華泰金融控股（香港）有限公司
HUATAI FINANCIAL HOLDINGS (HONG KONG) LIMITED

Huatai Research

15 August 2019

Equity | China

# Can cement industry 'coopetition' ensure long-term stability?

**NEUTRAL**

**Maintained**

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## A critical feature; but future effect cannot be overestimated

The co-existence of competition and cooperation ("coopetition") helped the China cement industry achieve unprecedented success in the past three years by letting cement producers avoid unnecessary competition. However, its future effect should not be overstated. It's not a sustained guarantee of a mildly competitive environment, and its success will be conditional and unstable. Looking ahead, we see more challenges arising that could undermine the effect of coopetition and consequently threaten its well-being. Although the market in 1H19 remained strong and most cement players should record solid performance, we are cautious on the outlook of the sector due to deterioration in supply-demand dynamic and a potential disintegration of industry coopetition. Maintain NEUTRAL.

## Success of coopetition sits on the coinciding of five conditions

From a case study of previous successes and failures of industry coopetition, we conclude that success depends on five key conditions: 1) high market concentration ratio; 2) firm determination of leading producer in carrying out rational competition; 3) strong competitiveness and market influence possessed by leading producers; 4) stable supply-demand dynamic; and 5) difficult access for existing or potential outsiders. The unprecedented favorable outcome currently enjoyed also owes to strong property market in 2016-2018, tightened off-peak production suspension policy, greater consensus on business philosophy after the arduous 2014-2015 and largely lifted market concentration rate amidst the backdrop of supply-side reforms, which are subject to changes ahead.

## Three challenges that may break coopetition down

Although the dysfunction of cement industry coopetition only took place in select regional markets such as northeast China and Guizhou so far, three challenges ahead may cause a potential overall breakdown going forward: 1) accelerating new capacity addition, mostly in the name of capacity replacement; 2) reduced demand on the ending of the unprecedented bull-cycle for property market coupled with continued tightening of control of local government implicit debt; and 3) widening price gap between regional markets, which will attract more outsiders to free-ride on the achievement of regional industry coopetition.

## Stability hard to achieve; de-capacity an essential pre-requisite

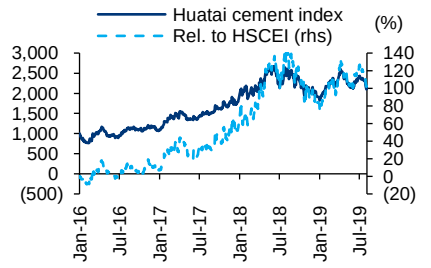
At the current stage, we believe the cement industry will continue to retain its cyclical nature, and industry coopetition still does not assure long-term stable profitability. To ensure more stable industry coopetition and the long-term welfare of the cement industry, the establishment of a mechanism for industry de-capacity should be an indispensable pre-requisite. Otherwise, a structural decline in demand will eventually make producers find less incentive to carry on industry coopetition, as was the case in the northeast China market. In developed countries in which market concentration ratio is much higher and the practice of industry coopetition has a much longer history, real stability is also hard to achieve, and it might take years for producers to re-balance the market before profit margin returns to a more stabilized level.

## Stock recommendations

| Company | Code | TP (HKD) | Rating |
|---|---|---|---|
| Conch Cement | 914 HK | 45.0 | HOLD |
| BBMG | 2009 HK | 3.4 | BUY |
| CR Cement | 1313 HK | 7.6 | HOLD |
| CNBM | 3323 HK | 7.6 | HOLD |

Source: Huatai HK Research estimates

## Sector performance




Source: Huatai HK Research estimates

# Contents

## Investment thesis

Industry coopetition, the co-existence of competition and cooperation among producers, has become a unique and important characteristic for the China cement industry. It allows producers to avoid unnecessary competition and enables the whole industry to gain better profitability. Together with other favorable factors — including stable demand, well-controlled supply addition and most importantly, off-peak production suspension — the cement industry achieved record-high profitability in 2018 despite the government not allocating any subsidies for industry to cut excess supply (unlike coal and steel).

Is this to say that the cement industry has finally found a way to rid itself of its cyclical nature and achieve sustainable stable profitability? We think it is too hasty to draw such a conclusion. We believe industry coopetition is still conditional and very unstable. The successful coopetition in recent years is supported by the coinciding with other favorable factors, and there is no guarantee of similar success in the future.

Looking at previous success and a breakdown of cement industry coopetition, we found five key conditions for industry coopetition to succeed: 1) high market concentration ratio; 2) firm determination of leading producer in carrying out rational competition; 3) strong competitiveness and market influence possessed by leading producers; 4) stable supply-demand dynamic; and 5) difficult access for existing or potential outsiders. A deterioration in either one of the five conditions could undermine the effectiveness of coopetition.

In 2H19-2020E, we see quite a few factors that may undermine the success of cement industry coopetition: 1) falling overall demand, mainly due to the significantly weakened property market coupled with limited room for infrastructure boost with tight control of local government implicit debt; 2) accelerating supply addition, mostly involving capacity replacement using zombie capacity; and 3) widening cement price gap between previously unconnected regional markets, which will increase inflow from outsiders. A potentially less-fruitful outcome is likely to shake the confidence of producers promoting coopetition. This is a self-reinforcing process which is likely to eventually lead to a complete breakdown in industry coopetition

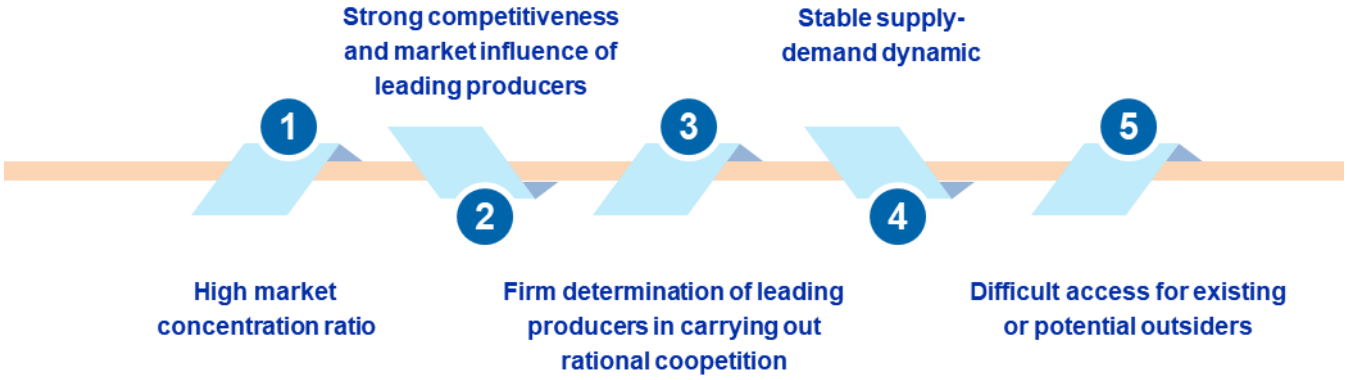
In developed countries in which industry coopetition has been practiced for a much longer period of time, the result is not always perfect either. Whenever there is a major change in supply-demand dynamic, industry coordination seems to fail to help, and it may take years before industry profitability gradually returns to a “stabilized level”.

To achieve long-term well-being for the China cement industry, capacity closure remains a crucial task. Otherwise, with demand potentially stepping down structurally (northeast China is a typical case), industry coopetition will be unable to help either and will eventually fail. Unfortunately, we see the opposite is happening. The lucrative cement price has invited many new expansionary projects, mostly in the name of capacity replacement.

We maintain NEUTRAL on the China cement sector as we do not expect industry coopetition to save the market. We expect the cement industry to retain its cyclical nature. Supply-demand dynamic will remain a key determinant for industry well-being, at least at the current stage.

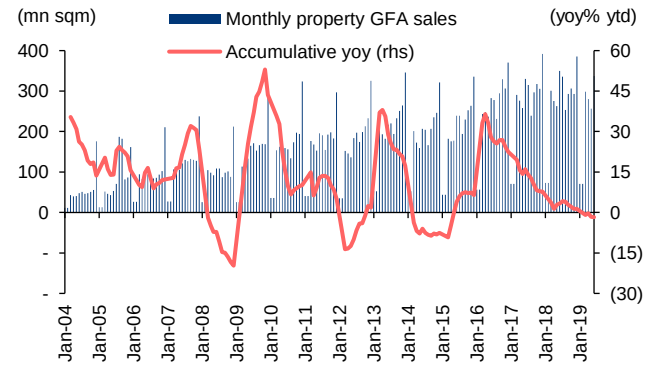
## Key charts

**Fig.1. Five fundamentals for successful cement industry coopetition**



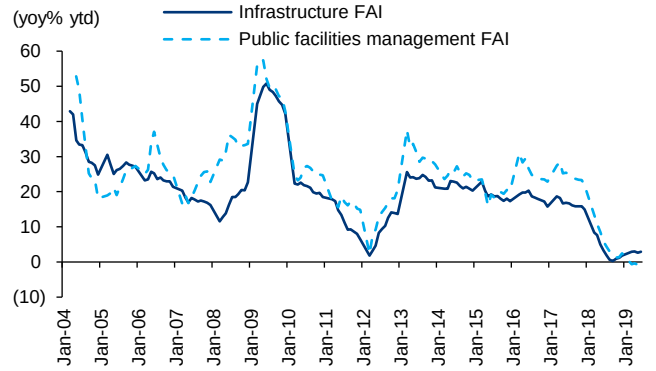

Source: Huatai HK Research

**Fig.2. Support from property sector set to weaken**



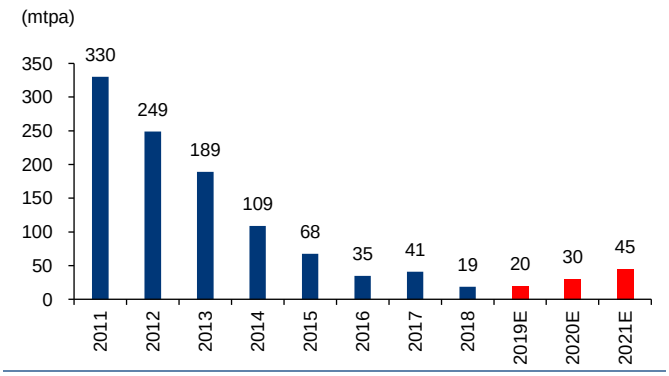

Source: NBS, Wind, Huatai HK Research

**Fig.3. Infrastructure FAI harder to boost than before**



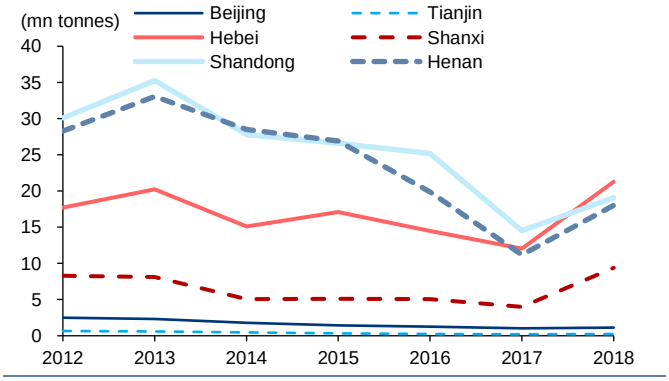

Source: NBS, Wind, Huatai HK Research

**Fig.4. Capacity addition accelerating again**



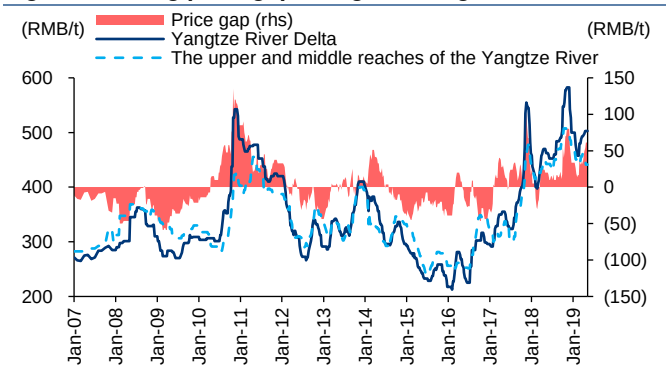

Source: Company data, Digital Cement, Huatai HK Research estimates

**Fig.5. No more room for further de-production**



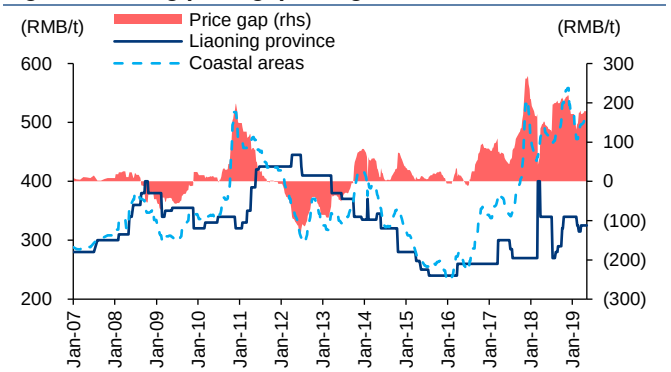

Note: clinker production during the heating season (November-March)
Source: Digital Cement, Huatai HK Research

**Fig.6. Widening price gap along the Yangtze River**



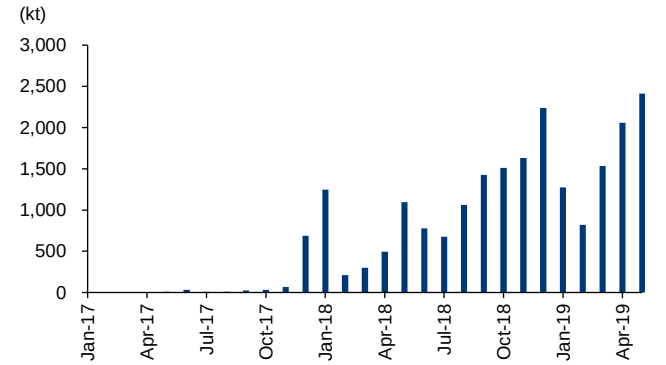

Source: Digital Cement, Huatai HK Research

**Fig.7. Widening price gap along coastal areas**



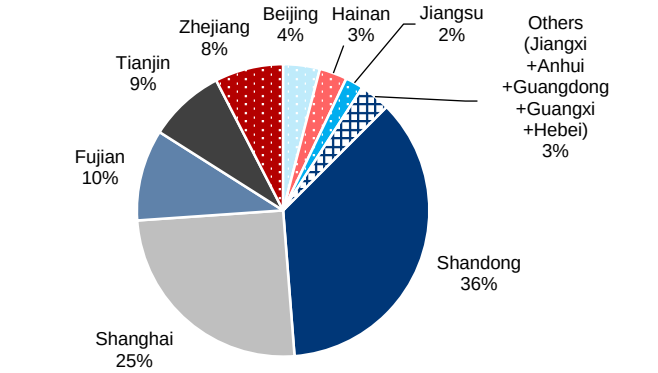

Source: Digital Cement, Huatai HK Research

**Fig.8. Monthly clinker imports**



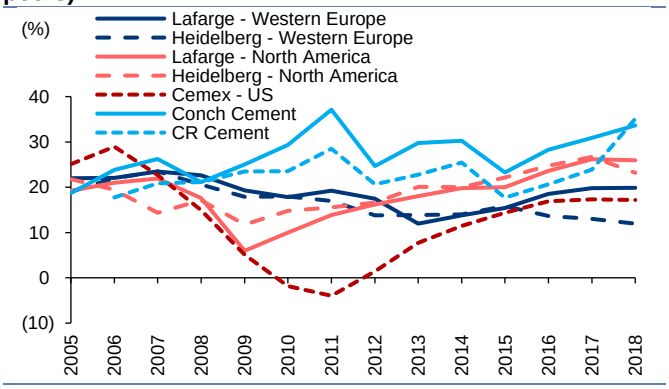

Source: China Customs, Digital Cement, Huatai HK Research

**Fig.9. Clinker imports by province (2018)**



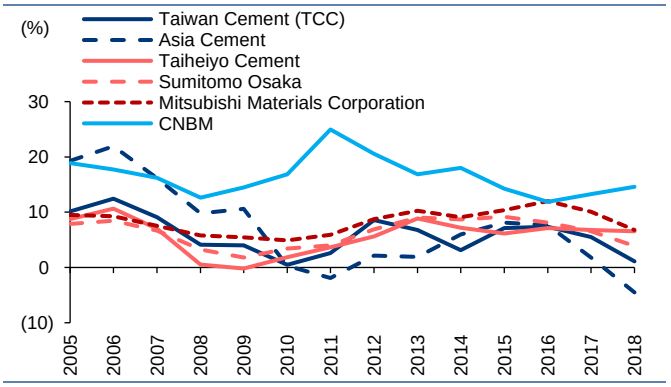

Source: China Customs, Digital Cement, Huatai HK Research

**Fig.10. Stability hard to achieve (EBITDA margin for peers)**



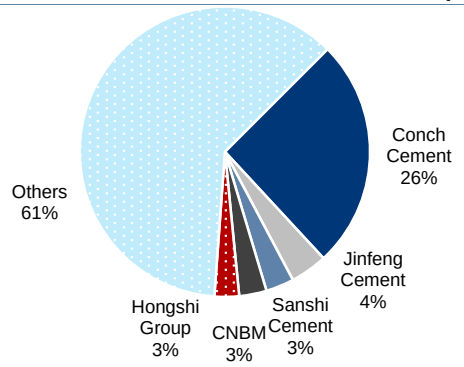

Source: Company data, Huatai HK Research

**Fig.11. Stability hard to achieve (OP margin for peers)**



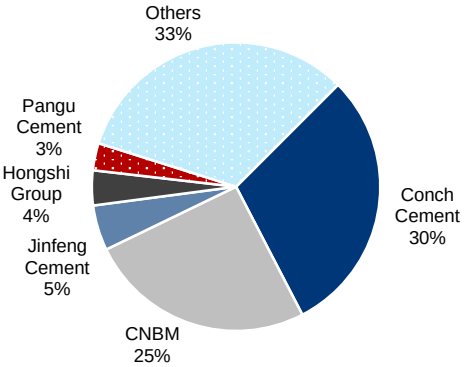

Source: Company data, Huatai HK Research

**Fig.12. East market without CNBM consolidation (2009)**



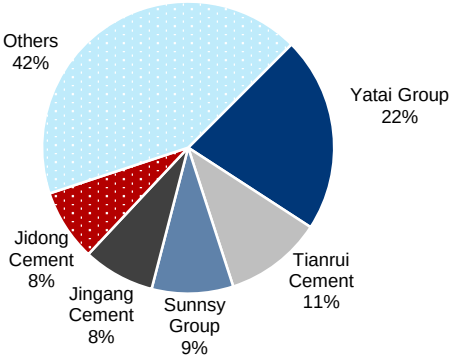

Source: Digital Cement, Geography Cement, Huatai HK Research

**Fig.13. East market with CNBM consolidation (2009)**



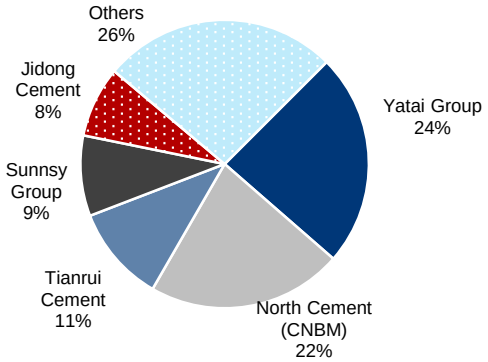

Source: Digital Cement, Geography Cement, Huatai HK Research

**Fig.14. Northeast without CNBM consolidation (2012)**



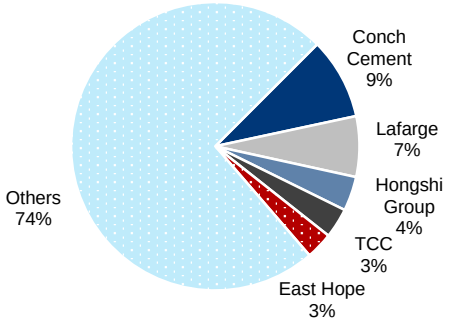

Source: Digital Cement, Geography Cement, Huatai HK Research

**Fig.15. Northeast with CNBM consolidation (2012)**



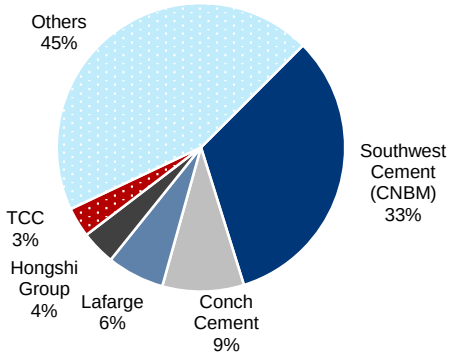

Source: Digital Cement, Geography Cement, Huatai HK Research

**Fig.16. Southwest without CNBM consolidation (2013)**




Source: Digital Cement, Geography Cement, Huatai HK Research

**Fig.17. Southwest with CNBM consolidation (2013)**

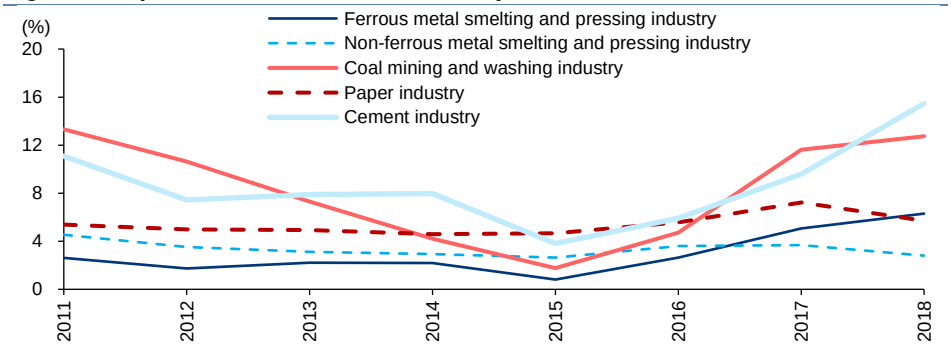



Source: Digital Cement, Geography Cement, Huatai HK Research

## Industry coopetition not the only game changer

In 2018, the cement industry saw record-high profitability of RMB154bn, with profit continuing to edge up to around RMB82.5bn (+20% yoy) in 6M19. This is a remarkable achievement, especially considering the fact that the cement industry has not received any financial subsidies from the central government as part of the supply-side reforms, unlike the steel or coal industries.

**Fig.18. Comparison: returns on sales of major industries in China**

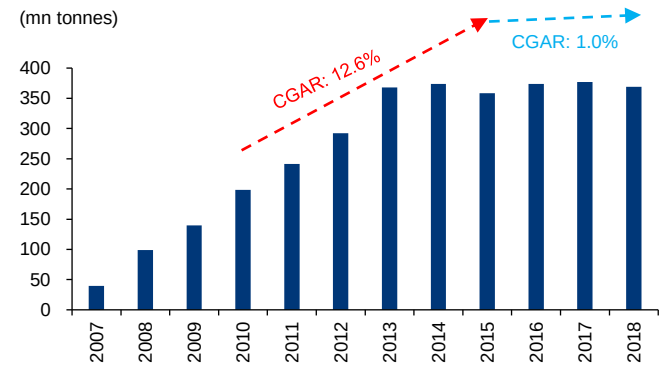



Source: NBS, Wind, China Paper Association, China Cement Association, Digital Cement, Huatai HK Research

Industry coopetition played an important part in this achievement. The arduous 2014-2015 period made cement producers realize that competing merely on price could only lead to a dead end. Strong volume expansion usually does not come with profitability, especially with demand entering a plateau period. Maintaining a stable cement price can help the whole industry avoid unnecessary competition and brings more opportunities to work on necessary upgrades on technology and environmental protection. Major producers started to form strategic alliance to find more common ground to work on. The implementation of coopetition kept improving in most regional markets in China since 2016. This was an unprecedented situation.

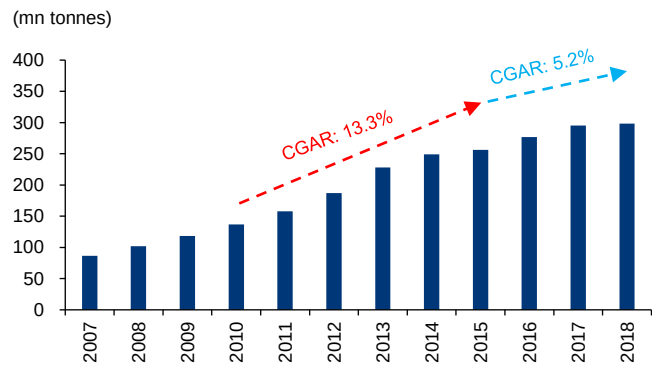
However, the coinciding of record-high profitability and unprecedented industry coopetition could make some investors overestimate the effect on industry coopetition. While industry coopetition played a major part in the past few years, we believe it was not the only reason behind these achievement. Several other factors also helped: 1) stable overall demand since 2016-1H19; 2) supply addition was mostly muted; and 3) more importantly, off-peak suspension turned production discipline from voluntary to compulsory. Neglecting these favorable factors may lead us to overestimate the impact of industry coopetition.

**Fig.19. Cement sales: CNBM + Sinoma**



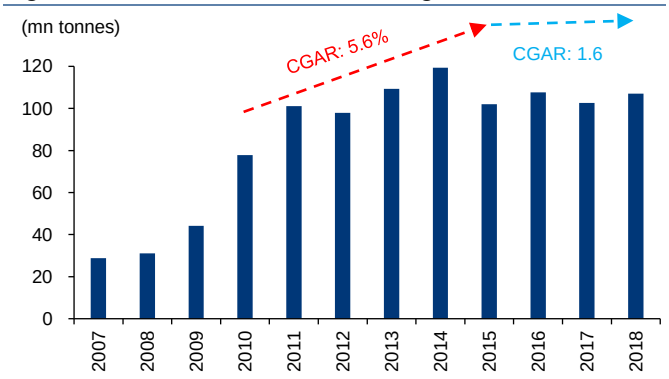

Source: Company data, Huatai HK Research

**Fig.20. Cement sales: Conch Cement (self-produced)**



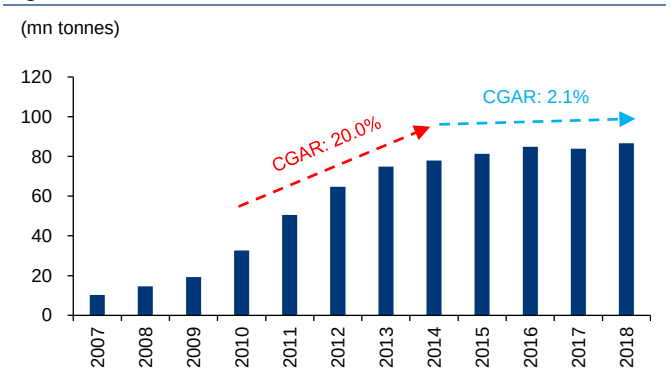

Source: Company data, Huatai HK Research

**Fig.21. Cement sales: BBMG + Jidong Cement**




Source: Company data, Huatai HK Research

**Fig.22. Cement sales: CR Cement**

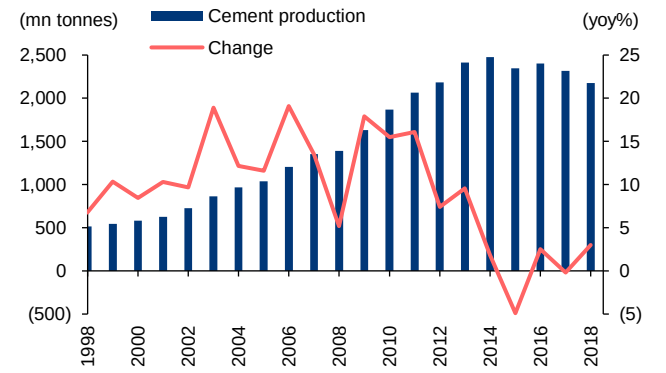



Source: Company data, Huatai HK Research

## Stable demand thanks to strong property market

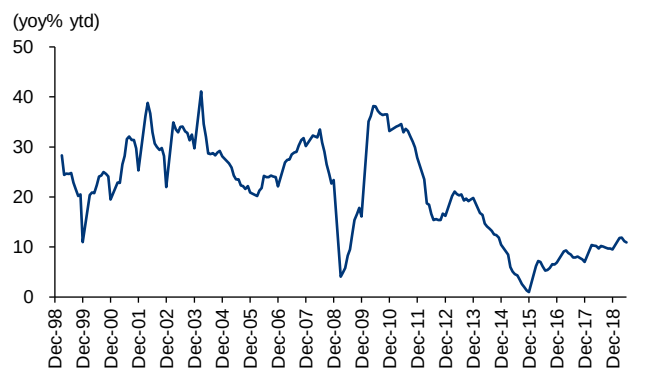
Cement demand in China took a hit with production down by 5.3% yoy in 2015, the first drop since 1990. The recovery in the property market since 2016, under government guidance to "de-inventory", helped prevent cement demand from declining further and stabilized the demand at a high level. The shanty-town redevelopment campaign, as one important measures for helping reduce inventory in lower-tier cities, played a key role in the process, making the recent round of property market bull cycle the longest and strongest in history.

**Fig.23. Cement demand staying stable at a plateau**



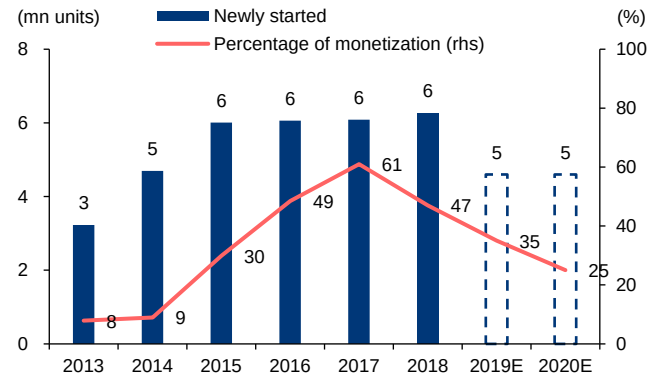

Source: Wind, NBS, Huatai HK Research

**Fig.24. Property development FAI**



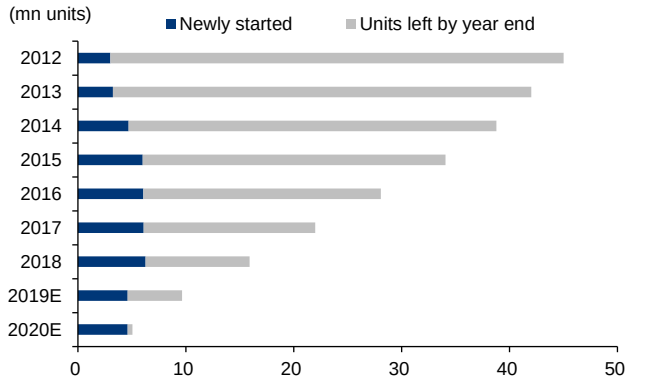

Source: Wind, NBS, Huatai HK Research

**Fig.25. Shanty-town redevelopment plan (2013-2020)**



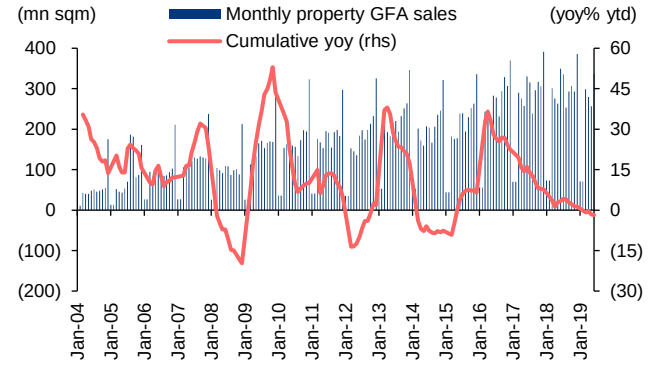

Source: CRIC, MOHURD, Huatai HK Research estimates

**Fig.26. Shanty-town redevelopment process (2012-2020)**



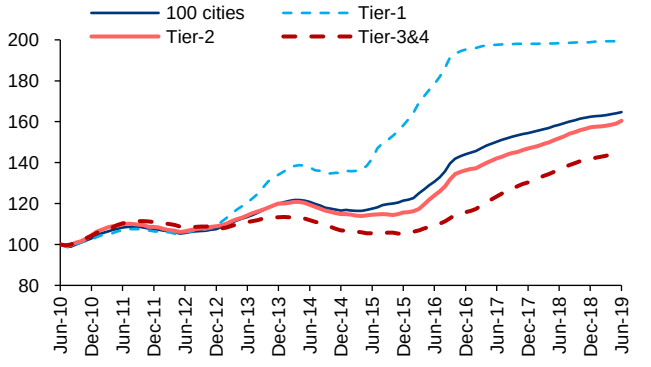

Source: CRIC, MOHURD, Huatai HK Research estimates

**Fig.27. Property GFA sales**




Source: NBS, Wind, Huatai HK Research

**Fig.28. 100 cities: price index for newly built housing**

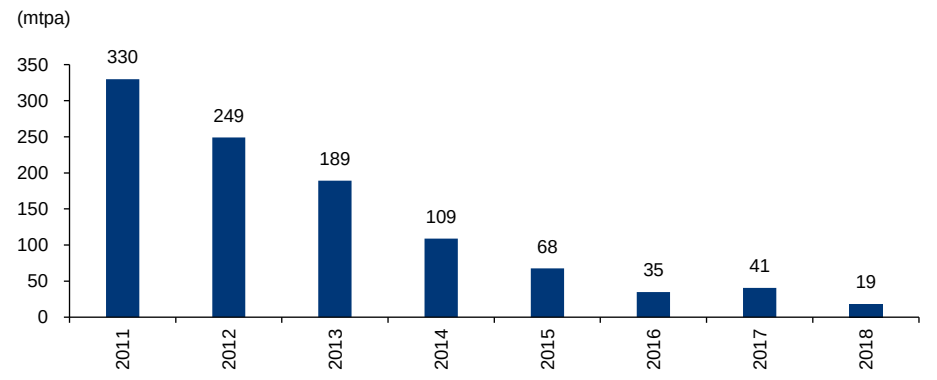



Note: price as at June 2010=100
Source: NBS, Wind, Huatai HK Research

## Supply addition well-controlled

While the central government realized the potential of overcapacity and started to control cement supply addition as early as 2009, it did not really slow it down until 2016. With increasingly tightened policy control, cement capacity addition finally decelerated to 31mn tonnes per annum in 2016-2018 (from 237mn tonnes per annum in 2009-2015). Most of the new capacity commencing operation in 2016-2018 were located in south-central and southwest China, where demand growth was more robust, meaning that the new addition barely undermined the supply-demand dynamic.

**Fig.29. New clinker capacity in 2011-2018**




Source: Company data, Digital Cement, Huatai HK Research estimates

## From voluntary discipline to compulsory discipline

Besides the well-controlled supply and remaining stable demand, off-peak production suspension also made a major push for the cement industry supply-demand rebalancing from 2016-2018.

In December 2014, off-peak production suspension started its trial-run in northeast China and Xinjiang at the request of several members of the Chinese People's Political Consultative Conference (CPCC). With a promising effect achieved, it was later on applied to the whole of northern China in the winter of 2015-2016. But at the time, it remained a voluntary practice for cement producers in these provinces. The actual cut in supply was still limited as full participation was not guaranteed.

In 2017, in order to achieve better air quality in the Beijing-Tianjin-Hebei region, the Ministry of Environment Protection required all cement producers (aside from a few production lines) in 2+26 cities in Beijing, Tianjin, Hebei, Henan, Shanxi and Shandong, to take part in off-peak production suspension in winter (November 2017 to March 2018). This was the time when production discipline turned from voluntary to compulsory. Later on, a few other local governments also required cement producers to curtail production when air quality was bad. Effective output was significantly lowered and re-balanced supply-demand condition was achieved for the cement industry.

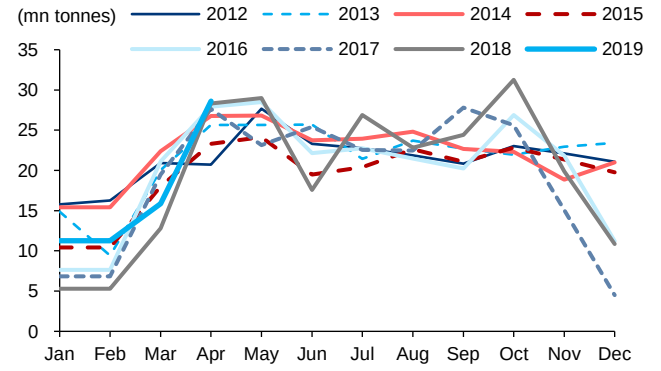
With the help of compulsory production curtailment, industry coopetition also became easier to implement. While production discipline was usually a hard part of industry coopetition, the involvement of the government's administrative order made this part no longer difficult to coordinate.

**Fig.30. The ins and outs of cement industry off-peak suspension**

| | Time | Key policy changes of cement industry off-peak suspension |
|---|---|---|
| **Phase 1** | Jan 2009 | South Cement proposed the concept of "production curtailment for price stabilization" |
| | Mar 2014 | 18 CPPCC members proposed at the Two Sessions to suspend clinker production during the heating season |
| | Dec 2014 | Off-peak suspension started to be implemented in northeast China and Xinjiang, followed by Jing-Jin-Ji, Shandong, Shanxi, and Henan |
| | Nov 2015 | MITT and MEP decided to start the trial implementation of off-peak suspension in north China in the 2015-2016 heating season |
| **Phase 2** | May 2016 | The State Council explicitly asked to set off-peak suspension as one of the methods to resolve the problem of cement overcapacity |
| | Oct 2016 | MITT and MEP issued the arrangement of cement industry off-peak suspension for 2016-2020: full implementation in north China and trial implementation in south China |
| | Oct 2017 | Off-peak suspension was implemented in the "2+26" cities in north China in the 2017-2018 winter season |
| **Phase 3** | Jun 2018 | The State Council decided to implement off-peak suspension in key areas in the heating season, and the Yangtze River Delta and the Fen-wei Plain were involved |
| | Jul 2018 | The State Council decided to implement differentiated off-peak suspension plans |
| | Sep 2018 | MITT, MEE, and NDRC asked to implement differentiated off-peak suspension plans based on local situations |

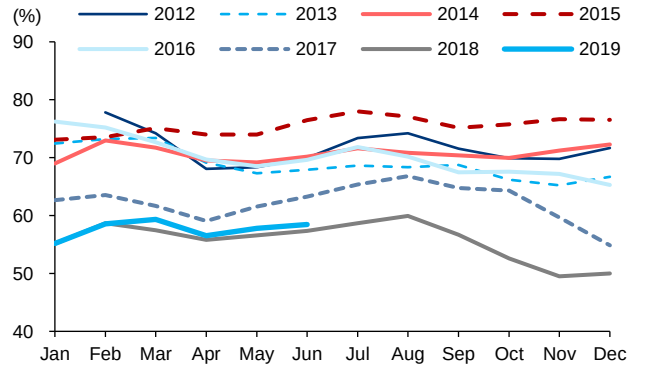
Source: Government websites, Huatai HK Research

**Fig.31. Clinker production: "Jing-Jin-Ji" and "Jin-Lu-Yu"**




Note: Jing-Jin-Ji - Beijing, Tianjin, Hebei; Jin-Lu-Yu - Shanxi, Shandong, Henan
Source: Digital Cement, Huatai HK Research

**Fig.32. Nationwide cement inventory**



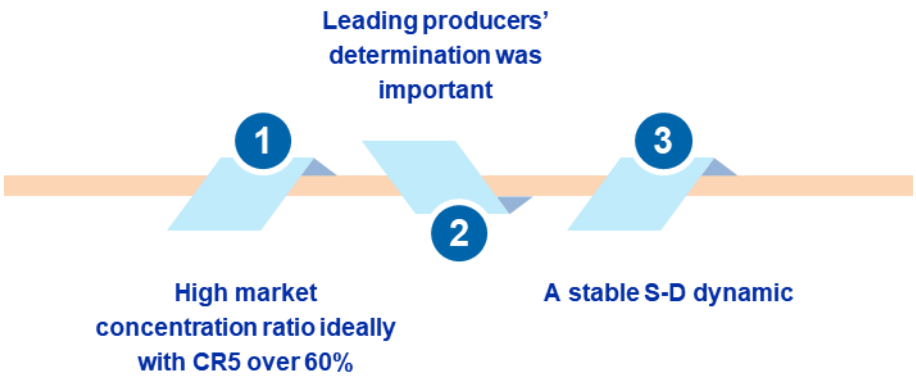

Source: Digital Cement, Huatai HK Research

## Coopetition works sometimes; but it fails too

A case study of what happened in the past helps us better understand the nature and characteristics of cement industry coopetition. We discovered three common facts for successful coopetition: 1) high market concentration ratio ideally with CR5 over 60%; 2) leading producers' determination was important as the implementation of coopetition usually called for a lot of effort and can be very time-consuming; and 3) a stable supply-demand dynamic. On the other hand, we identified from the failed cases three factors that would tear industry coopetition apart: 1) deterioration in supply-demand dynamic, either due to rising supply, weakening demand or the concurrence of both; 2) more outsiders to take a free ride on the result of industry coopetition, usually triggered by widening price difference among different regional markets; and 3) leading players unable or unwilling to act as the key advocator of industry coopetition.

### Three common facts for successful implementation

**Fig.33. Three common factors in successful coopetition**

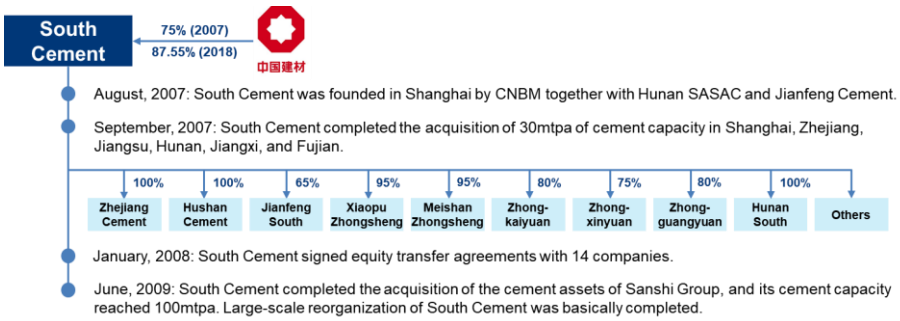



Source: Huatai HK Research

#### Case 1: East China market from 2010-2011

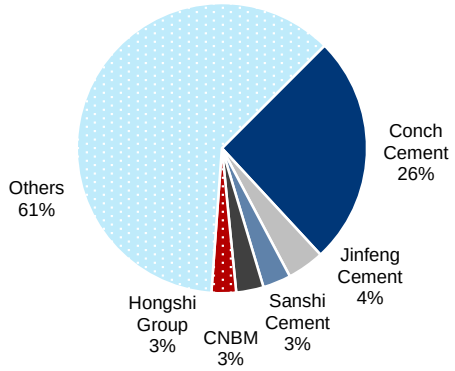
CNBM has been a herald and firm practitioner of industry coopetition. The establishment of the key subsidiary, South Cement, in 2007 was the genesis of the coopetition in the China cement industry. Through large-scale mergers and acquisitions, South Cement acquired over 120mn tonnes of cement capacity by 2009 and significantly lifted market concentration ratio, with CR5 increasing from 39% to 67% in the Yangtze River Delta region, laying solid ground for the promotion of industry coopetition.

**Fig.34. East China: major timeline for large-scale reorganization**



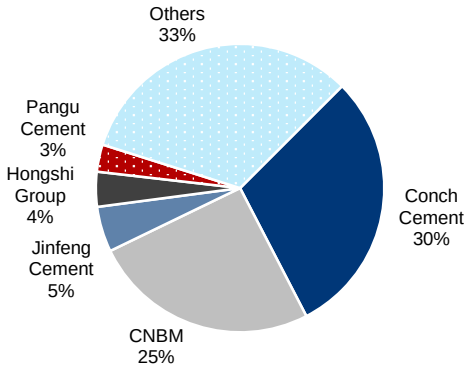

Source: Company data, Huatai HK Research

**Fig.35. East market without CNBM consolidation (2009)**



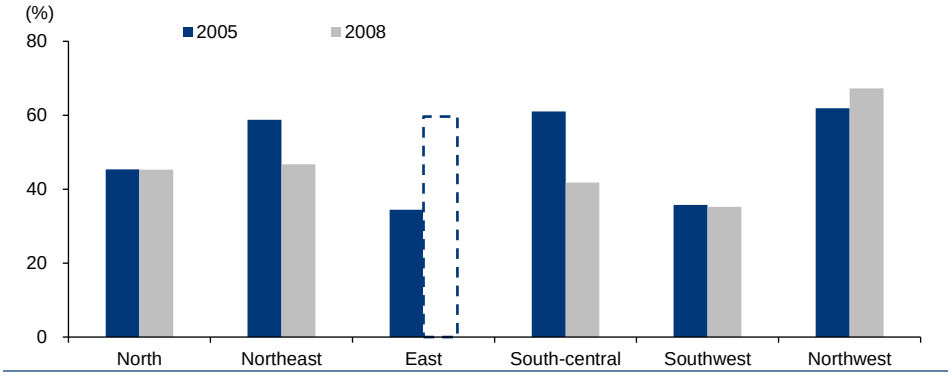

Source: Digital Cement, Geography Cement, Huatai HK Research

**Fig.36. East market with CNBM consolidation (2009)**




Source: Digital Cement, Geography Cement, Huatai HK Research

**Fig.37. CR5 increased in east China while declines occurred in other regions**

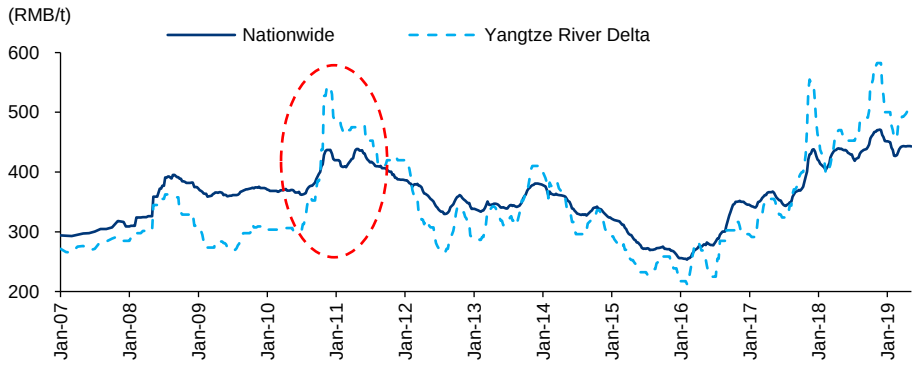



Source: Digital Cement, Geography Cement, Huatai HK Research

Although the lift in market concentration ratio was quick, the success in industry coopetition came slowly. The consolidation on the management level of its acquired subsidiaries took time, and letting other cement producers accept this new idea took longer. Cement price in east China stayed sluggish and remained the lowest among all regional markets until 2H10.

Starting from 2H10, industry coopetition finally paid off for the first time, with market price in east China market significantly outperforming other regions, with: 1) the business philosophy of industry discipline more widely accepted and better implemented among industry peers; and 2) improved supply-demand condition achieved, helped by the government stimulus package and power rationing. Cement price in east China became the highest regional market price in 2010, and this condition lasted till the end of 2011. From July 2010 to December 2011, cement price in the Yangtze River Delta (Shanghai, Jiangsu, Zhejiang and Anhui) was up by RMB122/t (40%), while national average cement price was up by RMB26/t (7%) during the period.

**Fig.38. P.O42.5 cement price: nationwide vs Yangtze River Delta**




Source: Digital Cement, Huatai HK Research

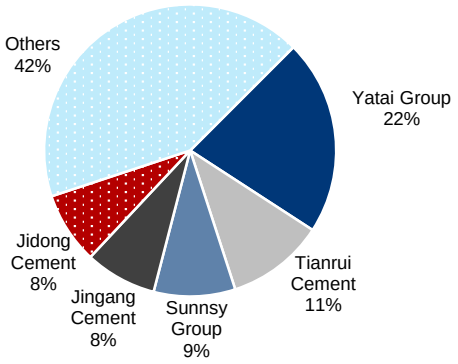
### Case 2: Northeast China market from 2011-2014

With the endeavor in east China market paying off, CNBM kicked off the promotion of industry coopetition on a national level. The northeast China market was the next target. By 2012, CNBM had acquired 32mn tonnes of cement capacity. CR5 in northeast China was lifted to 74% from 58% before the consolidation. For Jilin and Heilongjiang provinces, the market was even better consolidated, with CR5 at 93% after consolidation (71% before consolidation).

**Fig.39. Northeast China: major timeline for large-scale reorganization**

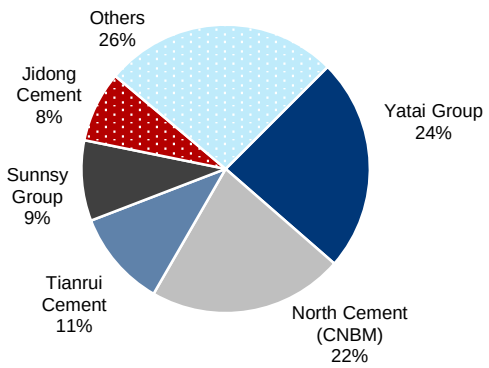

Source: Company data, Huatai HK Research

**Fig.40. Northeast without CNBM consolidation (2012)**



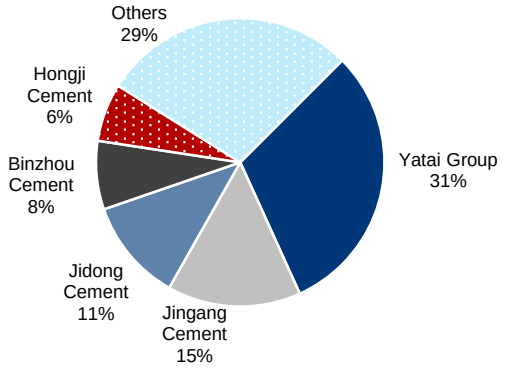

Source: Digital Cement, Geography Cement, Huatai HK Research

**Fig.41. Northeast with CNBM consolidation (2012)**



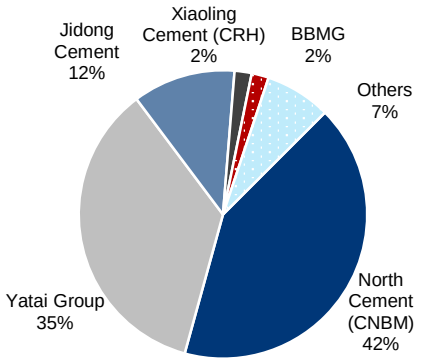

Source: Digital Cement, Geography Cement, Huatai HK Research

**Fig.42. Jilin and Heilongjiang before consolidation (2012)**




Source: Digital Cement, Geography Cement, Huatai HK Research

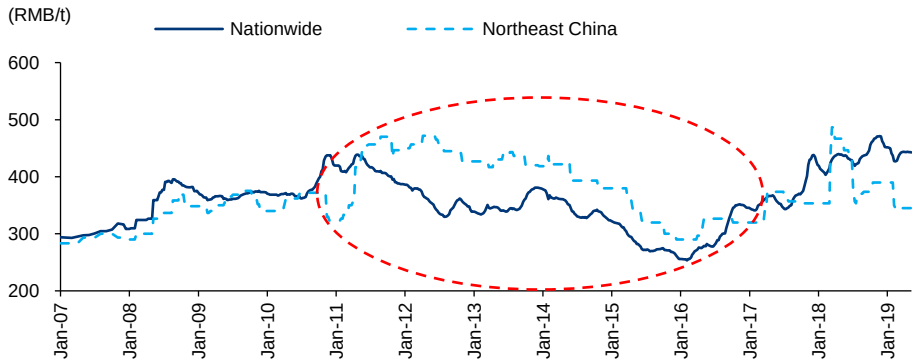
**Fig.43. Jilin and Heilongjiang after consolidation (2012)**




Source: Digital Cement, Geography Cement, Huatai HK Research

The previous success made the acceptance of industry coopetition come much sooner this time. Since the beginning of 2011, even before the market integration was mostly finished, industry coopetition was already well accepted and cement price in northeast China started to largely outperform other regions. While most other regions started to suffer the pain of slowing demand as the central government was paying more attention to local government debt issues, cement price in northeast China was significantly hiked and soon overtook east China to boast the highest regional cement price in China. From the beginning of 2011 till the end of 2014, cement price in northeast China was hiked by RMB44/t (+13%), while national average cement price was down by RMB103/t (-24%) during the period.

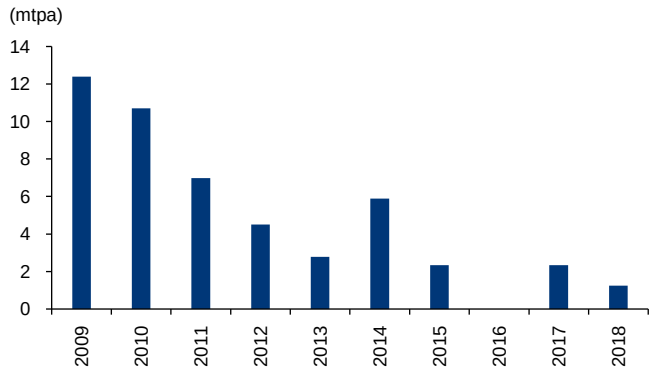
**Fig.44. P.O42.5 cement price: nationwide vs northeast China**




Source: Digital Cement, Huatai HK Research

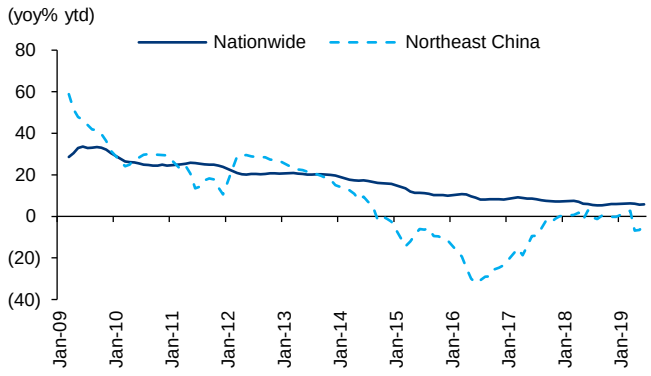
During 2011-2014, new capacity addition in northeast China averaged 5.5mn tonnes per annum, a significant deceleration compared with 16mn tonnes per annum in the previous two years. On the demand side, although weakness started to emerge in northeast China, with FAI growth slowing down (from a CAGR of 30% in 2009-2010 to a CAGR of 12% in 2011-2014), much faster than other regions (national average from 27% to 21%), it was still fair enough to maintain a roughly stable supply-demand dynamic.

**Fig.45. Northeast China: clinker capacity addition**




Source: Digital Cement, Geography Cement, Huatai HK Research

**Fig.46. FAI growth: nationwide vs northeast China**

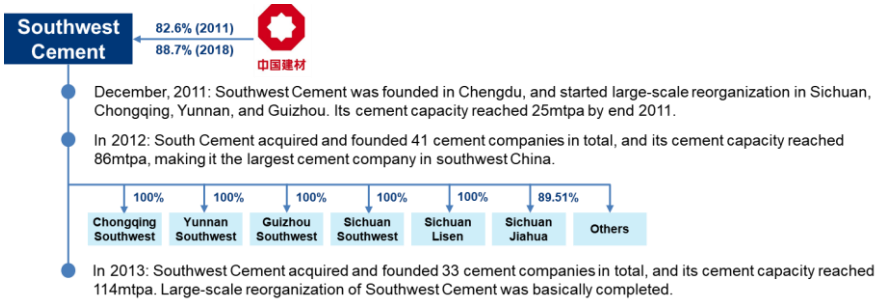



Source: NBS, Wind, Huatai HK Research

### Case 3: Southwest China market in 2013-2014

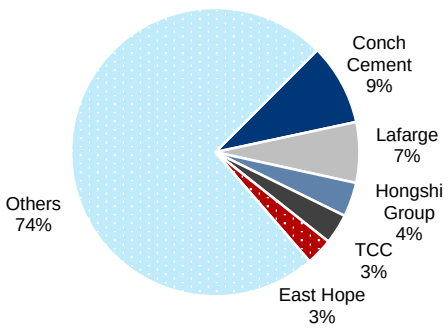
The integration of the southwest China market significantly accelerated from 2012, when CNBM established Southwest Cement to be a leading market consolidator in the region. Before 2011, the southwest China market was an extremely scattered market with CR5 of only 25%. With the help of CNBM's consolidation, CR5 doubled to 55% by the end of 2013. However, despite the big increase, it was still a more scattered market compared with CNBM's previous accomplishments in east China and northeast China. Supply growth roughly met demand growth in the southwest China market in 2013-2014, while total new capacity addition was 78.5mn tonnes and incremental demand was 74.5mn tonnes, maintaining a stable supply-demand dynamic.

**Fig.47. Southwest China: major timeline for large-scale reorganization**



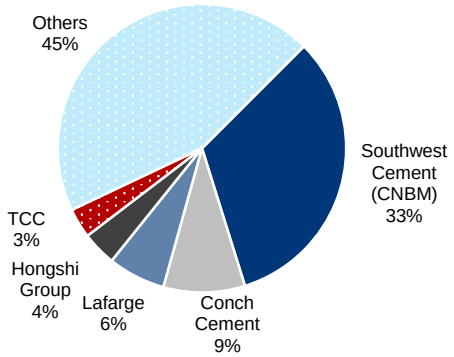

Source: Company data, Huatai HK Research

**Fig.48. Southwest without CNBM consolidation (2013)**




Source: Digital Cement, Geography Cement, Huatai HK Research

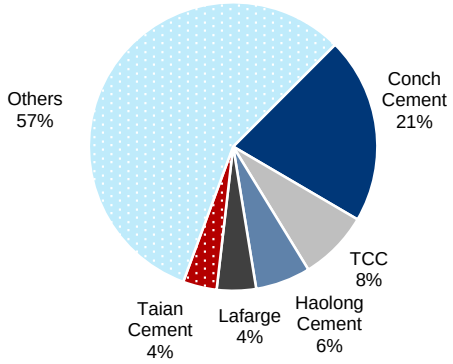
**Fig.49. Southwest with CNBM consolidation (2013)**




Source: Digital Cement, Geography Cement, Huatai HK Research

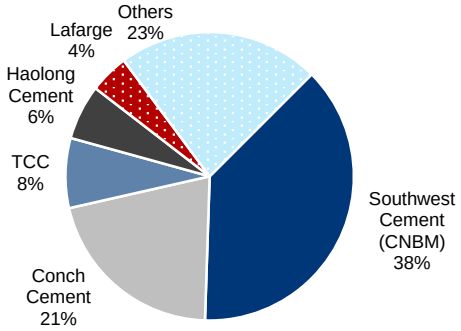
Unlike the plains of east and northeast China, the mountainous terrain in the southwest China made sub-regional markets in southwest China more independent from each other, resulting in a rather different result in market consolidation. The Guizhou market saw the biggest improvement in market concentration ratio, with CR5 raised from 43% to 77% after the market integration. Improvement in Chongqing was much less obvious, with CR% only raised from 51% to 60%.

**Fig.50. Guizhou without CNBM consolidation (2013)**



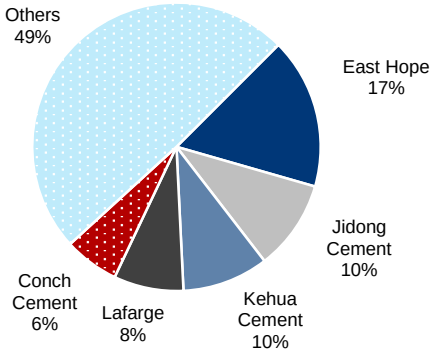

Source: Digital Cement, Geography Cement, Huatai HK Research

**Fig.51. Guizhou after CNBM consolidation (2013)**



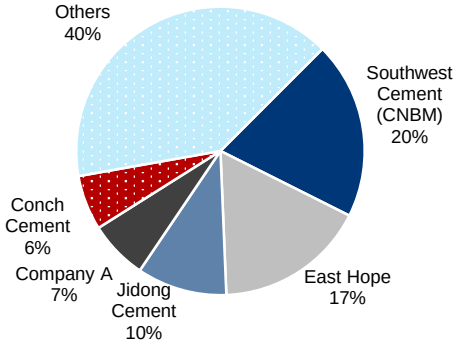

Source: Digital Cement, Geography Cement, Huatai HK Research

**Fig.52. Chongqing without CNBM consolidation (2013)**




Source: Digital Cement, Geography Cement, Huatai HK Research

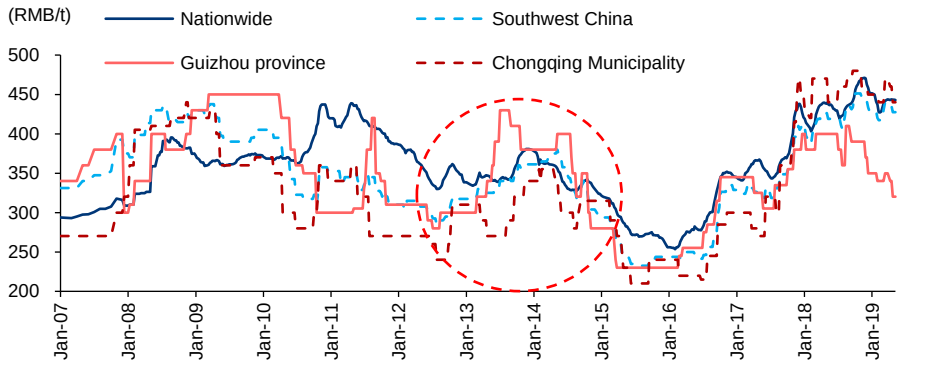
**Fig.53. Chongqing with CNBM consolidation (2013)**




Source: Digital Cement, Geography Cement, Huatai HK Research

As a result of better-consolidated market structure, industry coopetition and cement price also performed much better in Guizhou. From January 2013 to July 2014, the Guizhou market was the best performing regional market in China, with cement price up by RMB100/t (+33%), while national average cement price was down by RMB15/t (-4%) during the period. On the other hand, performance in the Chongqing market was much less impressive, with cement price down by RMB10/t (-3%).

**Fig.54. P.O42.5 cement price: nationwide vs southwest China**

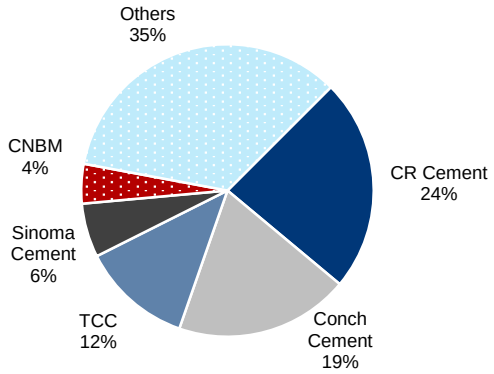



Source: Digital Cement, Huatai HK Research

### Case 4: South China market since 2016

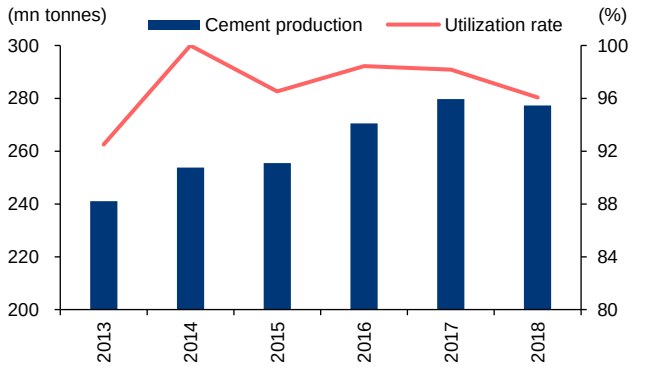
Unlike the aforementioned three cases, market structure in south China (Guangdong and Guangxi) was already concentrated before 2016, with CR5 at 65%. Supply-demand condition was also relatively more stable than other regions, with demand growth outpacing supply addition for most of the time, enabling most cement producers to run at high utilization rates.

**Fig.55. Market concentration: south China (2015)**




Source: Digital Cement, Geography Cement, Huatai HK Research

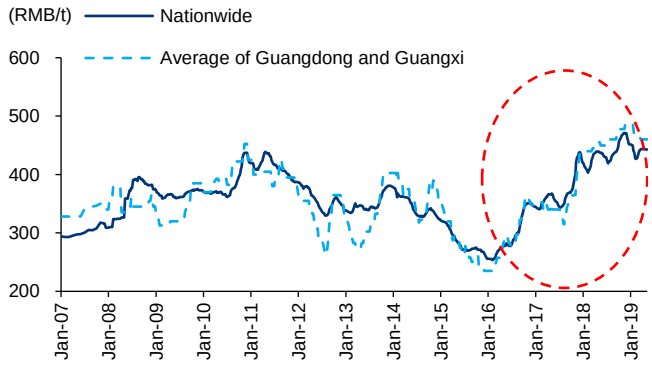
**Fig.56. Production & utilization: south China**




Source: Digital Cement, Geography Cement, Huatai HK Research

Despite the good market structure and stable supply-demand dynamic, industry coopetition in south China was absent before 2016. Cutting price was usually the first choice for producers when the market showed fluctuation. However, the extremely challenging 2015 made leading producers realize that the price war did not squeeze out other competitors and only made the whole industry make less profit. In June 2016, the two leading producers, Conch Cement and CR Cement, formed a strategic alliance to focus more on cooperation rather than mere competition. In 2016, cement price in south China rebounded by RMB111/t (+34%), ahead of other regional markets, while national average cement price rebounded by RMB83/t (+31%). The two producers have been determined in maintaining coopetition ever since.

**Fig.57. P.O42.5 cement price: nationwide vs south China**



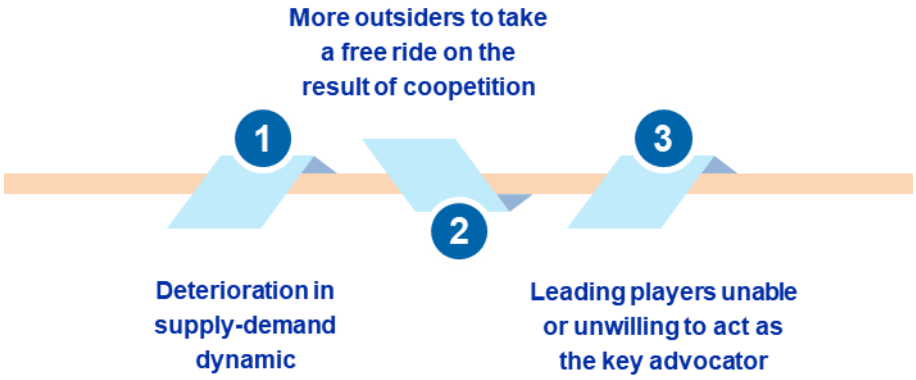

Source: Digital Cement, Huatai HK Research

**Fig.58. Strategic cooperation between Conch and CRC**


Source: Digital Cement, Huatai HK Research

## Three factors that would tear industry coopetition apart

**Fig.59. Three factors that would tear industry coopetition apart**

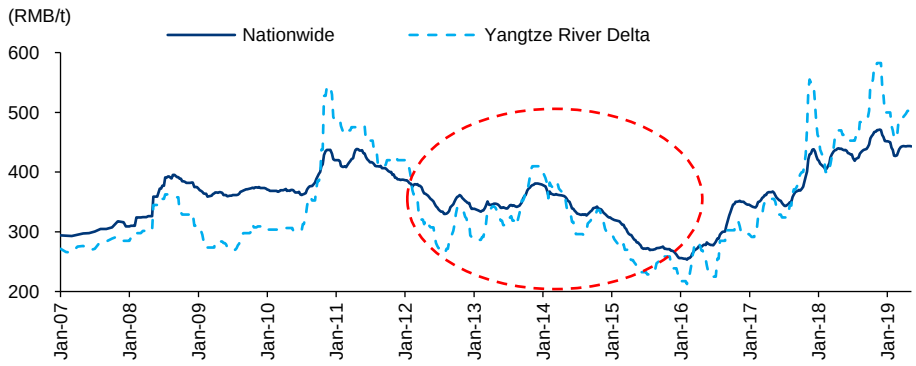



Source: Huatai HK Research

### Case 5: East China market in 2012-2015

Although the success in the east China market was remarkable in 2010-2011, it did not last very long. Cement price in the Yangtze River Delta region fell by RMB100/t (-24%) in 2012, a pullback bigger than in other regional markets, while national average cement price was down by RMB39/t (-10%). In the next three years (2013-2015), cement price in the Yangtze River Delta region continued to fall by another RMB77/t (-24%), while national average cement price was down by RMB83/t (-24%) during the period.

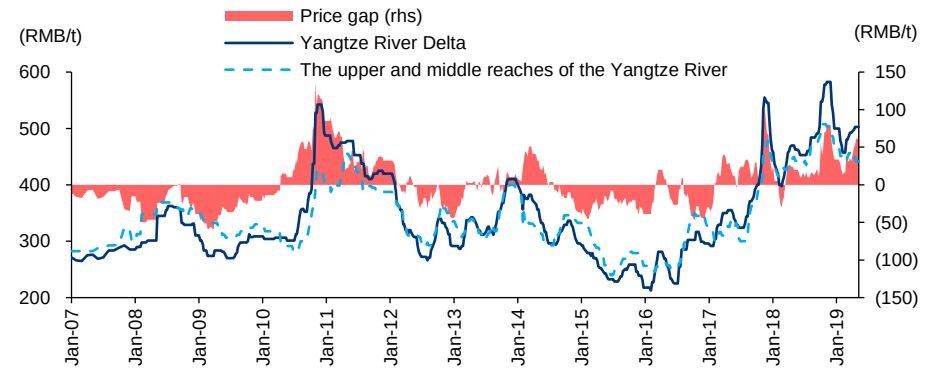
**Fig.60. P.O42.5 cement price: nationwide vs Yangtze River Delta**




Source: Digital Cement, Huatai HK Research

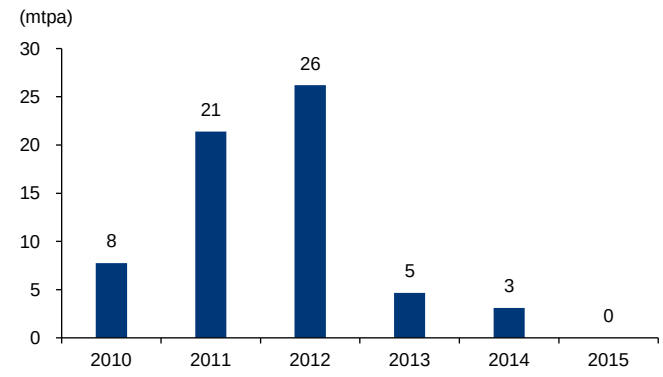
Together with the freefall in cement price in 2012, industry coopetition also collapsed. Quite a few changes hit the market at that time, making it difficult for producers to corporate with each other: 1) demand growth started to fall as the impact from the RMB4tn stimulus package started to fade; 2) strong new capacity addition in 2011-2012 in the region, with 31mn tonnes of new supply added per annum on average (16mn tonnes per annum in 2009-2010), including three production lines with capacity of over 10,000tpd; and 3) more cement inflow coming into the Yangtze River Delta region, especially from the upstream areas of the river, due to the widening price difference and much lower transportation cost via waterways.

**Fig.61. P.O42.5 Cement price: Yangtze River Delta vs upper and middle reaches**



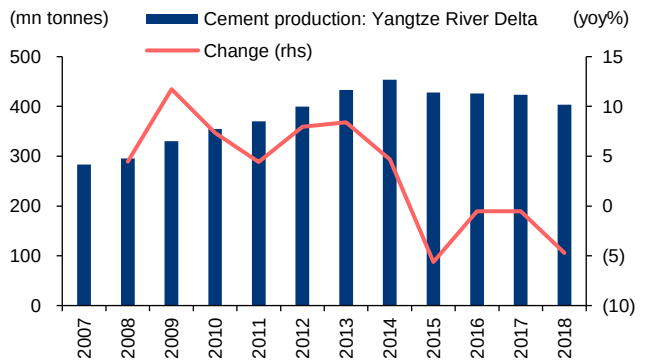

Source: Digital Cement, Huatai HK Research

**Fig.62. Yangtze River Delta: additional clinker capacity**




Source: Company data, Digital Cement, Huatai HK Research

**Fig.63. Yangtze River Delta: cement demand**




Source: Digital Cement, Huatai HK Research

### Case 6: Northeast China market since 2015

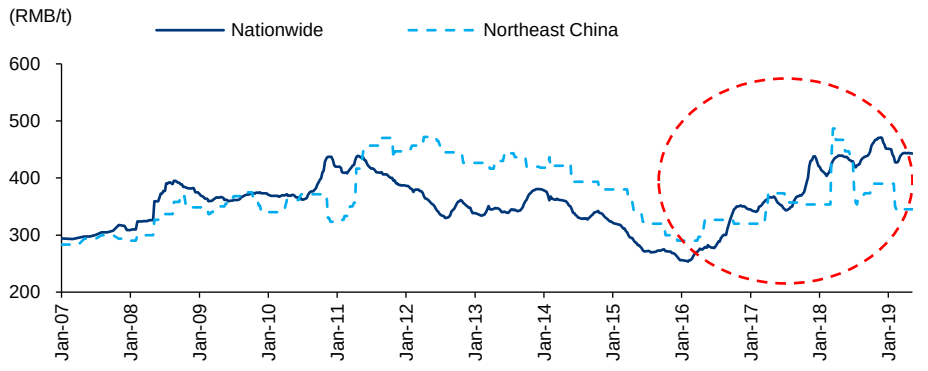
The dysfunction of industry coopetition in northeast China market can be broken down into two phases: 1) 2015-2017, when cement price largely underperformed despite that industry coopetition still existed; and 2) since 2018 till now, when industry coopetition fell apart completely.

Due to the favorable conditions following the establishment of North Cement, which was in turn initiated by CNBM, and given the successful market integration, cement price in northeast China market outperformed that of other regions in 2011-2014. However, heading into 2015, with demand deterioration accelerating, cement price started to fall much more sharply, by RMB80/t (-21%) in 2015 (national average cement price was down by RMB66/t), even though northeast China was the first regional market to implement off-peak production suspension in winter, which was later implemented in more regions and escalated as a government administrative order.

The situation worsened further in 2016-2017, when the cement market enjoyed an industry-wide bottoming-out. Demand continued to fall by a CAGR of 10% in northeast China and cement price again largely underperformed, rebounding by RMB53/t (+18%) while national average price was up by RMB156/t (58%). Although local producers were still trying to maintain industry coopetition in 2015-2017, their efforts did not pay off.

This situation finally came to an end in 2018, with industry coopetition totally breaking down. It started in the Liaoning market, where cement price had been long below that of Jilin and Heilongjiang, and the market was often impacted by cement inflow from Inner Mongolia. As producers in Liaoning had suffered from a low price as well as low utilization rate at the same time, they found industry coopetition less beneficial. Producers in Liaoning started to increase output and sold extra supply to Jilin and Heilongjiang, where cost of transport via highway can be covered by the big price difference, consequently causing a complete breakdown of industry coopetition in northeast China market.

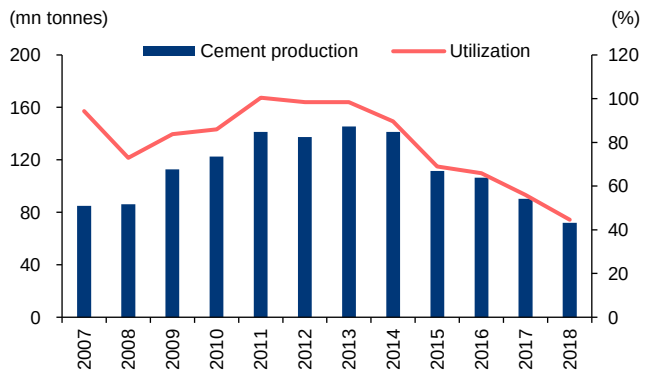
**Fig.64. P.O42.5 cement price: nationwide vs northeast China**




Source: Digital Cement, Huatai HK Research

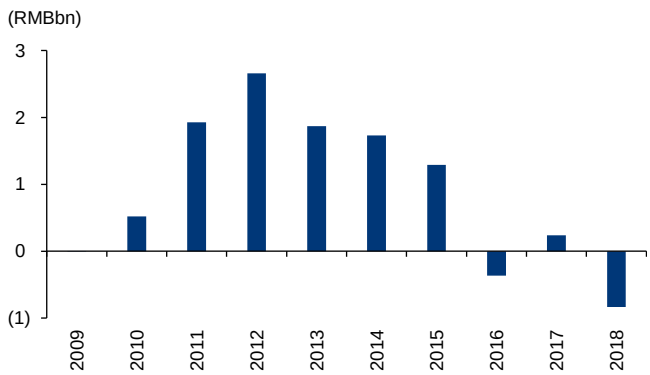
Although the northeast China market enjoyed a very high market concentration ratio and producers had enjoyed the benefits of industry coopetition for a long time, industry coopetition was still overwhelmed by the significantly deteriorated demand (annual production down by 49% in four years), despite producers making serious commitment to production discipline.

**Fig.65. Production & utilization: northeast China**



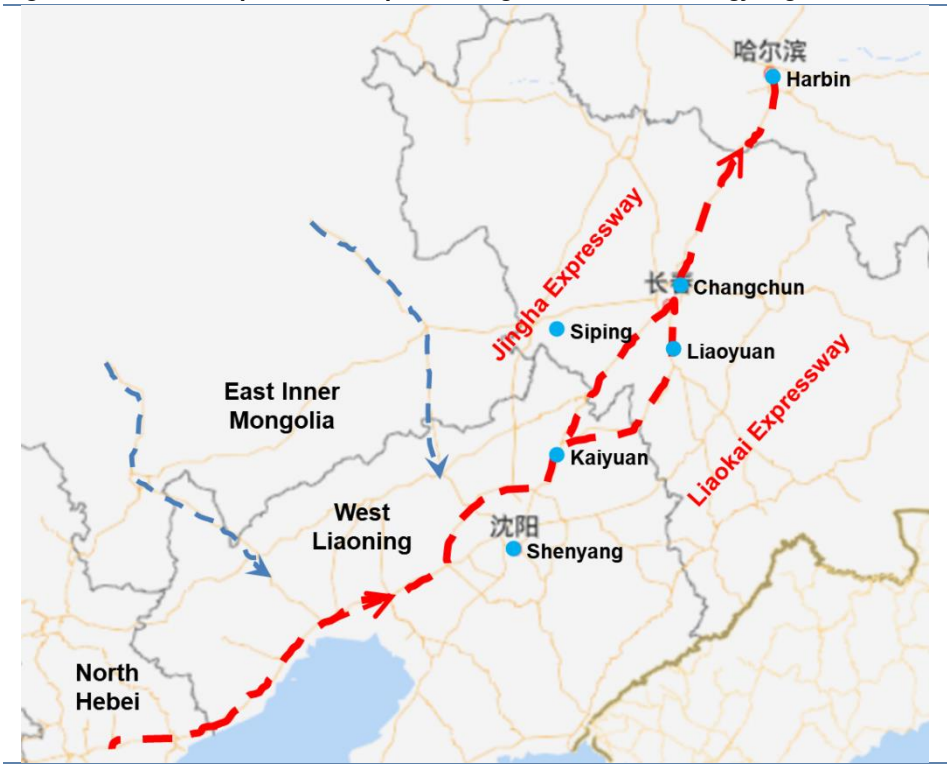

Source: Digital Cement, Geography Cement, Huatai HK Research

**Fig.66. North Cement: operating profit**




Source: Company data, Huatai HK Research

**Fig.67. Cement transportation map: Liaoning to Jilin and Heilongjiang**



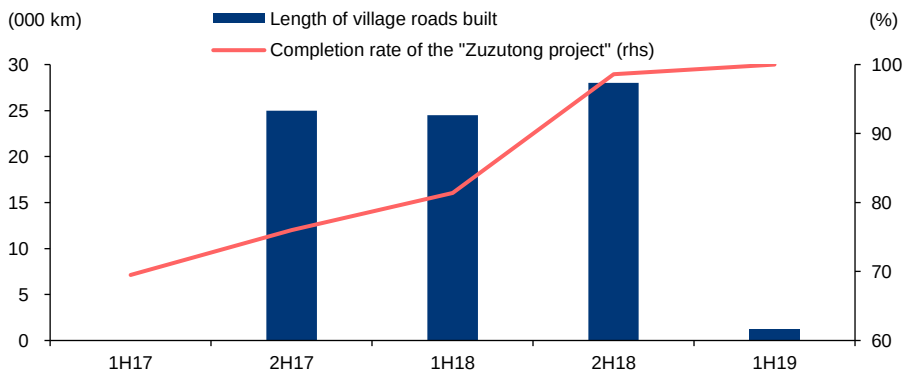

Source: Geography Cement, Huatai HK Research

### Case 7: Guizhou market since 2H18

Until 2H18, industry coopetition was still holding up in Guizhou. Although 35mn tonnes of new supply had been added in this regional market (43% of the existing capacity in 2013) from 2014-2017, after CNBM helped lift market concentration ratio and successfully implement industry coopetition, producers continued to find ways to re-balance the market, thanks to demand remaining solid, which achieved a CAGR of 8.7% during the period.

Strong government expenditure provided key support for the robust demand during the period. Infrastructure investment, which made up nearly 40% of the FAI in Guizhou, was solid at a CAGR of 24% in 2014-2017. The “Zuzutong project” was one of the typical campaigns. Over a period of one-and-a-half years, the “Zuzutong project” helped raise the hardening road coverage rate for villages with over 30 households from 69.5% in June 2017 to 98.6% in 2018.

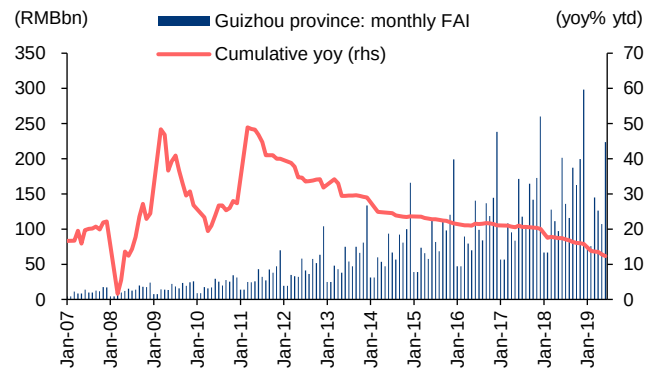
**Fig.68. A glance at the “Zuzutong project” in Guizhou province**




Source: Government websites, Huatai HK Research

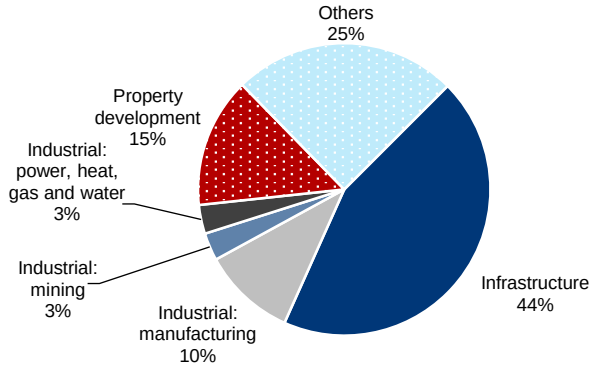
However, with spending failing to match income, the strong growth in infrastructure investment largely depended on debt spending. With tighter control on rising of local government debt coupled with the squeezing of shadow banking, the ability to raise more debt was undermined and infrastructure FAI growth in Guizhou started to drop from 2018; this process further accelerated in 2019.

**Fig.69. Guizhou province: monthly FAI**




Source: NBS, Wind, Huatai HK Research

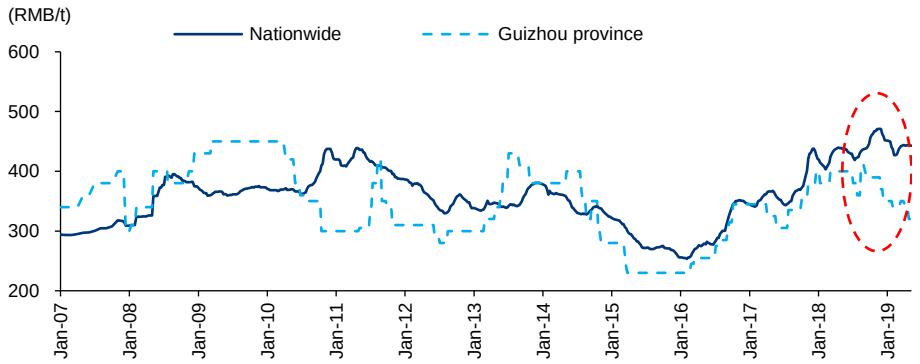
**Fig.70. Guizhou province: FAI by industry (2017)**




Source: Statistics Bureau of Guizhou Province, Huatai HK Research

Cement demand declined in 2018, undermining the key pillar supporting industry coopetition. Cement production was down by 3% in 2018 and by another 8.2% in 5M19. Considering much of the cement produced in Guizhou was sold in other provinces where prices are much higher, the actual contraction in demand should be much bigger. The collapse of coopetition came in 2H18, with cement price down by RMB103/t (26%) so far.

**Fig.71. P.O42.5 cement price: nationwide vs Guizhou province**



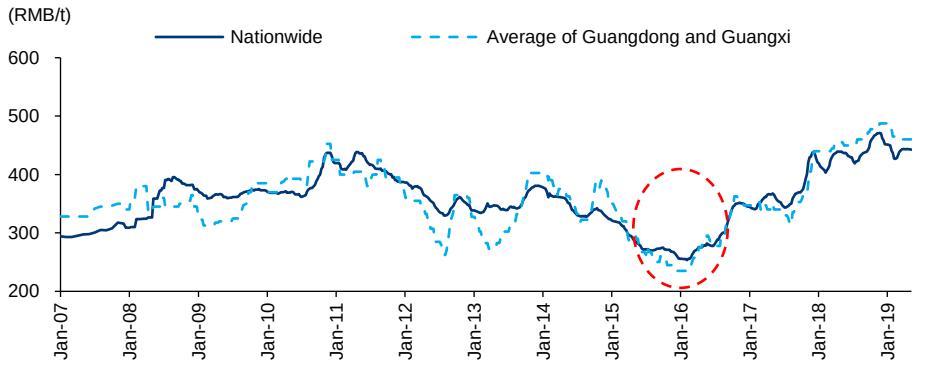

Source: Digital Cement, Huatai HK Research

### Case 8: South China market in 2014-2015

Despite south China enjoying a high market concentration ratio (CR5 at 65%) and good supply-demand dynamic (utilization rate of 99% for 2014 and 95% for 2015), the lack of industry coopetition still triggered a free-fall of cement price in the region in 2014-2015, down by RMB160/t (-40%) during the period, while national average cement price declined by RMB111/t (-29%).

Leading producers' lack of willingness in industry coopetition was the main reason behind the significant drop in cement price during the period. With producers focusing too much on competition instead of cooperation, cutting price usually became the first choice when demand wavered. With leading producers' competitiveness being close to each other, it was very difficult to squeeze others out, leaving largely weakened industry profitability as the only outcome.

**Fig.72. P.O42.5 cement price: nationwide vs south China**




Source: Digital Cement, Huatai HK Research

**Fig.73. Summary of case studies**

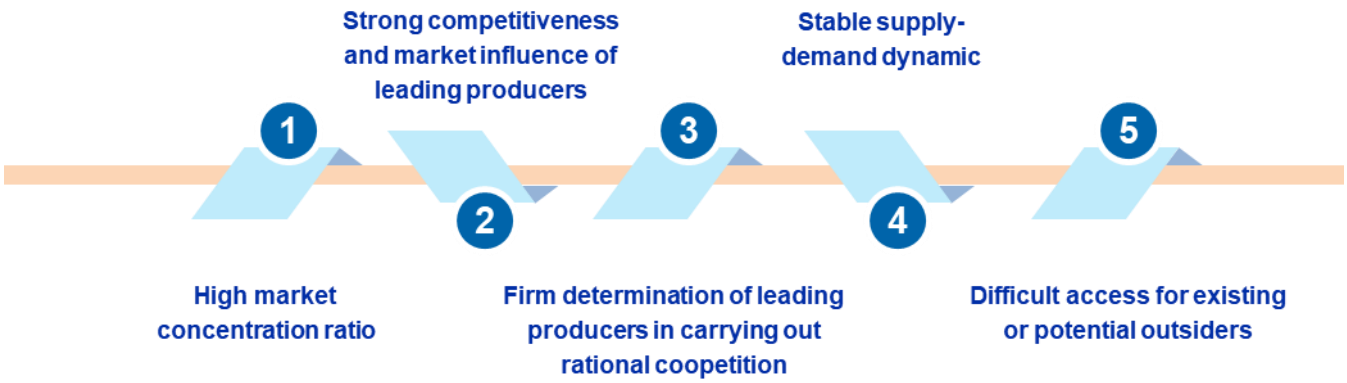
| Case studies | Result | Major cause behind the success/failure |
|---|---|---|
| East China 2010-2011 | Success | Leading producer's promotion, improved market concentration, improved supply-demand due to power rationing |
| Northeast China 2011-2014 | Success | Leading producer's promotion, improved market concentration, demand still held up well |
| Southwest China 2013-2014 | Partial success | Leading producer's promotion, improved market concentration in select regions, strong demand growth |
| South China since 2016 | Success | Leading producers formed strategic partnership, solid underlying demand, concentrated market structure |
| East China 2012-2015 | Failure | Strong capacity addition, slowed down demand growth, widened price gap |
| Northeast China since 2015 | Failure | Structurally weakened demand, increased inflow from other regions |
| Guizhou since 2018 | Failure | Significantly weakened demand |
| South China 2014-2015 | Failure | Lack of determination in implement industry coopetition |

Source: Huatai HK Research

## Three major challenges for sustainable success

Learning from both successes and failures, we have found that: the success of industry coopetition is conditional and unstable. At least five conditions have to be met to ensure good implementation: 1) high market concentration ratio; 2) strong competitiveness and market influence of leading producers; 3) firm determination of leading producers in carrying out rational coopetition; 4) stable supply-demand dynamic; and 5) difficult access for existing or potential outsiders. A deterioration in either one of the five conditions could undermine the effect of coopetition.

**Fig.74. Five fundamentals for successful and sustainable cement industry coopetition**




Source: Huatai HK Research

Going forward, we believe the success of industry coopetition for the China cement industry remains unstable, and that three major challenges lie ahead: 1) accelerating supply addition, mostly in the name of capacity replacement; 2) exacerbated demand deterioration, mainly due to downtrend in the property market and growing concerns on local government debt; and 3) widening price gap between different regions, inviting more outsiders to enjoy the result of coopetition at no cost to them.

These challenges are likely to make industry coopetition turn less productive and consequently undermine participants' willingness and determination in self-discipline. This is a dangerous self-reinforcing process that might put the entire coopetition system in jeopardy of complete breakdown.

### Challenge 1: supply on the rise before de-capacity is fully accomplished

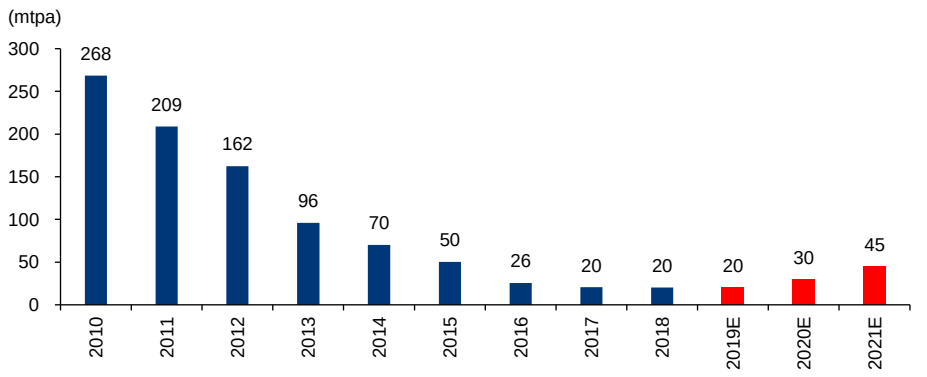
Cement capacity addition had proceeded at a moderate speed (c. 20-26mtpa per year) starting from 2016 after the intensive capacity build-up (c. 50-270mtpa per year) during 2010-2015, thanks to a series of policies, including the Announcement No. 127 [2015] and No.34 [2016], in order to prohibit the approval of new cement capacity as well as any capacity replacement between different owners. However, with the capacity replacement policy renewed in 2018 (No. 337 [2017]), we noticed that a new round of intensive cement capacity addition is on its way, mostly in the name of capacity replacement. According to Digital Cement's estimate, there is 75mtpa of new clinker capacity currently under construction (50mtpa) or under preparation (25mtpa), even without considering potential capacity replacement announcements going forward.

**Fig.75. Capacity replacement: major policy changes**

| Issued date | Document of the industry policy | Key changes in the document |
|---|---|---|
| Apr-15 | Announcement No.127 [2015] of the Division of Industrial Policy of the Ministry of Industry and Information Technology:<br>Notice on the Implementation Measures for Capacity Replacement in Some Industries with Serious Overcapacity | 1) Support capacity replacement across regions;<br>2) Replacement ratio: environmentally sensitive areas (1:1.25), other areas (1:1). |
| May-16 | Announcement No.34 [2016] of the General Office of the State Council:<br>Guiding Opinions on promoting the Construction Material Industry in Stabilizing Growth, Adjusting Structure and Heightening Benefits | 1) Suspend capacity replacement between different owners until 2018;<br>2) Approval of new capacity for cement industry prohibited before end-2020. |
| Jan-18 | Announcement No.337 [2017] of the Raw Material Industry Division of the Ministry of Industry and Information Technology:<br>Notice on the Implementation Measures for Capacity Replacement in the Steel, Cement and Glass Industries | 1) Accepts capacity replacement between different owners and across regions;<br>2) Replacement ratio: environmentally sensitive areas (1:1.5), Tibet (1:1), other areas (1:1.25). |
| Aug-18 | Announcement No.57 [2018] of the Ministry of Industry and Information Technology and the NDRC<br>Notice on Serious Regulation on Capacity Replacement and Strict Prohibition on Approval of New Capacity in the Cement and Glass Industries | 1) Provincial governments of new projects shall authorize national industrial organizations or intermediary organs to hold hearings before publicizing capacity replacements across regions. |

Source: Government websites, Huatai HK Research

**Fig.76. New clinker capacity in 2010-2021E**



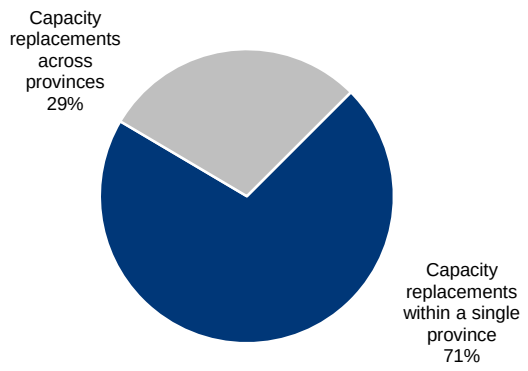

Note: estimates are from Digital Cement

Source: Digital Cement estimates, Huatai HK Research

### New facilities distributed mainly in still-profitable markets

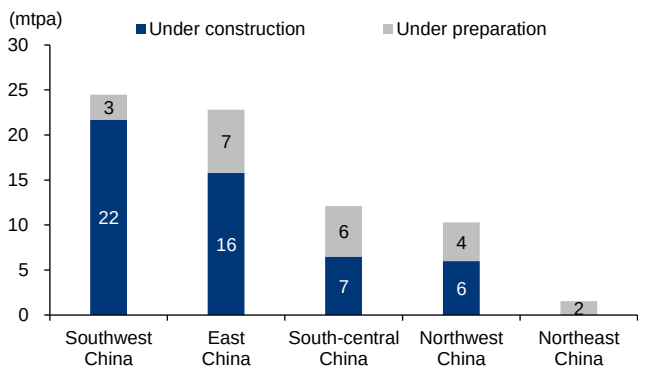
Among the 75mtpa of new clinker capacity in the name of capacity replacement, the majority (under construction, 88%; under preparation, 73%) is distributed across southwest, east, and south-central China, which are regions with still-healthy demand and good profitability. However, with these new facilities launching in 1-2 years, the original market equilibrium and the future well-being of such regional markets will be challenged. What is more worrisome is that in quite a few regions such as Guizhou, Guangxi and Yunnan, where small producers invest in new capacity, making the market more scattered.

**Fig.77. Capacity replacement: regional perspective**



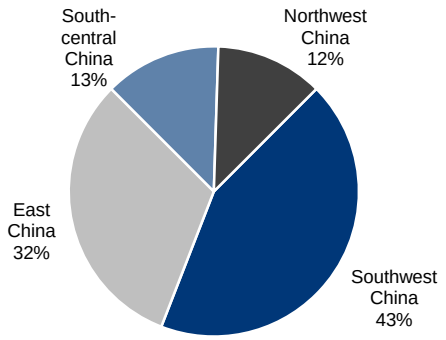

Source: Digital Cement, Huatai HK Research

**Fig.78. Capacity replacement: by stage**



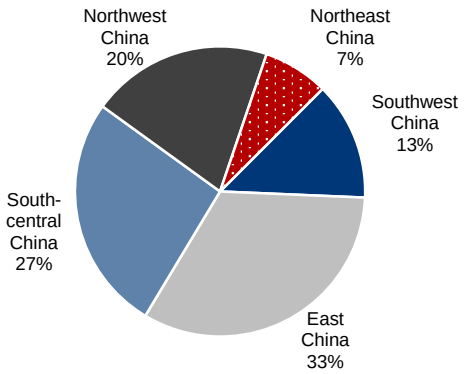

Source: Digital Cement, Huatai HK Research

**Fig.79. Capacity replacement: under construction**




Source: Digital Cement, Huatai HK Research

**Fig.80. Capacity replacement: under preparation**




Source: Digital Cement, Huatai HK Research

### Capacity replacement brings about net capacity addition

Although net capacity cut is compulsory in capacity replacement projects, regulated by the replacement ratio (environmentally-sensitive areas, 1:1.5; Tibet, 1:1; other areas, 1:1.25), effective capacity is still increasing intensively. The increasing supply pressure is mainly due to: 1) most capacity "to be replaced" is actually unused idle production lines; and 2) quite a few of the new lines are "replaced" from capacity located in other provinces. A total of 95mtpa of old capacity has been replaced for the construction of 75mtpa of new clinker lines; however, only 35mtpa (37%) of the old capacity is from Digital Cement's operational capacity list, indicating 40mtpa of effective capacity addition. Moreover, 22.5mtpa (29%) of the capacity replacements are replaced from quota located in other provinces, which means all those new lines to be built could be seen as net capacity addition to the regional markets.

### Guangxi case in capacity replacement

To take the situation of capacity replacement in Guangxi as an example, all four of the remaining capacity replacement projects involve: 1) idle capacity replacements; and 2) "cross-province" replacements. The Guangxi government approved three new projects with total capacity of 6mtpa in the name of capacity replacement in July, with most capacity "to be replaced" actually being unused production lines located in other provinces. Some projects even acquired their quota from up to five outside provinces. Supply-demand dynamic will remain challenged with this accelerating new supply addition.

**Fig.81. Capacity replacements in Guangxi province**

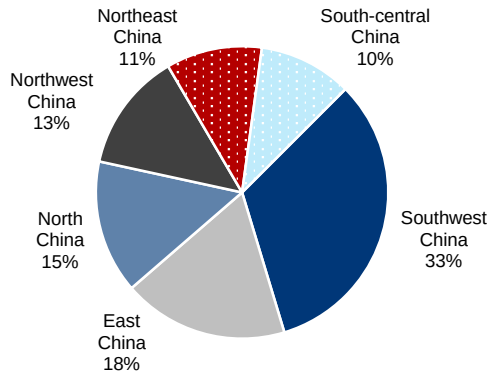
| Planned news | Company | New project location | Dismantled project location | New capacity (tpd) | Dismantled capcity (tpd) | Dismantled lines | Expected completion |
|---|---|---|---|---|---|---|---|
| Nanning Wuming Hongshi line 2 | Hongshi | Guangxi | Inner Mongolia<br>Heilongjiang<br>Shanxi<br>Anhui<br>Zhejiang | 5,000 | 6,460 | Inner Mongolia: 800tpd<br>Heilongjiang: 1,000tpd<br>Shanxi: 1,000tpd<br>Anhui: 660tpd (JT kiln)<br>Zhejiang plant 1: 2,000tpd (from 2,500tpd)<br>Zhejiang plant 2: 1,000tpd | 2020-2021 |
| Guangxi Heshan Huying line 2 | Huying | Guangxi | Xinjiang<br>Gansu<br>Ningxia<br>Inner Mongolia<br>Shanxi | 5,500 | 6,875 | Gansu plant 1: 1,000tpd<br>Gansu plant 2: 800tpd<br>Ningxia plant 1: 800tpd<br>Ningxia plant 2: 1,000tpd<br>Shanxi: 108tpd (from 1,500tpd)<br>Xinjiang:1,000tpd<br>Inner Mongolia plant 1: 1,167tpd<br>Inner Mongolia plant 2: 1,000tpd | 2020-2021 |
| Guangxi Yufeng Cement | Yufeng | Guangxi | Guangxi<br>Shanxi | 5,500 | 6,908 | Guangxi Yufeng plant 1: 2,000tpd<br>Guangxi Yufeng plant 2: 3,200tpd<br>Shanxi plant 1: 1,333tpd<br>Shanxi plant 2: 375tpd (from 1,000tpd) | 2020-2021 |
| Guangxi Tiandeng Cement | Tiandeng | Guangxi | Hebei<br>Other provinces outside Guangxi | 5,000 | na | Hebei: 1,500tpd<br>Other potential quota outside Guangxi | 2020-2021 |

Source: Company data, Government websites, Digital Cement, Huatai HK Research

### Challenges remain unsolved

Currently, there is still a notable amount of clinker lines with a scale of no more than 2,000tpd, adding up to a total capacity of 110mtpa. The small-scale capacity, located mainly in southwest and east China, is still eligible to be used for further capacity replacement projects, even without considering the idle capacity which has not been counted on the capacity list. Since "cross-province" replacement is still not banned, the small-scale capacity in north China remains eligible to be "replaced" into the south and east China markets, adding more pressure to such regional markets. Going forward, we think there are new regulations necessary to reduce the disorder of replacements: 1) a full ban on cross-province capacity replacements; 2) recognizing old capacity quota by actual production; and 3) raising the capacity replacement ratio.

**Fig.82. Clinker lines (≤ 2,000tpd): by region**




Source: Digital Cement, Huatai HK Research

## Challenge 2: demand shifting to the unfavorable side

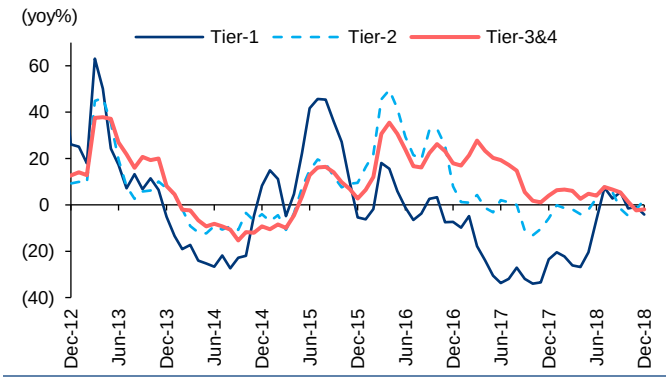
After the mild recovery from the unexpected decline in demand in 2015, cement demand has stayed largely stable at a high level from 2016-1H19. However, with property markets on the decline and still-tight control on government debt, demand is set to shift to become more unfavorable in 2H19-2020E. Maintaining industry coopetition was relatively easy in the past few years, with largely stable demand. However, with demand facing bigger downward pressure, keeping industry coopetition working could be much more difficult, especially considering supply-side conditions will not be as good as in the past three years.

### Property downturn underpinned

Property investment provided strong support along the way for cement demand growth. While the recovery in demand in 2016 was triggered by the revival of property markets in tier-1&2 cities, together with accelerated infrastructure investment, the endurance of such demand was actually maintained by the robust property investment in lower-tier cities, especially after infrastructure investment growth slowed down in 2018 amidst financial deleverage and PPP tightening.

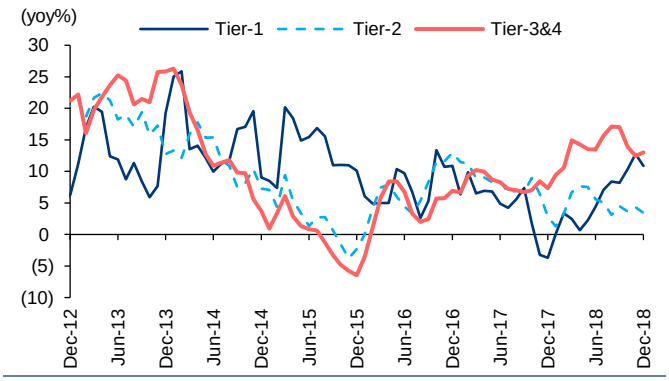
The strong property market since 2016-2018 was the longest and strongest upcycle in the past 20 years. This was especially true for tier-3&4 cities. The main reasons for this unprecedentedly long and strong upcycle were: 1) a very accommodating monetary environment with five benchmark interest rate cuts and ten RRR cuts since the end of 2014; 2) a marginal change from tightening to relaxation of home purchase restriction policies (though later, tightening was seen again in most cities) helped to unleash more demand; and 3) most importantly, a series of supportive policies aimed to lower inventory and boost the market in tier-3&4 cities.

**Fig.83. Differentiation: property GFA sales**




Source: NBS, Wind, CEIC, Huatai HK Research

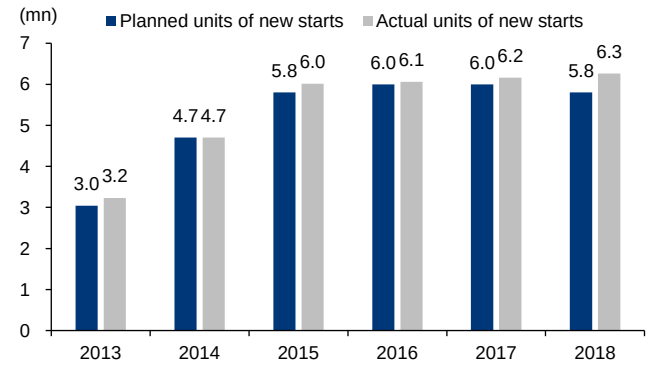
**Fig.84. Differentiation: property development investments**




Source: NBS, Wind, CEIC, Huatai HK Research

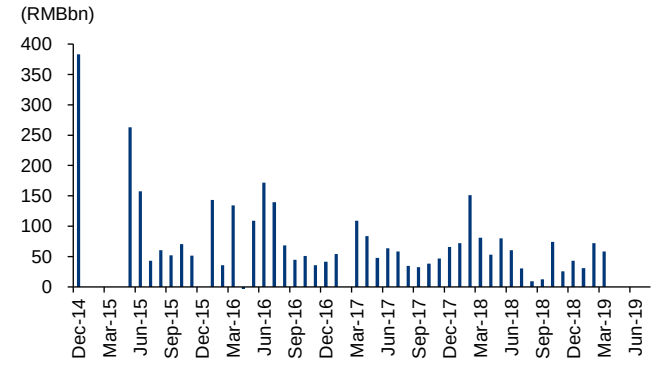
Shanty-town redevelopment was the most important supportive policy, especially with the combination of monetized resettlement. Before 2015, most shanty-town redevelopment projects involved relocation organized by government, which can be time-consuming and can have a limited impact on local property markets, due to the isolation from the commercial property market. In order to prompt the process and boost property markets, the central government introduced the use of PSL (pledged supplementary lending) to help pay shanty dwellers and make relocation more market oriented. So far, around RMB3.5tn of PSL has been issued. With the help of PSL, the two key policy banks financing shanty-town re-development has issued over RMB4tn to local governments for shanty-town redevelopment. This policy combination largely improved stimulated home purchasing demand in lower-tier cities, including pent-up demand and speculative demand, and unleased the market from previous high housing inventory.

**Fig.85. Shanty-town redevelopment (2013-2018)**




Source: CRIC, MOHURD, Huatai HK Research

**Fig.86. Monthly PSL addition**

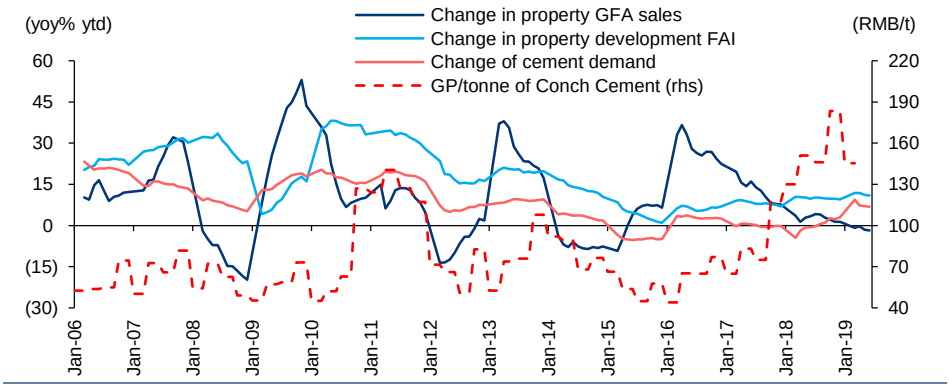



Source: Wind, PBOC, Huatai HK Research

However, with central government shifting its policy focus to “housing is for living, not for speculation” from the previous focus on “de-inventory”, the strongest and longest-lasting bull-cycle is set to come to an end. According to government budget plans, the target for shanty-town redevelopment is set at 2.85mn units in 2019, a significant decrease from 2018 (5.8mn completed in 2018). Furthermore, no PSL was granted in three recent months (April to June 2019), while previously, the PBOC had been granting PSL on a monthly basis since 2016, with an average monthly amount of RMB65bn. The property market started to see a significant cool-down since September 2018.

Property markets in tier-1&2 cities rebounded strongly in March and April, slowing down somewhat the speed of property market downfall. But we believe this kind of rebound was just temporary and will not affect the downward trajectory of the overall market. The rebound in March and April was built on a strong land price as more developers were shifting focus back to high-tier cities. The especially ample liquidity condition in 1Q19 was more accommodating to property developers to raise funds and purchase land. However, the central government has already taken measures to contain land appreciation under its "housing is for living, not for speculation" policy tone. Multiple financing channels for property developers were recently tightened, including banks, shadow banking as well as the bond market. Also, given that lower-tier cities came up for around 70% of the domestic property market in GFA terms, the rebound in tier-1&2 cities will have limited impact on the overall market. The weakening in property investment is set to continue with this ongoing cooldown in the property market.

**Fig.87. Leading indicators from property sector worsening**



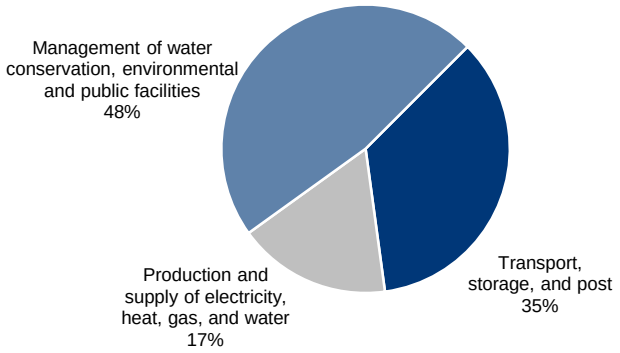

Source: NBS, Wind, CEIC, Huatai HK Research

### Infrastructure investment not as easy to boost as before

Promoting infrastructure investment has long been an effective countercyclical pro-growth policy frequently adopted by the government. However, it might not be as effective as before, especially for municipal infrastructure projects, with local governments' decreasing income from land sales and much tighter control on implicit debt.

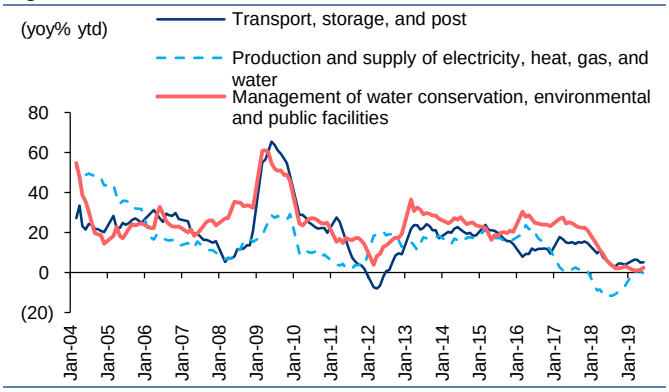
The broad terms of infrastructure investment can be breakdown into three categories: 1) investment in transport, storage, and post (RMB6.1tn in 2017); 2) investment in production and supply of electricity, heat, gas, and water (RMB3.0tn in 2017); and 3) investment in management of water conservation, environmental and public facilities (RMB8.2tn in 2017). Our key argument is that investment in the last category, which is also the biggest category, will be more difficult to boost.

**Fig.88. Infrastructure FAI: by categories (2017)**




Source: Wind, NBS, Huatai HK Research

**Fig.89. Public welfare-related investments harder to boost**

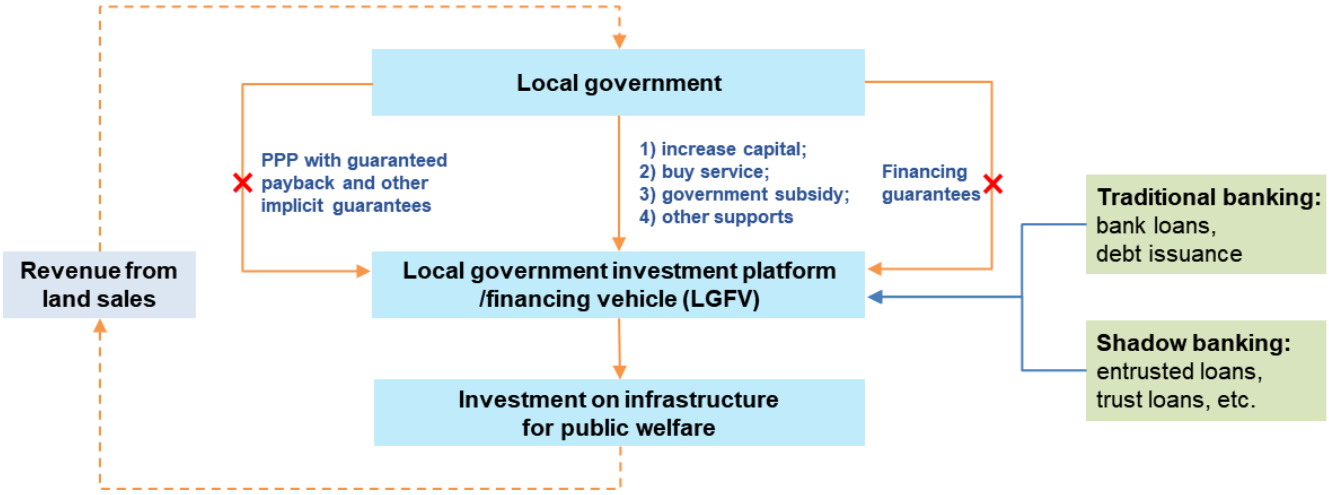



Source: Wind, NBS, Huatai HK Research

For the first two categories (ie, railways, toll roads, communications networks, water treatment plants), the return on the investment is usually easy to predict, with estimable number of end users paying for the services provided by such infrastructure. Many investors, other than local governments themselves, are willing to take on these investments. The central government recently allowed the use of proceeds from special-purpose government bonds as capital for direct investment in railway, toll road and utility projects meeting a certain level of expected returns, further increasing the funding sources for investment for these two categories of projects. As long as government is determined to streamline the approval process, getting a boost for these projects should be relative easy.

For the third category, which can be further divided into water conservation investment (RMB1tn in 2017), environmental protection investment (RMB0.4tn in 2017) and public facilities investment (RMB6.7tn), however, the payback mechanism is much less straightforward. Most water conservation and public facilities projects are for public welfare, and it is almost impossible to measure the usage and charge the public accordingly. These investments can only be paid back in the future in the form of land sales. As such, local government and local government funding vehicles (LGFV) are usually the only parties responsible for investment in these projects. The actual implementation can be more complicated and can vary in details, but basically, it involves local governments using the proceeds of land sales to pay LGFV to develop new land for sale, while in the development process, LGFVs invest in public facilities to increase the value of the land for sale. The explosive development of PPP in 2016-2017 made this mechanism more complicated, but they are still very similar in nature.

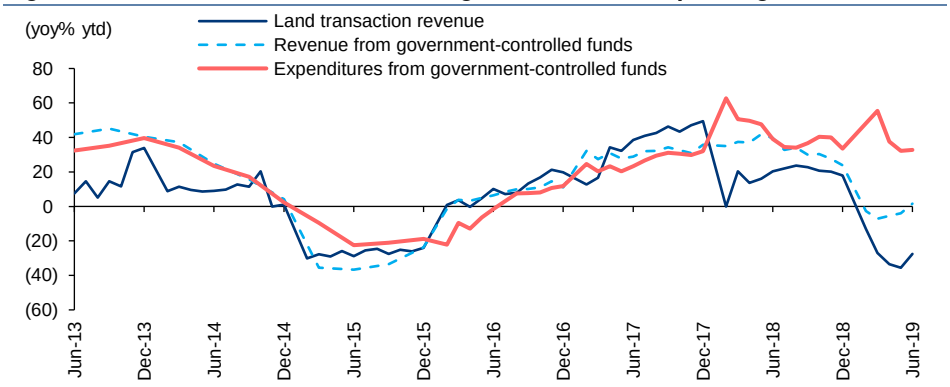
**Fig.90. Public welfare projects payback mechanism**




Source: Huatai HK Research

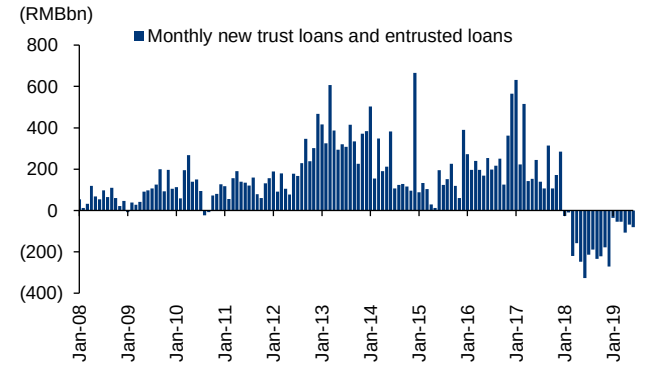
Hence, the ability to boost investment in these projects heavily relies on: 1) how much proceeds from land sales can be used to support LGFV; and 2) the amount of debt LGFV can raise to finance these projects. Unfortunately, both conditions are deteriorating. With the policy tone tuned to “housing is for living, not for speculation”, the property market began to cool down since 2H18 and accordingly, growth rate for land sales dropped significantly and entered negative territory year to date. As long as this continues, local government will have less to pay for LGFV on infrastructure investment. Meanwhile, the central government started to exercise strict control on additional local government implicit debt, cutting off implicit financing guarantees previously offered by the government and prohibiting PPP projects with guaranteed payback for investors. Together with a tightening on shadow banking, we believe LGFV’s financing ability will be undermined, leading to increased difficulty in boosting infrastructure investment.

**Fig.91. Weakened land income restricts government from spending more**



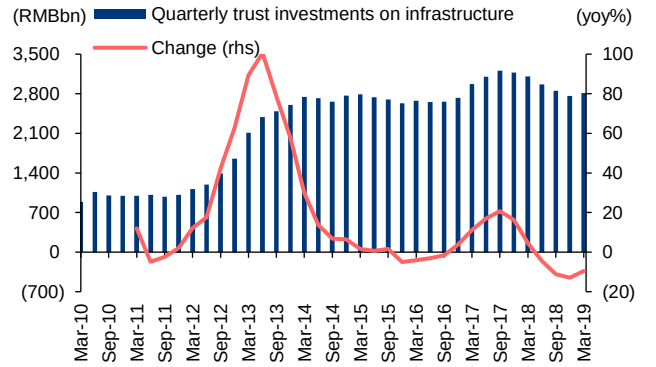

Source: Wind, NBS, Ministry of Finance, Huatai HK Research

**Fig.92. Monthly addition of non-standard financing**




Source: Wind, PBOC, Huatai HK Research

**Fig.93. Quarterly trust investments on infrastructure**




Source: Wind, China Trustee Association, Huatai HK Research

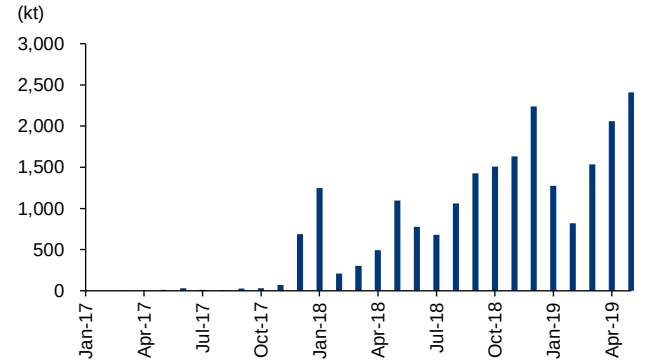
## Challenge 3: widening price gap between different regions

While cement is usually recognized as a localized product, given long-distance transport is cement uneconomical, two special cases should be taken into consideration: 1) transportation cost by water is only 1/6 to 1/5 of cost of ground transportation by truck, and transportation cost by railway is about 40% of that by truck, making reasonable distribution distance much longer for two places connected by waterway or railway; and 2) a widening price gap will further expand the feasible transportation distance. With regional differentiation in supply-demand dynamic increasing significantly in the past year, the price gap has kept expanding, making cross-regional product flow a potential threat to industry coopetition.

### Seaborne inflow soaring both home and abroad

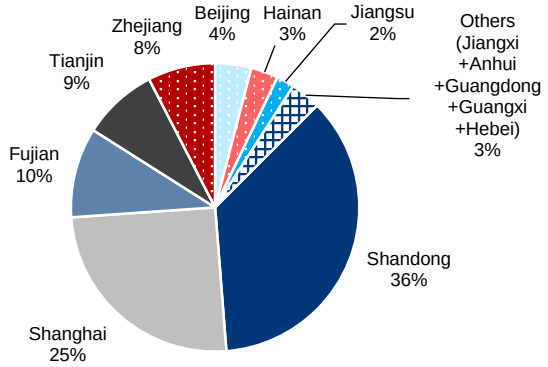
Since late 2017, when price sky-rocketed in east China, seaborne clinker has found a better destination. Clinker imports into China arrived at 8mn tonnes in 5M19, up 142% yoy, with most targeting coastal regions including Shanghai, Shandong, Fujian, Tianjin, Jiangsu and Guangdong. In 2016, clinker imports were at 0.04mn tonnes for entire year. Furthermore, with the complete breakdown of industry coopetition in northeast China in 2018, producers in Liaoning also made east China a target market to balance its excess capacity. Although industry coopetition in east China is still working well thanks to very resilient demand in this regional market so far this year, a potential deterioration on the demand side and increasing inflow from other regions could make the coopetition mechanism much less stable.

**Fig.94. Monthly clinker imports**



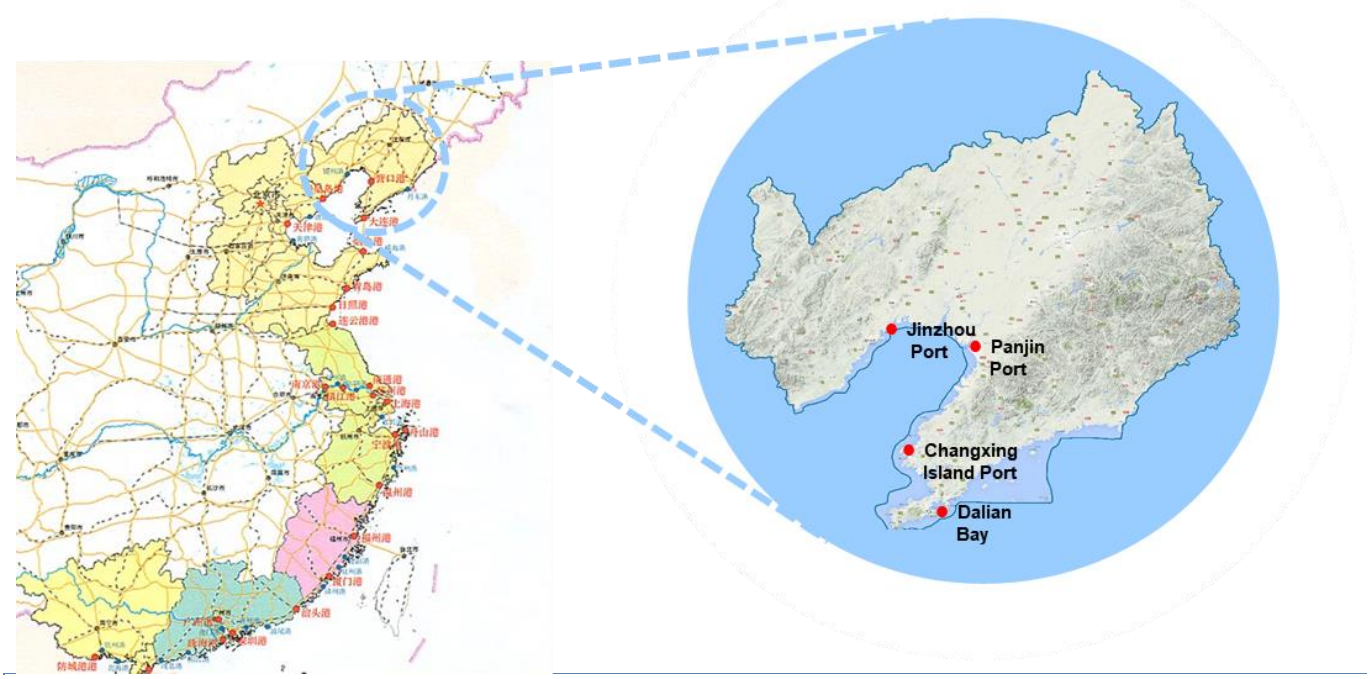

Source: China Customs, Digital Cement, Huatai HK Research

**Fig.95. Clinker imports by province (2018)**




Source: China Customs, Digital Cement, Huatai HK Research

**Fig.96. Cement and clinker can be transported by water from Liaoning to other coastal regions via four major ports**




Source: Geography Cement, Huatai HK Research

### Fall of Guizhou potentially threatens adjacent regions

Due to weakened supply-demand dynamic and breakdown of industry coopetition, cement price in Guizhou dropped significantly. In 1H19, average cement price in Guizhou was RMB112/t lower than Chongqing, RMB82/t lower than Guangxi and RMB109/t lower than Hunan. The enlarged price gap led Guizhou producers to dump more products into these adjacent provinces, making Chongqing, Guangxi and Hunan underperforming regional markets as well.

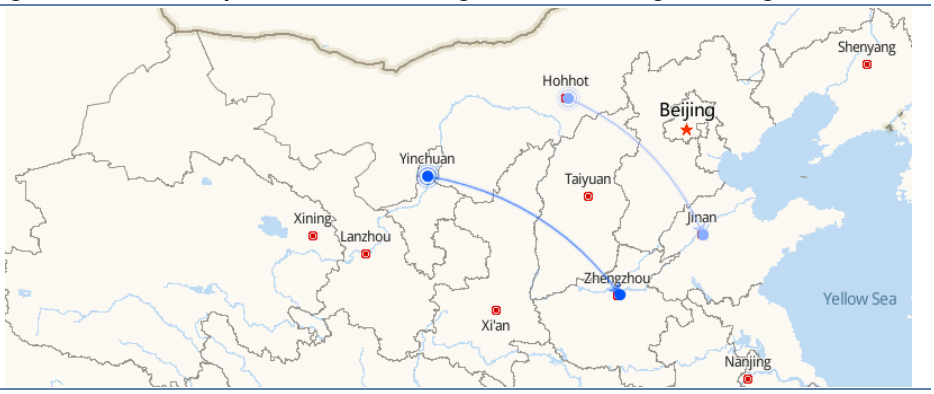
**Fig.97. Cement transportation: from Guizhou to adjacent provinces**


Source: Huatai HK Research

### "Highway to railway" connects previously unrelated markets

With the government's efforts to raise the proportion of railway transportation and lower the proportion of road transportation ("highway to railway") so as to help improve air quality, railway capacity is targeted to be boosted by 30% by 2020, and this action gives cement producers more opportunities to gain access to more remote markets. Price difference between Ningxia and Henan, as well as Inner Mongolia and Shandong, were both enlarged to around RMB200/t on average in 1H19. Railway transportation, together with the unprecedentedly large price difference, made the long-distance transportation between these previously unconnected markets feasible.

**Fig.98. Cement transportation: Inner Mongolia to Shandong and Ningxia to Henan**




Source: Huatai HK Research

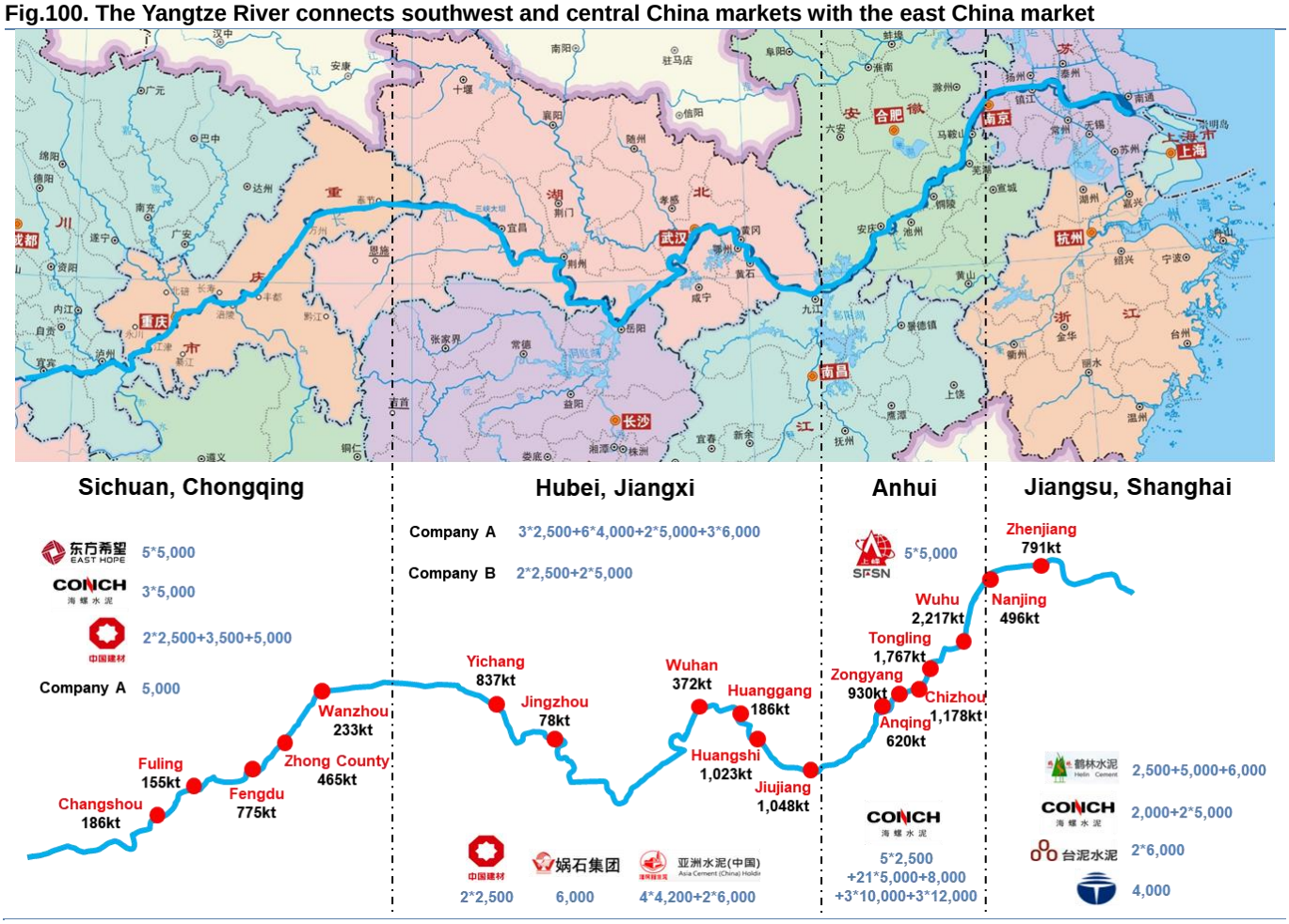
**Fig.99. Inner Mongolia cement shipped to Beijing via railway started in Aug 2019**


Source: Digital Cement, Huatai HK Research

### Water transportation complicates coopetition when price gap widens further

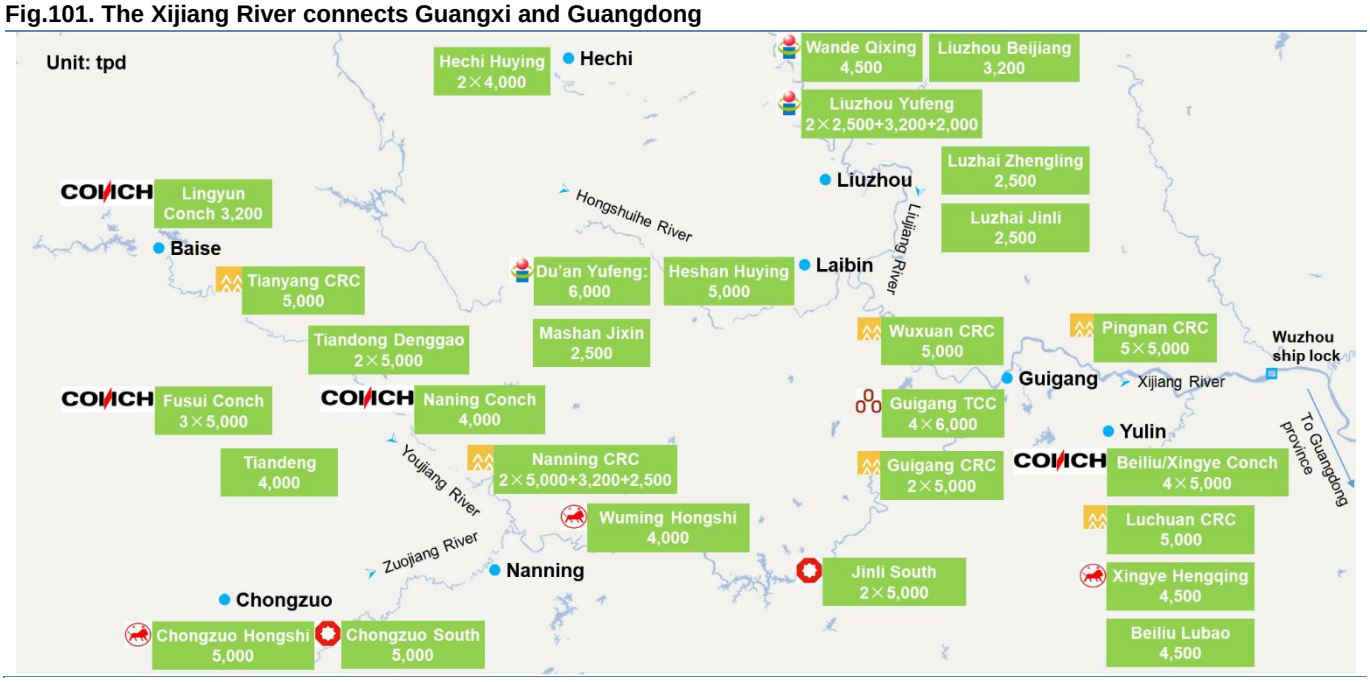
The much lower transportation cost enjoyed by waterway could worsen the condition of cross-regional cement sales when price gap widens. The Yangtze River and Xijiang River are two important waterways for the China cement industry, connecting production bases with lower production cost and end markets with stronger demand. In case there is a major change in the inflow-outflow dynamic between the ends of the two rivers, it will be necessary to involve much more producers to keep industry coopetition working, making the implementation much more complicated.

**Fig.100. The Yangtze River connects southwest and central China markets with the east China market**




Source: Geography Cement, Digital Cement, Huatai HK Research

**Fig.101. The Xijiang River connects Guangxi and Guangdong**




Source: Geography Cement, Digital Cement, Huatai HK Research

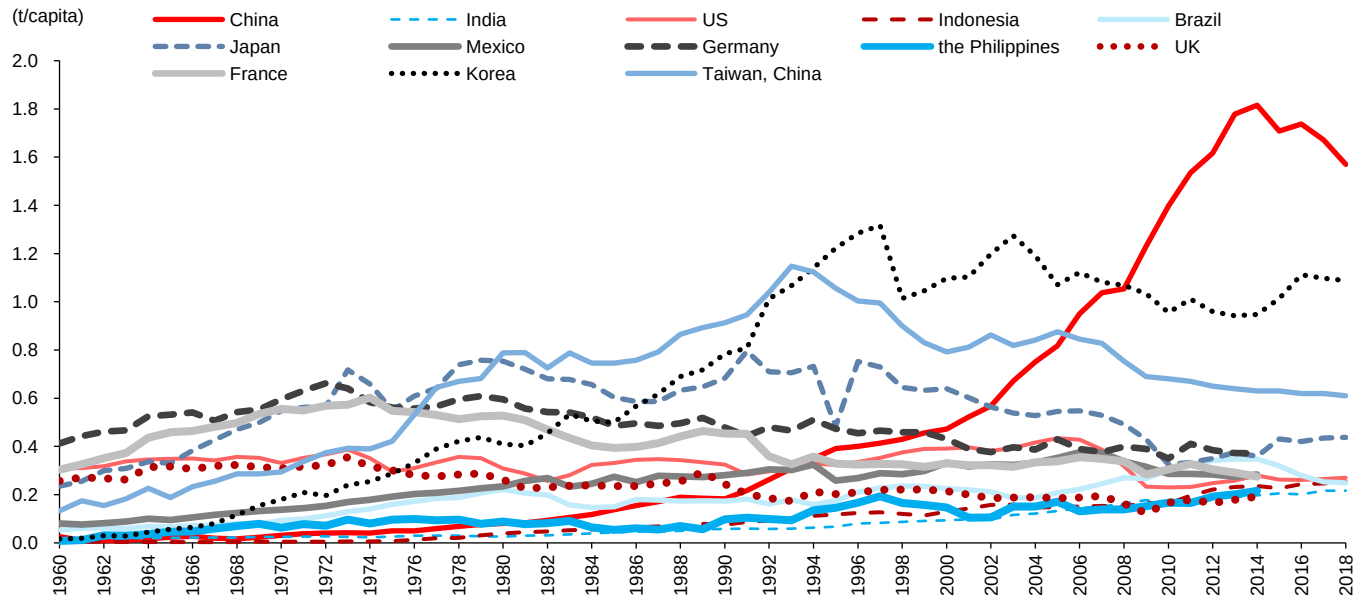
## Still too early to call for long-term stability

At the current stage, we believe the cement industry will continue to retain its cyclical nature and that industry coopetition is still not assurance for a long-term stable profitability. The previous re-balancing of industry supply-demand dynamic was mostly triggered by off-peak suspension, which turned voluntary production discipline into compulsory discipline. De-capacity, which is an inevitable process after demand peaked, has never really kicked off in China. While we do not expect off-peak production suspension to be further curtailed, more supply and demand will not always stay stable, and another round of industry re-balancing will take place sooner or later. In developed markets with higher market concentration ratios and more mature industry coopetition, we also notice that it is hard to achieve long-term stability.

### De-capacity is an indispensable pre-requisite

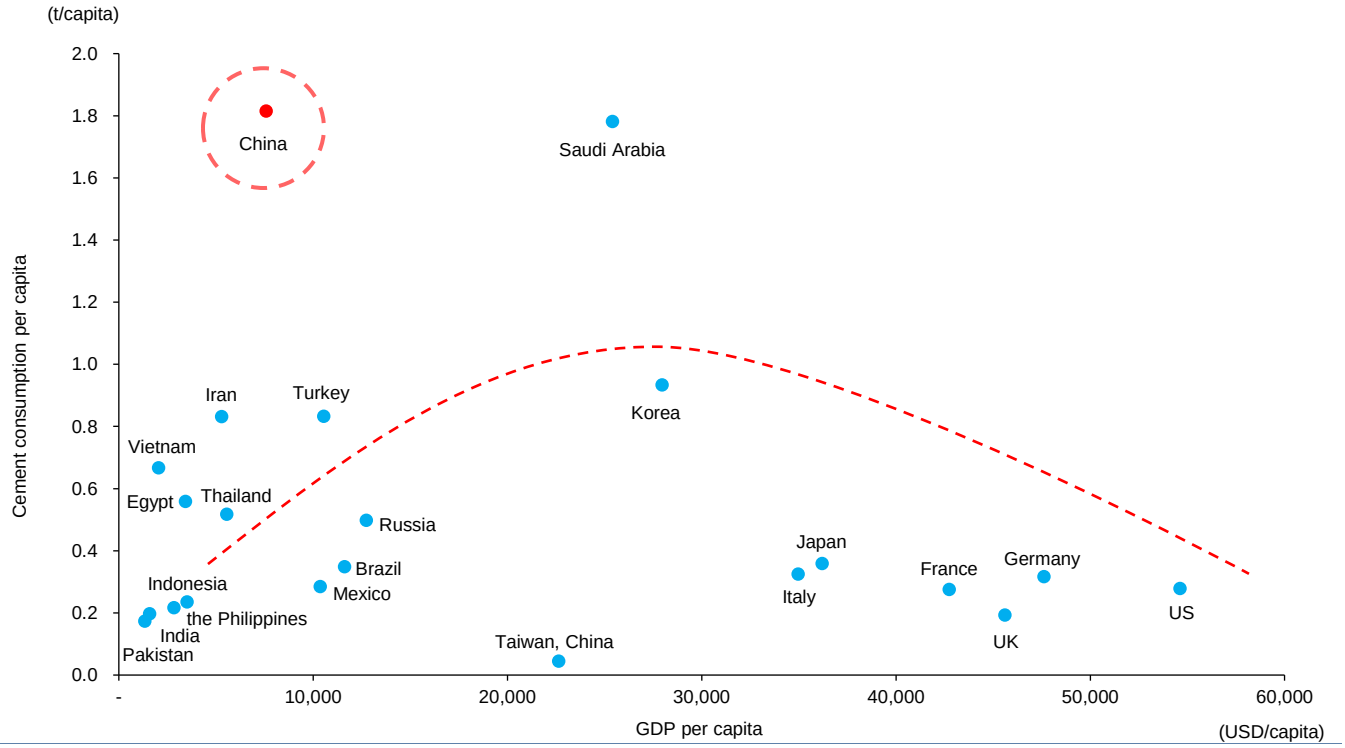
Cement consumption is closely related to investment, and it usually peaks when the main growth driver for the economy shifts from investment to consumption. Cement demand per capita reached 1.82t in China in 2014, a much higher level than most other countries ever achieved in history. While the urbanization process in China has already passed its fastest stage, and China is focusing more on finding new economic growth engines, we believe cement demand in China should have already peaked as well. After a few more years of plateau, demand is likely to step down structurally.

**Fig.102. Global comparison: cement consumption per capita**




Source: Wind, NBS, Digital Cement, USGS, International Cement Review, Huatai HK Research

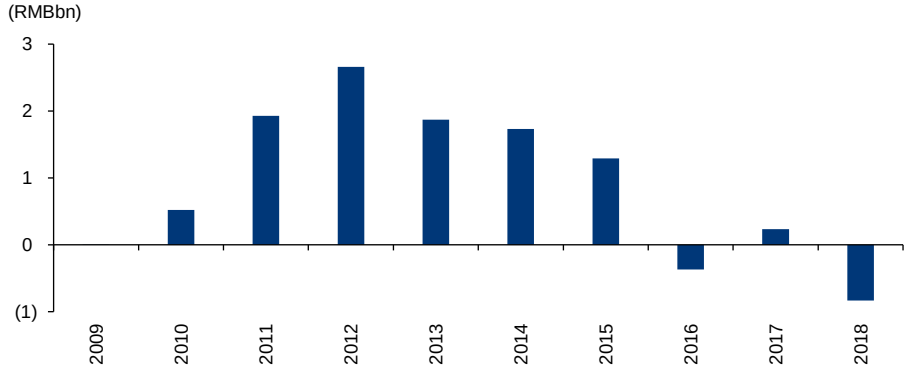
**Fig.103. Global comparison: cement consumption per capita & GDP per capita (2014)**




Source: Wind, NBS, Digital Cement, USGS, International Cement Review, World Bank, Huatai HK Research

Thus, to ensure more stable industry coopetition and long-term welfare for the cement industry, the establishment of a mechanism for industry de-capacity should be an indispensable pre-requisite. Northeast China is a very typical negative case. Despite industry coopetition functioning well for quite a long time, a structural decline in demand eventually caused the industry coopetition to breakdown as the continued weakening of profitability caused producers to find much less incentive to carry on.

**Fig.104. North Cement: operating profit**




Source: Company data, Huatai HK Research

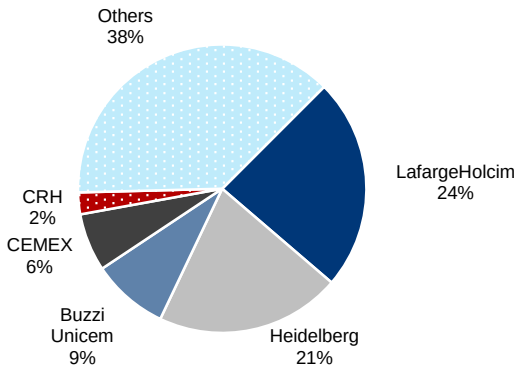
However, de-capacity has never even started for the cement industry. The re-balancing of cement industry supply-demand dynamic in the past few years was mostly achieved through administrative production curtailment under the policy of off-peak production suspension. While it benefits the industry by achieving record-high industry profitability, it may also harm the industry by postponing the indispensable process of industry de-capacity. What's worse is that not only has capacity not been cut, it is starting to rise, in the name of capacity replacement, as we mentioned earlier.

## Stability hardly achieved in developed markets either

In developed markets where market concentration ratios are much higher and the practice of industry coopetition has a much longer history, the result is not always perfect as well. In the past 18 years (2001-2018), profit margin was less volatile than China when demand was largely stable. But a change in supply-demand dynamic (mainly from the demand side) would still trigger a major demand fluctuation. It might take years for producers to re-balance the market after such need arises, before profit margin came back to a "stable level".

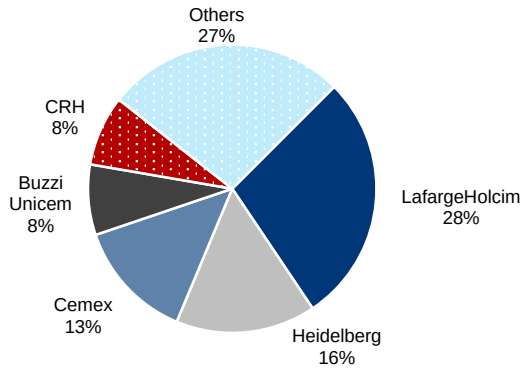
Western Europe (UK, Ireland, Benelux area, France, Germany, Spain, Italy and Greece) and North America (US and Canada) are two typical developed markets to look at. Market concentration ratios for both of the two markets are high, with CR5 at 62% in Western Europe and 73% in North America; leading participants are almost the same, with LafargeHolcim, Heidelberg Cement, Buzzi Unicem, CRH and CEMEX being the top-5 producers in both markets. Industry coopetition among these producers also have a much longer history of existence. Although cement consumption peaked long before in these developed markets, profitability was maintained at a good level most of the time.

**Fig.105. Market concentration: Western Europe (2018)**




Source: Company data, Huatai HK Research

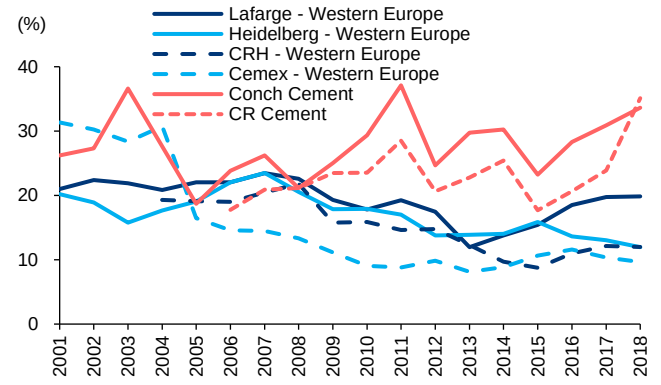
**Fig.106. Market concentration: North America (2018)**




Source: Company data, Huatai HK Research

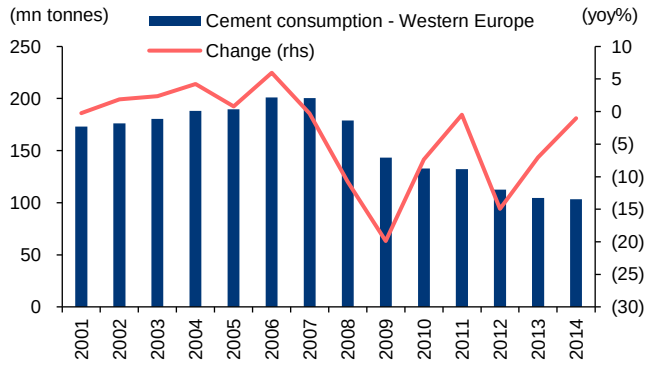
In Western Europe, leading players enjoyed stable profitability with EBITDA margin at around 20% during 2001-2007. Demand was stable with CAGR at 2.1% during the period. The real challenge came in 2008, when the global financial crisis hit Western Europe hard. Cement consumption was down by 11% yoy. For that year, profitability remained stable for most leading producers, showing Western European producers' strong capability to re-balance the market. However, demand tumbled by 20% in 2009, dragging down leading producers' average EBITDA margin from 20% to 16%. In the next few years from 2010-2014, when debt crisis later kicked in before the regional market fully recovered from the 2008 financial crisis, cement demand continued to fall by a CAGR of 6.3%, further dragging down leading producers' EBITDA margin to 12% on average in 2014. Although industry coopetition worked well in the Western Europe market, stable profitability was not achieved in 2008-2014, when supply-demand deterioration continued.

**Fig.107. EBITDA margin: Western Europe vs China**




Source: Company data, Huatai HK Research

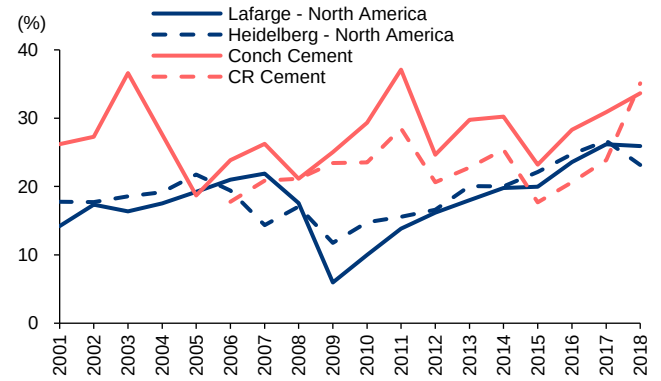
**Fig.108. Cement demand: Western Europe**




Source: Company data, Huatai HK Research

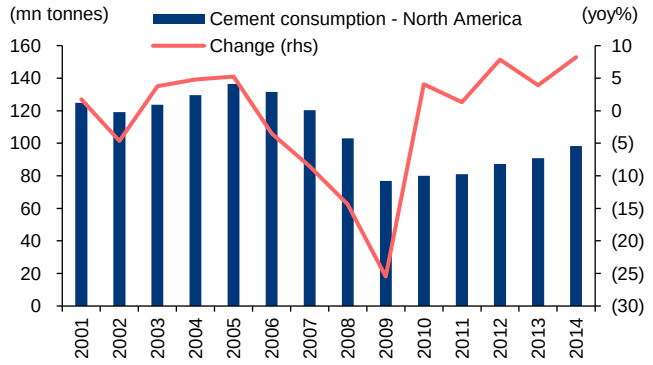
Similarly, in the North America market, producers also maintained stable profitability, with EBITDA margin at around 20% in 2001-2007, with demand largely flat during the period. The global financial crisis hit the North America cement market in 2008-2009, leading to demand contraction of 14% and 26%, respectively. Profitability also took a big hit in those two years, with leading cement producers' EBITDA margin lowered to 17% in 2008 and 8% in 2009. The key difference in the North America market was demand stabilization finally kicked in after 2010. Although overall demand never came back to the level before the crisis, profitability did make it back to the pre-crisis level in 2016. Despite a high market concentration ratio and well-run industry coopetition, it still took seven years for the North America cement industry to return to the level of "stable profitability".

**Fig.109. EBITDA margin: North America vs China**




Source: Company data, Huatai HK Research

**Fig.110. Cement demand: North America**




Source: Company data, Huatai HK Research

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