

# **APAC PU Market Report** **(2017 H1)**

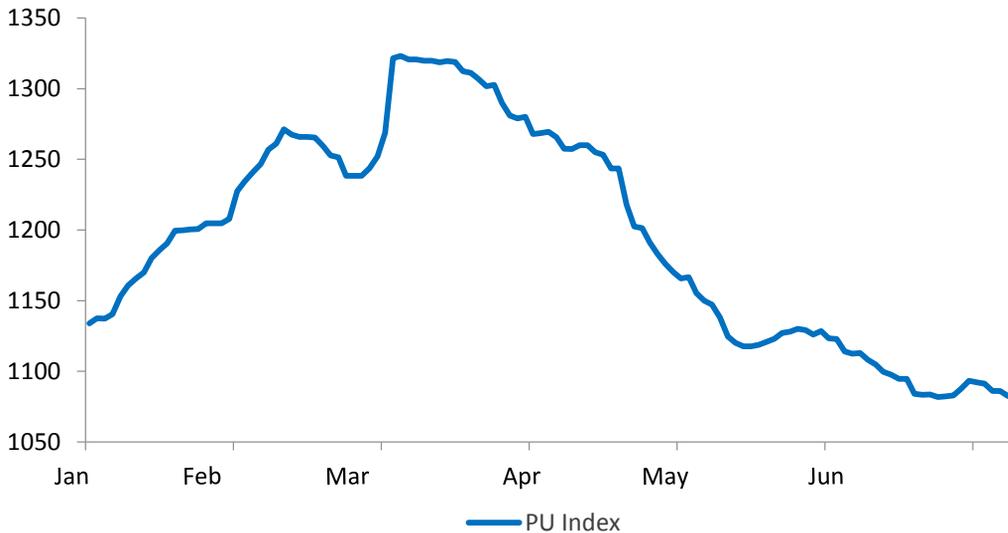
**PUdaily, July 2017**



# I China Economy & PU Raw Materials Market

# Economy & PUdaily Index

2017 H1 Pudaily PU Composite Index



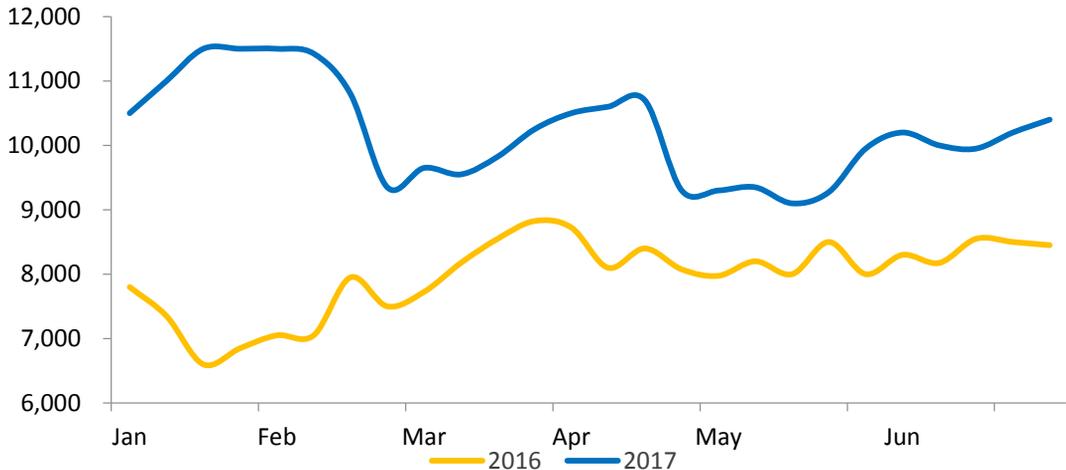
- The gross domestic product (GDP) is RMB 18068.3 billion yuan in the first half of 2017, with a real growth rate of 6.9%, a year-on-year increase of 0.2%. Specifically, the year-on-year growth of the first quarter was 6.7 percent and 6.7 percent for the second quarter. The added value of primary industry is RMB 2198.7 billion yuan, a year-on-year increase of 3.5%; the added value of secondary industry is RMB 15298.7 billion yuan, a year-on-year increase of 6.4%; the added value of tertiary industry is RMB 20651.6 billion yuan, a year-on-year increase of 7.7%. The GDP of the second quarter increased went up by 1.7% on a quarter-on-quarter base.
- Consumer price index rose 1.4% in the first half from a year earlier, unchanged from the first quarter. Among them, urban CPI rose 1.5% and rural CPI rose 1.0%.
- The total increasing value of industries over the scale in the whole country in half 1 of 2017 increased by 6.9% in real terms over the same period of last year, and the growth rate accelerated from the previous month, with a quarter-on-quarter up of 0.1% and year-on-year rise of 0.9%. In terms of economic type, the added value of state-owned enterprises rose by 6.2%, collective enterprises grew by 1.9%, and joint-stock enterprises by 7.1%, while foreign enterprises and Hong Kong-Macao-Taiwan investment enterprises increased by 6.7%.
- According to PUdaily polyurethane aggregative index, domestic polyurethane composite index is basically rising trend from Jan. to Mar. in 2017. The main reason is that most of domestic polyurethane raw materials markets are basically on the rising trend supported by sharp rebound in Feb, with mostly surging market price. Then the weak demand resulted in raw materials prices dropping down dramatically and continuous falling trend of the overall polyurethane aggregative index.

# 1. Propylene Oxide

2016-2017 China Propylene Oxide Price Trend (East China)



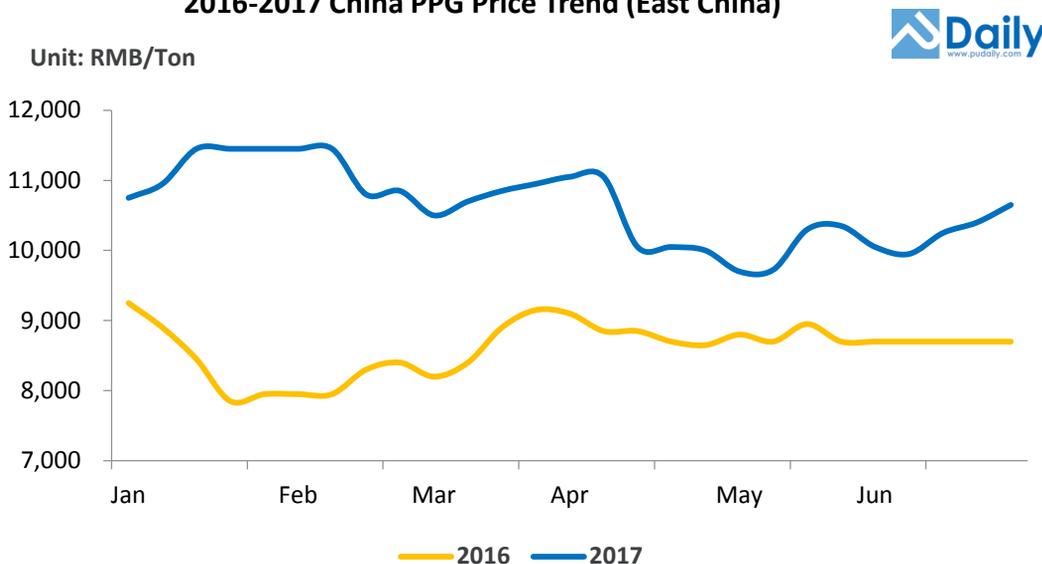
Unit: RMB/Ton



- China's PO market continue to move up with fluctuations in the first half of 2017. The market price in eastern China was RMB 10,400yuan/ton-10,550yuan/ton at the end of June, which is about RMB 100/ton less than that in January. Market players actively made inventory ahead of the Spring Festival in January and February in 2017. After the Spring Festival, PO manufacturers have accumulated a lot of inventory, some of the main factory inventories have been overstocked to around 9kt to 10kt, and prices have fallen sharply. The main factories in Shandong province have fallen their prices dramatically, which resulted in stockout of local areas. The whole country sourcing has been affected and the propylene oxide price increased slightly again. Due to the large-scale environmental inspections and PO manufacturers' overhauls, the market is dominated by panic mind of purchasing with continuous rising of PO price. Unable to hold the double pressure of polyether polyols and the polyether polyols downstream in April, the market price collapsed. Polyether polyol orders are received moderately after the price fell by RMB 1,400, stabilizing the PO price.
- In Mid-May, several PO factories focused on overhauling, pushing up the PO price again. The 240kt PO devices of Jinling Huntsman began to tested in June, and the fine 62kt PO devices of CNOOC reopened after one year. However, due to the tight market supply, PO price gradually up. The main guiding factor for PO price in the first half of 2017 is the supply situation of the manufacturer, and the main limiting factor is downstream demand.
- Looking ahead to the market in the second half of 2017, Jinling Huntsman PO plant has already started, and the Jilin Shenhua and Hunan Yueyang will gradually return to work in late July 2017. Sadara's polyether polyol will come out in a fierce way in September and October. With PO overcapacity, low output and low inventory, the profit will be higher, so the price is expected to fall slightly and then fluctuate at high price.

## 2. Polyether Polyols

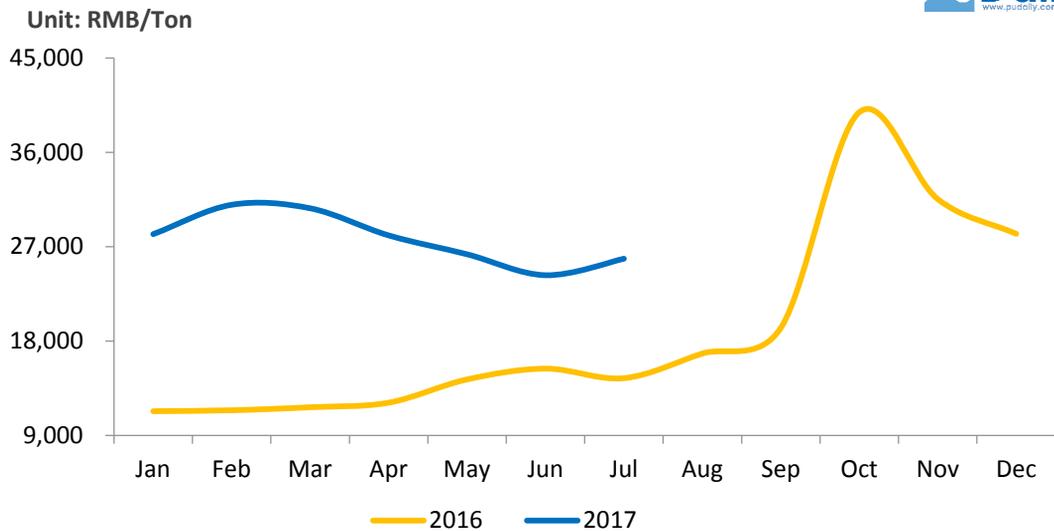
2016-2017 China PPG Price Trend (East China)



- The polyether polyol market remains fluctuating frequently in the first half of 2017, basically following PO price trend. Up to June, domestic common flexible slab polyols price is around RMB 10,650 yuan/ton, down RMB 100yuan/ton compared with January. Ahead of the Spring Festival in Jan, and Feb., polyether polyol manufacturers actively made inventory. After the Spring Festival, polyether polyol and PO manufacturers have accumulated a large amount of inventory, and prices have fallen sharply. Then PO plants in Shandong have reduced load dramatically, which resulted in stockout and again slight polyether polyol price rise.
- In May, the polyether polyol device of Gaoqiao Petroleum & Chemical was officially shut down, and the market showed a smooth transition. In mid-May, several PO plants focused on overhauls and polyether polyol price increased as the PO price rose. Despite the new PO capacity of 240kt/year of the PO factories, the market supply is tight, and polyether polyol price gradually increased following rising PO price.
- As a result of environmental inspections and PO manufactures' overhaul in March, the market is dominated by panic mind of purchasing. The polyether polyols price continue to rise following PO price and under pressure passively. Unable to hold the double pressure of polyether polyol and downstream in April, the market price collapsed. Polyether polyol plants receive orders moderately after the price fell by RMB 1,400 yuan, stabilizing the price.
- The main guiding factor for polyether polyol price in 2017 half one is PO price, and the main limiting factor is demand from the downstream, while the secondary limiting factor is the price of its complementary product TDI.
- Domestic environmental inspection in 2017 half one caused downstream lower demand for polyether polyols. Meanwhile, imported polyether polyol featured good quality and reasonable price will rapidly capture domestic market. Domestic polyether polyol capacity saturation will cause imbalance between supply and demand which will probably continue to rise. Maybe product quality improvement or product transformation is also a good way to cope with foreign competition.

### 3. TDI

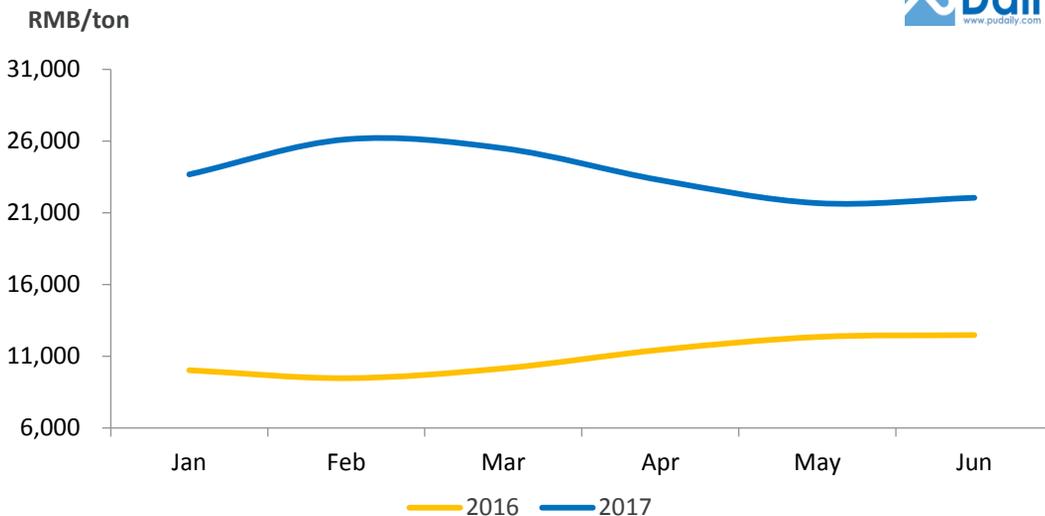
2016-2017 East China TDI Price Trend



- China MDI market gradually edge down in the first half of 2017. In terms of price, after the small peak season of Mar. and Apr. and affected by the weak downstream demand, TDI focus gradually edge down. The spot market price came to around RMB 22k/t, while the average price fell RMB 4k/t from the beginning of 2017. In July, affected by rapid decrease, spot market and weak downstream inventory, TDI price rebounded rapidly and the market was in short supply for a short time. In terms of demand, domestic TDI demand continues to grow slowly in the first half of 2017. Additionally, many enterprises specially small and medium-sized enterprises production of the furniture industry was affected by intensive national environmental inspection, and there was no lack of enterprises accepting rectification or being closed, which led to the market demand situation of "The peak season is not prosperous, and the slack season is very bleak".
- For the second half of 2017, there will be no new domestic device coming into production temporarily on supply side. Sadara's device is about to access to market, yet exerting little influence on the Chinese market because of its small amount of capacity. On demand side, the downstream furniture industry continues to be furtherly integrated and the automobile industry market will gradually become stable after the price surge last year. Therefore, TDI demand is expected to continue to grow slowly in the second half of 2017.

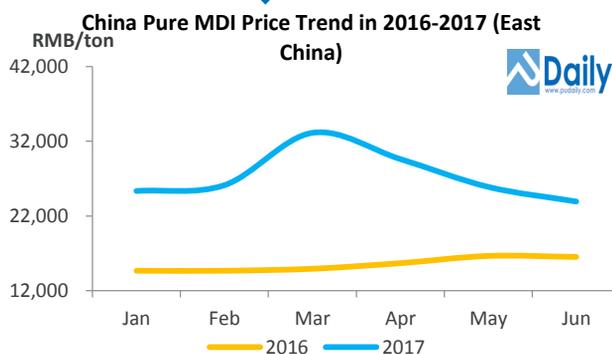
# 4. Polymeric MDI

China Polymeric MDI Price Trend in 2016-2017 (East China)



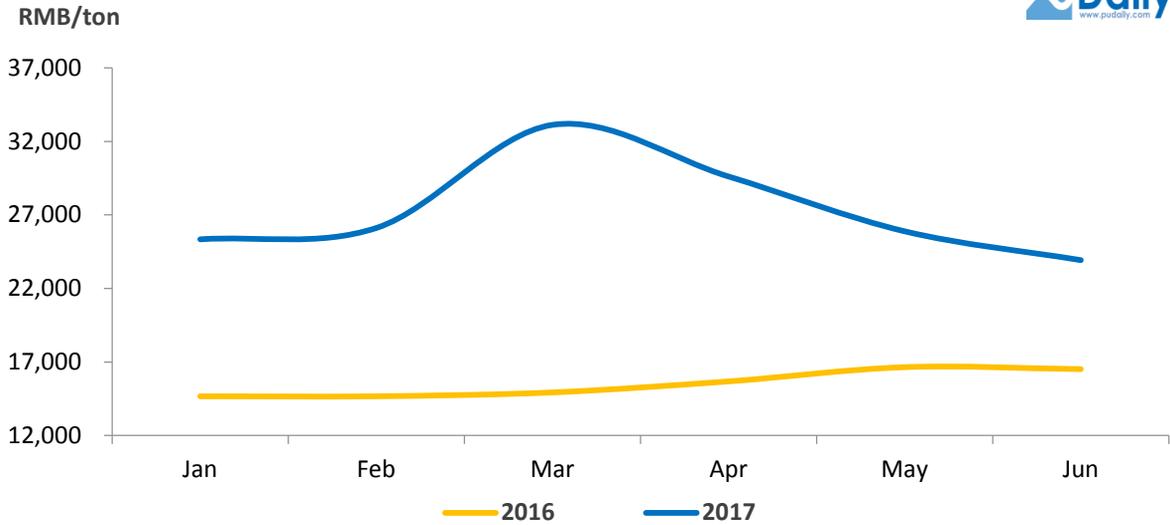
- Due to the goods-limiting policy at the beginning of 2017, polymeric MDI market extends rising trend of last year until Chongqing BASF's fault shutdown in February. Peak season of household appliances brings market support pushing price as high as RMB 26,800/ton. Since March, the major suppliers has stabilized market price with high prices. However, high prices lead to lower cost pressure in the downstream, some downstream factories reduced load to keep demands on rigid. The market price started to slide from the start of March with low market demand. Additionally, market demand was less than expected, the traditional peak season was not flourishing, and the market edged down.
- The demand still hasn't increased after April, some middlemen were bearish and trades at cheap price were often heard, and the price of polymeric MDI downward rapidly, with the low price of RMB 19,500 /ton in Shanghai. Then manufacturers concentrated on overhaul in May, and then some of the manufacturers suffered equipment fault shutdown, which resulted in tight supply on the market and price rebound. The price is as high as RMB 23k/t and then into the shrinkage

- cycle. In June, affected by overhauls sequels, market sourcing is less than expected and the market price upsurge again as high as RMB 24k/t in Shanghai at the end of June.
- China pure MDI market experienced the similar trend as China polymeric MDI market. During January and February, the market maintains flattish with limited fluctuations. After March, due to manufacturers support and recovering downstream demand, price begins to hike. However after entering June, price start to decline on weakening demand.
- By the end of June, China pure MDI average market price is at RMB 16,513/ton, up by around RMB 2,000/ton compared to January.



# 5. Pure MDI

China Pure MDI Price Trend in 2016-2017 (East China)



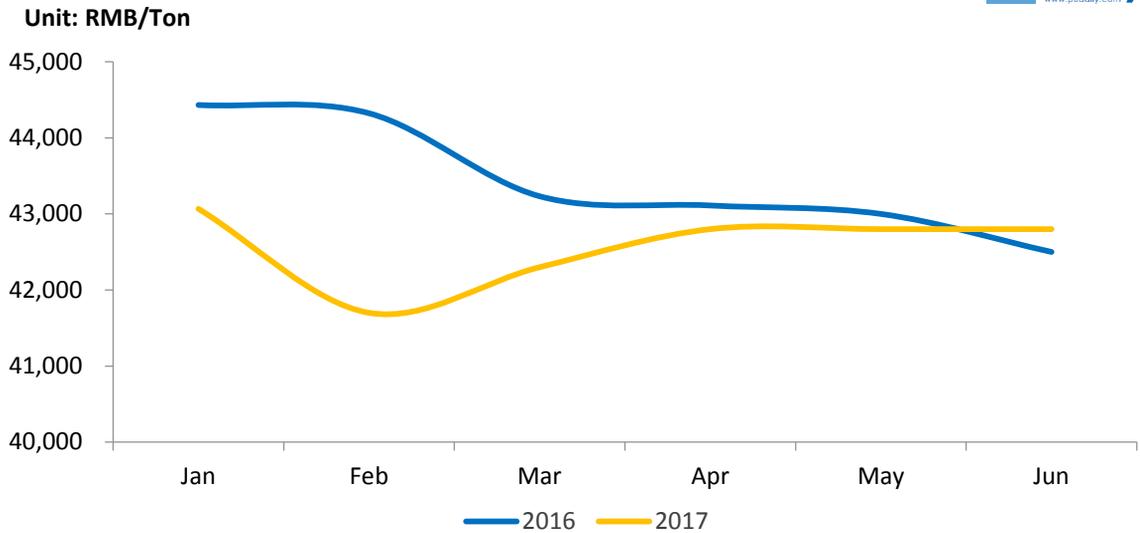
- Manufacturers will continue to hold the strategy of stabilizing the market in the second half of 2017 and guarantee abundant profits. Due to environmental inspection, the polyurethane industry has accelerated shuffling and many small and medium-sized enterprises faced shutdown with lowering loads. The total domestic MDI demands are expected to down compared with last year. In terms of import, with the accelerating globalization of domestic enterprises, gradually increased export surplus and the future newly added domestic capacity, the import volume is expected to further down and the export volume is expected to increase in the second half of 2017.
- Domestic pure MDI market price trend is similar to polymeric MDI in the first three months in 2017, which is in the upward due to factors such as overhauls and high demand. In April, the downstream is under cost pressure and in the state of resistance, resulting in downward price trend. Then, the downstream pulp and TPU overall workload were not high and downstream demand was weak, so there is no price rebound after the price falls down. Supported by manufacturers' costs at the beginning

of June, the market price was stable, but some sourcing are out of stock and products are quoted in cheap price with bigger market price difference. Up to the end of June, Wanhua pure MDI is quoted at RMB 24k/ton and Covestro pure MDI is quoted at RMB 22,500/ton.

Pure MDI imports will continue to decrease as the constant domestic installation load and new capacity expansion, and the exports will continue to grow. Due to the strict environmental inspection this year and low workload of some downstream manufacturers, the market will continue to remain weak trend at the beginning of the second half of 2017. With positive policy of stabilizing the market and the upcoming peak season, polymeric MDI market will continue to be stable with uptrend, but the upward space is limited as a result of the entrance of newly added capacity into the market in the second half of 2017. While the pure MDI trend will have an opportunity to bottom out. The downstream will continue to increase with a limited range and the price trend will be a little weak presented in a stable way.

# 6. HDI

2016-2017 H1 East China HDI Hardener Price Trend



- China HDI hardener capacity maintains rapid growth in the recent years. The HDI hardener capacity in 2017 doubled from 45kt/year in 2012 to 91kt/year. But the overall demand growth rate is less than capacity growth. The market is gradually becoming saturated. In such a situation, China HDI hardener market has abundant supply as a whole in the first half of 2017 with limited growth of domestic demand. Domestic manufacturers accelerated the intensity of exports, and export market grew rapidly, easing production pressure of the manufacturers to some extent. In terms of price, stimulated by traditional production peak season, manufacturers both at home and abroad are in state of pulling up prices in March and April. Most of them raised the price by 10% to 15%, but restricted by slow demand growth, the HDI hardener transaction focus upward slightly in March and was stable from April to June, with little strength pulling up price.

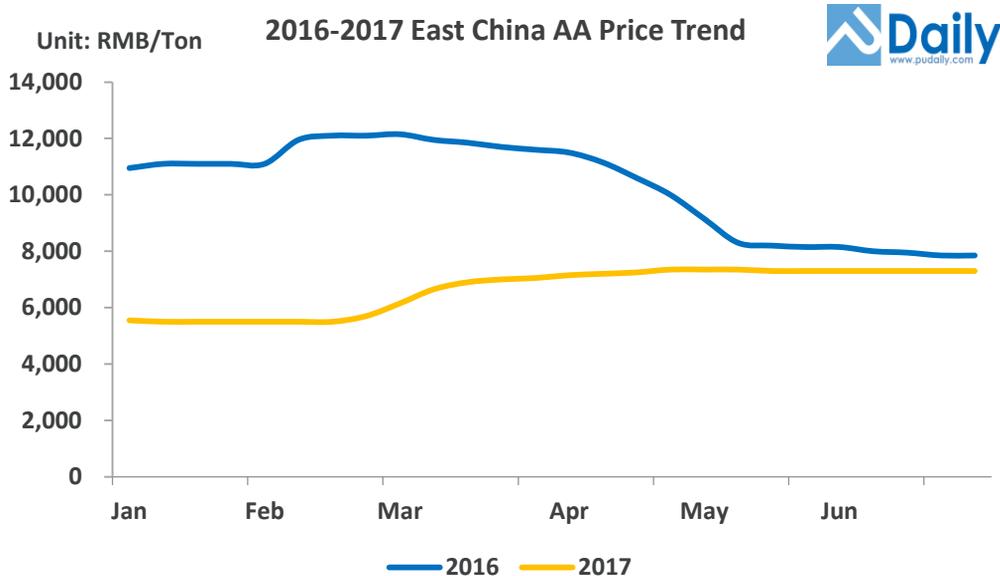
The current domestic HDI hardener suppliers all keep high utilization, and under the background of weak demand, the competition between suppliers may will be more intense. HDI hardener market is expected to run at low prices. The price will fluctuate slightly and is expected to rise with the coming of traditional production peak season of September and October. In terms of exports, with further growth of domestic supply, suppliers will continue to actively explore overseas market in order to ease domestic market pressure, and the exports volume is expected to grow. The total exports volume of China HDI hardener in the whole year of 2017 is expected to be more than 30kt and the competition platform will extends from China to the whole Asia.

# 7. IPDI



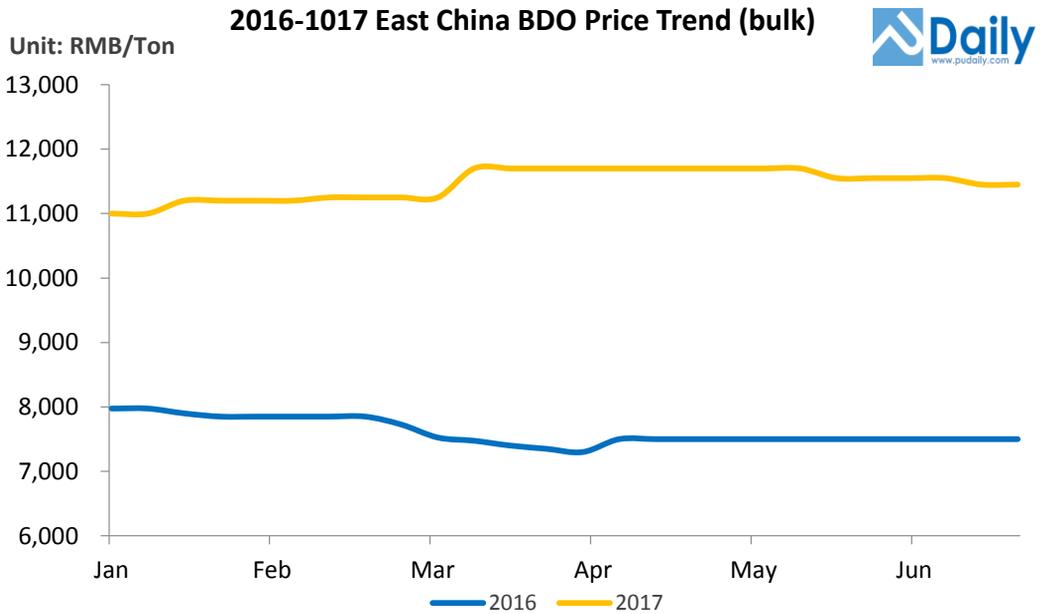
- With Wanhua IPDI supply increasing in the first half of 2017, the market competition will be fiercer. Domestic IPDI also change the traditional stable style and the overall market price is fluctuating more frequent than previous years. It was opened at RMB 71,300/ton at the beginning of 2017 and closed at RMB 62,700/ton at the middle of 2017, decreased RMB 8,600/ton by 12.1%.
- As a whole, with constant increasing of Wanhua new capacity, the future global IPDI supply will continue to grow and the competition platform will extend from China to the whole Asia. Price competition is inevitable, but due to the characteristics of high monopoly of PDI market and few global manufacturers, IPDI suppliers still have a larger initiative to the control of market supply and to market price trend. What's more, with shutdown of Wanhua IPDI device, market supply will change again. The IPDI market price is expected to fluctuate slightly with supply and demand situation.

# 6. Adipic Acid



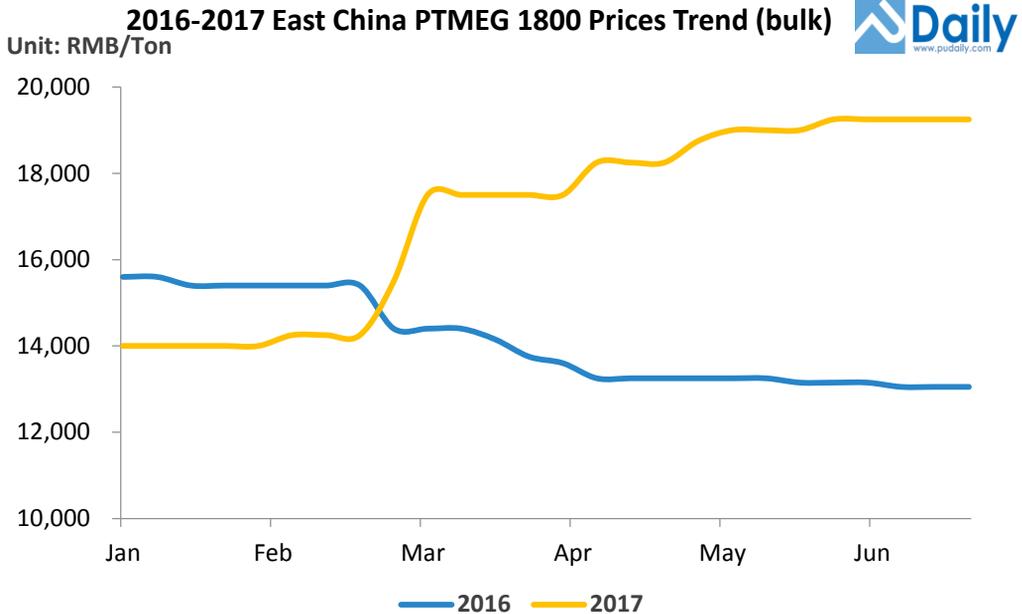
- Adipic acid rise price trend in 2016 has set the stage for the fall trend in 2017. Domestic adipic acid price trend in the first half of 2017 is as follows: sluggish up-edge down-keep in low level. The overall price volatility is relatively obvious, opened at RMB 10,950yuan/ton at the beginning of 2017 and ended at RMB 7,850yuan/ton. The price has fell RMB 3,100yuan/ton by 28.3%.
- Though adipic acid manufacturers raised listed price after the Spring Festival, traders pull up the price supported by costs, but the price focus was up slowly. In March, the upstream pure benzene was bearish and its price fell sharply. Additionally, the relative material pure MDI was in tight supply and high price, restricting the overall downstream workload growth. Then adipic acid started to edge down near mid-March. In April, adipic acid manufacturers continued to raise listed price, yet difficult to stop the price fall trend. From mid-April, the gap between supply and demand was enlarged, and Haili Chemical adjusted its listed price at RMB 11,800/ton in April, down RMB 1k/t from early April. The adipic acid market accelerated its declining from the earlier “fall” to “plummet”. The rapid fall made the manufacturers far from profits and at loss.
- From the middle of May, adipic acid market slowed down its fall trend and fluctuate at a low level.
- In terms of supply, Shandong Hongda adipic acid equipment was shut down at the end of May in 2017, the restart time is not sure at present. Xinjiang Tianli Gaoxin adipic acid equipment was shut down at the end of March and is expected to restart in July. Liaohua second adipic acid equipment is expected to restart at the end of 2017 and Yangmei group Taiyuan Chemical adipic acid equipment of 140kt/year is expected to put into production in July(It remains to be seen whether or not it could be restart.) Chongqing Huafeng Phase Three adipic acid project of 180kt/year is expected to come in production at the end of 2017. Restart of part of the faulted device and new capacity release will probably make competitions between suppliers become fiercer. In terms of demand, demands for TPU、PA66 is expected to remain high growth, while the demand growth in the fields such as slurry and sole is slower. In terms exports, with further growth of domestic supply, suppliers will continue to actively explore overseas market in order to ease domestic market pressure. If no special news, the exports volume is expected to keep upward trend.

# 7. BDO



- The BDO market continue to rise from the end of 2016 until March this year. With concentrated overhauls in April and May, domestic BDO remained overcapacity, maintaining general overall operation rate. BDO production was also able to meet the demand consumption of the downstream, which maintained rigid demand, thus making the market stable permanently. The market remains weak in June and July and the downstream is mostly weak and lack of bullish news, so trading atmosphere remains dull on demand. BDO price continues to fall slightly. Up to now, short selling and low price are still heard.
- According to statistics from PUdaily, the overall workload of BDO equipment of acetylene-formaldehyde process is at around 60% in the first half of 2017. Up to the end of June in 2017, the price run from RMB 10,500/ton to RMB 12,200/ton in the first half of 2017, grew RMB 3,300/ton to RMB 5k/ton compared with the end of June in 2016 by 45.8%.
- In the next half of 2017, domestic BDO remains overcapacity. Manufacturers maintain the general overall operation rate enough to supply the demand consumption of the downstream. However, the downstream manufacturers is inevitably affected because of the strict environmental inspection, combined with weak demand in July and August, short-term factory shipment is under pressure, without market support, the market forecast is not positive. According to the usual market feedback, the demand will decrease in the traditional weak season November and December compared with October. There is limited space for traders to let profits and short selling will be heard. In addition, BDO exports volume of this year has increased significantly compared with last year, lightening the domestic supply and demand contradictions.

# 8. PTMEG

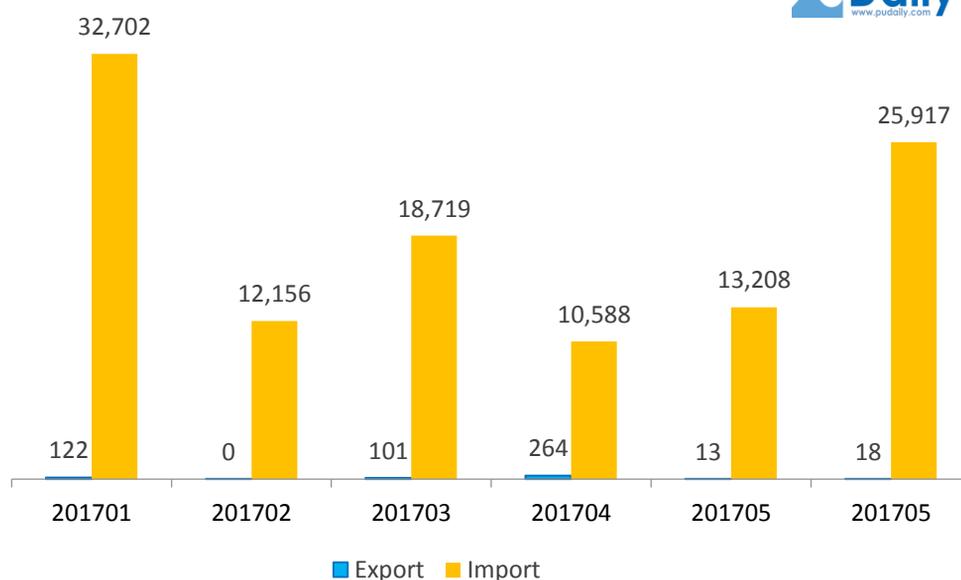


- Domestic PTMEG price remains fluctuating at high price in the first half of 2017, rises from RMB 14,500yuan/ton at the end of last year to RMB 19,500/ton. New capacity 46kt of Lanshan Tunhe and 50kt of Markor Phase Three in the first half of 2016 remains running steadily, and overall market supply grows compared with last year. The current total domestic capacity reaches 705kt/year. The overall operation rate remains around 50%. In recent years, PTMEG has been expanding at a slower pace, and spandex capacity is also growing. Demand for PTMEG has increased from last year. Constant PTMEG price rise at the beginning of 2017 is also driven by the raw material market, So far, PTMEG is under high price pressure, and the downstream orders are made on demand. Domestic TPU overall price is mainly stable with small changes. The increasing PTMEG raw materials consumption gives PTMEG market support to some extent. The overall trend of downstream slurry is firstly stable and then edging down in 2017 half 1. The operation rate of the industry production device remains around 50%, and the market participants are not optimistic about the market because of the downtrend of raw materials and weak terminal demand.
- Manufacturers mainly maintain general operation rate, basically meeting the sourcing demands of the downstream in the second half of 2017. Meanwhile, the total imports volume of PTMEG this year increased compared with last year, while the exports volume decreased, which can conclude that domestic demand is also growing. Although demand from downstream remains weak, PTMEG consumption is still in a high level. Demand from downstream is in slack season, combined with domestic strict environmental inspection, therefore small and medium-sized enterprises of downstream are inevitably affected and the market support is weak. The downstream industries such as TPU and pulp will also enter the off-season in November and December, and gap between supply and demand will be enlarged, and the price will be likely to edge down. The cost factor will not be underestimated. The overall PTMEG market will run weakly in the second half of 2017.

## **II PU Raw Materials Im & Export**

# 1. Propylene Oxide

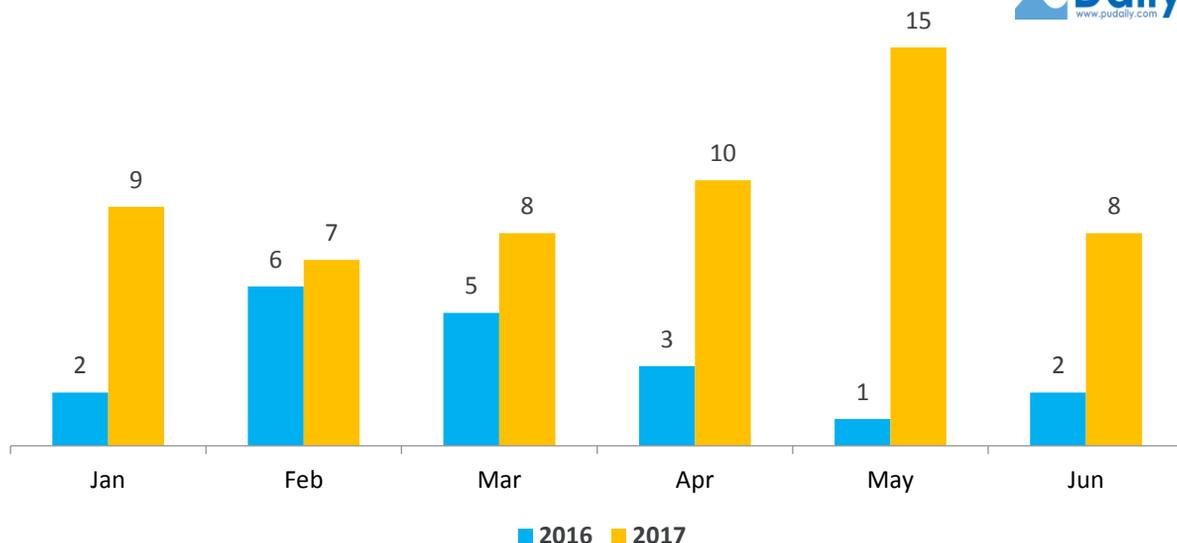
2017 China Propylene Oxide Im & Export Trend (Ton)



- The total import volume of China PO is 11,330 tons from January to June in 2017, decreased 64,200 tons compared with the same period of last year by 36.16%. The main reason is under the environmental inspection pressure, terminal enterprises is restricted to open and the demand of downstream decreased, lowering the consumption of imported propylene polyol.
- The total export volume of China PO is 519 tons from January to June in 2017, decreased 11,543 tons compared with the same period of last year by 95.7%. With domestic constant output expansion of PO, the future domestic PO market competition will be very heated. Maybe there will be some manufacturers turn to export markets in the future.

## 2. Polyether Polyols

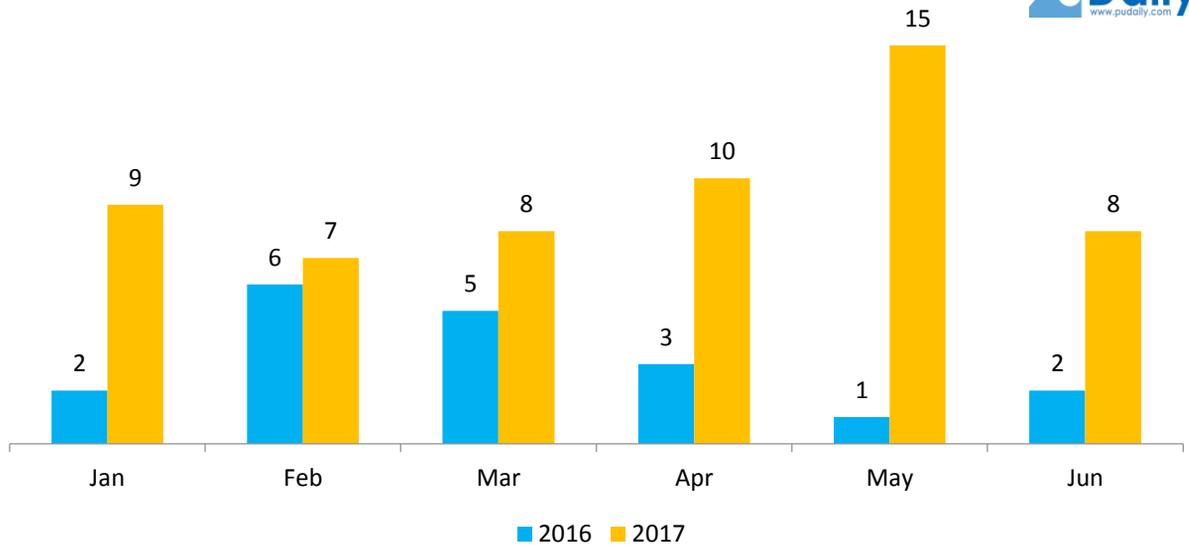
2017 China Polyether Polyols Im & Export Trend (KT)



- The total import volume of China polyether polyol in the first half of 2017 is 247,600 tons, up 14,400 tons compared with the same period of last year by 6.16%. The polyether polyol foreign giants such as Dow, Shell all pay attention to China market, actively both seeking breakthrough and expanding its polyether polyol varieties. Up to now, imported polyether polyol has basically cover the most majority of the varieties.
- The total export volume of China polyether polyol in the first half of 2017 is 252,200 tons, decreased 45,200 tons by 15.19%. The main reason is that cheaper foreign polyether polyol makes low export profit. China polyether polyol manufacturers may under domestic production pressure in the days to come and may will pay attention to overseas market.

# 3. TDI

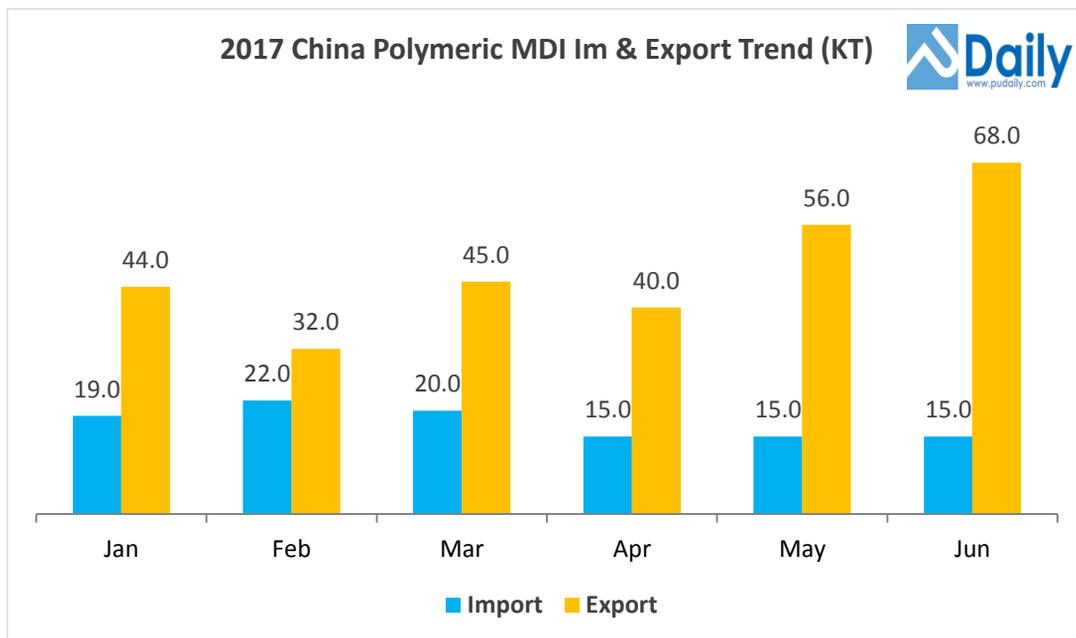
2017 China TDI Im & Export Trend (KT)



- In terms of imports, domestic TDI imports volume in the first half of 2017 is around 19kt, a year-on-year increase of 96.8%. South China and East China is the main TDI imports area, accounting for 48.63% and 48.57% of the total imports volume. The imported mainly TDI comes from Korea and Japan, respectively accounting for 67% and 22.5%.

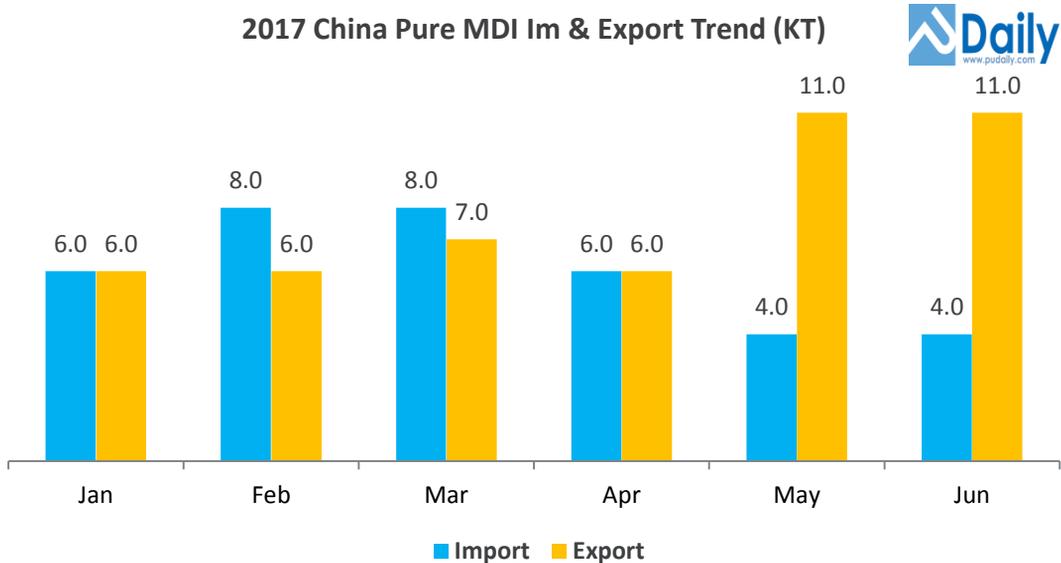
- In terms of exports, domestic TDI exports volume in the first half of 2017 is around 57kt, a year-on-year decrease of 0.46%. Top three exporter are Covestro, Cangzhou Dahua and Yantai Juli, respectively accounting for 76.58%, 7.99% and 7.89%. The main exports area are USA (5kt), Indonesia (4,180 tons) and Taiwan (4,155 tons), respectively accounting for 10.17%, 8.50% and 8.44%.

# 4. Polymeric MDI



- Judging from the situation in the first half of 2017, China polymeric MDI are still dragged down. However, as entrance of Dow into China market, imports will rebound slightly. The total imports volume of China polymeric MDI in the first half of 2017 is around 106kt, a year-on-year decrease of 16.37%; The total imports volume in the year of 2016 is 211,100 tons.
- The exports volume of polymeric MDI continue to maintain a certain amount of growth. Due to the sluggish situation of China market in the past few years, domestic MDI manufacturers especially Wanhua Chemical turn to focus on exporting to overseas market. Due to frequent force majeure of foreign devices and thus shortage of foreign demand, domestic exports have increased significantly compared with last year. Instability of foreign devices provides favorable condition for MDI exports. The total polymeric MDI export volumes in the first half of 2017 is around 285kt, a year-on-year increase of 28.78%. The total exports volume in the year of 2016 is 423,500 tons.

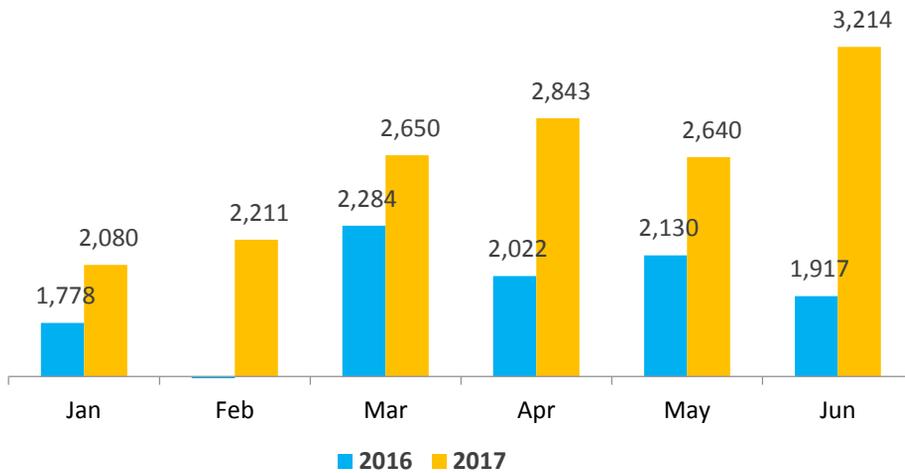
# 5. Pure MDI



- As downstream growth in China hit a bottleneck this year, pure MDI, like the MDI, presents a situation where imports are shrinking and exports are increasing. In the first half of this year, the domestic downstream demand for pure MDI was severely shrinking, and the construction load of some industries such as TPU and pulp was low. Some manufacturers' pure MDI were out of stock and they have to increase exports volume to ease pressure. So it can be seen that the export volume of pure MDI in May and June nearly twice the volume of the past few months. The total imports volume of China pure MDI in the first half of 2017 is around 34kt, a year-on-year decrease of 29.79%. The total import volume in the year of 2016 is 85,900 tons. Meanwhile, the total exports volume in the first half of 2017 is around 50kt, a year-on-year increase of 42.86%. The total exports volume in the year of 2016 is 77,600 tons.

# 6. HDI Hardener

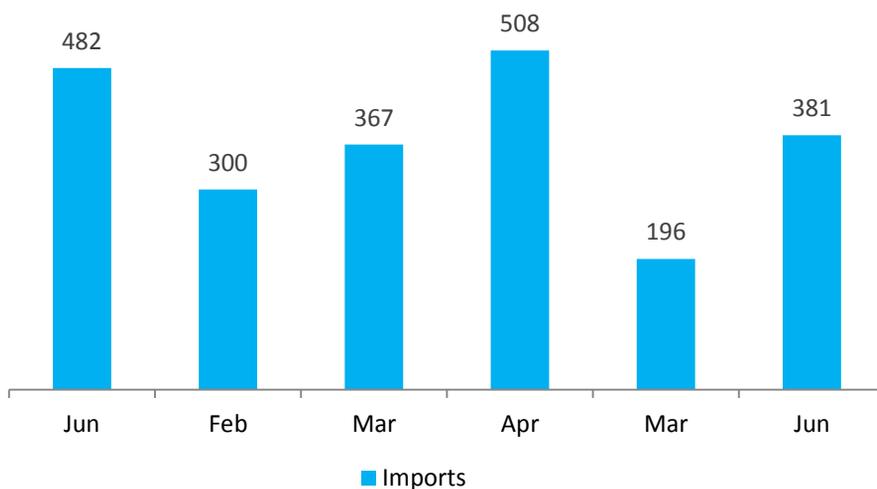
2016-2017 China HDI Hardener Export Trend (Tons) 



- Import: The imports volume of China HDI hardener is 6,862 tons in the first half of 2017, a year-on-year decrease of 14%. It can be seen that with constant increase of domestic capacity, the imports volume of domestic HDI hardener started to decrease.
- Export: The exports volume of China HDI hardener this year increases significantly compared with 2016, reaching 15,600 tons in the first half of 2017, a year-on-year increase of 42%. It can be seen that with constant release of domestic newly added HDI hardener capacity in recent years, domestic manufacturers started to pay more attention to developing overseas market, improving exports volume to ease saturation pressure in domestic market.

# 7. IPDI

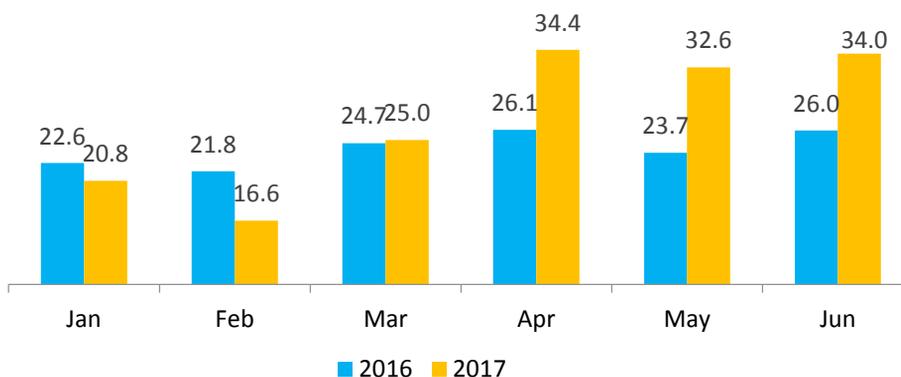
2017 H1 China IPDI Imports Trend (Tons)



- In terms of imports, with release of domestic Wanhua’s capacity expansion and effects of suppliers’ strategies, the total imports volume of China IPDI in the first half of 2017 is around 2,233 tons, decreased evidently compared with last year. The sources of China imports include Belgium, Germany, the United States, France and South Korea, mainly in Germany and the United States, which are also the IPDI device locations of Evonik and Covestro. France, which is the main source of Vencorex, saw a significant increase in its imports volume in the first half of this year compared with last year, but with low market share due to its low base.

# 8. Adipic Acid

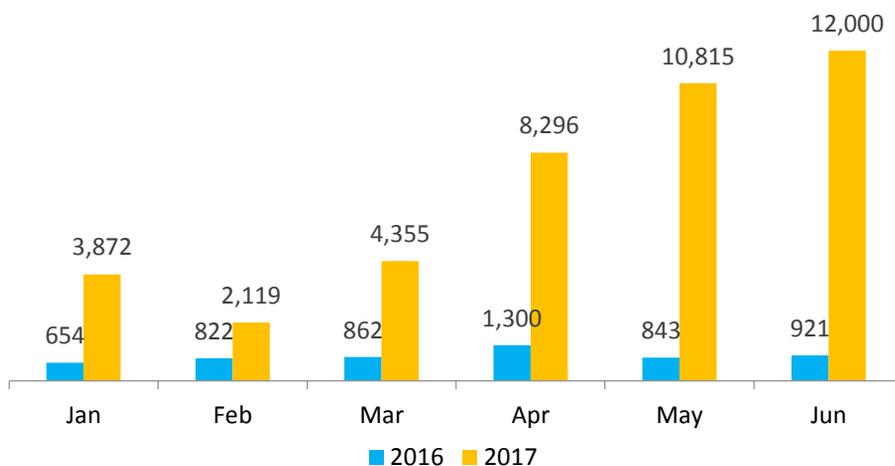
2016-2017 China AA Exports Trend (KT)



- Domestic adipic acid exports continue to grow in 2017. The exports volume of China adipic acid is expected to reach 163kt in the first half of 2017, a year-on-year increase of about 12.8%. The top four exports volume of customs are expected to be Najing customs, Qingdao customs, Jinan customs and Chongqing customs. The sum exports volume of these four customs is expected to account for over 85% of the total exports volume of China adipic acid. In the first half of 2017, among the export countries and regions, the exports volume to Singapore is the most compared with other export countries and regions. Turkish is in the second place and Taiwan is in the third place.

# 9. BDO

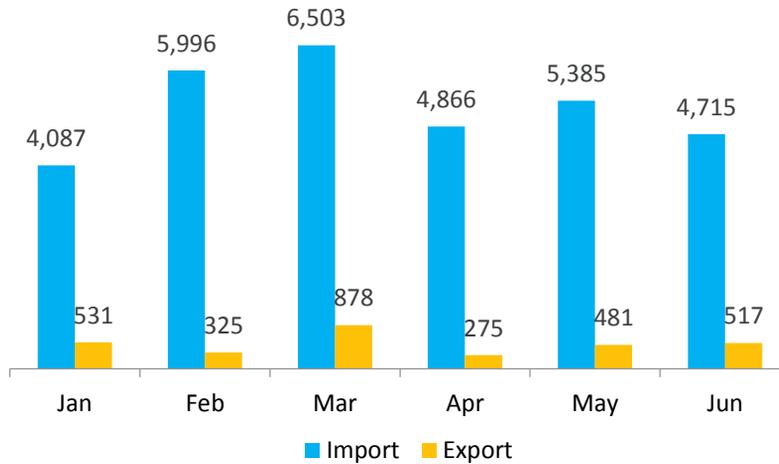
2016-2017 China BDO Export Trend (Tons)



- Domestic BDO exports volume increases significantly in 2017 compared with last year. The exports volume of domestic BDO in the first half of 2017 is 39,149 tons, increased 5,402 tons by 624.71% compared with the same period of last year. Due to limited domestic demand, “One Belt, One Road” state policy and domestic manufacturers’ positive mind to seek export, BDO exports volume increases greatly. The top five suppliers of BDO exports volume in the first half of 2017 are Changlian Chemical(Panjin), Xinjiang Markor, Henan Kaixiang, Xiaoxing Chemical(Jiaying), Wanhua Chemical, while Shanxi Sanwei and Xinjiang Tianye didn’t export. And Changlian Chemical(Panjin) exports volume accounts for 35.85% of the total domestic BDO exports volume , while Xinjiang Markor exports volume accounted for 35.35% of the total domestic BDO exports volume.

# 10. PTMEG

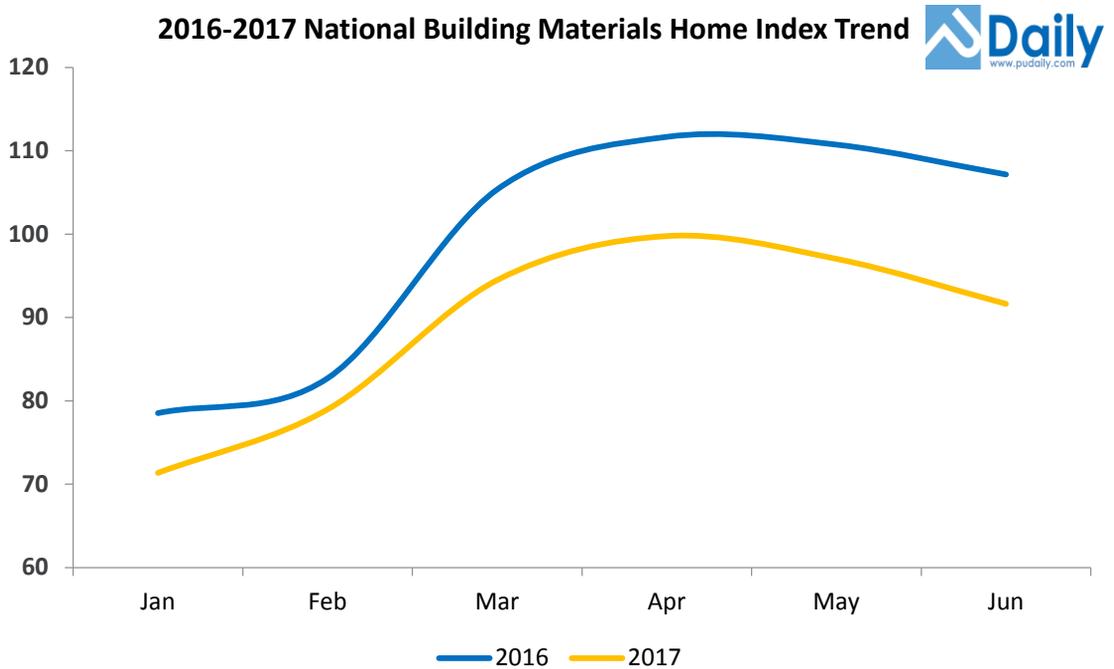
2017 H1 China PTMEG Im & Export Trend (Tons)



- China's imports of PTMEG in 2017 were up compared with last year, and domestic PTMEG imports volume in the first half of 2017 reaches 31,552 tons, a year-on-year increase of 24,005 tons by 31.44%. China mainly imports PTMEG from such countries and regions as Taiwan, Korea, Japan, USA and Germany. The exports volume of PTMEG in 2017 decreases compared with last year, and the exports volume in the first half of 2017 reaches 3,007 tons, a year-on-year decrease of 4,946 tons by 39.2%. Thailand ranks number one among China's export countries and regions in the first half of 2017 and the exports volume to Thailand accounts for 47.65% of China's total exports volume. Mexico is the second place, followed by Vietnam.

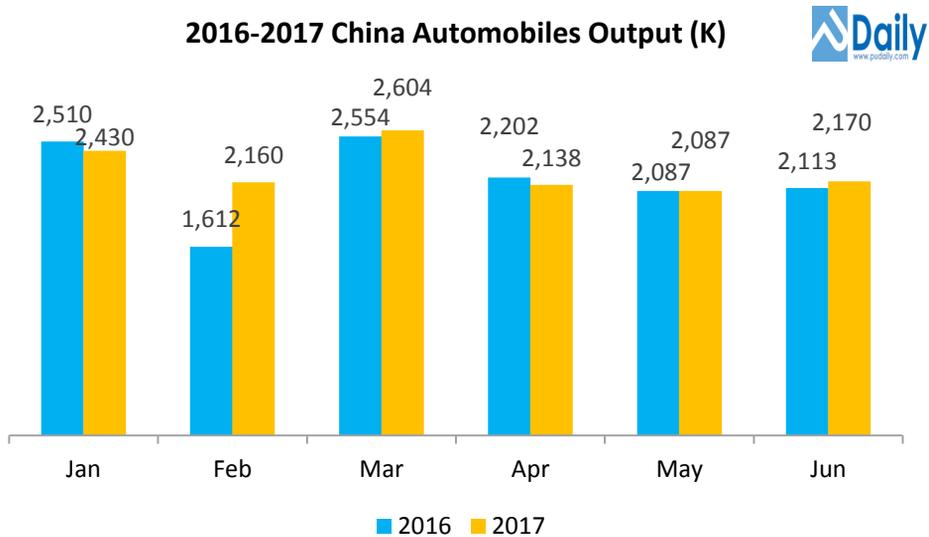
# **III China PU Terminal Market**

# 1. Upholstered Furniture



- The building material industry market was closed during the Spring Festival in Jan. and Feb., which made BHI start from low price, and then rose to a high level in Apr. yet not breaking 100(The BDI is 99.76 in April), and then fell for two consecutive months. The overall market remains weak compared with 2016.
- National real estate market runs in downtrend in the first half of 2017: Firstly, with constant tightening real estate market regulating policy, regulating cities continue to grow (At least more than 60 prefecture-level city and 30 counties). The upgrade and fermentation of regulation make demand for investment and speculation significantly inhibited and housing price rise at a slow pace, and housing transaction reduces to some extent. Secondly, the transformation and upgrading of the building material industrial and the structural reform have not keep pace with current consumption upgrade.
- The current Internet consumption consumers are mainly made of the post-80s and 90s , who are expecting the upgraded, more fashionable and personalized products. As a result, the traditional development pattern of “Happy Enclosure” is not suitable for industrial law of development, which the industrial enterprises is devoting to exploring. They take the measures of listing, merger, acquisition, reorganization and cross-border etc. together with improving hardware, enriching industrials, upgrading brands etc. However, Rome is not built in a day. It still needs process from catering to consumption to leading consumption. Domestic upholstered furniture market is also affected by the real estate market, and manufacturers start to focus on overseas market. The export value of mattresses, bedding, and similar articles from Jan. to Mar. is USD 1.786 billion, increased over the same period of last year. TDI price surge causes big decrease of upholstered furniture profits, lowering the industry development. The whole upholstered furniture market situation is expected to be difficult to change.

## 2. Automobile



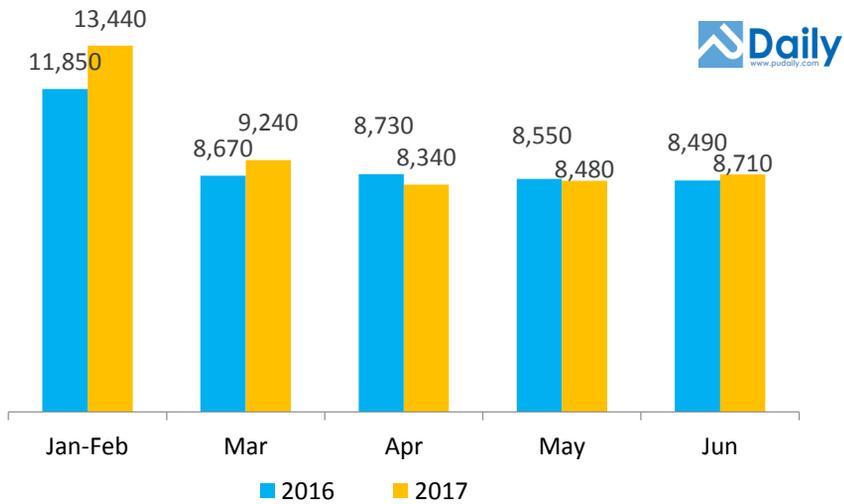
- According to statistics and analysis of the China Association of Automobile Manufacturers, the production and sales volume of automobile are respectively 13.5258 million and 13.3539 million, year-on-year increase of 4.64% and 3.81%. The growth rate is slower by 1.83% and 4.33%. The production and sales volume of passenger vehicles are 11.4827 million and 11.2530 million, year-on-year increase of 3.16% and 1.61%; the production and sales volume of commercial vehicles are 2.0430 million and 2.1009 million, year-on-year increase of 13.80% and 17.39%.

The top ten companies in automobile in the first half of 2017 are SAIC, Dongfeng, FAW, Changan, BAIC, GAGC, Geely, Great Wall, Brilliance Auto and Chery. The sales of BAIC, Brilliance, Dongfeng and Changan decreased compared with the same period of last year. The total sales volume of the above ten companies in the first half of 2017 is 11.8111 million, accounting for 88.45% of the total sales volume of automobile.

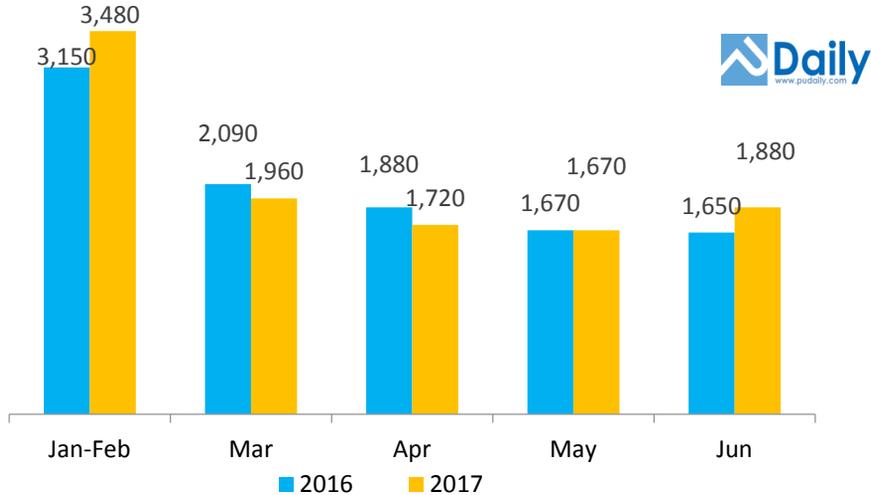
The production and sales volume of new energy vehicles in the first half of 2017 are 212k and 195k, year-on-year increase of 19.7% and 14.4%. New energy autos especially passenger vehicles will gradually occupy the market.

# 3. Household Appliance

2016-2017 China Refrigerator Output Trend (K)



2016-2017 China Freezer Output Trend (K)



- The production of China household refrigerator in the first half of 2017 is around 48.20 million, a year-on-year increase of 3.23%, showing a slight increase in growth. The production of China household freezer in the first half of 2017 is around 10.70 million, a year-on-year increase of 0.2%, with a smaller growth rate
- After the Spring Festival, some manufacturers made inventory for 3.15 promotion. So the production volume from January to March increased 16.3% compared with the same period of last year. And the output growth during this period also bring the polymeric MDI price as high as RMB 26,800/ton. Then the sales volume met problems and showed bad performance. The output of refrigerator and cooler are both on decrease.

## 4. Leather

- According to statistics released by the National Bureau of Statistics, the total output of China light leather industry in the first four months of 2017 is 220.9752 million square meters, a year-on-year increase of 3.96%. The output in April is 51.9582 square meters, a year-on-year increase of -0.11%.

## 5. Textile

- The retail sales volume of China above-norm clothing, shoes and hats in the first five months of 2017 increases by 7.2%, 0.2% higher than the same period last year. Online retail growth has accelerated and the national online retail sales volume of clothing items increases by 20.6% in the first five months of 2017, 4.4% higher than the same period of last year.

## 6. Footwear

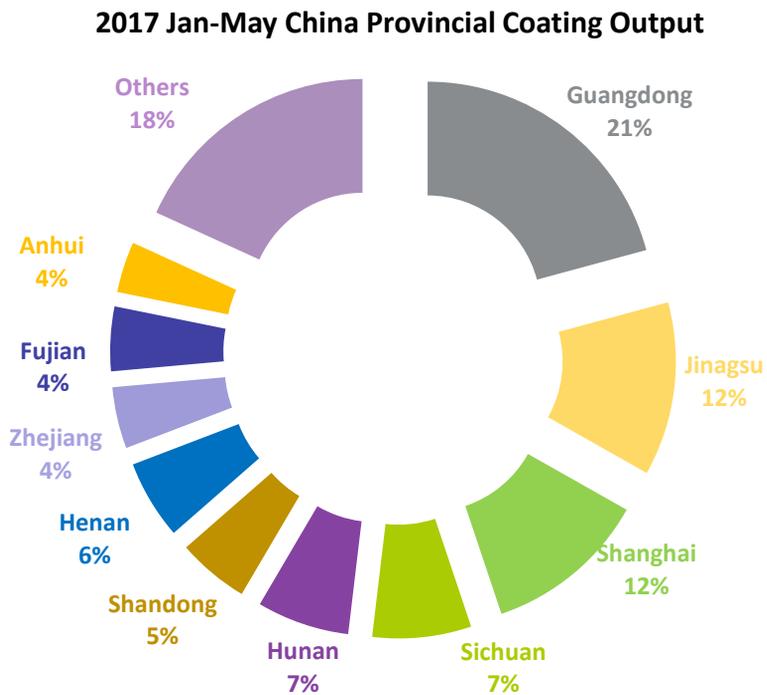
- According to statistics released by the National Bureau of Statistics, the national leather footwear industry has achieved a total output of 1406 million pairs in the first four months of 2017, a year-on-year increase of 4.30%. The production in April is 380 million pairs, a year-on-year increase of 4.55%.

## 7. Adhesives & Sealant

- Faced with constant progress of domestic economic structural transformation and adjustment in 2016, the economic growth momentum in the industrial field is weakening quietly. Under the pressure of de-overcapacity, de-stocking and de-leverage of traditional industrials, demands for some segments of adhesive applications are stagnant even show negative growth; some adhesive products market is in fierce competition. The total market consumption of China adhesive in 2016 decreased slightly compared with 2015. The consumption quantity is around 6.9 million tons. With domestic economic restructuring and constant driving force of consumption market, China adhesive market will continue to remain rising trend in the years to come. China adhesive market consumption is expected to reach near 1000kt in 2020 and the five-year compound growth rate is near 7%.

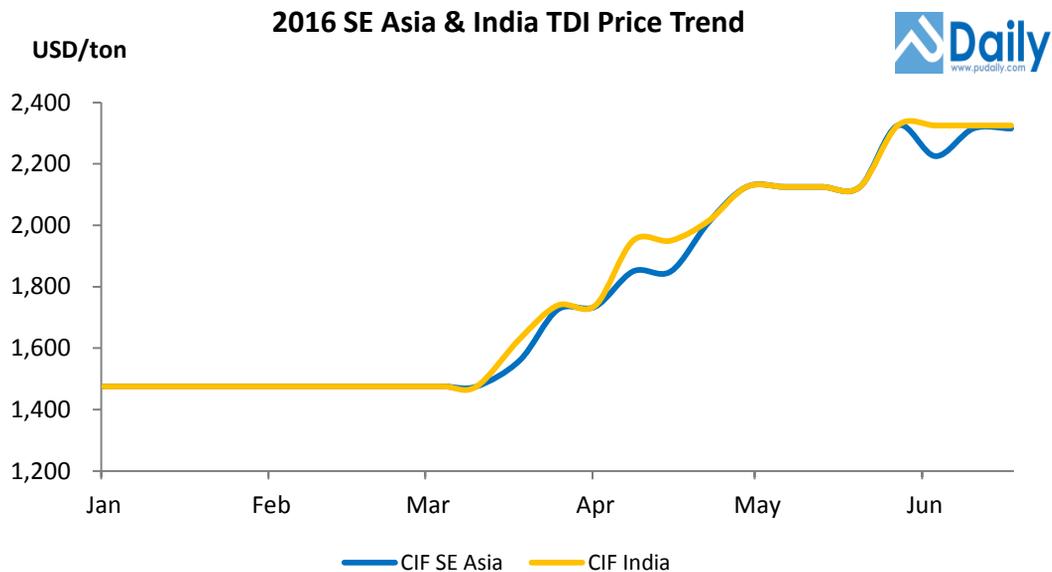
# 8. Coating

- The total output of China coating industry in the first five months of 2017 is 7.7125 tons, a year-on-year increase of 9.1%, 6.5% higher than the first four months and return to the stable-to-fast development pattern. The top five provinces and cities of the production are Guangdong, Jiangsu, Shanghai, Sichuan and Hunan, of which the production is respectively 1,605kt, 952kt, 901kt, 544kt and 509kt, respective increase of 12.3%, 7.4%, 18.9%, -40.2% and 6.96%.
- The total imports and exports volume of major products of China coating industry, an increase of 2.72%. Among them, the total imports volume is 672.2498 million tons, a year-on-year increase of 5.01%; the total imports value is USD 357.0807 million, a year-on-year increase of 1.00%; the total exports volume is 775.2742 tons, a year-on-year increase of 14.01%; the total exports value is USD 254.5730 million, a year-on-year increase of 5.24%.



# **IV Southeast Asia & India PU Market**

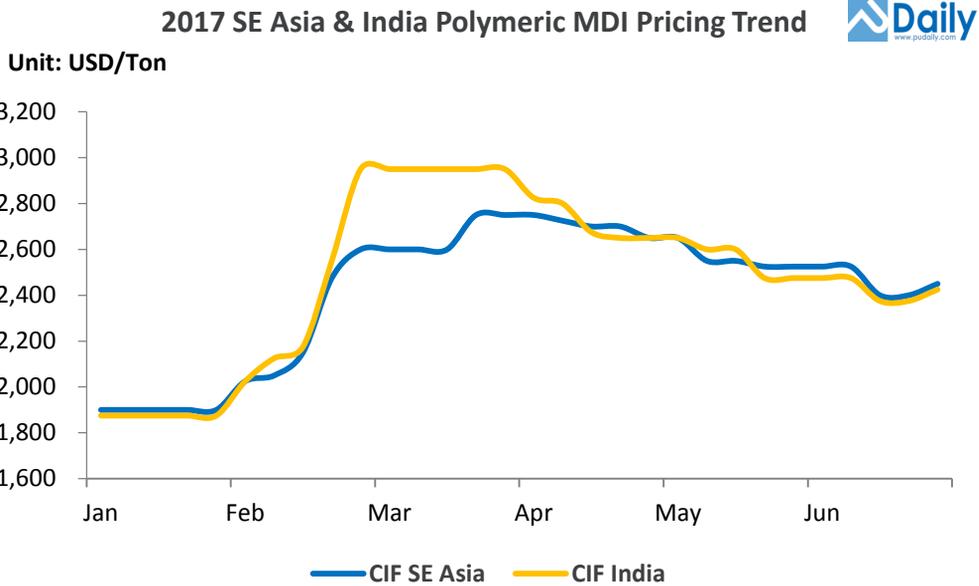
# 1. Southeast Asia & India TDI



**Note:** covered countries in Southeast Asia include Thailand, Indonesia, Vietnam, Malaysia and Singapore

- Southeast Asia and India TDI market is tepid in the first half of 2017, and traders are offering firmly with little price fluctuation. At the end of June, the price was fluctuating at around USD 3,300/ton to 3,400/ton (CIF), the same level as the beginning of the year. In terms of downstream demand, affected by high price of TDI, sponge manufacturers only purchase on rigid demand. Even in the peak season ahead of Eid al-Fitr, the market remains weak. In addition, India decided to impose anti-dumping duties on TDI from China, Japan and Korea, which took effect on June 5 and made China, Japan and Korea export less to India. And due to the new GST tax which took effect on July 1 in India, the downstream manufacturers only made inventory on rigid demand at earlier stage. TDI market demand was very weak in May and June, and GNFC still continue to increase exports intensity under the protection of anti-dumping.
- Looking forward to the second half of 2017, Southeast Asia and India TDI market is expected to remain stable. With the arrival of “Golden September and Silver October” in China and the New Year in India, market demand will regain momentum and is expected to push Asia TDI price rise. Sadara TDI device will gradually come into production in the second half of 2017, but the impact on market may be limited this year.

## 2. Southeast Asia & India MDI



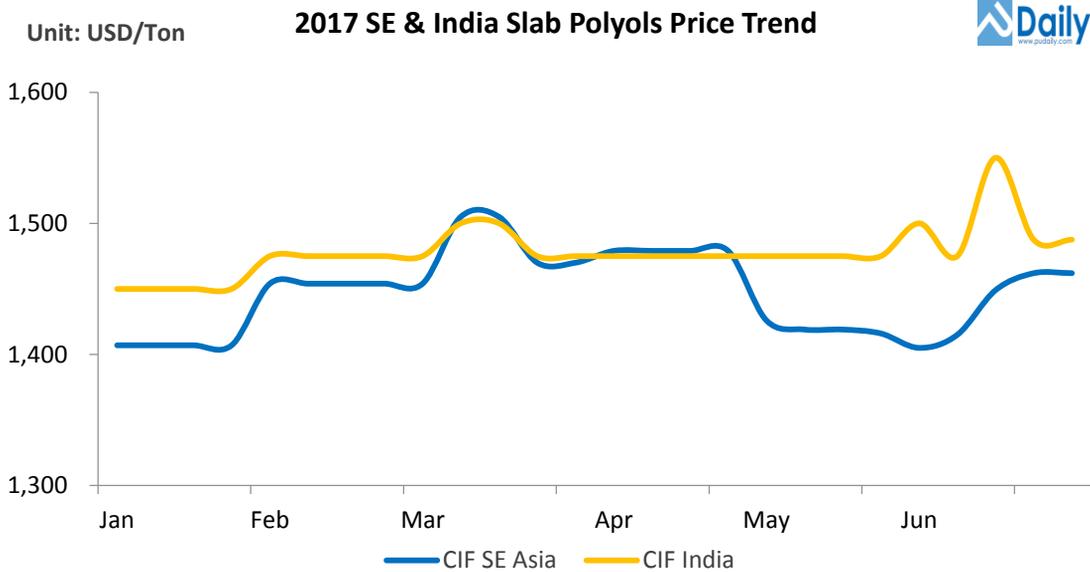
- Benefitted from price rise of global manufacturers and tight region supply between the beginning of February and the middle of March this year, Southeast Asia and India polymeric MDI market broke the steady running state of the first two months and the price continue to rise; according to statistics from PUdaily, up to the middle of March, Southeast Asia polymeric MDI was quoted at USD 2,600/ton CIF, grow USD 700/ton compared with the beginning of 2017, and India polymeric MDI was quoted at USD 2,950/ton, increased USD 1,075/ton compared with the beginning of 2017. Market participants held wait-to-see views towards market between mid-March and mid-April.
- Additionally, with no more inventory in March, Southeast East and India polymeric MDI market price turns to falling. From mid-April, due to sufficient inventory and the upcoming of rainy season, downstream demand in the building and household appliance industry became weaker. Southeast Asia and India polymeric MDI price started to fall back, and up to the end of June, the polymeric MDI price in Southeast Asia was USD 2,475/ton (CIF), decreased

about USD 275/ton compared with mid-April, while it was USD 2,400/ton in India, decreased about USD 550/ton compared with mid-April.

With no MDI production device in Southeast Asia, supply are mainly from Northeast Asia countries, including China, Korea and Japan. Circulation sourcing will remain stable in the first half of 2017, and supplies in China, Korea and Japan will remain stable.

According to the published statistics, China exported about 43kt of MDI to Southeast Asia from January to May this year, including 35kt of polymeric MDI and 8kt pure MDI (both contain respectively modified MDI, the same below); Korea exported about 30kt MDI (21kt of polymeric MDI, 9kt of pure MDI), and Japan exported about 18kt of MDI (11kt of polymeric MDI, 7kt of pure MDI) to Southeast Asia. Demand in Southeast Asia is expected to be about 110kt in the first half. Malaysia's demand remain unchanged from a year earlier, mainly because of market saturation and weak growth of the downstream industry, while Indonesia, the Philippines, Singapore, Thailand and Vietnam market demands have seen a steady rise supported by domestic consumption.

# 3. Southeast Asia & India Polyols



- Due to the influence of the low global crude oil market price, the overall economy in SE Asia was downward since 2016. In Jan., because of the policy of increasing import tariffs of 20% in Furniture in USA, SE Asia furniture manufacturers have to change the market focus. At the end of June, global large-scale chain convenient store 7-eleven announced the closure of all its stores in Indonesia. Meanwhile, China's major polyols manufacturers started overhaul in Half 1 2017, and affected by high PO price, combined with the shutdown of Shanghai Gaoqiao polyether polyols, polyols market in SE Asia and India remain running firmly, but the downstream demand is not good.
- According to PUdaily, up to the end of June, flexible slab polyols in bulk price in SE Asia reached USD 1,350/ton-1,500/ton (CIF), and the price in India was USD 1,470/ton-USD 1,500/ton. The overall price rose about USD 20/ton- 60/ton from the beginning of 2017. Though domestic PO price continue to rise in the past two weeks, future polyols

market in SE Asia and India is expected to slide within a small range, due to downstream resistance to high price, Sadara PO and polyols equipment's coming into production, together with weak demand in traditional seasons.

In India, with the completion announced by Dow and Sadara in last November, Sadara will be the largest global composite chemical production facility, with daily chemical production volume of more than 30kt. Meanwhile, Sadara has PO capacity of 390kt/year and polyether polyols capacity of 400kt/year. It is reported that its MDI device has put into production in May, then its PO and Polyether Polyols device will also put into production later. In addition, the Indian government imposes anti-dumping duties on 3k to 4k molecular weight of ordinary flexible foam polyether polyols imported from Thailand Dow, with a tax rate of USD 135.4/ton. Previously, the Indian government only imposed anti-dumping duties on these products from Singapore's Shell, with a tax rate of USD 68/ton.

- The total exports volume of varieties of polyether polyols in Thailand in 2016 is around 216kt. And it exports about 65kt to SE Asia and India, accounting for 30%; The total polyether polyols exports volume in the first half of 2017, with 32kt exporting to SE Asia and India, decreased 38kt compare with the same period of 2016 by 16%.
- The total polyether polyols exports volume of Singapore in 2016 is 380kt, with around 150kt exporting to SE Asia and India, accounting for 39%.

## 4. Southeast Asia & India PO

- SE Asia and India PO capacity in the first half of 2017 maintain the same level with last year, which means no new capacity in the region in half 1 of 2017. The main producers are still Dow Chemical and Singapore Shell. Dow built HPPO equipment of 390kt/year in Thailand raoyong, while Singapore Shell built two PO/SM plants in Jurong Island. The total capacity is 425 kt/year.

According to relevant statistics, Thailand exports 53kt PO to China and Austria in the first five months, a year-on-year increase of 4%; Singapore totally exports around 73kt PO mainly to Kora and Taiwan, remain unchanged with last year.

## 5. Automobile

- Thailand has a total output of 1,940 k autos in 2016, a year-on-year increase of 1.64%. The total sales volume is around 770 k, declined by 3.9% compared with 2015. Thailand has a total output of 950 k in the first half of 2017, a year-on-year decrease of 4.3%. Domestic auto sales volume is near 410 k, a year-on-year increase of 11.2%. And the exports volume is 530 k, a year-on-year decrease of 9.8%. The import tax rate on autos from Thailand will decrease to 30% in 2017, and will decrease to 0% in 2018.
- Indonesia has a total production of 1,170 k autos in 2016, a year-on-year increase of 7.2%; the total sales volume is 1,060 k, a year-on-year increase of 4.7%. In the first five months of 2017, Indonesia's total production is 520 k, a year-on-year increase of 5.8%. Domestic total auto sales volume from Jan. to May is 460 k, a year-on-year increase of 6.1%.
- Malaysia has a total output and sales volume of 540 k and 580 k in 2016, a year-on-year decrease of 11.3% and 13%. From Jan. to May in 2017, Malaysia has a total production of 220 k, increased by 0.5% compared with same period of last year. During this period, the sales volume is 230 k, a year-on-year increase of 7.4%. Malaysia may will intensify investment on infrastructure in order to push domestic economic growth. Meanwhile, affected by factors such as slow expansion of domestic consumption demand and constant rising exports, the auto production is expected to continue to grow in the whole year.
- India total auto output in 2016 reached 3,760 k, grew by 8.2% over the same period in 2015; the total sales volume is around 3,670 k, a year-on-year increase of 7.2%. In the first half of this year, India has a total output of around 2,330 k, a year-on-year increase of 5.6%, and domestic auto sales volume is around 1,900 k, a year-on-year increase of 6%. The introduction of the commodity service tax (GST), which cut the indirect tax on cars, make various assembly plants cut the sales price in succession, which may furtherly drive the auto demand and supply in India in the second half of 2017.

Source from PUdaily

## 6. Furniture

- Thailand furniture has a total sales value of 37.751 billion baht in 2016 and is mainly for exporting, a year-on-year increase of 4.21%. In 2016, the top export market for Thai furniture is USA, with a sales value of 7.38727 million baht, up 2.17% and the market share is 19.27%.
- Japan is in the second place, with a sales value of 6.78726 billion baht, up 6.59% and the market share is 17.7%. It also exports about 2.47422 billion baht to China, up 16.31% and the market share is 6.5%. In addition, it exported 1.8875 billion baht to Vietnam last year, a year-on-year increase of 57.62%. The main export markets are including USA, Japan, China and the UK. But the government will expand the export volume to ASEAN countries this year.
- Vietnam has a total export output value of USD 5.1200 billion of its wooden furniture in 2016, a year-on-year increase of 7.1%. And this is the first time that the export value growth rate reaches a single digit. In the first half of 2017, the total export value of Vietnam wooden furniture is around USD 2.5 billion, up 13.5% compared with the same period of last year. since the U.S.-Vietnam trade agreement came into effect, Vietnam's exports to the United States have grown steadily. As a result of the free trade agreement, the import tax rate decreased greatly from 50%, some products even enjoy the treatment of zero tariff. Many Chinese enterprises also move their production lines to Vietnam, with preferential tariffs (only 0-4%).

## 7. Refrigerator

- Thailand, Indonesia and Vietnam are three main bases of household appliance in SE Asia. The mainstream refrigerators in Thailand are Rili, Sanling Electronics, Samsung, Toshiba, Dongzhi Electronics, Haier and etc., which all set up factories in Thailand. Their products not only meet local needs but also be exported to neighboring countries, such as Malaysia and Singapore. Local macroeconomic development bring heated real estate market, thus bring bullish news for household appliance industries.
- Demands for local household appliance in H1 of 2017 increases sharply over the same period of last year, changing the bleak demand market last year. Such case is the same as demands for polymeric MDI increase by 30%.
- The output of refrigerator in Indonesia keep steady increase in recent years. Vietnam, as an emerging economy in SE Asia, has a huge potential market for household appliance. The current Vietnam refrigerator producers are mainly Haier (Sanyang), LG, Songxia, Rili and etc. Vietnam refrigerator market remained rapid growth before 2014 and various companies kept increasing investment. During the past two years since 2015, local refrigerator market still keep growth, significantly stimulating demands for PU materials. Vietnam refrigerator market is expected to continue to grow in H2 of 2017 with Vietnam economic growth. In addition, due to the low labor cost, more and more manufacturers transfer the production center to Vietnam, with their products not only meet domestic demands, but also be exported countries such as Myanmar, Laos, Cambodia taking advantage of ASEAN economies.

## 8. Footwear

- Vietnam leather and footwear market enjoyed rapid growth in recent years. According to Vietnam Leather Shoes and Bag Industry Association, Vietnam leather and footwear are expected to grow 10% with a total volume of USD 18 billion. Additionally, Vietnam-EU Free Trade Agreement is expected to come into force in 2018, which means more export opportunities to EU for Vietnam footwear producers. The leather industry export value last year reached USD 16.2 billion, up 8.8% from 2015, of which the footwear export value totaled USD 13 billion. Besides, the rest is leather products. The bags export value grew by 8.8% and the leatherware export value grew by 11.1%. The main factors of Vietnam competitive leather footwear market are including Vietnam's economic, political and social stability, a large number of low labor cost supply and the gradual expansion of Vietnam's free trade zone.
- Vietnam footwear market has developed well and will continue to show a promising development condition. With growth of local income and disposable income, people are attaching more and more importance to health and healthy lifestyle. The number of India's GYM is increasing at 7% a year and the increase rate will last until 2020. From 2015 to 2016, India's sportswear grew by 22%, outpacing the global growth in the sector (7%). The Prime Minister Modi said last year that India will increase spending on sports and the sector will definitely improve in the years to come. India market is expected to grow at a compound annual increase rate of 12% from now to 2020, with a sales value of USD 8 billion. These are bound to bring great development opportunities to India's footwear market and meanwhile promote demands for MDI.

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