Capral Limited
ABN 78 004 213 692

Folio133

Corporate Office
Level 4, 60 Phillip Street
Parramatta NSW 2150
PO Box 209, Parramatta CBD BC NSW 2124
T 02 9682 0710 **F** 02 9682 0777
www.capral.com.au

12 August 2013

The Director Operations 3
Anti-Dumping Commission
1010 La Trobe Street
Docklands VIC 3008

Submission to Review 214

This submission is made by Capral Ltd, a member of the Australian industry, in relation to Accelerated Review 214 of certain aluminium extrusions exported from China by Guangdong Jinxiecheng Al. Manufacturing Co., Ltd. (Guangdong Jinxiecheng).

Capral notes ACDN No. 2013/57 states that given the nature of an accelerated review the Anti-Dumping Commission will not be reassessing countervailable subsidies other than those already subject to the countervailing duty notice or reconsidering whether or not London Metal Exchange (LME) prices are indicative of what would be competitive market costs for primary aluminium.

Countervailable subsidies

Capral notes that 19 subsidy programs are covered by the countervailing duty notice. Many of these programs are stated in broad terms and Capral further notes that subsequent investigations have found similarly-titled programs to be the same program as one found in an earlier investigation such as aluminium extrusions. Therefore, despite Guangdong Jinxiecheng's claim that it did not receive a benefit under any of the programs covered by the notice, it is imperative that the Commission investigates the receipt of benefits under any program that may be characterised as an existing countervailed program.

The following factors indicate further investigation of Guangdong Jinxiecheng's situation regarding subsidies is warranted:

- Guangdong Jinxiecheng claims to be a foreign invested enterprise (FIE)[1] and many subsidies are specific to FIEs
- On its own website Guangdong Jinxiecheng identifies a number of 'Honours' (all in Mandarin) which could indicate receipt of one or more grants,[2] and
- Since the original extrusions case the US has found subsidies in the order of 4-6% for programs other than government provision of aluminium (Australia's Program 15).

Capral submits that significant subsidies to aluminium smelters and aluminium extrusion companies continue in China, and it is incumbent upon the Commission to fully investigate all subsidies flowing to extrusions sold on the Australian market, as those subsidies continue to injure Australian industry.

Primary aluminium

Capral maintains a view that, whilst the LME plus appropriate premiums (discussed below) is a more suitable proxy for competitive market costs for primary aluminium, this approach still fails to recognise the significant higher costs

[1] Guangdong Jinxiecheng Exporter Questionnaire Response, A-3.1 at p.4

[2] http://www.jinxiecheng.com/en/honour.php?page=1

of production (for primary aluminium) in China. On this basis Capral submits that a more suitable methodology would be to calculate the additional costs of producing primary aluminium in China, compared to the rest of the world, and adding this cost premium to the methods described below. Whilst Capral fully anticipates that this approach will not be considered for this accelerated review, Capral submits this for further consideration in the event of future reviews.

Despite the time constraints of this accelerated review, Capral submits that proper aluminium premiums should still be considered and applied in this review. The method proposed is discussed below.

Capral agrees that LME prices are 'indicative' of competitive market costs, however, as Capral has stated in meetings with Customs during the original investigation and three subsequent reviews of aluminium extrusions (Reviews 186, 194 and 205), the LME is a trading house, and the LME price alone is not available in any market as a cost of primary aluminium in physical form.

In all competitive markets around the world, purchasers of physical aluminium must pay a premium on top of the LME price. Clear evidence of this is contained in the two attached documents published this year:

- Platts Metals Week's methodology and specifications guide (Platts Guide) – Attachment A, and
- HARBOR Aluminium Intelligence Unit's global outlook for aluminium premiums (Outlook Report) – Attachment B.

The premium used in Australia is the CIF Japan Forward Quarter Premium, referred to in the industry as the Major Japanese Ports premium (MJP), which comes from the terms of the premium being CIF Osaka, Nagoya, Yokohama ports (ie major Japanese ports). The full terms are outlined in the Platts Guide.[3]

The amount of the MJP applicable to the latter part of the review period is shown in the primary billet price schedule produced by one of Australia's aluminium suppliers for February 2013, which is at Attachment C (CONFIDENTIAL).[4]

The Outlook Report analyses global spot premiums. The MJP shown in Confidential Attachment C is within the range of the Japan aluminium ingot spot premium shown in the Outlook Report.[5] There are a number of other regional premiums as described in the Platts Guide and analysed in the Outlook Report.

Capral understands that in the original investigation the benchmark for primary aluminium incorporated the LME price plus the actual 'premiums' payed by the Chinese exporters investigated. These 'premiums' appear to be characterised by Customs in the original investigation as trader premiums.[6]

Capral notes the exporter questionnaire sent to Guangdong Jinxiecheng in this review does contain a question concerning premiums:

> Identify the value and type of any premiums incurred on primary aluminium costs which may include hot metal, T-bar, billet or ingot premiums (i.e. C&F China LME premium or CIF Japan premium).[7]

It is not clear from the public version of the exporter questionnaire response whether Guangdong Jinxiecheng has addressed this question or not. Capral submits that in order for industry to better understand the purchase price of primary aluminium in China, the Commission should seek from Guangdong Jinxiecheng an explanation, with supporting evidence, of:

---

[3] Platts Guide, p.3

[4] The MJP is highlighted yellow

[5] Outlook Report, p.1

[6] REP 148, 7.4.1 at p.58

[7] Guangdong Jinxiecheng Exporter Questionnaire Response, G-8 at p.36

- how the purchase price for primary aluminium is negotiated with suppliers (differentiating between domestic purchases and imports), and
- what are the components of the purchase price from each supplier.

Regardless of what Guangdong Jinxiecheng actually pays for its primary aluminium, Capral notes that, consistent with previous decisions, the Commission is likely to find that it is not a competitive market cost as required by r.180(2)(b)(ii) of the Customs Regulations. If the Commission's approach is to substitute the non-competitive market cost of primary aluminium in China with a cost that is representative of one that could be found in a competitive market, then the benchmark cost must include a suitable competitive market premium.

Capral submits that a suitable benchmark premium would be the MJP, as it is used in major markets in the region including Japan and Australia.

It is important to note that the MJP is at CIF (cost, insurance and freight). Therefore the cost of delivery to the manufacturer's premises must be added.

It is also important to note that the MJP is an ingot premium. The Australian industry generally purchases aluminium in billet form and pays additional premiums over and above the MJP as follows:

- Base product premium—for standard grade billets delivered to premises
- Alloy upcharge—additional charge for higher grade alloys, and
- Diameter upcharge—additional charge for larger diameter billets.

These premiums are shown in the primary billet price schedule at Confidential Attachment C. The Outlook Report also highlights that 'full billet premiums' are significantly higher than base ingot premiums.

Capral understands that some manufacturers in China purchase aluminium ingot and cast their own billets. However, to the extent that Chinese extruders purchase aluminium billet, the Commission must be mindful of the need to include an additional billet premium. Capral can provide further information on billet premiums if required.

Public file version

Capral also submits that the public file version of Guangdong Jinxiecheng's exporter questionnaire response is inadequate and does not contain sufficient detail to allow a reasonable understanding of the substance of the information, as required by s.269ZJ(2) of the Customs Act. While the requirements of that subsection do not strictly apply to an accelerated review under Division 6, Capral submits that Guangdong Jinxiecheng's failure to provide an adequate public file version of it's exporter questionnaire response amounts to a refusal to cooperate with the review and the Commission should terminate the review under s.269ZE(3).

Guangdong Jinxiecheng has claimed confidentiality of its response to key questions. In particular there is no information to understand the production process and what type of extrusions are being exported to Australia or are intended to be exported in the future, other than noting current exports are mill finish and future exports may have various coatings. Guangdong Jinxiecheng could be planning to export high cost profiles and coatings, however if the cost information provided covers low cost extrusions the resulting normal values will be understated and the measures ineffective.

Specific comments on questionnaire response

Capral submits the following specific comments/questions in relation to Guangdong Jinxiechengs' questionnaire response:

1. Guangdong Jinxiencheng states as a response to a number of questions (eg: response to B-1) that it:

> *"wishes to keep this information confidential as it is a private company and information is confidential. The release of this to a third party, especially to the competitors will negatively impact its competitiveness, even summation of this information will contain information that is confidential by its nature".*

It is unclear from this statement as to whether the respondent has provided the requested information to the Commission. On the basis of other statements (eg: response to A-5) that "this confidential information is provided to the subject authority for investigation...", Capral can only assume that Guangdong Jinxiecheng has not provided the requested information when this response is made.

If this is the case, Capral submits that Jinxiecheng has not co-operated with the investigation.

2. In relation to questions/responses in A-3 Company information, Capral submits that the following questions should be posed/answered (and placed on the public record):

   a) What other companies do Mr Wu Zecheng, Mr Ng Kuishing and Mr Wu Zhecheng have interests in?
   b) What family members of Mr Wu Zecheng, Mr Ng Kuishing and Mr Wu Zhecheng are involved in Foshan Nanhai Newtime Trading Co.Ltd?
   c) What family members of Mr Wu Zecheng, Mr Ng Kuishing and Mr Wu Zhecheng are involved in other companies which produce aluminium extrusions in China?
   d) Has Foshan Nanhai Newtime Trading Co.Ltd or any of its associated companies at any time shipped aluminium extrusions to Australia that have been produced by a company other than Guangdong Jinxiecheng?
   e) Given that Guangdong Jinxiecheng has no other affiliates or subsidiaries - what is the purpose of the parent company Jinxiecheng Al Co., Ltd?

Conclusion

Capral submits that:

- the Commission should properly investigate subsidies to Guangdong Jinxiecheng
- the competitive market benchmark cost, for the purposes of this accelerated review, for purchasing primary aluminium in physical form should be the LME price plus a suitable premium (such as the MJP), plus a billet premium (where applicable), plus trader premiums plus delivery to the manufacturer
- the public file version of Guangdong Jinxiecheng's exporter questionnaire response is inadequate, and
- the Commission should put a number of questions to Guangdong Jinxiecheng and place its responses on the public record.

Kind Regards,

Andrew Barlow
Group Commercial Manager
Capral Limited

METHODOLOGY AND SPECIFICATIONS GUIDE

Metals

(Latest Update: June 2013)

PRICE INDEXES

Each of these three indexes is a straight arithmetic average calculated in such a way that its value would have been 100.00 on Dec. 30, 1982. The prices averaged are usually from the next to last business day of the week. When the price is a range, the low end is used in calculating the average. **MW Base Index** includes Aluminum MW US Market, Copper MW Composite, Lead US Producer, Tin MW Composite, Zinc MW NA SHG, and Nickel Cathode NY Dealer. **MW Precious Index** includes Gold London Initial, Silver Comex 1st Position, Palladium MW NY Dealer and Platinum MW NY Dealer. **MW Composite Index** includes MW Base and MW Precious Indexes.

PRICE ASSESSMENTS, EXCHANGE PRICES AND LIST PRICES

ALUMINUM

Unalloyed primary ingot and billet prices:

LME – Official morning session prices on the London Metal Exchange. First price is bid, second is asked. Weekly average is the bid/asked mean; settlement is official cash asked price, with weekly average being average of that price alone. HG (high grade) is min. 99.7% purity, quoted in US dollars.

NYMEX/COMEX – Daily official settlement/closing prices of the New York Mercantile Exchange's COMEX division, for 99.7% purity, in warehouse on warrant at select COMEX-registered warehouses. To meet COMEX specs, reflected as futures prices for each active trading month.

MW US Market – Weekly estimated US free market price for prompt delivery Midwest of 99.7% purity high-grade, (arrival within 30 days). Pre-dating the LME, the price reflects an "all-in" end price for the aluminum, accounting for premiums done over the LME in a given week but also enabling for adjustments in times of LME backwardation. The assessment, published usually every Thursday, includes the LME prices and daily survey premiums for Monday through Thursday only, incorporated into a one-cent range to smooth out volatility and reflect the majority of the week's business. Monthly average of this price uses the low end of the range only, so the price tends to be lower than the Transaction price.

MW US Transaction Premium – Daily premium or discount to the London Metal Exchange cash price for spot physical 99.7% high-grade aluminum, delivered, duty-paid US consumer works, arrival within 7-30 days from date of publication, net-30-day terms. Assessment is expressed in cents per pound but also available on a converted dollars/mt basis. Premium or discount is determined based on physical spot deals, bids and offers reported through a daily survey of spot buyers and sellers, using a representative sample of producers, traders and different types of end users (sheet mills, remelt billet makers, extruders, rod mills, etc). Includes business for LME-deliverable, any-origin 99.7% P1020 ingot, low-profile sow or T-bars, basis delivery US Midwest. Volumes are minimum full 45,000 lb truckloads; typical order quantities 100-500 mt. Prices for volumes that are larger or smaller than the typical order size may be normalized to the standard. The daily assessment reflects delivery to a typical-freight consumer in a broad US Midwest region via truck or rail. The typical-freight delivery location is determined to be 1.25-1.75 cents/lb from multiple suppliers or ports (freight rates updated December 2012). Deals that are reported as FOB, FCA, for non-Midwest locations or for particularly close or long freights (ie, less than/greater than the current range of 1.25-1.75 cents/lb) are normalized before inclusion in the calculations. Platts uses a matrix of typical delivery locations throughout North America and categorizes these locations as "average," "close," or "extra" freights. The "close" or "extra" freight locations are normalized to "average" based on assigned differential values of ranging from plus/minus 0.25 cents to 0.5 cents/lb, which are adjusted periodically based on market feedback on typical locational discounts or extras. Assessment reflects net-30-day payment terms from delivery (net-cash, net-5 and net-10 are normalized using typical LIBOR-plus rates or prevailing net-cash versus net-30 spreads). Deals that require a specific shape or chemistry (ie, T-bars only, no lithium) may be normalized to the stated standard specification. In the absence of repeatable concluded spot deals where a premium/discount is negotiated, the assessment takes into account firm bids and offers. Changes in the spreads on formula deals, or the premiums and discounts for other grades of aluminum basis Transaction premium, are considered for trend purposes. "Good until cancel" (GTC) deals reflecting a fixed price with non-negotiated premiums, or additional orders given as part of a frame contract, are not considered in the assessment but may be monitored for trend purposes. The assessment reflects the most-widely tradable and repeatable premium or discount value prevailing at the close of US markets, typically at 4:30pm US Eastern time. On the last business day of the month, the assessment closes by 1pm US East Coast time.

MW US Transaction – Daily London Metal Exchange high-grade aluminum cash settlement price, converted into cents per pound, adjusted by US free-market premium or discount for prompt delivery Midwest (arrival within 7-30 days from date of publication). (See specification for US Transaction Premium). Premium determined based on physical business reported by a daily survey of major buyers and sellers, using a representative survey sample of producers, traders and different types of end users. Includes business for LME-deliverable, any-origin 99.7% North American P1020 ingot, low-profile sow or T-bars, meeting LME specifications, basis delivery US Midwest. Volumes are minimum full 45,000 lb truckloads, typical quantities 100-500 mt.

MW US Net-cash premium – Daily premium or discount to the London Metal Exchange cash price for spot physical 99.7% high-grade aluminum, delivered, duty-paid US consumer works, arrival within 7-30 days from date of publication, net-cash payment terms, normalized to a broad Midwest region. The premium is determined based on a survey of producers, traders and end users to determine the prevailing spread between net-cash and net-30 terms, on a cents/lb basis. All other specifications are the same as for the US Transaction Premium (see separate reference).

US Six-Months P1020 – Weekly estimated US free-market premium over LME for North American 99.7% ingot delivered Midwest for a period in time six months forward, based on a survey of quotes and sales during the current week for six months from that date. Reflects both physical and financial swaps business done by producers, traders and consumers.

US Spot 6063 Billet Upcharge – Weekly estimated US spot upcharge over current P1020 transaction price for primary, North American General Purpose 6063 billet, to Aluminum Assn. specifications, basis delivery Midwest, net 30 days terms. The range reflects the majority of spot (non-contract) business based on a survey of active sellers and buyers. Excludes secondary and import billet.

Europe-Good Western Duty-paid Premium Rotterdam – Duty-paid daily estimated $/mt premium over LME cash for Western-origin 99.7% ingot meeting LME high grade specifications. In warehouse Rotterdam, 0-30 days terms, prompt delivery. Based on a survey of producers, traders and consumers (extruders, rolling mills). Began being assessed daily September 2003.

Europe-Good Western Duty-Unpaid Premium Rotterdam – Daily estimated $/mt premium over LME cash for 99.7% ingot meeting LME high grade specifications. In warehouse Rotterdam, 0-30 day terms, prompt delivery, on a duty-unpaid basis. Based on a survey of producers, traders and consumers (extruders, rolling mills). Assessed daily as of September 2003.

Europe-Russian A7E Duty-Unpaid Premium Rotterdam – Daily estimated $/mt premium over LME cash for 99.7% Russian origin ingot in warehouse Rotterdam, 0-30 day terms, prompt delivery, on a duty-unpaid basis. Based on a survey of producers, traders and consumers of aluminium. Assessed daily as of September 2003.

Europe-Russian A7E FOB Premium St. Petersburg – Daily estimated $/mt premium over LME cash for 99.7% Russian origin ingot on a FOB St. Petersburg basis, 0-30 day terms, prompt delivery. Based on a survey of producers, traders and consumers of aluminium. Assessed daily as of September 2003.

(DISCONTINUED)Europe – Good Western Premium: Duty paid weekly estimated $/mt premium over LME cash for Western-origin 99.7% ingot meeting LME high grade specifications. In warehouse Rotterdam, 0-30 days terms, prompt delivery. Based on a weekly survey of producers, traders and consumers (extruders, rolling mills). Replaced with daily price effective September 2003.

(DISCONTINUED)Europe – Russian A7E Premium Rotterdam: Weekly estimated $/mt premium over LME cash for 99.7% Russian origin ingot in warehouse Rotterdam, 0-30-day terms, prompt delivery. Based on a survey of producers, traders and consumers of aluminum. Replaced with daily price effective September 2003.

(DISCONTINUED)Europe – Russian A7E Premium St Petersburg: Weekly estimated $/mt premium over LME cash for 99.7% Russian origin ingot on a FOB St Petersburg basis, 0-30-day terms, prompt delivery. Based on a survey of producers, traders and consumers of aluminum. Replaced with daily price effective September 2003.

(DISCONTINUED)Europe – Russian A7E Premium Novorossiysk: Weekly estimated $/mt premium over LME cash for 99.7% Russian origin ingot on a FOB Novorossiysk basis, 0-30-day terms, prompt delivery. Based on a survey of producers, traders and consumers of aluminum. Discontinued as of September 2003.

CIF Japan Spot Premium – Daily estimated premium for 99.7% Good Western aluminum, over LME cash for CIF Japan aluminum business, CIF Yokohama, Nagoya, Osaka ports, excluding Iran, Egypt, India, LME warehouses, CBA Brazil. Cash within 3 days of bill of lading; cargo leaves port in month following month of transaction. 500-10,000mt quantities. Platts surveys market sources, gathering information from a representative sample of traders, consumers, producers and brokers deemed reliable and active in the market. Platts contacts sources based in Japan, Australia, Hong Kong, Korea and other Asian countries. Platts also gathers information from sources in North and South America, and Europe.

CIF Japan Forward Quarter Premium – Daily estimated premium for 99.7% Good Western aluminum, over LME cash for CIF Japan aluminum business, CIF Yokohama, Nagoya, Osaka ports, excluding Iran, Egypt, India, LME warehouses, CBA Brazil. Cash within 2 days of bill of lading; cargo leaves port in the quarter following the quarter in which business is transacted. 500-10,000mt quantities. The assessment appears as "CIF Japan Q(1,2,3,4)." Q1 represents the January-March term, Q2 the April-June term, Q3 the July-September term, and Q4 the October-December term. The assessment covers business in which lifting from the producer's port is scheduled for some time in the quarter following the one in which business was transacted (ie: business concluded in August for October lifting; the assessment would read "Q4" because October is part of the fourth quarter term). The term is rolled over when the majority of counterparties have negotiated pricing for the forward quarter.

C&F China Western – Daily estimated premium for 99.7% (0.1% Si, 0.2% Fe) Good Western aluminum in the form of ingots, sows, T-bars, over LME cash for C&F China aluminum business. Cargo leaves port upon receipt of letter of credits, usually within one month following the transaction. Delivered to main Chinese ports such as Huangpu, Shanghai, Fuzhou, Qingdao, Zhongshan, Zhuhai, and Hong Kong. Under consideration to be changed to CIF China.

C&F China Russian – Daily estimated premium for 99.7% (0.1% Si, 0.2% Fe) Russian aluminum in the form of ingots, sows, T-bars, over LME cash for C&F China aluminum business. Cargo leaves port upon receipt of letter of credits, usually within one month following the transaction. Delivered to main Chinese ports such as Huangpu, Shanghai, Fuzhou, Qingdao, Zhongshan, Zhuhai, and Hong Kong. (Under consideration for change to CIF, Chinese origin only)

In-Warehouse Singapore – Daily estimated premium for 99.7% (0.1%Si, 0.2% Fe) material of all origin, mainly Indian, Chinese, and some Russian and Western, in-warehouse Singapore. Cargo released immediately upon payment.

Secondary alloy ingot prices

LME Alloy – Official morning session prices on the LME. First price is bid, second is asked. Weekly average is the bid/asked mean; settlement is official cash asked price, with weekly average being average of that price alone. Aluminum alloy delivered under this contract shall be: A380.1 alloy produced in conformity with the Aluminum Assn. specification; 226 alloy, produced in conformity with GDB-AlSi9Cu3 as described in DIN standard 1725; and D12S alloy, produced in conformity with JIs H2118-1976, Class 12. (Note: this specification to be read in conjunction with the provision that there be an allowance as follows: Others, total 0.50% max. Al balance). Lot sizes are 20 mt and in US dollar per mt. Cash price started Feb 1, 1993.

LME North American Special Aluminum Alloy Contract – Aluminum alloy conforming to the special North American A380.1 specification; size of lot is 20mt (with a tolerance of +/-2%). Delivery is daily from cash to 3 months (first prompt date two working days from cash), then every Wednesday from 3 months to 6 months. Then every third Wednesday from 7 months out to 27 months forward. The aluminum delivered under this contract shall be in the form of: ingot in the weight range of minimum 4kg to maximum 17.3kg; small sows in the weight range of minimum 408kg to maximum 590kg; large sows in the weight range of minimum 567kg to maximum 726kg; and T-bars in the weight range of minimum 408kg to maximum 726kg. Warehouses are located in Baltimore, Maryland, Chicago, Illinois; Detroit, Michigan; and St Louis, Illinois.

A-380 Alloy – 8-9.5% Si, 1% Fe, 3-4% Cu, 0.5% Mn, 0.1% Mg, 0.5% Ni, 2.9% Zn, and 0.35% Sn. Estimated twice-weekly (Monday-Thursday) market price for prompt delivery Midwest, customer works, payment net-30 to net-60 days, 45,000-lb truckload amounts. Price represents a range of spot transaction prices conducted by a survey of US secondary aluminum smelters, diecasters, foundries, automotive companies, traders and brokers. Price started in 1992.

US 319, 356, F132, A-413.1, F-132 and B390 – Twice-weekly price assessment ranges for major secondary aluminum alloys. Delivered Midwest customer works, payment net-30 to net-60 days, 45,000-lb truckload quantities. Assessed twice per week, on Mondays and Thursdays (except for changes during holidays), through a survey of US secondary aluminum smelters, diecasters, foundries, automotive companies, traders and brokers. The assessments reflect the narrow low-high price range, in cents/lb, of the majority of concluded deals, bids and offers. The impurity levels represent the Aluminum Assn. specifications or typical market specifications for 319.1, 356.1, 332.2, A413 and B390, respectively, as follows: **319.1** – 5.5-6.5% Si; 0.8% Fe, 3.0-4.0% Cu; 0.50% Mn, 0.10% Mg, 0.35% Ni; 1.0% Zn, 0.25% Ti. **356** – 6.5-7.56% Si; 0.50% Fe; 0.25% Cu; 0.35% Mn; 0.25-0.45% Mg; 0.35% Zn; 0.25 Ti. **F-132** – 8.5-10.0% Si; 0.6% Fe; 2.0-4.0% Cu; 0.20 Mn; 0.9-1.3% Mg; 0.10% Ni; 0.10% Zn; 0.20% Ti. **A-413.1** -- 11-13% Si; 1% Fe max; 0.6% Cu max; 0.35% Mn; 0.1% Mg; 0.5% Ni; 0.5% Zn; and 0.15% Sn. **B390** -- 16-18% Si, 1.3% max Fe, 4.0-5.0% Cu, 0.50% Mn, 0.45-0.65% Mg, 0.10% Ni, 1.4% Zn and 0.20% Ti. Price assessments for 319, 356, and F132 started in April 1993; A413 started in 2010 and B390 in 2013.

Europe – Secondary Aluminium 226 Price (Started Sep 1, 2003): Weekly estimated Eur/mt price for secondary aluminium alloy 226 LME grade on a delivered works basis 0-30 day terms, prompt delivery. The alloy is produced in conformity with GBD-AlSi9Cu3 as described in DIN standard 1725 (1986). Based on a survey of producers, traders and consumers of aluminium. Price assessed weekly and published on Fridays.

ADC12 ex-works China: Platts assessment for ADC12 Alloy to conform to JIS standard – 9.6-12% Si, 0.9% Fe, 1.5-3.5% Cu, 0.5% Mn, 0.3% Mg, 0.5% Ni, 1% Zn, and 0.2% Sn. Spot prices assessed weekly on Tuesday or closest working day. The assessment reflects the domestic market price, on a spot trade basis, in yuan per mt, ex-plant from a typical supplier. The spot price represents a range of spot transactions, bids and offers determined by surveying Chinese secondary aluminum smelters, diecasters, foundries, automotive companies, traders and brokers.

ADC12 FOB China: Platts assessment for ADC12 Alloy to conform to JIS standard – 9.6-12% Si, 0.9% Fe, 1.5-3.5% Cu, 0.5% Mn, 0.3% Mg, 0.5% Ni, 1% Zn, and 0.2% Sn. Spot prices assessed weekly on Tuesday or closest working day. The assessment reflects the export market price, on a spot trade basis, in $/mt, FOB Chinese ports, mainly Shanghai and Tianjin. The spot price represents a range of spot transactions, bids and offers determined by surveying secondary aluminum smelters, diecasters, foundries, automotive companies, traders and brokers in China, Hong Kong and Japan.

Scrap prices.

US Old Cast – Aluminum castings for consumption by secondary aluminum smelters, crushed cast, shreddable, less than 1% Mg and Zn, low Fe, low contamination; minimum recovery rate 92%; cents/lb, within 30-day delivery US Midwest. Assessed twice a week, usually on Mondays and Thursdays, through a survey of secondary aluminum smelters and scrap dealers. Price started in July 2000.

US Old Sheet – Non-cast aluminum items for consumption by secondary aluminum smelters to meet ISRI "taint/tabor" specification; cents/lb, 30-day delivery US Midwest. Assessed twice a week, usually on Mondays and Thursdays, through a survey of secondary aluminum smelters and scrap dealers. Price started in July 2000.

US Mill-grade MLCCs – Mixed-low copper clips able to be consumed by aluminum rolling mills, 1000, 3000, 5000, 6000 series only; cents/lb, 30-day delivery US Midwest. Assessed twice a week, usually on Mondays and Thursdays, through a survey of secondary aluminum smelters, scrap dealers and rolling mills. Price started in July 2000.

US Smelter-grade MLCCs – Mixed-low copper clips for consumption by secondary aluminum smelters, loose, bare, new, no contamination, free of 2000 and 7000 series; cts/lb, 30-day delivery to US Midwest. Assessed twice a week, usually on Mondays and Thursdays, through a survey of secondary aluminum smelters and scrap dealers. Price started in July 2000.

US Turnings – Machine and tooling scrap for consumption by secondary aluminum smelters; high grade, clean and dry; cts/lb, 30-day delivery US Midwest. Assessed twice a week, usually on Mondays and Thursdays, through a survey of secondary aluminum smelters and scrap dealers. Price started July 2000.

US UBCs – Baled used beverage cans, to meet ISRI "taldon" specification; cents/lb, delivered US Midwest. Assessed once a week, usually on Thursdays, reflecting the range of spot business concluded by consumers and mid-to-large scrap dealer/consolidators/brokers. Business that is reported as non-Midwest or FOT (picked up) is adjusted to reflect average US Midwest delivery. Price started July 2000.

US 6063 Press Scrap – New 6063 extrusion press scrap, direct from presses, billet with butts included. Expressed as a cents/lb discount below US Midwest P1020 Transaction price, delivered US Midwest cast houses. Assessed once a week as the range of discounts most commonly concluded on a spot basis, via a survey of primary producers, extruders and scrap dealers. Price started September 2000.

US Painted Siding – Siding consisting of clean, low-copper aluminum siding scrap, painted one or two sides, free of plastic coating, iron, dirt, corrosion, fiber, foam or fiberglass backing or other non-metallic items, for US Midwest delivery within 30 days. Assessed once a week, usually on Thursdays, through a survey of scrap dealers and rolling mill buyers. Price started in March 2006.

US High-grade auto shreds – Auto shreds generated through a heavy media-based separation process, containing at least 98% metallics and not more than 1% free zinc, to include material from the following suppliers: Huron Valley, Newell, Ferrous Processing/SLC Recycling and Fort Wayne OmniSource Corp., for US Midwest delivery within 30 days. Assessed twice a week, usually on Mondays and Thursdays, through a survey of secondary aluminum smelters and scrap dealers/processors. Price started in May 2006, replacing previous auto shreds/twitch price effective September 2006.

US Low-grade auto shreds – Auto shreds generated through an eddy current-based or hand separation process, containing at least 90% metallics and not more than 4% zinc, for US Midwest delivery within 30 days. Assessed twice a week, usually on Mondays and Thursdays, through a survey of secondary aluminum smelters and scrap dealers. Price started in May 2006, replacing previous auto shreds/twitch price effective September 2006.

ANTIMONY

MW NY Dealer – 99.65% min. antimony ingot, 0.15% max. arsenic, warehouse, 5-ton lots, duty paid.

99.65% HK – Chinese produced antimony regulus, min. 99.65% Sb, $ per mt, FOB Hong Kong.

ARSENIC

MW Dealer – Free market price for arsenic metal lumps (fist size), minimum 99% As, 5mt lots, in-warehouse, $/lb. Started September 2003.

BISMUTH

MW NY Dealer – Estimated NY merchant price, 99.99% min. purity, prompt delivery. Min. one ton, in-warehouse, $/lb.

CADMIUM

MW NY Dealer – Estimated NY Dealer price, 99.95% min. purity, prompt delivery. Min 5-ton lots.

MW Free Market High Grade – Estimated NY dealer price, 99.99% minimum purity metal, prompt delivery, minimum 5-ton lots, $/lb. Started October 2003.

COBALT

Europe - Cobalt 99.8%: Weekly estimated $/lb price for minimum 99.8% cobalt. The price is assessed on a free market in warehouse Europe basis. Based on survey of producers, traders and consumers of cobalt. Assessed weekly, usually on Thursdays.

MW, 99.8% US Spot Cathode – US free market cobalt, 99.8%, Falconbridge (Xstrata Nickel) or equivalent, 1"x1" cut, electrolytic, cobalt cathodes, minimum 99.8% Co, packed in 250 kg steel drums, four drums per wooden pallet, strapped to pallet. Assessed in $/lb, delivered, duty-paid US, delivery within 30 days, payment net-30 days. All Cuban origin material excluded from US cobalt assessments. Based on surveys of producers, merchants and consumers, assessed Thursdays or closest business day.

MW, 99.6% Zambian – US free market cobalt, 99.6%, Zambian, thin/broken, electrolytic cathode, minimum 99.6% Co, packed in 250 kg steel drums. Assessed in $/lb, delivered, duty-paid US, delivery within 30 days, payment net-30 days. Based on surveys of producers, merchants and consumers. Assessed Thursdays or closest business day.

MW, 99.3% Russian – US free market cobalt, 99.3%, Russian K1A/K1Ay electrolytic ingot/granules, minimum 99.30% Co and 99.35% Co, K1A and K1Ay respectively, ingot sizes 370x110x60 mm or 270x150x50 mm for K1A, typical ingot weight 12-14 kg, or granules 5-50 mm for K1Ay, certified suitable for use in aerospace, packed in 250 kg steel drums, or packed in metal containers up to 4,500 kg net. Basis delivered, duty-paid, US, delivery within 30 days, payment net-30 days. Note: Russian K1 (99.25% Co) and K2 (98.30% Co) excluded from this assessment. Based on surveys of producers, merchants and consumers. Assessed on Thursdays or closest business day.

COPPER

COMEX – Settlement prices on New York Mercantile Exchange's COMEX division. Forward positions are indicated by footnote (C) on price pages. The high-grade contract is ASTM B115.

LME – Official morning session prices on London Metal Exchange. First price is bid, second is asked. Weekly average is the bid/asked mean. The grade A contract is 99.9935% Cu and only cathode and wirebar shapes are deliverable. Quoted as œ/mt until June 30, 1993. Started quote in $/mt as of July 1, 1993.

MW No. 1 Scrap – Mid-week transaction based, buy-side indications for US-delivered bare bright scrap and burnt wire, expressed as a cts/lb discount spread to the First Position COMEX price.

MW No. 2 Scrap – Estimated New York area delivered price for US-delivered clean No. 2 scrap (96% Cu) for the next to last business day of the week expressed as a cts/lb discount spread to the First Position COMEX price.

MW CIF Europe – LME grade A asked price.

MW Composite – Weighted average based on estimated US refined copper production, on a delivered cathode basis.

NY Dealer Premium/Cathode – Typical premiums expressed in cts/lb above First Position COMEX being charged by New York metal merchants on the next to last business day of the week.

MW US Producer Cathode – Weighted average based on estimated US refined copper production and published prices for delivered full-plate cathodes.

MW US Producer/Refinery – f.o.b. quotation is MW US producer/delivered prices less 1.4cts shipping cost.

US Producer Cathodes and US Producer Wirebars – Official list prices for those grades (99.9% Cu).

Europe – Grade A CIF Rotterdam: Weekly estimated $/mt premium for Grade A LME copper on a CIF Rotterdam basis, 0-30-day terms, prompt delivery. Based on a survey of producers, traders and consumers of copper. Assessed weekly, usually on Wednesdays.

Europe – Grade A CIF Italy: Weekly estimated $/mt premium for Grade A LME copper on a CIF Italian port basis, 0-30-day terms, prompt delivery. Based on a survey of producers, traders and consumers of copper. Assessed weekly, usually on Wednesdays.

Europe – Standard CIF Rotterdam: Weekly estimated $/mt premium for Russian standard grade copper on a CIF Rotterdam basis, 0-30-day terms, prompt delivery. Based on a survey of producers, traders and consumers of copper. Assessed weekly, usually on Wednesdays.

Copper Concentrate – Cu 30%, CIF Japan. Daily estimated treatment and refining charges ($/mt; cts/lb) for 25-30% copper-in-concentrate, any origin, lumpy ore, 0-30 day terms, Cargo leaves port in month following that of transaction.

Copper C&F China – Daily estimated premium for Grade A 99.95% minimum cathode, mostly of Chilean origin, over LME cash for C&F China copper business. Cargo leaves port upon receipt of letter of credits, usually within one month following the transaction. Delivered to main Chinese ports such as Huangpu, Shanghai, Guangzhou, and Hong Kong. (Under consideration to be changed to a CIF basis price)

In-Warehouse Singapore Premium – Daily estimated premium for Grade A 99.95% minimum material of all origin, mainly Philippines, Indonesia, Chilean, South Korean, and Australian, Chinese, and Japanese, in-warehouse Singapore. Cargo released immediately upon payment.

FERROCHROME

65% 6-8% High Carbon DDP NWE: Weekly assessment for 60-70% chrome, normalized to 65% Cr, with Si content of 1.5%; P content 0.030%. The specification is for volumes of 200-500 mt, delivered, duty-paid Northwest Europe, basis for delivery within four weeks from date of transaction, net-30 days payment terms. Assessment will be in $/lb Cr contained and conducted on Thursdays (or closest business day in the case of holidays) through a survey of producers, traders and steel mill buyers. Started July 8, 1992.

65% High-Carbon, in-warehouse US: Weekly assessment of the repeatable, tradeable, spot price for 60-65% Cr, high-carbon ferrochrome, normalized to 65% Cr, 6-8% carbon, 2% max silicon, 0.03% max phosphorous, 0.04% max sulfur, lumps size 0.50 x 2.5 inch; US origin and imported material, free market, cents/lb Cr contained; in-bulk or 2,000-3,000 lb supersacks; duty-paid in-warehouse in key locations along the Mississippi, Chicago, Ohio and Columbia River systems and other key port warehousing locations, including Baltimore, Maryland, Long Beach, California and Portland, Oregon; delivery within 60 days from date of transaction; net-30 days payment terms from date of delivery. Transactions reported on a delivered basis normalized to an in-warehouse basis. Fines normalized to stated lump specifications. Special packaging and payment terms normalized to meet stated specifications. The assessment will reflect pricing for quantities of four truckloads and greater. Assessment made Wednesdays, or closest business day, from survey of producers, traders and end users in the carbon, stainless and specialty steel sectors, closing at 4pm New York time. Started December 15, 1971.

Low Carbon 0.15% in-warehouse US: Weekly assessment of the repeatable, tradeable, spot price for 0.15% carbon, 68-74% Cr, ferrochrome, carbon 0.15% max, silicon 1% max, phosphorous 0.3% max, sulfur 0.02% max, lumps size 0.50 x 2.5 inch; US origin and imported material, free market; cents/lb Cr contained; in-bulk or 2,000-3,000 lb supersacks; duty-paid in-warehouse in key locations along the Mississippi, Chicago, Ohio and Columbia River systems and other key port warehousing locations, including Baltimore, Maryland, Long Beach, California and Portland, Oregon; delivery within 60 days from date of transaction, net-30 days payment terms from date of delivery. Transactions reported on a delivered basis normalized to an in-warehouse basis. Fines normalized to stated lump specifications. Special packaging and payment terms normalized to meet stated specifications. The assessment will reflect pricing for full truckload quantities and greater. Assessment made Wednesdays, or closest business day, from survey of producers, traders and end users in the carbon, stainless and specialty steel sectors, closing at 4pm New York time. Started October 4, 1995.

Low-Carbon 0.10% DDP NWE: Weekly assessment for 60-70% chrome, normalized to an assessed grade with a Si content of 0.05% and P content 0.05%. The specification will be for volumes of 200-500 mt, delivered, duty-paid Northwest Europe basis for delivery within 4 weeks from date of transaction, net-30 days payment terms. Assessment will be in $/lbCr contained and conducted on Thursdays (or the closest business day in the case of holidays) through a survey of producers, traders and steel mill buyers. Started July 8, 1992.

Low Carbon 0.10% in-warehouse US: Weekly assessment of the repeatable, tradeable, spot price for 0.10% carbon, 65-74% Cr, ferrochrome, normalized to 68% Cr, carbon 0.10% max, silicon 1% max, phosphorous 0.3% max, sulfur 0.02% max, lumps size 0.50 x 2.5 inch. The assessment covers US origin and imported material, free market, cents/lb Cr contained, in-bulk or 2,000-3,000 lb supersacks; duty-paid in-warehouse in key locations along the Mississippi, Chicago, Ohio and Columbia River systems and other key port warehousing locations, including Baltimore, Maryland; Long Beach, California and Portland, Oregon; delivery within 60 days from date of transaction, net-30 days payment terms from date of delivery. Transactions reported on a delivered basis normalized to an in-warehouse basis. Fines normalized to stated lump specifications. Special packaging and payment terms normalized to meet stated specifications. The assessment will reflect pricing for full-truckload quantities and greater. Assessment made Wednesdays, or closest business day, from survey of producers, traders and end users in the carbon, stainless and specialty steel sectors, closing at 4pm New York time. Started September 1, 1992.

Low Carbon 0.05% in-warehouse US: Weekly assessment of the repeatable, tradeable, spot price for 0.05% carbon, 65-74% chrome, normalized to 68% Cr, carbon 0.05% max, silicon 1% max, phosphorous 0.3% max, sulfur 0.02% max; lumps 0.50 x 2.5 inch; US-origin and imported material, free market; cents/lb Cr contained; in-bulk or 2,000-3,000 lb supersacks; duty-paid in-warehouse in key locations along the Mississippi, Chicago, Ohio and Columbia River systems and other key port warehousing locations, including Baltimore, Maryland, Long Beach, California and Portland, Oregon; delivery within 60 days from date of transaction, net-30 days payment terms from date of delivery. Transactions reported on a delivered basis normalized to an in-warehouse basis. Fines normalized to stated lump specifications. Special packaging and payment terms normalized to meet stated specifications. The assessment will reflect pricing for full-truckload quantities and greater. Assessment made Wednesdays, or closest business day, from survey of producers, traders and end users in the carbon, stainless and specialty steel sectors, closing at 4pm New York time. Started January 3, 1973.

Charge Chrome 52% DDP NWE: Weekly assessment for 48-52% grades normalized to a Si content of maximum 6-8% and P content 0.030%. The specification will be for volumes of 200-500 mt, delivered, duty-paid Northwest Europe basis, for delivery within 4 weeks from date of transaction, net-30 days payment. Assessment will be in $/lb Cr contained and conducted on Thursdays (or the closest business day in the case of holidays) through a survey of producers, traders and steel mill buyers. Started July 8, 1992.

Charge Chrome 48-52% Cr, in-warehouse US: Weekly assessment of the repeatable, tradeable, spot price for 48-52%Cr charge chrome, carbon 8% max, silicon 4% max, phosphorous 0.03% max, sulfur 0.04% max, lumps size 1 x 2.5 inch; US origin and imported material, free market, cents/lb Cr contained; in-bulk or 2,000-3,000 lb supersacks; duty-

paid in-warehouse in key locations along the Mississippi, Chicago, Ohio and Columbia River systems and other key port warehousing locations, including Baltimore, Maryland, Long Beach, California and Portland, Oregon; delivery within 60 days from date of transaction; net-30 days payment terms from date of delivery. Transactions reported on a delivered basis normalized to an in-warehouse basis. Fines normalized to stated lump specifications. Special packaging and payment terms normalized to meet stated specifications. The assessment will reflect pricing for quantities of four truckloads and greater. Assessment made Wednesdays, or closest business day, from survey of producers, traders and end users in the carbon, stainless and specialty steel sectors, closing at 4pm New York time. Started March 16, 1977.

50-55% Regular CIF Japan – 50-55% Cr, 6-9% C Started July 1, 1993

60-65% Spot CIF Japan – 60-65% Cr, 6-9% C Started July 1, 1993

FERROMANGANESE

High-Carbon 76% Mn in-warehouse US: Weekly assessment of the repeatable, tradeable, spot price for high-carbon ferromanganese 74-78% Mn, normalized to 76% Mn, carbon 7.5% max, silicon 1.2%, phosphorous 0.5%, sulfur 0.02%; lumps 0.5- x 4.00 inch; US-origin and imported material, $/long ton Mn contained; in-bulk or 2,000-3,000 lb supersacks; duty-paid in-warehouse in key locations along the Mississippi, Chicago, Ohio and Columbia River systems and other key port warehousing locations, including Baltimore, Maryland, Long Beach, California and Portland, Oregon; delivery within 60 days from date of transaction, net-30 days payment terms from date of delivery. Transactions reported on a delivered basis normalized to an in-warehouse basis. Fines normalized to stated lump specifications. Special packaging and payment terms normalized to meet stated specifications. The specification will be for a minimum of four truckload quantities and greater. The assessment will reflect pricing for minimum quantities of four truckloads and greater. Assessment made Wednesdays, or closest business day, from survey of producers, traders and end users in the carbon, stainless and specialty steel sectors, closing at 4pm New York time.

High-Carbon 75% HK – 75% Mn, US dollar per mt, f.o.b. main Chinese ports.

Medium Carbon 85% Mn in-warehouse US: Weekly assessment of the repeatable, tradeable, spot price for medium-carbon ferromanganese 80-85% Mn, carbon 1.5% max, silicon 1.5% max, phosphorous 0.40% max, sulfur 0.2%; lumps size 0.50 x 2.5 inch; US-origin and imported material; cents/lb Mn contained; in-bulk or 2,000-3,000 lb supersacks; duty-paid in-warehouse in key locations along the Mississippi, Chicago, Ohio and Columbia River systems and other key port warehousing locations, including Baltimore, Maryland, Long Beach, California and Portland, Oregon; delivery within 60 days from date of transaction, net-30 days payment terms from date of delivery. Transactions reported on a delivered basis normalized to an in-warehouse basis. Fines normalized to stated lump specifications. Special packaging and payment terms normalized to meet stated specifications. The assessment will be for minimum quantities of four truckloads and greater. Assessment made Wednesdays, or closest business day, from survey of producers, traders and end users in the carbon, stainless and specialty steel sectors, closing at 4pm New York time.

FERROMOLYBDENUM

Prices based on moly content.

US Free Market ferromoly – weekly spot sales, 60% min Mo, 0.5% Cu, delivered, $ per lb/Mo, minimum 2,400 lb lot.

Europe – Ferromoly: Free market weekly estimated $/kg price for ferromolybdenum 70% Mo, 0.5% Cu, on a cash Rotterdam inwarehouse, duty paid basis.Standardized lump 2" or less, truck load lots. Based on a survey of producers, traders and consumers of ferromoly. Assessed in Europe on Thursdays.

HK Femo – Hong Kong, min 60% Mo, US dollar per kilo, f.o.b. main Chinese ports.

(DISCONTINUED) 60-70% Prod/Japan – 0.1% C, 2% Si, Mo content per kilo, Japanese producer. Discontinued June 30, 1993.

Spot CIF Japan – (min 60% Mo, max 0.1% C, max 2% Si; Mo content per kg) Japanese imports. Started July 1, 1993.

FERROSILICON

75% Std DDP NWE: Weekly assessment for 75% ferrosilicon; grades will be normalized to a specification with Al content of 1.5%, S 0.02% and P 0.04%. The assessment will be for volumes of 200-800 mt, delivered, duty-paid Northwest Europe basis for delivery within four weeks, net-30 days payment terms. Assessment will be in $/lb Si contained and conducted on Thursdays (or the closest business day in the case of holidays) through a survey of producers, traders and steel mill buyers.

75% Si, in-warehouse US: Weekly assessment of the repeatable, tradeable, spot price for 73-79% Si, normalized to 75% Si, aluminum 0.5% min-1.5% max, calcium 1.5% max; carbon 0.10% max, lumps 2x0.50 inch, 2x1 inch, or 4x1 inch; US-origin and imported material; in cents/lb Si contained; in-bulk or 2,000-3,000 lb supersacks; duty-paid in-warehouse in key locations along the Mississippi, Chicago, Ohio and Columbia River systems and other key port warehousing locations, including Baltimore, Maryland, Long Beach, California, and Portland, Oregon; delivery within 60 days from date of transaction, net-30 days payment terms from date of delivery. Transactions reported on a delivered basis will be normalized to an in-warehouse basis. Fines normalized to stated lump specifications. The assessment will be for a minimum of four truckload quantities and greater. Special packaging and payment terms normalized to meet stated specifications. Assessment made Wednesdays or closest business day from survey of producers, traders and end users in the carbon, stainless and specialty steel sectors, closing at 4pm New York time.

Chinese CIF Japan (Si 75% min, 0.2% C max.) – Started July 1, 1993.

HK 75% Si – 75% Si, US dollar per mt, f.o.b main Chinese ports.

(DISCONTINUED) Regular CIF Japan, Spot CIF Japan. Discontinued as of December 31, 2007: Regular CIF Japan, Spot CIF Japan)

(DISCONTINUED) Non-Origin yen/mt delivered (120-day usance) – Started July 1, 1993. Discontinued December 31, 2007

FERROVANADIUM

US Free Market Ferrovanadium – weekly spot sales; 80% minimum V content, $/lb/V; 2% max Si, 2% max Al, delivered.

US Free Market V_2O_5, (vanadium pentoxide) – weekly spot sales/indications; 98% minimum, delivered, price per lb/V205.

Europe- 70-80% V Ferrovanadium: Free market weekly estimated $/kg price for ferrovanadium 70-80% V, on an inwarehouse Eurpoe basis. Based on a survey of producers, traders and consumers of ferrovanadium. Assessed in Europe on Thursdays.

(DISCONTINUED) 80% Prod/Japan – 80% V, V content ferrovanadium, Japanese producer, and imported, yen per kilo. Discontinued June 30, 1993.

GOLD

COMEX – Settlement prices on the New York Mercantile Exchange's COMEX Division. Forward position is indicated by footnote (C) on price pages. These months are spot and one year out.

Handy & Harman – Daily quotation is the lowest price at which offers can be obtained by Handy & Harman for gold, min 99.95% purity, for nearby delivery in New York in quantities sufficient to meet its daily requirements.

London Final and London Initial – These spot quotations are established twice daily by consensus of major London bullion dealers. Purity: 99.5% fine.

Engelhard Unfab – base price per tr oz, asked price at 10:30 EST for 99.99% purity, unfabricated, f.o.b. Carteret, NJ, vault.

Hong Kong spot at 0700 GMT – These spot quotations are established daily at 0700 GMT, based on current trading levels quoted by Johnson Matthey. Purity: 99.5% fine minimum.

INDIUM

US Producer Indium Corp. – Indium Corp.'s price for 99.97% purity metal; 1 kilo bar in lots of 10,000 tr oz, f.o.b., Utica, NY, published in $/kg.

MW NY Dealer Indium – Price is based on 99.99% minimum purity indium at warehouse (Rotterdam), CIF, in minimum lots of 50kg.

Indium 99.99% CIF Japan: Indium metal with 99.99% purity, primary or secondary, measured in $/kg, shipped to Japan, delivery within 30 days. The metal should be compliant to European Union's RoHS directive, which restricts content of cadmium to less than 75 ppm, lead to less than 100 ppm, mercury to less than 100 ppm and hexavalent chromium to less than 20 ppm in 1 kilogram of the metal. 99.993% and 99.995% purity metal prices are to be considered as references. Platts assesses materials of Chinese and South Korean origins. Platts reserves the right to omit materials of unspecified origins from the assessment. Lots are 50 kg minimum and should not exceed 5 mt. Lots less than 50 kg are not to be considered as they are likely to be priced higher, and lots over 5 mt are likely to be sold with a volume discount. Platts assesses prices of the metal exported to Japan to be sold to Japanese traders, indium tin oxide manufacturers, solder and electronics equipment makers, as well as solar battery material makers. Spot prices are assessed on a weekly basis every Tuesday or closest working day based on a survey of Chinese producers, traders, South Korean producers and traders, Japanese traders, Japanese ITO makers and solder/electronics and battery makers.

IRIDIUM

MW NY Dealer – f.o.b. New York spot, estimated market price for min. 99% Ir purity.

LEAD

LME – Official morning session prices on the London Metal Exchange. First price is bid, second is asked. Weekly average is the bid/asked mean. Purity 99.97%. Quoted as ¢/mt until June 30, 1993. Started quote in $/mt on July 1, 1993.

MW NA Producer (MW NA Prod) – The weighted average, based on 1993 production figures, of the list prices of those NA (Canadian and US) primary and secondary producers still quoting list prices, in addition to those producers who have switched to LME pricing, the LME cash price plus appropriate market premiums or discounts.

MW North American Secondary Price (Lead Sec Prod) – The weighted average of the prices of NA (US and Canadian) secondary producers.

US Lead Premium: US premium to the LME settlement price for 99.97% pure corroding-grade lead, in 2,000-lb blocks (sows) or 55-100 lb pigs (ingots), maximum 0.025% bismuth, max 0.0050% silver, max 0.0010% Cu, max 0.001 Fe, delivered US within 30 days, normalized to a delivered Midwest basis, net-30 days payment terms. Minimum quantity one truckload (42,000-44,000 lb), typical order size one to five truckloads. Assessed weekly on Tuesday or closest business day in the event of holidays, through a survey of primary and secondary lead producers, traders and consumers of refined lead.

North American Lead Market Price: Daily formula assessment reflecting the current day's LME lead cash settlement price in cents per pound plus the weekly US premium. (See separate entry).

US Used Lead-Acid Batteries – Weekly assessment for 50% lead-acid, starter-lighter ignition automotive batteries, picked up US Midwest, assessed in cents/lb, suitable for delivery to secondary smelters within 30 days, net-30 days payment terms. Minimum quantity one truckload (42,000-44,000 lb), with typical order size one to five truckloads, packaged in shrink-wrapped pallets or skids, pallet size 40" or 44" by 48", maximum 3,600 lb per skid, no more than three battery layers separated by cardboard sheets. Assessed weekly through a survey of secondary lead smelter buyers, scrap dealers/processors, traders and brokers. Input from scrap yards will also be considered for trend purposes. The lead prices will be assessed weekly on Tuesdays (or closest business day in the event of holidays).

Europe – Dealer Premium 99.990% Rotterdam: Weekly estimated $/mt premium over LME cash for 99.990% lead on an in-warehouse Rotterdam basis, duty paid. Based on a survey of producers, traders and consumers of lead. Assessed every other week, usually on Tuesdays.

Europe – 99.985% Rotterdam: Weekly estimated $/mt premium over LME cash for 99.985% lead on an in-warehouse Rotterdam basis, duty paid. Based on a survey of producers, traders and consumers of lead. Assessed every other week, usually on Tuesdays.

Europe – 99.970% Rotterdam: Weekly estimated $/mt premium over LME cash for 99.970% lead on an inwarehouse Rotterdam basis, duty paid. Based on a survey of producers, traders and consumers of lead. Assessed every other week, usually on Tuesdays.

In-Warehouse Singapore Premium – Daily estimated premium for 99.97% material of mainly Chinese origin, in-warehouse Singapore. Cargo released immediately upon payment.

MAGNESIUM

All prices for 40,000-lb (truckload) lots.

(DISCONTINUED) US Die Cast Alloy/Producer – US producer list price, AZ91D alloy ingot, delivered. Under consideration for discontinuation due to producers' failure to update. Discontinued December 31, 2007

(DISCONTINUED) US Primary Ingot/Producer – US producer list price, 99.8% Mg, ASTM Grade 9980A, net 30 days financing, delivered, duty paid. Under consideration for discontinuation due to producers' failure to update. Discontinued December 31, 2007

US Die Cast Alloy/Tran – Western AZ91D alloy ingot, 40,000-lb (truckload), net 30 days, delivered, duty paid, reflecting the majority of producer/customer transactions on a spot basis. Started July 1, 1993.

MW US Spot Western – Western-origin pure 99.8% Mg ingot, ASTM Grade 9980A, truckload (40,000 lb) lots, net 30 days, duty paid, prompt delivery to US customer plant (Al alloying, chemical, and Mg ferrosilicon segments). Started July 1, 1993.

MW US Dealer Import – Non-oxidized, pure 99.8-99.9% Mg ingot, primarily from CIS or China, truckload (40,000 lb) lots, net 30 days, duty paid, prompt delivery to US customer plant (Al alloying, chemical, and Mg ferrosilicon segments). Started July 1, 1993.

European Free Market – Dealer price, 99.9% pure Russian or Ukrainian origin, mostly unoxidized Mg, in warehouse Rotterdam, duty unpaid.

99.8% FOB China: Weekly spot assessment range for 99.8% minimum pure magnesium ingots from China, in $/mt, FOB Tianjin, for shipment within 30 days. The assessment is based on a survey of China-based and Western traders, Chinese producers, Western consumers and analysts, assessed weekly on Tuesday or closest working day.

Magnesium Diecast Alloy FOB China – Magnesium diecast alloy, to include AZ91D, AM50 and AM60 specifications qualified by automotive companies, FOB Tianjin port destined for export within 30 days. Assessed from Hong Kong or Singapore in dollars per metric ton on a weekly basis, on Tuesday or closest business day, through a survey of Chinese producers, Asian traders and worldwide diecasters buying on an FOB China basis. Prices which are reported on a delivered China or CIF basis to other countries will be normalized to meet the specification. Includes export tax.

MANGANESE

Electrolytic Manganese 99.7% Mn FOB China: Weekly assessment of the repeatable, tradeable, spot price for 99.7-99.9% Mn; flakes, size 10mm x 150mm x 1.5 mm, normalized to 99.7%; silicon 0.05%, sulfur 0.04%, carbon 0.04%, iron 0.03%, phosphorous 0.004%, lead 0.001%; Chinese-origin and imported material, free market, $/mt, packaging in 250 kg drums, in Customs-sealed, 20 ft containers, export duty paid; shipment loading within 30 days from date of transaction, payment cash against documents, including original bill of lading. Reported CIF and CFR transactions normalized back to FOB China specification, using prevailing freight rates. Special packaging and payment terms normalized back to stated specification. Assessment made Thursdays, or closest business day, from survey of producers, traders and consumers of electrolytic manganese metal flake.

MANGANESE ORE

Platts launched on January 3, 2012, a daily spot market price assessment of **manganese ore**.

Price Assessment: Platts publishes the daily spot market price for manganese ore, reflecting the price at which a cargo could be traded on a CIF North China basis, Tianjin, at the close of the assessment period on the day of publishing. These assessed values are based on confirmed spot cargo transactions, or the tradable price falling between firm cargo bids/offers, or in the absence of liquidity, where spot market transactions would have been concluded for the benchmark grade.

Spot price bids/offers or trades basis FOB or CIF in other locations may be netted back to CIF North China using prevailing spot freight rates for dry bulk carriers on the day of assessment. For netback/netforward calculations , the appropriate vessel class freight costs are taken into consideration.

Platts spot market price assessment can also take into account fundamentals of demand/supply of manganese ore and alloys in key consumer and producer markets internationally.

Availability: The daily spot price assessment of manganese ore is published in Platts' real-time service Platts Metals Alert (PMA), in Platts Metals Week, and in Platts Metals Daily supplements. Monthly averages are published on PMA, in Platts Metals Week Price Notification Monthly Report and in Metals Week.

Frequency: The assessment CIF China is published daily and reflects market values prevailing at the close of Asian markets, typically at 6:30 pm Singapore time (1030 GMT). The assessment is published following editorial engagement with market participants such as producers, consumers, traders, shippers and other active spot market participants.

Basis & Location: Cargoes offered Cost, Insurance and Freight (CIF) Tianjin North China are the basis for delivery, with delivery to other Chinese ports normalized to Tianjin.

Unit: All prices are quoted in US dollars per dry contained manganese unit ($/dmtu).

Timing: Platts assesses cargoes arriving CIF North China typically from 2 – 8 weeks forward from the date of publication and will normalize to the middle of the delivery window.

Quality: The assessment reflects high grade manganese ore lumps normalized to a standard specification of 44% Mn contained content. All values deemed typical; specifications with Mn content ranging from 41% to 46% are to be normalized to a standard where Fe content is 6.00%, SiO2 is 8.00%, Al2O3 is 7.00% P is 0.11%, moisture is 3.00% and sizing at 5mm to 80mm, 90% passing.

Quality inspections are typically made at discharge port. Re-assessments of quality at delivered ports will not be considered for assessment of spot prices based on the principle that the original transaction was executed in good faith.

Volume: Minimum cargoes of 5,000 mt or one full hatch are assessed as standard.

Payment terms: Cash or at sight terms are standard for assessment all deviations will be normalized to this standard.

MERCURY

(DISCONTINUED) D.F. Goldsmith – Price quoted by D.F. Goldsmith for 99.995% purity mercury in 76lb flasks, 99.99%. Price was implemented on June 1, 1992. Discontinued in 1998.

Free Market International – Price based on 99.99% minimum purity HG, Prime Virgin, CIF Rotterdam, $/fl.

US Domestic – Price based on 99.99% minimum purity Hg, Prime Virgin, FOB US East Coast warehouse, in minimum quantity of 50fl, $/fl.

MOLYBDENUM

Daily Dealer Oxide (MMAYQ00) – Platts launched a daily Molybdenum Oxide assessment on October 10, 2011. The assessment is for "repeatable" dealer-to-consumer, producer-to-consumer, producer-to-dealer and/or dealer-to-dealer spot sales, technical-grade moly oxide (roasted molybdenum concentrates), min 57% Mo, max 0.5% Cu, 0.05% lead, drummed material, order quantities 18-24 metric tons for delivery 3-30 days forward from the date of publication, CIF Japan, in-warehouse European ports, delivered US, delivered duty-unpaid South Korean ports and CIF Nhava Sheva/Mumbai, India. Reported sales of powdered material packed in big bags or cans, and of oxide briquettes, are normalized to an equivalent price for powdered material in drums. The daily assessment takes into account all transactions, bids and offers reported to Platts in the 24-hour period up to 4:30 pm London time each day, except on the last business day of the calendar month, when the cut-off point for transactions to be included is 1:00 pm London time. The price is assessed as a range in US dollars per pound, reflecting the narrow price band where the majority of transactions took place or, in the absence of business, where most typical buyers and sellers would be likely to conclude a deal. The Daily Dealer Oxide price assessment is published in Platts' real-time service Platts Metals Alert (PMA) on page PMA398, in Platts Metals Daily and in the Platts Metals Week supplement. Weekly and monthly averages of the high, low and mean of the daily assessment ranges are published on PMA and in Platts Metals Daily on the last business day of the week and the month, respectively, after close of business US East Coast time. Platts publishes weekly volume figures to show total tonnage by region for concluded deals accounted for in the assessment. Before January 3, 2012, the assessment only reflected dealer-to-consumer sales, CIF Japan, in-warehouse European ports and delivered US.

MW Dealer Oxide (MMAGQ00) – A weekly assessment for "repeatable" dealer-to-consumer, producer-to-consumer, producer-to-dealer and/or dealer-to-dealer spot sales, technical-grade moly oxide (roasted molybdenum concentrates), min 57% Mo, max 0.5% Cu, 0.05% lead, drummed material, order quantities 18-24 metric tons for delivery 3-30 days forward from the date of publication, CIF Japan, in-warehouse European ports, delivered US, delivered duty-unpaid South Korean ports and CIF Nhava Sheva/Mumbai, India. Price history begins in April 1971. Before January 3, 2012, the assessment only reflected dealer-to-consumer sales, CIF Japan, in-warehouse European ports and delivered US. Consolidated with the Daily Dealer Oxide assessment effective January 2, 2013, when the methodology changed to become the weekly average of the Daily Dealer Oxide assessment.

MW Oxide Transaction – A weekly assessment for "repeatable" dealer-to-consumer, producer-to-consumer, producer-to-dealer and/or dealer-to-dealer spot sales, technical-grade moly oxide (roasted molybdenum concentrates), min 57% Mo, max 0.5% Cu, 0.05% lead, drummed material, order quantities 18-24 metric tons for delivery 3-30 days forward from the date of publication, CIF Japan, in-warehouse European ports, delivered US, delivered duty-unpaid South Korean ports and CIF Nhava Sheva/Mumbai, India. Molybdenum is assessed every week on Thursdays or closest prior business day. Discontinued July 2, 2012.

(DISCONTINUED) Moly oxide CIF Japan – Moly Oxide min. 57% grade — Platts assesses weekly spot prices for molybdenum oxide (roasted molybdenum comcentrates) of minimum 57% molybdenum, maximum 0.5% copper, and maximum 0.05% lead, with a chemistry composition of MoS3, exported to Japan on a CIF basis. Assessments are for moly oxide in powder form, drummed or sold in big bags, for delivery to Japanese ports. Prices for moly oxide briquettes are normalized to the price of powder, with Platts taking into consideration typical processing charges. Minimum tonnage of transactions to be considered for the assessment is 18 mt. Units for assessment are US dollar per pound. Discontinued May 1, 2013.

(DISCONTINUED) Moly oxide FOB China – Chinese Origin — Platts assesses weekly spot prices for molybdenum oxide (roasted molybdenum concentrates) of minimum 57% molybdenum, maximum 0.5% copper, and maximum 0.05% lead, with a chemistry composition of MoS3, exported from China on an FOB basis. Assessments are for moly oxide in powder form, drummed or sold in big bags, for delivery from Chinese ports. Prices for moly oxide briquettes are normalized to the price of powder, with Platts taking into consideration typical processing charges. Minimum tonnage of transactions to be considered for the assessment is 18 mt. Units for assessment are US dollar per pound. Discontinued May 1, 2013.

NICKEL

N American Free Market – 4X4 cathode**,** estimated weekly market price in US and Canada; 99.9% Ni, delivered.

N American Free Market – melting grade; estimated weekly market price in US and Canada; briquettes, cathode, disc/pellets; 99.9% Ni, delivered.

N American Free Market – plating grade; estimated weekly market price in US and Canada; 99.95% Ni, various forms, delivered.

LME – Official morning session prices on the London Metal Exchange for the cash, three-month, and 15-month positions. First price is bid, second is asked. Weekly

average is bid/asked mean. Meets LME specifications, duty unpaid in approved LME warehouses.

MW LME Mean – The average of the cash and three months, bid and ask positions calculated on a daily basis.

Europe — Cut Cathode: A weekly assessment for the spot premium over LME cash for nickel 4x4 inch cut cathodes, LME grade minimum 99.8% nickel, on an in-warehouse Rotterdam basis. The premium is assessed on US dollar per metric tonne basis. The assessment is based on a survey of producers, traders and consumers of nickel. Nickel cut cathode is assessed every week on Fridays or closest prior business day.

Europe — Briquettes: A weekly assessment for the spot premium over LME cash for nickel briquettes, LME grade minimum 99.8% nickel, on an in-warehouse Rotterdam basis. The premium is assessed on US dollar per metric tonne basis. The assessment is based on a survey of producers, traders and consumers of nickel. Nickel briquetes are assessed every week on Fridays or closest prior business day.

Europe — Russian Full Plate: A weekly assessment for the spot over LME cash for Russian Full Plate uncut cathode, LME grade minimum 99.8% nickel, on an in-warehouse Rotterdam basis. The premium is assessed on US dollar per metric tonne basis. The assessment is based on a survey of producers, traders and consumers of nickel. Russian full plate is assessed every week on Fridays or closest prior business day.

In-Warehouse Singapore Premium – Daily estimated premium for 99.8% minimum material of mainly Brazilian and Russian origin, in-warehouse Singapore. Cargo sold in the form of squares, full plates, or briquettes. Cargo released immediately upon payment.

OSMIUM

MW New York Dealer – f.o.b. New York, spot, estimated market price, min 99.5% purity osmium.

PALLADIUM

New York Mercantile Exchange – 99.95% purity palladium in 100-oz lots. Settlement prices on the New York Mercantile Exchange for the nearest active delivery month. These months are January, April, July and October.

MW New York Dealer – Estimated market price for 99.95% purity spot metal, f.o.b. New York.

JM Base Asia, JM Base Europe, JM Base NA – Quoted by Johnson Matthey to customers for 99.95% purity palladium, f.o.b. JM refinery.

Hong Kong spot at 0700 GMT – These spot quotations are established daily at 0700 GMT, based on current trading levels quoted by Johnson Matthey. Purity: 99.95% purity.

Engelhard Unfab – base per tr oz asked price at 10:30 EST for 99.95% purity, unfabricated, f.o.b. Carteret, NJ, vault.

London AM Fix – Based on Good Delivery metal of 99.95% purity in the form of plate or ingot with a minimum weight of 1 kg and maximum of 6 kg.

London PM Fix – Based on Good Delivery metal of 99.95% purity in the form of plate or ingot with a minimum weight of 1 kg and maximum of 6 kg.

PLATINUM

New York Mercantile Exchange – 99.95% purity platinum in 50-oz lots. Settlement prices on the New York Mercantile Exchange for the nearest active delivery month. These months are January, April, July, and October.

MW New York Dealer – Estimated market price for spot 99.95% purity metal, f.o.b. New York.

JM Base Asia, JM Base Europe, JM Base NA – Quoted by Johnson Matthey to customers for 99.95% purity platinum, f.o.b. JM refinery.

Hong Kong spot at 0700 GMT – These spot quotations are established daily at 0700 GMT, based on current trading levels quoted by Johnson Matthey. Purity: 99.95% purity.

Engelhard Unfab – base price per tr oz, asked price at 10:30 EST for 99.95% purity, unfabricated, f.o.b. Carteret, NJ, vault.

London AM Fix – Based on Good Delivery metal of 99.95% purity in the form of plate or ingot with a minimum weight of 1 kg and maximum of 6 kg.

London PM Fix – Based on Good Delivery metal of 99.95% purity in the form of plate or ingot with a minimum weight of 1 kg and maximum of 6 kg.

RHENIUM

MW NY Dealer – Free market price based on 69.4% Re contained (ammonium perrhenate), delivered to US customer works, quoted in $/kg, basis shipment and payment within 30 days. Based on a weekly survey of merchants, producers and consumers. Assessed Thursdays or closest business day.

RHODIUM

MW New York Dealer – f.o.b. New York, spot, estimated market price for 99.9% purity.

JM Base Asia, JM Base Europe, JM Base NA – Quoted by Johnson Matthey to customers for 99.9% purity Rh, f.o.b. JM refinery.

Engelhard Unfab – base price per tr. oz. asked price at 10:30 EST for 99.9% purity, unfabricated, f.o.b. Carteret, NJ, vault.

RUTHENIUM

MW New York Dealer – f.o.b. New York, spot, estimated market price for 99.9% purity metal.

JM Base NA – Quoted by Johnson Matthey to customers for 99.9% purity Ru, f.o.b. JM refinery.

Engelhard Unfab – base price per tr.oz. asked price at 10:30 EST for 99.9% purity, unfabricated, f.o.b. Carteret, NJ, vault.

SELENIUM

MW New York Dealer – Selenium metal powder, minus 200 mesh, min. Se 99.5% in warehouse, 5-ton lots. Assessed in $/lb, basis shipment and payment within 30 days. Assessed on Thursdays or closest business day based on a survey of merchants and producers.

SILICOMANGANESE

65:16 DDP NWE: Weekly assessment for grades will be normalized to a specification with P content 0.25% and C content 1.5%. The assessment will be for volumes of 300-1,000 mt delivered, duty-paid Northwest Europe basis for delivery within four weeks. Assessment will be in Eur/mt Mn contained and conducted on Thursdays (or the closest business day in the case of holidays) through a survey of producers, traders and steel mill buyers.

65% Mn, in-warehouse US: Weekly assessment of the repeatable, tradeable, spot price for 65-72% Mn, normalized to 65% Mn, silicon 16-18%, carbon 2% max, phosphorous 0.35% max, sulfur 0.04% max; lumps size 2.5x0.50 inch; in-bulk or 2,000-3,000 lb supersacks; US-origin and imported material; cents/lb Mn contained, duty-paid in-warehouse in key locations along the Mississippi, Chicago, Ohio and Columbia River systems and other key port warehousing locations, including Baltimore, Maryland, Long Beach, California, and Portland, Oregon; delivery within 60 days from date of transaction, net-30 days payment terms from date of delivery. Transactions reported on a delivered basis normalized to an in-warehouse basis. Fines normalized to stated lump specifications. Special packaging and payment terms normalized to meet stated specifications. The assessment will reflect pricing for minimum quantities of four truckloads and greater. Assessment made Wednesdays or closest business day from survey of producers, traders and end users in the carbon, stainless and specialty steel sectors, closing at 4pm New York time.

60-70%/Japan – 60-70% silicomanganese, 16-20% Si imported, ( ) per mt. HK 65% Mn – min 65% Mn. max 17% Si, US dollar per kilo, f.o.b. main Chinese ports. Discontinued June 30, 1993.

Chinese CIF Japan – (Mn 65% min, Si 16% min). Started July 1, 1993.

(DISCONTINUED) Regular CIF Japan – (S Africa, Norway, Brazil) $/mt (Mn 65% min, Si 16% min). Started July 1, 1993. Discontinued December 31, 2007.

(DISCONTINUED): CIS CIF Japan. Discontinued as of December 31, 2007.

(DISCONTINUED) Non-Origin – yen/mt delivered (120-day usance). Started July 1, 1993. Discontinued December 31, 2007.

SILICON

Silicon 553 Grade, Delivered US Midwest: Weekly assessment of the repeatable, tradeable, spot price for US and imported 553 grade silicon metal with minimum 98.50% silicon; maximum 0.50% iron; maximum 0.30% calcium and 0.2-0.5% aluminum; lumps size 4 inches; cents/lb, in bulk or 2,000-3,000 lb supersacks, duty-paid, delivered Midwest, delivery within 30 days from date of transaction; net-30 days payment terms from date of delivery. Reported in-warehouse, or picked-up, transactions normalized to delivered US Midwest. Fines normalized to stated lump specifications. Special packaging and payment terms to be normalized to meet stated specifications. Assessment quantities are three truckloads and upward. Smaller quantities to be normalized to stated quantity. Assessment made Wednesdays or closest business day, based on a survey of producers, traders and consumers, closing at 4pm New York time. Assessment started October 22, 1975.

Silicon, 553 grade, in-warehouse EU: Weekly assessment of the repeatable, tradeable, spot price for EU origin and imported 553 grade silicon metal with minimum 98.50% silicon; maximum 0.50% iron; maximum 0.30% calcium and 0.2-0.5% aluminum; lumps size 50-100 mm; euros/mt, in bulk/1 mt big bags in-warehouse, duty-paid, EU main ports, producer plants and major EU warehousing hubs; delivery within 60 days from date of transaction; net-30 days payment terms from date of delivery. Reported delivered transactions normalized back to in-warehouse basis. Special packaging and payment terms to be normalized to meet stated specifications. Transaction quantities are three truckloads and greater. Smaller quantities to be normalized to stated quantity. Assessment made Thursdays or closest business day from a survey of producers, traders and consumers. Assessment started March 7, 2002.

Silicon 553 grade, FOB China: Weekly assessment of the repeatable, tradeable, spot price for Chinese origin and imported 553 grade silicon metal with minimum 98.50% silicon; maximum 0.50% iron; maximum 0.30% calcium and 0.2-0.5% aluminum; lumps size 50-100 mm; $/mt, FOB main Chinese sea ports, in bulk/1 mt big bags loaded on oceangoing vessel or packed in seagoing 20ft or 40 ft containers and customs sealed, export tariff-paid, within 30 days of date of transaction. Payment by telegraphic transfer, cash against documents, including original bill of lading and irrevocable letter of credit drawn against approved bank at site or equivalent. Assessment quantities are 20 mt and greater, with smaller volumes normalized to stated quantity. Special packaging and payment terms to be normalized to meet stated specifications. Assessment made Thursdays or closest business day from a survey of producers, traders and consumers. Assessment started June 27, 1991.

Silicon 553 grade, CIF Japan: Weekly assessment of the repeatable, tradeable, spot price for any origin silicon metal with minimum 98.50% silicon; maximum 0.50% iron; maximum 0.30% calcium and 0.2-0.5% aluminum; lumps size 50-100 mm; $/mt, CIF main Japan sea ports, loaded in bulk or 1 mt big bags on oceangoing vessel or packed in seagoing 20ft or 40 ft containers and customs sealed at point of origin. Payment by telegraphic transfer, cash against documents, including original bill of lading and irrevocable letter of credit drawn against approved bank at site or equivalent. Assessment quantities are 20 mt and greater, with smaller volumes normalized to stated quantity. Assessment made Thursdays or closest business day from a survey of producers, traders and consumers. Assessment started July 1, 1993.

SILVER

COMEX – Settlement prices on the New York Mercantile Exchange's COMEX division. Forward positions are indicated by footnote (C) on price pages. These months are spot, three months out, and one year out.

Handy & Harman – Lowest price at which offers can be obtained by Handy & Harman for silver in commercial bar form, in accordance with ASTM designation B413-69. Specification for refined silver, grade 99.9%, for nearby delivery at New York, in quantities sufficient to meet its daily requirements.

London Fix – This fix is established at 12:05 London time by consensus of major silver dealers.

London Spot/US Equivalent – Official US dollar equivalent of London Spot price as quoted by major London bullion dealers.

Engelhard Unfab – base price per tr oz asked price at 12:30 EST for 99.9% purity, unfabricated, f.o.b. Carteret, NJ, vault.

Hong Kong spot at 0700 GMT – These spot quotations are established daily at 0700 GMT, based on current trading levels quoted by Johnson Matthey. Purity: 99.9% purity.

STAINLESS SCRAP

North American Free Market 18-8 – weekly spot sales, $/long ton gross weight; 7-9% Ni, 17% min chrome, delivered plant, minimum quantity 1,000st.

TANTALUM

Spot Tantalite Ore – US import, dealer quote, $/lb, price based on Ta_2O_5 content.

TIN

LME – Official morning session prices on the London Metal Exchange. First price is bid, second is asked. Weekly average is the bid/asked mean. Purity 99.85%.

MW Composite – the price is calculated using an average of the KLTM price and the LME price, plus fixed charges, finance charges, Malaysian exchange rate, and a risk factor representing the cost to US consumers for Grade A tin, ex-dock, major port, duty paid.

MW New York Dealer – New York Grade A tin quotation by major dealers for spot material. Duty paid, ex-dock. Prices usually set Monday and Thursday.

MW New York low lead tin – New York low lead tin (i.e. 50 ppm lead content max) quotation by major dealers for spot material. Duty paid, ex-dock, for delivery within 30 days. Prices usually set Monday and Thursday. Price is in cents/lb.

Europe – 99.85% Malay origin: Weekly estimated $/mt premium for Malay origin 99.85% tin on a CIF Rotterdam basis, 0-30-day terms, prompt delivery. Based on a survey of producers, traders and consumers of tin. Assessed weekly, usually on Wednesdays.

Europe – 99.9% Chinese origin: Weekly estimated $/mt premium for Chinese origin 99.9% tin on a CIF Rotterdam basis, 0-30-day terms, prompt delivery. Based on a survey of producers, traders and consumers of tin. Assessed weekly, usually on Wednesdays.

KLTM – Daily settlement price for Straits tin (min 99.85% purity) on the Kuala Lumpur Tin Market, Malaysia, converted into US cents per lb, using the spot Citibank Malaysian exchange rate.

TITANIUM

MW US 70% Ferrotitanium – Estimated spot market price for 70% Ti ferrotitanium, lump form, max. 5% Al, 2-3% V, 0.5% tin, duty paid, delivered, per lb of Ti contained.

European 70% Ferrotitanium – Spot market transaction price for European standard grade 70% Ti ferrotitanium, max. 5% Al, 2-3% V, 0.5% tin, max. 0.5% N, duty paid, delivered, œ per kg Ti contained.

MW US Turning 0.5% – Free market price for US unprocessed turnings, 90% Ti, 6% Al, 4% V, 0.5% tin, delivered, duty paid.

European Turning 0.5% – Spot price for US- or European-generated turnings, 90% Ti, 6% Al, 4% V, 0.5% tin, delivered, duty paid.

TUNGSTEN

MW US Free Market Tungsten Ore Import – weekly estimate of market price; Min 65% WO_3, price based on stu of WO_3,

APT US – weekly estimate of market price; min 88.5% WO_3, $/stu, delivered.

MW US Free Market Ferrotungsten – weekly estimate of market price; min 75% W, max 0.5% Cu, $/lb W, delivered.

APT European – Min 88.5% WO_3, US dollar per mtu, c.i.f. Rotterdam, cash, duty free.

APT-HK – Chinese #1 grade, min, 88.5% WO_3, US dollar per mtu, f.o.b main Chinese ports.

HK Ferrotungsten – min 75% W, US dollar per kilo, f.o.b. main Chinese ports.

ZINC

LME SHG – Official morning session price for 99.95% or better zinc.

MW North American SHG (MW NA SHG) – Price based on LME base price plus premiums or discounts, depending on market conditions.

MW North American GAL (MW NA GAL) – A formula-based quote aimed at zinc users in the galvanized and steel markets. Factors considered are the LME cash price plus premiums or discounts, financing by the consumer, and other market-related conditions. Varies on a daily basis.

MW Four Corners – (Formerly MPR, EPP) LME SHG cash and three-month bid and asked prices, averaged on a daily basis.

MW Alloyer No. 3 – US alloyer quote for No. 3 die casting alloy, 30,000-lb lots and over, delivered, based on LME cash price plus premiums for alloying. Varies on a daily basis.

Europe – SHG Rotterdam: Weekly estimated $/mt premium over LME cash for Special High Grade zinc on an inwarehouse Rotterdam basis, 0-60-day terms, prompt delivery. Based on a survey of producers, traders and consumers of zinc. Assessed every other week, usually on Tuesdays.

In-Warehouse Singapore Premium – Daily estimated premium for 99.995% minimum material of mainly Chinese origin, in-warehouse Singapore. Cargo released immediately upon payment.

FOREIGN EXCHANGE

Pound Sterling (Spot) and Three-Month Midpoint, Deutschemark, Canadian dollar, and Yen. The exchange rates as quoted by the New York Federal Reserve Bank. The Pound Sterling, Deutschemark, Canadian dollar spot, and Yen are set at noon New York time, while the Pound Sterling and Canadian Dollar Three-Month 10 AM Midpoint are set at 10 AM New York time. The Malaysian ringgit is the Citibank selling rate taken at approximately 10:15 AM New York time. The London Metal Exchange Sterling, Three-Month Sterling, LME Deutschemark and LME Yen are as quoted on LME Official morning session.

BACKGROUND

Since January 2, 1930, *Platts Metals Week* (originally *E&MJ Metal & Mineral Markets*) has served as an independent price authority for the international nonferrous metals industry. *Platts Metals Week's* prices are widely used by the industry and government for evaluating pricing of metals and ores, levying taxes and tariffs, determining freight rates, and evaluating new projects.

Because of the large variety of prices and the different methods used to determine each, it is important to understand the ground rules which Platts Metals Week uses to keep the price series as consistent as possible. An overview of how the Platts Metals Week prices are gathered, computed, and averaged follows.

Types of prices

As distinguished by frequency, *Platts Metals Week* publishes the following types of prices:

- Daily
- Weekly averages of dailies
- Monthly averages of dailies
- Weekly (set or quoted once a week)
- Bi-weekly (set or quoted twice a week, e.g. NY Dealer Tin)
- Monthly averages of weeklies
- Monthly mean averages of select weeklies
- Annual averages of monthly averages

These prices, according to their source or method of calculation, may be further categorized as follows (examples in parentheses):

- Producer list prices (Lead North American Secondary)
- Consumer buying prices (Silver-Handy & Harman)
- *Platts Metals Week* canvas of dealers, producers, and consumers (Molybdenum-MW Dealer Oxide)
- *Platts Metals Week* weighted averages calculated using confidential prices and tonnages (Lead-MW NA Producer)
- *Platts Metals Week* weighted averages calculated using published prices and estimated tonnages (Copper-MW Composite)
- Prices computed by a formula (Tin-MW Composite)
- Consensus prices set by specialized groups (Gold-London Final)
- Quoted prices on metal and commodity exchanges (Zinc-LME SHG Cash)
- Prices converted from other currencies and units (Copper-MW c.i.f. Europe)

Exclusive *Platts Metals Week* quotations are usually preceded by **MW** in the price description. Weekly averages of the quoted prices on the London Metal Exchange, the New York Mercantile Exchange's NYMEX/COMEX divisions also are published in *Platts Metals Week*.

Price descriptions usually refer to the source of the price, although they may also include references to the form or purity of the metal as well as to quantity and delivery information.

Effective dates

The fact that there are many types of prices makes it necessary to use three dating conventions: 1) the producer list price effective date, 2) the day the market was last surveyed, and 3) the day a price last changed.

Producer prices usually carry effective dates. When more than one producer is involved, the date is the last time a producer price change affected the price published in *Platts Metals Week*.

The day the market was last surveyed is usually the next-to-last business day of the week. Most dealer prices and others that change frequently are dated in this manner.

The day a price last changed is used for prices which do not have effective dates and which may change infrequently. It is also occasionally used with certain inactive dealer prices.

Foreign exchange rates

Four daily foreign exchange rates are published by *Platts:* the British pound sterling (both spot and three-months), the Canadian dollar (both spot and three-months), the London Metal Exchange sterling (both spot and three-months), the LME European Euro and the Japanese yen. The British (spot), Canadian (spot) and Japanese exchange rates are the official noon buying rates as quoted by the New York Federal Reserve Bank. These rates are averaged to six decimal places on a weekly, monthly and annual basis.

The British pound sterling spot exchange rate is used to convert *Platts Metals Week* weekly prices into pounds sterling on a weekly basis and to convert several London prices into US dollars on a daily basis. When an exchange rate is not

available (because of a US holiday which does not apply in London, for example) the previous day's exchange rate is used. This procedure minimizes fluctuations in the converted price. The Malaysian dollar exchange rate is used to convert Malaysian tin prices into US dollars and to calculate the MW Composite tin price.

Price ranges

A weekly price may be quoted as a range to reflect either divergent pricing by competing producers and dealers or a week's dealer business. The bottom end of the range is used for calculating the monthlies in all cases except where the price is listed as a MEAN price.

The double prices quoted on the London Metal Exchange are daily bid and asked prices. The arithmetic means of these are used to calculate weekly and monthly averages.

High/low prices

Most of the "High" and "Low" price listings which appear on the monthly and annual price pages of *Metals Week* apply to the quoted daily prices. Exceptions to this rule are: 1) for weekly prices, the high/low quotes are determined by the bottom of the weekly range if one exists; 2) for London Metal Exchange prices, the high/low applies to the daily bid/asked quotation; and 3) for monthly LME settlement prices (which are monthly averages of the applicable daily LME cash asked price), the high/low is the applicable monthly LME Settlement price.

Futures trading positions

The New York Mercantile Exchange's NYMEX/COMEX divisions quote constantly changing futures positions on several metals. *Platts Metals Week* has selected convenient positions and reduced them to numerical designations (1st positions, 2nd position, etc.). The actual trading months quoted are footnoted each week in *Platts Metals Week*. The nearest (spot), three months, and approximate twelve months from spot positions are generally quoted.

When trading months shift in the middle of a week, the quoted prices reflect the new trading month applicable to the numerical position designation.

Calculation of averages

There are three types of Platts Metals Week averages: 1) those derived from daily prices, 2) those derived from weekly prices, and 3) those derived from monthly prices.

1) All prices quoted on a daily basis are arithmetically averaged to create weekly and monthly averages in the currency and units in which the prices originate. For bid and ask prices, the mean of the bid and ask price is used for the calculation, holidays, and other no-quote situations are excluded from the calculation.

2) In calculating monthly averages, prices quoted only on a weekly basis are considered to represent the full business week (beginning Monday) and therefore are weighted according to the number of business days in that week for which the New York Federal Reserve Bank published an exchange rate.

For example, the monthly averages for March 1993 were based on four weeks with five business days and one week with three business days; the price quoted for each week is weighted by the number of business days in that week, and the total is divided by the number of business days in the month – in this case 21.

Monthly averages of weekly prices in most cases use the low end of a price range, if one exists. The exceptions to this rule are prices that are listed as mean. The mean price is an average of the low and high end of a range. *Platts Metals Week* reserves the right to drop a low quote at any time it becomes unrepresentative of the market.

Because monthly averages must be available to industry on the first day of the following month, a discrepancy can result in the monthly average for prices set weekly when the month ends early in a given week. In such an instance, when a month ends on Monday, Tuesday, or Wednesday, the previous week's price applies to those days. If the month ends on Thursday or Friday, that week's price applies to the entire week. (In particularly volatile markets, *Platts Metals Week* may set a given week's price earlier than usual to assure that the resulting monthly average more accurately reflects the market.) Weekly prices are intended to apply to the week as a whole, and producer effective dates are not taken into consideration in calculating monthly averages. This is done to minimize the problem of having arbitrarily to determine which of several producer effective dates should be applied.

3) Annual averages are arithmetic averages of monthly quotations in the currency and units in which the price originates.

Conversion into other currencies

The way a price is converted from one currency and measure of weight into another depends on whether the price is a daily, weekly, or monthly one. (see page 13 for a description of the different types of prices.)

1) Prices which originate as weekly quotations are converted into other currencies using the applicable exchange rates for the next to last business day of the week (usually Thursday). Monthly averages of weekly prices are converted into other currencies by using the published average monthly exchange rates, which reflect the New York Federal Reserve Bank business day schedule.

2) Weekly and monthly averages of daily prices are converted using an average of the daily exchange rates as they apply to each individual price. Because of differing holiday schedules from one country or industry to another, a number of different (unpublished) average exchange rates may be used to convert weekly and monthly averages of daily prices into other currencies. For any month in which there are no holidays, the published weekly and monthly average exchange rates are used to convert the daily prices into other currencies.

3) Annual averages are converted into other currencies using arithmetic averages of the published monthly exchange rates. It should be noted that only annual averages stated in the originating currency are true averages. The conversion of these averages into other currencies is accomplished using a single average annual exchanges rate. As a result, that conversion will not exactly agree with an annual average (which one might calculate for oneself) of monthly averages which are not stated in the originating currency. The same is true of monthly averages of prices which originate as weekly prices.

Conversion tables

To convert a price from a per-unit basis to a per-ton-of-ore basis, multiply the unit price by the percentage of unit-based material in the ore. For example, if 50% manganese ore were priced at $1.00 per long ton unit, the price per long ton of ore would be $50.00

GLOSSARY OF TERMS

ABMS	American Bureau of Metal Statistics
Ag	Silver
AK	Alaska
AL	aluminum
A1203	alumina, or aluminum oxide
ally	alloy
APT	ammonium paratungstate
AR	Arkansas
Ar	argon
As	arsenic
Atl	Atlantic
Au	gold
AZ	Arizona
B	Boron
backwardation	A situation in which the cash (nearby) price of a commodity is higher than the futures price.
Be	beryllium
Bi	bismuth
BOM	Bureau of Mines
BPA	Bonneville Power Administration
C	carbon
(C)	Comex footnote
CA	California
Ca	calcium
carb	carbon
cath	cathode
Cb205	columbium pentoxide, not the mineral columbite
CBOT	Chicago Board of Trade
Cd	cadmium
CFTC	(US) Commodity Futures Trading Commission
c.i.f.	cost, insurance, and freight paid by shipper
CIPEC	Conseil Intergouvernmental des Pays Exportateurs de Cuivre (Intergovernmental Council of Copper-Exporting Countries). The copper exporters' organization, formed in 1967, headquartered in Paris whose principal members are Chile, Peru, Zaire, and Zambia.
Cl	chlorine
CO	Colorado
Co	cobalt
Comex	The COMEX division of the New York Mercantile Exchange. A hedge market on which gold and silver are traded.
conc	concentrates
contango	A situation in which the futures price of a commodity is higher than the cash (nearby) price.
Cr	chromium
Cr2O3	chromite
CT	Connecticut
Cu	copper
DC	District of Columbia
DE	Delaware
del	delivered
DLA	Defense Logistics Agency, responsible for US government stockpile metal sales, acquisitions, and upgrading.
DM	German Deutschmark
electrltc	electrolytic
EPA	(US)Environmental Protection Agency
eqv	equivalent
F	fluorine
f.a.s.	free alongside ship
Fe	iron
ferromoly	ferromolybdenum
FeSi	ferrosilicon
FL	Florida
fl	Flask. A unit of measure for mercury, equal to 76 lb.
fndry	foundry
f.o.b.	Free on board. Consignment to customer with all prior charges onto customer's conveyance, usually ship, railcar, or truck.
force majeure	act of God
FTC	(US)Federal Trade Commission
GA	Georgia
GAO	(US) General Accounting Office
Ge	germanium
gm	gram
GOB	good ordinary brand [European prime western-grade zinc]
H	hydrogen
He	helium
Hf	hafnium
HG	high grade [copper, tin, and zinc]
Hg	mercury
HI	Hawaii
hi	high
IA	Iowa
IBA	International Bauxite Association. The bauxite producers'

	group, formed in March 1974 and headquartered in Kingston, Jamaica.
ID	Idaho
IL	Illinois
ILZSG	International Lead and Zinc Study Group
IMF	International Monetary Fund
IMM	International Monetary Market. Also known as the Chicago Mercantile Exchange.
impt	imported
IN	Indiana
In	indium
ingt	ingot
Ir	iridium
IRS	(US) Internal Revenue Service
ITA	International Trade Administration
ITC	(US) International Trade Commission
K	potassium
kg	kilogram
KLCE	Kuala Lumpur Commodity Exchange
KLTM	Kuala Lumpur Tin Market
KS	Kansas
kW	kilowatt
kWh	kilowatt-hour
KY	Kentucky
œ	British pound sterling
LA	Louisiana
lb	pound
Li	lithium
LIA	Lead Industries Association
lo	low
lt	long ton or gross ton (2.240 lb).
ltpy	long tons per year
ltu	long ton unit
(M)	New York Mercantile Exchange footnote
MA	Massachusetts
maj	major
mast	master
max	maximum
MD	Maryland
ME	Maine
mean	averaged high and low price
med	medium
Merc Ex	New York Mercantile Exchange
mesh	The number of wires per linear inch of a screen. Used for fine sizing.
Mg	magnesium
MI	Michigan
micro	One-millionth of a meter. Used for fine sizing.
min	minimum
MITI	Ministry of International Trade and Industry, a Japanese government body
MN	Minnesota
Mn	manganese
MO	Missouri
Mo	molybdenum
MS	Mississippi
MT	Montana
mt	metric ton (2204.62 lb)
mtl	metal
mtpd	metric tons per day
mtpm	metric tons per month
mtpy	metric tons per year
mtu	metric ton unit
MW	Megawatt. A unit of power equal to one-million watts. Often used in describing the capacity of a power plant; e.g, "a 300-MW hydroelectric plant."
MW	Metals Week or Mid West
N	nitrogen
NA	North America
NA	not available
Na	sodium
Nb	niobium
NC	North Carolina
ND	North Dakota
NE	Nebraska
NH	New Hampshire
Ni	nickel
NJ	New Jersey
NM	New Mexico
NUM	(South Africa)National Union of Mineworkers
NV	Nevada
NY	New York
NYMEX	New York Mercantile Exchange
O	oxygen
official session	The morning session of the London Metal Exchange
OH	Ohio
OK	Oklahoma
OPIC	Overseas Private Investment Corp. Authorized by the US government to provide expropriation insurance for private corporations operating outside the US.
OR	Oregon
Os	osmium

OSHA	Occupational Safety and Health Administration
P	phosphorous
p	British pence
PA	Pennsylvania
Pb	lead
Pd	palladium
pellt	pellet
pos	position
prem	premium
primary production	The process of producing metal from its ore, as distinct from secondary production from scrap metal.
prod	producer
Pt	platinum
PW	prime western [zinc]
Rb	rubidium
Re	rhenium
ref	refinery
refinery	In copper and lead, a plant which further purifies metal produced in a smelter. In zinc, a plant which produces purer metal than could be produced in a smelter. In aluminum, a plant which refines bauxite into alumina.
Rh	rhodium
RI	Rhode Island
ring dealer	A member of the London Metal Exchange allowed to trade metal in the ring
Ru	ruthenium
S	sulfur
Sb	antimony
SC	South Carolina
SD	South Dakota
Se	selenium
settlement price	The last price at which a commodity is traded in a particular session.
SG	standard grade
SHG	special high grade
Si	silicon
smelter	In copper, lead, and zinc, a plant which reduces concentrate to metal. In aluminum, a plant which upgrades alumina into metal.
Sn	tin
Sr	strontium
stu	short ton unit
Ta	tantalum
Ta2O5	tantalum pentoxide, not the mineral tantalite
Te	tellurium
thr-mo	three-month
TiO2	titanium dioxide, a paint base
TN	Tennessee
ton	short ton (2,000 lb)
tpm	short tons per month
tpy	short tons per year
tr oz	troy ounce
TVA	Tennessee Valley Authority
TX	Texas
U	Uranium
UAW	United Auto Workers
UNCTAD	United Nations Conference on Trade and Development
unfab	unfabricated
USBM	United States Bureau of Mines
USTR	United States Trade Representative
USW	(US) United Steelworkers Union
UT	Utah
V	vanadium
V2O5	vanadium pentoxide
VA	Virginia
VT	Vermont
W	tungsten
WA	Washington
WI	Wisconsin
WO3	tungsten trioxide, common designation for tungsten content
WV	West Virginia
WY	Wyoming
Y	yttrium
Zn	zinc

HARBOR > aluminum intelligence unit
the global leader in aluminum industry analysis and outlook

Aluminum Premiums Outlook

> Upward Trend in Premiums Far From Over: Winners vs Losers

Regional Aluminum Premiums Report (Q1 2013)

January 2013

EXECUTIVE SUMMARY

NORTH AMERICA

Midwest P1020 aluminum premiums (MW) up early this year to a fresh high of 11.10-12.0 cent/lb. Full billet premiums (MW + billet upcharge) also on the rise to levels as high as 25.0 cent/lb. Today, 74% of total LME aluminum inventories in the region are concentrated in Detroit, trapped in a queue of 18 months. On-warrant North America LME inventories (metal theoretically available for consumer) have fallen by 285,675 mtons only in the last month. Expect tighter physical conditions this year and continuing iteration of the vicious cycle that locks away metal from consumers (+concentration, +queues, -availability). MW could reach levels above 13.0 cent/lb as soon as Q2, with billet premiums near 27.0 cent/lb. Billet could suffer the most as the US building & construction sector continues to gather momentum. Primary aluminum demand expected to grow 5.0% this year, with only a modest recovery in output rates of traditional suppliers (Canada and Latin America). Lately, *Alba*, *Qatalum* & *Rusal* gaining market share.

MEXICO

Spot premiums for P1020 are up to levels as high as 13.8 cent/lb on the high end of the range of negotiations. These levels apply for consumers that aim to directly import metal. Consumers buying metal from Mexican traders/distributors get much lower premiums on fiscal strategies. Premiums for billet in a range of 21.3-24.0 cent/lb. Industry sources are quoting less hot demand in the beginning of this year for castings and FRP. Construction sector on a much noticeable slowdown that mainly has to do with the change of federal government in the country. This is only temporarily and demand is expected to remain notably strong during the year. Expect spot P1020 premiums as high as 15.0 cent/lb sometime during H1, with billet premiums +27.0 cent/lb. *Rusal* gaining market share. *Vedanta* via traders entering the market.

BRAZIL

Spot ingot and billet premiums on the rise again after declining somewhat in Q4. Levels for P1020 premiums quoted in a $260-310 per mton range and billet premiums in a range of $510-610. Overall demand in the country is back in expansion mode and should accelerate ahead. Manufacturing activity left contraction zone in October and then gain some traction in November-December. Primary demand to grow 5.1% this year, with primary output in the country staying near ten-year lows. Expect P1020 premiums +$350 per mton in Q2 and billet premiums +$600 as soon as Q1.

WEST EUROPE

Duty paid ingot premiums up to a record high of $290-305 per mton in the beginning of the year, billet premiums more modest increase to $470-490 per mton. Much less pressure for billet in West Europe vs North America as building & construction hit the most mainly in Southern European countries. Today, 59% of total LME aluminum inventories in the region are concentrated in Vlissingen, trapped in a 16-month long queue. On warrant Europe LME inventories down by 167,300 mtons in the last month. End user demand deep inside contraction, but no worsening at the margin. In spite of lackluster demand, physical conditions to get tighter this year as primary output could experience further declines. Expect P1020 premiums as high as $350 per mton in H1 with billet at $520. *Dubal/EMAL* and *Alba* gaining market share.

EXECUTIVE SUMMARY

JAPAN

Spot P1020 premiums up to $240-245 per mton after falling in November-December, still shy of the record highs reached in October. Overall demand in the country is in contraction mode and weakening, although it is expected to improve on government stimulus. Automotive and consumer electronics sector quoted particularly weak. The vicious cycle that locks away metal from the consumer is not playing in Asia. However, Japan will have to compete for new metal with North America, Europe and Southeast Asia. Premiums should go up in consequence. Expect spot P1020 premiums to go up to $280 per mton in H1. *UC Rusal* market share up in the P1020 Japanese market on output declines in New Zealand and South Africa, while *Dubal/EMAL* and *Rusal's* VAP exports to Japan grew the most. This year, *Ma'aden-Alcoa* smelter (in Saudi Arabia) to gain share in the Japanese market.

SOUTHEAST ASIA

Spot premiums for P1020 quoted in a range of $215-245 per mton taking into account India, Malaysia, Singapore and South Korea. Quotes for billet premiums cited at $365-390 per mton in India, Thailand, Vietnam and Malaysia. Overall demand remains strong with some seasonal easing. Indonesia, Malaysia, Thailand remain as hot spots, while South Korea and Taiwan cited less strong. The vicious cycle that locks away metal from the consumer is not playing in Asia and we expect slightly better physical conditions this year given primary output expansions taking place in India and Malaysia. In fact, the region is positioned the best also to compete for new metal coming out from *Ma'aden-Alcoa* smelter. Nevertheless, the region will still have to partially compete for material with Japan, West Europe and in a lesser extent North America. Expect P1020 premiums heading toward $300 per mton and billet towards $450 per mton as the year advances.

MIDDLE EAST

Our best estimate is that spot P1020 domestic premiums stand between $175-200 per mton. Demand in the region is described as hot, with Saudi Arabia leading at the margin. Strong building & construction and electrical markets in the country. The *Ma'aden-Alcoa* smelter in Saudi Arabia has already started commercial deliveries and its output should be of 230,000 tons this year, reaching full capacity (750,000 mtpy) in late 2014. At that point, they should supply most of the domestic market. Today, other regional players are even increasing exports to the country. This trend will continue.

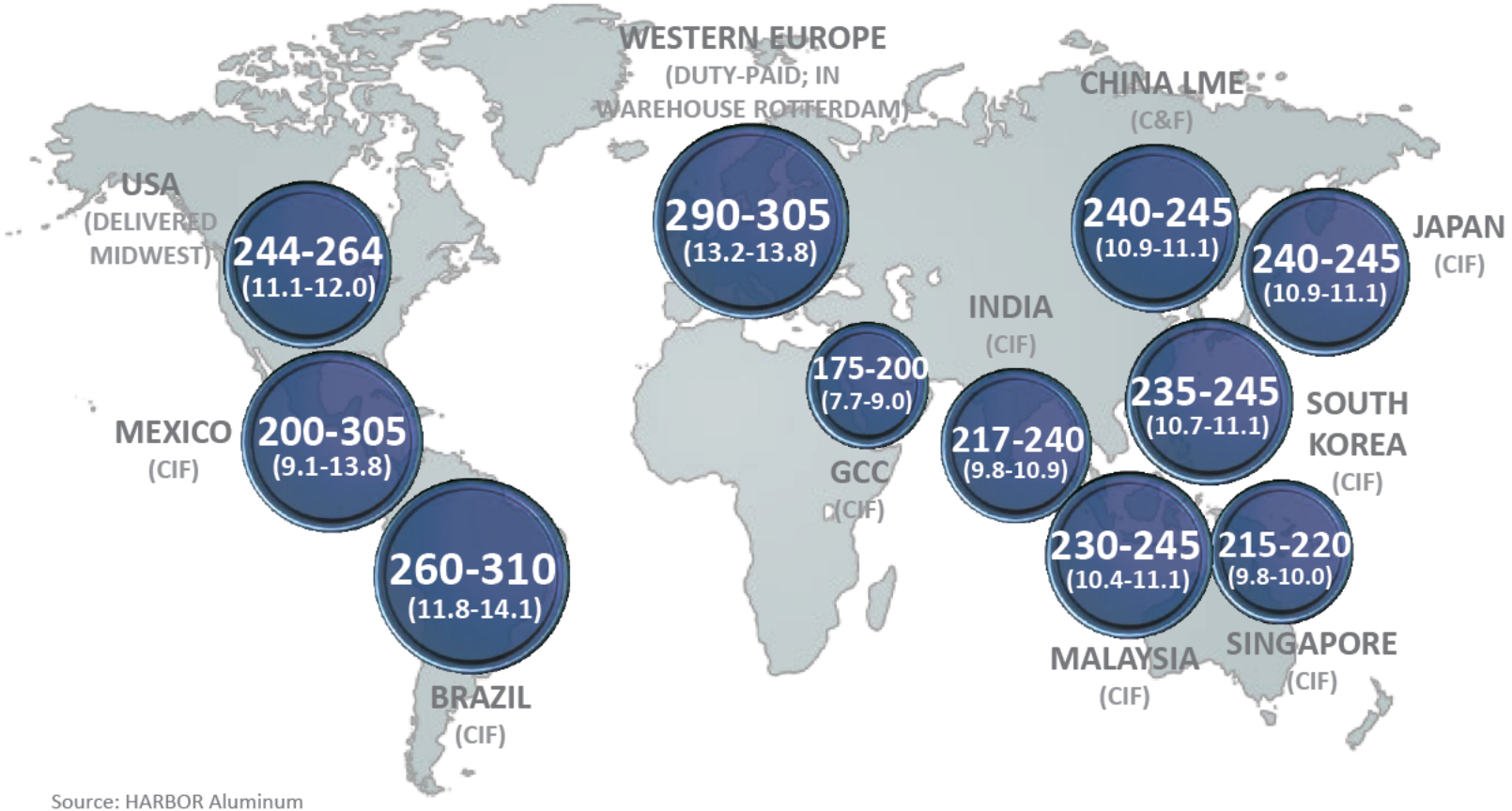
CHINA

China LME ingot premiums up to $240-245 per mton early this year in line with higher premiums in Japan & Southeast Asia. Overall demand picking up since October 2012. Flash manufacturing activity estimates show strong pick up in January. However, China is also producing primary aluminum at record high rates. We expect a balanced primary aluminum market for this year. In 2012, China imported 0.5 millions tons of P1020 with *Rusal/RTA* as main suppliers. China also increased VAP imports with *Dubal/EMAL* penetrating the market. Quantities and suppliers would be similar in this year. Ingot premiums should have to follow Japan & Southeast Asia to attract that metal. *Rusal/RTA* to benefit the most if current trend of gradual increase in Chinese imports continues (possible scenario).

Ingot premiums (what you pay on top of LME price) started the year rising …

ALUMINUM INGOT SPOT PREMIUMS TODAY

($/mton and cent/lb in parenthesis; January 24th, 2013)

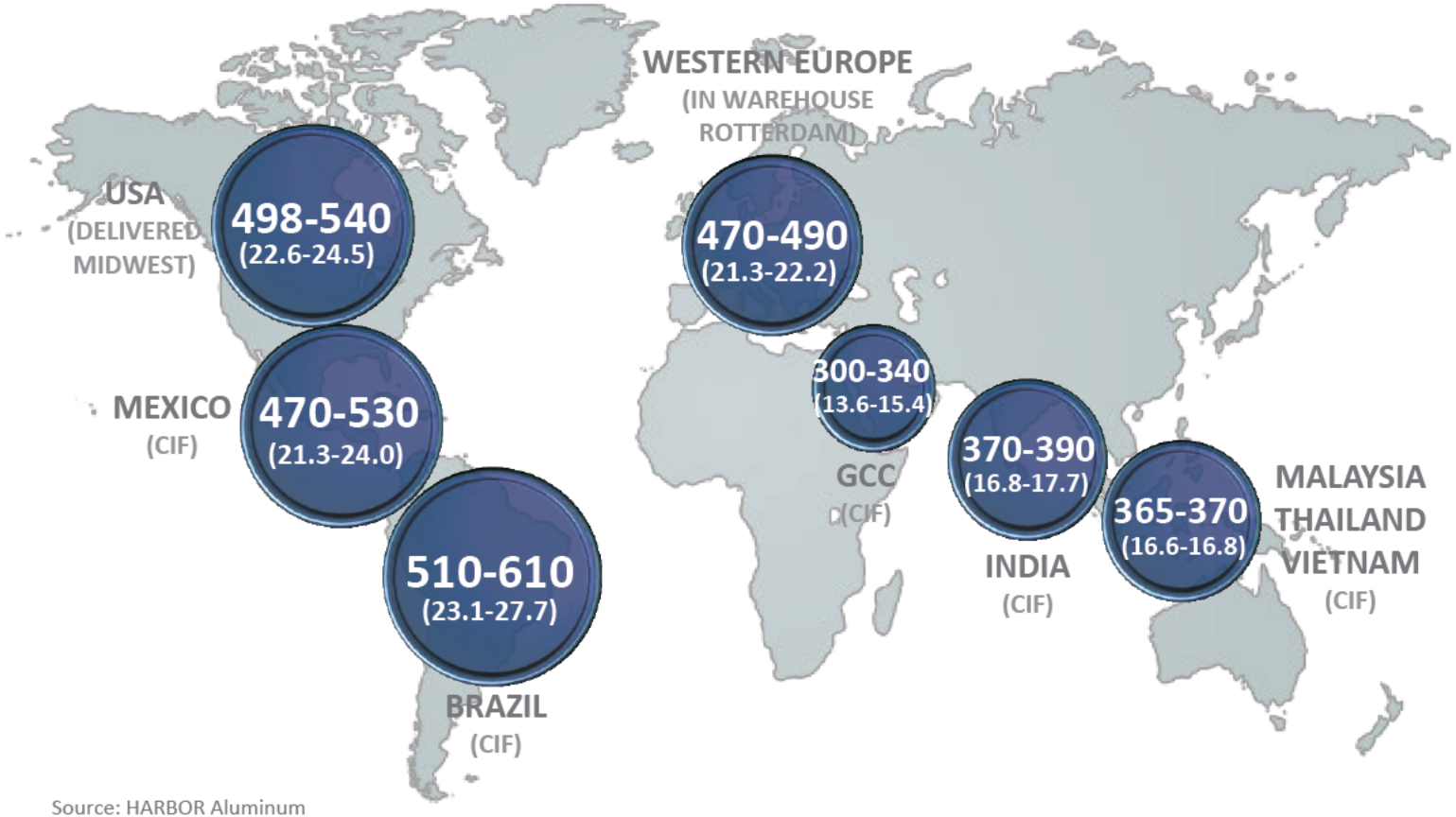


Source: HARBOR Aluminum

…with full billet premiums increasing in the Americas, Europe & Southeast Asia

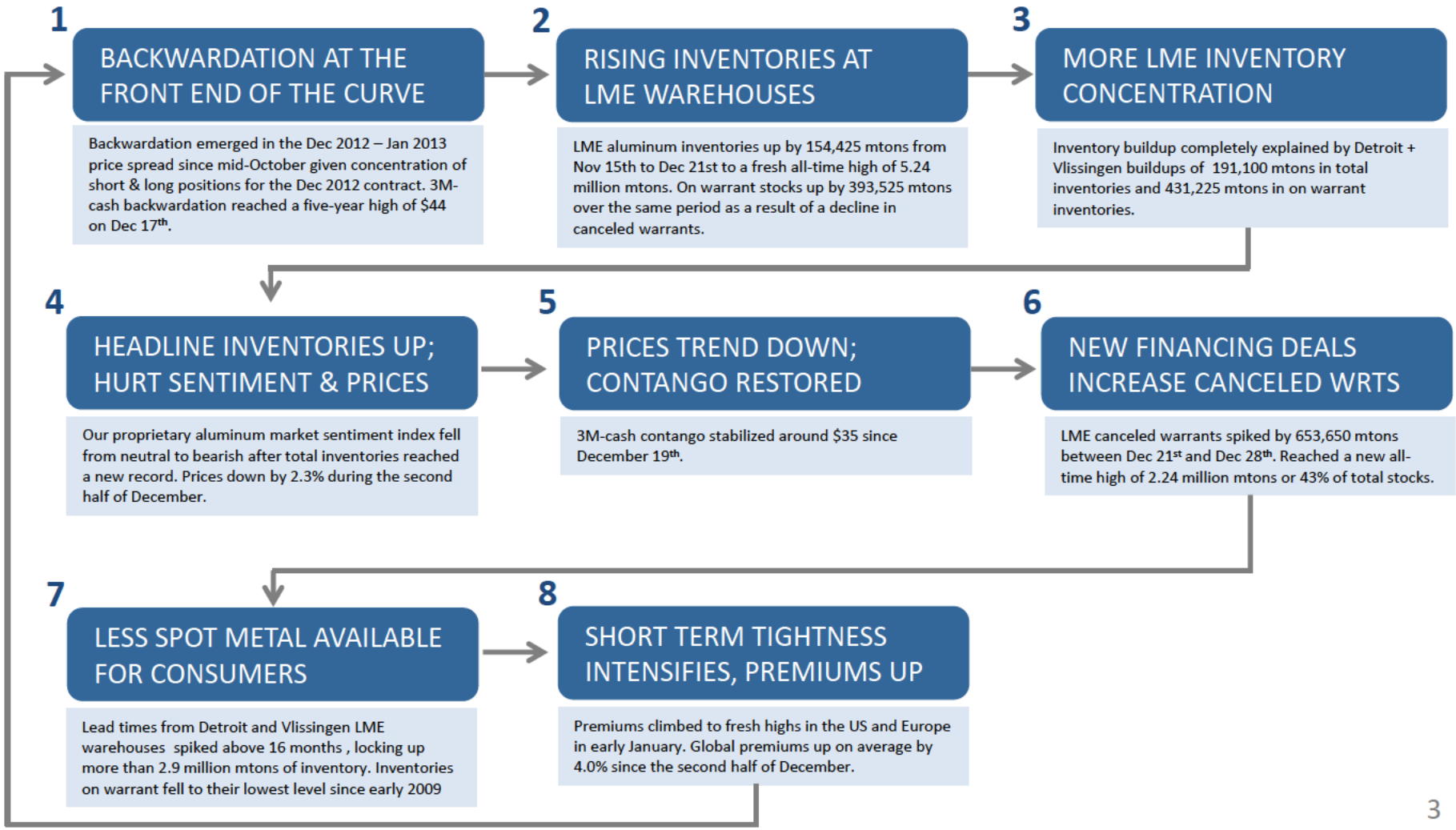
ALUMINUM BILLET FULL SPOT PREMIUMS TODAY

($/mton and cent/lb in parenthesis; January 24th, 2013)



Source: HARBOR Aluminum

Vicious cycle that locks out metal from consumers iterated itself again in December…

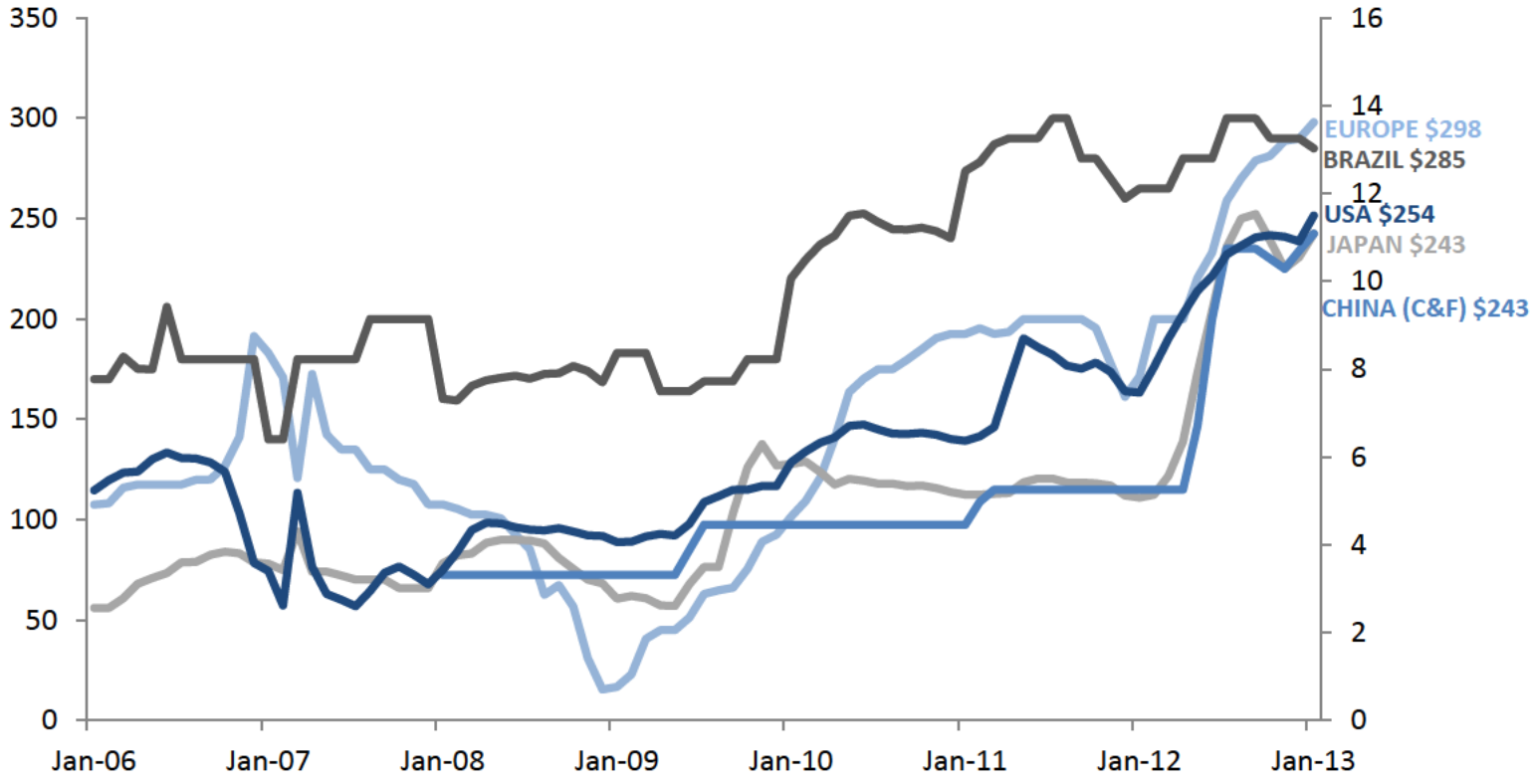


Source: HARBOR Aluminum

…pushing up premiums across the board and to fresh record highs in Europe & USA…

REGIONAL ALUMINUM INGOT PREMIUMS CIF

(monthly average data; $/mton in left scale and cent/lb in right scale)

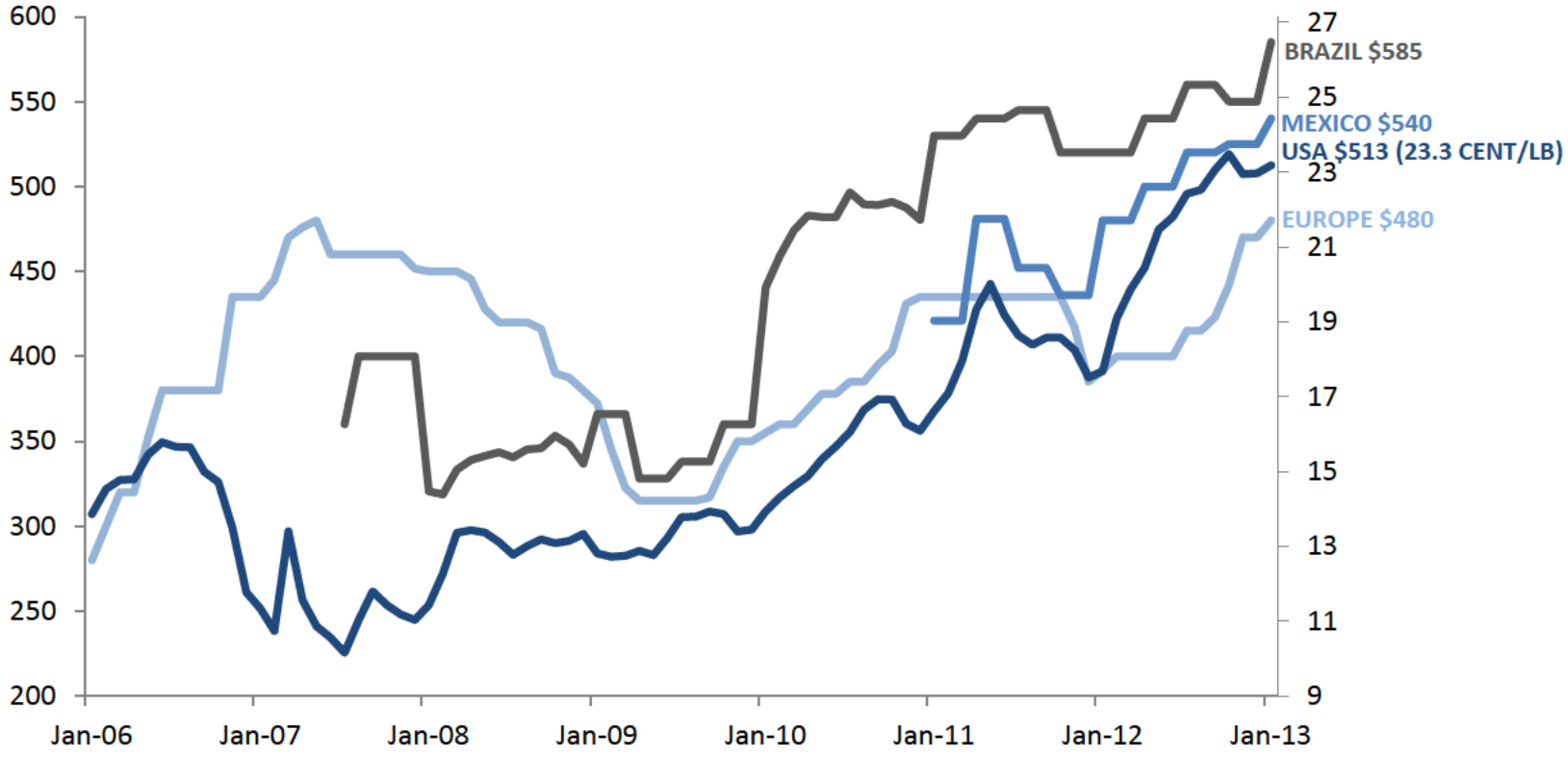


Source: HARBOR Aluminum

...including billet...

REGIONAL ALUMINUM BILLET FULL PREMIUMS CIF

(monthly average data; $/mton in left scale and cent/lb in right scale)

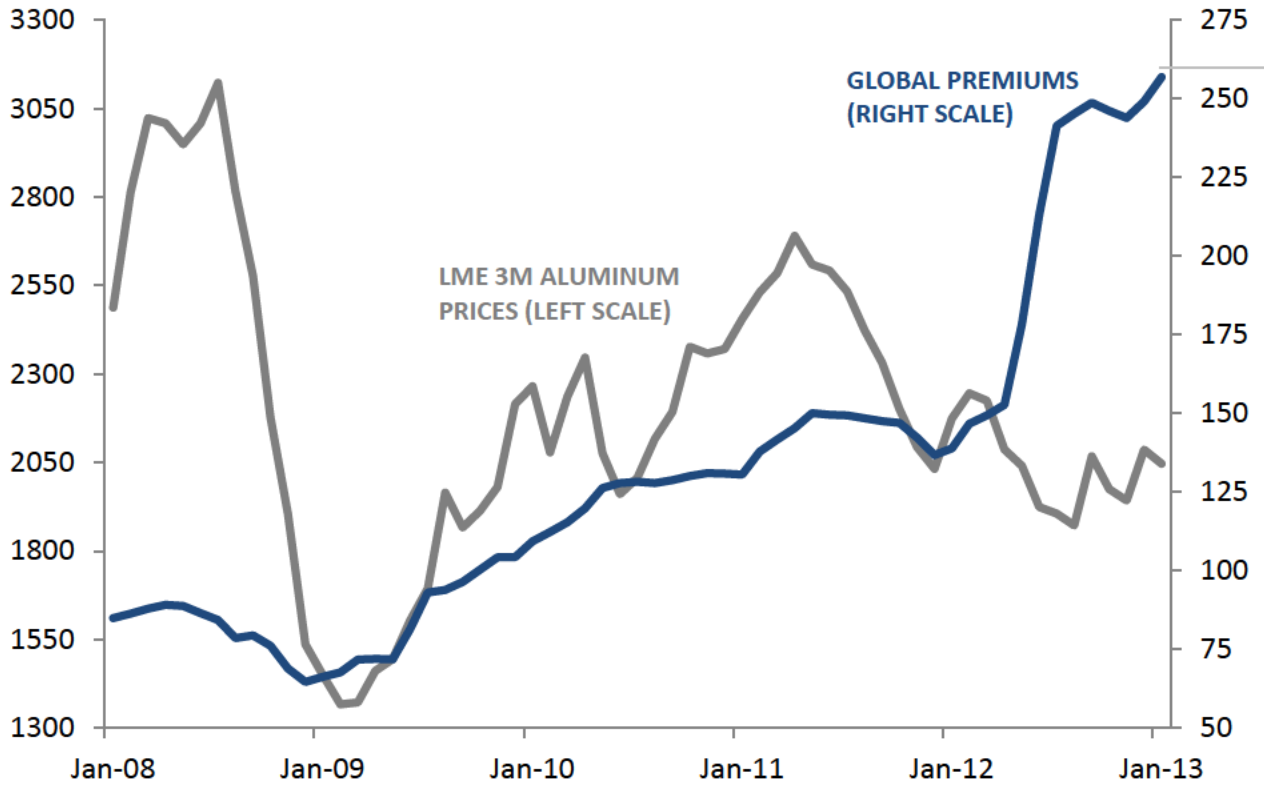


Source: HARBOR Aluminum

...and widening again the unprecedented divergence between premiums and LME prices

LME 3M ALUMINUM PRICES VS GLOBAL ALUMINUM PREMIUMS*

(monthly data; $/mton)



The divergence between spot premiums and LME prices has reached an unprecedented level. While premiums are a full reflection of physical supply and demand dynamics (including what some consider "manipulation"), LME prices have become a reflection mainly of financial (paper) supply and demand as 70% of the volume traded in the LME is fund related.

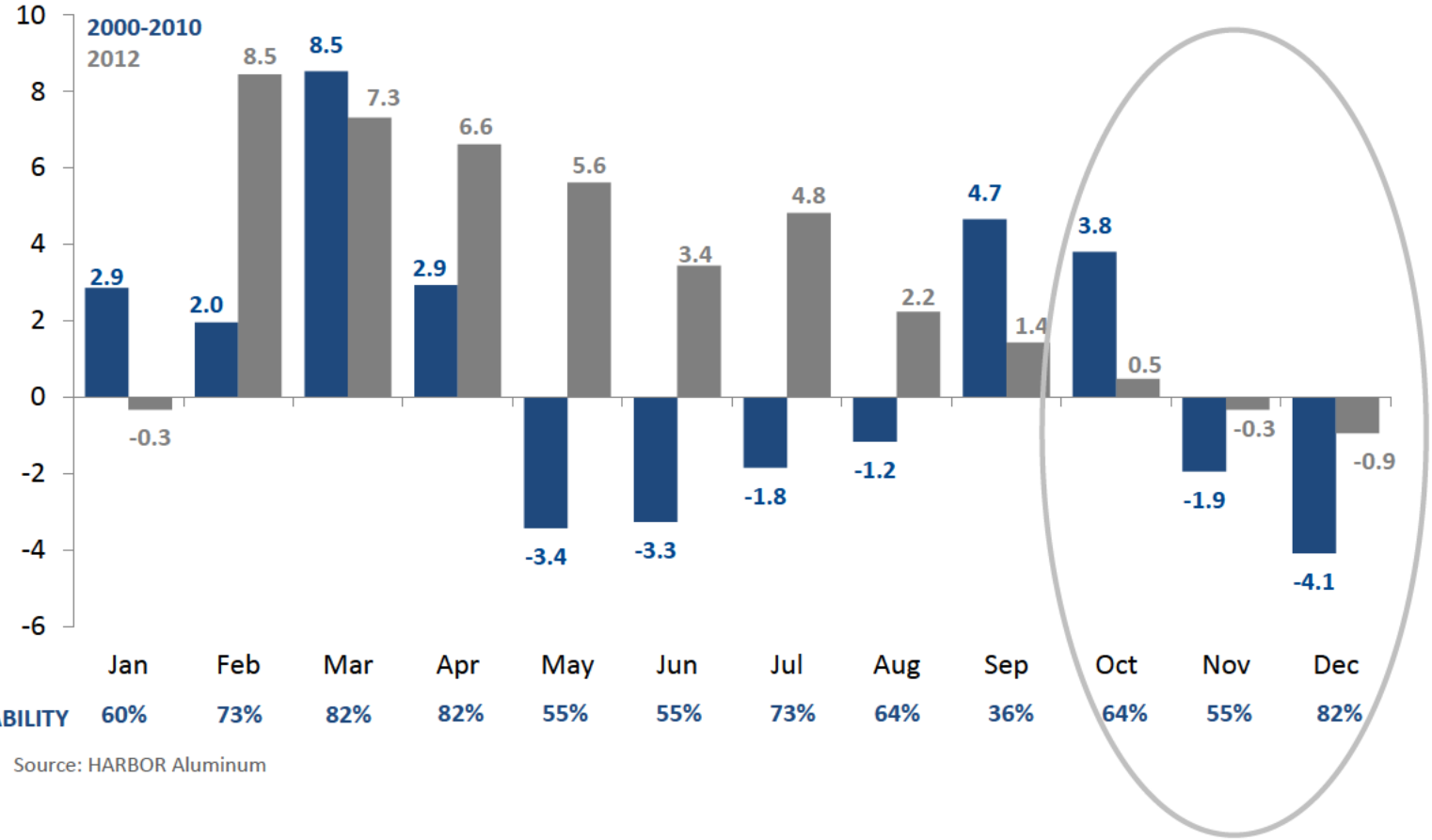
Source: HARBOR intelligence with LME data

*US Midwest, Europe duty-paid, Japan Spot, Brazil and China LME weighted by country shares in total primary aluminum consumption

In fact, ingot premiums in North America fell less than expected in Q4…

US MIDWEST PREMIUM SEASONALITY

(monthly average % change; 2000-2010)

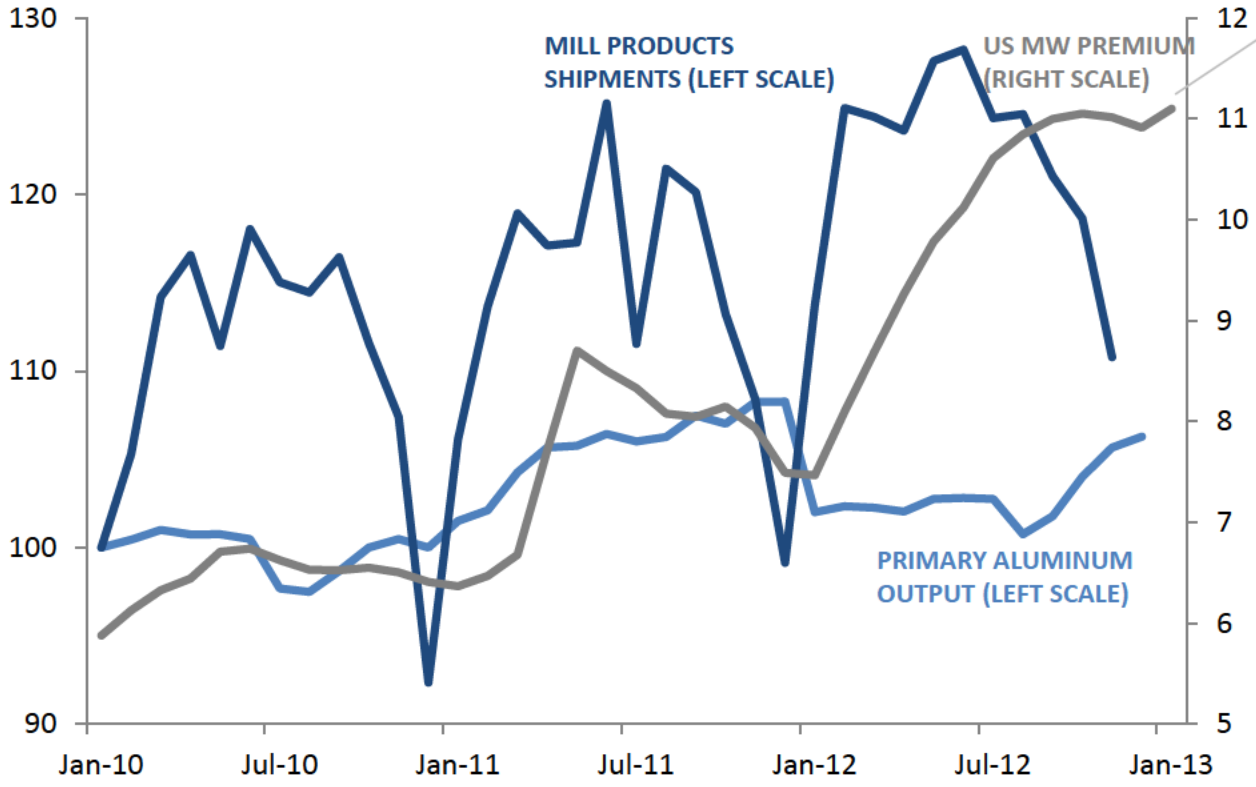


Source: HARBOR Aluminum

…and were roughly immune to the typical end-of-year demand slowdown…

NORTH AMERICA PRIMARY ALUMINUM OUTPUT & PRODUCTS SHIPMENTS

(index vs cent/lb; January 2010 = 100)



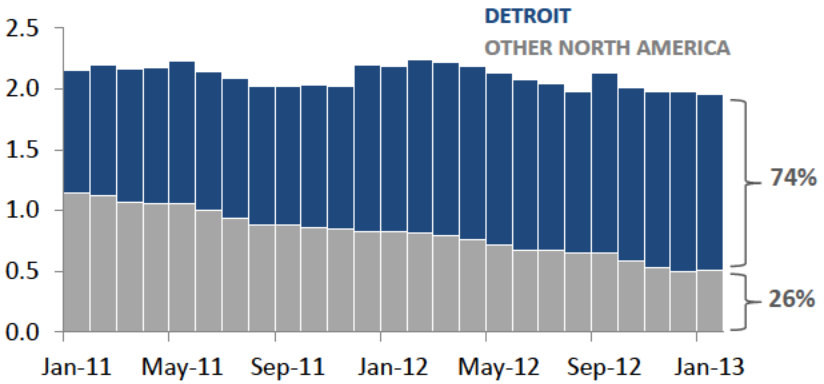
Probably the most reliable metric for physical aluminum demand is semi products shipments. Growing demand for aluminum vs lower primary production is one of the main drivers behind rising premiums. Shipments of semis fell considerably during Q4 in North America and this time premiums were resilient.

Source: HARBOR Aluminum with Aluminum Association data

…as more metal was locked away from the consumer

LME INVENTORY CONCENTRATION IN DETROIT

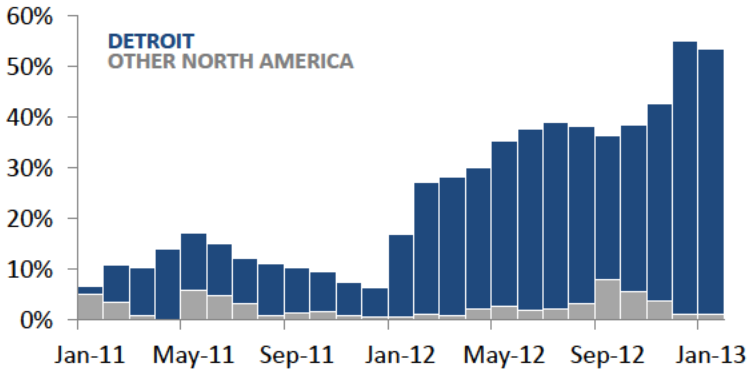
(million mtons)



Source: HARBOR Aluminum with LME data

NORTH AMERICA CANCELED WARRANTS AS % OF INVENTORIES

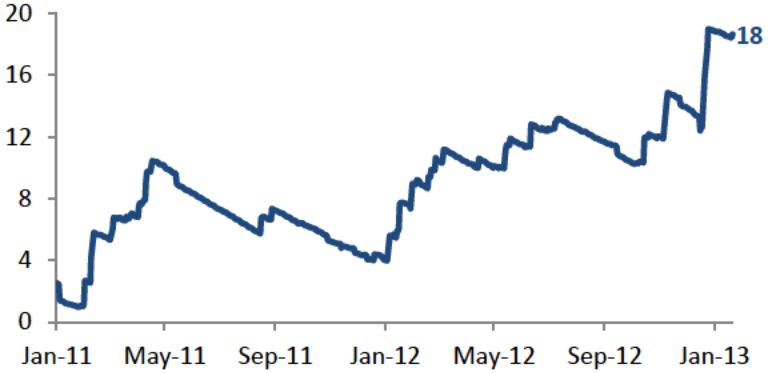
(% of total regional inventories)



Source: HARBOR Aluminum with LME data

LOAD OUT QUEUE IN DETROIT LME WAREHOUSES

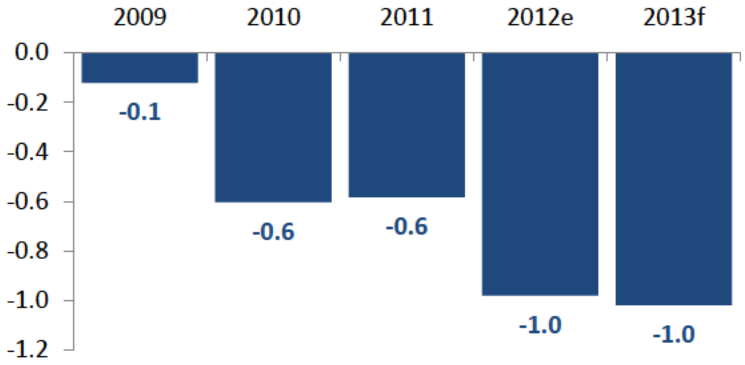
(estimated maximum queue in months)



Source: HARBOR Aluminum with LME data

NORTH AMERICA PRIMARY ALUMINUM MARKET BALANCE

(million mtons; negative balance indicates market deficit)

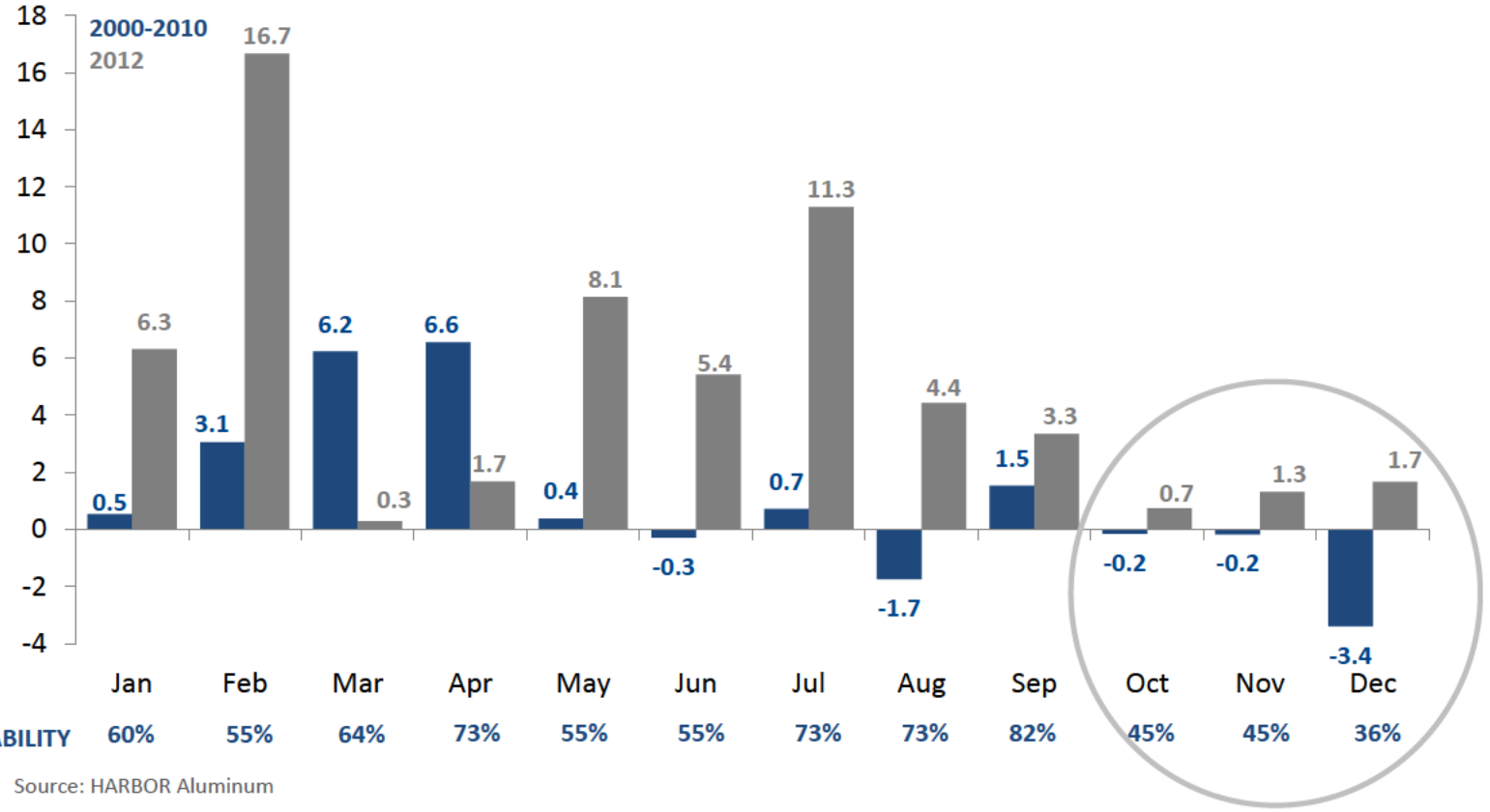


Source: HARBOR Aluminum

In Europe, premiums actually increased, defying seasonality …

EUROPEAN DUTY-PAID PREMIUM SEASONALITY

(monthly average % change; 2000-2010)

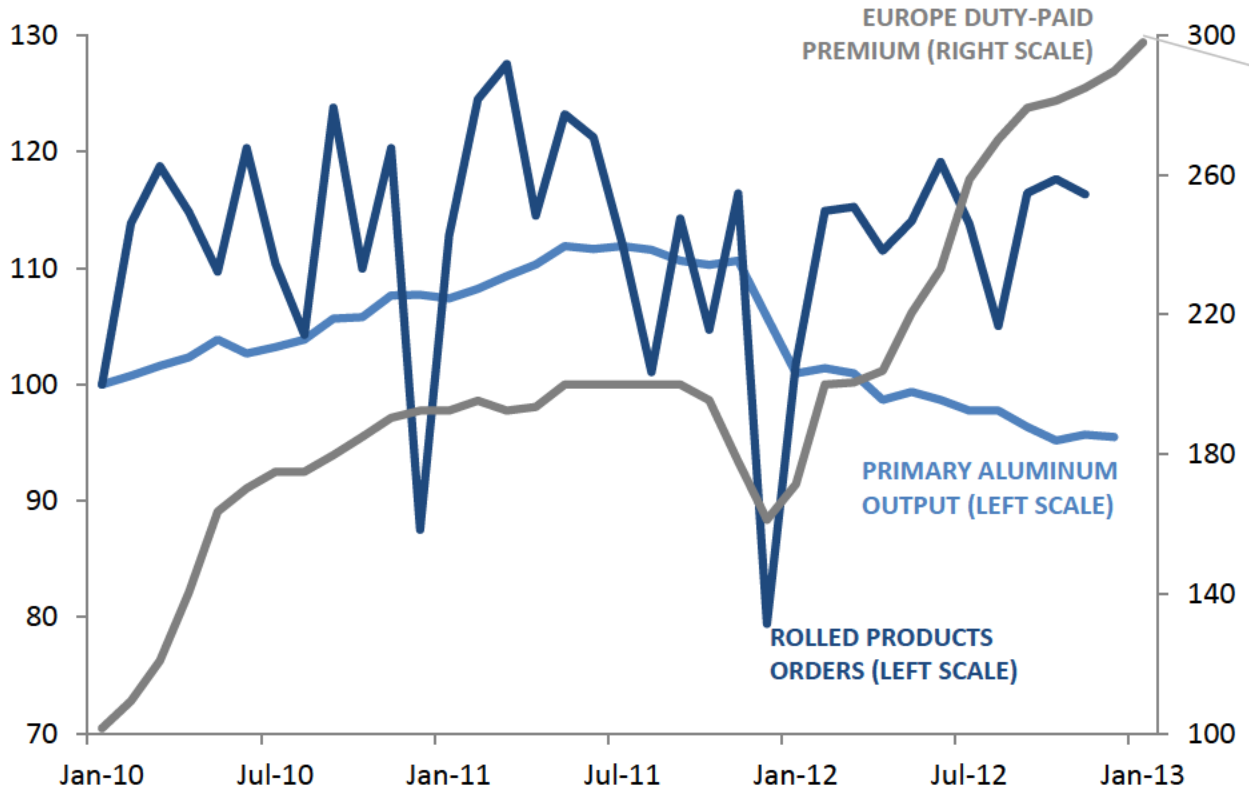


Source: HARBOR Aluminum

…partly because physical conditions continued to be hurt by falling primary output…

EUROPE PRIMARY ALUMINUM OUTPUT & PRODUCTS ORDERS

(index vs $/mton; January 2010 = 100)



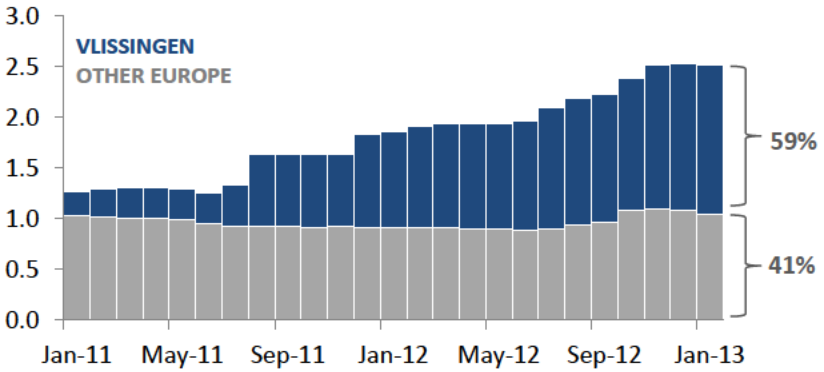
Probably the most reliable metric for physical aluminum demand is semi products shipments. Growing demand for aluminum vs lower primary production is one of the main drivers behind rising premiums.

Source: HARBOR Aluminum with EAA and IAI data

…which compounded the impact of the December cycle iteration

LME INVENTORY CONCENTRATION IN VLISSINGEN

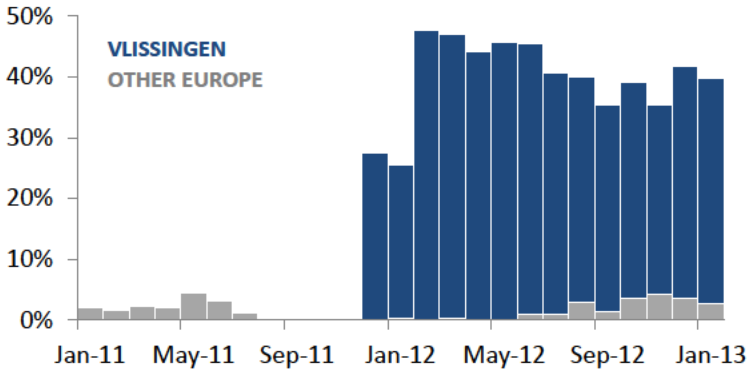
(million mtons)



Source: HARBOR Aluminum with LME data

EUROPE CANCELED WARRANTS AS % OF INVENTORIES

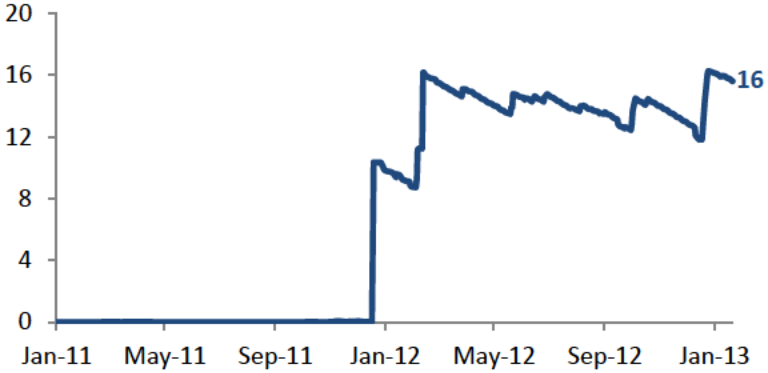
(% of total regional inventories)



Source: HARBOR Aluminum with LME data

LOAD OUT QUEUE IN VLISSINGEN LME WAREHOUSES

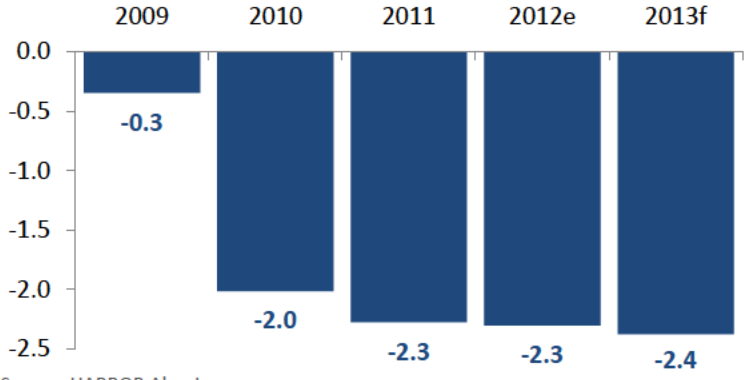
(estimated maximum queue in months)



Source: HARBOR Aluminum with LME data

WESTERN EUROPE PRIMARY ALUMINUM MARKET BALANCE

(million mtons; negative balance indicates market deficit)

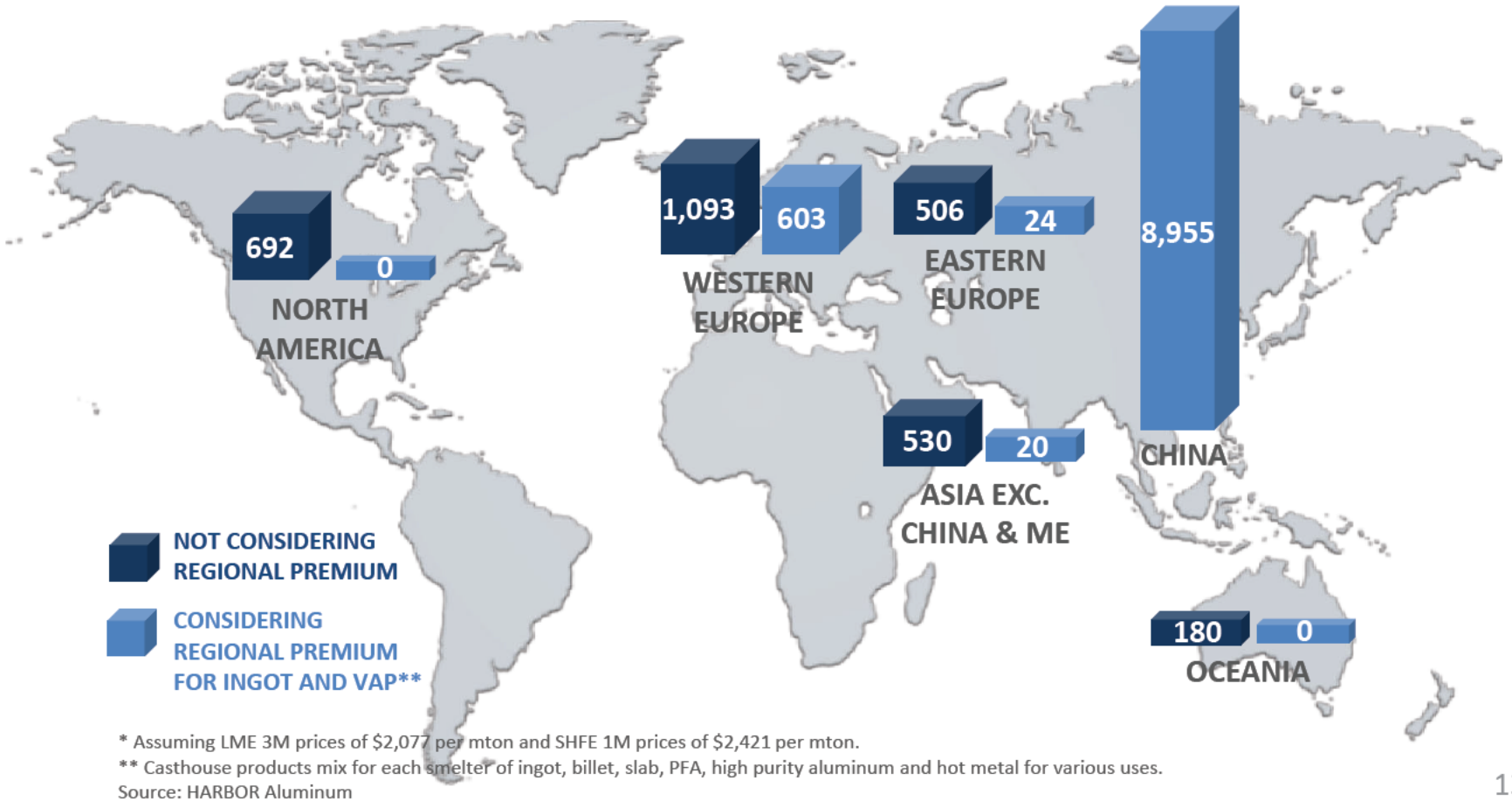


Source: HARBOR Aluminum

Worth to note that capacity at risk in ROW is concentrated today only in Europe…

PRIMARY ALUMINUM OPERATING CAPACITY UNDERWATER BY REGION*

(Q4 2012; thousand mtons per year)



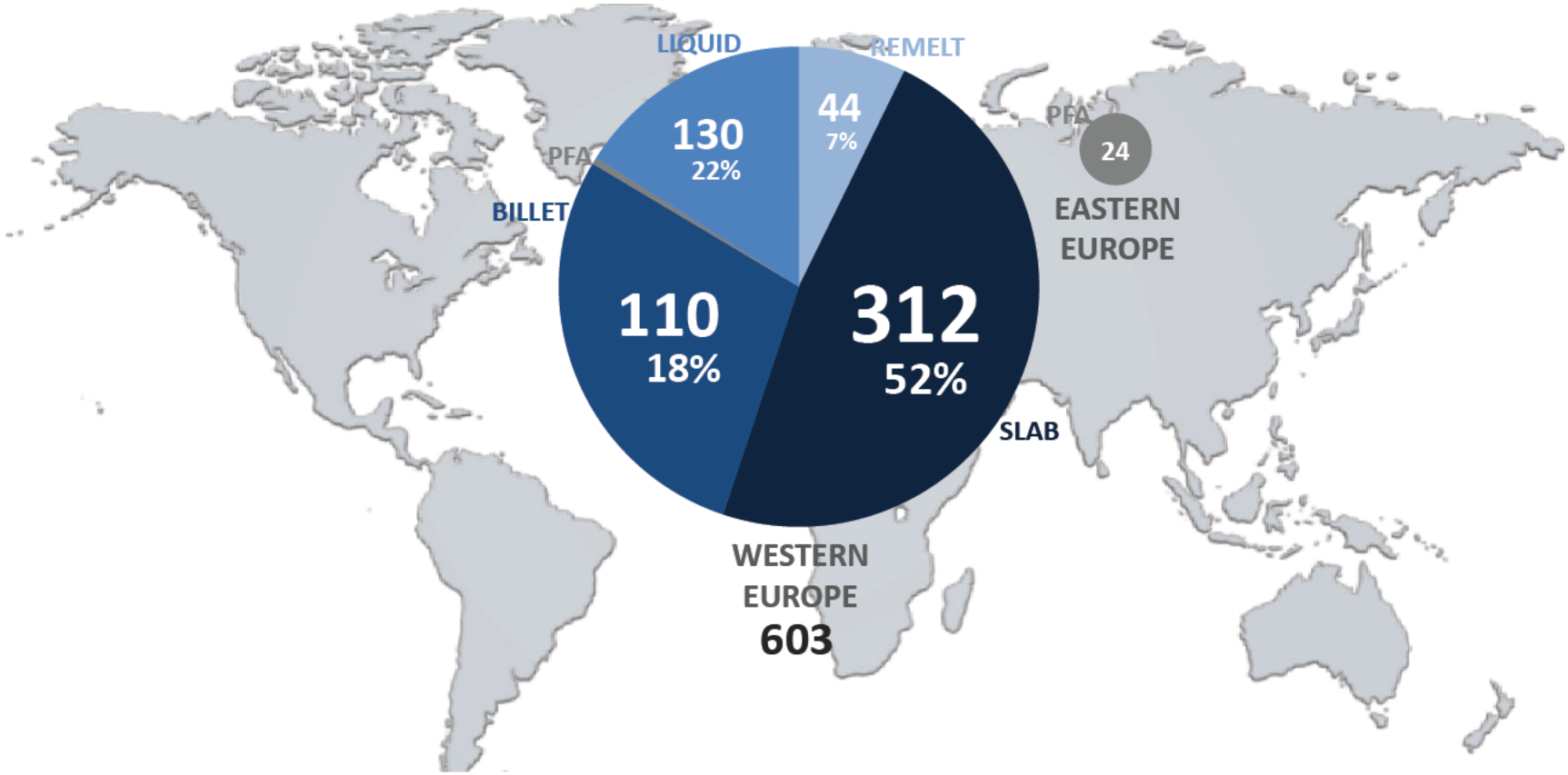
* Assuming LME 3M prices of $2,077 per mton and SHFE 1M prices of $2,421 per mton.

** Casthouse products mix for each smelter of ingot, billet, slab, PFA, high purity aluminum and hot metal for various uses.

Source: HARBOR Aluminum

…with more than 50% of it being slab

ROW PRIMARY ALUMINUM OPERATING CAPACITY UNDERWATER BY REGION & CASTHOUSE PRODUCT* (Q4 2012; thousand mtons per year)

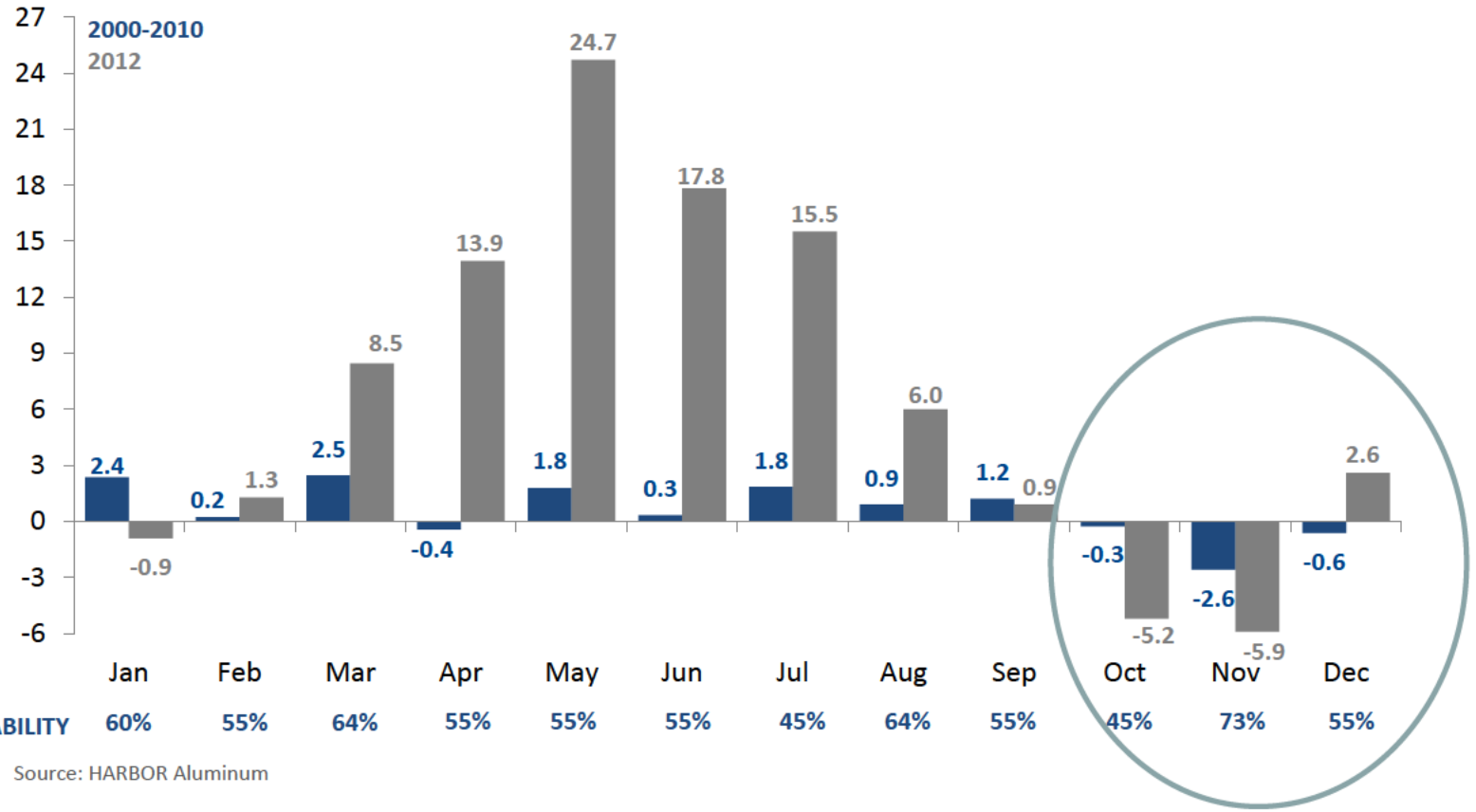


* Assuming LME 3M prices of $2,077 per mton and SHFE 1M prices of $2,421 per mton.
Source: HARBOR Aluminum

In Asia, premiums fell according to seasonality patterns…

JAPAN SPOT INGOT PREMIUM SEASONALITY

(monthly average % change; 2000-2010)

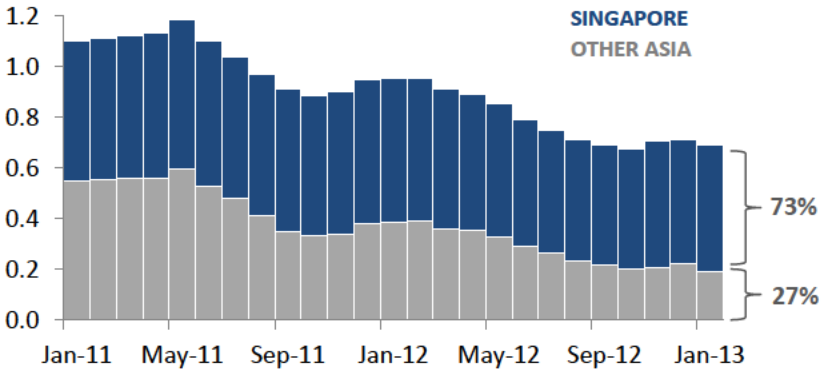


Source: HARBOR Aluminum

…as concentration/long queues are not playing much in the region…

LME INVENTORY CONCENTRATION IN SINGAPORE

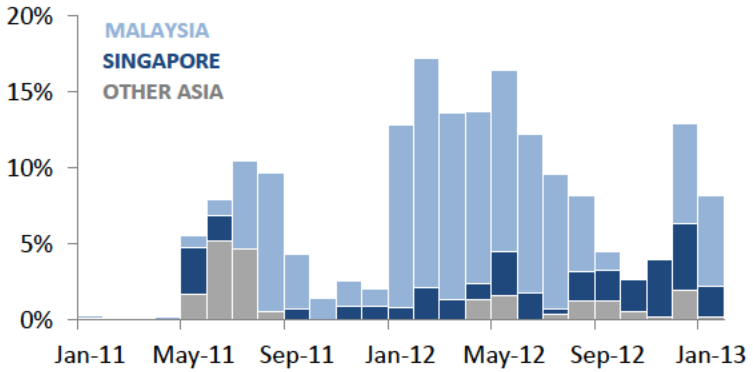
(million mtons)



Source: HARBOR Aluminum with LME data

ASIA CANCELED WARRANTS AS % OF INVENTORIES

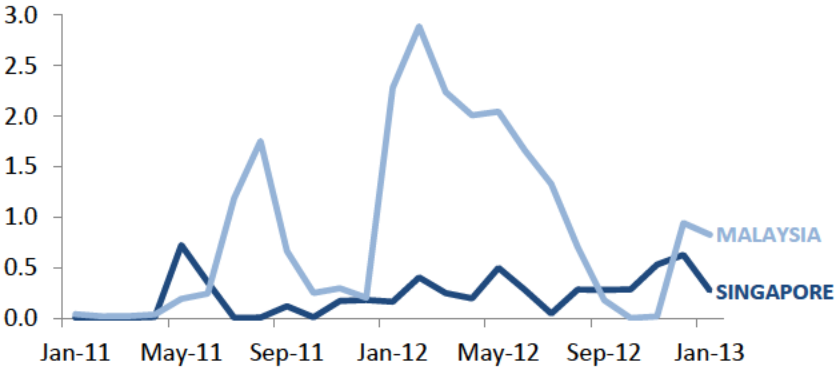
(% of total regional inventories)



Source: HARBOR Aluminum with LME data

LOAD OUT QUEUES IN LME LOCATIONS IN ASIA

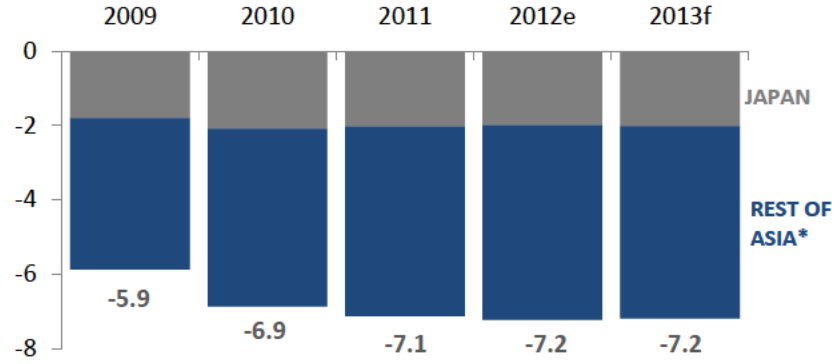
(estimated maximum queue in months)



Source: HARBOR Aluminum with LME data

ASIA* PRIMARY ALUMINUM MARKET BALANCE

(million mtons; negative balance indicates market deficit)

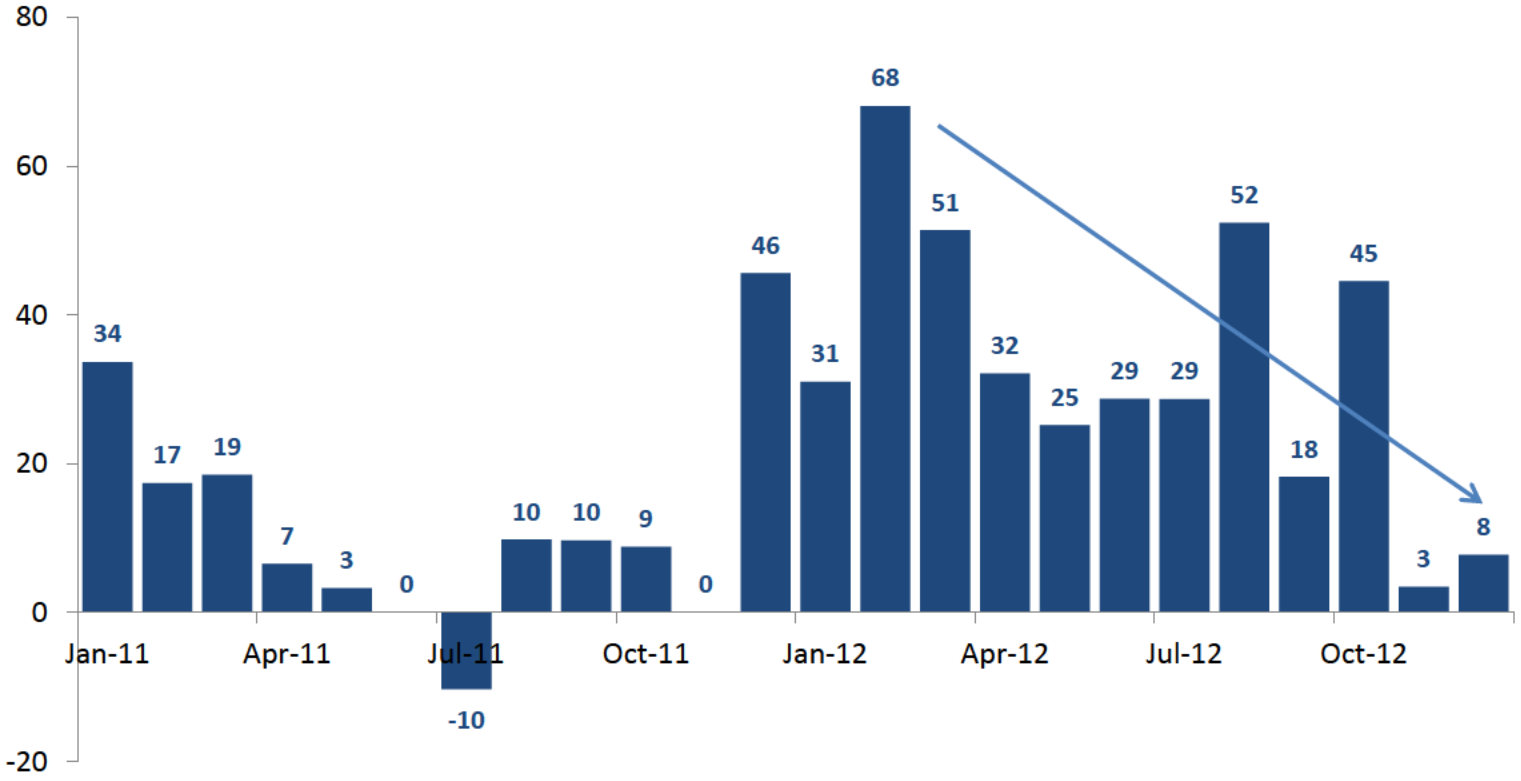


Source: HARBOR Aluminum
*Excluding China and Middle East

…and as China imported less quantities of metal

CHINA UNWROUGHT UNALLOYED ALUMINUM NET IMPORTS

(monthly data; thousand mtons)



Source: HARBOR Aluminum

The Americas healthy and expected to accelerate; Europe's contraction easing

↑ NORTH AMERICA

Overall Demand – Healthy and accelerating gradually

↑ **Transportation** – Automotive & aerospace demand stays 'hot'
↑ **Electrical** – Conductor shipments up 40% y/y in November
↑ **Building & Construction** – Continues to gain momentum
↓↑ **Packaging** – Remains as the laggard; contracting in late 2012

- End user demand growing at the fastest pace in two years in January
- Motor vehicle and parts output at all time highs in December
- Housing starts up 40% y/y in Q4 2012
- Domestic can stock orders at multi-year lows in December

↑ BRAZIL

Overall Demand – Back in expansion mode; should accelerate

↓ **B&C** – Latest hard data was still not showing any improvement
↓ **Transportation** – Auto production was still contracting in November
↓ **Electrical** – Sector activity contracting in late 2012
↑ **Packaging** – Was expanding in November 2012, after contraction in July-October

- Brazil manufacturing activity left contraction zone in October and then gain some traction in November-December… better prospects for 2013

↑ MEXICO

Overall Demand – Strong growth with some seasonal easing

↑ **B&C** – Output temporarily stalled as usual as the new government takes the office… expected to resume strong growth soon
↑ **Transportation** – Significant slow down in December 2012
↑ **Packaging** – Beverage sector demand growing steadily
↑ **Electrical** – Electrical equipment output growing at modest rates

- Automotive sector cited less strong than expected in early 2013
- Demand for FRP also less robust than expected for the beginning of this year

↓ WESTERN EUROPE

Overall Demand – Still contracting, but rate diminishing

↓**Transportation** – Hard data for October showing heavy contraction
↓ **B&C** – Deep contraction mainly in Southern countries
↓ **Packaging** – Can beverage segment weakened more in Q4 2012

- Region well inside manufacturing recession, but worst point reached in July and roughly stable rate of decline since then
-Preliminary manufacturing activity estimates for January show contraction easing and even marginal growth in Germany
- However, anemic growth at best expected ahead.

Source: HARBOR Aluminum

Middle East strong, Asia's growth expected to accelerate

↑ MIDDLE EAST

Overall Demand – Strong growth and accelerating

↑ **Transportation** – Prospects of attractive growth ahead
↑ **B&C** – Cited hot mainly in Saudi Arabia
↑ **Electrical** – Cited hot mainly in Saudi Arabia
↑ **Packaging** – Attractive structural growth

- Non-Oil manufacturing output at 2-year highs in UAE in December
- New orders in UAE at four-year highs in December
- Aluminum demand described as hot in Saudi Arabia

↑ SOUTHEAST ASIA

Overall Demand – Strong growth with some seasonal easing

↑ **Transportation** – Attractive growth in automotive demand
↑ **B&C** – Urbanization trends encouraging for sector
↑ **Electrical** – Urbanization trends encouraging for sector
↑ **Packaging** – Steady attractive growth

- Indonesia, Malaysia, Thailand remain as hot spots
- South Korea and Taiwan cited less strong in late 2012/early this year
- Premiums stable in consequence… this is only temporarily

↑ CHINA

Overall Demand – Modest pick up since October 2012

↑ **B&C** – Investment continues steady at rates of +20% y/y
↑ **Transportation** – Auto production slowed down notably in H2 2012
↑ **Electrical** – Should receive boost from infrastructure projects
↓ **Packaging** – Seasonal monthly contraction in Q4 2012

- Flash manufacturing activity estimates show strong pick up in January
- Manufacturing activity had exited contraction zone since October
- Motor vehicles production up 20% in November-December

↓ JAPAN

Overall Demand – In contraction mode; expected bounce on stimulus

↓↑ **B&C** – Still expanding y/y, but already contraction m/m
↓ **Transportation** – Auto production contracting at two-digit rates in Q4
↓ **Packaging** – Can demand contracted m/m and y/y in November
↓ **Electrical** – Demand from sector continued to decline in H2

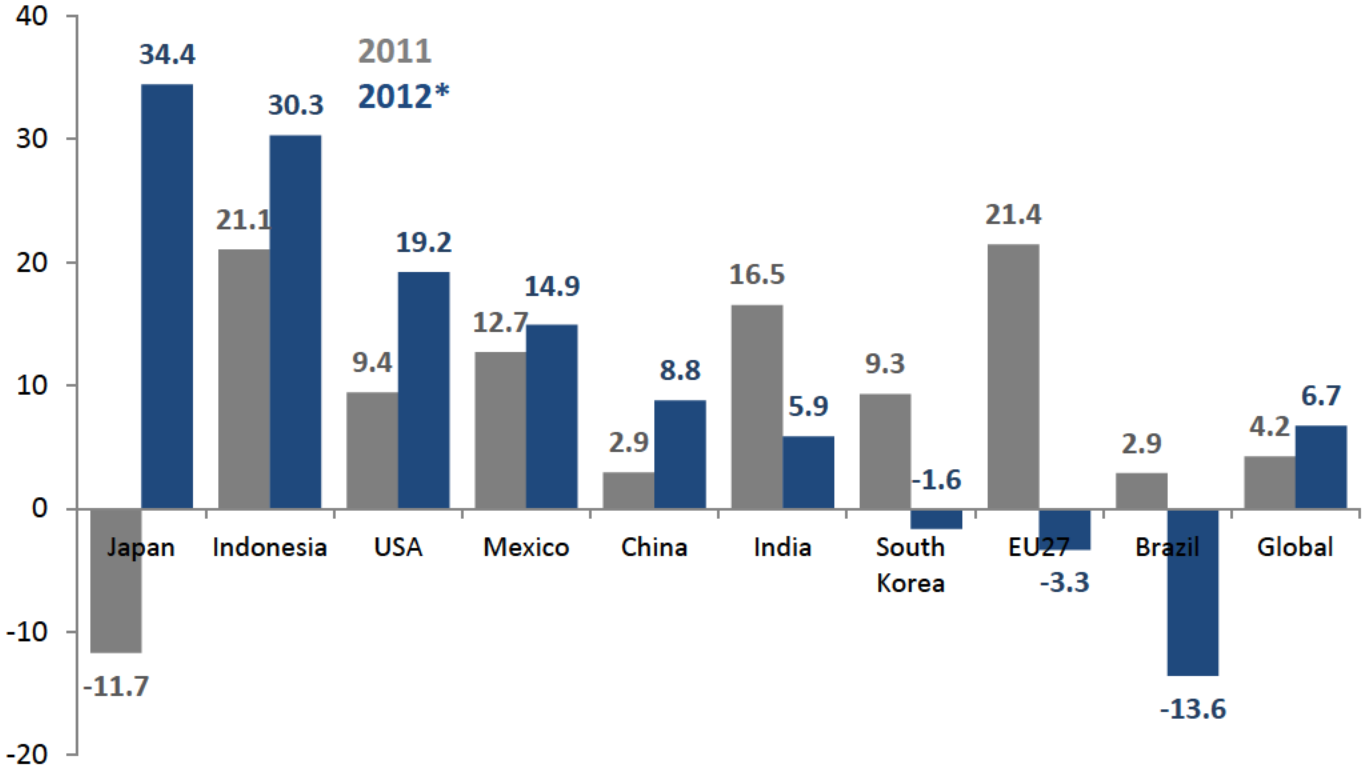
- Auto production down 14% y/y in Sep-Nov more weakness in Dec-Jan
- Construction activity still growing 4% y/y, but falling m/m since July. Extrusions contracting y/y since August 2012
- Consumer electronics sector weakening in the beginning of this year

Source: HARBOR Aluminum

Southeast Asia and North America led in automotive growth…

AUTOMOTIVE SECTOR DEMAND GROWTH BY COUNTRY

(average annual % growth rates)



Source: HARBOR Aluminum with METI, GAIKINDO, FRB, AMIA, CNBS, SIAM, KAMA, Eurostat, IBGE and Bloomberg data.
*January-November 2012 data

Japan: Passenger cars, buses and trucks production
USA: Motor vehicles and parts IP
India: Vehicle sales domestic & total
EU27: Motor vehicles production

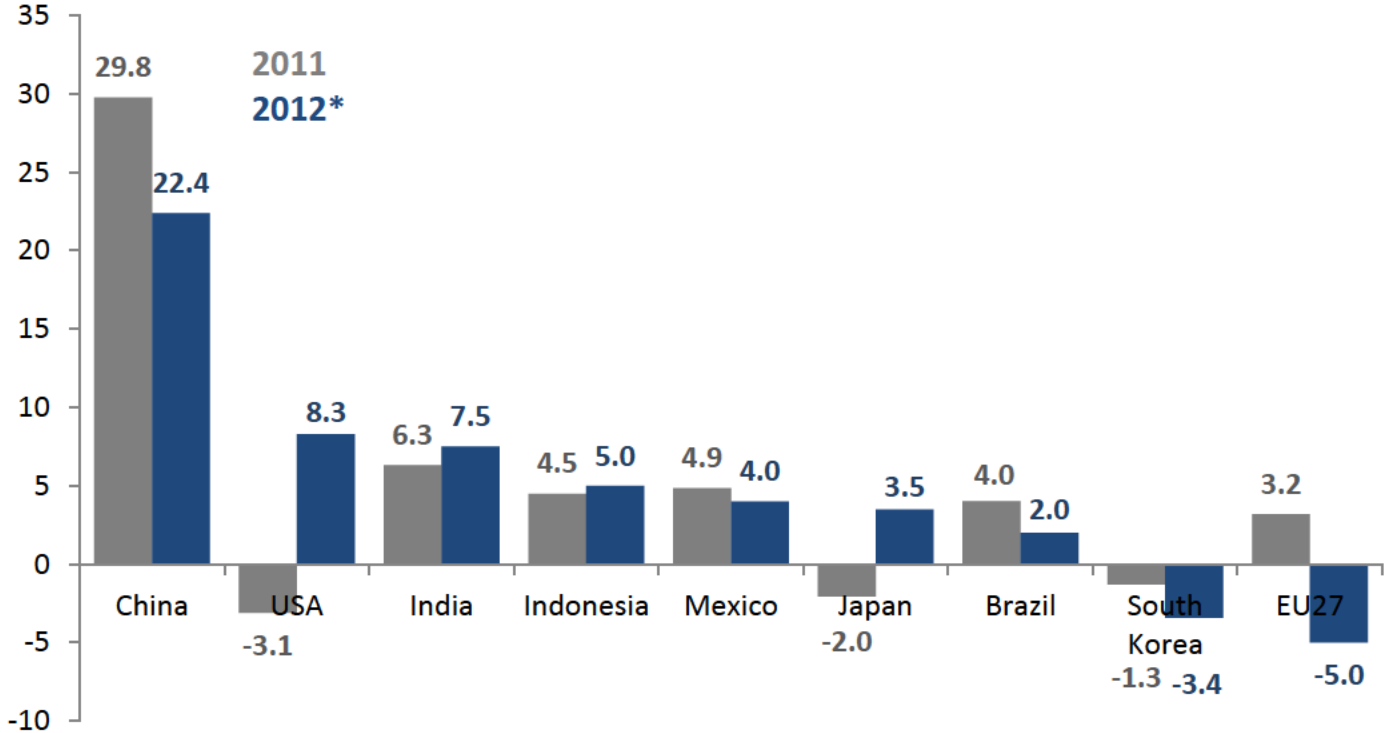
Indonesia: Automotive production
China: Automobile production
South Korea: Vehicle production
Brazil: Automotive vehicles production

Global: Vehicle sales
Mexico: Motor vehicle production

…as well as bulding and construction, only behind China…

CONSTRUCTION SECTOR GROWTH BY COUNTRY

(average annual % growth rates)



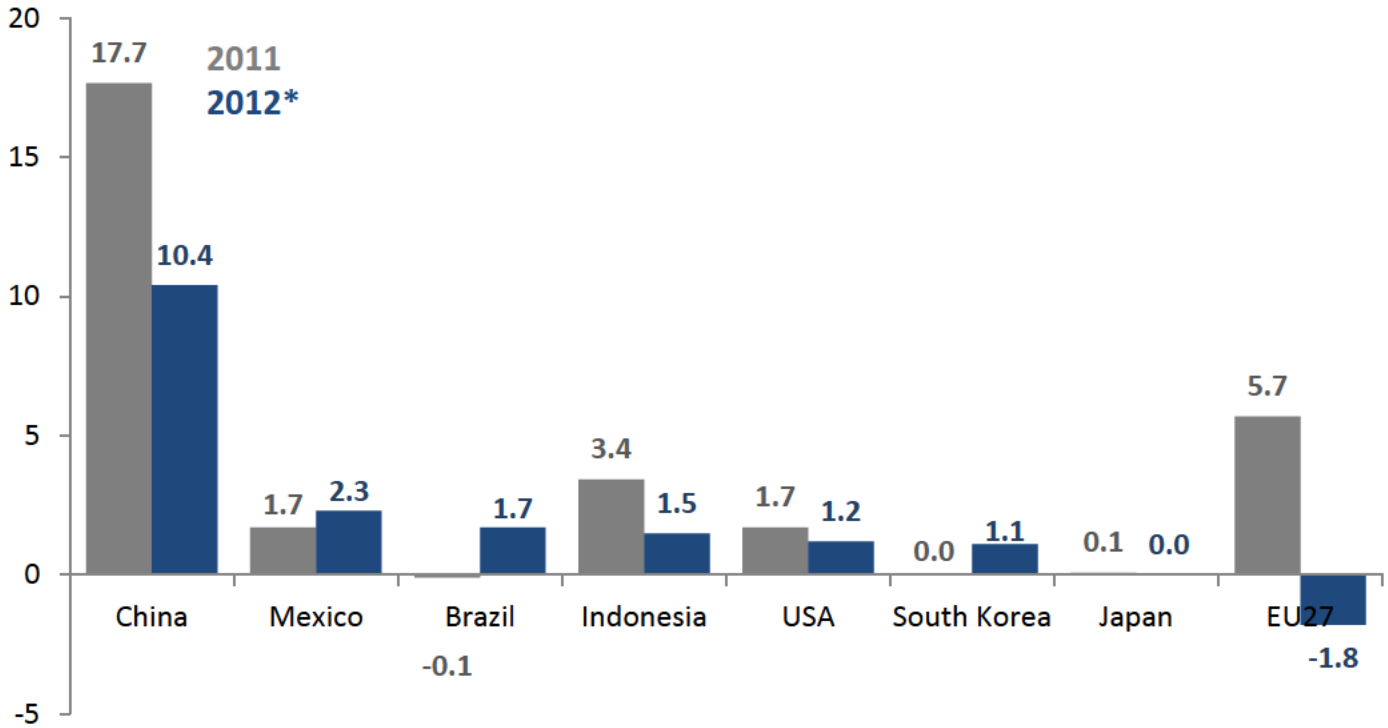
Source: HARBOR Aluminum with CNBS, US Census Bureau, ICSO, BPSI, INEGI, OECD, METI, KNSO and Eurostat data.
*January-November 2012 data

Japan: Construction activity
USA: Construction spending
India: Construction GDP (real)
EU27: Construction production (buildings)
Mexico: Construction production
Indonesia: Construction GDP (real)
China: Fixed assets investment in construction and installations
South Korea: Value of construction completed
Brazil: Construction production

…while beverage sector growth was almost fully delivered by the Emerging World

BEVERAGE SECTOR GROWTH BY COUNTRY

(average annual % growth rates)



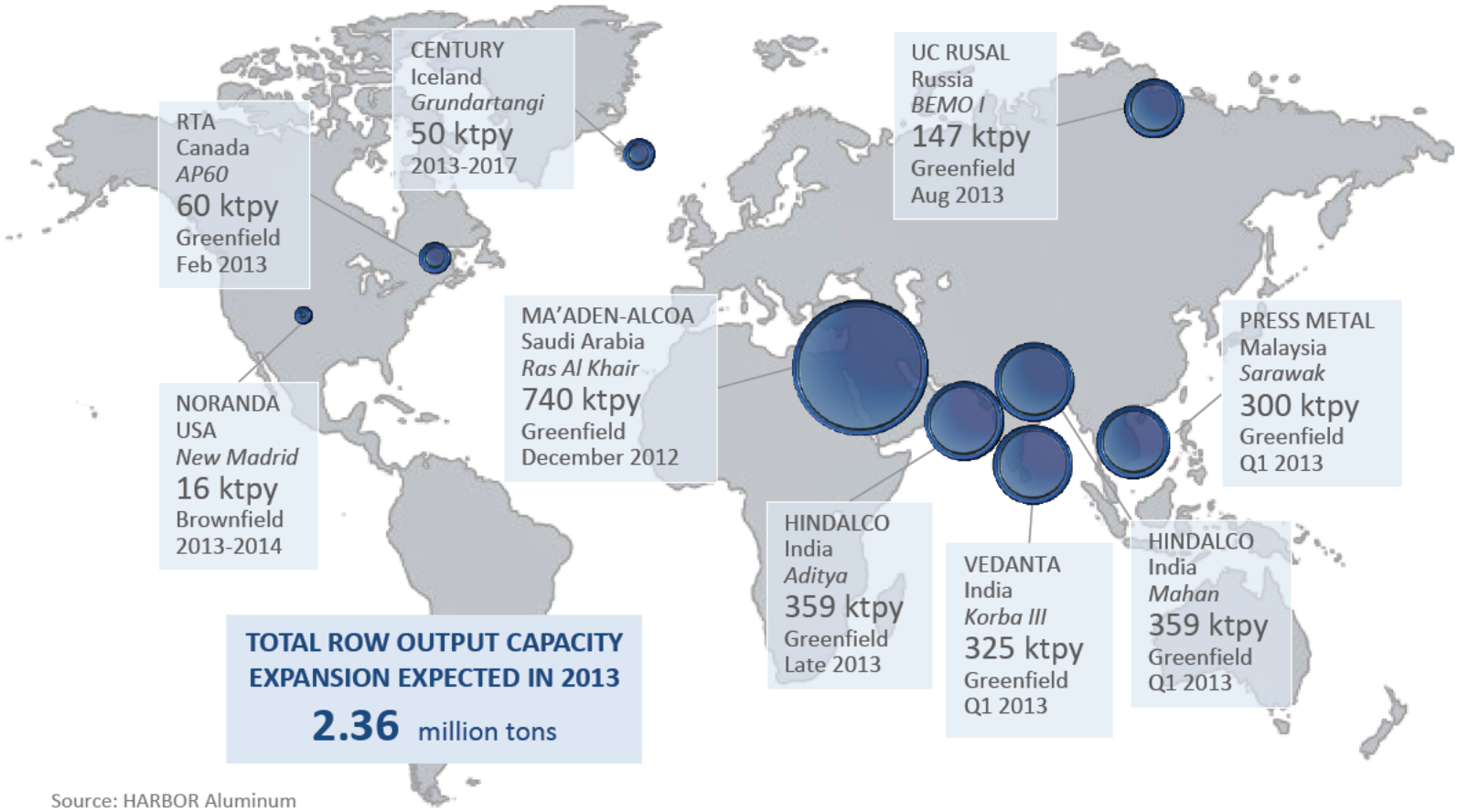
Source: HARBOR Aluminum with Aluminum Association, Eurostat, METI, CNBS, INEGI, KNSO, BPSI and IBGE data.
*January-November 2012 data

Japan: Aluminum cans for beverage output
USA: Can stock shipments
South Korea: Domestic beverage shipments
Brazil: Beverage production

Indonesia: Manufacturing food, beverages and tobacco GDP
China: Soft drinks production
EU27: Beverage production
Mexico: Food and beverages production

Asia is best positioned to benefit from primary output expansions in 2013

ROW PRIMARY ALUMINUM OUTPUT EXPANSION PROJECTS IN 2013

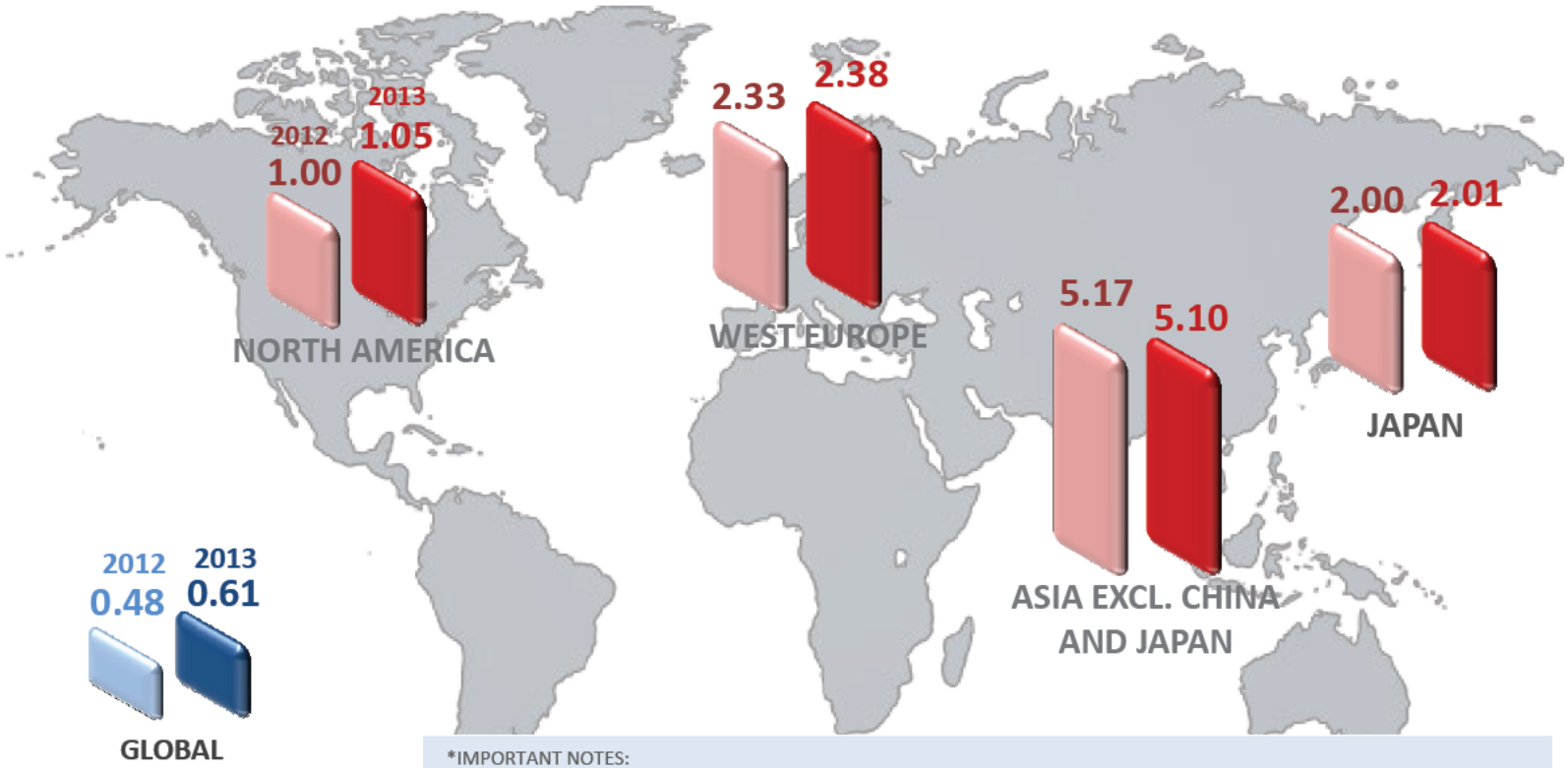


Source: HARBOR Aluminum

Regional deficits to widen in North America & West Europe, but not in Asia…

EXPECTED PRIMARY ALUMINUM MARKET DEFICITS BY REGION 2012-2013*

(million mtons)



*IMPORTANT NOTES:
A) Aluminum production forecasts assume all confirmed brownfield / greenfield projects hit the market as planned (no delays).
B) Aluminum production forecasts assume no cuts in production beyond the ones that have been confirmed so far nor disruptions in operating capacity.
C) Aluminum production forecasts include annual capacity creep of 0.5% per year for all smelters.

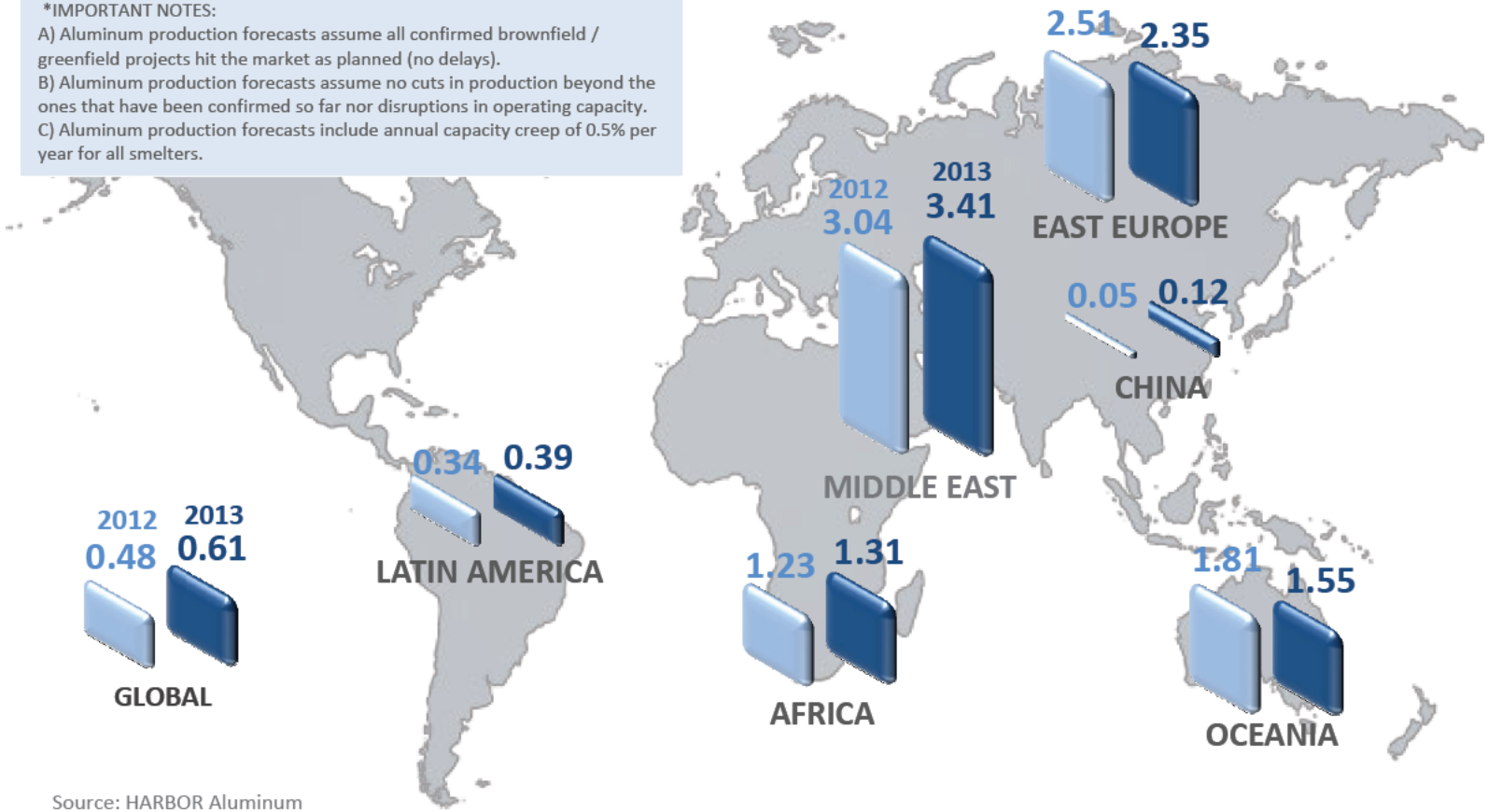
Source: HARBOR Aluminum

…while regional surpluses will only increase significantly in the Middle East

EXPECTED PRIMARY ALUMINUM MARKET SURPLUSES BY REGION 2012-2013*

(million mtons)

*IMPORTANT NOTES:
A) Aluminum production forecasts assume all confirmed brownfield / greenfield projects hit the market as planned (no delays).
B) Aluminum production forecasts assume no cuts in production beyond the ones that have been confirmed so far nor disruptions in operating capacity.
C) Aluminum production forecasts include annual capacity creep of 0.5% per year for all smelters.



Source: HARBOR Aluminum

Conditions behind record high regional premiums are not likely to go away soon

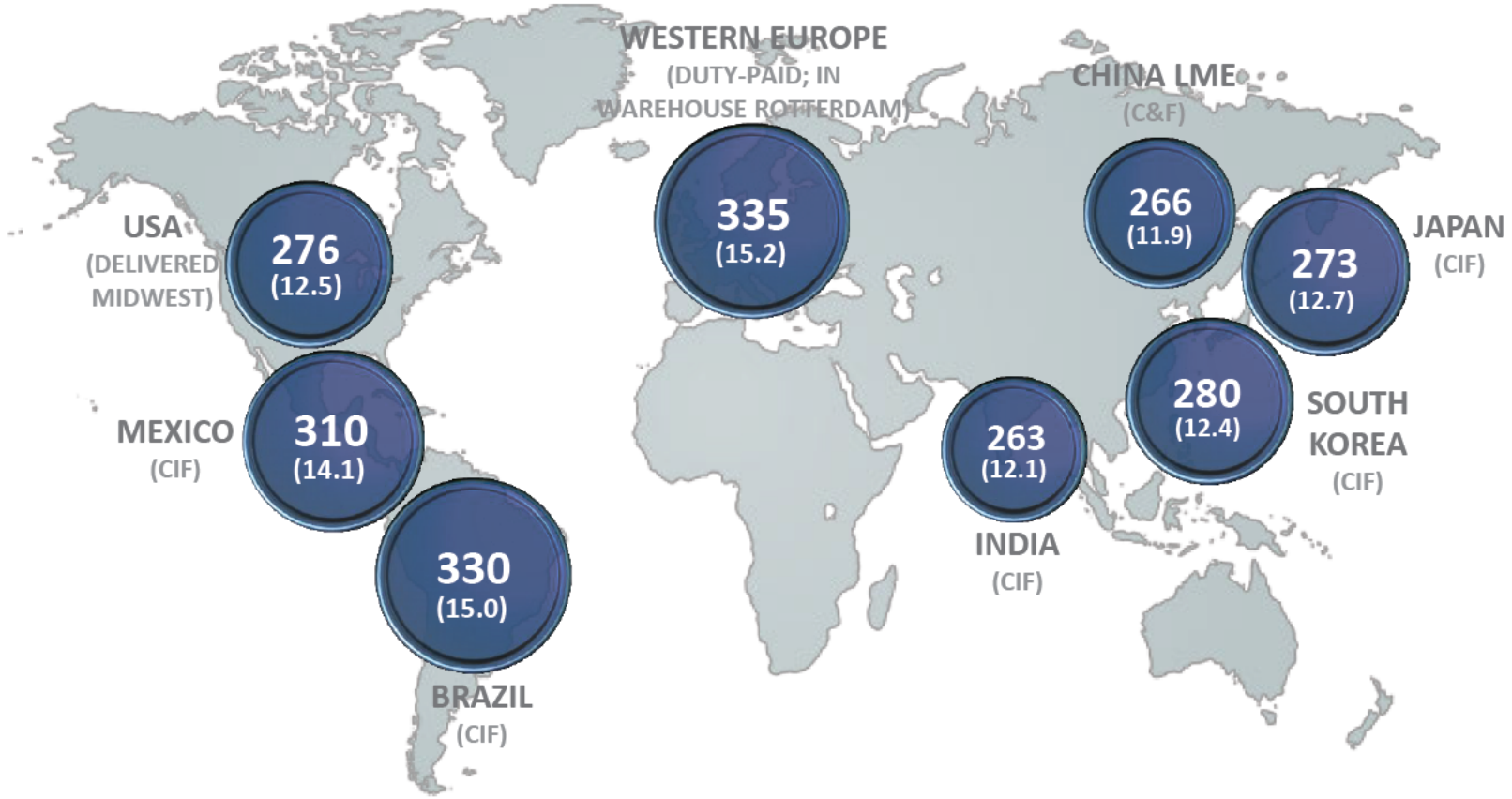
	EXPECTED PHYSICAL MARKET CONDITIONS	VICIOUS CYCLE PLAYING IN THE REGION	OUTLOOK FOR REGIONAL PREMIUMS
THE AMERICAS	Market deficit to widen to 1,019 ktons in 2013 from 979 ktons in 2012	Yes	Worst geographical position to compete for new metal. Expect fresh record highs, billet to suffer the most
WEST EUROPE	Market deficit to widen to 2,374 ktons in 2013 from 2,301 ktons in 2012	Yes	Worst primary aluminum output outlook prospects, will compete for metal against the Americas and Southeast Asia. Expect fresh record highs, P1020 to suffer the most
SOUTHEAST ASIA	Market deficit to narrow to 5,174 ktons in 2013 from 5,236 ktons in 2012	No	Will have to pay higher premiums to compete for its regional new metal against the Americas , West Europe and Japan
JAPAN	Stable. Market deficit to widen marginally to 2,015 mtons in 2013	No	Will have to pay higher premiums to compete for its regional new metal against the Americas, West Europe and Southeast Asia

Source: HARBOR Aluminum

Expect fresh highs for ingot premiums… Europe potentially affected the most

ALUMINUM INGOT SPOT PREMIUMS FORECAST 2013

($/mton and cent/lb in parenthesis; annual average)

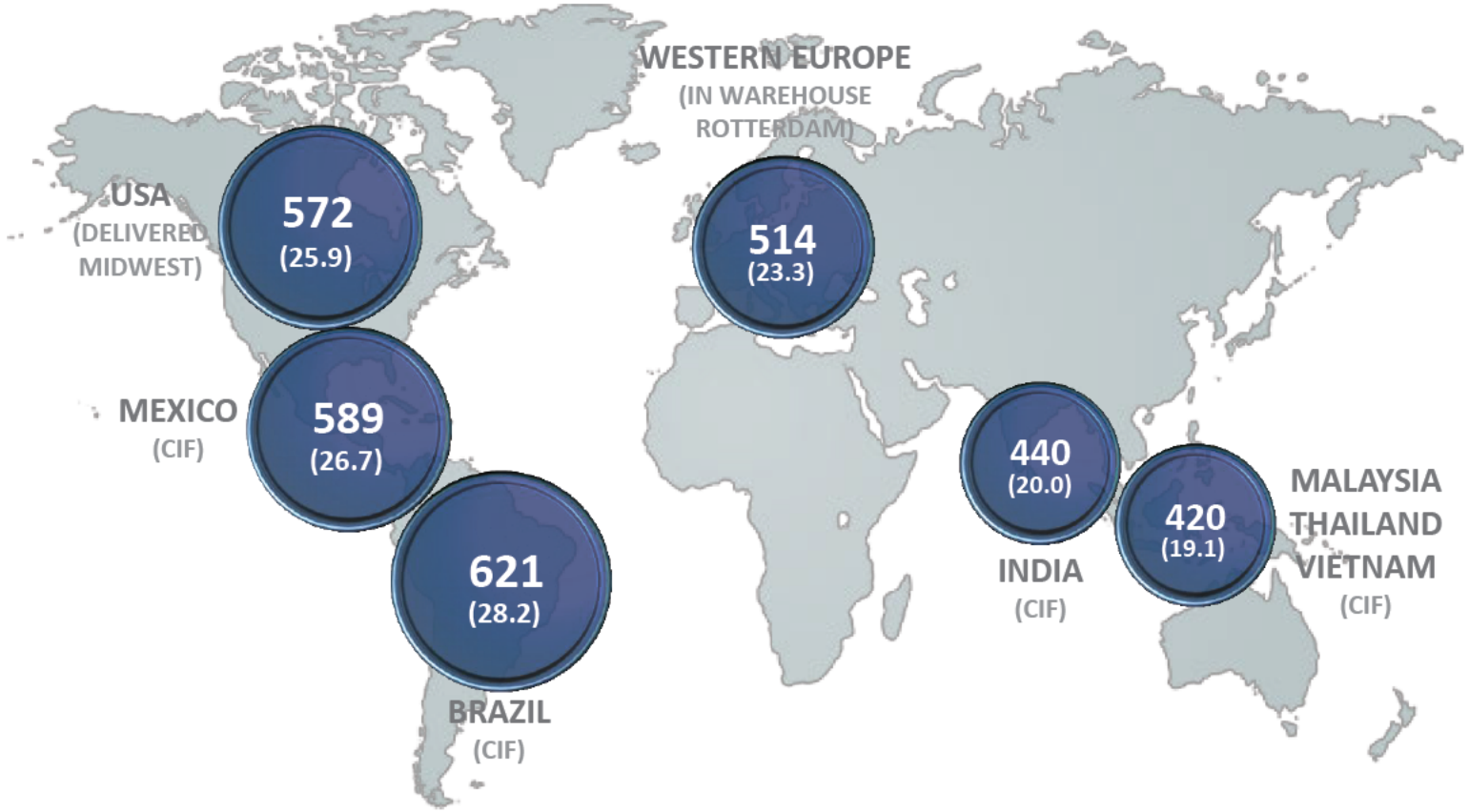


Source: HARBOR Aluminum

Record levels also expected for billet premiums… The Americas affected the most here

ALUMINUM BILLET FULL SPOT PREMIUMS FORECAST 2013

($/mton and cent/lb in parenthesis; annual average)



Source: HARBOR Aluminum

Largest increases in ingot and VAP premiums potentially during H1

GLOBAL ALUMINUM PREMIUMS DATA AND FORECASTS

(quarterly average)

	2012				2013			
	Q1	Q2	Q3	Q4	Q1f	Q2f	Q3f	Q4f
US Midwest Premium (prompt delivery; cent/lb)	8.1	9.7	11.0	11.0	11.5	12.5	13.0	13.0
US Full 6063 Billet Premium (prompt delivery; cent/lb)	18.9	21.3	22.7	23.2	24.2	25.9	26.7	27.0
Brazil Spot Ingot Premium (CIF; $/mton)	265	280	300	290	310	325	345	340
Brazil Spot Billet Premium (CIF; $/mton)	520	540	560	550	585	615	650	635
Mexico Spot Ingot Premium (CIF; $/mton)	200	237	264	268	280	300	325	330
Mexico Spot Billet Premium (CIF; $/mton)	480	500	520	525	540	580	615	620
Europe Spot Duty-Paid Premium (In-Warehouse Rotterdam; $/mton)	190	219	269	285	300	328	351	359
Europe Spot Duty-Unpaid Premium (In-Warehouse Rotterdam; $/mton)	123	158	214	216	230	255	280	290
Europe Full 6063 Billet Duty-Paid Premium (In-Warehouse Rotterdam; $/mton)	397	400	423	459	485	505	525	540
Japan Ingot Contract Premium (CIF; $/mton)	112	121	205	255	243	260	275	290
Japan Ingot Spot Premium (CIF; $/mton)	115	172	247	232	252	270	285	285
South Korea Spot Ingot Premium (CIF; $/mton)	135	190	235	239	260	275	290	295
India *Nalco*Tenders Ingot Premium (CIF; $/mton)	165	174	223	223	230	260	280	280
China LME Premium (C&F; $/mton)	115	154	235	230	248	260	275	280

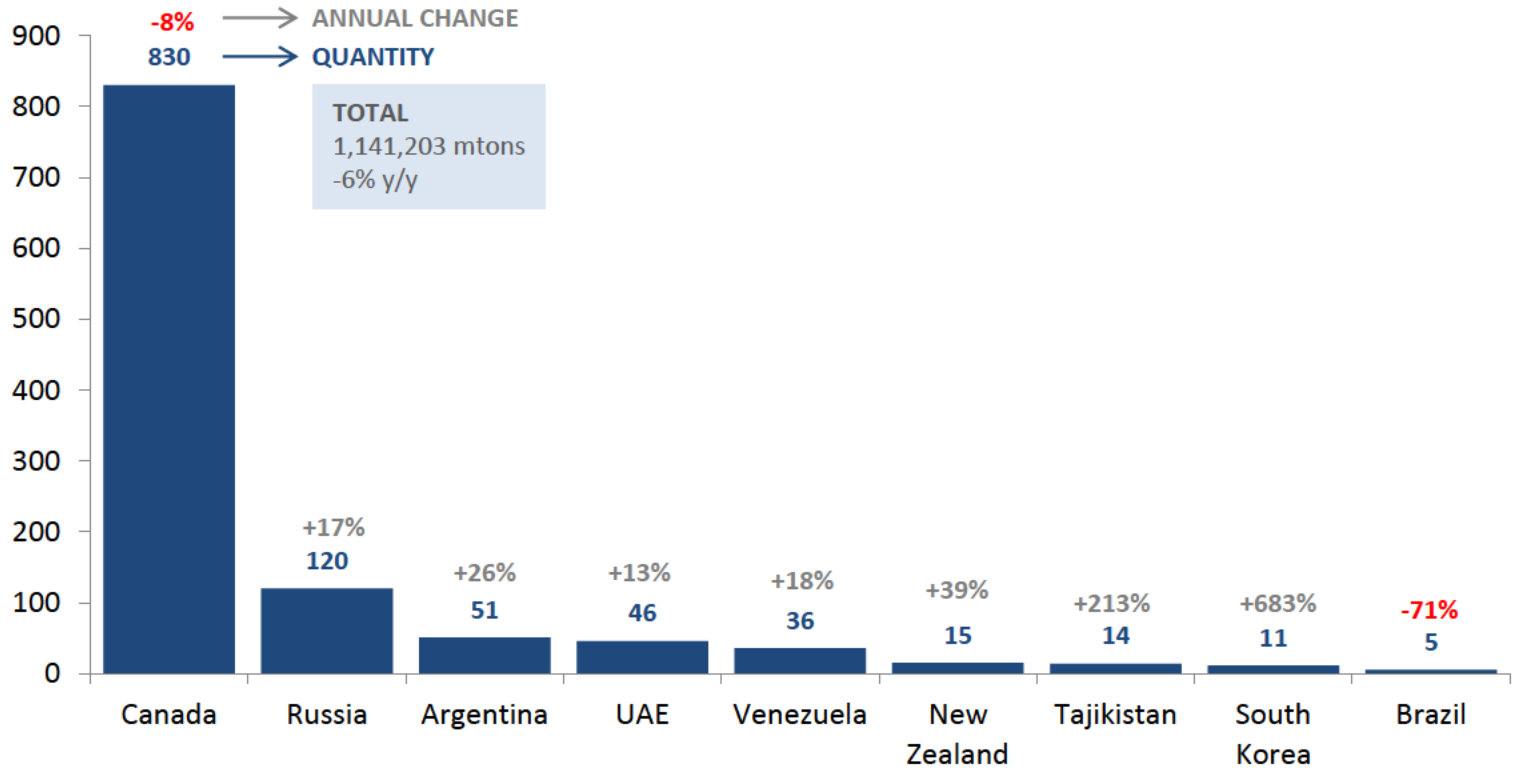
Source: HARBOR Aluminum

*INGOT AND VAP TRADE FLOW TRENDS

Rusal and *Aluar* gained P1020 share in the US… Canada & Brazil lost

USA UNWROUGHT UNALLOYED ALUMINUM IMPORTS BY TOP ORIGIN

(January-November 2012 data; thousand mtons)

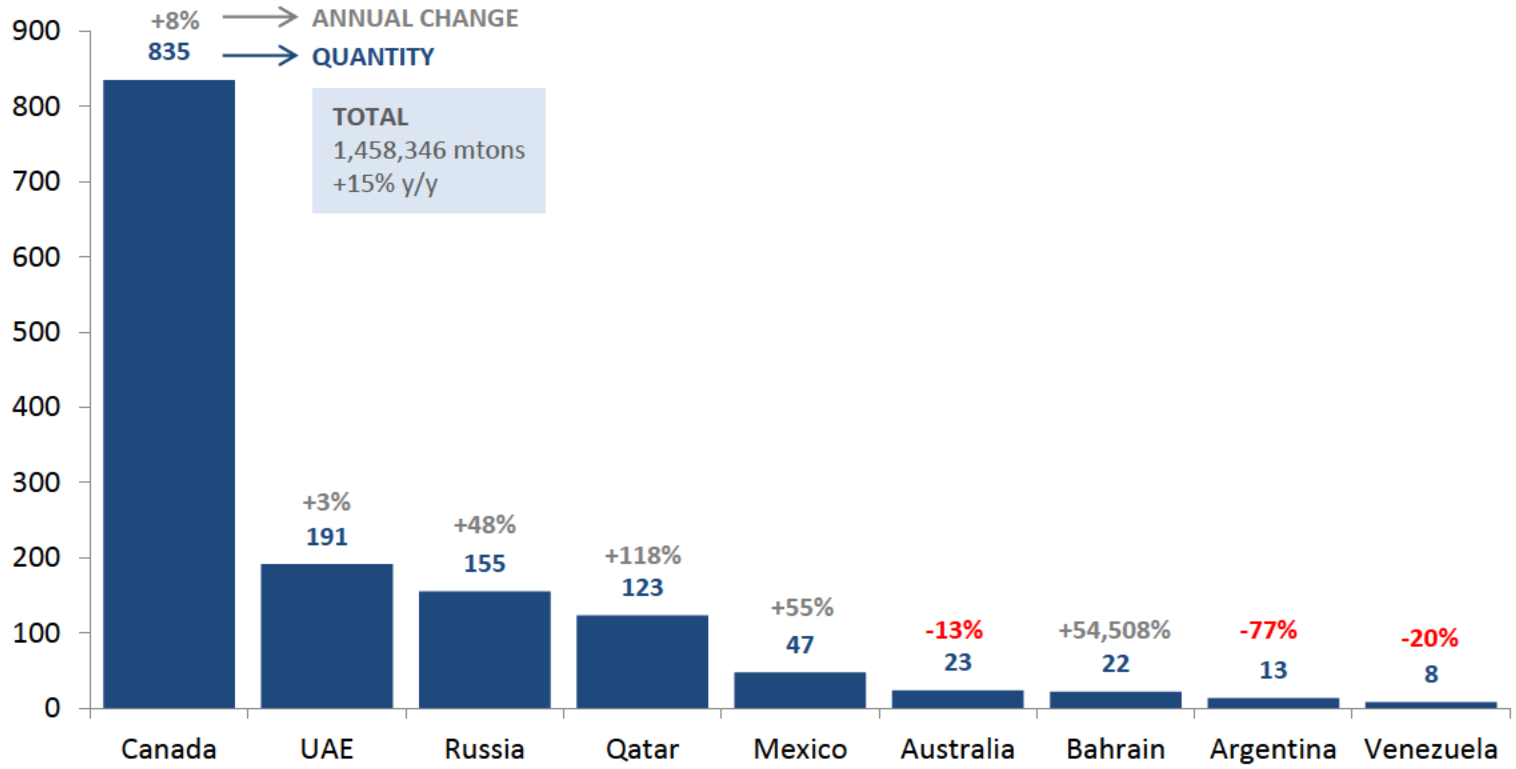


Source: HARBOR Aluminum

Qatalum, Rusal and Alba the clear winners of BIllet mkt share…Latam the loser

USA UNWROUGHT ALLOYED ALUMINUM IMPORTS BY TOP ORIGIN

(January-November 2012 data; thousand mtons)

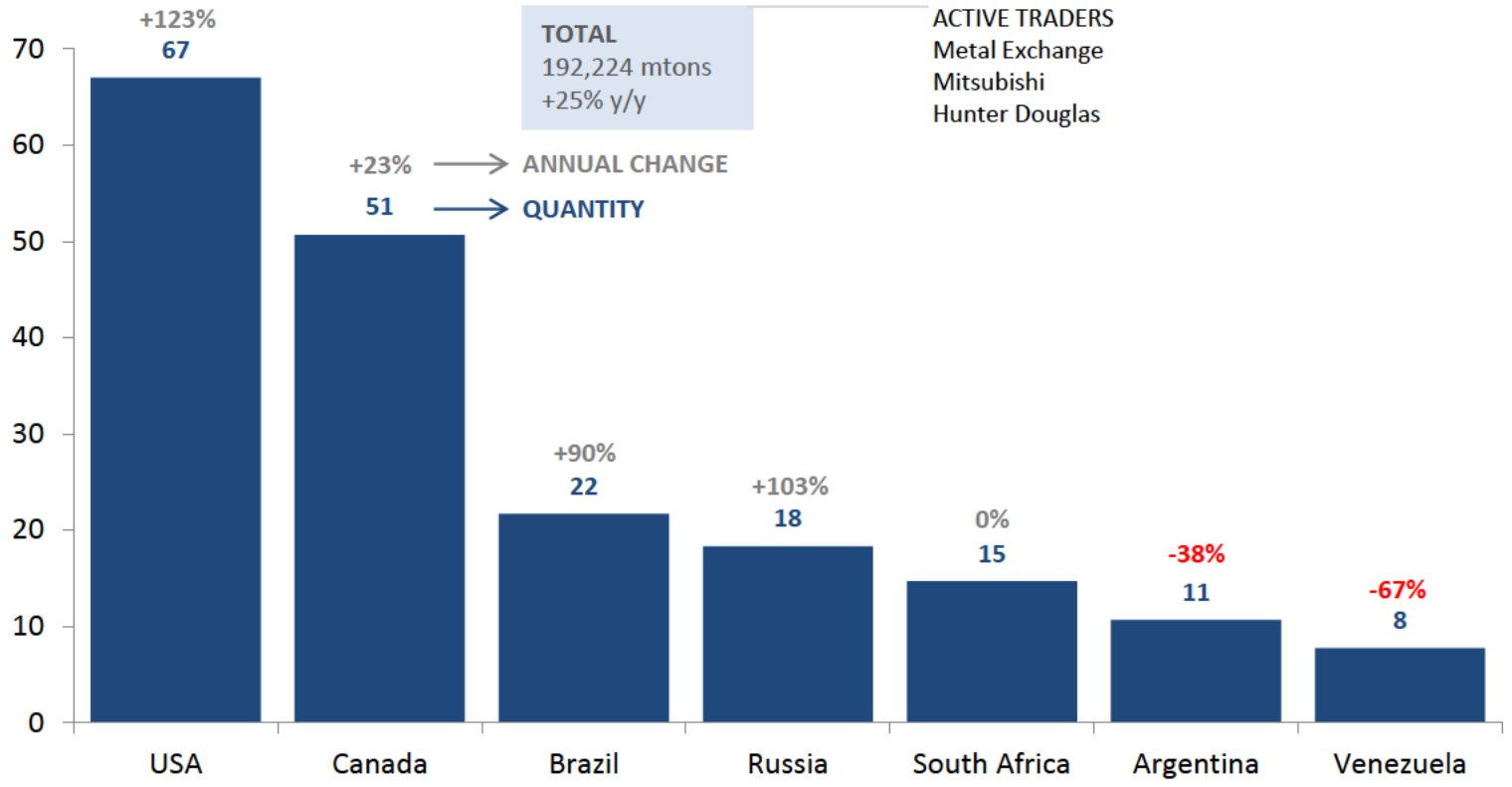


Source: HARBOR Aluminum

Mexico growing importer of ingot… traders grabbing share as Latam falls

MEXICO UNWROUGHT UNALLOYED ALUMINUM IMPORTS BY TOP ORIGIN

(January-October 2012 data; thousand mtons)

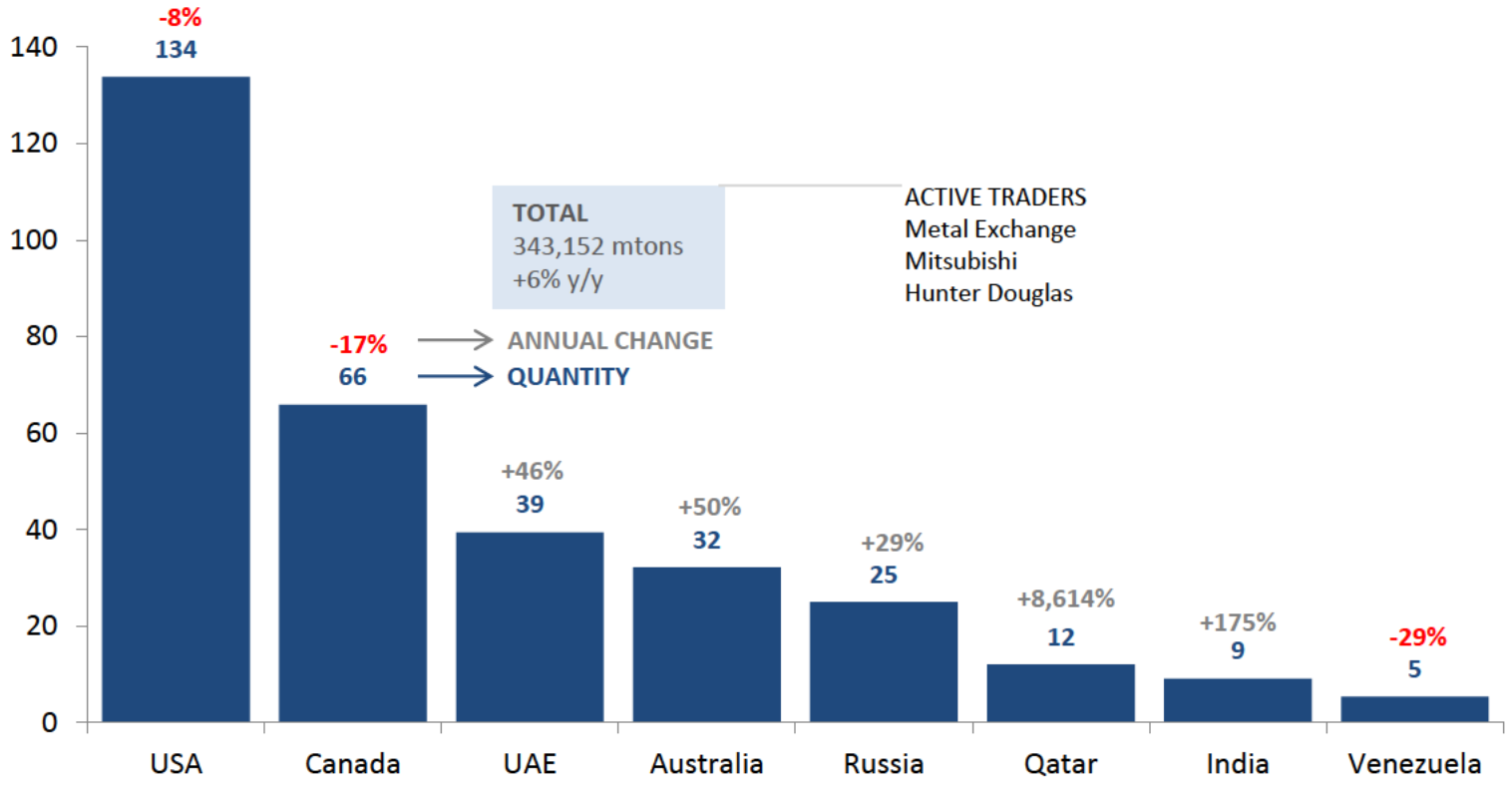


Source: HARBOR Aluminum

…but in VAP, Mexico's needs grew and the Middle East stepped in

MEXICO UNWROUGHT ALLOYED ALUMINUM IMPORTS BY TOP ORIGIN

(January-October 2012 data; thousand mtons)

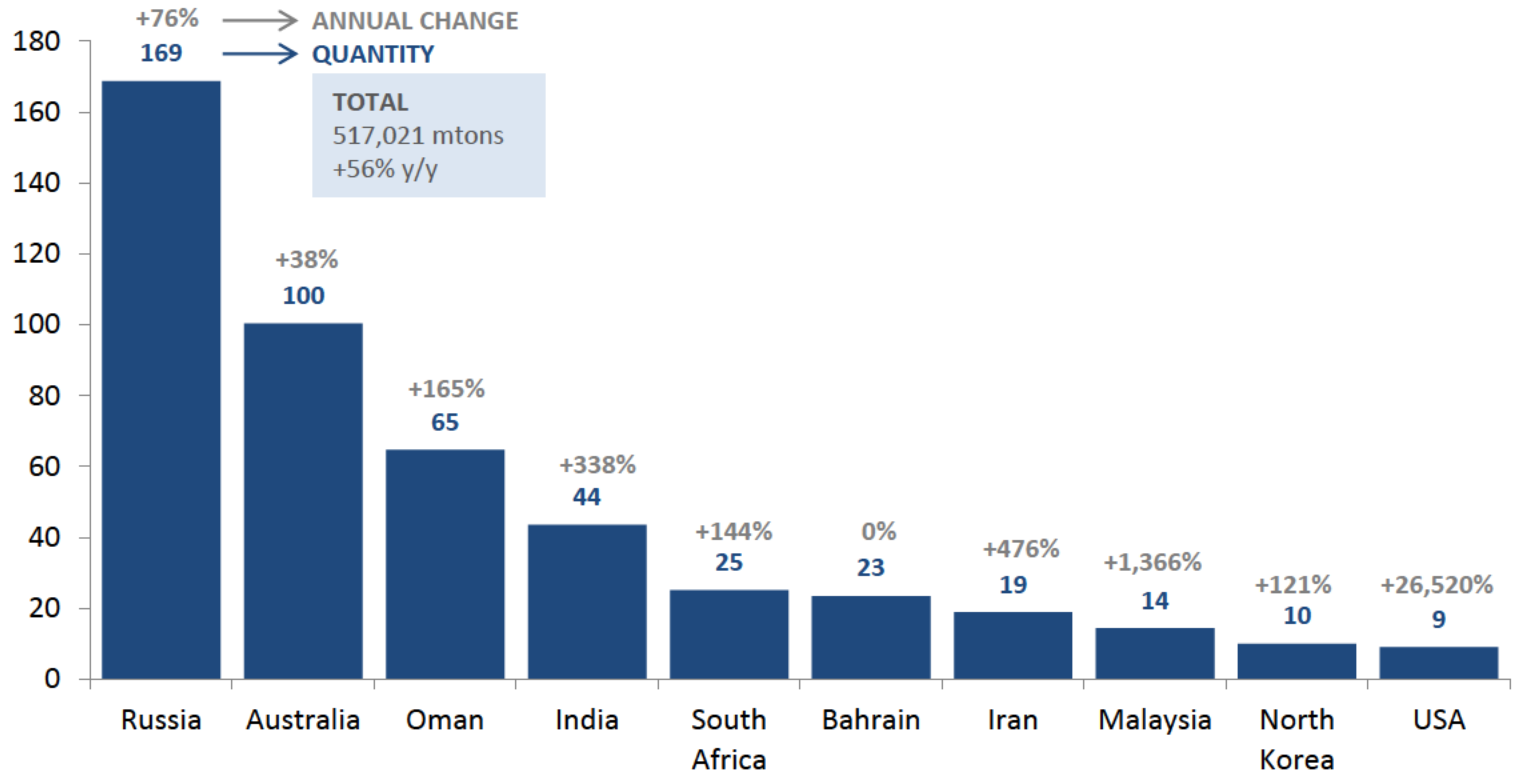


Source: HARBOR Aluminum

China imported 0.5 millions tons of P1020 in 2012… *Rusal/RTA* main suppliers

CHINA UNWROUGHT UNALLOYED ALUMINUM IMPORTS BY TOP ORIGIN

(January-December 2012 data; thousand mtons)

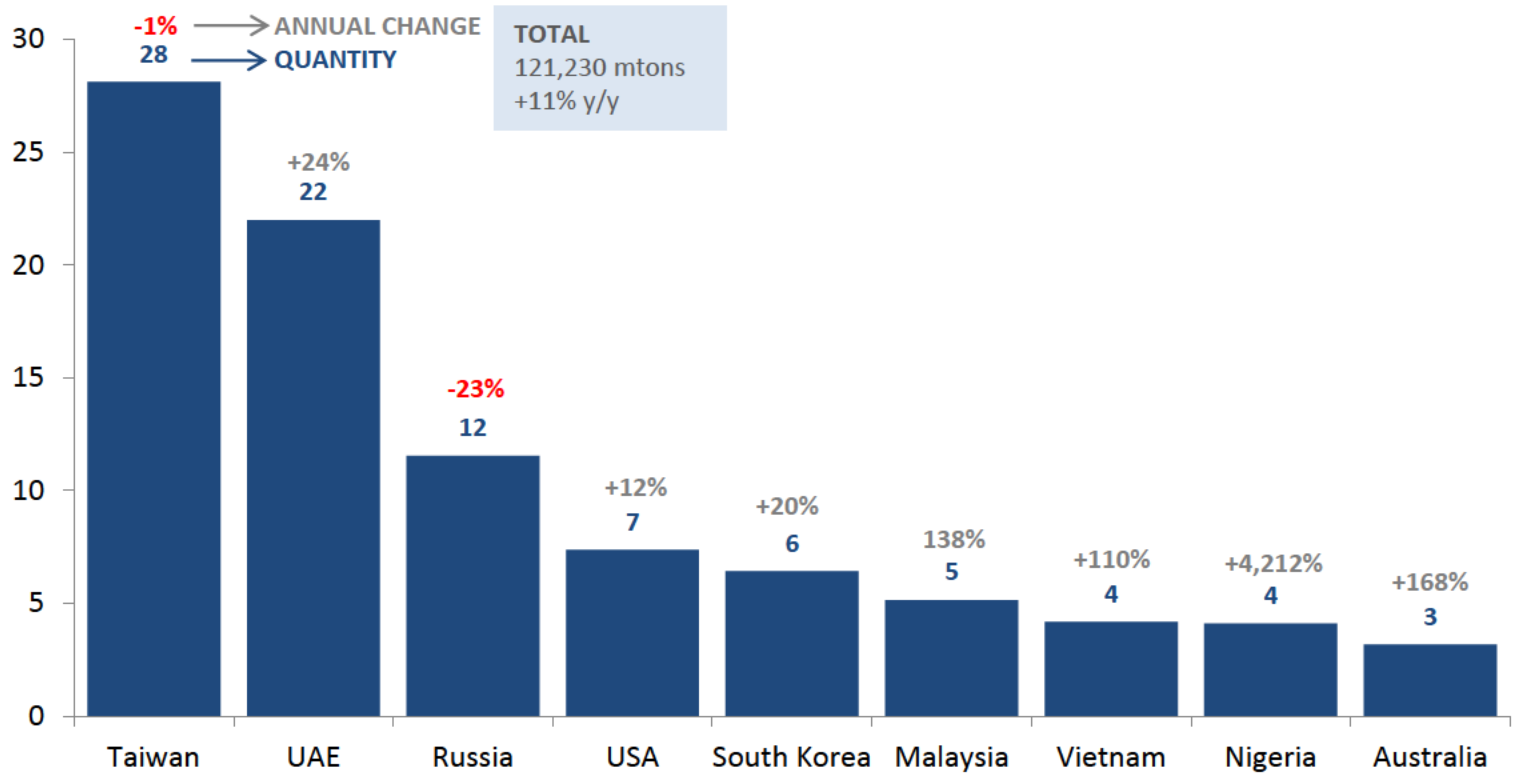


Source: HARBOR Aluminum

China also increased VAP imports…*Dubal/EMAL* penetrating the market

CHINA UNWROUGHT ALLOYED ALUMINUM IMPORTS BY TOP ORIGIN

(January-December 2012 data; thousand mtons)

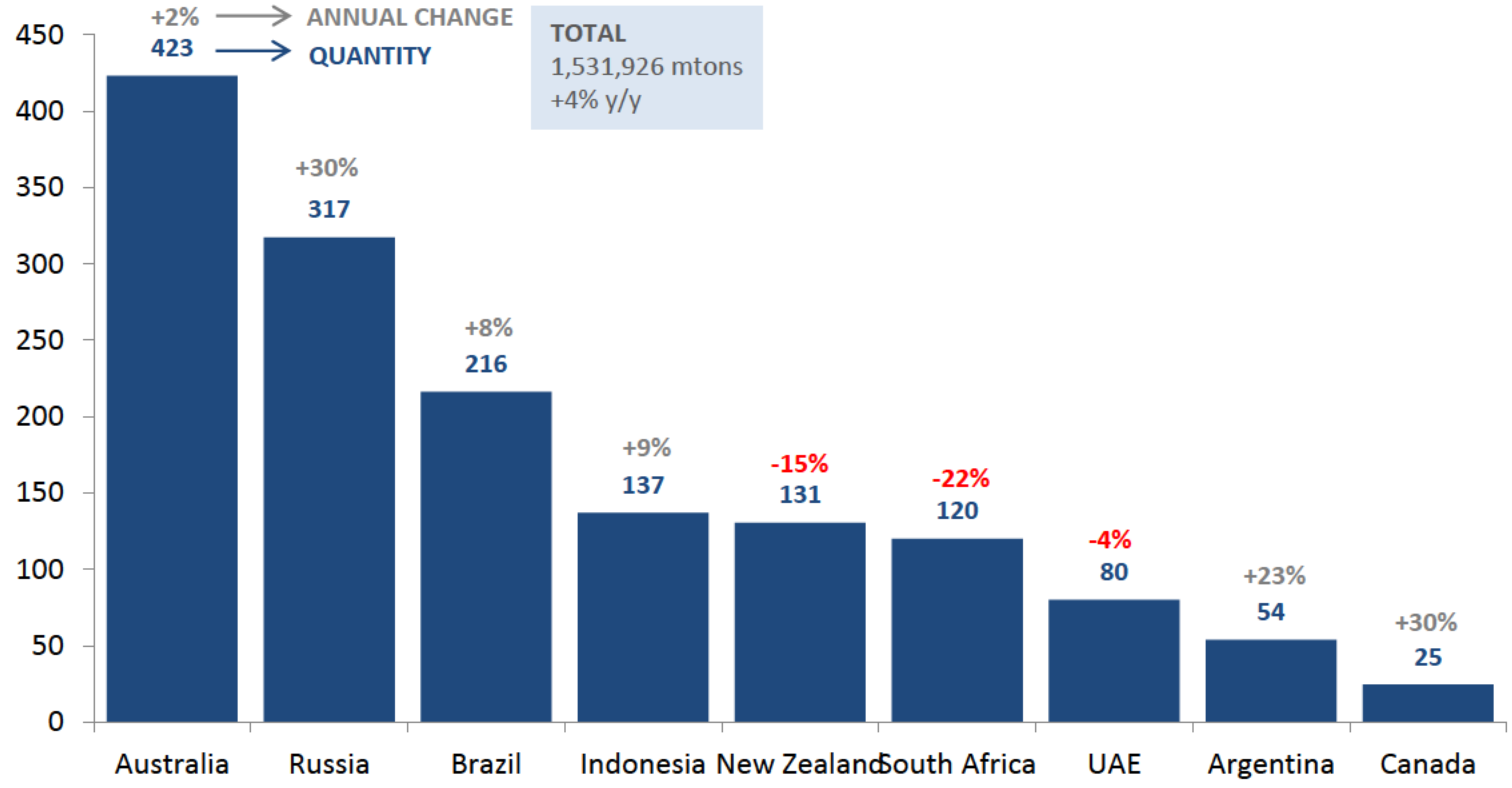


Source: HARBOR Aluminum

UC Rusal mkt share up in P1020 Japanese market on output declines in NZ and SA…

JAPAN UNWROUGHT UNALLOYED ALUMINUM IMPORTS BY TOP ORIGIN

(January-November 2012 data; thousand mtons)

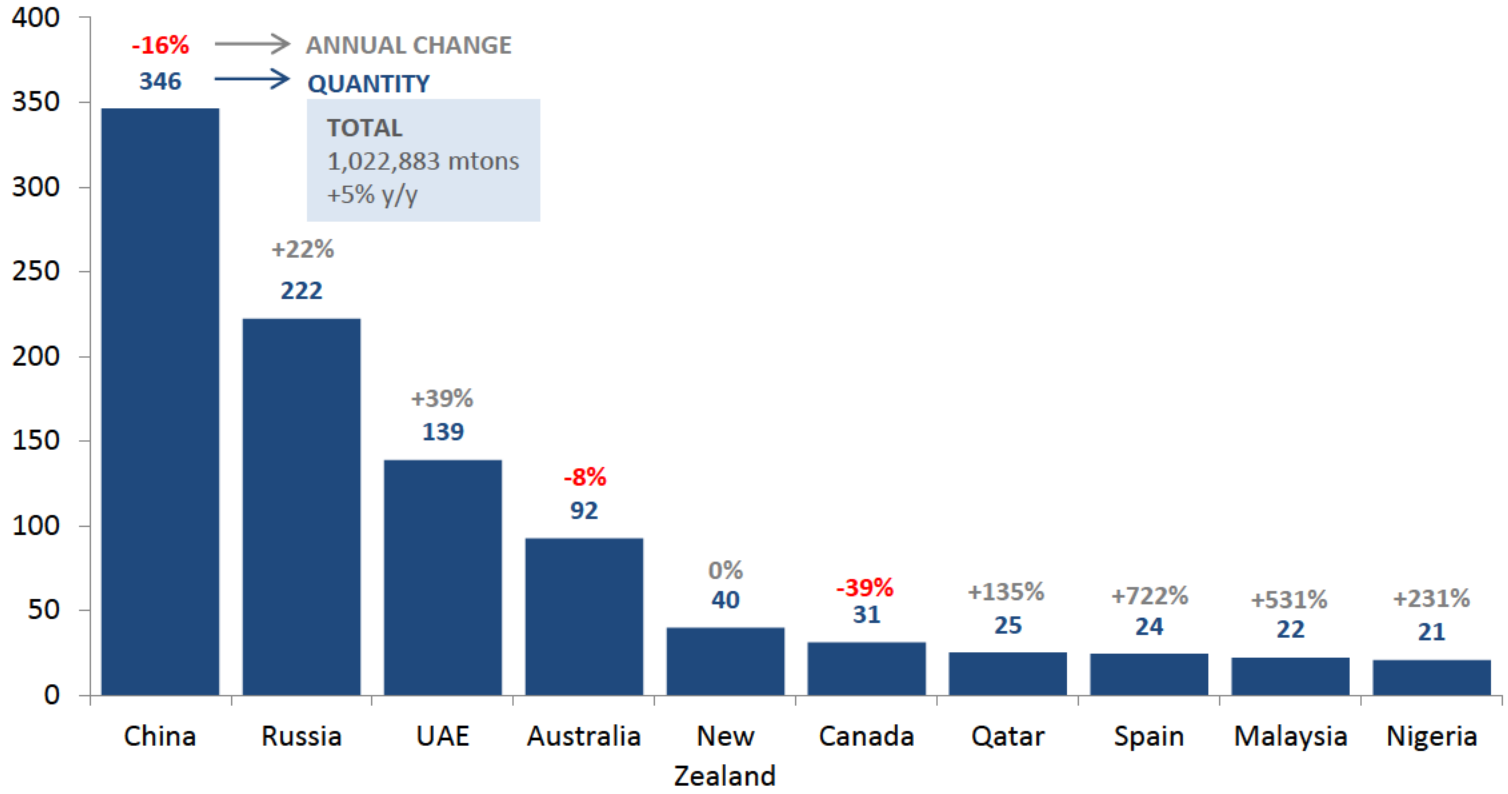


Source: HARBOR Aluminum

…while *Dubal/EMAL* and *Rusal's* VAP exports to Japan grew the most

JAPAN UNWROUGHT ALLOYED ALUMINUM IMPORTS BY TOP ORIGIN

(January-November 2012 data; thousand mtons)

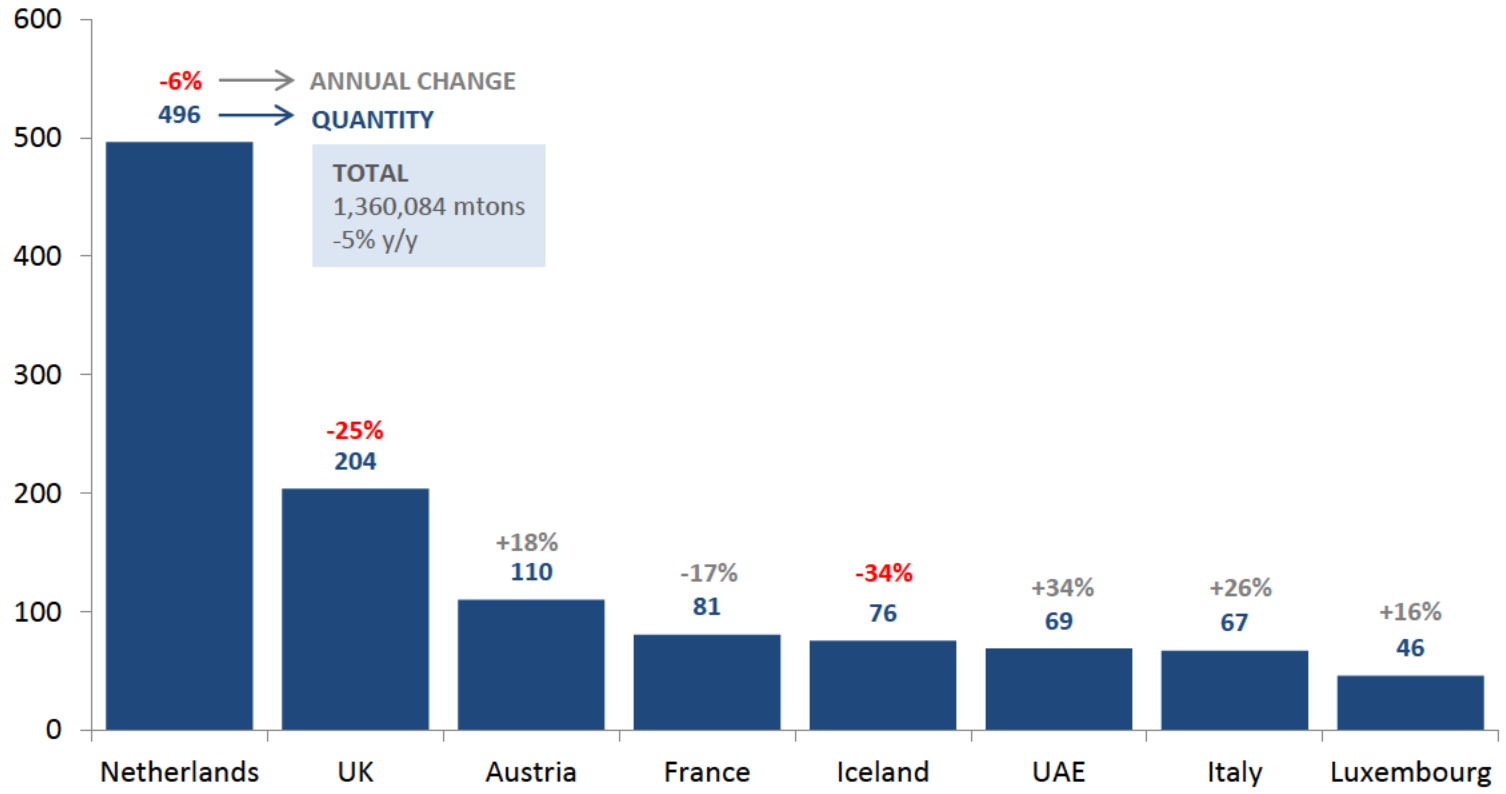


Source: HARBOR Aluminum

Dubal/EMAL sending more P1020 to Germany as *Glencore* scaled back a bit…

GERMANY UNWROUGHT ALLOYED ALUMINUM IMPORTS BY TOP ORIGIN

(January-October 2012 data; thousand mtons)

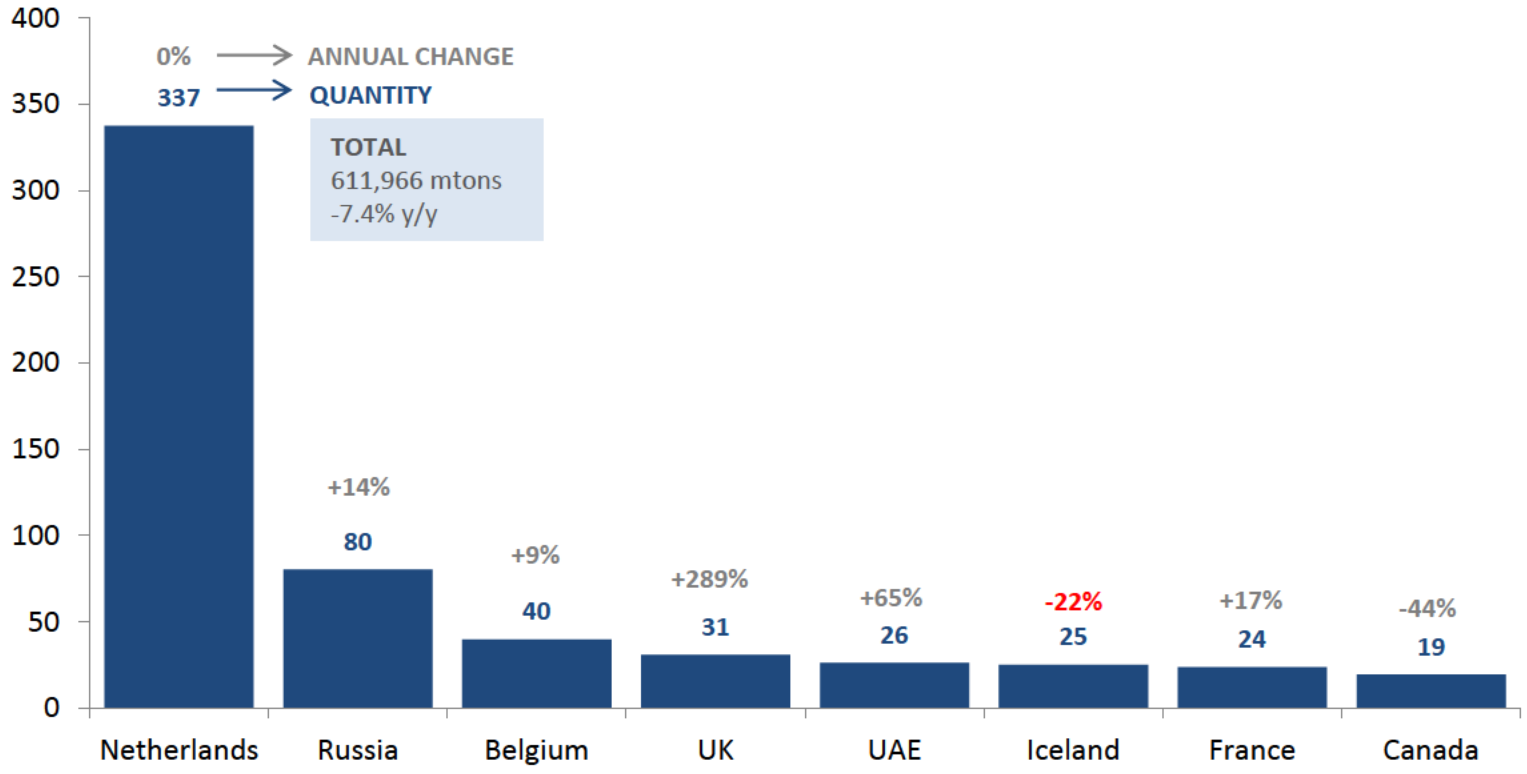


Source: HARBOR Aluminum

… while *Dubal/Emal* and *Rusal* increased its VAP exports to Germany

GERMANY UNWROUGHT UNALLOYED ALUMINUM IMPORTS BY TOP ORIGIN

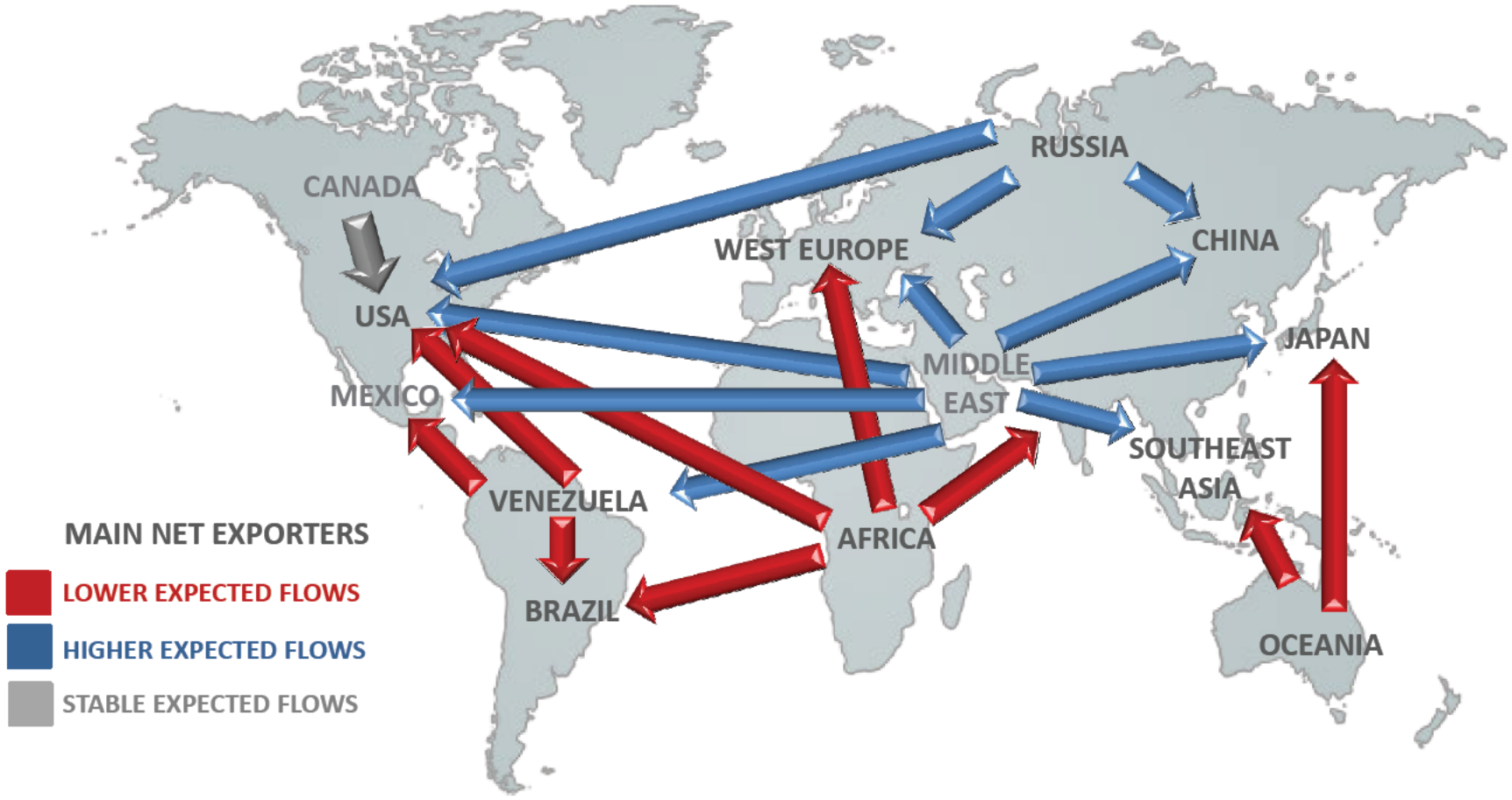
(January-October 2012 data; thousand mtons)



Source: HARBOR Aluminum

No major changes expected in the trade picture… Middle East/Russia to gain the most

MAJOR INGOT/BILLET ALUMINUM TRADE FLOWS 2013



Source: HARBOR Aluminum

Aluminum Premiums Outlook

SUMMARIZING WHAT WE SAID

1. RECENT DEVELOPMENTS

1. The vicious cycle that locks metal away from the consumer iterated itself again in December, pushing premiums up across the board and to fresh highs in January in the Americas and Europe.

2. Premiums defied Q4 seasonal patterns and have started Q1 in strong note on pick up in physical demand.

2. OUTLOOK

1. Conditions behind record premiums will not go away soon. Ingot and Value Added Products should continue to reach fresh highs during 2013. More upward pressure expected in H1. The Americas and Europe especially vulnerable to upward pressure.

HARBOR'S ASSESSMENT

3. WINNERS

1. Traders/Financiers/Warehousing companies.

2. Primary producers in ROW as current levels of premiums leave less than 10% of ROW capacity under water. *Alba*, *Qatalum* and *Rusal* gaining market share in the US. *Rusal/RTA* and *Dubal/Emal* in China. Local and foreign traders sales growing strong in Mexico.

4. THOSE AFFECTED

1. Consumers as metal availability continues to shrink and premiums to rise while premiums are hard to hedge. Regionally speaking, the Americas & Europe hurt the most.

2. Traditional suppliers in North America and Europe as consumers look for alternative sources (including building own casthouse).

IMPLICATIONS

5. WHAT TO EXPECT

1. The vicious cycle locking metal away from consumers will stay roughly intact, thus pushing premiums up to fresh highs at the time the Americas and Europe will face a slight increase in their domestic deficit.

2. Industry participants complaining more about the current LME structure/rules but without effectively changing the situation. LME popularity among consumer plummeting but among traders increasing.

3. Consumers actively seeking ways to hedge premiums and find new suppliers (other than their traditional regional sources).

4. Producers trying to have more exposure to higher premiums via shorter contract terms or floating premiums and direct contact with clients (not by traders). Producers selling to warehouses, will continue practice during 2013.

Source: HARBOR Aluminum

6th HARBOR's aluminum outlook SUMMIT

Folio66

June 3-5, 2013
Radisson Blu Aqua Hotel | Chicago, IL, USA

> the largest and most strategic aluminum market conference in The Americas

save $400 USD!
before Feb. 28th, 2013
register now

"... professional, detailed & relevant, best source of information to keep up with the aluminum market"
CEO / North American Aluminum Producer

"If it's networking in the aluminum industry you're looking for, the HARBOR Summit is the best I have seen"
Commodity Risk Manager / Global Beverage Company

"A must go event to understand aluminum industry data, drivers and trends"
Managing Director / Aluminum Consumer

Special* Workshops

> Designed to broaden your understanding of the aluminum market & industry:

- Understanding Regional Aluminum Premiums and its Drivers
- Aluminum's Key Industry Indicators and How to Read Them
- How Does The London Metal Exchange Operates
- Uncovering the Structure of the Aluminum Market in The Americas

Lead Sponsors:

dubal Dubai Aluminium

emal الإمارات للألمنيوم Emirates Aluminium

Novelis

Platinum Sponsor:

alba Aluminium for the world

Speakers/Panelists:

- **Carlos Salazar,** Chief Executive Officer, *Coca-Cola Femsa*
- **Erwin Mayr,** Chief Strategy & Commercial Officer, *Novelis*
- **Walid Al Attar,** Executive Vice President Marketing & Sales, *Dubal*
- **Scott Kelley,** Chief Executive Officer, *Service Center Metals*
- **Boris Santosi,** Head of Sales & Marketing, *Aluminum Bahrain (Alba)*
- **Eugenio Clariond,** Chief Executive Officer, *Cuprum*
- **Ron Knapp,** Secretary General, *International Aluminium Institute*
- **Tom Akers,** President, *Metal Exchange*
- **Buddy Stemple,** CEO, *Oman Aluminium Rolling Company*
- **Alejandro Guerra,** Sr. Purchasing Manager North America, *NEMAK*
- **Modar Al Mekdad,** General Manager, *Gulf Extrusions (UAE)*
- **Jorge Vazquez,** Managing Director, *HARBOR Aluminum Intelligence*
- **Tim Weiner,** Global Commodity Manager, *MillerCoors*
- **Derek Prichett,** Vice President Global Recycling, *Novelis*
- **Heidi Biggs Brock,** President, *The Aluminum Association*
- **Jay Sherwood,** Nonferrous Marketing Manager, *Schupan & Sons*
- **Danny Fischer,** Trading Manager for the Americas, *OneSteel Asia*
- **Edward Meir,** Senior Metal Analyst, *INTL FC Stone*
- **Jim Lennon,** Head of Commodities Research, *Macquarie Bank*
- **Anson Frericks,** Commodity Risk Manager, *Ab-Inbev*

Supported by:

World Aluminium · The Aluminum Association · aluminium association of canada · AAC Aluminum Anodizers Council · CEC Aluminum Extruders Council · AFCMA The Aluminum Foil Container Manufacturers Association · Gulf Aluminium Council · ET Foundation · JAA · ABAL · IMEDAL · AEROBAL International Organisation of Aluminium Aerosol Container Manufacturers

Exhibitor:

MetalPrices.com

Media partners:

aluplanet.com the aluminium portal · A&L Aluminium and its alloys · MetalMiner · recycling today