The following analysis will give an overview of the global paint and coatings market. This article provides insights into the world economic environment, the competitive landscape and raw materials. It also takes a closer look at the relevant paint and coatings segments.

The global paints and coatings industry is a mature and stable component of the world economy. Coatings demand tends to follow overall economic activity, thus a strong correlation exists between GDP per capita and coatings consumption per capita. Coatings demand exhibits significant dependence upon industrial production and construction spending.

WORLD ECONOMIC OVERVIEW

By definition, global recessions are contractions in inflation-adjusted output per capita accompanied by far-reaching, synchronized declines in various other measures, such as world industrial production, employment, trade and capital flows, and energy consumption. The Great Recession of 2008 that devastated world financial markets, manufacturing, banking and real estate markets and industries, ultimately had its origins in the U.S. mortgage market. Since U.S. business cycles are highly synchronized with global business cycles, economic policy initiatives in the United States can – and, during the Great Recession, did – have ripple effects around the world.

Since 2014, advanced economies (United States, Euro Area, Japan, United Kingdom), have experienced a continued recovery from the recession and GDP for these countries is projected to remain above potential through 2020. Growth in emerging market and developing economies (China, Brazil, Russia, Mexico) is expected to increase as well – from 4.8% in 2017 to 4.9% in 2018 (estimated) and 5.1% in 2020 (forecasted).

AUTOMOTIVE

During the 2008–2009 crisis, the automotive situation was intensified by deteriorating access to consumer credit, which customarily financed a high share of new vehicle purchases, especially in the United States. North America, which already experienced a decline in total vehicle production in 2006 and 2007, experienced a 16% drop in 2008 followed by an additional 32% decrease in 2009, representing the sharpest production decline since the Great Depression and the deepest production decline of all world regions.

Conversely, developing economies endured because of their steadily expanding new demand for vehicles. Although large developing countries, including China, India and Brazil, saw lower demand for new cars in 2008 and 2009 than in 2007, their new vehicle sales continued to grow during the crisis.

In 2010, North America started experiencing a strong recovery, with a 38.7% increase in vehicle production from 2009. Globally, auto sales have grown steadily since 2010, rising on average more than 5% annually.
In 2018, sales are on track to hit 97 million vehicles worldwide, however the growth rate is expected to slow to 1.8% from 2017. Although global demand remains robust, driven by continued economic strength, headwinds are gathering (1% growth in North America, 2% in Europe, 2% in China, 10% in South America, and a 1% decline in auto production in Japan and Korea).

**CONSTRUCTION**

The construction industry was unquestionably one of the hardest-hit by the Great Recession – foreclosures, falling home prices, and decreased consumer demand and spending stunted growth across the industry. Residential construction was the weakest of the construction segments and is usually the first area to experience the chill winds of an oncoming recession. House price uncertainties and stricter mortgage lending requirements led to a dampening in demand as buyers opted to take the ‘wait and see’ approach. Globally, residential construction growth started to pick back up in 2010, although increases have been modest, with growth rates remaining well below 5% in most of the world.

Nonresidential construction is not as homogenous a category as residential construction, however the demand and the need for new nonresidential projects can be tied to metrics such as job creation and consumer spending. Tight credit and weak demand for new facilities generated by the financial crisis and subsequent recession, however, took their toll on this market and in the United States, nonresidential construction declined 13% in 2009 and 16% in 2010. Global spending on nonresidential structures increased a modest 1.5% in 2013 as the uncertainty in Europe and the United States held investors back. The deceleration in China eased as the government bolstered investment programs, though growth in nonresidential structures spending there was only 6.4% in 2013. Recently, growth has strengthened – on a region-by-region basis – as the result of increased demand for new buildings, roads, utilities, bridges and other infrastructure; rapid urbanization in Asian countries; surging economy in emerging markets; rising per capita income; declining interest rates and increasing investments in infrastructure and development of new cities in emerging markets.

**INDUSTRY PERFORMANCE**

The Boston Consulting Group classifies companies that manufacture highly-refined chemical products and focus on a limited set of customer applications as ‘Focused-Specialty.’ Paint & Coatings are included in this subsector and have thrived.

The superior performance of coatings companies is clear from Total Shareholder Return (TSR). Coatings companies have benefited from a rebound in construction activity, consolidation, and from continued strength in emerging markets. Innovation (‘VOC-free’ paints) is also contributing to this upward trend (Figure 1).

The paints and coatings sector, according to McKinsey & Company, is considered ‘Specialty,’ where ‘key success factors are end-market selection, product selection, and the scope for value add and differentiation.’ Companies in this category score higher valuations, driven by their ability to sustain performance (Figure 2).

The superior performance of coatings companies is clear from Total Shareholder Return (TSR). Coatings companies have benefited from a rebound in construction activity, consolidation, and from continued strength in emerging markets. Innovation (‘VOC-free’ paints) is also contributing to this upward trend (Figure 1).

The paints and coatings sector, according to McKinsey & Company, is considered ‘Specialty,’ where ‘key success factors are end-market selection, product selection, and the scope for value add and differentiation.’ Companies in this category score higher valuations, driven by their ability to sustain performance (Figure 2).

The Paints & Coatings sector has also shown a strong internal rate of return (IRR) in its recent history: The sector’s IRR was estimated at 15% in 1995, and increased to 20.1% in 2008. (The term ‘internal’ refers to the fact that its calculation does not involve external factors, such as inflation or the cost of capital.) Like all other sub-sectors in the chemicals industry, this fell to 15.4% in 2009, but recovered swiftly to 18.3% in 2010. The 2011-13 period was comparatively flat at ~18%. 2014-16 saw IRR rising to 25.1% in 2016, making it the highest return subsector in the chemical industry. In 2017, Sherwin-Williams had by far the best IRR (Figure 3).

**COMPETITIVE LANDSCAPE**

The global coatings industry has become increasingly consolidated over the past two decades, with the top ten suppliers now representing roughly half of the market total. Most recently, The Sherwin-Williams Company (‘S-W’) has moved to the No. 1 position following its acquisition of Valspar, though PPG is trailing closely behind (Figure 4).

Merger and acquisition activity (‘M&A’) has been an essential part of the coatings industry strategy, complementing the strong organic growth witnessed during the past decade. Benefits of size and scale are manifested from raw material purchasing to manufacturing – and from distribution through research and development to supplier consolidation, largely driven by consolidating and globalising coatings customers. The M&A history of the coatings industry primarily consists of bolt-on and tuck-in acquisitions, with some major deals. In 2017, Sherwin-Williams completed its acquisition of Valspar and remains the most attractively valued company, with a 2017 IRR of 45% and a total return of 53.8%, significantly outperforming the S&P 500 (21.6%). In 2017, Akzo Nobel was the subject of an unsuccessful takeover bid by PPG. In March of 2018 Akzo Nobel announced the 100% sale of its Specialty Chemicals business to The Carlyle Group and GIC Private Limited for an enterprise value of EUR 10.1 billion. Separation of Specialty Chemicals is intended to re-
duce conglomerate inefficiencies, making Akzo a fully-fledged paints and coatings company. Going forward, it is likely that Akzo Nobel will be looking for bolt-on/tuck-in acquisitions to complement its Paints & Coatings business, or potentially engage in a larger M&A deal. Axalta is potentially the next acquisition candidate in coatings industry consolidation, given its attractive high-margin, market-leading portfolio, already experiencing two near misses (Akzo Nobel and Nippon Paint) in 2017. Overall, the need for consolidation will increase further, due to the ongoing consolidation of suppliers and customers, as well as the rapid changes and higher costs of technology developments/regulatory issues. Paradoxically, the coatings market still remains extremely fragmented, with the top-four players having only 32% of the global market.

RAW MATERIALS

Paints and Coatings companies are sensitive to crude oil prices due to oil-derivative products, as Resins and latex (Acrylic paints, alkyd [oil] paints, and epoxy paints). Paints and Coatings manufacturers generally have a low fixed-cost base, however experience higher variable costs. Coatings production is not capital-intensive. Most of the costs to produce coatings are raw materials. For an average US coatings producer, raw materials costs generally encompass 40-55% of total sales with total cost of goods sold encompassing 55-70% of sales. Historically, industry participants have been able to pass on raw material prices to their end customers quite efficiently, typically with a lag of one or two quarters.

Generally, the cost of raw materials is higher for industrial coatings than for architectural coatings, but the cost of distribution is much higher for architectural coatings. In architectural coatings, TiO2 makes up the biggest cost component, and the price became inflated during 2017 due to tight market conditions (Figure 5). The rest consists of latex; additives; solvents and pigments. Industrial coatings, on the other hand, have a higher exposure to oil-linked raw materials such as organic resins, followed by organic solvents and pigments; TiO2; and additives.

GLOBAL MARKET

Since the turn of the century, coatings have shown relatively steady growth, at about 2%/annum. Increases in the global coatings market are being driven by an acceleration in world building construction spending, particularly residential construction, which is expected to increase, especially in North America and Europe. In 2017, the Global Paints & Coatings market was ~42 billion litres valued at ~EUR 130 billion, with a ~5% compound annual growth rate (CAGR) through 2020 (Figure 6). This will be driven by an expected growth in global manufacturing activity and increasing demand for coatings used in the production of motor vehicles, durable goods, and industrial maintenance applications.

Depending, of course, upon the length and effect of the global trade war that began in July of this year, Asia will remain the leading consumer of paints and coatings through 2020 and will also see the most rapid gains. China and India, the two largest markets in Asia, are also the fastest-growing coatings markets in the world. Gains are also forecast for North America and Europe, which are expected to rebound strongly from the declining demand of earlier years and benefit from a greatly improved outlook for building construction and manufacturing activity.

The coatings market is commonly divided into three categories: Architectural (Decorative) Paints, Industrial OEM Coatings, and Special Purpose Coatings.

ARCHITECTURAL (DECORATIVE) PAINTS

In 2017, the Architectural Paints & Coatings market was ~23 billion litres valued at ~EUR 52 billion (Figure 7). Architectural coatings are used to decorate and protect new and existing residential, commercial, institutional, and industrial structures. Architectural coatings demand tends to fluctuate with the construction and home resale markets.

We expect growth in demand mainly to be driven by APAC (which currently holds the biggest share of the Architectural market at 43% in volume, 34% in value) due to continued urbanization, and by North America, supported by the continued recovery in the housing market, and demand for remodeling activities.

Figure 3: Global coatings – IRR (operating cash flow/ERV), 2005-2017.

Figure 4: Top 10 global paint & coatings producers, by value (EUR billions).

- Jotun 1%
- RPM 3%
- Masco [Behr] 1%
- Kansai Paint 2%
- BASF 3%
- Axalta 3%
- Nippon 4%
- AkzoNobel 7%
- PPG 10%
- Sherwin Williams / Valspar 11%
- Others 55%
With respect to end use, the global mix between ‘do-it-yourself’ (DIY) and professional (PRO) stands at about 40/60%. Overall, the residential market represents demand of 65% vs. commercial at 35% (higher in APAC), and remodeling activities make up about 70% of the demand vs. new construction at 30%. Remodeling leads in both residential (75%) as well as in commercial construction (60%).

North America has seen the growth of the ‘do-it-for-me’ (DIFM) or contractor market at the expense of the ‘do-it-yourself’ (DIY) market. In 1980, the US market was split roughly 60% DIY/40% contractor. Today, in the United States, the market has reversed with 64% being contractor and 36% being DIY.

Sherwin-Williams is the No. 1 architectural paint supplier globally, with the highest brand awareness and remains the most used brand with DIY painters as well as the most preferred store to buy paint among contractors/PRO painters.

INDUSTRIAL OEM COATINGS

In 2017, the Industrial OEM Coatings market was ~16 billion litres valued at ~EUR 52 billion and is further sub-segmented into automotive OEM, coil, general industrial, packaging, powder, wood, and other transportation. Industrial OEM coatings are typically characterised by imparting both protective, as well as aesthetic, properties to the coated articles (Figure 8).

Demand for industrial coatings was severely impacted by the decline in industrial output experienced during the recession. However, growth has rebounded over past five years driven by increasing demand in developing markets and continued growth in Asia (especially China). Much of what drives demand in Industrial Coatings end markets relies on the macroeconomic environment and is fueled by industrial production which has picked up momentum. Sherwin-Williams expects growth for general industrial and industrial wood to outpace others (Figure 9).
There are four technology offerings in industrial coatings, including liquid, powder, pretreatment, and electrocoat. Liquid, which consists of traditional primers and topcoats, is by far the largest, accounting for nearly two-thirds, and continues to outpace competing technologies. Powder, for which a solid coating is applied by electrostatic spray, follows at about 25%. Pretreatment and electrocoat are about 5% each; the former includes cleaners and phosphate chemicals to condition metal before paint is applied, while the latter applies coatings by electrically charged immersion.

**SPECIAL PURPOSE COATINGS**

In 2017, the Special Purpose Coatings market was ~4 billion litres valued at ~EUR 23 billion and serve far fewer end markets than those served by industrial OEM coatings, but typically carry higher margins (Figure 10). Special purpose coatings are formulated to meet the needs of specific end uses and include maintenance and protective coatings, marine coatings, and automobile refinish coatings, as well as a number of smaller end-use sub-segments, such as traffic-marking paints and aerosols. Most of these sub-segments are growing, with the exception of marine coatings, which tends to be cyclic, and has seen subdued demand in recent years, due to the decline in shipbuilding activity. Vehicle Miles Travelled (VMT) is an important metric for auto refinish, as repair/refinish activity picks up with increased driving (which means more accidents). VMT typically slows in the early months of the year as cold weather curbs travel, partially offset by icy conditions increasing accidents. Longer term, autonomous driving technology and collision avoidance technology in cars as well as ride-sharing apps like Uber may threaten the automotive refinish segment. Following is the outlook for refinish industry sales by region, with expectations that sales will grow at a CAGR of 3.6% from 2016 through 2020. Focusing on the protective and marine market, the following breakdowns represent the approximately EUR 11-12 billion global business. Marine coatings are applied to general cargo and passenger ships, tankers, bulk carriers, and container ships. Ultimately, the demand for marine coatings is linked to global maritime commerce and sea shipping, including sea travel. Chemical tankers are more sophisticated and expensive equipment. The internal coating of a ship's cargo tanks is necessary to protect surfaces against corrosion, avoid contamination, and facilitate cleaning.

**WITH AN EYE TO THE FUTURE**

At the end of the day, at least from a purely economic point of view, it must be said that the global paints and coatings industry is doing a good, solid job of growing at a moderate, but predictable, rate; it is consistently – and predictably – profitable; it is not capital intensive; and raw material price increases can, as a rule of thumb, be passed through to end-customers. It is easy to see why the private equity sector has taken such a high-level of interest in acquiring paints and coatings producers in recent years. That should be sufficient for the majority of companies in the paint and coatings industry, for whom we are happy to provide this information.
It is not good enough, however, for those companies that are less concerned about this year than they are about 5-10 years from now. Such companies fully understand that possession of data is always comforting. It gives us the feeling that we are in control—the feeling that armed with fundamental information about our industry, we will automatically have an understanding of that industry, which will in turn confer safety and prosperity upon both the present and the future of our individual businesses. These companies also recognise, however, that the possession of such data is falsely comforting. Financial and trend data only have value if they are used to help coatings producers make strategic decisions regarding where they are going to position themselves in the future, based upon the predictive ability of information available in the present. These companies understand this, and they are only too aware that an industry that is technology-based is constantly in need of newer, safer, more durable, more damage-resistant and more sustainable products.

For these companies, making money in order to stay in business this year is necessary – but creating new products to stay in business in the future is absolutely mandatory. This requires having a strategy – a plan for future success that is as rare as it is necessary in the second decade of the twentieth-first century. For these companies, data is important, but action, in the form of innovation, is mandatory.

**Figure 9: Industrial coatings forecasted global activity.**

![Figure 9: Industrial coatings forecasted global activity.](image)

**Figure 10: Global special purpose coatings major market sub-segmentation, volume & value (2017).**

![Figure 10: Global special purpose coatings major market sub-segmentation, volume & value (2017).](image)

Strategy creation can only be effective, however, if it receives unswerving support from the top of the organization, and is the result of a deeply committed working relationship between Marketing and Technology – a cooperative effort between those whose antennae detect the direction in which the wind is blowing, and those who can develop the products that are able to follow the wind to new and exciting destinations. This must then be supported by a mutually constructive and mutually lucrative relationship between the technical team of the coatings company and the technical team of its key raw material suppliers. This latter group is often seen as being very passive—one frequently hears coatings people bemoaning the lack of ‘new raw materials;’ which is simply just not true. There are a lot of raw materials being introduced every year – raw materials that are not just ‘me too’ products or ‘tweaks’ of existing products, but new materials that truly do have the potential to ‘make a difference’ to the coatings formulator who needs to create properties that don’t currently exist. Such materials are introduced every year, and – without endorsing or recommending any of them on behalf of the authors, ChemQuest or Vincentz Network – a selection of new materials are listed in the appendix to this paper. This is a random and arbitrary selection of raw materials that have all been introduced within the past 6-24 months, and the authors recommend that paint and coatings formulators take a look at them, if they appear to address any properties that would be helpful to have. Since it is often difficult to convince paint makers to look at new raw materials, suppliers of such materials should also give serious consideration to having their new products tested and validated in a variety of coatings technologies by independent, third-party laboratories that can provide unbiased results that can then be presented to the paint formulators as ‘proof of concept’ documentation.

**THE BOTTOM LINE**

The years between 2018 and 2023 will be good ones, but the forces that account for this are already in place – each individual coatings producer has the ability to make tactical decisions that will either take advantage of the underlying economic, demographic, regulatory and sociological forces, or run counter to them and pay a high price for doing so. The real question, therefore, is not ‘what should we be doing between now and 2023,’ but ‘what should we be doing NOW to prepare for the years BEYOND 2023.’ This is where the need for the creation and nurturing of a well-funded, and intellectually empowered marketing-technical effort comes to the fore. Any company wishing to harvest the fruits of a truly strategic approach that will place it among the best and most forward-looking companies, not only in 2023 but well into the future, has no choice but to take this path. Strategy IS its future, and a powerful marketing-technical/raw material supplier partnership is the key to this strategy.

*George R. Pilcher*
Vice President
The ChemQuest Group
gpilcher@chemquest.com

*Michael Rezai*
Chemical Industry Consultant
The ChemQuest Group