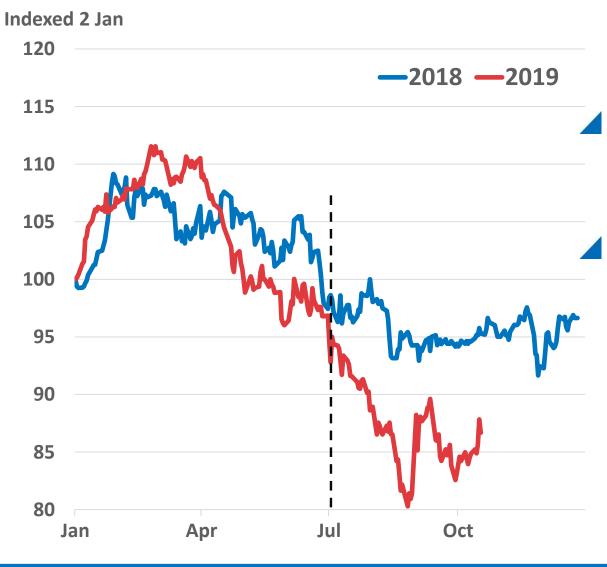


TIN MARKET OUTLOOK

Navigating Market Uncertainty



LME 3-Month Settlement Price



Prices follow supply/demand trend Q2 peak

2019 followed trend until July

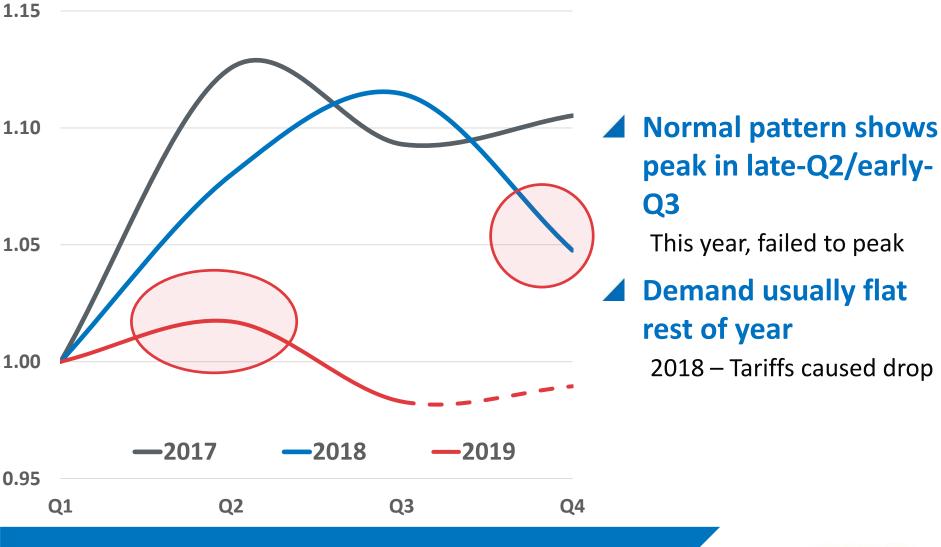
Divergence from trend indicates significant disruptions

Price records significant decline



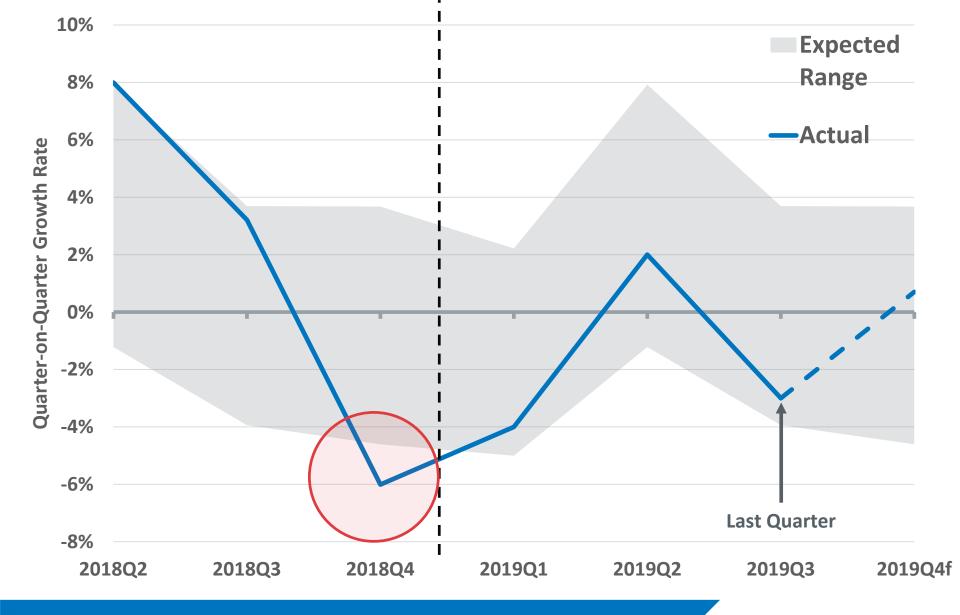
Demand bucks seasonal trends

Quarterly refined tin demand, indexed Q1



Demand fails to peak



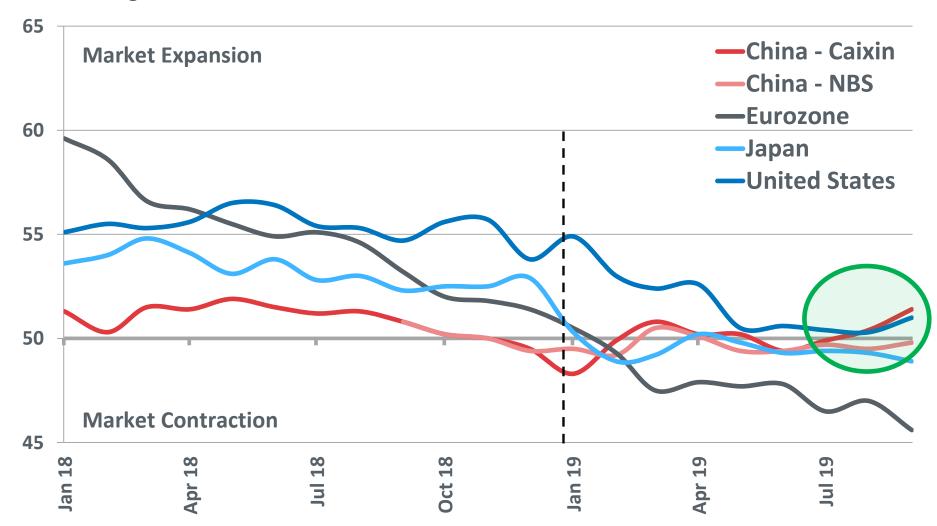


Consumption growth back on track



Purchasing Managers Index (PMI)

Manufacturing PMI, 2018-2019

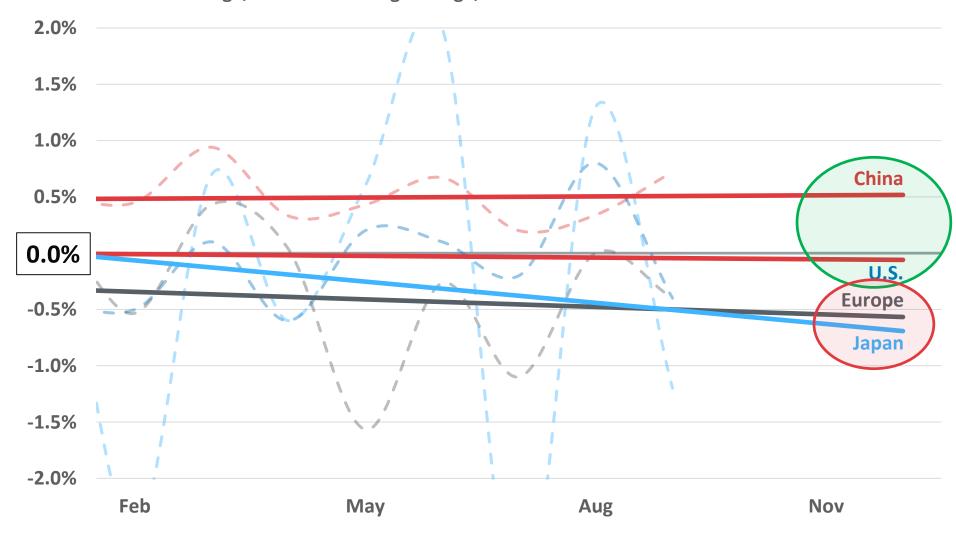


Manufacturing sector stabilising



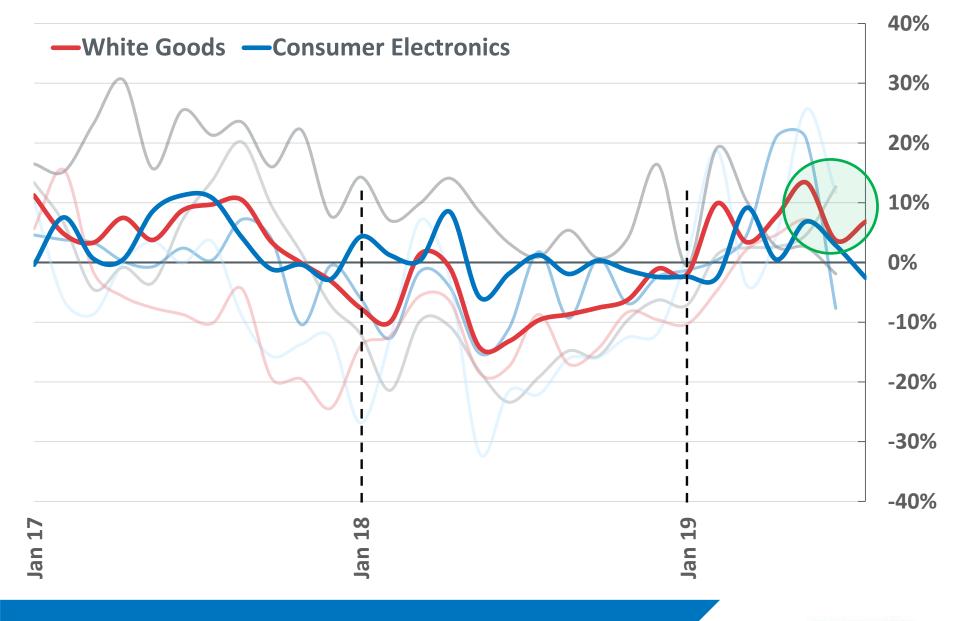
Industrial Production Growth

Month-on-Month Change, 5-month moving average, 2019



Industrial production balanced





Chinese electronics recovering



2019 surveyed growth in refined tin consumption

Surveyed annual refined tin demand growth (%)

	China		Ex-China		Global	
	2018	2019	2018	2019	2018	2019
Solders	3%	-3%	1%	-1%	2%	-2%
Chemicals	5%	-1%	2%	-4%	3%	-2%
Tinplate	0%	-7%	-5%	5%	-2%	-3%
Lead-Acid Batteries	7%	1%	5%	3%	7%	1%
Copper Alloys	-3%	-5%	-	-	-3%	-5%
Other	-	-	-1%	1%	-2%	-2%
Total	3%	-2%	1%	-1%	2%	-2%

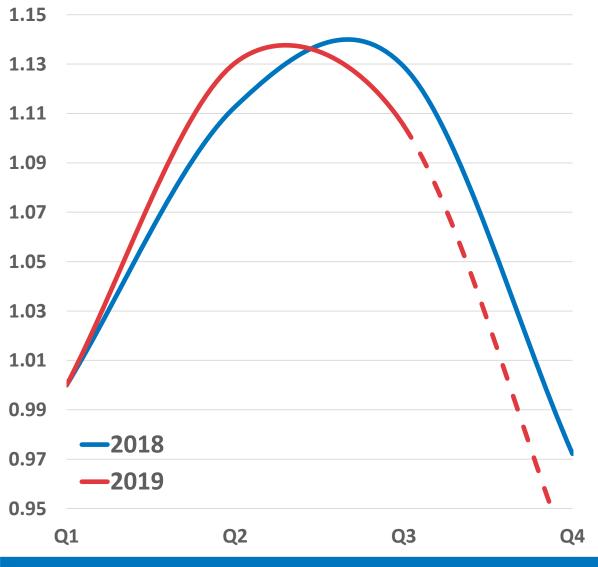
Data: International Tin Association

*Figures represent average changes of sample totals

Tin users expect demand decline



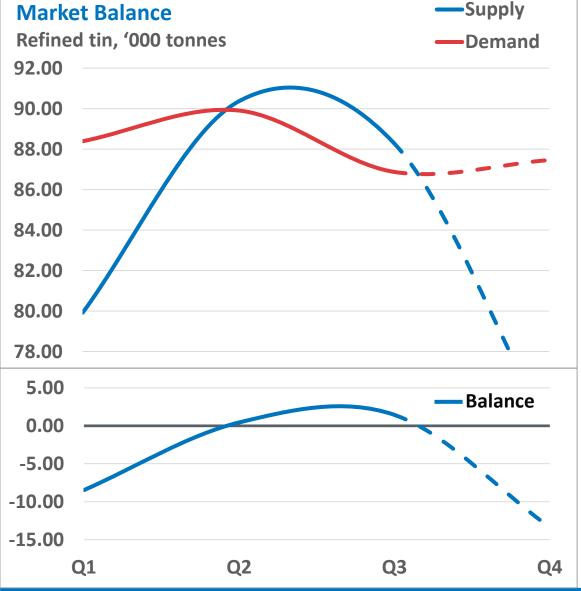
Quarterly refined tin supply, indexed Q1



- ✓ Supply generally follows demand curve
 Peak in Q2/Q3
- Expect supply to fall off in Q4 due to production cuts

Supply overshoots demand

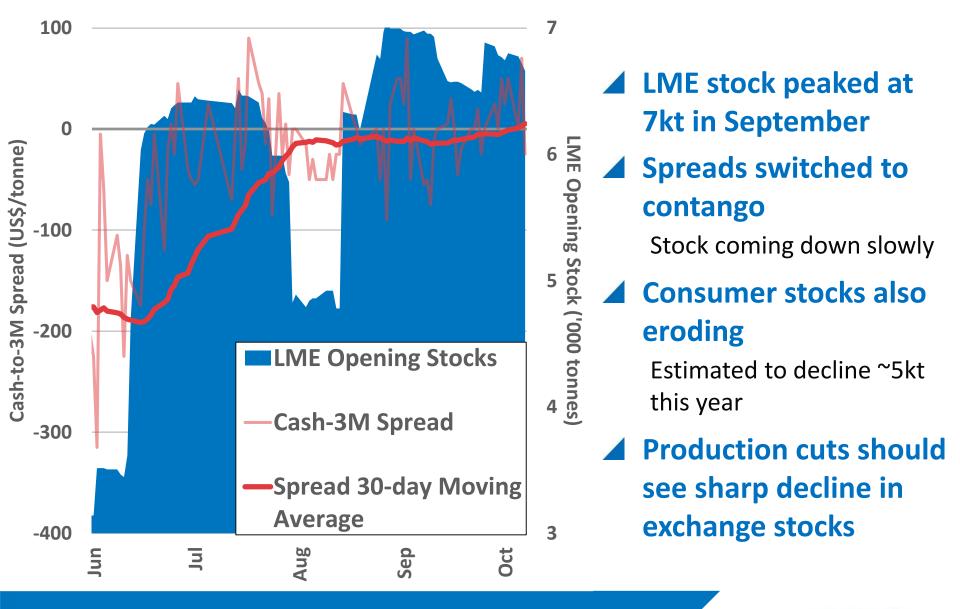




- ✓ Significant deficit in Q1
 Price reacted strongly
- ✓ Relatively balanced Q2– Q3
- ✓ Price fell more than expected
 Demand =/= Trade
 Consumers using stocks
- Q4 production cuts to put market into deficit?

Too much production cut?





Stocks beginning to erode?





▲ Key consumption indicators point to stabilisation

Manufacturing PMI's & electronics market stable in China
Uptick in Industrial Production

Demand growing as expected QoQ

Growing from a low base due to 2018Q4 slump

▲ Market volatility remains

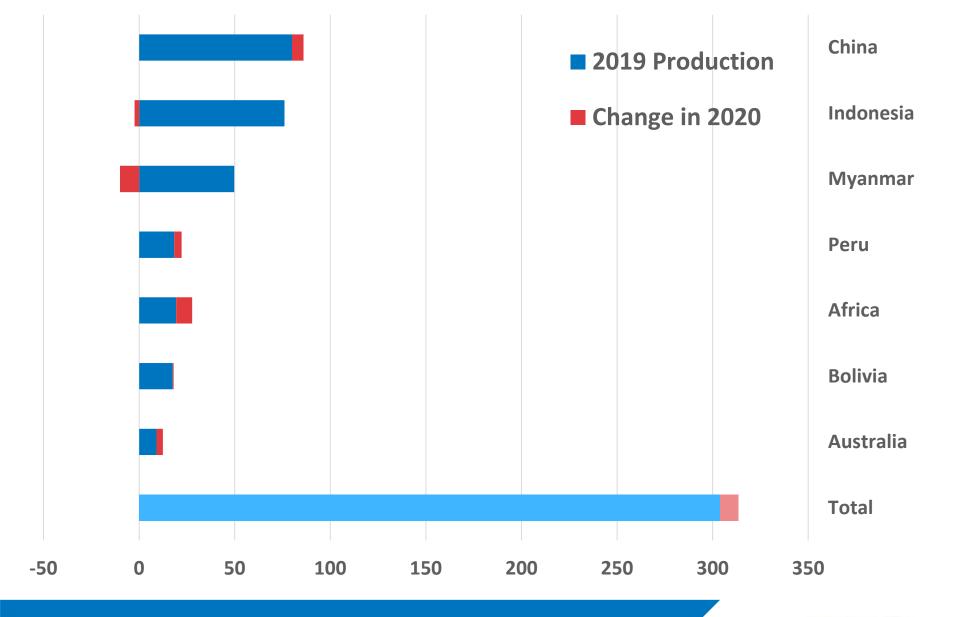
US-China trade deal "to be signed" November 1st

No deal would create more uncertainty
Uncertainty surrounding production cuts

Q4 demand outlook stable



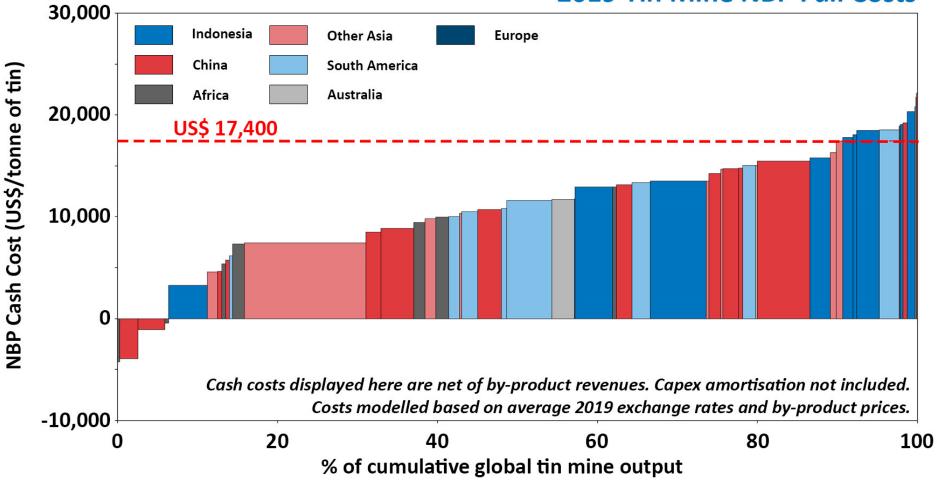




Mine supply steady



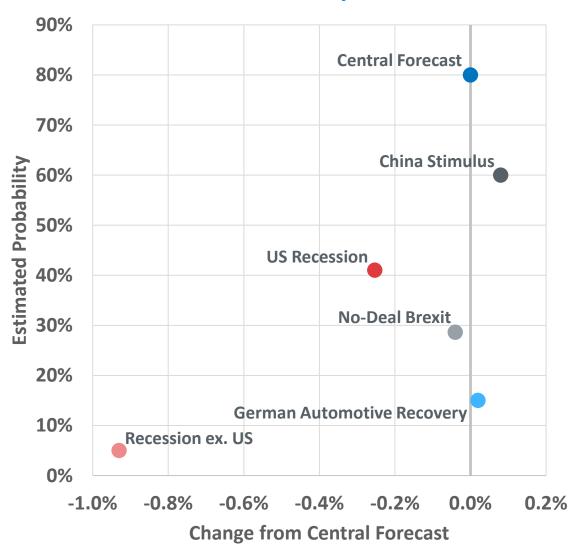
2019 Tin Mine NBP Full Costs



Production to be impacted by price?



Scenario Analysis



✓ Central forecast 0.4% demand growth in 2020

Upside from China stimulus & German automotive recovery

Downside from Brexit, US Recession & ex-US Recession

Could have combination of factors

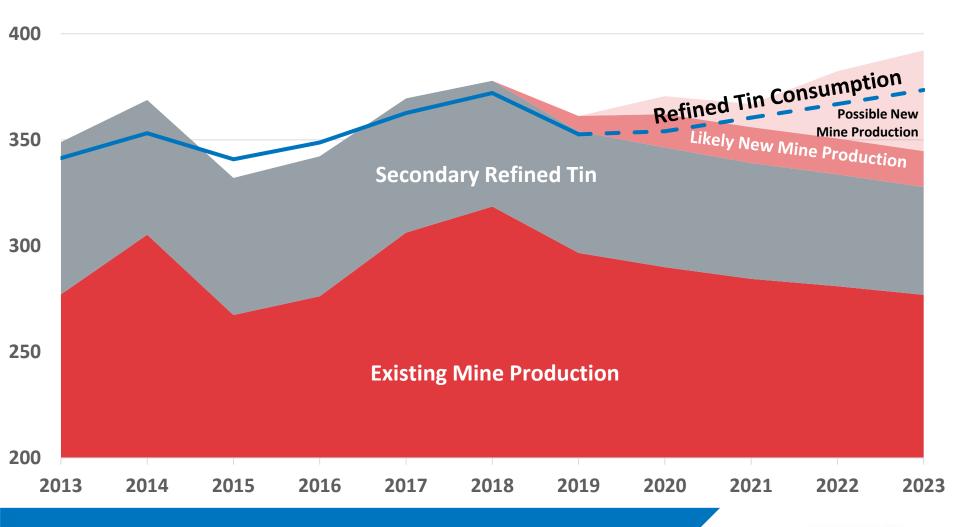
Bigger risk on downside

Growth 2020 – but downside risks



*Smelter recoveries are not guaranteed to be 100%; mine production not directly translatable to refined tin production.

*Does not include volatility due to relationship between artisanal mining and price



Widening market deficit?





■ 2020 unclear due to fog of trade tensions

Some recovery indicators Trade deal? Geopolitics?

▲ Longer-term fundamentals should drive demand

Long-term 2% pa growth
Solder market to recover
Future technology positive

Demand growth to outpace new mines

New mines will only stabilise decline in existing mines

Unclear road ahead



Thank You

We believe that global co-operation on markets, technology, sustainability and regulatory issues is the most cost effective route to achieve long-term success for the industry. If we work together effectively then the outlook for tin is very positive.

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Global co-operation for long-term success

