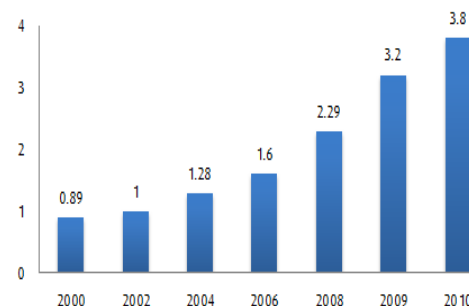


## PLASTIC INDUSTRY COVERAGE

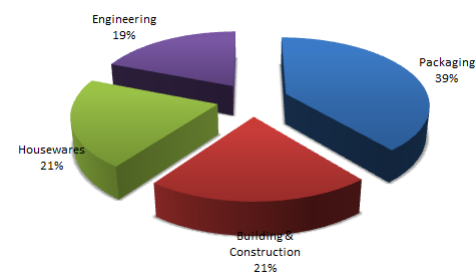
The plastics industry has been among the fastest growing industries in Vietnam during the recent years. Similar to pharmaceutical industry, one of the reasons for this growth is that the starting point of Vietnam is quite low, and plastics consumption per capita is still lower than the region's and world's average. Therefore, the industry's growth is more extensive rather than intensive with out-of-date technology and little value added so there are only few leading companies that have net profit margin above 10%. Depending up to 80% on imported raw materials, Vietnam plastics industry is not stable and initiative, and need large working capital.

Currently, packaging is the largest product segment of plastics and also has the highest import value accounting for 66% of total export. Following the global trend, plastics packaging firms, especially those that produce PET bottles and recycled plastics, have much potential in coming years with forecasted growth of more than 20% per year.

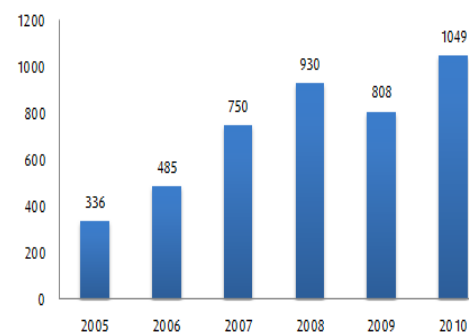
In the next 5 years, Vietnam plastics industry has many opportunities for further growth and differentiation. Firms with appropriate strategies and invest heavily in technology in niche product segments will survive better than the smaller ones with outdated equipments. As plastics products are becoming necessities, plastics firms can more or less adjust their prices to accommodate the changes in input prices. Large firms like Binh Minh Plastics, Tien Phong Plastic, and others like Bavico and Ngoc Nghia who are preparing to be listed, are suitable for value investing. The sector is presently valued at a discount compared to the market's average and is relatively safe to consider buying.



Vietnam plastics output  
(Million tons) - Source: VPA



Vietnam plastics industry segmentation -  
Source: Ministry of Industry and Commerce



Export of plastics (million USD)- Source:  
Vietnam customs

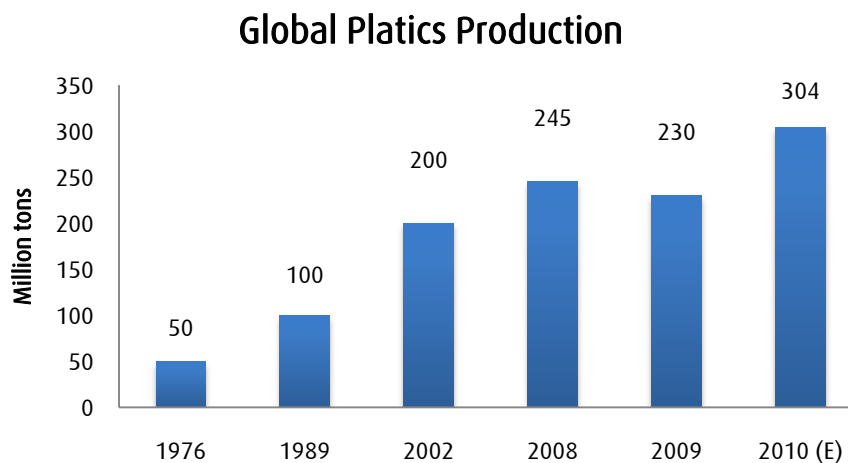
## OVERVIEW OF GLOBAL PLASTICS INDUSTRY

### CHARACTERISTICS OF GLOBAL PLASTICS INDUSTRY

1. **Stable growth thank to increasing demand, especially in Asia:** Plastics is one of the more stable growing industries in the world with 9% of growth averagely during the past 50 years. Even though the economic crisis in 2008 left huge impacts on many industries, global plastics industry still maintained its growth at 3% in 2009 and 2010. The plastics industries in China and India impressively grew more than 10% in 2010 and it was more than 20% in South East Asian countries.

This on-going and stable development of the industry is to thank to the global demand being in the peak period. Global plastics consumption reached 500 million tons in 2010, growing at 5% per year (according to BASF). The average consumption per capita in 2010 was 40 kg/year. The North America and Western Europe regions have the highest average consumption rate of more than 100 kg/year. Demand for plastics in these areas did not drop in 2009 -2010 and increased the strongest in Asia at 12-15%. Aside from geographical factors, demand for plastics products also depends on the growth of end-application markets like food industry (3.5%), electrical and electronic (2.9%), building and construction industry (5% in Asia), and so on. Demand for plastics rise averagely 3.8% in food processing industry; 3.1% in E&E, and 6-8% in building and construction industry (US), which is a key factor that boosts global plastics demand.

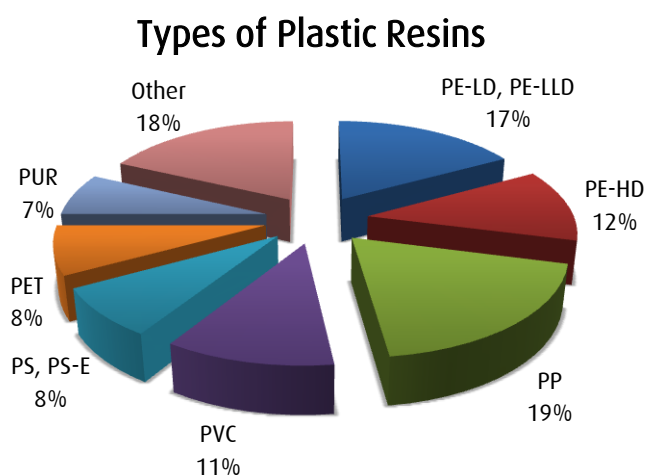
2. **Supply recovered significantly in 2010 and came quite near the level before the economic crisis but still could not satisfy the fast growing demand:** Global plastics production picked up greatly in 2010 to more than 300 million tons, 32% more than in 2009. Plastics production in the world decreased in 2009 mainly was because of soaring production cost and economic crisis. With various stimulus packages, especially in Thailand, global supply returned to the growth level before the crisis but was still insufficient for global demand. Together with the sudden hike in raw materials' price, the price of plastics products also climbed 25% in 2010.



*Global plastics production – Source: Plastics Europe*

The production in Asia (in particular China, India, and South East Asian countries) increased spontaneously ~15% in 2009 and 2010. This was the ground for the more-than-2-digit growth in Asia last year. Asia currently supplies 37% of total plastics in the world with 15% belongs to China. Europe and NAFTA follow closely with 24% and 23% respectively. The productions in these 2 regions declined slightly in 2010 due to strong competition from Asia and the prolong effects of the worldwide financial crisis and the debt crisis in Europe.

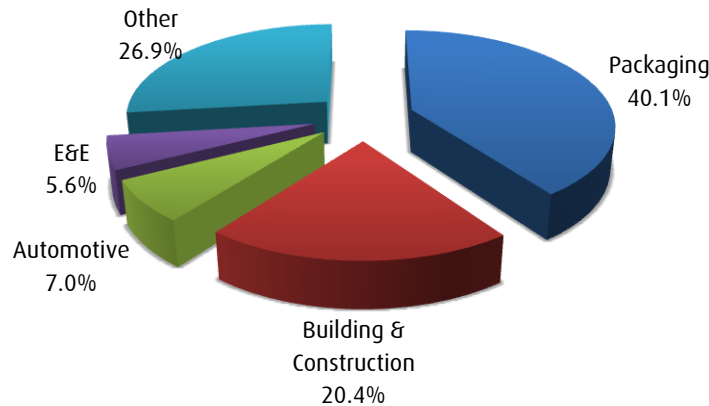
3. **Lacking in raw material supply and dependent on energy sources like oil and natural gas:** Demand exceeding supply was the common trend in 2010. The drop in production heightened the price of plastic resins, especially in Q2 and Q4. The main cause was the hike in prices of oil and natural gas which were main inputs to produce plastic resins.
  - China and Middle East are taking over the leading position from the US and Western Europe in both demand and supply for plastic resins. Last year, the world consumed 280 million tons of plastic resins, up 26% since 2006. Among which, Asia accounted for 42% of total consumption, followed by Europe and North America with 23% and 21% respectively. Majority of demand is for PE and PP resins (29% and 19%). PET (8% of total demand) is the best growing group with 7% per year. Supply for PET resin has gone up 25% since 2006 but still could not meet the demand for this resin.



*Types of plastics (by demand) - Source: Plastics Europe*

- At the present, China, Middle East, and Russia are the biggest three in producing and exporting plastic resins in the world. China has the fastest transformation with more than 21 million tons of resins in H1/2010, 23% more than the same period of 2009. 28% of China resins production is of PVC. Meanwhile, Middle East is the main producer for PE resins. PE supply from this region is expected to perk up from 4.3 million tons to 11.7 million tons in 2013, exceeding Asia and Europe (ICIS). *As such, the prices of PE and PP depend greatly on the macro economic of these regions.*
4. **The global plastics industry relies on end-application markets like food, building and construction, electronic, and automotive:** The industry is fragmented into many small segments based on end-products like packaging segment, building and constructions, automotive, E&E, etc. The development of these segments is closely linked to the demand for plastics products and growth in these markets.
    - **Packaging segment (40%)** is the largest segment with more than 40% of total produced products. The value of this segment is said to reach 180 billion USD in 2011. The stable growth of 4%/year is thank to end-products markets like food, beverage, and pharmaceutical, etc which were not effected strongly by the difficulties in economic environment.
    - **Building and Construction (20%):** During 2009-2010, this segment was strongly impacted by the US and European reduction in public spending on building and construction industry. These regions are unfortunately the largest markets for the segment's products. However, the plastic building and construction segment is forecasted to rebound in 2011-2012 as global demand for plastic pipes goes up to 4.5%/year reaching 8.2 billion meters. The highest growth is from developing countries like China (30% of global demand), and Japan to rebuild the country after the earthquake. Western Europe and North America even though might slow down a little but are still the regions that consume the most plastic pipes. It is estimated that the value of plastic pipes (main product) will jump 6.6% to 38.6 billion USD from 2010-2015 in the US.

## End-Application Segments



*Global plastics industry segmentation by end-used applications - Source: Plastics Europe*

- **Automotive (7%):** The segment is growing averagely 5%/year in Asian market and might be affected negatively by the earthquake and tsunami in Japan as Japan is one of the largest suppliers of automotive parts.
- **Electrical and Electronic Equipment (5.6%):** With rising demand for electrical equipments like PC, TV, printers, etc in India, South East Asia, and China, this segment has the potential to go up 5%/year averagely.

### 5. Recycled plastic is increasingly encouraged by many Governments and recycled products are still under supply:

Compared with other products, recycle plastics is a new segment that is more and more popular, especially in developed countries. Recycled plastics products are environmental friendly and can preserve energy. Production of recycled plastics has been rising averagely 11% for the past 10 years. This segment's expansion is one of the most impressive ones in the global plastics industry. Up to 2009, the proportion of recycled plastics in European countries like France and Germany is around 15%-30% and highest in the UK with 40%. Recycled plastics supply has improved substantially but is still insufficient.

- **Products and prospects:** Most recycled plastic products are from the packaging segment, for example PET bottles, food packaging, etc. In recent year, the number of recycled PET bottles doubled, accounted for 30% of total PET bottles produced globally. This is also the most impressive sub-segment in the packaging segment. Demand for green plastics in developing countries is getting higher and it also leads to upward demand for PET and HD-PE resins. PET resins consumption exceeded 500,000 tons in 2010 and will probably overcome the 600,000 tons mark in the coming years. The future prospect for recycled PET is very optimistic. According to the US Environmental Protection Agency, recycled bottles only account for 2% of green plastics in the US. The country is aiming for a new target of 25% which will guarantee rising PET production and market share.
- **Technology:** The most important machine to produce PET is a stretch blow molding machine. The most basic type is the Single Stage blow molding machine which was first used in 1975. The single stage machine can create bottles in any shape and size. An Injection molding machine is used to shape mold before putting them in the blow molding machine. The more updated blow machine has 2 stages (Two Stage Blow Molding machine) including both injection and extrusion blow molding. It is more flexible than the one stage one and can produce 4,000-6,000 bottles/hour, depending on the models. The most modern machine currently is called the Integrated Two Stage Blow Molding Machine which is suitable for producing small chunks of bottle with smooth surface. The more modern the technology is; the better the production capacity is.

## GLOBAL PLASTIC INDUSTRY OUTLOOK IN 2011

Factors that manipulate the common trend of global plastics industry in the coming years comprise of the recovery of the world' economy (especially in Asia); the growth of end-application markets like food, building and construction, etc; oil and natural gas prices, environment policies of many Governments, and changes in technology (if valid).

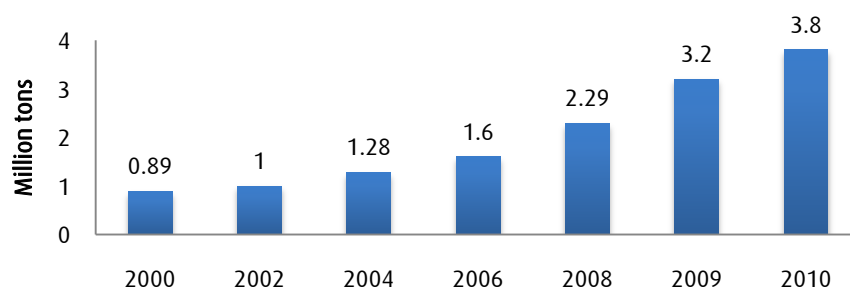
- **Continue growing more than 4% in 2011:** The IMP expects the global GDP to have another 4% added to its 2010 figure in 2011, 3.5% in food industry (IMAP), and 7% for building and construction industry (PwC), etc. Moreover, demand for plastic products increases on average 3%/year in food processing industry, 3.1% in E&E industry, and 6-8% in the US's building and construction industry, which will raise the global demand for plastic products in 2011. European Plastics estimates that global plastics consumption per capita will go up 4% a year and will grow the fastest in Asia with 12-15%. At the moment, consumption per capita in this area is about 25 kg/year, which is lower than the world average so there are plenty of opportunities for growth. The anticipated consumption per capita in Asia is at 40 kg/year in 2015. Therefore, the on-going growth of global plastics industry from 2011 is estimated to be above 4% and higher than the 3% growth of global GDP. In the meantime, fastest improvement belongs to Asia with 5% in 2011 (HIS) and more-than-2-digit-growth in China and developing countries. So the global plastics industry is recovering thank to the economy and global demand on the rise, in particular demand in Asia and developing countries.
- **Demand and price of plastic resins will keep their upward trend in 2011 while supply meets many difficulties because of political unrest in the Middle East:** It seems that demand for plastic resins will soar in Asia in 2011 and 2012 where the main growth lies. Among which, ICIS estimated that demand for PET resins could leap 41% from 25 billion USD in 2010 to 36 billion USD in 2011. Resins price rises sharply more than 10% in Q1 and the trend will continue on due to soaring prices of oil, natural gas and under supply. According to Goldman Sachs, oil price will go from 80 USD/barrel in 2010 to 105 USD/barrel in 2011 and the unrest in Middle East might be prolonged. Experts from JP Morgan also predict that oil price might reach 120 USD/barrel in 2012. Resins price as the result will follow closely the upward trend of oil price, which leads firms to raise prices of plastic products in 2011. In this condition, countries that are more material initiative and large production capacity like China, India, and Middle East will have more competitive advantages.
- **Recycled plastics will have the strongest and the most stable growth in the future:** As recycle plastics is used more and more, the increase of 11%/year in production can not meet the high demand. The rising demand is partly because of the new green policies to reduce pollution from plastics products employed by many Governments. Australia, Ireland, Italy, South Africa, Taiwan and many more have officially banned nylon bags. China's list of forbidden plastic products has caused the collapse of the largest soft plastic bag producer in the country - Suiping Huaqiang Plastic in 2008. Many other countries are encouraging the use of recycled plastics including Vietnam. This trend has been going for 10 years. The development of recycled plastics requires new and more complicated technology and machinery.

## OVERVIEW OF VIETNAM PLASTICS INDUSTRY

### CHARACTERISTICS OF VIETNAM PLASTICS INDUSTRY

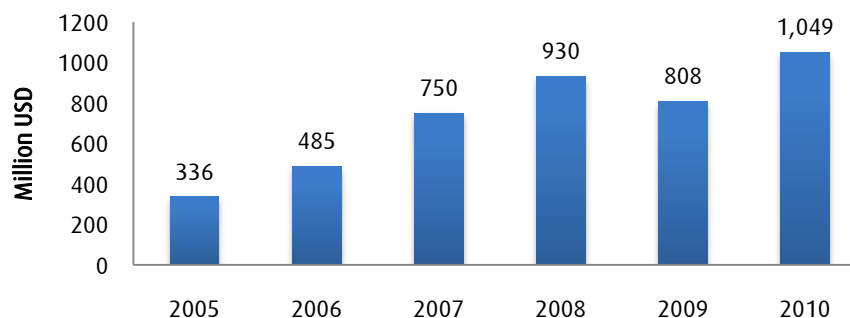
1. **Vietnam is one of the countries that have highest growth rate of plastics production:** In 2010, Vietnam plastic industry grew more than 20% in value and 18.75% in output compared with 2009. In contrast with the slow down of global plastics industry during the economic crisis, the growth of Vietnam plastics industry is thank to domestic demand remains high. Currently, domestic demand reaches 32 kg per capita, up 15% over 2009 and closes to the world average (40 kg per capita). The average demand is likely to climb further and contribute greatly to production output and export turnover of the country's plastic industry.

Plastics products account for 4.48% of total domestic output and serves as an essential supporting industry that needs the government's attention. The industry is one of the State's top priority sectors due to high and stable growth, strong exports, and competitiveness compared with other countries in the region.



*Plastics production in Vietnam - Source: Vietnam Plastics Association*

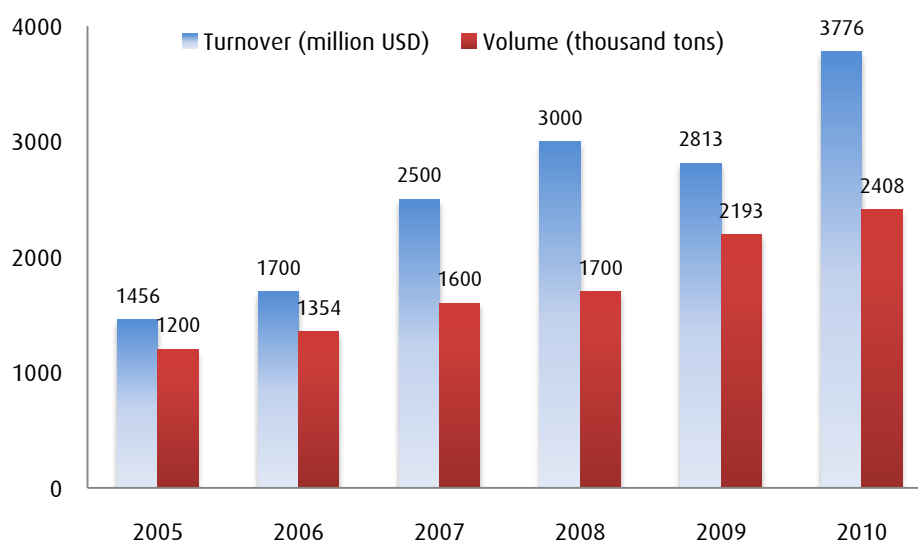
2. **Export turnover hit 1 billion USD for the first time in 2010 and Vietnam plastics brand is gradually strengthened in hard-to-pleased export markets:** In 2010, plastics officially becomes one of the export sectors that exceeds 1 billion USD. Strong recovery of export turnover (29%) showed the resilience of the domestic sector and the global plastics industry last year. Plastic products from Vietnam are exported to the hard-to-pleased markets that require certain product quality like Japan, America and Germany. This proved that Vietnam's plastics products has a stable quality level. What's more, Vietnam's products are not subject to anti-dumping duty from 8%-30% in the European market like other Asian countries including China. This is a favorable advantage for Vietnam plastics firms to increase outputs and exports to these markets.



*Export of plastics - Source: Vietnam Customs*

For export products, Japan is currently the biggest market with 26% of market share, followed by the US (11%) and Germany (7%). For export resins, China is the main market with 29% of total turnover, followed closely by Japan (25.7%) and India (11%). Asian countries are very important export markets for Vietnam plastics industry. A plus point is that plastics demand in this region (excluding Japan) is still below the world average and has high growth potential in the following years. Concentration risk remains high, especially from the Japanese market as it occupies large shares in both exporting of plastics products and resins. Happening in this market will have large impacts on the domestic market.

3. **High reliance on imported leads to the trade deficit of Vietnam plastics industry:** As the domestic petrochemical industry is underdeveloped, plastics firms must rely from 70% to 80% on imported resins. In 2010, import of plastic resins reached 3.7 billion USD, gaining 34% in value and 10% in volume due to the sudden increase in resin price and trade deficit of the industry was more than 2 billion USD. The rise in resins price also has a large impact on the firms' business results. Vietnam imported resins mostly from Korea (18.9%), Taiwan (17%) and Saudi Arabia (14.7%) which own highly advanced petrochemical industries but offer lower price than Germany or the US. Plastic finished products are mostly imported from Japan (28.5%), China (25%), Korea (10.8%), and Thailand (9.8%).

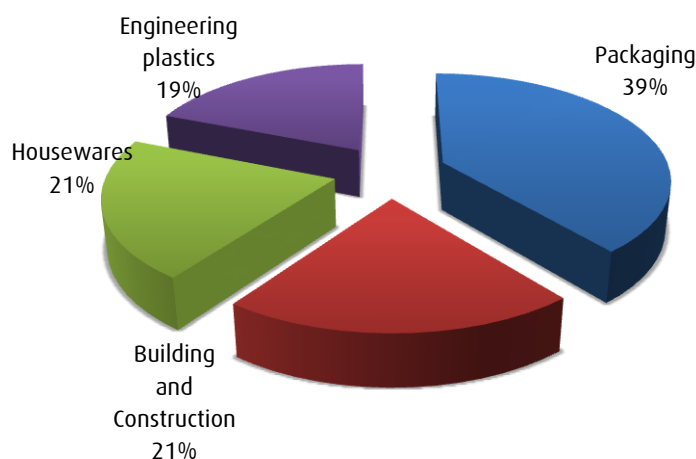


*Import of plastic materials in volume and value – Source: Vietnam Customs*

4. **Domestic technology is still much behind the world standard:** After 1975, Ho Chi Minh City had about 1,200 production facilities with roughly 2,000 plastic machines of all kinds. Since 2005, these firms have invested in upgrading equipments, importing high-tech machinery from Germany, Italy, and Japan. Currently, there are over 5,000 machines including 3000 injections, 1,000 blowing injection and hundreds of other profile machines. 60-70% of them are new machines imported from Asia. Machines from these markets, especially China, are less expensive but not complex like the ones from Germany, Italy, and Japan. The latest technology in 8 engineering sectors of plastics has also appeared in Vietnam like manufacturing of integrated electronic circuits in plastic, DVD, CD, 4 layer bottles, PET, PEN, and advanced compound BOPP film.

## COMPETITION IN VIETNAM PLASTICS INDUSTRY

In general, Vietnam plastics industry is developing spontaneously and not concentrated. According to the Ministry of Industry and Commerce, there are approximately more than 1,200 plastics firms today. Competition is more aggressive in the South with 80% of the businesses in this region, followed by the North with 15%. Plastic packaging takes up the largest market share with 39%, followed by building and construction segment, housewares and engineering plastics with respectively 21%, 21% and 19% of the total plastics output. The shares of packaging and engineering segment soared from 30% and 15% in 2000 to 39% and 19% in 2010. The proportions of these segments are now quite fair and the packaging segment remains as leader in terms of output.



*Segmentation of Vietnam plastic industry (by output) – Source: Ministry of Industry and Commerce*

**Packaging is the largest segment in the plastics industry:** There are about 460 firms that are producing plastic packaging (38%) nationwide. According to the Vietnam Plastics Association, 66% of export turnover is from plastic packaging products. PET bottles, woven, and PE film are amongst the commodities that are most exported. Based on technology, materials and markets, this segment can be divided smaller into the following sub-segment.

- **Building materials packaging:** mainly plastic bags for cement of which main materials are Kraft paper and PP resins.
- **Food packaging:** the majority of firms in the packaging segment produce packaging products for food because the production does not require large capital or high technology. The main material is PP resins.
- **PET products:** this segment requires large scale of production, latest technology and the main material is PET resin. Listed companies that produce PET include TPC, TPP, and DTT. The two leaders of this segment are BAVICO and Ngoc Nghia Plastics and will be listed in 2011.
- **Plastic soft bags:** this segment requires high technology and material is mainly PE resins. Most soft plastics bags are exported to Europe, the US, Japan, etc.

Competition between packaging firms is indirect competition because products are varied and have less similarity. Most the firms have long time partners such as cement producers and food companies as customers. Like the global trend, firms specialized in PET bottles and recycled products will enjoy the highest growth rate of more than 20% compared to other products in the coming years. Some exporters of soft plastic bags to the US might face tax barriers when the US imposes anti-dumping duty on soft plastic bags from Vietnam.

**Building and construction segment supply primarily for domestic market:** There are about 180 companies currently operating in this segment. Main products include uPVC, HDPE pipes, plastic doors, ceiling panels, furniture, etc which are used mainly in construction and water supply and drainage. The local products are gradually preferred due to lower cost compare to the imports. The domestic construction industry which consumes the most plastic products has an average growth rate of 15-20% per year. Main material used in this segment is PVC resins which cost about 70-80% of product cost. Binh Minh Plastics and Tien Phong Plastics are the two leading enterprises that have the majority share of this segment in both the North and South. Binh Minh Plastics has 50% market share in the South and about 30% nationwide. Meanwhile, Tien Phong Plastics has 65% in the North and 25% of plastic pipe in the country. Because the two companies are from two separate geographic markets, direct competition is not strong unless they want to break in the each other market. Competition among other smaller enterprises in the industry is very fierce to gain market share.



***Housewares segment:*** There are about 370 enterprises in this segment. Main products include tables, chairs, cabinet, plastic dishes, plastic toys, shoes, etc. Export turnover of household products accounted for 20% of total plastics exports. Firm that best represents this segment is Rang Dong Plastics.

***Engineering plastics segment:*** Firms of engineering plastics only account for 10% of total plastics companies but produce around 20% of total manufacturing output. This shows that these firms have large scale. The main products in this segment are plastic counterparts used in assembling automobiles, motorcycles, and plastic electronic devices. These firms mainly supply domestic needs and export is about 11% of the total plastics export turnover of Vietnam. Typical firms are Tien Phong Plastics and Tan Tien Plastics.

***Supporting industry for Vietnam plastics industry is underdeveloped:*** The domestic plastics industry needs more than 2.2 million tons of materials each year but because the plastic material industry of Vietnam is underdeveloped, plastics firms still rely heavily on imported materials (80%). Domestic supply currently provides about 450,000 tons of resins for plastic industry. PVC resins are produced at TPC Vina and Phu My Plastics and Chemical Co. with total capacity of 200,000 tons per year (of which 30% are exported). Formosa Vietnam (100% capital of Taiwan) supplies 145,000 tons of PET resins per year. In August 2010, Binh Son Petrochemical Company officially starts operating the first PP factory of Vietnam. The factory has a capacity of 150,000 tons per year and can produce 30 kinds of plastic resins from Homopolymer PP, meeting part of domestic demand for PP resins. In 2010, the plant was expected to produce about 40,000 tons of resins (less than 2% of total imports). It seems that the plant can only achieve maximum capacity after 2012, however, it could meet about 100,000 tons of PP resin in 2011. Local factories currently supply 15-20% of domestic demand for resins.

## VIETNAM PLASTICS INDUSTRY IN 2010

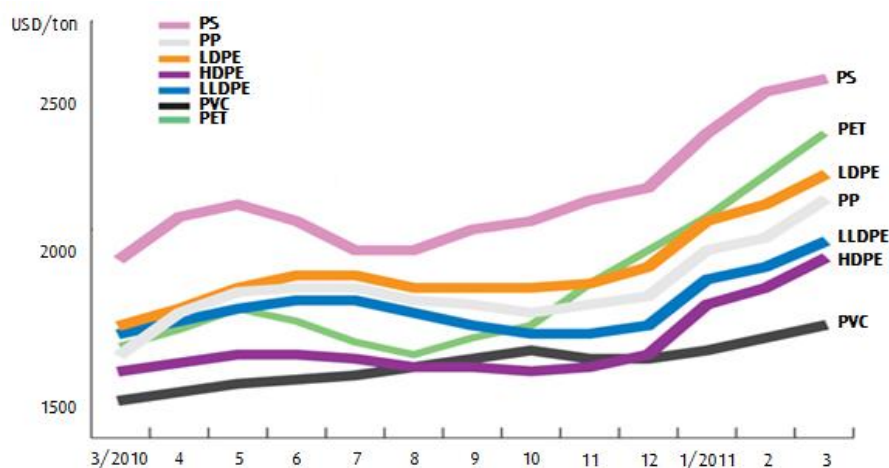
### *Price of domestic plastic products rose 15% on average and hiked globally compared to before the crisis*

Since the beginning of 2009, the price of many plastics products has been increasing from 50% - 100% (according to Federplast). Compared to the level before crisis (9/2008), plastics product prices gained 15-25% on average. In Vietnam, the prices also went up 10-20% depending on the products. One of the reasons was the rising inflation but the main cause was the soaring resins price in 2010.

- Domestically, price of PVC pipe type  $\phi 21 \times 1.2\text{mm}$  of Tien Phong Plastics increased 11% from 5,500 VND/m to 6,100 VND/m, 30% higher than 2009. Similarly, price of PVC pipe type  $\phi 27 \times 1.3\text{mm}$  and  $\phi 34 \times 1.3\text{mm}$  all leaped around 30%. Plastic doors from Dong A Group went up by 12%, especially the 1 door type rose 22% from 1,801,800 VND/m<sup>2</sup> (August) to 2,202,200 VND/m<sup>2</sup> in March/2011.
- Price of packaging bags for cement also gained 9-10% in 2010. Firms that produce these bags usually have a few large customers with large orders so the pressure from the customers is quite high. Price of plastic bags for cement, as a result, could not be raised as much as other lines of products.
- The price of PET bottles of 20l moved up slightly 2% to 27,000 VND/bottle in September. The highest rise belonged to bottle of 500ml (24%). On average, price of PET bottles went up 10-15% in 2010.

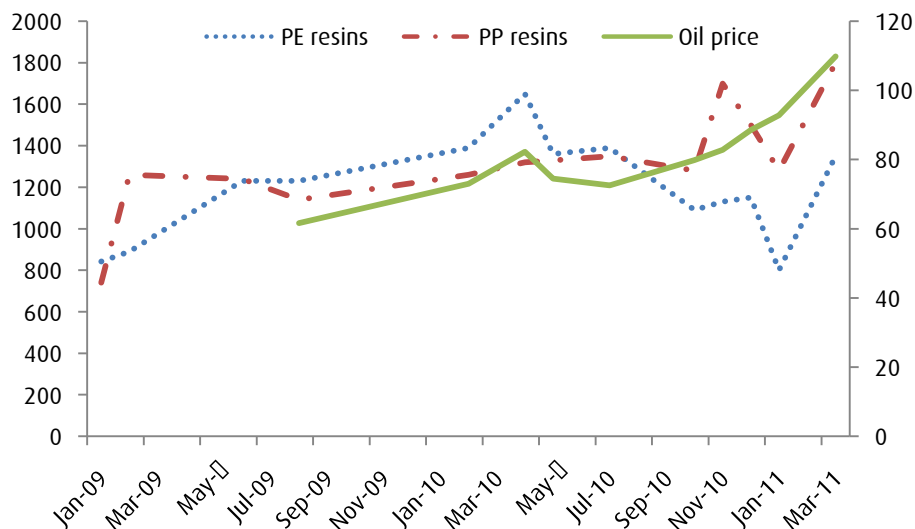
### *Plastic resins price also soared in 2010 with 20% averagely and the upward trend will continue into 2011*

The plastics industry is importing resins for 80% of its demand including PS, PP, PE, PET resins. The price of imported resins hiked in April and May of 2010, reduced weakly and became stable during the middle, but picked up gradually from December/2010 to March/2011. PET resins had the most significant rise in price with more than 100% from August/2010 (the bottom price) to March/2011.



*Plastic resins price in 2010 and beginning of 2011 - Source: Plastic news*

PE and PP are the main resins to produce packaging products and have the highest demand and consumption in the domestic industry. The price trend of imported PE and PP into Vietnam is quite different from the global trend. It can be seen that PP price was less elastic than PE price in 2010, up 3.8% in the first 3 quarters, then went up strongly in Q4/2010. During November and December of 2010, PP price climbed 32% from 1,280 USD/ton to 1,700 USD/ton. During the last 3 months of 2010, PP resins rose 11% in price.



*Price of PE, PP resins and oil price – Source: Ministry of Industry and Commerce, OPEC*

Meanwhile, price of imported PE resins was more fluctuated. It hit the ceiling of 1,650 USD/ton in April, then declined to the bottom at 800 USD/ton, and bounced back to 1,350 USD/ton in March 2011. So PE price was at around 1,300 USD/ton in 2010 and 20% more than 2009 average. During the 1<sup>st</sup> quarter of 2011, price PE resins kept on increasing to 1,350 USD/ton, 20% higher than in 12/2010 and there is a probability that it might reach the ceiling of 2010. Even though Vietnam can supply some of PVC resins demand, import is unavoidable. Price of PVC resins in Asian market was quite stable compared to others and moved similarly to the global oil price. Averagely, PVC resins cost 980 USD/ton in 2010, up 20% compared to 2009 average of 815 USD/ton.

### ***The increase of resins price in 2010 was caused by rise in price of oil and natural gas***

Most resins are extracted and produced from oil and natural gas, some from corn and other sources. Therefore, resins price depends largely on price of global oil and natural gas.

- The upward trend of resins price at the end of 2010 and beginning of 2011 can be explained by the unstable conditions in Middle East and Libya which drove oil price up. As a result, 20% more was added to production costs and resins price increased substantially in Q1/2011 compared to same period of 2010.
- Natural gas future price was quite stable during 2010. It climbed 7% in the last 3 months of 2010 from 3.69 USD/million BTU to 3.96 USD/million BTU and reached 4.23 USD/million BTU in February 2011 (Source: US Energy Information Administration).

Resins producers in this condition had to import fewer materials and slowed down production, together with psychology factors this pushed price of PE and PP to a new high. This trend is likely to continue in 2011 as the unrest in the Middle East is spreading. Many analysts believed that PP and PE prices will be 'hot' again in April/2011.

### ***Other factors***

- Oil and petrol accounts for about 1% of total production costs in plastics firms. In 2008, oil price went up 30% added 1.29% more into production costs of these firms and 2.2% in plastic products prices. Oil price in 2010 rose 6%, approximately 1,000 VND/liters. During Q1/2011, it was raised 29% from 16,400 VND/ liters to 21,300 VND/ liters. The increase will effected negatively to firms' business results in 2010 and 2011. To be specific, production cost will be up 1.1% and prices up by 2%.

- In 2010, price of electricity sold to manufacturers was raised 6.3%. The rise in electricity has already been estimated into expected production costs. With highly automatic and semi-automatic machines, plastics firms are strongly affected by the policy which applied higher electricity price during rush hour and the VPA has proposed for stimulus from the Government.
- According to the Ministry of Finance, USD/VND exchange rate in December/2010 picked up 4.5% compared the January/2010 and 8.9% more than December/2009. For export firms, the differences in exchange rate can be compensated but for firms that mainly produce for domestic market and import resins in dollar, exchange rates is a big issue that directly influences firms' financial costs.
- During Q1/2011, USD/VND exchange rate was adjusted 9.3% more. Interest rate also stayed around 16%-20% for manufacturing firms. Rising interest and exchange rate will increase interest cost of firms as most plastics firms rely much on loans, especially short-term ones.

### ***Impacts of Japan earthquake and tsunami***

The Japan market accounts for 26% of export turnover and 28.5% of import turnover of Vietnam plastics. Products export into Japan is mainly from packaging segment like packaging for transport (30% of export turnover to Japan), small plastic components (20%), stationery (13%), etc. These products have lower margin compared with imported products like plastic machinery. The production and export of components also mean that the domestic plastic industry is strongly affected by end-application markets in export countries, Japan including.

The earthquake and tsunami in Japan on 11/03 have the following impacts on some sub-segments.

- To rebuild the country and self-supply, export from Japan might reduce, which in turn reduce the demand of packaging for transportation productions. Saving and cutting budget in companies might be the cause for declining demand of office stationery.
- However, demand for some goods like plastics for building and construction, food packaging, etc will soar like what happened to seafood demand.

More time is needed to observe the market but we believe that the demand for Vietnamese plastics products from this market will not fall. Customers of some firms that export to Japan like An Phat Plastics are not within the affected areas so export activities carry on as normal. A week after the tsunami (11/3/2011), export of plastics from Vietnam to Japan climbed 100% compared to the previous week. Many analysts believe that Japan will be entering a strong growth period. After the Kobe earthquake in 1/1995, industrial production dropped 2.6% in January but rebounded to 2.2% in February and completely recovered in 15 months. Even though the damage this time is much worse, companies can rebuild, many jobs will be created, and industrial areas are renovated. So Japan might escape from the previous ineffective economy. So the disaster in Japan might not leave a long term effects on Vietnam plastics industry.

## VIETNAM PLASTICS INDUSTRY 2011 OUTLOOK

Similar to the global plastics industry, the domestic sector is also recovering well after economic crisis. Key factors that influence the industry in 2011 will be the improvement of the world economy, especially of export markets, the growth of domestic and global end-application markets like food, building and construction, etc, and oil and natural gas price.

- **Stable growth trend in 2011:** During 2008-2009, Vietnam plastics industry achieved growth of more than 20% and played a quite important role in the domestic economy. Production increases 18%/year on average but is still insufficient for the rising demand. It leads to high import turnover for plastic materials and products. The recovery of 2011 will be more clearly seen in plastics export turnover as regional economy improves. The impact of earthquake and tsunami in Japan is momentary. As the demand for plastics in Asia is forecasted to growth more than 20%/year and around 5% in the US and Japan, domestic demand can maintain the rate of 15-20% or more. Domestic production will have good foundation to increase 15-20% at full capacity in 2011.
- **Upward trend of plastic products and resins:** With rising demand domestically and globally, supply could not meet demand. Price of plastic products in 2010 did not increase as much as worldwide. However, it is forecasted that plastic prices will be more than 2010 from 5-10% (or 25-30% in total) because this year's inflation is very high, oil and electricity price go up, and increasing exchange rate and import resins. Oil price is predicted to be more than 100 USD/barrel in 2011 on average as the unrest in the Middle East is prolonged. PE and PP price, therefore, might go up. In the beginning of 2011, USD exchange rate was adjusted from 19,800 VND to 20,800 VND/USD. This is more advantageous for firms that are less reliant on import materials, have large production scale, export, and initiative in changing output prices.
- **Recycled plastics products are finally noticed:** The recycled plastics segment is becoming more popular in Vietnam as firms have the advantages of latest technology. Global supply can still not meet demand for this line of products, especially PET products. This is a good chance for Vietnamese firms that can produce these products.

## LISTED PLASTICS FIRMS AND FINANCIAL PERFORMANCE

Listed companies are separated into two main segments: packaging and building & construction based on their main products (See detailed appendix). Although most listed firms have quite large scale but cannot represent all segments of the plastics industry.

**Packaging segment:** 14 in the total number of listed companies are classified under packaging segment with varied products and technologies. Based on the products, this segment is then subdivided into building material packaging, food packaging, PET packaging, and soft compound packaging firms. Some companies produce plastic housewares plastics are listed in this segment because their main products are in packaging segment while industrial plastic only accounts for about 20%. There is no firm producing for automotive or electronics segment.

**Building & Construction:** Listed companies in this segment account for approximately 60% market share of Building & Construction segment. Thus, it can be said that business results of these firms are typical for this sub-sector. In particular, BMP and NTP are the two largest firms in terms of production scale, technology, and about 55% of total market share across the segment.

As the first quarter financial statements of the companies are insufficient at the time of the report, their business results in 2010 are also taken into account in the report.

### HIGH GROWTH IN 2010 AND SOARING REVENUE IN Q1/2011

Average revenue growth in 2010 of the listed companies was high (27%) thank to the impressive growth of packaging segment (37%), especially companies with high proportion of PET products and soft plastic bags (41% and 48% increase in revenue). Average profit growth was stable at 18% but there was great differentiation between the companies. Packaging firms had the most notable profit growth of 38%, which offset the slight decrease of 1% in average net income of the building & construction companies.

- Highest revenue growth in 2010: DTT (93%), AAA (77.5%), and DAG (51%).
- Top profit growth in 2010: SPP (219%), AAA (140.9%), RDP (72.9%), and TPP (38.8%).

Average revenue of the companies increased sharply in Q1/2011 to 37% but the average after-tax profit fell 25%. The sudden peak of revenue was partly due to output price increased considerably as inflation went up to 6.1% in the first quarter.

### Packaging firms have high revenue and profit growth despite having a big gap

The segment has been enjoying revenue and profit growth of more than 37%/year on average and has the most impressive growth in 2010. Among them, PET and soft compound plastic sub-segments had the most remarkable sales growth (41% and 48% respectively) across the sector. Also, this growth has taken into account the adjustments inputs price from 2010 to 2011.

Ticker	Segment	2010		% 2010 Target		Q1/2011				% 2011 Target	
		<i>Growth in Revenue</i>	<i>Growth in Net profit</i>	Revenue	Profit	Revenue (Bil. VND)	<i>Compared to Q1/2010</i>	Net profit (Bil. VND)	<i>Compared to Q1/2010</i>	Revenue	Profit
AAA	Packaging	77.5%	141%	124%	163%	195	59.8%	16.1	35.3%	23.96%	18.30%
RDP	Packaging	28%	73%	117%	110%	n/a	n/a	n/a	n/a	n/a	n/a
SPP	Packaging	41%	219%	112%	112%	86.9	22.4%	2.7	-38.6%	51.73%	33.75%
TPP	Food Packaging	27.8%	1.7%	107%	134%	387.6	31.4%	22.2	8.30%	56.58%	96.52%
DTT	Food Packaging & PET	96.3%	-31.7%	101%	15%	n/a	n/a	n/a	n/a	n/a	n/a
TPC	Food Packaging & PET	12.2%	-39.1%	172%	204%	129.2	52.4%	8.5	-4.5%	36.30%	32.40%

<b>TPP</b>	Food Packaging & PET	44.1%	38.8%	144%	135%	60.7	31.4%	1.84	8.2%	n/a	n/a
<b>VPK</b>	Food Packaging & PET	17%	12%	117%	123%	74.3	61.5%	9.05	115.5%	20.87%	25.86%
<b>BPC</b>	Building Material	18%	-39%	101%	88%	77.6	34.0%	2.1	10.5%	n/a	n/a
<b>BXH</b>	Building Material	25%	-47%	116%	87%	42.3	47.9%	-1.5	-314.3%	22.00%	N/A
<b>DPC</b>	Building Material	30%	-11%	116%	129%	21	-5.4%	0.9	-62.5%	21.00%	13.80%
<b>HBD</b>	Building Material	-4%	15%	95%	153%	n/a	n/a	n/a	n/a	n/a	n/a
<b>VBC</b>	Building Material	14%	-26%	115%	142%	n/a	n/a	n/a	n/a	n/a	n/a
<i>Growth in revenue and net profit of packaging firms in 2010 and Q1/2011 – Source: Annual reports, SMES</i>											

- *Building material packaging:* the companies in this segment had average growth of 21%, which was quite stable and similar between them. Except HBD, other firms all exceeded the sales target of 2010. HBD not only did not meet target but also had revenue decreased by 3.7% compared to 2009 as its sales in Q2 fell 37.1% over the same period last year. However, HBD still achieved a 15% rise in net profit. Strongest revenue growth of 29.6% belongs to DPC. While achieving profit growth of over 20% in 2010, profits of most companies dropped 21.5% compared to 2009. The biggest drop (47.5%) was from BXH due to many factors including rising material price (cost of goods sold leaped by 30%), and interest expense increased 6 folds (16 billion loan to expand plants). BPC's net income fell after C.O.G.S jumped 20% and reserve for securities investment at 3 billion VND.
- *Food packaging companies have strong differentiation in revenue and profit growth:* In terms of targets, except DTT which did not reach its profit plan, other companies all met the revenue and profit targets. TPC completed 176% of projected revenue and 222% of profit as the 2010 plan was too modest (half of 2009 revenue). Averagely, sales of these companies went up by 36% and profit by 12.7% but there is a big differentiation in their business results. The difference is partly from the diverse nature of plastic products. The common characteristic of most firms is that sales and profit are highest in the first and the fourth quarter due to seasonal nature of the food industry - the segment's main customers. Because the food industry was less affected by economic crisis compared to other industries and kept its strong growth in 2010, food packaging is one of the few sub-segments with positive income growth in 2010. TPC had net income down 31% from the previous year due to incurred provisioning costs (nearly 10% profit) from the investment of 4 billion VND for ALT and EIB.
  - *PET packaging firms had higher average revenue but lower average net income:* PET packaging firms had average revenue growth of 41% thanks to DTT's hike of 96%. As the result of rising demand for PET domestically and globally, it is not surprising that these companies' average revenue is higher than the industry average. However, their net profit dropped 6% compared with 2009. This mainly was because of the negative growth of DTT and TPC (-31% and -39% respectively). Meanwhile, the most profit lift in this sub-segment was from TPP with 38% who specializes in PET bottles for the plant protection industry and 10% market share of the PET segment.
  - *Firms that also produce housewares plastic (DPC, DTT, and RDP) had relatively high revenue growth (25%):* DTT's sales climbed impressively 93% but net income declined 5.7% and did not meet 2010 target. In contrast, RDP had net profit increased sharply (79%) despite low revenue growth.
- *The soft compound packaging companies had evenly distributed revenue and profit growth and the highest among listed companies:* PET and soft compound packaging products are recycled plastics which is the highest growing segment in the world today. AAA, RDP, and SPP all enjoyed sharp revenue growth in 2010 at 48% averagely. Soft compound packaging companies had the highest profit growth of 140%. The best net profit growth in this sub-segment was of SPP (219%). AAA's profit spiked in Q3 (41.9 billion VND) after selling recycling machine line for Japanese partners and 10 billion profits from interest rate differences.

## Building & construction firms have cyclical revenue and profit growth in Q2 and Q4

Firms in this segment have quite similar revenue growth of around 20%, except DAG at 50%. The trend is that the highest revenue is often from Q2 and Q4 due to the peak of construction seasons. Average profit of these companies decreased 1% primarily because DNP's net income dropped 25.8% compare to 2009. DNP is also the only company that did not reach its 2010 profit target. Its net profit fell for fourth quarters continuously due to sharply rising interest expenses.

Ticker	2010				% 2010 Target		Q1/2011			
	Revenue (Bil. VND)	Growth in Revenue	Net profit (Bil. VND)	Growth in Net profit	Revenue	Net profit	Revenue (Bil. VND)	Compared to Q1/2010	Net profit (Bil. VND)	Compared to Q1/2010
BMP	1417.38	24.0%	276.44	10.6%	114.9%	216.8%	371.16	36.66%	49.93	3.16%
DAG	328.35	51.6%	20.81	6.2%	128.3%	111.6%	n/a	n/a	n/a	n/a
DNP	230.44	20.2%	7.57	-25.8%	109.7%	94.6%	n/a	n/a	n/a	n/a
NTP	662.44	18.9%	320.89	5.0%	108.3%	131.0%	600.6	51.6%	58.6	-16.6%
<i>Growth in revenue and net profit of firms producing plastics for building and construction in 2010 and Q1/2011</i>										
<i>– Source: Annual reports, SMES</i>										

## EFFECTS OF RISING RESINS PRICE AND OTHER FACTORS

Among listed firms, firms that provide plastics for building & construction and housewares were affected the most by rising material price. Packaging firms were less influenced in general. However, PET packaging firms was strongly impacted as price of PET resins soared in 2010. The difference can be explained by the dissimilar in resins prices' changes.

- Firms with more than 20% of gross profit margin are NTP (33.9%), AAA (27.4%), BMP (26.9%), SPP (25%), and DAG (20.7%).
- Firms that have the highest net profit margin include BMP (19.5%), NTP (16.4%), and AAA (13.3%).

## Stable gross profit and net profit margins in packaging segment

Ticker	Segment	2010				Q1/2011			
		Gross profit	Compared to 2009	Net profit	Compared to 2009	Gross profit	Compared to Q1/2010	Net profit	Compared to Q1/2010
AAA	Packaging	33.9%	5.7%	13.3%	3.5%	22.7%	-2.8%	8.3%	-1.6%
RDP	Packaging	10.7%	1.1%	3.1%	0.8%	n/a	n/a	n/a	n/a
SPP	Packaging	11.9%	7.7%	8.5%	127.0%	24.8%	4.5%	3.1%	-3.0%
TTP	Food Packaging	11.9%	-1.5%	6.4%	-20.4%	9.2%	-0.5%	5.7%	-1.2%
DTT	Food Packaging & PET	14.5%	0.2%	0.6%	-65.5%	n/a	n/a	n/a	n/a
TPC	Food Packaging & PET	14.9%	-7.2%	7.9%	-7.5%	14.4%	-3.6%	6.6%	-3.9%
TPP	Food Packaging & PET	10.9%	0.0%	1.7%	-3.7%	17.0%	2.7%	3.0%	-0.6%
VPK	Food Packaging & PET	-6.9%	-1.0%	5.3%	-9.1%	23.2%	1.3%	12.1%	2.1%
BPC	Building Material	26.9%	-1.7%	3.7%	-48.2%	9.6%	0.6%	2.7%	-0.6%
BXH	Building Material	25.0%	-2.9%	3.1%	-58.0%	-11.2%	-22.4%	-3.5%	-6.0%
DPC	Building Material	19.3%	-2.8%	7.0%	-2.9%	17.5%	-4.1%	4.0%	-6.8%
HBD	Building Material	13.9%	3.0%	8.6%	19.0%	n/a	n/a	n/a	n/a
VBC	Building Material	9.9%	-2.9%	4.1%	-34.7%	n/a	n/a	n/a	n/a
<i>Profit margins of packaging firms in 2010 and Q1 2011 – Source: Annual Reports, SMES</i>									



- *Building material packaging:* Firms in this sub-segment supply mostly to the State's cement manufacturers so they are less initiative to change output prices as input costs increase. Even though, price of cement package has risen 9%, the extra 7% in resins cost reduced 1.5% of the firms' gross profit margin. HBD is the only firm that have improved gross profit margin 3%. The highest rate belongs to DPC with 19.3% but the margin still fell as the firm import both PE and PVC resins. Net profit margins of BPC and BXH dropped the most. Financial cost of BPC gained another 3 billion VND for investment reserves while BXH's interest cost increased 4 times in the final quarter as the firm started to expand the factory. As such, the ability to monitor material sources and interest are key factors deciding firms' profitability.
- *Food packaging companies:* Food packaging firms use many types of resins (PE, PP, and PET) in production process. The average gross profit margin of this sub-segment was 11.5%, down 0.9% compared to previous year. TPC has the strongest gross profit margin but also fell the most by 6.8% as PE and PP price soared by the year end. Net profit margin of TPC dropped sharply as resins price went up and extra reserves for investment. Net profit margin of other firms went down slightly by 1.6%.
  - *PET packaging firms* enjoyed stable gross profit margin at 11.8%. VPK has the highest shares of PET products and resins in its products portfolio compared to other firms and also had the highest margin in 2010. The margin declined in Q3 and Q4 as price of PET resins. Net profit margin of most PET packaging firms reduced a little by 0.1% - 0.7%. Net profit margin of TPC reduced the most as financial costs and C.O.G.S hiked (9x and 2x).
  - *Firms that also produce housewares plastic (DPC, DTT, and RDP):* DPC had the highest gross profit margin of 19.3% but only fell the strongest (2.8%). On average, gross profit margin of these firms is 11.9% of total revenue. RDP had the most stable gross margin at 10.7% and also the only firm had both margins increasing. Net profit margin of these firms, however, is quite thin at around 1%.
- *The soft compound packaging companies:* This segment has the second highest gross profit margin at 21% and all three firms had gross margin increased in 2010. With high revenue and profit and not reducing gross profit margin, it seems that these firms are not strongly influenced by material prices. Net profit margins also were stable and highest one is of AAA (13.3%).

### Profit margins of firms in building & construction segment declined slightly due to increase in material prices

Average gross profit margin of firms in this segment was 25.6% which is highest within the industry. NTP's gross profit margin is the highest at 33.9% because the firm imports materials through bidding for lowest possible prices. This is an advantage that only leading companies in the industry can achieve (including BMP). Compared to other segments, gross profit margin of these firms fell by 3% averagely. Average net profit margin also is amongst the highest of listed plastics firms.

Ticker	Segment	2010				Q1/2011			
		<i>Compared to 2009</i>	Net profit	<i>Compared to 2009</i>	Net profit	<i>Compared to 2009</i>	Net profit	<i>Compared to 2009</i>	Net profit
BMP	Building & Construction	26.9%	-2.5%	19.5%	-2.4%	24.3%	-2.1%	13.5%	-4.3%
DAG	Building & Construction	20.7%	-5.0%	6.3%	-2.1%	n/a	n/a	n/a	n/a
DNP	Building & Construction	13.8%	-2.6%	3.3%	-2.0%	n/a	n/a	n/a	n/a
NTP	Building & Construction	33.9%	-2.1%	16.4%	-3.3%	30.5%	-3.6%	9.8%	-8%
<i>Profit margins of firms producing plastics for building and construction in 2010 and Q1 2011 – Source: Annual Reports, SMES</i>									

## PLASTICS FIRMS ARE HIGHLY LEVERAGED

Most plastics firms have high rate of short and long term loans (46% and 18% respectively), which leads to high quick ratio (1.44) and D/E ratio (1.12). Short-term debt is mainly used to import resins and invest in new machines. On average, inventory turnover days is long at nearly 90 days but payables turnover days is much shorter (30 days) compared to the receivables turnover days (65 days). To secure sufficient working capital, short-term liabilities in plastics firms are high in all 4 quarters of the year.

Segment	Ticker	Loan ratio (%/Total Loans)			Payment ratio	
		Short-term Loans	Long-term Loans	Foreign currency Loans	Quick ratio	D/E
Packaging	AAA	45.5%	33.6%	-	1.23	0.99
Packaging	BPC	39.8%	-	-	2.03	0.57
Packaging	BXH	33.7%	15.0%	-	1.03	1.50
Packaging	HBD	48.6%	-	36.1%	0.43	0.55
Packaging	SPP	70.0%	33.2%	-	3.15	1.77
Packaging	TPC	20.2%	-	-	0.78	0.08
Packaging	TPP	71.5%	6.3%	-	7.03	2.05
Packaging	TTP	3.8%	-	-	0.77	0.31
Packaging	VBC	46.9%	4.4%	32.8%	1.23	1.68
Packaging	VPK	49.7%	4.0%	-	2.19	1.07
Packaging and housewares	DPC	55.0%	-	-	0.89	0.33
Packaging and housewares	DTT	52.6%	21.1%	16.0%	0.37	0.16
Packaging and housewares	RDP	46.8%	16.6%	-	1.03	1.68
Building & construction	BMP	9.7%	-	-	0.96	0.15
Building & construction	DAG	53.5%	10.7%	-	1.37	1.68
Building & construction	DNP	65.7%	13.1%	-	0.55	1.86
Building & construction	NTP	64.0%	-	32.0%	0.60	0.62
<i>Loans of plastics firms –Source: Annual reports</i>						

Some firms have very high long term loan like AAA (33%), BXH (15%), RDP (16%), and DTT (21.1%) are all investing in new factory plants or new technology. AAA is currently in the first phase of the new plant An Phat Mineral. DTT just finished Do Thanh plastics plant in February 2011. Amongst the available news about loans in foreign currency, DPC, RDP, and DAG have quite a lot of loans from foreign currency. Aside from high USD interest rate of 7-8%/year (Q1/2011), these firms also have the devaluation of VND risk.

Firms with large working capital like BMP (580), NTP (435), and TTP (367), lower ratios of short and long term loans will face less leverage risk. Even though the risk from high interest rate is high, firms need loans to invest into new equipments to increase production capacity which is also the most stable strategy for growth. In general, the ability to repay loans of firms is very important for on-going activities.

## PROSPECTS OF LISTED FIRMS IN 2011

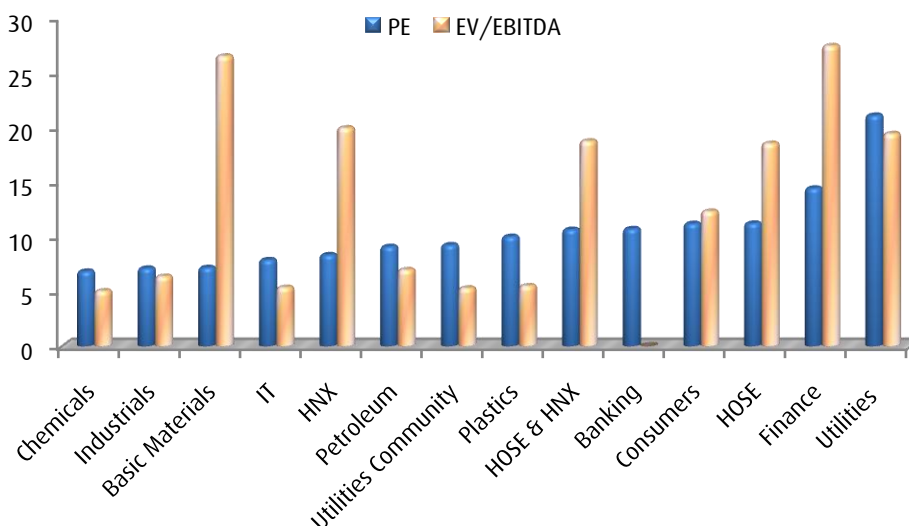
- Growth in revenue of listed firms will be more sustainable if it is an increase in production rather than price. Production capacity of listed plastics firms in 2011 is forecasted to gain nearly 3 million tons more with the assumption that all new factories are operating nearly at maximum. BMP and DAG have also completed and put into operations new factories and machines in 2010 to increase productions of plastics pipes.

Ticker	Company	Scale and productivity expand form 2011
<b>AAA</b>	An Phat Plastics and Green Environment	October 2010, AAA inaugurated Phase 1 of An Phat Mineral plant in Laos produced CaCO <sub>3</sub> powder with capacity of 10,000 tons per year with contributed capital of 100 billion VND. AAA also expanded plant No.1, invested 39 billion VND in new machinery.
<b>BMP</b>	Binh Minh Plastics	December 2010, BMP officially put HDPE pipes manufacturing lines into operation for pipe types of 710, 800, 900, 1,000 and 1,200 mm.
<b>BPC</b>	Bim Son Packing	December 2010, a new production line was implemented at Bim Son cement plant, the largest customer of BPC, with a total capacity of about 3.8 million tons per year. To meet the increasing demand from customers, BPC has invested 32.8 billion VND to upgrade the current capacity to 60 million bags per year.
<b>BXH</b>	Haiphong Cement Packing	BXH expanded its packaging plant to increase production output from 25 million to 50 million bags per year.
<b>DAG</b>	Dong A Plastics Group	July 2010, DAG opened the uPVC door factory in Tan Tao Industrial Park which was invested nearly 30 billion VND. The factory has modern equipment imported from Europe with 10 synchronous lines specializing in manufacturing uPVC door like Smartwindows and has capacity of 100.000m <sup>2</sup> per year. DAG also invested 12 billion in Aluminum composite plant and another 15 billion VND in an aluminum doors and glass wall factory.
<b>DTT</b>	Do Thanh Technology	February 2011, DTT opened Do Thanh plastics factory. The factory has total investment of 80 billion and a capacity of 4,000 tons of packaging products per year using injection and PET bottle blowing technology.
<b>RDP</b>	Rang Dong Plastics	9 billion VND was invested to build a factory in Tien Son, Bac Ninh. RDP also bought new equipment worth 30 billion VND.
<b>TPP</b>	Tan Phu Plastics	15 billion VND was invested to build a factory in Long An. In addition, TPP imported new machinery and equipment worth 463,000 USD in 2010.
<i>Changes in production scale and capacity of plastic firms from 2011 – Source: SMES</i>		

- With CPI in 2011 can be over 10%, prices of many plastics products are expected to rise around 15% due to inflation and rising resins price. The chaos in Middle East and high oil price are some of the reasons for higher resins prices in 2011. During the first Q1 of 2011, resins price went up 20% compared to the end of 2010. Aside from resins price, plastics firms also face difficulties with interest rate in 2011.
- Stimulus packages for firms to borrow long-term loans (10-15 years) mainly are for projects that build petrochemical plants to produce resins or molds so most plastics firms will face greater challenge from the interest rate of 20-25%/year at the present.
- As resins are mainly imported in USD, exchanges rates directly impact firms' underlying profit. USD exchange rate after the adjustment in February/2011 has been stable and it is unlikely that there will be another raise in 2011. Most firms have already applied this rate before it was raised so exchange rate will not be a big issue in 2011.

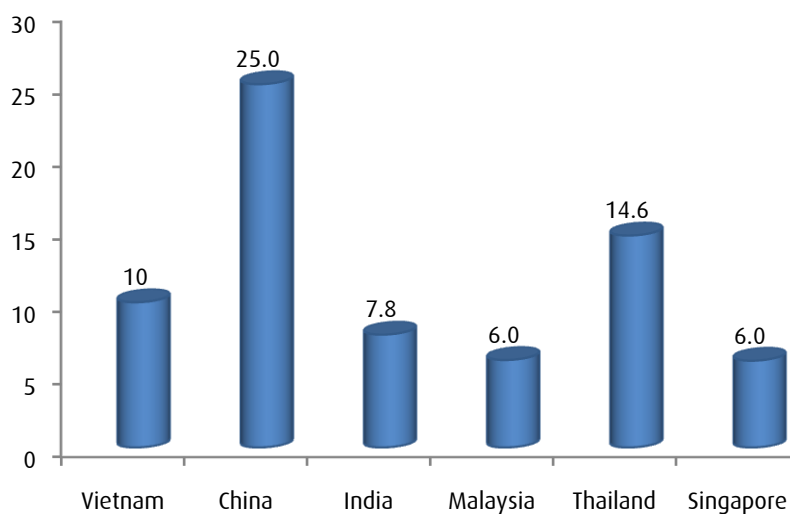
## INVESTMENT RECOMMENDATION

According to general statistics, P/E of plastics industry is approximately 10x but in reality, leading firms like NTP or BMP is traded at around 5.0x. They are companies with large market shares in their current product markets, high profit, and sustainable growth so in general, the plastics industry is at a discount compared to the market average.



*PE and EV/EBITDA of Vietnam industries – Source: Stoxplus (04/05/2011)*

Compared to other plastics companies in the region, P/E of Vietnam plastics industry is not 'cheaper' but if considering only the top Vietnamese companies, they are all at good price. For companies in the region, firms that have high growth, large market share, and potential for expansion are all trading at P/E more than 1 digit.



*PE of Vietnam plastics industry compared to other countries in the region – Source: Bloomberg (17/03/2011)*

Therefore, we recommend BUY for the Vietnam plastics industry at the present as it will continue to grow well and stable in 5 years. Within the industry, leading firms of respective segments like packaging (in particular, recycled and PET packaging) and building &

construction segment have the most potential. These firms are more initiative in adjusting output prices to better maintain profit margins while facing the fluctuation of input prices from global and domestic markets. Some noticeable firms are listed as following.

	TTP	BMP	NTP
Price (17/03/2011)	26,000 VND	46,000 VND	40,700 VND
Three largest Market Caps of the industry	390billion VND	1,604 billion VND	1,764 billion VND
High and stable revenue growth and profit (three years' average)	16.7% & 18.6%	27.8% & 54%	29.5% & 42%
PE lower than industry average (10x)	4.6	5.8	5.77
EV/EBITDA lower than industry average (5.5x)	2.5	4.2	4.9
High dividend	20%	20%	30%
Lowest D/E compared to industry average (1.12)	0.31	0.15	0.62
Low $\beta$ , less influenced by the market movement	0.33	0.36	0.52
Investment recommendation	Long term	Long term	Long term

Code	Company	Main products	Technology
AAA	An Phat Plastics and Green Environment	Exported packaging film (environment friendly), using recycled plastic materials	Film blowing technology, two end TWBD 600 blower of Taiwan in 2010, JapanJBP650blower in 2009
BPC	Bim Son Packing	Cement bags as KP, KPK from Kraft and PP resin; self-production accounted for 82.6%	Fiber, yarn and woven PP film coating technology from Austria since 1993
BXH	Haiphong Cement Packing	Cement KP and Compound KPK bags	Starex fiber machine, textile and coating machinery from Austria since 1999
DPC	Danang Plastics	Packaging (68%), Engineering plastics (25%)	Many technology lines: HDPE pipe blower, injection molding machine, yarn and woven PP machine, PE film blowing machines from Taiwan, Germany, Austria since 1996
DTT	Do Thanh Technology	Industrial plastics such as plastic tanks containing beer or soft drinks (76% of profit). PET packaging (23%) for beer, soft drinks (Pepsi, Coca-Cola) ... and plastic templates	Injection molding machine, HDPE pipe extrusion machine, plastic bottle blowing machine, PET bottle blowing machine with total capacity of 1,700 products per hour produced by Vietnam and China since 2002, Japan PET line with capacity of 1,000 products per hour since 1997
HBD	HaiPac Binh Duong	KP cement bags - a layer of Kraft paper coated by PP film.	Yarn and woven PP machine of Stralinger Lohia, Austria. Coating machine from Taiwan since 2002-2004
RDP	Rang Dong Plastics	PVC, PE, etc: over 100 product lines, main groups: PVC film (27% of profit), PE, PEVA, EVA thin film, roofing product, corrugated plate (21.6%), compound packaging (31 %)	Multiple technologies: thin film laminating machine, PVC coated synthetic leather, extrusion, injection molding, compound coating
SPP	Saigon Plastic Packing	High-grade soft packaging (compound film), paper items such as calendars, paper boxes, product labels, etc. The strength of SPP is compound products with multiple layers of aluminum material.	Multi-layer technology: high-performance extrusion lamination machine of Shin Han, South Korea, dry lamination machine of Prodoing, Taiwan
TPC	Tan Dai Hung Plastics	Domestic PP woven bags (22%), exported (77%). Main products are PP and PE woven bags used to contain rice, fertilizer, animal feed, agricultural products.	Fiber, yarn and woven PP PE film coating technology and machinery imported from China, Taiwan.
TPP	Tan Phu Plastics	PET bottles used in the food industry, bottled water, especially for plant protection industry. HDPE, PET, PP, ABS products used in industry and agriculture	HDPE injection molding machine, 2 stage PET bottle automatic blower, 3-4 layers bottle blower

<b>TTP</b>	Tan Tien Plastic Packing	Compound packaging supply for other manufacturers, including food packaging and consumer goods accounted for 80%	Film coating technology from Korea since 2001, three layer film blowing technology from Germany and Taiwan since 2003-2005
<b>VBC</b>	Vinh Plastics and Bags	Cement bags, and frails to be sold on domestic market. Cement bags (85%), fertilizer bags, food and animal feed bags (13%), commercial products (2%).	Stalinger spinning machine since 2001, Lohia machine since 2008, textile machine, coating machine from Taiwan and Vietnam since 2004-2005
<b>VKP</b>	Viky Plastics	PP packaging (80%) used in packing animal feed, rice, sugar, fertilizer, food and printed package.	Woven PP fiber, PE coating technology from China, 3 layers PE film blowing technology from Italy
<b>VPK</b>	Vegetable Oil Packing	Packaging for the food industry such as PET (32% of profit margin), carton (58%) and lids	Semi-automatic carton manufacturing system from Taiwan, high-tech PET bottle blowing machine from Japan with capacity of 2,500 products per hour, bottle cap molding machine with capacity of 6,000 products per hour, producing lines since 2003-2004
<i>Packaging segment – Source: Companies annual reports</i>			

#### Building & Construction segment

Code	Company	Main products	Technology
<b>BMP</b>	Binh Minh Plastics	Hard PVC pipes, HDPE, pesticide sprayers, protection helmets, etc.	Modern equipment of famous brands such as KraussMaffei, Cincinnati, Corma. Modern technology, production lines have 90% of automation level; injection, extrusion, bottle blowing machine of KAIMEI
<b>DAG</b>	Dong A Plastics Group	Building& construction plastics, furniture and advertising: plastic doors, uPVC doors (20%), traditional products and ceiling cladding profile; hi flex canvas, PP foams, and gaskets (57%)	Extrusion technology with automatic CNC control from Germany and Taiwan, profile extrusion line with automatic PLC control, uPVC door production line from China, Taiwan, manufacturing lines since 2008-2009
<b>DNP</b>	Dongnai Plastics	UPVC pipes, HDPE fittings and installation (> 80% of profit), match products, clothing (10%)	uPVC pipe extrusion line since 1999-2001, HDPE pipe injection since 2002
<b>NTP</b>	Tien Phong Plastics	uPVC, HDPE, PPR pipes and fittings products for construction industry, water supply& drainage	Modern production lines from Germany, Italy such as Kraussmaffe K90, K 50 and KME-1-90-30 machines from Germany, sinusoidal heating pipe machine of SICA, Italy. PE pipe extrusion technology from German, injection molding technology of Hyundai, Japan
<i>Building and construction segment – Source: Companies annual reports</i>			

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