERSITY

MSCI ESG Research has flagged the board as potentially entrenched due to a high number of long-serving directors. Of particular importance during periods of extended underperformance, the impact of an entrenched board can be particularly damaging to sustainable shareholder interests and we do see the potential for such entrenchment at this firm due to a significant number of long-serving directors. These concerns are aggravated due to additional factors, e.g. all board members do not stand for annual re-elections and the lack of an independent chairman, which together with the high number of long-tenured directors raises concerns about whether the board is able to provide an effective counterbalance to management. We note that 34% in Taiwan have been flagged for having an entrenched board.

We have flagged the Taiwan Cement board for gender diversity concerns. Several recent studies have shown that companies with too few female directors tend to be less effective and even underperform those whose boards are more diverse.

A board with one or more active CEOs and overboarded directors may not be able to provide effective oversight of management. External distractions can limit the time and attention required to fulfill their fiduciary duties.

AUDIT OVERSIGHT

Audit Committee - Number Of Meetings: 9

The Taiwan Cement board of directors includes a fully independent audit committee and at least one member of that committee meets our standards for financial expertise.

Name	M/F	Age	Board Tenure (Years)	Boards	Independent of Mgmt	of Other Interests	Committee Status
Chin Jen Sheng	M	53	3	1	Yes	Yes	Member
Ling Tai Chou \$	F	66	2	1	Yes	Yes	Member
Victor Wang \$	M	71	8	1	Yes	Yes	Chair
Yu-Cheng (Arthur) Chiao	M	65	8	5	Yes	Yes	Member

\$ - Financial Expert (2)

PAY OVERSIGHT

Pay Committee - Number Of Meetings: 6

The Taiwan Cement board includes an independent pay committee, considered best practice for oversight of executive pay.

Name	M/F	Age	Board Tenure (Years)	Independent of Mgmt	of Other Interests	CEO Role?	Committee Status
Chin Jen Sheng	M	53	3	Yes	Yes		Member
Ling Tai Chou \$	F	66	2	Yes	Yes		Member
Victor Wang \$	M	71	8	Yes	Yes		Member
Yu-Cheng (Arthur) Chiao	M	65	8	Yes	Yes	Active	Chair

\$ - Financial Expert (2)

CONTROVERSY CASES

Category: Executive Misconduct

Last Reviewed:

Date Initiated: September 2017

Assessment:

Status: Ongoing

Hong Kong: Directors Reprimand by Regulator for Violating Code on Takeovers and Mergers over Failure to Disclose Transactions during TCC International Privatization

Hong Kong Securities and Futures Commission (SFC) reprimanded two Board Directors of Taiwan Cement in September for their violation of Code on Takeovers and Mergers. According to the SFC, the two directors failed to disclose their transactions on TCC International and Taiwan Cement during the company's privatization process.

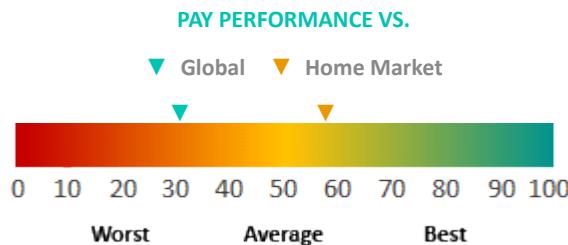
PAY

Executive pay practices at Taiwan Cement fall into the average scoring range relative to global peers. Areas of particular concern include poor disclosure in relation to executive pay.

0-10 Score	Global Percentile Rank	Home Market Percentile Rank
2.3	32nd (Average)	59th (Average)

KEY METRICS SCORING

Deduction	
NON-EXECUTIVE DIRECTOR PAY	
Director Equity Policy	-0.10
PAY FIGURES	
Executive Pay Disclosure	-1.20
PAY PERFORMANCE ALIGNMENT	
CEO Equity Policy	-0.20
Clawbacks & Malus	-0.20



PAY FIGURES

DISCLOSURE

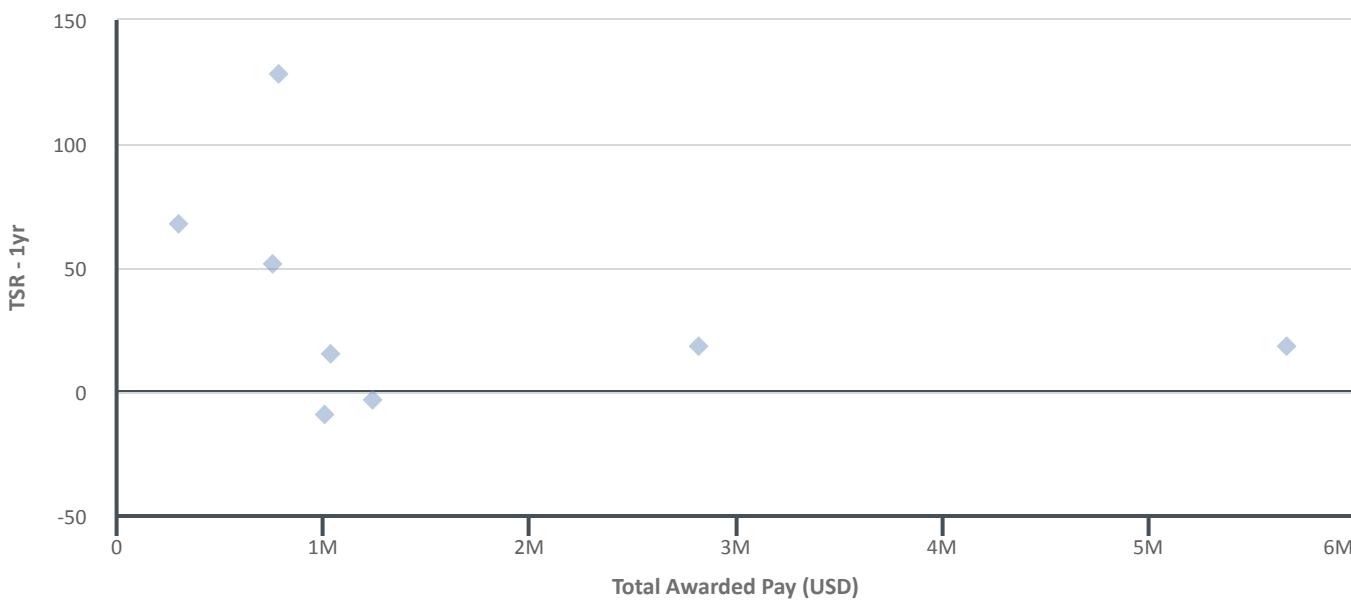
Disclosure should include, at minimum, pay for each executive member of the Board of Directors (or Management Board for companies with a two-tier board structure) on an individualized basis or in cases where there are no executive members, the CEO. The individualized disclosure should include separate information on the amount of each of the following (where such a component is provided): salary, short-term Incentives, long-term Incentives, pensions, benefits, and any one-off payments (such as recruitment or retention awards).

PAY PEER GROUP

MIDCAP - EMERGING - CONSTRUCTION MATERIALS (13 COMPANIES)

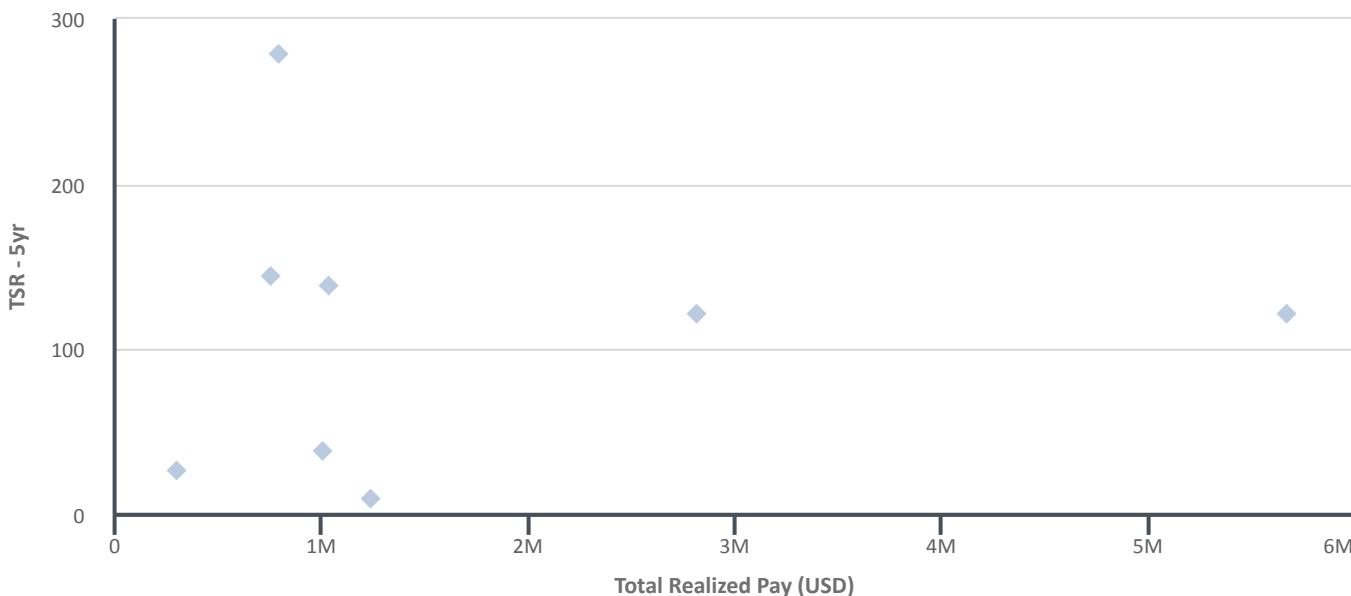
Company	Home Market	Market Cap (USD m)	Pay Year	1 Yr TSR	Total CEO Annual Pay (USD)	CEO Name	CEO Since
SHREE CEMENT LIMITED	India	10,367	2020	18.48%	5,674,850	Bangur	Apr 2011
SHREE CEMENT LIMITED	India	10,367	2020	18.48%	2,822,273	Bangur	Aug 2012
ACC LIMITED	India	4,324	2019	-3.16%	1,246,572	Akhoury	Feb 2017
CHINA JUSHI CO., LTD	China	8,950	2019	15.39%	1,038,230	Zhang	Mar 2005
GRASIM INDUSTRIES LTD	India	8,101	2020	-9.08%	1,015,798	Gaur	May 2016
Huaxin Cement Co., Ltd.	China	6,502	2019	128.27%	793,790	Li	Apr 2003
CHINA RESOURCES CEMENT HOLDINGS LIMITED	China	9,081	2019	51.67%	760,286	Ji	Sep 2016
China National Building Material Company Limited	China	10,240	2019	67.82%	305,066	Peng	Jun 2018
Asia Cement Corporation	Taiwan	5,239	2019	50.46%		Lee	Aug 2000
CEMEX, Sociedad Anonima Bursatil de Capital Variable	Mexico	8,106	2019	-23.59%		Gonzalez Olivieri	May 2014
PT Semen Indonesia (Persero) Tbk	Indonesia	4,670	2019	6.13%		Santoso	Sep 2017
DANGOTE CEMENT PLC	Frontier	6,317	2018	-18.69%		Makoju	Jan 2018
Taiwan Cement Corp.	Taiwan	8,878				An Ping (Nelson) Chang	Jul 2019

CEO TOTAL AWARDED PAY VERSUS PAY PEER GROUP



Pay Peers (♦) are used in the calculation of the Key Metric CEO Pay Total Summary and selected as set out in the MSCI Governance Metrics Methodology Document.

CEO TOTAL REALIZED PAY VERSUS PAY PEER GROUP



Pay Peers (♦) are used in the calculation of the Key Metric CEO Pay Total Summary and selected as set out in the MSCI Governance Metrics Methodology Document.

PAY PERFORMANCE ALIGNMENT

CEO & EXECUTIVE EQUITY

No effective stock ownership guidelines have been identified.

Executive	Tenure (Years)	Shares Held	YoY % Change	Shareholding As % of Salary
An Ping (Nelson) Chang	26	184,304		
Jong-Peir (John) Li	2	749,076		

- Industry Expert (2)

CLAWBACK & MALUS

No clawback or malus provisions have been identified.

NON-EXECUTIVE DIRECTOR PAY

NON-EXECUTIVE EQUITY

Director	Tenure (Years)	Shares Held
Chi Chia Hsieh	4	470,874
Chi-Wen Chang \$	4	3,216,041
Chin Jen Sheng	3	2,000
Kung Yi Koo	2	535,054
Ling Tai Chou \$	2	1
Nan-Chou Lin	22	2,684,588
Qi-De Chen	4	193,888,706
Tung Sheng (Eric) Wu	35	71,129

\$ - Financial Expert (2)

NON-EXECUTIVE PAY TABLES

There are insufficient disclosures available to present non-executive pay data.

CONTROVERSY CASES

No major relevant controversies have been uncovered.

OWNERSHIP & CONTROL

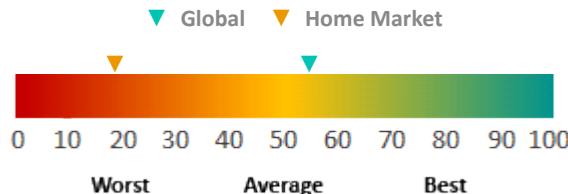
The company's ownership structure and shareholder rights at Taiwan Cement fall within the average scoring relative to global peers.

0-10 Score	Global Percentile Rank	Home Market Percentile Rank
7.2	56th (Average)	20th (Below Average)

KEY METRICS SCORING

	Deduction
DIRECTOR ELECTIONS	
FLAG Annual Director Elections	-0.10
FLAG Majority Voting	-0.10
OWNERSHIP STRUCTURE	
FLAG Cross Shareholdings	-0.40
SHAREHOLDER RIGHTS	
FLAG Say on Pay Policy	-0.10
TAKEOVER PROVISIONS	
FLAG Business Combination Provision	-0.10

OWNERSHIP & CONTROL PERFORMANCE VS.



CORPORATE STRUCTURE

Public Company

CAPITAL STRUCTURE

Capital Type	Votes Per Share	Shares Outstanding
Common shares	1.0	5,665,619,204

OWNERSHIP STRUCTURE

OWNERSHIP CATEGORIES

- Principal Shareholder
- Family Firm

NOTABLE SHAREHOLDERS

Koo Family and Chang Family -9.8% (1.78% through Heng Qiang Investment Co., Ltd.; 4.22% through Chinatrust Investment Co., Ltd. Chia Hsin Cement Corporation-3.80%, Chia Hsin International -1.85)	11.7%
5%+ shareholders - Aggregate Voting Power	11.7%
Insider Voting Power	11.7%

We note that despite being classified as a family firm/founder firm, the company does not have a controlling shareholder. The company does not have a special capital structure, thus one vote right is afforded per common share. This principle of 'one share one vote' helps align economic and voting power and ensures that no class of shareholders has more voting power than economic exposure.

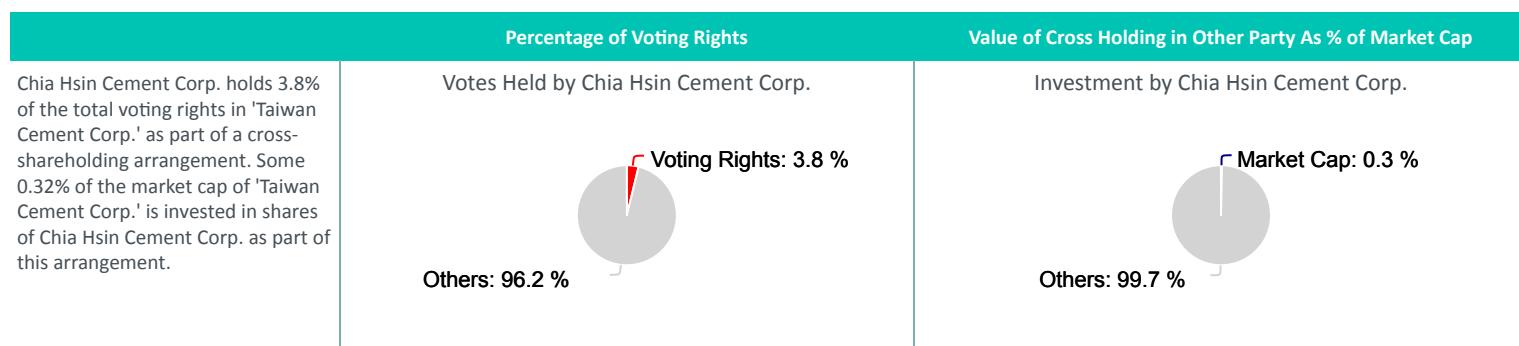
CROSS SHAREHOLDINGS

The company has been flagged for being involved in a series of cross-shareholdings with other (related or unrelated) companies. Cross shareholdings can lead to double counting, whereby the equity of each company is counted twice when determining value. Cross-shareholdings are rare in the Taiwan markets, with only 9% of the companies being flagged for this.

Chinatrust Investment Co., Ltd. holds 4.22% of Taiwan Cement Corp., Taiwan Cement Corp holds 9.36% of Chinatrust Investment Co., Ltd.

Chia Hsin Cement Corp. holds 3.8% of Taiwan Cement Corp, Taiwan Cement Corp holds 3.54% of Chia Hsin Cement Corp.

CROSS-SHAREHOLDINGS



FAMILY FIRM

Koo family collectively holds 11.65% of company shares through direct and indirect holdings

TAKEOVER PROVISIONS

Fair Price Provision	Mandatory Bid Provision	Mandatory Bid Ownership Threshold
Yes	Yes	33.3

% of Votes to Approve a Merger

67%

GOVERNING DOCUMENTS

MAJORITY REQUIREMENTS

Default percentage of votes required to amend a provision	Bylaws	Charter
		67%

The following matters shall be passed by a special resolution at the general meeting of shareholders. Amendment of the company's articles of association

A special resolution made by the shareholders' general meeting shall be passed by more than 2/3 of the voting rights held by the shareholders (including shareholders' proxies) present at the shareholders' general meeting.

SHAREHOLDER RIGHTS

Investors should be aware of governance risks in relation to shareholder rights and management-controlled takeover defence mechanisms currently applicable in the governing documents or applicable regulation at Taiwan Cement including:

- business combination provisions that fail to include protections of shareholder interests
- Limits on the right of shareholders to take action by written consent

SHAREHOLDER MEETINGS & RESOLUTIONS

	Call Special Meeting	Requisition a Resolution at AGM	Act by Written Consent
Percentage of shares required	10%		100%

RESTRICTIONS ON LEGAL ACTION BY SHAREHOLDERS

No exclusive forum provision has been identified.

SAY ON PAY

Despite a significant global trend towards providing shareholders with the ability to review and approve executive pay practices, the company does not operate in a market which requires regular 'say on pay' votes nor has it extended this right to shareholders.

DIRECTOR ELECTIONS

BOARD RE-ELECTION PROVISIONS

All board members are not subject to annual re-election. While often touted as a means of ensuring board continuity, a classified board structure severely limits the ability of shareholders to hold directors accountable and serves as a takeover defense.

Board Re-election Provisions	
Board Re-election Frequency (Years)	3
% of Board subject to re-election	100%

DIRECTOR ELECTION STANDARD

Director Election Rules	
Vote Standard	Plurality
Immediate Binding Resignation	Yes

In the election of directors of this Company, candidates who acquire more votes should win the seats of directors. If two or more persons acquire the same number of votes and the number of such persons exceeds the specified seats available, such persons acquiring the same votes shall draw lots to decide who should win the seats available, and the Chairman shall draw lots on behalf of the candidate who is not present.

ACCOUNTING

Based on the company's disclosures and other public information, accounting and financial reporting practices at Taiwan Cement appear to be generally appropriate and effective relative to global peers. We have flagged this company for potential concerns regarding revenue recognition ratios (based on our quantitative assessment).

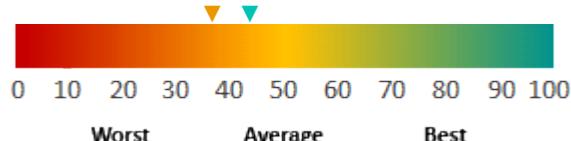
0-10 Score	Global Percentile Rank	Home Market Percentile Rank
7.2	45th (Average)	38th (Average)

KEY METRICS SCORING

Deduction	
ACCOUNTING RISK	
Revenue Recognition	-0.30
Expense Recognition	-0.16
Asset-Liability Valuation	-0.02

ACCOUNTING PERFORMANCE VS.

▼ Global ▼ Home Market



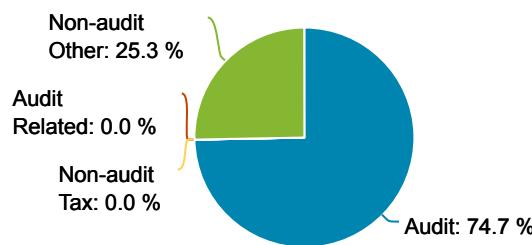
EXTERNAL AUDITORS

Type	Since	Firm	Most Recent Fiscal Year End Signed Off
Primary		Deloitte & Touche	2019

AUDITOR FEES

Fees paid to: Deloitte & Touche (Primary)

Fee	Dec 31, 2019 (TWD)	Dec 31, 2018 (TWD)	Dec 31, 2016 (TWD)
Audit	24,425,000	19,560,000	19,480,000
Audit Related			
Total Audit + Audit Related	24,425,000	19,560,000	19,480,000
Tax Compliance/Advice			
Other Non-audit Services	8,269,000	3,430,000	2,789,000
Total Non-audit Fees	8,269,000	3,430,000	2,789,000
Total Fees	32,694,000	22,990,000	22,269,000



AUDITOR REPORT

	Dec 31, 2019	Dec 31, 2018	Dec 31, 2017
Report Disclosed	Yes	Yes	Yes
Opinion	Unqualified Opinion	Unqualified Opinion	Unqualified Opinion
Emphasis of Matter	No	No	No

CONTROVERSY CASES

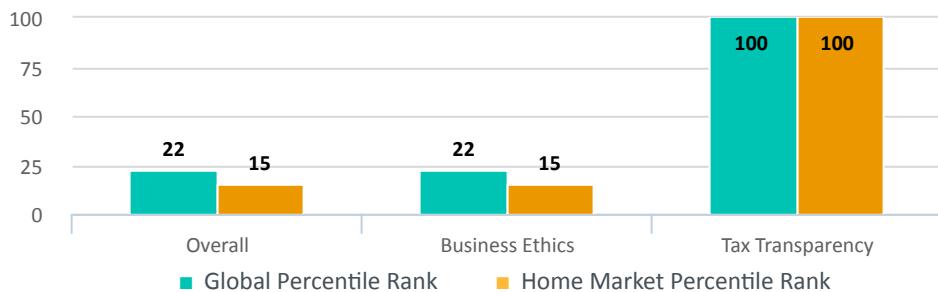
No major relevant controversies have been uncovered.



Corporate Behavior

0-10 Score	Change (since rating)	Quartile	As of
4.0	▼ -1.1	● ●	Aug 31, 2020

CORPORATE BEHAVIOR THEME AND KEY ISSUE RANKINGS



METHODOLOGY NOTE

This theme evaluates the extent to which companies may face ethics issues such as fraud, executive misconduct, corruption scandals, money laundering, anti-trust violations, or tax-related controversies.

* [For symbols and terms used in this report, refer to the Glossary section at the end of the report]

KEY AREAS OF CONCERN*

SCORING DEDUCTIONS

Business Ethics Policies & Practices

(-2.80)

Regular Audits of Ethical Standards

Whistleblower Protection

Employee Training on Ethical Standards

Business Ethics Risk & Controversies

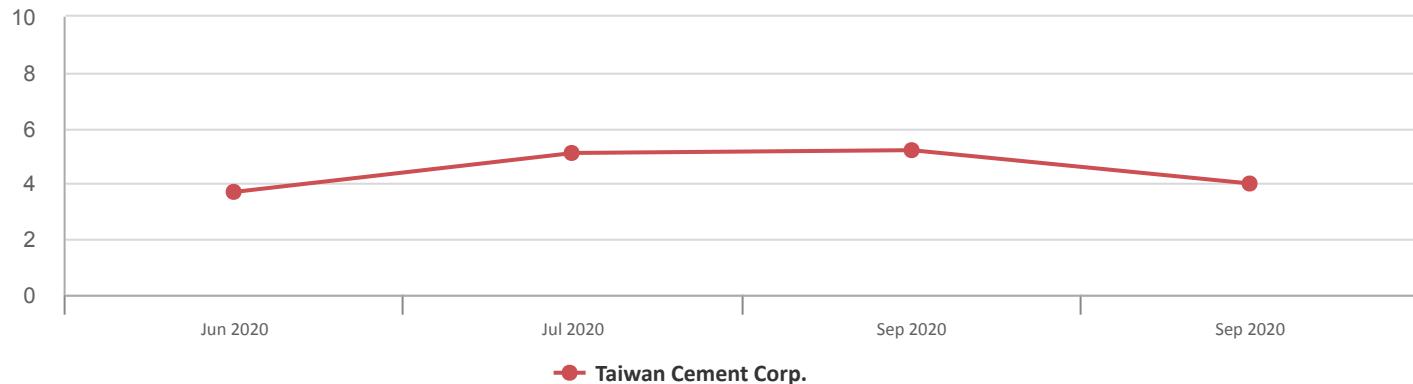
(-3.20)

Corruption Risk Exposure & Controversies

Business Ethics Controversies

*Key areas of concern include flagged key metrics that represent the largest scoring deductions. Please review the full report to see a complete set of flagged key metrics.

CORPORATE BEHAVIOR SCORE HISTORY



BUSINESS ETHICS

KEY METRICS SCORING

	Deduction
BUSINESS ETHICS POLICIES & PRACTICES	-2.80
Regular Audits of Ethical Standards	-1.40
Whistleblower Protection	-0.70
Employee Training on Ethical Standards	-0.70
BUSINESS ETHICS RISK & CONTROVERSIES	-3.20
Corruption Risk Exposure & Controversies	-2.00
Business Ethics Controversies	-1.20

Note: Business Ethics Policies & Practices deductions as well as Business Ethics Risk & Controversies are capped at a maximum of -7.0. Cumulative deductions are capped at 10.

0-10 Score	Change (since rating)	Global Percentile Rank	Home Market Percentile Rank
3.9	▲ 3.9	22 nd (Below Average)	15 th (Below Average)

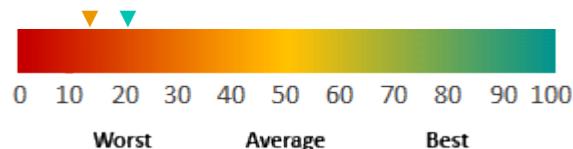
METHODOLOGY NOTE

Companies are evaluated on their oversight and management of business ethics issues such as fraud, executive misconduct, corrupt practices, money laundering, or anti-trust violations.

*[For symbols and terms used in this report, refer to the Glossary section at the end of the report]

BUSINESS ETHICS VS.

▼ Global ▼ Home Market



BUSINESS ETHICS POLICIES & PRACTICES

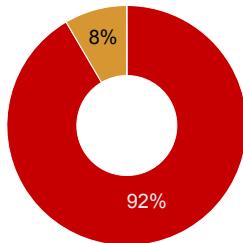
Indicators	Company Practice	Best Practice	Deduction
Oversight for Ethics Issues	C-suite or Executive committee	Board-level committee or C-suite or Executive committee	0.00
Bribery and Anti-Corruption Policy	Detailed formal policy on bribery and anti-corruption	Detailed formal policy on bribery and anti-corruption	0.00
Regular Audits of Ethical Standards	No evidence	Audits of all operations at least once every three years	-1.40
Whistleblower Protection	Whistleblower protection with no details on system or legal protection	Formal anonymous whistleblower system with legal protection	-0.70
Employee Training on Ethical Standards	Programs covering all permanent employees (excluding part-time and contractors)	Programs covering all employees (including part-time) and contractors	-0.70
Anti-Corruption Policy for Suppliers	NA	All suppliers are required to have anti-corruption policies and programs to verify compliance	0.00
Policies Related to Anti-Money Laundering	NA	Policy and implementation strategy articulated	0.00

*Business Ethics Policies & Practices deductions are capped at a maximum of -7.0.

CORRUPTION RISK EXPOSURE

Exposure to: Regulatory risks or lost market access due to corruption scandals or political and social instability
Business Types: Percentage of operations in business segments perceived most likely to pay or receive bribes

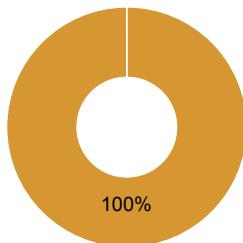
■ High Risk ■ Medium Risk ■ Low Risk



- Cement, Power generation
- Chemicals and chemical preparations
- No exposure to low risk segments

Source: Bribe Payers Index (Transparency International); State Capture Index (Transparency International); Refinitiv; MSCI ESG Research; company disclosure

Business Locations: Percentage of operations in countries with high/moderate/low level of corruption and political instability, violence or terrorism



- No operations in markets with high risks
- Taiwan, China
- No operations in markets with low risks

Source: Corruption Perceptions Index (Transparency International); World Governance Indicators (World Bank); Refinitiv; MSCI ESG Research; company disclosure

CORRUPTION RISK EXPOSURE SCORING DEDUCTION KEY

% of operations in medium and high risk geographies	% of operations in high risk business segments	>=20% government ownership	<20% government ownership	No evidence of government ownership
20% or more	50% or more	-4.00	-2.60	-2.00
	Less than 50%	-1.20	-1.20	-1.20
Less than 20%	50% or more	-0.60	-0.60	-0.60
	Less than 50%	0.00	0.00	0.00

*The Corruption Risk and Controversies Deduction is based on the maximum of deductions from the corruption risk exposure and corruption controversies category listed below

BUSINESS ETHICS CONTROVERSIES

Controversy Cases

Category	Assessment	Headline	Status	Last Updated	Deduction
Business Ethics & Fraud	--	No ongoing controversies.	--	--	--
Anticompetitive Practices	Moderate	China: CNY 300,000 SAMR penalty for the alleged failure to declare joint venture with OYAK	Concluded	December 2020	-1.2
Corruption & Instability	--	No ongoing controversies.	--	--	--

*The maximum deductions from the Anticompetitive Practices and Business Ethics & Fraud categories are summed to arrive at the overall Business Ethics Controversies deduction, which is capped at a maximum of -7.0.

TAX TRANSPARENCY

TAX GAP ASSESSMENT

Indicators

Tax Gap

Estimated Effective Tax Rate	23.3%
Estimated Corporate Income Tax Rate	23.0%
Estimated Tax Gap	(-0.3%)
Tax Gap Assessment	Low Gap

Revenue

Foreign Revenue	59.8%
-----------------	-------

Confidence

Confidence Level of Estimation	High
--------------------------------	------

Involvement in Controversies

Tax Gap Score*	8.0
----------------	-----

*The Tax Gap Score is based on the estimated tax gap, country revenue transparency, foreign revenues, controversies and whether a company is classified as a tax-favored structure such as a REIT. The score is derived on a 0-10 scale and can be used for cross-company comparisons but does not contribute to a company's overall ESG Rating.

0-10 score	Change (since rating)	Global Percentile Rank	Home Market Percentile Rank
10.0	▲ 8.0	100th (Best In Class)	100th (Best In Class)

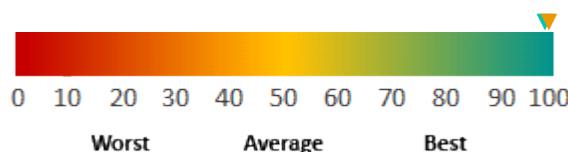
METHODOLOGY NOTE

Companies are evaluated on their estimated corporate tax gap (i.e. gap between estimated effective tax rate and estimated corporate income tax rate) and their involvement in tax-related controversies.

*[For symbols and terms used in this report, refer to the Glossary section at the end of the report]

TAX TRANSPARENCY VS.

▼ Global ▼ Home Market



TAX CONTROVERSIES

Controversy Cases

Category	Assessment	Headline	Status	Last Updated	Deduction
Tax Transparency	--	No ongoing controversies.	--	--	--

TAX CONTROVERSIES SCORING DEDUCTION KEY

Involvement in tax controversies	Estimated tax gap	Tax gap assessment	Deduction
Yes	Below 5%	Low	-0.80
	5-10%	Moderate	-1.40
	Above 10%	High	-2.00
No	Below 5%	Low	0.00
	5-10%	Moderate	0.00
	Above 10%	High	0.00

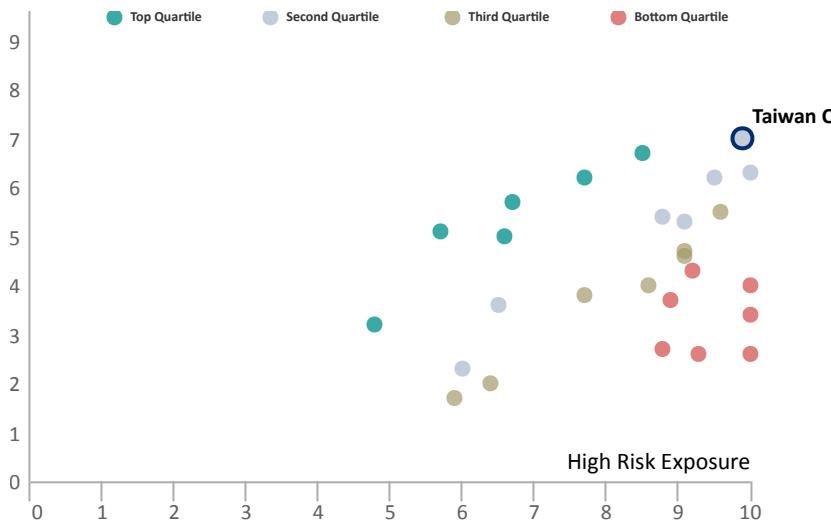
Tax related controversies are not considered for companies in Real Estate Management services or Mortgage REITs industries. Tax gap assessment is effectively low for companies with less than 5% of total revenue categorized as foreign.



Carbon Emissions

Score	Change (since rating)	Quartile	Weight	As of
4.1	0.0	•••	20.0%	Aug 31, 2020

Strong Risk Management



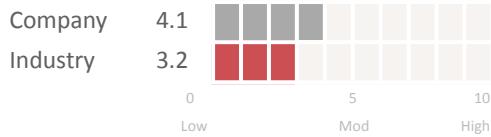
KEY ISSUE SCORE DISTRIBUTION *



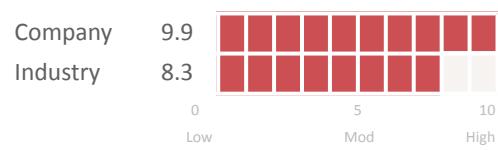
TOP 5 INDUSTRY LEADERS

The Siam Cement Public Company Limited	6.4
CRH PUBLIC LIMITED COMPANY	6.0
MARTIN MARIETTA MATERIALS, INC.	5.5
BBMG Corporation	5.4
GRASIM INDUSTRIES LTD	5.4

KEY ISSUE ASSESSMENT



RISK EXPOSURE ASSESSMENT



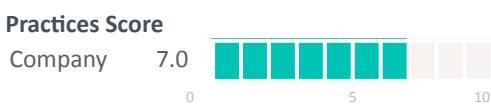
RISK MANAGEMENT ASSESSMENT



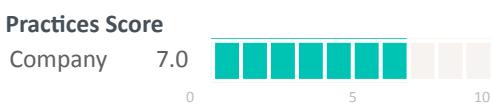
Drivers of Risk Exposure



Drivers of Risk Management



Business Types



Business Locations



BOTTOM 5 INDUSTRY LAGGARDS

ANHUI CONCH CEMENT COMPANY LIMITED	1.0
China National Building Material Company Limited	0.9
CHINA RESOURCES CEMENT HOLDINGS LIMITED	0.4
Huixin Cement Co., Ltd.	0.3
TANGSHAN JIDONG CEMENT CO.,LTD.	0.0

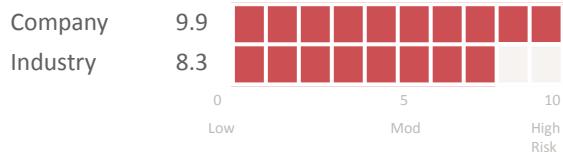
METHODOLOGY NOTE

Companies are evaluated on the carbon intensity of their operations and their efforts to manage climate-related risks and opportunities.

* [For symbols and terms used in this report, refer to the Glossary section at the end of the report]

EXPOSURE

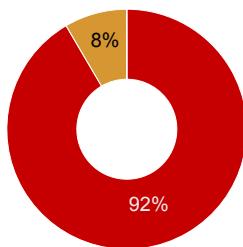
RISK EXPOSURE ASSESSMENT



Key Drivers of Risk Exposure

Exposure to: Risks of having to pay increased compliance costs tied to carbon emissions regulations

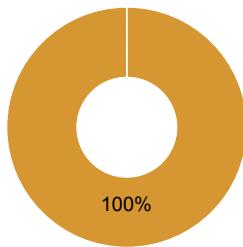
Business Types : Percentage of operations in business segments with high/moderate/low carbon intensity



- Cement, Power generation
- Chemicals and chemical preparations
- No exposure to low risk segments

Source: IERS' Comprehensive Environmental Data Archive (CEDA); Air Emissions Accounts (Eurostat); Refinitiv; MSCI ESG Research; company disclosure

Business Locations : Percentage of operations in countries with strengthening or pending carbon emissions regulation

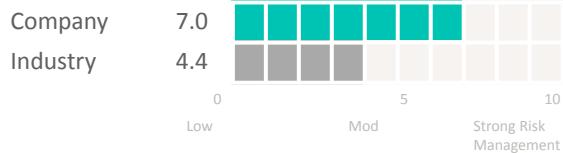


- No operations in markets with high risks
- Taiwan, China
- No operations in markets with low risks

Source: MSCI ESG Research; Refinitiv; company disclosure

MANAGEMENT

RISK MANAGEMENT ASSESSMENT



Description	Company Practice	Best Practice	Practices Score ²
Targets			
Aggressiveness of the company's reduction target in the context of its current performance	Aggressive target from a high base	Aggressive target with a low base	- LOW MID TOP

Carbon Improvement Targets			
Baseline Year	Target Year	Target Description	Target Reduction (%)
2016	2021	Reduce carbon emission intensity by 2% of the 2016-2020 accumulative average in 2021	2.00%
2016	2021	Reduce energy consumption by over 5% of the 2016-2020 accumulative consumption in 2021	5.00%
2016	2025	10.8% reduction in our total GHG emissions	10.80%
2013	2030	Reduce emissions by 30% by 2030.	30.00%

Mitigation

Strength of Greenhouse Gas Mitigation Strategy (0-10 Score, 0=worst, 10=best) 7.00

Programs or actions to reduce the emissions intensity of core operations

Use of cleaner sources of energy	Some efforts	Aggressive efforts	- LOW MID TOP
Capture GHG emissions	Aggressive efforts	Aggressive efforts	- LOW MID TOP
Energy consumption management and operational efficiency enhancements	Some efforts	Aggressive efforts	- LOW MID TOP
CDP disclosure	Yes	Yes	- LOW TOP

Performance

Carbon Emissions Performance Relative to Peers (0-10 Score, 0=worst, 10=best) 7.00

GHG Emissions - metric tons CO2e

Year	Scope 1 Disclosed	Scope 1 Estimate Key	Scope 2 Disclosed	Scope 2 Estimate Key	Scope 1+2 Disclosed	Scope 3 (upstream)	Scope 3 (downstream)	Scope 3 (undefined)	Scope 1 Estimated	Scope 2 Estimated	Scope 1+2 Estimated	Scope 1+2 Estimate Key	GHG Emissions Details
2019	4,267,805.0	Reported	230,040.0	Reported	4,497,845.0	21,083.0						Reported	
2018	4,230,680.0	Reported	255,802.0	Reported	4,486,482.0	15,041.0						Reported	
2017	4,144,669.0	Reported	241,691.0	Reported	4,386,360.0	8,873.0						Reported	
2016	4,396,724.0	Reported	253,768.0	Reported	4,650,492.0							Reported	
2015	4,614,890.0	Reported	281,352.0	Reported	4,896,242.0							Reported	
2014	5,097,453.0	Reported	284,379.0	Reported	5,381,832.0							Reported	
2013	6,545,197.0	Reported	306,790.0	Reported	6,851,987.0							Reported	
2012		E.CSI		E.CSI					6,318,540.0	351,160.0	6,669,700.0	E.CSI	April 2018 Estimations
2011		E.CSI		E.CSI					6,012,913.0	334,174.0	6,347,087.0	E.CSI	April 2018 Estimations
2010		E.CSI		E.CSI					5,594,964.0	310,946.0	5,905,910.0	E.CSI	April 2018 Estimations

Year	Scope 1 Disclosed	Scope 1 Estimate Key	Scope 2 Disclosed	Scope 2 Estimate Key	Scope 1+2 Disclosed	Scope 3 (upstream)	Scope 3 (downstream)	Scope 3 (undefined)	Scope 1 Estimated	Scope 2 Estimated	Scope 1+2 Estimated	Scope 1+2 Estimate Key	GHG Emissions Details
2009		E.CSI		E.CSI					4,169,956.0	231,750.0	4,401,706.0	E.CSI	April 2018 Estimations
2008		E.CSI		E.CSI					3,674,763.0	204,229.0	3,878,992.0	E.CSI	April 2018 Estimations

GHG Emissions Intensity - metric tons CO2e / USD million sales

Year	GHG Intensity	GHG Intensity Details	GHG Intensity - Reported	GHG Intensity - Reported Details
2019	1,098.10			
2018	1,106.80			
2017	1,325.70			
2016	1,673.40			
2015	1,715.90			
2014	1,437.30			
2013	1,760.70			
2012	1,622.20			
2011	1,622.20			
2010	1,622.20			
2009	1,622.20			
2008	1,622.20			

Energy Consumption

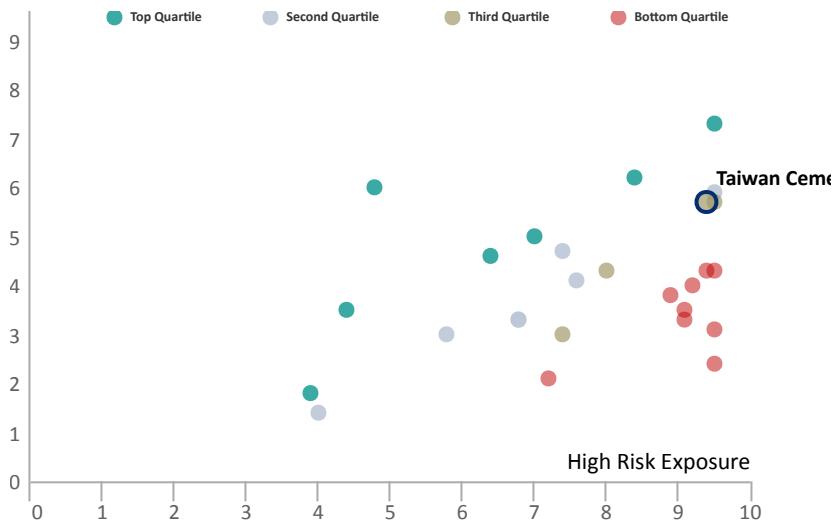
Year	Total energy consumption (reported)	Total energy consumption (MWh)	Energy intensity (reported)	Reported intensity details	Total energy consumption intensity	Energy consumption details
2019	4,951,266.39	4,951,266.39			1,208.83	Annual energy consumption (plants and HQ): coal, diesel and electricity
2018	4,860,081.67	4,860,081.67			1,198.96	Annual energy consumption (plants and HQ): coal, diesel and electricity
2017	5,231,866.67	5,231,866.67			1,581.28	Annual energy consumption (plants and HQ): coal, diesel and electricity
2016	5,574,619.73	5,574,619.73			2,005.98	Annual energy consumption (plants and HQ): coal, diesel and electricity
2015	9,524,741.95	9,524,741.95			3,337.96	Annual energy consumption (plants and HQ): coal, diesel and electricity
2014	10,290,800.01	10,290,800.01			2,748.39	Annual Energy Consumption
2013	12,603,016.40	12,603,016.40			3,238.48	Annual Energy Consumption



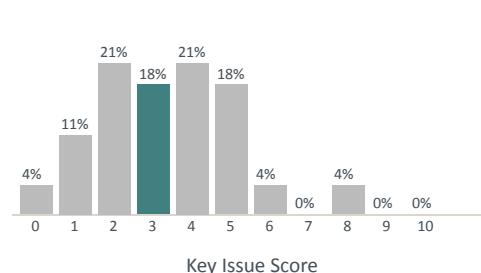
Toxic Emissions & Waste

Score	Change (since rating)	Quartile	Weight	As of
3.3	0.0	● ●	19.0%	Aug 31, 2020

Strong Risk Management



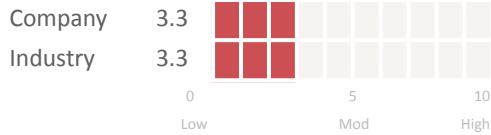
KEY ISSUE SCORE DISTRIBUTION *



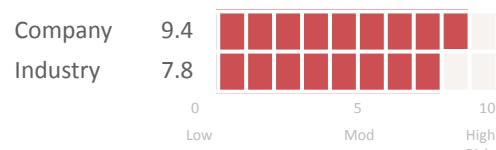
TOP 5 INDUSTRY LEADERS

CRH PUBLIC LIMITED COMPANY	8.2
BBMG Corporation	6.1
HeidelbergCement AG	5.2
POSCO CHEMICAL CO., LTD.	5.0
VULCAN MATERIALS COMPANY	4.9

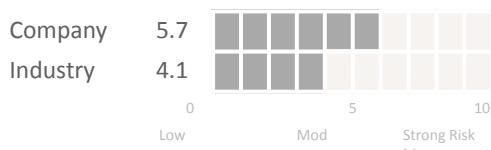
KEY ISSUE ASSESSMENT



RISK EXPOSURE ASSESSMENT



RISK MANAGEMENT ASSESSMENT



Drivers of Risk Exposure



Drivers of Risk Management



Business Types



Practices Score



Performance Score



Controversy Deduction



BOTTOM 5 INDUSTRY LAGGARDS

CHINA RESOURCES CEMENT HOLDINGS LIMITED	1.8
PT Indocement Tunggal Prakarsa Tbk	1.4
Asia Cement Corporation	1.2
TANGSHAN JIDONG CEMENT CO.,LTD.	0.6
Saudi Cement Company SJSC	0.0

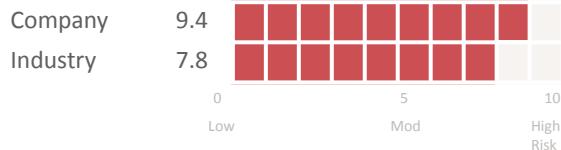
METHODOLOGY NOTE

Companies are evaluated on the potential environmental contamination and toxic or carcinogenic emissions arising from their operations and the strength of their environmental management systems.

* [For symbols and terms used in this report, refer to the Glossary section at the end of the report]

EXPOSURE

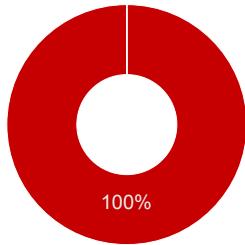
RISK EXPOSURE ASSESSMENT



Key Drivers of Risk Exposure

Exposure to: Risk of increased compliance costs and liabilities associated with damaging health, property; risk of losing access to markets due to community opposition or heightened regulatory hurdles

Business Types : This represents the portion of the company's revenues derived from lines of business that are High Risk (typically generate large amounts of toxic emissions), Medium Risk (typically generate moderate amounts of toxic emissions), and Low Risk (typically generate low amounts of toxic emissions).

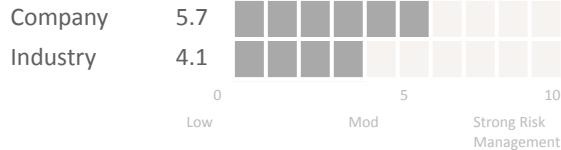


- Cement, Chemicals and chemical preparations, Power generation
- No exposure to medium risk segments
- No exposure to low risk segments

Source: Toxics Release Inventory (US Environmental Protection Agency); National Emissions Inventory (US Environmental Protection Agency); Risk-Screening Environmental Indicators (US Environmental Protection Agency); US Economic Census; Refinitiv; MSCI ESG Research; company disclosure

MANAGEMENT

RISK MANAGEMENT ASSESSMENT



Description	Company Practice	Best Practice	Practices Score ²
Governance and Strategy			
Existence of Environmental Management System (EMS)	ISO 14001 or equivalent	ISO 14001 or equivalent	- LOW MID TOP
Percentage of sites with hazardous waste guidance that achieved HAZWOPER certification or follow ISO 14001 for waste management	100.00%		
Disclosure around the number or percentage of sites with HAZWOPER or ISO 14001 certification	Disclosed	Disclosed	- LOW MID TOP
Evidence of regular environmental impact audits	Yes	Yes	- LOW TOP
Evidence of audits across all locations of operations	Yes	Yes	- LOW TOP
Evidence of annual compliance audits	Not Disclosed	Yes	- LOW TOP

Targets			
Aggressiveness of Toxic Emissions Reduction Target (0-10 Score, 0=worst, 10=best)	4		
Demonstrated track record of achieving its toxic emissions targets	No previous targets	Met previous targets	- LOW MID TOP

Toxic Emissions and Waste Reduction Targets

Baseline Year	Target Year	Target Description	Target Reduction (%)
2013	2030	Lower 2030 air pollution emissions by 20% compared to the base year.	20.00%

Performance

Toxic Releases Performance Relative to Peers (0-10 Score, 0=worst, 10=best)	5.00
---	------

Air Emissions: NOx Performance

3 Year Average Intensity	1.78
Average Annual % Change in Intensity	-15.80%

Air Emissions: NOx Performance

Year	NOx Emissions	NOx Emissions Intensity (tons/ USD million sales)
2019	6,388	1.56
2018	6,744	1.66
2017	7,035	2.13
2016	7,331	2.64

Year	NOx Emissions	NOx Emissions Intensity (tons/ USD million sales)
2015	7,896	2.77

Air Emissions: SOx Performance

3 Year Average Intensity	0.02
Average Annual % Change in Intensity	-20.45%

Air Emissions: SOx Performance

Year	SOx Emissions	SOx Emissions Intensity (tons/ USD million sales)
2019	79	0.02
2018	85	0.02
2017	82	0.02
2016	111	0.04
2015	117	0.04

Air Emissions: Particulate Matter Performance

3 Year Average Intensity	0.14
Average Annual % Change in Intensity	-16.59%

Air Emissions: Particulate Matter Performance

Year	Quantities	Intensity
2019	305	0.07
2018	643	0.16
2017	587	0.18
2016	433	0.16
2015	655	0.23

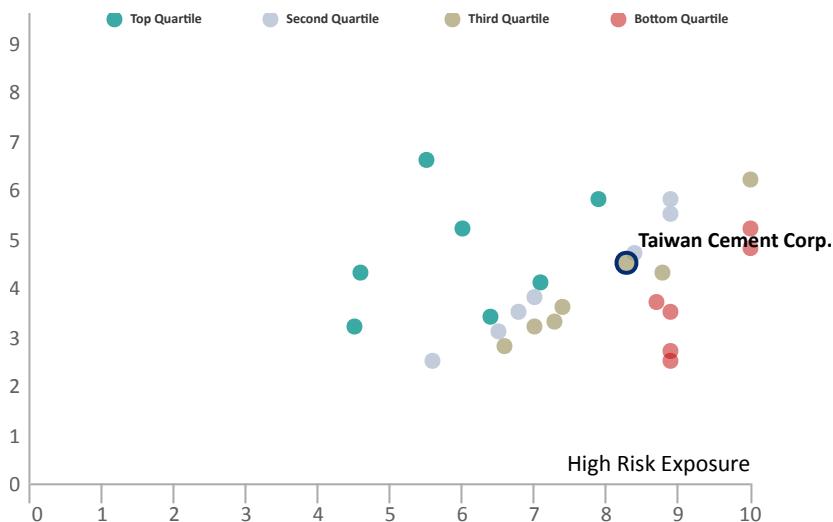
CONTROVERSIES

All controversies are assessed as part of the annual review of a company's ESG rating. MSCI ESG Research tracks controversies for all companies on a regular basis. There is no evidence of the Taiwan Cement's current involvement in prominent controversial events or alleged misconduct.

Health & Safety

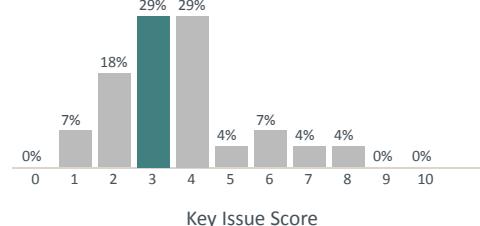


Strong Risk Management



Score	Change (since rating)	Quartile	Weight	As of
3.2	0.0	● ●	14.0%	Aug 31, 2020

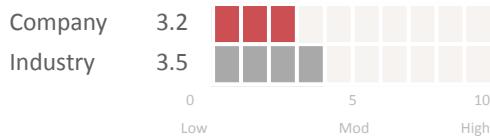
KEY ISSUE SCORE DISTRIBUTION *



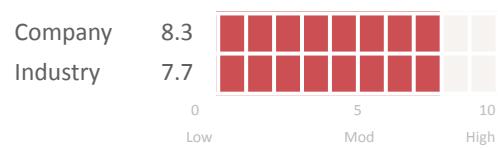
TOP 5 INDUSTRY LEADERS

CRH PUBLIC LIMITED COMPANY	8.1
The Siam Cement Public Company Limited	6.7
TAIHEIYO CEMENT CORPORATION	6.2
CHINA JUSHI CO., LTD	5.7
GRASIM INDUSTRIES LTD	4.9

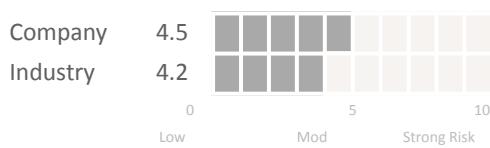
KEY ISSUE ASSESSMENT



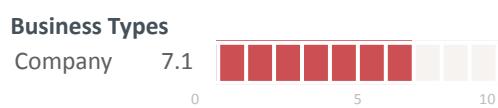
RISK EXPOSURE ASSESSMENT



RISK MANAGEMENT ASSESSMENT



Drivers of Risk Exposure



Drivers of Risk Management



Business Locations



Performance Score



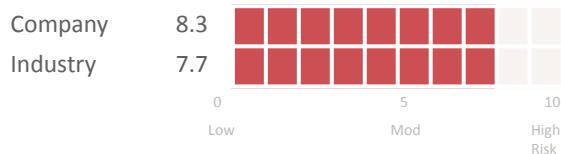
METHODOLOGY NOTE

Companies are evaluated on their management of workplace safety and the workplace safety standards in the industries and regions in which they operate.

* [For symbols and terms used in this report, refer to the Glossary section at the end of the report]

EXPOSURE

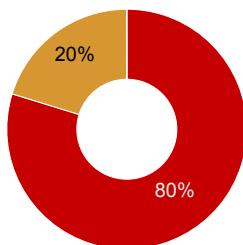
RISK EXPOSURE ASSESSMENT



Key Drivers of Risk Exposure

Exposure to: Risk of accidents that can lead to production disruptions, litigation, and liabilities

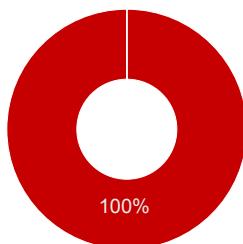
Business Types : Percentage of operations in business segments with high/moderate/low level of fatalities and industrial injuries



- Cement
- Chemicals and chemical preparations, Power generation
- No exposure to low risk segments

Source: US Occupational Health & Safety Administration (OSHA); UK Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR); US Bureau of Labor Statistics; Refinitiv; MSCI ESG Research; company disclosure

Business Locations : Percentage of operations in countries with high/moderate/low employee fatality rates (total fatalities per 100,000 employees)

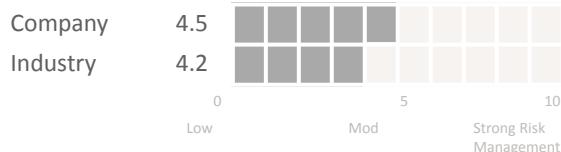


- Taiwan, China
- No operations in markets with medium risks
- No operations in markets with low risks

Source: International Labour Organization; Refinitiv; MSCI ESG Research; company disclosure

MANAGEMENT

RISK MANAGEMENT ASSESSMENT



Description	Company Practice	Best Practice	Practices Score ²
Governance and Strategy			
Percentage of the company's health & safety system certified to OHSAS 18001	100.00%		
Evidence of Recognized Certification	Yes	Yes	- LOW TOP
What executive body is responsible for H&S strategy and performance?			
H&S strategy and performance is managed by Sustainability Committee, H&S task force or risk officer	Yes	Yes	- LOW TOP
Health & safety policy			
H&S policy is group-wide	Yes	Yes	- LOW TOP
H&S policy applies to contractors	Yes	Yes	- LOW TOP
Targets			
Target to improve H&S performance	Zero target	Non-zero target (contractors included)	- LOW MID TOP
Other H&S Metric			
Year (YYYY)	Other Health & Safety Metric Description	Other Health & Safety Metric Value	Details
2019	Lost Day Rate (LDR)	17.37	
2018	Lost Day Rate (LDR)	4.40	
2017	Lost Day Rate (LDR)	6.23	
Operations			
Performance on Health & Safety Metrics Relative to Peers (0-10 Score, 0=worst, 10=best)			
5.00			
Lost Time Incident Rate			
Year	Lost Time Incident Rate	Lost Time Incident Rate (per million hours)	Lost Time Incident Rate Unit
2019	0.24	1.20	per 200,000 hours
2018	0.40	2.00	per 200,000 hours
2017	0.35	1.75	per 200,000 hours

Total Recordable Injury Rate

Year	Total Recordable Injury Rate	Total Recordable Injury Unit	Total Recordable Injury Rate (per million hours)	Details
2014	0.11	per 200,000 hours	0.55	only for Taiwan employees
2013	0.76	per 200,000 hours	3.80	only for Taiwan employees
2012	0.10	per 200,000 hours	0.50	only for Taiwan employees

Fatalities

Year	Contractor Fatalities	Employee Fatalities	Fatalities	Details
2019			0	
2018			0	
2017			0	
2016			0	

CONTROVERSIES

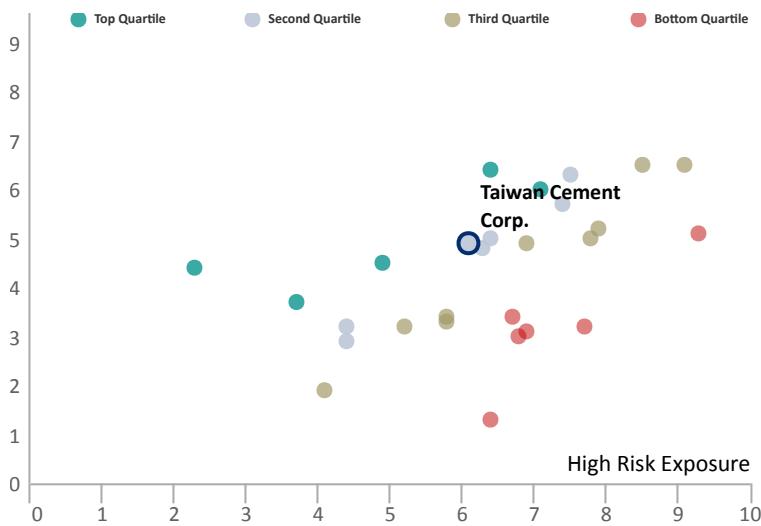
All controversies are assessed as part of the annual review of a company's ESG rating. MSCI ESG Research tracks controversies for all companies on a regular basis. There is no evidence of the Taiwan Cement's current involvement in prominent controversial events or alleged misconduct.



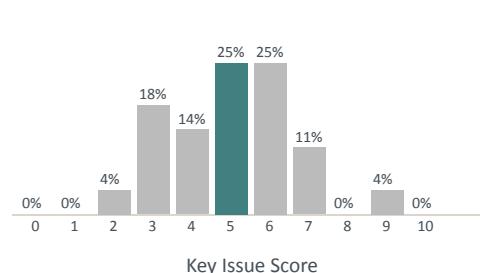
Labor Management

Score	Change (since rating)	Quartile	Weight	As of
5.8	0.0	•••	14.0%	Aug 31, 2020

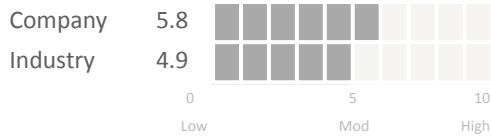
Strong Risk Management



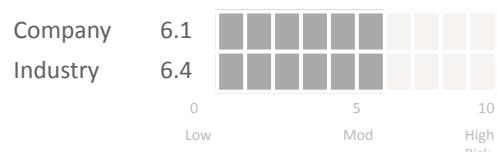
KEY ISSUE SCORE DISTRIBUTION *



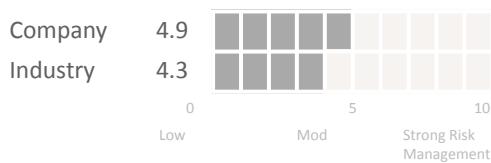
KEY ISSUE ASSESSMENT



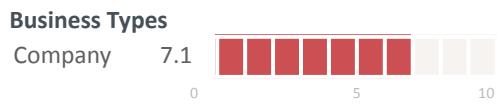
RISK EXPOSURE ASSESSMENT



RISK MANAGEMENT ASSESSMENT



Drivers of Risk Exposure



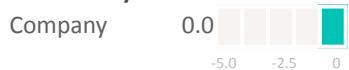
Drivers of Risk Management



Business Locations



Controversy Deduction



TOP 5 INDUSTRY LEADERS

Beijing Oriental Yuhong Waterproof Technology Co., Ltd.	9.1
CHINA JUSHI CO., LTD	7.0
PT Indocement Tunggal Prakarsa Tbk	7.0
TAIHEIYO CEMENT CORPORATION	6.6
HeidelbergCement AG	5.9

BOTTOM 5 INDUSTRY LAGGARDS

CHINA RESOURCES CEMENT HOLDINGS LIMITED	3.2
TANGSHAN JIDONG CEMENT CO.,LTD.	3.2
China National Building Material Company Limited	2.8
ANHUI CONCH CEMENT COMPANY LIMITED	2.5
Saudi Cement Company SJSC	1.9

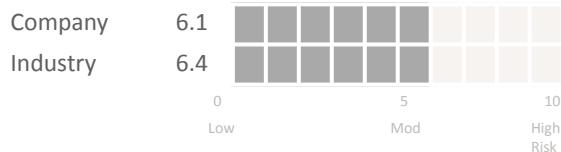
METHODOLOGY NOTE

Companies are evaluated on the complexity of their workforce (size, labor intensity, and regions of operation), employee relations, strength of worker protections, and employee engagement efforts.

* [For symbols and terms used in this report, refer to the Glossary section at the end of the report]

EXPOSURE

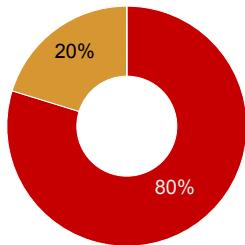
RISK EXPOSURE ASSESSMENT



Key Drivers of Risk Exposure

Exposure to: Risk of workflow disruptions due to labor unrest, or reduced productivity due to poor job satisfaction

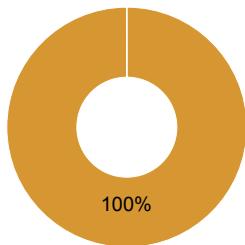
Business Types : Percentage of operations in business segments with high/moderate/low labor intensities, as measured by average sales per employee of industries



- Cement
- Chemicals and chemical preparations, Power generation
- No exposure to low risk segments

Source: MSCI ESG Research; Refinitiv; company disclosure

Business Locations : Percentage of operations in countries with high/moderate/low likelihood of labor unrest (based on historic precedent)



- No operations in markets with high risks
- Taiwan, China
- No operations in markets with low risks

Source: International Labour Organization; Refinitiv; MSCI ESG Research; company disclosure

Layoffs Events

Major Layoffs:

No

Size and Composition of Workforce

Number of employees:

10,618

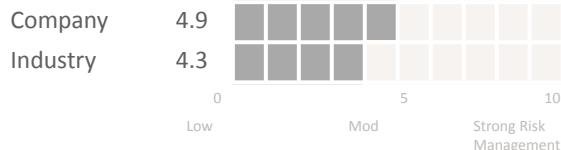
Number of Employees

Year	Number of employees	Part time workers (%)	Contract or temporary workers (%)	Estimated Part time/contract %
2019	10,618			

Year	Number of employees	Part time workers (%)	Contract or temporary workers (%)	Estimated Part time/contract %
2018	9,325			
2017	9,356			
2016	9,609			
2015	9,822			
2014	8,890			
2013	8,448			
2012	10,409			
2011	9,777			
2010	7,129			
2009	4,780			
2008	4,864			

MANAGEMENT

RISK MANAGEMENT ASSESSMENT



Description	Company Practice	Best Practice	Practices Score ²
Strategy			
Percentage of workforce covered by trade unions/ collective agreements	95.60%		
Estimate Key: Percentage of workforce covered by trade unions/ collective agreements	Reported	Reported	- LOW MID TOP
Evidence of collective agreements	Yes	Yes	- LOW TOP
Employee stock ownership plan (ESOP) or employee stock purchase plan (ESPP)	Only select number of employees eligible for ESOP and/or ESPP	Sector-leading number of employees eligible for ESOP and/or ESPP	- LOW MID TOP
Variable performance-based component to pay	Selective performance-based incentive pay for non-officer staff	Strong performance-based incentive pay structure covers all employees	- LOW MID TOP
Non-compensation benefits including pension and retirement	Scope not determinable	Benefits cover all employees	- LOW MID TOP

Performance

External recognition as employer of choice (last three years) Not Disclosed

Employee turnover

Year	Annual employee turnover (%)	Details
2019	9.28%	No Clear Disclosure of Salaries & Wages, Hence not Calculated SPE
2018	11.03%	No Clear Disclosure of Salaries & Wages, Hence not Calculated SPE
2017		No Clear Disclosure of Salaries & Wages, Hence not Calculated SPE

Employee Productivity

Year	Profit per employee (USD '000)
2018	73

CONTROVERSIES

All controversies are assessed as part of the annual review of a company's ESG rating. MSCI ESG Research tracks controversies for all companies on a regular basis. There is no evidence of the Taiwan Cement's current involvement in prominent controversial events or alleged misconduct.

APPENDIX

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ISSUER COMMUNICATION

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ISSUER COMMUNICATION SUMMARY

COMPANY COMMUNICATION PAST 15 MONTHS

Direction	Method	Category	Research Product	Date
Outgoing	E-mail	Data Review - Feedback Provided	ESG Ratings	Sep 29, 2020
Incoming	E-mail	Data Review - Feedback Provided	ESG Ratings	Sep 29, 2020
Outgoing	E-mail	Updated ESG Rating	ESG Ratings	Aug 31, 2020
Outgoing	E-mail	Other report clarification	ESG Ratings	Jun 24, 2020
Outgoing	E-mail	ICP Log in - New User	ESG Ratings	Jun 18, 2020
Incoming	E-mail	ICP Log in - New User	ESG Ratings	Jun 16, 2020
Incoming	E-mail	Other report clarification	ESG Ratings	Jun 09, 2020
Outgoing	E-mail	Data Review - Feedback Provided	ESG GovernanceMetrics	Jun 09, 2020
Outgoing	E-mail	Data Review - Alert	ESG Ratings	May 30, 2020
Incoming	E-mail	Data Review - Feedback Provided	ESG GovernanceMetrics	May 22, 2020
Outgoing	E-mail	Data Review - Feedback Provided	ESG Ratings	Apr 06, 2020
Incoming	E-mail	Data Review - Feedback Provided	ESG Ratings	Mar 30, 2020

LEGEND

Direction	Category
Outgoing: MSCI ESG Research contacts issuer.	Data Review - Alert: Notification of pending annual update of ESG Rating, and invitation to engage MSCI.
Incoming: Query by corporate issuer.	Data Review - Report: MSCI ESG Research delivers report of updated ESG data
	Data Review - Feedback Provided: Feedback provided to MSCI ESG Research.
	Request for Information: Issuer inquiries; MSCI ESG Research queries.
	Published Report Sent: MSCI ESG Research delivers issuers' ESG product report that is posted to the MSCI ESG Manager platform.
	Other: Issuer notified of custom projects; Miscellaneous queries.

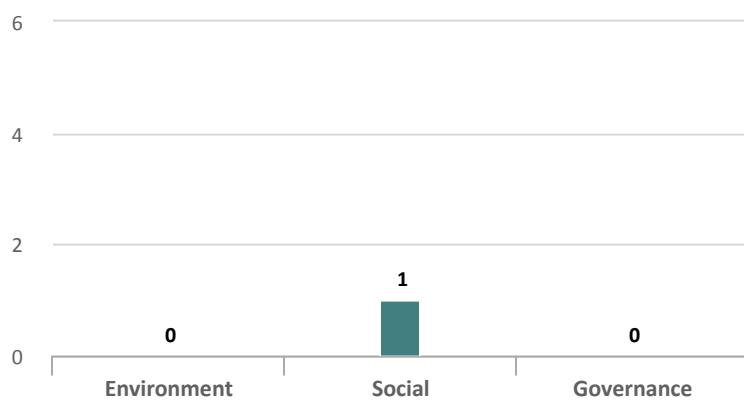
CONTROVERSIES DETAIL

Here you will find the narratives for all controversies relevant to the ESG Ratings issues covered for the company in addition to those controversies that do not map to the ESG Ratings issues.

CONTROVERSY CARD

	MOST SEVERE CONTROVERSY	CONTROVERSY COUNT
Environment		
Carbon Emissions	None	0
Toxic Emissions & Waste	None	0
Social		
Labor Management	None	0
Health & Safety	None	0
Governance		
Corporate Governance	None	0
Corporate Behavior	Moderate	1

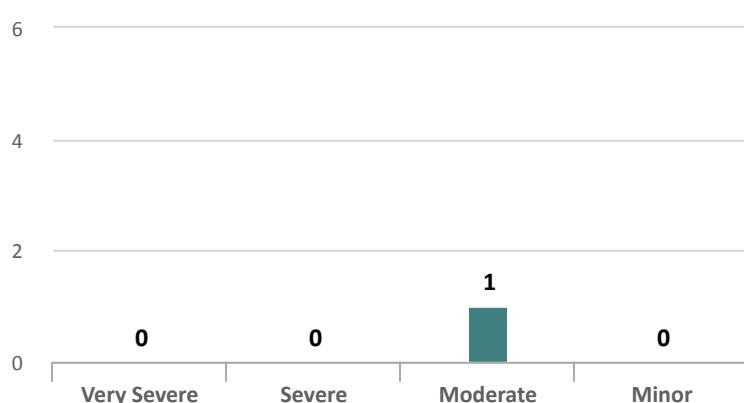
NUMBER OF CONTROVERSIES BY PILLAR



CONTROVERSIES

- **Very Severe:** Indicates an action by a company that results in a very large impact on society and/or the environment.
- **Severe:** Indicates an action by a company that results in a large impact on society and/or the environment.
- **Moderate:** Indicates an action by a company that results in a moderate impact on society and/or the environment.
- **Minor:** Indicates an action by a company that results in a low impact on society and/or the environment.
- **None:** There is no evidence that a company is involved in any controversy.

NUMBER OF CONTROVERSIES BY ASSESSMENT



SOCIAL CONTROVERSIES

Moderate Controversies

Date: September 2020

Assessment: Moderate

Status: Concluded

China: CNY 300,000 SAMR penalty for the alleged failure to declare joint venture with OYAK

In June 2020, the State Administration of Market Regulation (SAMR) of China imposed a penalty of CNY 300,000 (approximately USD 44,276) on Taiwan Cement Corp. for alleged failure to declare concentration of business operators while registering a joint venture in 2018 with a Turkish company Ordu Yardimlasmak Kurumu (OYAK). According to the regulator, both Taiwan Cement and OYAK reached the declaration standard based on their turnover in 2017 but failed to file a declaration before completing the joint venture registration.

UPDATES: 17 Sep 2020: No new information available.

25 Jun 2020: Administrative penalty to Taiwan Cement and OYAK regarding failure to legally declare joint venture. (State Administration for Market Regulation)

Source: 25 Jun 2020 (State Administration for Market Regulation)

KEY METRIC & SCORE CHANGES

ALL KEY METRIC & SCORE CHANGES (SINCE AUGUST 2019)

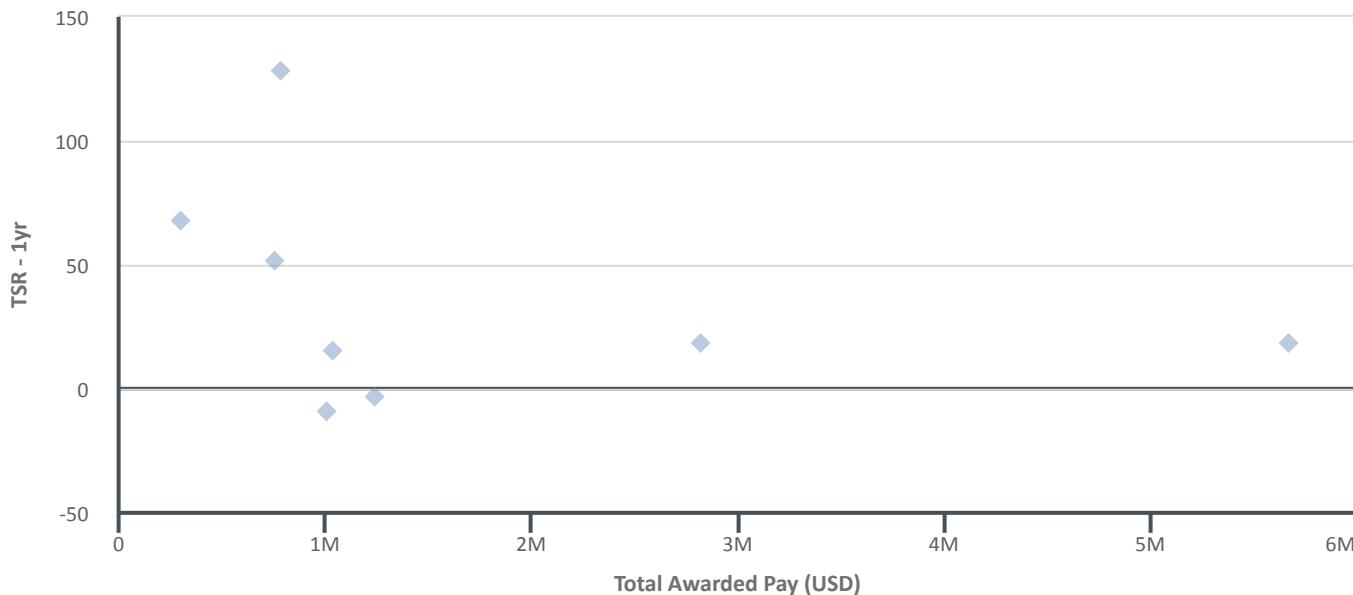
Key Metric	Key Metric Change	Date	Score Change*	Change Notes
Revenue Recognition	Score Change	Oct 23, 2020	0.30	Updates to data for accounting peer group member(s)
Expense Recognition	Score Change	Oct 23, 2020	0.01	Updates to data for accounting peer group member(s)
Asset-Liability Valuation	Score Change	Oct 23, 2020	-0.02	Updates to data for accounting peer group member(s)
Revenue Recognition	Flag Added	Aug 24, 2020	-0.60	Updates to data for accounting peer group member(s)
Expense Recognition	Score Change	Aug 24, 2020	-0.17	Updates to data for accounting peer group member(s)
Asset-Liability Valuation	Score Change	Aug 24, 2020	0.00	Updates to data for accounting peer group member(s)
Revenue Recognition	Flag Removed	Aug 13, 2020	0.43	Updates to data for accounting peer group member(s)
Expense Recognition	Score Change	Aug 13, 2020	0.16	Updates to data for accounting peer group member(s)
Asset-Liability Valuation	Score Change	Aug 13, 2020	0.05	Updates to data for accounting peer group member(s)
Pay Linked to Sustainability	Flag Removed	Jul 10, 2020	0.20	
Revenue Recognition	Score Change	Jun 25, 2020	-0.43	Updates to data for accounting peer group member(s)
Expense Recognition	Flag Removed	Jun 25, 2020	-0.16	Updates to data for accounting peer group member(s)
Asset-Liability Valuation	Flag Removed	Jun 25, 2020	-0.05	Updates to data for accounting peer group member(s)
Revenue Recognition	Score Change	Jun 22, 2020	0.44	Updates to data for accounting peer group member(s)
Leadership Concerns	Flag Removed	Jun 22, 2020	0.30	
Expense Recognition	Flag Added	Jun 22, 2020	0.16	Updates to data for accounting peer group member(s)
Asset-Liability Valuation	Flag Added	Jun 22, 2020	0.05	Updates to data for accounting peer group member(s)
Leadership Concerns	Flag Added	Jun 18, 2020	-0.30	
Revenue Recognition	Score Change	Jun 11, 2020	-0.06	Updates to data for accounting peer group member(s)
Expense Recognition	Score Change	Jun 11, 2020	0.03	Updates to data for accounting peer group member(s)
Asset-Liability Valuation	Score Change	Jun 11, 2020	-0.02	Updates to data for accounting peer group member(s)
Leadership Concerns	Flag Removed	Jun 05, 2020	0.30	
Director Removal Without Cause	Flag Removed	Jun 05, 2020	0.10	
Cross Shareholdings	Score Change	Jun 05, 2020	0.30	
Combined CEO/Chair	Flag Added	Jun 05, 2020	-0.20	
Business Combination Provision	Flag Added	Jun 05, 2020	-0.10	
Audit Committee Industry Expert	Flag Added	Jun 05, 2020	-0.10	
Related Party Transactions	Score Change	Dec 17, 2019	-0.50	
Overboarded Non-Exec Directors	Flag Added	Dec 17, 2019	-0.50	
Overboarded Audit Committee Members	Flag Added	Dec 17, 2019	-0.10	
Revenue Recognition	Score Change	Dec 03, 2019	-0.01	Updates to data for accounting peer group member(s)
Pay Committee Concerns	Flag Added	Dec 03, 2019	-0.30	
Expense Recognition	Score Change	Dec 03, 2019		Updates to data for accounting peer group member(s)
Related Party Transactions	Score Change	Sep 19, 2019	0.50	
Controlling Shareholder Concerns	Flag Removed	Sep 19, 2019	1.00	
Controlling Shareholder	Flag Removed	Sep 19, 2019	0.00	

Key Metric	Key Metric Change	Date	Score Change*	Change Notes
Executive Misconduct	Flag Removed	Sep 13, 2019	0.30	Event now time expired

*Score change available in respect of changes dated on or after 13 December 2017.

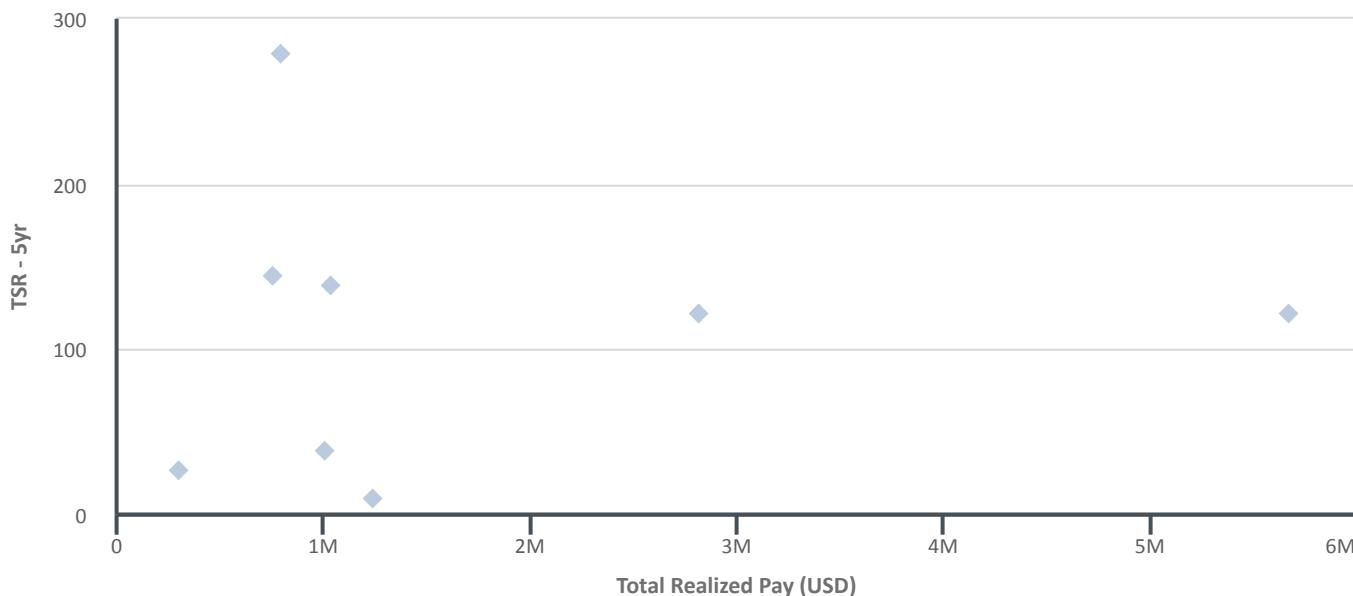
CEO PAY CHARTS

CEO TOTAL AWARDED PAY VERSUS PAY PEER GROUP



Pay Peers (blue diamond) are used in the calculation of the Key Metric CEO Pay Total Summary and selected as set out in the MSCI Governance Metrics Methodology Document.

CEO TOTAL REALIZED PAY VERSUS PAY PEER GROUP



Pay Peers (blue diamond) are used in the calculation of the Key Metric CEO Pay Total Summary and selected as set out in the MSCI Governance Metrics Methodology Document.

SHAREHOLDER/MANAGEMENT PROPOSALS

MANAGEMENT PROPOSALS

Proxy Year	Proposal	Proposal Summary	Outcome	Votes For	Votes Against	Abstain/Withhold%
2020	Other	(III) To approve the amendments on part of Rules of Procedure for Annual Shareholders' Meeting	Approved	89.5%	0%	10.5%
2020	Amend Certificate of Incorporation	(II)To approve the amendments on part of Article of Incorporation.	Approved	89.5%	0%	10.5%
2020	Stock Issuance	(I) Proposal for a new share issue through capitalization of earnings.	Approved	89.5%	0%	10.5%
2020	Other	(II) The proposal for distribution of 2019 profits	Approved	91.1%	0%	8.9%
2020	Other	(I) To approve 2019 Annual Business Report and Financial Statements.	Approved	90.5%	0.2%	9.3%
2019	Other	3 Approval Items (I) To approve 2018 Annual Business Report and Financial Statements.	Approved	90.4%	0%	9.6%
2019	Other	3 Approval Items (II) The proposal for distribution of 2018 profits (Proposed by the Board of Directors)	Approved	90.8%	0%	9.2%
2019	Other	4. Discussion Items (I) Proposal for a new share issue through capitalization of earnings. (Proposed by the Board of Directors)	Approved	89.3%	0.2%	10.5%
2019	Amend Certificate of Incorporation	4. Discussion Items (II)To approve the amendments on part of Article of Incorporation. (Proposed by the Board of Directors)	Approved	89%	0%	11%
2019	Other	4. Discussion Items (III)To approve the amendments on part of Procedures for Acquisition or Disposal of Fixed Assets. (Proposed by the Board of Directors)	Approved	89%	0%	11%
2019	Other	5. To approve the amendments on part of Procedures for Handling Endorsement/Guarantee. (Proposed by the Board of Directors)	Approved	89%	0%	11%
2018	Other	1, To adopt the 2017 Business report and financial statements	Approved	88.4%	0.1%	11.5%
2018	Other	2 To adopt the 2017 profit distribution plan	Approved	88.9%	0%	11.1%
2018	Other	3, Proposal for a new share issue through capitalization of earnings.	Approved	88.9%	0%	11.1%
2018	Other	4, To approve the Company's long-term capital raising plan	Approved	70.4%	18.5%	11.1%
2018	Other	5, To amend the "Articles of Incorporation."	Approved	88.7%	0.2%	11.1%
2018	Other	6, Distribution of souvenir for the Annual Shareholders' Meeting.	Approved	88.9%	0%	11.1%
2018	Other	8, Proposal to release the newly-elected Directors from non-competition restrictions.	Approved	80.6%	0%	19.4%

*For Management Proposals at AGM's held more than three years ago, please refer to the Screener tool on ESG Manager.

TAIWAN



CURRENCY: TAIWAN NEW DOLLAR (TWD)

In Taiwanese companies, all directors are elected simultaneously for terms no longer than three years. They may have a one-tier board with an audit committee or a two-board arrangement with a board of directors and board of supervisors (both elected by shareholders). In the latter case, which is more common, the board of supervisors supervises the board of directors and management and the audit function and must have at least one member not related to other supervisors or directors. The one share one vote rule applies, as well as cumulative voting. Directors can be removed by a two-thirds shareholder vote.

Newly listed companies must have at least two independent directors (one of whom is a financial expert) and one independent supervisor. Taiwanese companies are encouraged to follow the Corporate Governance Best-Practice Principles for TWSE/GTSM Listed Companies (the Principles), although there is plenty of divergence from them. The Principles require that no more than half of directors be related and there be at least two and not less than 20% independent directors.

The supervisors are responsible for overseeing internal controls. If a company has an audit committee, the Principles require it to be wholly independent with at least one financial expert and approve the internal controls system. IFRS now apply in Taiwan. Where a conflict of interest arises, it must be approved by the board and the audit committee, if it exists. Any dissent by independent directors must be recorded in the minutes.

Shareholders representing 1% of shares can propose general meeting resolutions and 3% shareholders can requisition an extraordinary general meeting. Amendments to the articles of association and mergers require approval by a two-thirds vote of shareholders. A mandatory takeover offer is required for any acquisition of at least 20% of shares within a 50 day period. All shareholders must be treated equally in the offer. Poison pills and other takeover defenses are available, although rarely used. Upon receipt of a tender offer, a company must establish a review committee composed of at least three independent directors. The review committee reviews and report on the fairness and reasonableness of the transaction. There is no statutory squeeze out procedure in Taiwan.

Listed companies must have a remuneration committee. If there are independent directors on the board, at least one independent director must be on the committee and chair it. Shareholders approve remuneration for directors and supervisors, but not executives. Shareholders must approve equity-based incentives. If the company has an option plan for executives, the options cannot have a lower exercise price than the market price unless approved by a two-thirds majority shareholder vote.

DIRECTOR PROFILES

AN PING (NELSON) CHANG

Age: 69
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry: Materials - Construction Materials

BIOGRAPHICAL INFORMATION

Synnex Technology International Corp., Source Date:

Zhang Anping has been Independent Director in Synnex Technology International Corp. since June 13, 2012. Zhang is also Chairman of the Board and Director in five other companies. Zhang holds a Master of Business Administration from New York University and a Bachelor's degree in Economics from Princeton University.

Taiwan Cement Corp., Source Date:

Mr. Zhang Anping has been Managing Director in Taiwan Cement Corporation since November 1, 2011. He was Vice Chairman of the Board in the Company. He is also Chairman of the Board, Independent Director and Director in other companies. He holds a Master of Business Administration (MBA) from New York University, the United States. He was Vice Chairman of the Board in another cement company.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Executive, Board Member, Chairman, CEO	26	Apr 21, 1994		No	No	

CHI CHIA HSIEH

Age: 77
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp., Source Date:

Xie Qijia is Director in Taiwan Cement Corporation. Xie is Vice Chairman of the Board, Chairman of the Board, Independent Director and Director in four other companies. Xie holds a Ph.D in Electrical Engineering from Santa Clara University, the United States.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	4	Jun 22, 2016		Yes	No	
Innolux Corporation	Board Member	7	Jun 19, 2013		Yes	Yes	

BOARD COMMITTEES

Company	Committee Type	Position
Innolux Corporation	Audit	Member
Innolux Corporation	Pay	Chair

DIRECTOR PAY (all values USD)

Company	Role	Tenure	Pay Year	Cash Fees	Total Awarded Pay	Shares Held
Innolux Corporation	Non-Executive	7	2019		33,359	0

CHI-WEN CHANG

Age: 63
Gender: M
Nationality: Taiwan

Financial: Yes
Risk: No
Industry: Diversified Financials - Diversified Financial Services

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Chi-Wen Chang is a member of our board of directors. He is the director and also president of Xin Hope Investment Co., Ltd. He received a master's degree in both accountancy and administration in California State University

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	4	Feb 01, 2016		Yes	No	

CHIEN (JAMES) WEN

Age: 70
 Gender: M
 Nationality: Taiwan

Financial: Yes
 Risk: No
 Industry: Semiconductors & Semiconductor Equipment -
 Semiconductors & Semiconductor Equipment

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Chien, Wen is a member of our board of directors. Prior to joining our company, Mr. Wen was the CFO of Winbond Electronics Corp. He also worked as a supervisor of Winbond Electronics Corp. and a general manager of Cathay Securities Investment Trust. Currently, Mr. Wen is also a director of Jiantan Temple Foundation and a supervisor of Chi Cheng Investment Corp., Chinatrust Investment Co., Ltd, and Ta-Ho. He received a master's degree in business administration from Wharton School of the University of Pennsylvania.

WINBOND ELECTRONICS CORP. - Audit Board Member Source Date: 05/21/2020

MBA, Wharton School in University of Pennsylvania President of Cathay Securities Investment Trust Co., Ltd.

CFO at Winbond Electronics Corp.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	2	Jun 22, 2018		Yes	No	

CHIH-CHUNG TSAI

Age: 53
 Gender: M
 Nationality: Taiwan

Financial: Yes
 Risk: No
 Industry: Banks - Banks

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Chih-Chung, Tsai is a member of our board of directors. Prior to joining our company, Mr. Tsai was a senior consultant of Natixis Taipei Branch. He also worked as a director of Barclays Capital Securities Taiwan Limited. and as CFO of Barclays Taipei Branch. Currently, he is also a consultant of Chinatrust Investment Co., Ltd., and a director of Falcon Investment Co., Ltd., TCC Investment Corporation, and Sheng Kai Investment Corp. He received a master's degree in finance from Baruch College, The City University of New York

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	2	Jun 22, 2018		Yes	No	

CHIN JEN SHENG

Age: 53
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Sheng Chih-Jen is an independent director of our company. He is also an independent director of TPCC, the CEO of LDC Hotels & Resorts Group and the chairman of FDC International Hotels Corporation. Prior to joining our company, he was the chairperson of Council for Cultural Affairs, CEO of Republic of China (Taiwan) Centenary Foundation, the chairperson of Research, Development and Evaluation Commission of Taipei City Government, and the CEO of Deaflympics Taipei 2009. He received a doctor's degree in political science from US Northwestern University.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	3	Jun 28, 2017		Yes	Yes	

BOARD COMMITTEES

Company	Committee Type	Position
Taiwan Cement Corp.	Audit	Member
Taiwan Cement Corp.	Pay	Member

CHUN YING LIU

Age: 45
 Gender: F
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry: Commercial & Professional Services - Professional Services

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Chun-Ying, Liu is a member of our board of directors. She is a partner at Tsar & Tsai Law Firm. Ms. Liu graduated from the EMBA program of National Taiwan University.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	2	Jun 22, 2018		Yes	No	

JONG-PEIR (JOHN) LI

Age: 57
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry: Materials - Construction Materials, Banks - Banks

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Executive, Board Member Source Date: 05/29/2020

Mr.Zhongpei (John) Li is the president and director of Taiwan Cement Corp and has served as our president since 2017. He was the president and CEO of HSBC Taiwan. He received a master's degree in information technology from Johns Hopkins University.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Executive, Board Member	2	Jun 22, 2018		No	No	

KANG LUNG (JASON) CHANG

Age: 38
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Koo Jason Kung-Yi is the vice chairman of our board of directors. Prior to joining our company, Mr. Koo was a vice president at the Investment Banking Department of Morgan Stanley. He is also the chairman of TPCC, China Synthetic Rubber Corporation and E-ONE Moli Energy Corp., managing director of TCCIH and director of Ho-Ping Power. Mr. Koo received a bachelor's degree in economics from the National Central University and a master's degree in business administration from Wharton School of the University of Pennsylvania. Mr. Koo is the nephew of Mr. Chang An-Ping, Nelson.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	8	Jun 21, 2012		No	No	

KENNETH C.M. LO

Age: 79
Gender: M
Nationality: Taiwan

Financial: Yes
Risk: No
Industry: Banks - Banks

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Kenneth C.M. Lo is a member of our board of directors. He is also the chairman of O-Bank Co., Ltd., and a director of Industrial Bank of Taiwan II VC Corp. He received a bachelor's degree in business from the University of Alabama.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	15	Feb 24, 2005		Yes	No	

KUNG YI KOO

Age: 38
Gender: M
Nationality: Hong Kong

Financial: No
Risk: No
Industry: Diversified Financials - Diversified Financial Services

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Koo Jason Kung-Yi is the vice chairman of our board of directors. Prior to joining our company, Mr. Koo was a vice president at the Investment Banking Department of Morgan Stanley. He is also the chairman of TPCC, China Synthetic Rubber Corporation and E-ONE Moli Energy Corp., managing director of TCCIH and director of Ho-Ping Power. Mr. Koo received a bachelor's degree in economics from the National Central University and a master's degree in business administration from Wharton School of the University of Pennsylvania. Mr. Koo is the nephew of Mr. Chang An-Ping, Nelson.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	2	Jun 22, 2018		No	No	

LING TAI CHOU

Age: 66
 Gender: F
 Nationality: Taiwan

Financial: Yes
 Risk: No
 Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Lynette Ling-Tai, Chou is an independent director of our company. Before joining the company, she was the dean of student affairs and vice dean of College of Commerce, National Chengchi University. She also worked as a supervisor in the Department of Accounting of National Chengchi University. Currently, she is also a professor of accounting at National Chengchi University. She received a doctor's degree in accounting from the University of Houston.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	2	Jun 22, 2018		Yes	Yes	

BOARD COMMITTEES

Company	Committee Type	Position
Taiwan Cement Corp.	Audit	Member
Taiwan Cement Corp.	Pay	Member

NAN-CHOU LIN

Age: 50
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Lin Nan-Chou is a member of our board of directors. He is also the chairman of Sishan Investment Co., Ltd. Mr. Lin has a master's degree in business administration from La Trobe University

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	22	Dec 15, 1998		Yes	No	

POR-YUAN WANG

Age: 79
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Wang Por-Yuan is a member of our board of directors. He is also the chairman of SerComm Corporation, a director of Prosperity Dielectrics Corporation, independent director of UPC Technology Corporation and Taishin Holdings. He was the chairman of Pacific Venture Partners and Monte Jade Association. Mr. Wang received a doctor's degree from Carnegie-Mellon University.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	11	Jun 19, 2009		Yes	No	

QI-DE CHEN

Age: _____
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Mr. Qi-De Chen is the director of Taiwan Cement Corp.

MBA from anta Clara University

Chairman of Chien Kuo Construction Co., Ltd.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	4	Jun 22, 2016		Yes	No	

TUNG SHENG (ERIC) WU

Age: 68
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Eric T. Wu is a member of our board of directors. He is also the chairman of Shinkong Synthetic Fibers Corp., Shinkong Materials Technology Co., Ltd., Ubright Optronics Corporation, and TacBright Optronics Corp. Mr. Wu received a doctor's degree from Harvard Law School.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	35	Apr 18, 1985		Yes	No	

TZUN-YEN YU

Age: 73
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Yu Tzun-Yen is a member of our board of directors. He is also the chairman of CTCI Corporation and Hsin Li Development Corp., a director of each of CTCI Overseas Corp., Ltd., Gintech Energy Corporation, TSRC Corporation and Utech Solar Corporation, a supervisor of China Steel Chemical Corporation, and an executive director of CTCI Foundation. Mr. Yu has a bachelor's degree in electrical engineering from National Taiwan University and graduated from the EMBA program of Harvard Business School.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	18	Oct 30, 2002		Yes	No	

VICTOR WANG

Age: 71
Gender: M
Nationality: Taiwan

Financial: Yes
Risk: No
Industry: Diversified Financials - Diversified Financial Services

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 05/29/2020

Victor Wang is an independent director of our company. Before joining our company, he was the vice chairman of Deloitte Taiwan. He is also a director of Chilisin Electronics Corp. and YAGEO Corporation, a supervisor of DIVA Laboratories, Ltd., and independent director of Taiwan Navigation Co., Ltd. Mr. Wang has a bachelor's degree in accounting from Soochow University and was graduated from the EMBA program in National Taiwan University

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	8	Jun 21, 2012		Yes	Yes	

BOARD COMMITTEES

Company	Committee Type	Position
Taiwan Cement Corp.	Audit	Chair
Taiwan Cement Corp.	Pay	Member

YU-CHENG (ARTHUR) CHIAO

Age: 65
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry: Semiconductors & Semiconductor Equipment - Semiconductors & Semiconductor Equipment

BIOGRAPHICAL INFORMATION

Walsin Lihwa Corp., Source Date:

Mr. Jiao Youjun has been Vice Chairman of the Board and Deputy Chief Executive Officer in Walsin Lihwa Corporation since May 31, 2005. He used to be Chairman of the Board in the Company. He holds a Master's degree in Electrical Engineering from Washington University, the United States. He also serves as Chairman of the Board and Director in other companies, including Baystar Holding Ltd., Marketplace Management Limited, Newfound Asia Corporation and Peaceful River Corporation.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
WALSIN TECHNOLOGY CORPORATION	Board Member	4	Jun 22, 2016		No	No	
Taiwan Cement Corp.	Board Member	8	Jun 21, 2012		Yes	Yes	
Nuvoton Technology Corporation	Board Member, Chairman	12	Mar 14, 2008		No	No	
WINBOND ELECTRONICS CORP.	Executive, Board Member, Chairman, CEO	33	Sep 04, 1987		No	No	
WALSIN LIHWA CORPORATION	Board Member	39	Apr 10, 1981		No	No	

BOARD COMMITTEES

Company	Committee Type	Position
Taiwan Cement Corp.	Audit	Member
Taiwan Cement Corp.	Pay	Chair

GLOSSARY

MSCI ESG RATINGS AND SCORES

FINAL ESG RATING

- Letter ratings are relative within each MSCI ESG Ratings industry. Each Final Industry-Adjusted Company Score is converted to an equivalent rating on the AAA-CCC scale.

ESG PILLARS

- the **Environment Score** represents the weighted average of all Key Issues that fall under the Environment Pillar
- the **Social Score** represents the weighted average of all Key Issues that fall under the Social Pillar
- the **Governance Score** represents the sum of score deductions derived from Key Metrics included in Corporate Governance (including Board, Pay, Ownership & Control, and Accounting) and Corporate Behavior (including Business Ethics and Tax Transparency)
- the **Environment Weight** represents the sum of the weights of all Key Issues that fall under the Environment Pillar
- the **Social Weight** represents the sum of the weights of all Key Issues that fall under the Social Pillar
- the **Governance Weight** represents the sum of the weights of Corporate Governance and Corporate Behavior, with a minimum weight set at 33% for all rated issuers

KEY ISSUES

For each industry and Company-Specific Key Issue that contributes to the final rating:

- Weight** contribution to the final rating
- Exposure Score** (available for companies published since June 2011; excluding Raw Material Sourcing – Environmental)
- Management Score** (available for companies published since June 2011; excluding Raw Material Sourcing – Environmental)
- Overall **Key Issue Score**

WEIGHTED-AVERAGE KEY ISSUE SCORE VS. INDUSTRY RELATIVE SCORE

- the **Weighted-Average Key Issue Score** is dynamic, reflecting changes in any underlying scores as of the Last Update date, while the **Industry Relative Score** is more static and corresponds to the Rating Date. Issues that we determine do not present material risks or opportunities to companies in a given industry receive 0% weight and do not impact the overall ESG rating.

SCORES AND CALCULATION OF AVERAGE, PERCENTILE AND RATING DISTRIBUTION

All averages, percentiles, and rating distributions found in the report are based on companies in the relevant MSCI ESG Ratings Industry that are constituents of the MSCI All Country World Index (ACWI) and are calculated based on industry scores as of the date of publication of this report.

ESTIMATED CARBON EMISSIONS

Carbon estimates are based on carbon intensity (carbon emissions/sales). The Estimate Key represents the source of the estimated carbon emissions data. E.CSI represents Company-Specific Intensity estimates based on previously disclosed data. E.GICSSI represents estimates based on the GICS Sub-Industry average. For E.GICSSI we set five levels of confidence (High, Moderately High, Moderate, Moderately Low, and Low). The Carbon Estimation Methodology document, available on ESG Manager, describes the estimation model in greater detail.

GOVERNMENT SUPPORT RATING

We calculate the 'government support rating' for Supranationals and Development Banks based on the weighted average of member countries' Governance scores using the MSCI ESG Government Ratings methodology. These scores are based on measures of political governance (strength of institutions, corruption control, civil liberties, and human rights) and financial accountability.

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