Mexico Steel

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Editorial researched and written by Alice Pascoletti, Nathan Allen and Brent Johns

Let there be light

Mexico is moving out of the economic doldrums thanks to structural reforms to strategic segments of its economy, renewed levels of dynamism and the increased purchasing power of Mexican consumers.

Alice Pascoletti, Nathan Allen and Brent Johns for Global Business Reports

HEADING eastward out of Monterrey the landscape flanking the dried-up Santa Clara river offers little to write home about. What was once anonymous scrubland has now been supplanted by equally anonymous suburban sprawl. The scattering of warehouses and shopping centres does little to liven up the scenario.

Then, out of nowhere, rises an iron giant. This is Alto Horno 1, Latin America's first blast furnace. Built in 1903, the facility continued to operate throughout the 20th Century before finally being decommissioned in 1986. Today, the furnace forms part of a museum and tourism complex where visitors can learn about the history of the steel industry and the contribution that it made to Mexico's – and particularly Monterrey's – path towards development.

Just as steel production played a large part in Mexico's development, so too did the country help to drive the industry forward. It was a Monterrey-based producer that gave the world its first commercial scale gas-based direct reduction plant in the form of the Hylsa1M facility. The arrival of this technology paved the way for one of the most profound changes to hit the world steel scenario since the 19th Century invention of the Bessemer process. Direct Reduced Iron (DRI) plants have now taken root around the world and thanks to the continuing downward trend in natural gas prices the process is becoming even more popular.

Fast-forward 50 years and Mexico remains a key player in the global steel industry. The North American nation is the 13th largest producer in the world, and the second largest in Latin America. After a dramatic drop in production in 2009 following the great financial crash, volumes are back up to healthier levels, and in 2013, the country broke all previous records with gross production coming in at 18.21Mt. The sector provides employment for some 720,000 people and generates 2.7% of total GDP.

Mexico's largest integrated producer is still Altos Hornos de México (AHMSA), but the last 10 years have seen the arrival of a range of new international players. ArcelorMittal has an important presence on the West Coast, while the Argentine Ternium operates a range of facilities across the country. Meanwhile, the Brazilian company Gerdau has recently finalised a deal to expand its footprint through a joint venture with local producer Corsa.

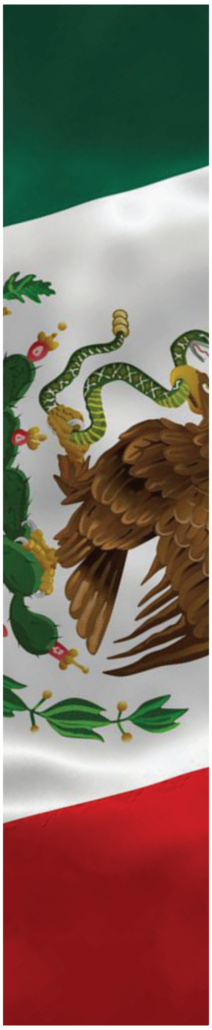
Levels of investment are impressive and steel imports continue to fall, but this does not mean that local mills can afford to rest on their laurels. Competition from low-cost producers in China and India continues to put pressure on margins and has forced producers to reign in costs wherever they can. Furthermore, Mexico still suffers from relatively high energy costs, particularly when compared to the highly-subsidised rates that steel mills in the USA pay.

Poor economic growth in recent years has also led producers to worry about overcapacity issues as they struggle to find a market for their products, particularly those destined for the construction industry.

Nevertheless, the forthcoming structural reforms to strategic segments of the economy will help bring Mexico out of the economic doldrums. The opening of the oil and gas sector combined with the meteoric growth of automotive manufacturing should go some way to providing a strong foundation for increased demand.

In parallel, we should see renewed levels of dynamism in the broader economy and increased purchasing power for Mexican consumers. "Disposable income rates are rising and this is intrinsically linked to steel consumption levels," said Luis Reyes, vice president NAFTA for Vesuvius. "If a person sees a rise in their income then they are likely to switch from riding a bicycle to riding a motorbike. If he earns still more money, he will probably buy a car."

Mexico is an exciting place to be and, if the local mills can capitalise on the country's natural competitive advantages of close proximity to the USA and a highly skilled workforce, then it seems that they have a very bright future ahead of them. The challenge now is to improve levels of technology and develop the level of expertise in the production of more sophisticated grades, and bring more value to the sector overall.



Secretary of the Economy Ildefonso Guajardo Villareal

Fair trade prospers in Mexico

While the Mexican economy is highly susceptible to external economic fluctuations, the economies of its main trading partners are in much better shape today. Mexico's Secretary of the Economy Ildefonso Guajardo Villareal says better structured domestic policies will mean stronger growth in 2014

AFTER GDP growth of just 1.1% in 2013 the bank of Mexico has cut its forecast for this year's Gross Domestic Product (GDP) growth from 3% - 4% down to 2.3% - 3.3%. What are the reasons behind this anaemic growth?

The Mexican economy is highly integrated with the global economy. Our ratio of total trade to GDP is approximately 66%. This makes our economy highly susceptible to economic fluctuations outside of Mexico. Thus, if the United States faces a bad year economically and Europe's growth remains stagnant, we are disproportionately affected.

Looking at the internal factors here in Mexico, 2013 saw the transition to the new government. When you have a starting government it takes time to adjust policies. When the new Administration came to power, certain sectors had been mis-managed and it was necessary to rethink how entire systems were managed.

Today, the economies of our main trading partners are in much better shape and our own domestic policies are better structured. As such, we are expecting to see stronger growth in 2014 than we saw last year. The numbers are already improving with second quarter statistics showing improvement over the first quarter of the year.

Decision making in the private sector is not looking at the short term, as we see from the high level of foreign direct investment (FDI) coming into Mexico. This is proof that investors have faith in Mexico, not just in the short term, but looking to the long term as well.

There is an obvious split between Mexico's large formal network of businesses and smaller informal SMEs. How does the government aim to address these stark contrasts in the Mexican business environment?

Twenty years ago we integrated our country into the global market and opened up our borders to foreign trade by signing NAFTA (North American Free Trade Agreement). Since that time, we have multiplied our exports by seven and FDI inflows have increased four-fold. We have signed free trade treaties with 45 other countries that have directly connected Mexican producers to over one billion consumers across the world. At the same time, the economy has stabilised well since the 1990s and both inflation and interest rates have come down. However, none of this translated into strong growth for Mexico. This is because the underlying mechanisms governing how business operates were in dire need of reform.

The structural reforms aim to level the playing field for all businesses. One goal is to provide a regulated economy in which SMEs have access to more and more competitive financial resources and cheaper energy. How can companies flourish if they are paying 35% more for telecommunication services? How can companies flourish when they do not have access to financing? At the end of the day, the reforms, paired with a strategy to directly target sectorial developments, will help make the business environment more attractive for all players.

Through INADEM (Instituto Nacional del Emprendedor), with a budget of MXN$10 billion, we are further pushing for the development, innovation and growth of entrepreneurs and micro, small and medium businesses.

The automotive industry continues to be a key driver for the economy, but foreign players dominate the supply chain. Will we see Mexican companies make the transition from simple product supply to more knowledge-based participation?

Ideally, the arrival of new investments into a country will lead to the domestic development of technologies and value-added capabilities. This process has already taken root in Mexico and the country can boast a number of firms that contribute high-level processes and products to the industry. We now hope to see a similar skill transfer take place within the aerospace industry. Mexican aerospace exports have grown approximately 15% in the past seven years largely due to the proven expertise that has been built up in the automotive sector. We furthermore want to see the SMEs develop alongside this industry as tier 2 and 3 players.

Mexico is now in a privileged position with regards to manufacturing. There are three pillars to succeed in manufacturing. The first pillar is human capital. Countries such as China and Korea will see their labour force diminish by 30% by 2050, while Mexico's will increase by 30% in the same period. The second factor is energy. Thanks to energy reform, this resource will become cheaper, allowing companies to be more competitive on cost. Innovation is the third pillar. To this end, we are investing heavily in boosting IT capabilities, and we have recently launched out PROSOFT 3.0, our revamped public policy aimed at developing the IT sector in Mexico.

Where does the steel industry fit into the business environment in Mexico?

As a key component in the Mexican manufacturing environment, steel is a sector highly dependent on innovation. Leading steelmakers, such as AHMSA, are investing in new capabilities in order to decrease dependency on imports and meet rising demand from new arriving industries. Currently, steel production accounts for 12.6% of manufacturing GDP.

When I came into office, a number of key players in the industry wanted me to increase tariffs, but this will not happen. We have struck a good balance between looking out for domestic players and fostering an open economy where fair trade prospers. Increased protectionism would negatively impact downstream companies and would decrease our competitiveness in final products. That being said, we have been highly efficient in utilising the tools that we have available to avoid unfair competition.

Throughout North America we are looking for more integration within the markets. NAFTA is not only about trade, but is about creating an integrated production process. In order to do this, it is important to have efficient rules that allow you to be competitive as a region. The rules of international trade have to be monitored accordingly to avoid highly protectionist communities in the North American region. ■

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A two-tiered economy

While Mexico has managed to attract a number of high-profile, international companies to its shores, such as Audi, Daimler-Nissan and BMW, their presence hasn't translated into strong economic growth.

OVER the past year or two, Mexico has garnered international attention for the high volume of world-class companies that have chosen to set up shop in the country. The automotive sector in particular can be singled out as the recipient of unprecedented levels of foreign direct investment (FDI). In 2014 alone, Audi, Daimler-Nissan and most recently BMW have given the green light to billion-dollar investments in new production bases. The Bajío region in Northern Central Mexico, which encompasses the states of Aguascalientes, Guanajuato, Jalisco and Queretaro, has been converted into a high-tech manufacturing hub and is now seeking to promote itself to players within the aviation industry.

Nevertheless, these high-profile developments have failed to translate into strong economic growth. In 2013, the first full year of President Enrique Peña Nieto's term of office, Mexico's economy grew by just 1.1%, barely outstripping the beleaguered economies of the Eurozone. In May of this year, the Bank of Mexico cut its forecasts for GDP growth from 3% to 4% down to 2.3% to 3.3%. According to many commentators, this is still highly optimistic. Some estimates are as low as 2%, with the most pessimistic economists suggesting that Mexico may actually enter a recession.

It is difficult to reconcile these two opposing trends. Indeed, looking solely at FDI figures, the outside observer would imagine that Mexico should be experiencing bonanza growth. The explanation lies in a duality that defines the whole Mexican economy. "The reason we have not seen enough growth is that Mexico is essentially split into two different countries," said Mario Arregoytia, audit partner and head of mining and metals for Mexico and Central America at EY "One part of Mexico is very modern and can compete on a global level… while the rest of Mexico is made up of small companies with very low efficiency and low competitiveness. Foreign investment in Mexico is mainly allocated within the most modern sectors," he said.

SMEs, or PyMES as they are known in Mexico, dominate the economy. Small firms employ 60% of Mexicans and this figure is even higher in certain sectors, such as construction. Many of these companies are local, family businesses, characterised by a high degree of informality. This stands in stark contrast to the technologically advanced multinationals now flocking to Mexican soil. Most estimates suggest that between 1982 and 1992 Mexican productivity barely grew at all. The growth rate rose to just below 1% after NAFTA was signed in 1992. However, closer analysis reveals a more nuanced picture. According to research conducted by McKinsey, productivity within large, modern firms has improved by an average of 5.8% per year. Yet among traditional, family-owned businesses this level has been dropping at an annual rate of 6.5%. Clearly, poor performance from the PyMES is having a strong, adverse effect on Mexico's economic potential. This is a headache for government because the high level of informality has a direct correlation with the country's low tax revenues.

A large proportion of these firms are not officially registered and, therefore, do not pay any taxes. It has been suggested that current social security policy and labour laws actually serve to perpetuate this situation. Formal sector employers contribute to their employees' pension and healthcare provision through a direct payroll tax, equivalent to approximately 30% of salary, a high cost for any SME to bear. However, there is a secondary framework designed to cater to informal sector workers, which is paid for out of general government revenues. The quality of this latter system is now so high that many small businesses consider themselves better off staying under the radar and letting the government look after their staff.

On top of this, the recent fiscal reforms, which were supposed to remedy some of these maladies, have proven to be highly unpopular among the business community. For many small enterprises, the standards demanded by the new legislation constitute still more entry barriers to formality. "The reforms will mean more taxes and more complex compliance issues for these smaller organisations," said Oscar Lizcano of Mexico City-based tube maker Conduit. "At the end of the day, medium companies may grow, and the large organisations will become much larger, but it is my belief that these reforms will actually hurt the smaller players in the industry."

In spite of this skewed incentive scheme, there are, of course, many businesses that wish to grow, become more professional and profit from the development of Mexico's dynamic, growing industries. Unfortunately, there are more hurdles ahead for these companies—the lack of access to affordable finance is perhaps the most significant. "Banks in Mexico are not very well prepared to cater to small and medium-sized companies. They see loans to small companies as extremely risky and so often they charge exorbitant interest rates," explained Juan Carlos Herrera, regional sales manager of the press technology division of Komatsu.

According to figures from the World Bank, more than half of Mexico's SMEs lack access to financial services, which has led to an estimated $60 billion credit gap for small and mid-size businesses.

As a result, smaller companies involved in Mexico's steel processing and metalwork sectors tend to suffer from a lack of advanced technology. There is an over-reliance on used machinery, which is usually not able to deliver the quality and consistency demanded by Mexico's more developed industries. Hector Morales, director of steel trader and equipment supplier Aceroteca, believes that the time has come for a change. "This situation cannot persist, especially when you consider the high standards that Mexico's main growth industries such as automotive and oil and gas demand from their steel products," he said. This low level of technology often prevents local firms from integrating into multinational supply chains and further widens the gulf between the two streams.


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Rosario Soto Barrionuevo, President of Disma

However, there are some positive signs on the horizon. Disma is a leading provider of machine technology to metalworkers and steel transformers. The company's president, Rosario Soto Barrionuevo, who has been in the market for over 20 years, has witnessed a shift in the buying habits of the smaller companies within her client base. "In the past, Mexican manufacturers usually acquired second-hand machines from the USA. Over the years, this situation has changed thanks to the growth of local companies that now see the value in purchasing new equipment," notes Barrionuevo.

The company has recently begun to stock cutting-edge laser cutters and bending robots from Japanese manufacturer Amada. "Twenty years ago it would not have been possible to sell this type of equipment in Mexico," said Barrionuievo. "We have had to develop the market by building credibility and demonstrating the value of advanced technology."

This sentiment is echoed by Israel Gonzalez, country manager for Hypertherm, a developer and distributor of advanced cutting technologies. "Plasma technology is not well known in the country," said Gonzalez. "Companies are still selling and using technologies such as friction or oxy-fuel cutting. We use ionised gas to cut materials, which is a big step forward in terms of safety when compared to older technologies," he explained.

While Gonzalez acknowledges that there is still a need to educate the market, Hypertherm's sales figures would suggest that there is a real demand for this higher level of quality. In the last four years, the company has quadrupled its revenues and substantially increased its market share.

In parallel with this new demand for advancement, more flexible payment options and alternative finance avenues are starting to open up. These are mostly initiatives taken by equipment producers and distributors working in concert with finance companies. As of yet, it seems that Mexican banks are not interested in offering more attractive options to help smaller companies develop. This could prove to be damaging in the long term. Mexico's economic woes will not be solved if large financiers continue to ignore the needs of their smaller clients. Ruben Rodriguez, director of Cokes Industriales, a key supplier of metallurgical coke and coal to the steel industry, sees SMEs as pivotal to ensuring more equitable development across the country. "It is vitally important to stimulate this sector of the economy rather than to just focus on the big headline investments," said Rodriguez. "More work for small companies means more employment, which would help to bring down poverty and unemployment levels, which would ultimately have a positive impact on crime rates too."

As many of these companies are highly localised operations, programmes being implemented on a state level may be the way forward. In Nuevo León, Rolando Zubirán, the Secretary for Economic Development, is rolling out a unique scheme to help small companies bring a greater level of professionalism to their business. "We have developed a centre for entrepreneurship that is the only one of its kind in the country and certified by the OECD," said Zubirán. "We provide a one-stop shop to foster entrepreneurship to help with registration, taxes and accounting, as well as market development."

Such innovations are surely a step in the right direction, but it will take more than a few isolated initiatives to help bridge the gap and bring Mexico's faltering economy up to speed. ■

Mexico's place in the global market

Mexico is a firm believer is free trade and a signatory of the North American Free Trade Agreement (NAFTA) but it too is concerned about opening the floodgates to cheap steel from China.

FOR some years now, the world has been dealing with overcapacity of 20% to 30% within steel production. This is largely a result of the state-sponsored development of new capacity in China, which finally caught up with the colossal spike in demand that the country experienced in the early noughties. Now, excess output from Chinese producers is finding its way to far-flung markets and putting serious pressure on local producers to bring down their prices. Mexico is no exception to this global phenomenon.

Despite this worldwide surfeit of crude steel, Mexican mills have been investing heavily in new plants. According to figures from the Mexican Iron and Steel Industry Chamber (CANACERO), steel producers invested $10.8 billion between 2001 and 2014, and it looks as though this level of activity is set to intensify, as the investment portfolio for 2014 to 2019 now stands at $11.5 billion. This may seem counterintuitive under the circumstances, but it is important to understand that Mexico actually suffers from a regional shortage of steel, particularly when it comes to speciality materials. In fact, Mexico remains a net importer of the metal.

Gerardo Treviño, of financial services at Deloitte, identifies two principal drivers for these new facilities: "The first is to substitute imports and deliver to the domestic market at more competitive prices," explained Treviño. "The second forms part of the bigger picture of foreign companies arriving in Mexico… naturally it makes sense for steel mills to cater to this new wave of customers."

Obviously, it will only be possible to substitute imports if the local producers can deliver their products to market at lower prices than the Chinese. Given the heavy subsidies that the Chinese government awards its mills, particularly for exports, this would be almost impossible without similar intervention here. While the Mexican government is not prepared to offer incentives to domestic producers, it has introduced a series of tariffs and entry barriers to prevent dumping of cheap Asian and Eastern European materials, specifically targeting China. Thanks in large part to these controls, Mexico was able to reduce imports by 12% between 2012 and 2013. These laws may not go as far as some in the industry might hope, but Roberto Benavides, audit partner at Deloitte, recognises that it is a difficult situation in which legislators find themselves. "Steel makers may wish for more protective measures, but the reality is that it is very tough to strike the right balance between opening the country to foreign trade and protecting our domestic producers from unfair practices," he said.

Since the late 1980s, when the Salinas administration began to privatise many state-owned entities, successive governments have tended to veer toward free trade rather than protectionism. This propensity toward openness is frequently identified as one of the reasons why the country has been so favoured by foreign investors. Today, Mexico participates in over 40 free trade agreements (FTAs), the most important of which is NAFTA.

Maintaining an open border to the North is extremely important to Mexico's steel producers. "Ever since NAFTA was implemented, more stabilisation and better regulations have made it easier to cross the border between Mexico and the United States," said Alfredo Garcia, president of Mexico City's Lavisa, which imports high quality carbon steel pipe for clients in the oil and gas sector. "Pre-NAFTA it was often an obstacle transferring products across the border. Today as we are shipping consistently across the border this is no longer seen as an obstacle and is actually done quite efficiently and easily."

While it used to be the case that most steel shipped within NAFTA took the form of goods produced in the USA and Canada destined for the south, Mexican exports are beginning to pick up. At the end of 2013, exports reached 6.01Mt, a 16.3% increase on 2012 levels. The largest external buyer of Mexican steel by far is the United States, but they are also starting to buy an increasing volume of finished products. This is particularly evident in the case of the automotive sector as coils of speciality steels brought in from Canada and the USA are turned into light vehicles, which are exported northward by the thousand, predominantly via rail.

Nevertheless, when it comes to steel trading within the North American region, the relationship between Mexico and the USA does not quite live up to the image of seamless integration that their respective leaders seek to project. Beneath the harmonious exterior, a battle is raging over supposed dumping of cheap rebar by Mexican mills. "Mexico has always produced a huge surfeit of rebar, which has led the local producers to export their products at ludicrously low prices to the USA," explained Ricardo Fernandez, CEO of Ferrecabsa. "This has provoked legal action from the North and once again we are seeing anti-dumping suits being brought against Mexican mills."

The USA already imposes strict tariffs on rebar imported from a range of low-cost producing countries, including China, Ukraine, Latvia and Poland. Now, US legislators have set their sights on Mexico and Turkey. The case against Mexico began in September 2013, with a petition filed by a consortium of American producers headed by Nucor and Commercial Metals USA. They claimed that cheap exports from south of the border constituted unfair competition and should be treated as a threat to the national industry.

As of April 2014, the United States Department of Commerce has recognised the legitimacy of the claims brought by the consortium and has imposed preliminary duties on all rebar crossing the border. The organisation has set a provisional margin of 20.59% for Mexican producers, but also singles out three producers in particular: Grupo Acerero, which faces a margin of 66.70%, DeAcero with 20.59% and Grupo Simec, which has fared slightly better, with a margin of 10.66%.

Mexican producers were swift to register their disapproval at this decision. In a piece for the Houston Chronicle, Raul Gutierrez, co-CEO of DeAcero, one of the companies that will be most affected by the legislation, makes a strong case against the Commerce Department's move. He points out that Mexican products account for just 4% of the total US rebar market, while mills within the USA enjoy nearly 90% market share. He accuses the department of violating the basic principles of co-operation and fair trade that are at the core of the NAFTA agreement.

His claim that the litigation process could derail NAFTA is probably overblown, but it carries with it a kernel of truth: steel is a highly politicised industry within the USA, and such disputes only serve to sour relations between the two countries on a broader level. Mexico is petitioning US producers and government representatives to negotiate with Mexican mills outside of court in order to find a more mutually beneficial solution. However, for now, it seems that the preliminary measures will be converted into de-facto tariffs, and Mexican producers will have to look elsewhere to offload their excess capacity. ■

Compania Minera Autlan

Raw Materials in Mexico

Illegal iron ore trading, a need to import scrap from the USA, limited domestic coke production and highly professional integrated steel producers – four elements of Mexico's raw materials industry.

Ilegal iron ore

THE rich iron ore deposits of Michoacán state have attracted the attention of artisanal miners for centuries, and were initially explored by the local indigenous communities long before the arrival of Cortés in 1519. Over the centuries, the methods used to exploit the mineral wealth became more and more sophisticated and a substantial mining industry built up. In the early 1970s, the government of President Gustavo Diaz Ordaz ordered the construction of the colossal Lazaro Cardenas steelworks, precisely in order to take advantage of the large ore bodies located just inland, which were state-controlled at the time.

Today, Michoacán is still the biggest producer of iron, but a new group has begun to muscle in on the production chain. In April 2014, the Mexican Navy seized a ship containing 68kt of illegal iron ore bound for China. The seizure came as part of a targeted operation to put a stop to illicit mining activity carried out by organised crime rings. Facing increasing competition within the drugs trade, the Knights Templar cartel began to integrate iron ore into their existing business operations several years ago. Michoacan has long been one of Mexico's most lawless areas and the cartels have a significant influence over the local communities.

Criminal fingerprints can be found all the way through the mining chain. It is thought that their first incursion into the industry came through extorting transport unions involved in the shipping of the ore. They then began to take advantage of their hold over local government figures to determine which prospectors would receive exploration permits and mining licenses; those who refused to pay were refused their license. Eventually they entered into the extraction itself, sending personnel into the pits to receive a cut from the more legitimate operations and actually operating their own mines as well.

Victor Cairo, CEO ArcelorMittal

It is estimated that in 2013, approximately half of all iron ore produced in the area was mined without the necessary permits.

Over the course of 2013, the going rate for iron ore hovered between $105/mt and $110/mt, less than 0.0001% of the $250 million price tag commanded for a ton of cocaine. Nevertheless, exporting iron ore to China is now reckoned to be the main area of income for the criminal gang. In November 2013, in an effort to control the situation, the government sent in federal troops to take over the port of Lazaro Cardenas. Local police were disarmed and sent for evaluation and retraining programmes. These measures were widely regarded as a failure and it fell to loosely organised bands of vigilantes to fight back against the cartel activity. In an embarrassing situation for the government, the informal forces had more success than the might of the federales, and there are now efforts underway to formalise these disparate groups into an organised rural police force. For now, however, the prevalence of illegal mining is not going to disappear.

Integrated producers

Needless to say, Mexico's steel producers are highly professional organisations and have extremely exigent demands on all their suppliers. Raw materials used in mills require exceptionally high levels of traceability and so domestic producers will only work with thoroughly vetted providers. The three heaviest users – AHMSA, ArcelorMittal and Ternium – are all fully integrated and use their own mines to meet internal demand.

AHMSA's Hercules Mine in Coahuila is the main source of unprocessed ore for the company. Operated by AHMSA's subsidiary, Minera del Norte, the complex incorporates both open pit and subsurface operations and produces approximately 3.2Mt/yr of iron concentrate, as well as further important production of lump iron. Proved and probable reserves at the site come to 40Mt and under current exploitation rates, the mine life will extend for another 14 years. Ore from the mine is transported via a 382km mineral pipeline to a pelletising plant at the company's Monclova production complex, which can process 3Mt/yr.

Minera del Norte also owns substantial deposits in the states of Jalisco, Michoacán, Colima and Oaxaca. Looking to the future, the company has developed an ambitious plan to begin exploiting these reserves with a view to exporting them to China. An agreement has already been formalised with the Xingxing Hanfang Mining Investment Co. to supply 10Mt/yr of iron concentrate over a period of 20 years.

ArcelorMittal runs fairly substantial mining operations in the country. "We have three iron mines: El Volcán in Sonora;

Peña Colorada, which is a joint venture with Ternium; and Las Truchas in Lazaro Cardenas," explained CEO, Victor Cairo. "These three operations provide us with a combined total of 6.5Mt/yr iron ore, which is used to produce our crude steel."

The company has recently entered into a five-year agreement with Canadian based Evrim Resources to explore for iron ore around Mexico.

The Peña Colorado mine, jointly operated by Ternium and ArcelorMittal, produced 3.9Mt in 2013, slightly less than total output in 2012. This slowdown has been attributed to lower grades within the open pit. At the end of 2013, it was predicted that the operation had 18 years of useful life ahead of it, and both operating partners are investing in delineating new resources in the immediate area surrounding the mine. Ternium is also the sole owner of the Las Encinas mine in Colima, which can deliver a total of 1.9Mt/yr in the form of pellet feed.

While all of these operations are boasting healthy production figures and have an assured mine life of over a decade, the outlook for the future of Mexico's mining industry in general is not so positive. The increase in mining tax to 7.5%, coupled with the country's already high energy costs, has had a serious impact on the country's competitiveness when it comes to attracting new mining projects. According to statements from ArcelorMittal, the arrival of this new tax could cost the company up to $65 million and it is expected that exploration investments will drop off as of next year.

Elsewhere, the continuing downward trend in global iron ore prices has had a direct impact on steelmakers, but the miners are now in a much stronger position than their clients in the steel business. "Twenty years ago, most of the profit margin in finished steel went to the steel producers. Now, the situation is different. The participants with the highest margins are now in minerals and raw materials", explained Gerardo Treviño of Deloitte.

Evidence of this can be seen elsewhere in Latin America as Brazil's Votorantim Group has decided to reign in its steel production in favour of focusing on its more profitable mining unit.

The challenge for steelmakers now is to determine and forecast price fluctuations in order to secure the best possible supply deals with miners. In the current situation, however, this can be difficult, as miners tend to hold the upper hand in such negotiations. If miners believe that the iron ore price is about to rise, then they will push for a short-term contract and then try to renegotiate based on the higher price some months down the line.

Scrap

While iron ore has been trending towards ever-lower prices, the value of ferrous scrap continues to increase. At the moment, the Mexican scrap market processes between 6Mt/yr and 8 Mt/yr, which is not enough to meet growing local demand. Further pressure is being put on supplies by increased levels of activity in the foundry and forging sectors. As is the case with steel production, Mexico runs a substantial scrap deficit and relies heavily on imports from the USA, particularly within speciality grades, to satisfy domestic requirements.

By far, the most important participant in the scrap market is Deacero, which purchases approximately 250kt to nourish its string of melt-shops around the country. With the exception of this large conglomerate, the market is highly fragmented and populated in the main by very small, informal scrapyards that turn over a maximum of 10,000 mt/m. A high percentage of these minor operations eventually end up feeding into Deacero's extensive supply chain.

This dramatic split in the market has unsurprisingly led to some resentment towards the largest operator. Independent merchants resent Deacero's clear predominance in the market, and accuse it of distorting market prices and cutting off business opportunities for smaller players.

Meanwhile, mid-size companies are looking to professionalise and for alternative strategies to grow and develop. "Because it is a deficit market, we do not have to make any effort to sell. We operate at the price paid by the mills, which are

Roca Acero

competing among themselves for the material," said Mario Tijerina, director general of Roca Acero, a mid-size scrap recycler based in Monterrey that is looking to professionalise its operations.

In this scenario, the potential for scrappers to grow is dependent on their ability to source waste materials at competitive prices. They are seeking to differentiate themselves to suppliers by bringing a new level of sophistication to their services. Some waste collectors are streamlining their logistics to coincide better with Just-In-Time (JIT) manufacturing programmes at stamping plants, while others are bundling additional services such as industrial cleaning and hazardous material handling into their offering.

The high degree of fragmentation is similar to the dynamic that prevailed in the USA 20 years ago. This all changed after Nucor bought out the scrap company DJJ, and the market saw a process of consolidation and integration. It seems likely that as mills grow in capacity and look to secure metals on a longer term, we may see a similar transformation take place in Mexico. A number of North American scrap dealers have recently set up shop in Mexico and are looking to establish their position. However, given that many of the enterprises with which they will be interacting are small, family-run businesses, it seems likely that Mexican operators, with their long-standing personal relationships, will have an advantage, at least in the short term.

On the demand side, buyers are starting to re-evaluate their purchasing programmes. "Instead of going to the spot market, we are negotiating with suppliers and scrap generators to establish a formula based off of American Metal Market prices so that we can secure steel scrap," said Raul Lopez, managing director of grey iron foundry, Novocast.

As a subsidiary of the large American firm Grede, Novocast may be able to leverage its substantial weight to arrive at more favorable terms with providers, but given the current imbalance between supply and demand, this will remain a seller's market for some time. For now, scrappers can effectively name their price and be sure of finding a buyer.

Coke and coal

Overall, Mexico is not a large producer of carbon. Domestic coke production is highly limited, and the little output that is generated within the country is mostly absorbed by state energy producer Comisión Federal de Electricidad (CFE) to drive its power-generation turbines.

AHMSA owns and operates coal mines in Palaú, Coahuila. The coal extracted is processed at its coke ovens and incorporated into the blast furnaces in Monclova. The Sabinas region has been an important source of coal for the company for over 70 years and today its mines extract approximately 4Mt/yr.

Independent coal production is mostly centered in the state of Coahuila and is dominated by a spread of small operations. Consistency, both in terms of supply volumes and quality, is fairly patchy from these players, and as a consequence, heavy users tend to import their own supply or work with local distributors. In the past, consortiums of major mills have collaborated to bring over entire shipments of metallurgical coal from China.

Local distributors, on the other hand, may not be able to bring in the volumes to make this type of operation economically viable. "We import most of our coke, petroleum coke and graphite from the USA," said Ruben Rodriguez of Cokes Industriales. "We occasionally import materials from China but the problem here is that the freight cost is very high. Although the product itself is much cheaper, the total cost works out slightly higher. In a good year we will import some 3,000 mt of material, but Mexican suppliers also play a key role in our supply chain, particularly when it comes to graphite and anthracite." ■

Mexico's major mills


Deacero's worker

Mexico plays host to five major steelmakers

AHMSA

Since its establishment in 1942, Altos Hornos de Mexico, S.A. de C.V. (AHMSA) has become the largest integrated steel plant in Mexico. The company operates two steelworks that recorded crude steel production of 4.14Mt in 2013, up 7.1% year-on-year, according to the National Chamber of Iron and Steel Industry (CANACERO). The vertically integrated organisation starts with the extraction of coal and iron ore and finishes with the manufacturing of high value-added steel products. With a workforce of 19,000 people, including its subsidiary companies, AHMSA is a national leader in the production and commercialisation of flat steel products including hot-rolled coil, wide plate, cold-rolled coil, and tin-free steel.

The company ownership has varied between a variety of public and private investors, but in 1991 it was privatized and was purchased by Grupo Acerero del Norte (GAN).

AHMSA has felt the volatility of the Mexican steel market over its long history. As a consequence of plummeting international steel prices and the financial crisis that began in Asia at the turn of the millennium, AHMSA was forced to file for bankruptcy protection on a $1.86 billion debt in 1999. AHMSA has since taken advantage of outdated bankruptcy laws in Mexico to enable an orderly suspension of payments ahead of the eventual liquidation of troubled companies. The old law does not stipulate term limits on procedural hearings, does not limit the use of litigation by opposing parties, and allows debtors to remain under court protection indefinitely. The law also discourages creditors from pushing for the liquidation of a corporation in default. Thus, after defaulting on the $1.86 billion, AHMSA business has continued unaffected for the past 15 years.

The company continues to invest in further production capabilities. The most recent of these investments is an $83 million injection that aims to produce steel for the oil and gas industry. The mill, which is expected to start operating in October 2015, will have the capacity to process 2Mt/yr of liquid steel and will focus on the production of high-tensile steel with a low hydrogen content—the type of steel demanded by the oil industry and manufacturers of pipelines, among other users.

Ternium

Ternium is a leading Latin American manufacturer of steel products and has a specific focus on the Mexican market, as it accounts for the majority of its total shipments. Ternium produces and processes a number of value-added steel products, including galvanised and electro-galvanised sheets, pre-painted sheets, tinplate, welded pipes, hot-rolled flat products, cold-rolled products, bars and wire rods, as well as slit and cut-to-length offerings through its service centres. These products aim to serve a wide variety of needs for the construction, home appliance, capital goods and energy industries and, increasingly, the automotive industry.

Despite a weaker domestic demand for steel goods in the Mexican market at the beginning of 2014, which was largely due to a 4.5% contraction in the domestic construction industry, Ternium achieved a record shipments volume of 9Mt/y and was the leading supplier of flat steel products in Mexico. The company notes that the less developed southern region of Mexico played a big role in accomplishing these records as industrial activity and construction actually improved in this area.

In 2014, Ternium and Tenigal, a company in which Ternium and Nippon Steel & Sumitomo Metal Corporation hold 51% and 49% respectively, began ramping up production at its newly inaugurated mill in Pesquería, Nuevo León, Mexico. The two cutting-edge production lines combine Ternium's cold rolling mill and Tenigal's hot-dipping galvanising mill in order to provide high-end steel primarily for the automotive industry. With a processing capacity or 1.5Mt/yr of cold-rolled steel and 400kt/yr of galvanised steel, the company expects this investment to pay out large dividends in the long term and increase market share within Mexico's growing automotive industry.

In addition to further penetration into new markets, Ternium is also focusing on controlling more of its raw materials through supply chain integration. Techgen, a company that Ternium has a 48% stake in, along with Tenaris (22% stake) and Tecpetrol (30% stake), is launching a $1 billion energy system project. The new natural gas-fired combined-cycle power plant in Mexico is expected to be completed in the fourth quarter of 2016 and will deliver a total generation capacity of between 850 and 900mW. Ternium's supply agreements with Techgen will enable it to purchase 78% of this power output.

Integrated systems such as those mentioned above, demonstrate Ternium's growing commitment to the Mexican market. In 2013 alone, Ternium's capital expenditure in the country amounted to $486 million.

ArcelorMittal

ArcelorMittal is the world's leading integrated steel and mining company. By employing an aggressive acquisition strategy, ArcelorMittal, itself the result of a merger between Mittal Steel and Arcelor in 2006, has continued to expand and in 2013, produced nearly double the total amount of steel as its closest competitor Nippon Steel & Sumitomo Metal Corporation. With sales of $79.4 billion in 2013, global steel shipments of 84.3Mt, and crude steel production of 91.2Mt, ArcelorMittal is the leading supplier of steel products in all major markets, including automotive, construction, household appliances and packaging. ArcelorMittal sells its steel products to customers in over 170 countries, is present in more than 60 countries, and has an industrial footprint in over 20 countries – including Mexico.

ArcelorMittal is Mexico's largest steel producer and slab exporter. Its industrial footprint consists of a 4Mt/yr pelletiser plant, a 2.3Mt/yr HYL DRI plant, a 1.5Mt/yr Midrex DRI plant, four 220Mt electric arc furnaces, two twin-strand continuous slab casters, and a thermal power plant. The main facility, which employs over 5,500 people, is located in Lázaro Cárdenas, Michoacán where the total production of steel is 3.8Mt/yr. The adjacent port on Mexico's Pacific coast gives ArcelorMittal maritime access to North American, South American and Asian markets.

The company further increased its Mexican operations through the acquisition of Dofasco and taking over its Mexican tube welding facility in Monterrey. The tubes produced here contribute to the growing automotive, agriculture and construction industry in Mexico.

ArcelorMittal is the only slab producer in the world utilising the direct reduced iron – electric arc furnace (DRI-EAF) continuous casting method for its entire production of steel products. The process boasts higher quality slabs that have a uniform grain structure and superior finish. This allows for a finished product that can be used for more sophisticated applications such as the automobile, appliances, petroleum and gas, and shipbuilding industries, as well as structural and commercial grade steel for the construction industry.

Alfonso Carmargo, Commercial Director for Profiles Deacero

Deacero

Deacero began its operations in the 1950s as a producer of steel mesh for fencing. Over time, the privately owned, 100% Mexican company became increasingly dominant in the production of mesh and other wire and, as a result, began to focus on the vertical integration of its supply chain. In 1980, Deacero established its first steel mill, gaining the capability to process billets and manufacture steel wire, the primary raw material for the wire derivatives that Deacero currently produces.

Today, Deacero has continued integrating and has its own scrap metal collection and processing infrastructure, steel mills, product manufacturing plants and distribution centers across Mexico and the United States. Alfonso Camargo, a director at Deacero emphasized the strategic importance of further integrating the company. "The fact that we are fully integrated and produce our own raw material allows us to work with a wide variety of different alloys, depending on the particular application we are looking at," he said.

The fact that Deacero has experienced continuous growth, doubling in size every 10 years, and currently employs over 6,500 people, attests to the strategic success of such integration.

With a total production capacity of 4.5Mt/yr and over 60 years experience, Deacero has become one of the largest manufacturers in North America. The company offers a diversified portfolio of over 3,800 products that can be subdivided into 90 categories. This includes a wide assortment of finished goods, such as fences, meshes, nails, and wire ropes. Industrial goods, such as galvanised or black annealed wires, wire rod, merchant bars, shapes and beams for


ArcelorMittal Mexico

value-added resellers such as equipment manufacturers, fabricators and the construction industry, continue to constitute a large percentage of Deacero's current business. In addition, it continues to operate as a non-ferrous recyclable metals supplier for mills, foundries, smelters and traders.

Deacero's most recent plant, inaugurated in 2013 in Ramos Arizpe, has allowed the company to produce rebar for the construction industry. The bilateral selling of low-cost rebar across borders remains a highly controversial topic in Mexico, and Deacero's co-CEO Raul Gutierrez has been vocal in expressing his annoyance with recent "dumping" accusations from American steel producers.

As a fully integrated leader in North America, Deacero has started assessing the potential of other markets worldwide and has named South America and Central America as exciting prospects for future operations. "We do not have any firm plans yet," said Camargo, "but we plan on setting up joint ventures with local partners in order to strengthen our footprint in new locations moving forward."

Gerdau

Brazilian steelmaker Gerdau is the Americas' leading company in the production of long steel and a major global supplier of speciality steel. The company has an installed capacity of more than 25Mt/yr and more than 45,000 employees worldwide. Through a vertically integrated network of mini-mills, scrap recycling facilities, and downstream operations, the company serves customers throughout North America and offers an assorted product mix of merchant steel, rebar, structural shapes, fabricated steel, flat-rolled and wire rod.

The company's products are generally sold to steel service centres, distributors, steel fabricators, or directly to the OEMs for use in a variety of industries including commercial, industrial and residential construction, manufacturing, mining, cellular and electrical transmission and the automotive industry.

The company's penetration into the Mexican market occurred in March 2007 with the acquisition of Siderúrgica Tultitlán (Sidertul), a Mexican company with more than 50 years of national experience in manufacturing rebar for construction. The mini-mill, located in the metropolitan area of Mexico City, had the production capacity of 350kt/yr of steel and 330kt/yr of laminated product and was purchased for $259 million. At the time, André B. Gerdau Johannpeter, CEO of Gerdau, stated: "Mexico is a priority market for Gerdau," and this acquisition was a pledge to this prospering market. The company has since increased production capacity at the facility to 500kt/yr and 430kt/yr, respectively.

The company made further commitments to the Mexican steel market with a 49%, $110.7 million acquisition of Corsa Controladora that concluded in 2008 and led to the formation of Gerdau Corsa. "The partnership strengthens the Gerdau Group's presence in the third largest steel consumer market in the Americas and allows us to continue as one of the agents in the consolidation process of the global steel business," stated Johannpeter.

Today, Gerdau Corsa operates two mills producing crude and rolled steel located in the state of Mexico with aggregate installed production capacity of 500kt/yr of crude steel and 400kt/yr of rolled steel products. In Hidalgo there is another unit producing structural profiles. It also has three scrap processing and collection units and seven distribution centres. Gerdau Corsa products are primarily sold on the domestic Mexican market.

More recently, through the joint venture with Gerdau Corsa, Gerdau has purchased the main equipment for the installation of a new structural shape mill for which construction is fully underway. The new mill has an annual installed capacity of 1Mt/yr of steel and 700kt/yr of rolled products. The investment will negate the need for imports of this product in Mexico. ■

Mirroring the trend for expansion and advancement within the mills themselves, service centres have had to formalise their operations and improve the level and range of services they offer in order to stay relevant within the market. Distributors that still adhere to the old model of simply holding inventory for small users are rapidly disappearing


Plesa steel leveler

Bridging the gap between supply and demand

STEEL distribution is big business in Mexico. In other Latin American nations such as Brazil or Argentina, mills tend to operate their own distribution networks and maintain fairly direct interaction with their end clients. This is not the case in Mexico. Here, producers invariably sell only to independent distributors or service centres. This situation has led the sub-sector to grow to extremely large proportions. Member companies of the National Confederation of Steel Distributors (CONADIAC) provide employment for over 40,000 people and sell more than 50% of all the steel produced in the country.

It is unclear how exactly this dynamic came about in the first place, but it seems likely that it was born of necessity. Traditionally, the companies involved in Mexico's metal processing sector were small, highly localised operations. The original idea of a service centre was simply to buy steel and keep inventory for small customers who lacked the purchasing power to go directly to the mills. Today, many heavy consumers of steel – major construction companies, stamping plants and forges, for example – are now large, professionally run operations that could potentially buy their materials from the original producer, but the strength of the distributor still persists.

This does not mean that the sector has remained stagnant. We are seeing a variety of different strategies take shape as distributors alter their business models to adapt to the demands of the changing economy. In order to follow the rationale behind these strategies, it is first necessary to understand that a broad division exists within the sector. "It should be noted that companies focus on either commercial or industrial, and that industrial steel has a much larger growing demand at the moment," explained Mauricio Morales, director of Galvaprime, a fairly new player among Monterrey's thriving community of service centres that prides itself on the early adoption of modern technology. "Commercial steel, such as that used in the construction industry, has seen stagnant or very low growth."

In this context, those operators with a focus on commercial steels have had to differentiate themselves primarily through the sheer scale of their inventory. "Ferre Barniedo is one of the largest suppliers of structural steels to the construction industry and has built up a strong reputation behind its brand with over 40 years in the market. Ferre Barniedo's slogan is "En Acero, Todo," which roughly translates as "Everything in steel." This idea underpins our philosophy and we aim to keep an extremely large inventory across a wide range of different products," commented, José Calixto Perez del Blanco, the company's director. Across its five different warehouses, Ferre Barniedo manages stocks of approximately 200kt. Clearly, this is not a feasible strategy for everyone, as the costs associated with building up such an inventory are very high.

As such, an increasing number of service centres are shifting their approach to appeal more to clients involved in Mexico's booming automotive and manufacturing industries. Now, the main thrust is towards adding value to the base steel being sold. This is generally accomplished by incorporating increasingly complex processing technologies to existing plants. A large number of service centres have been acquiring new slitting lines, multi-blanking lines and automated cutting equipment. One name that is emblematic of this new direction is Plesa Steel. The company recently completed a $50 million investment in a state-of-the-art process plant in Monterrey. "More and more of our clients are looking for better quality processed material, which is why we made the new investment into our facilities. All of the machinery we brought in is providing much higher quality, particularly when it comes to the flatness of the material," explained director Eduardo Zundelevich.

Moving forward, Zundelevich is very optimistic about the future of the sector and plans to roll out further investment programmes over the next two to three years.

Still others have chosen to push even further down the value chain towards the delivery of final products. Aceros del Toro started out as a small scrap trader, before moving into distribution and processing. Although its service centre still constitutes the most important part of the operation, director Francisco Vargas sees huge potential opening up through the fabrication of large metallic pieces. He said: "Rather than selling steel, the idea here is to move further downstream and sell components. This area currently makes up about 5% of our total revenues but the eventual goal is to export."

To capitalise on this growing demand for fabrication services, the company has recently purchased a laser cutter to shape thick steel plates for use in their workshop.

However, amidst this flurry of new investment, some are sounding a note of caution. "There is a huge overcapacity problem within the service centre sector. Across the country, service centres are running at as low as 30% capacity," warned Ricardo Fernandez, CEO of distribution chain Ferrecabsa.

Rather than investing in its own process capacity, Ferrecabsa's management has opted to pursue an entirely different course of action. "We have looked at this possibility many times, but after analysing in great detail the potential consequences, we concluded that it is simply not a worthwhile investment."

Recognising that demand for commercial steel has been underperforming, they have moved to compensate lower sales in their traditional wholesale business by entering the retail market. Selling small volumes with much higher margins has allowed them to prop up their core business until market conditions improve.

This strategy may be paying off for Ferrecabsa but it is not without risks. Crossing over into retail means stepping on hotly contested territory. In addition to the plethora of micro-distributors that exist in every Mexican city and cater to neighborhood construction firms, entrants to the retail market will have to take on high-volume international behemoths such as Home Depot. "When it comes to steel, Home Depot destroys prices. As they have such a huge range of different products they are able to offer simple materials like cement and rebar with margins of just 1% or 2%," cautioned Jorge Zarick, director of Puebla's Tycsacero, a distributor focusing on construction materials.

This squeeze on margins has effectively closed the door on retail rebar to small, independent players, which generally need to sell at a 6% or 7% mark-up to stay afloat. That being said, there is still room for manoeuvre in other commercial profiles, such as beams, which are not usually manufactured within Mexico.

Looking to the future, it seems certain that Mexico's distribution sector is here to stay. The growth of foreign producers such as Ternium and Gerdau, which are used to running their own distribution networks in their home countries, may shake up the scenario to a degree, but large distributors are so entrenched within the market that it will prove difficult for the new mills to dislodge them. Francisco Ponton, director general of American service centre, Steel Warehouse, believes that the current overcapacity will give way to a new wave of mergers and acquisitions: "In terms of market, I hope that we see more consolidation. Currently there are too many players fighting for the same space . . . just look at how many slitters are around the Monterrey area. With so many players, consolidation is bound to occur."

This seems like a fair assessment, although given that most local players are currently investing as much as they can in a bid to outdo each other, we may not see any activity in this regard for some years.

Mexican manufacturing shifts into high gear

There are many reasons why Mexico is becoming so popular for the automotive industry. First, its proximity to the USA and Canada. Second, its status as a signatory to trade agreements with over 40 different countries and third, the high number of parts manufacturers in the country.

"EVERYBODY wants to be in Mexico." This is how Raúl Lopez of Novocast sums up the automotive industry's current sentiment toward the country. It would seem that Mr. Lopez is entirely correct in his assessment. The past five years have seen extremely high levels of investment from new entrants and established players alike. Daimler AG and Nissan Motor Co. have just announced a new $1.36 billion facility in Aguascalientes to produce premium small cars, which will be located alongside Nissan's existing plant in the area. This comes hot on the tail of BMW's confirmation of a $1 billion investment in San Luis Potosí to manufacture 150,000 vehicles per year by 2019.

In 2013, Mexico produced just over 3 million cars, or approximately 18% of all the cars made in North America. By 2020, this figure is expected to climb to 25% as Mexican plants steal market share from producers in Canada and the Southern United States. Since 2009, employment in the sector has risen by 46% and now provides jobs for some 580,000 people, principally in the central Bajío region.

Why has the country suddenly become so popular for automakers?

Low labour costs play an important role, as is the case in any manufacturing industry. According to numbers from the Centre for Automotive Research, the average Mexican worker earns approximately $8 per hour, compared with $37 in the USA. However, in the long-term, an over-reliance on low wages could prove to be shortsighted; as Mexico's economy develops, wages and living standards should see a commensurate improvement. As such, promoters of the industry within Mexico are keen to point out the country's other competitive advantages.

Oscar Albín, president of the National Autoparts Institute (INA), emphasised four key factors that play in Mexico's favour. The first is the country's geographic situation. Next door to the USA and Canada and in close proximity to growing markets within South America, producers in Mexico are in an advantageous position when it comes to distributing their products. "Vehicles are expensive products to transport, so being positioned close to end markets is very important for manufacturers," he pointed out.


Oscar R Albin, Executive President of INA

While China or India may be able to offer even lower labour costs than Mexico, when total shipping costs are taken into account, it is cheaper to deliver a car from Mexico to the USA.

The second key advantage is derived from Mexico's status as a signatory to trade agreements with over 40 different countries. 90% of Mexican vehicles eventually find their way to these destinations. The third attribute is the high number of part manufacturers present in Mexico. The country is home to over 1,100 part makers, which helps bring down costs for the assembly lines located here. The final point is the level of automotive expertise concentrated within the country and particularly within the central region. Forty years of significant car production has contributed to a very deep talent pool. Mexican plants have a good deal of experience in lean manufacturing, quality control and supply chain management.


Fausto Cuevas, Director General of AMIA

It is a peculiarity of the Mexican industry that, despite its lengthy association with auto production, there are relatively few truly Mexican players involved. The big name OEMs are based out of Europe, the USA and Asia, and so too are the major parts producers. "In order to gain a foothold in this market, Latin American part makers must have a very high level of internationalisation," explained Albin. "But in the 1990s most major Latin manufacturers were acquired by larger, global corporations."

Nevertheless, there is a solid core of small and medium-sized Mexican operations that are building up off the back of automotive producers and beginning to integrate themselves into the supply chain. Unicar is a tier-two supplier to the sector, producing small, stamped pieces that eventually find their way to VW's Puebla assembly line. Director Teodoro Bordas believes that a high level of quality control is of paramount importance to be considered as a supplier: "When producing for the automotive industry it is important that you are ISO TS certified, as we became in 2009/2010. ISO TS is connected directly to the automotive industry and has more specific regulations than simply ISO 9001."

While this was previously only a requirement for tier-one suppliers, demands from the OEMs are becoming increasingly exigent, which is exerting a positive effect on quality levels throughout the supply chain.

Looking forward, it is without a doubt that Mexico's automotive sector will play an ever-increasing role in the Mexican economy, but it is not without its challenges. The country suffers from relatively weak domestic demand, which has still not recovered from the 2008 financial crash. A high export volume can be healthy, but the current level of 80% is too high, according to some analysts.

The primary contributing factor to this low Mexican demand is the high number of cheap, used cars coming in from the USA. "It is estimated that seven million used vehicles have been imported into Mexico from the United States since 2005. The problem with these imports is that they cannot get circulation plates in the States anymore due to environmental or safety problems," said Fausto Cueva, president of the Mexican Automotive Industry Association (AMIA).

As Mexico has no real controls over emissions or mechanical standards, vehicles that would be illegal to operate in the USA are routinely being shipped across the border and sold off cheaply. AMIA is currently lobbying the government to introduce regulations similar to those seen in the USA, thereby reducing the number of dangerous vehicles on the roads and stimulating demand for Mexican produce.

The need for specialities...

Increased automotive activity will have a profound effect on the steel production profile. While aluminum is gaining favour among luxury car manufacturers, steel remains the material of choice for the vast majority of light vehicles. However, the steels used within auto manufacturing are extremely specialised and, at present, Mexican mills are more geared towards commercial grades, which are only sufficient for some interior parts and chassis components.

A shift is underway though. Steel is a conservative industry and not one given to rapid change, but even the most stubborn of CEOs cannot fail to see the value of catering to Mexico's biggest growth sector. Since 2012, it is estimated that steelmakers have invested $3 billion in developing their auto-grade steel production.

In June 2013, Korean producer POSCO completed construction of its second continuous galvanizing line in Tamaulipas. "The new plant is able to produce 500kt/yr of galvanised and 'galvannealed' steel coils," said POSCO Mexico's president, Hwangbo Won. "This brings our total capacity to 900kt/yr, which we believe will be able to supply 60% of Mexican automotive manufacturers' needs and supplant some of the need for imports."

Until recently POSCO has tended to import its raw materials from its mills in Korea or bring in steel from Japan or the USA. However, following an anti-dumping petition brought by Ternium, the Koreans are looking to work closer with their Mexican peers and plan on using an increasing amount of domestically produced raw material.

The second major investment in speciality production is Tenigal, a joint venture between Ternium and Nippon Steel to produce cold-rolled galvanised

Harsco Industrial Plant

coils. The $1.1 billion plant constitutes the single largest investment by a foreign entity in Nuevo Leon for the last 10 years. Geared specifically towards supplying the automotive sector, Tenigal has the capacity to deliver 2Mt/yr when production ramps up.

These new plants will have a positive impact further down the value chain. Larger domestic capacity will allow transformers and manufacturers to cut down lead times and control production costs to a much greater degree. However, at present, carmakers seem to be investing much more rapidly than the mills, so imports will continue to play a key role for some time to come.

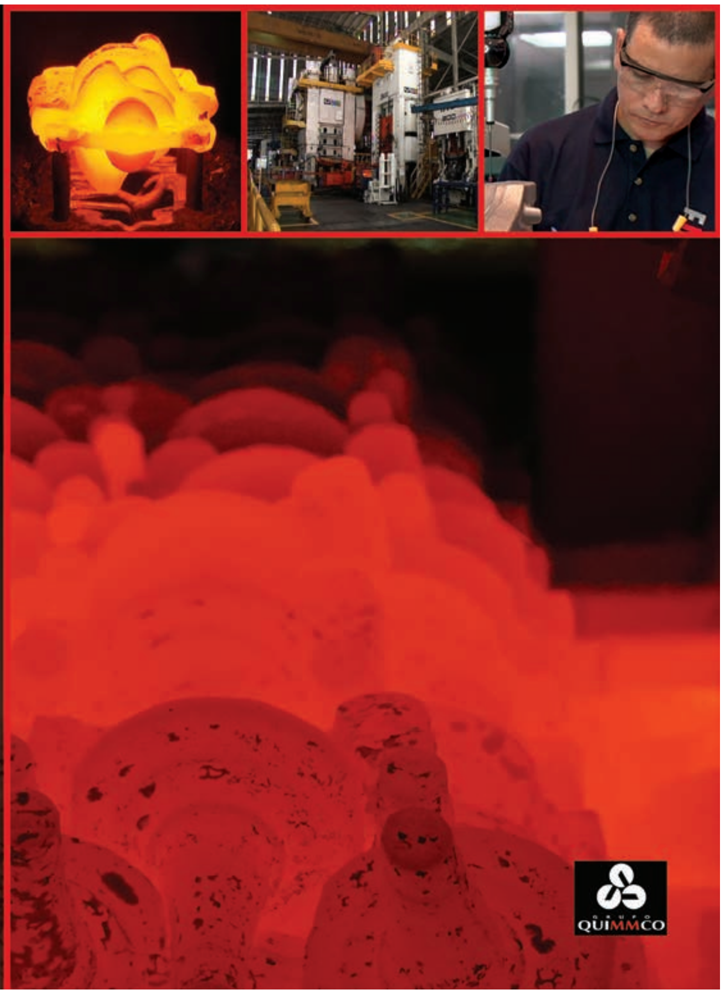
Maquiladoras

Catering to those companies that rely on imports is a range of specialist importers and toll processors or maquiladoras, as they are called in Spanish. The maquiladora is a uniquely Mexican phenomenon that came to prominence in the mid-20th Century.

The idea is that a company in Mexico can temporarily import goods or services that will then be transformed or manufactured, and eventually re-exported as finished or semi-finished products without incurring any duties or other taxes. The system was first introduced in an effort to attract high-level manufacturing operations to the country, a goal that has been achieved. However, it has drawn criticism from certain quarters for allowing foreign-owned firms to profit from cheap Mexican labour without delivering any real value to the country.

From an automotive perspective, the system is ideal. A range of companies has now sprung up that combine the role of maquiladora with that of a service centre. Acero Prime imports large volumes of auto-grade steel coils on behalf of its clients and also provides a full warehousing service, delivering the coils or processed sheets only when their clients require them. "The supply chain is getting very tight and customers do not want to keep a lot of inventory. We do shorter runs and deal more with customers shipping material in by truck because they want to keep less inventory," said general manager Arturo Marroquín.

It is important to emphasise that toll processors do not buy or sell steel like a traditional distributor. They are never the legal owners of the material; they simply manage the importation and storage aspects. Marroquín now plans to expand the business by incorporating further processing technologies such as blanking and laser cutting in order to supply products that integrate more easily into the assembly lines. ■



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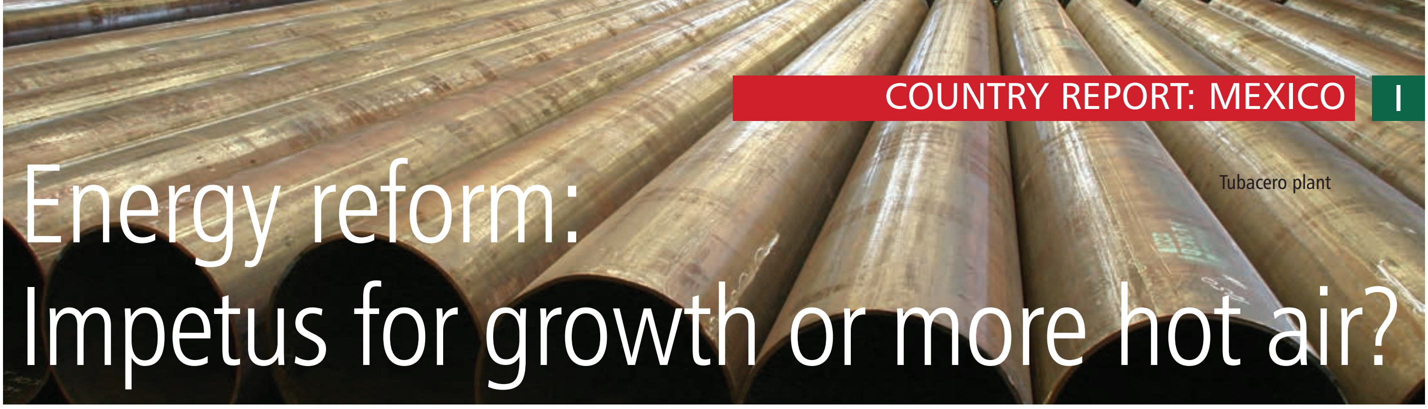
Energy reform: Impetus for growth or more hot air?



Tubacero plant

Opening up Mexico's hydrocarbon resources to foreign investment is not going to happen overnight, but when it does take place it will be good news for the Mexican steel industry

2013 was a busy year for Mexico's President Enrique Peña Nieto. The first-term leader succeeded in breaking down a long-lasting deadlock between the two main political parties and pushing through an ambitious programme of reforms to the national Constitution. The so-called structural reforms are the first step in a radical overhaul of the largely inefficient systems that governed major parts of the state apparatus such as education, telecoms and taxation.

Now, Congress is coming together to debate the finer points of perhaps the most far-reaching of all the reforms: energy.

The underlying philosophy of the movement is to open up Mexico's hydrocarbon resources to foreign investment for the first time since nationalisation in 1938. Under the previous legal framework, the state producer – Pemex – was the sole body entitled to explore and extract Mexican petroleum. Over time this has caused severe setbacks in the development of the country's oil and gas production. More than half of Mexico's oil reserves lie buried deep underwater and, thanks to several decades of underinvestment, Pemex has never built up the technical capabilities to exploit them. Teodoro Gonzalez, director general and CEO of Tubacero, one of Mexico's most important producers of carbon steel tubing for oil and gas pipelines, sees the reforms as crucial to unlocking this potential: "When oil prices first began to rise in the 2000s, the government began to invest in delineating new reserves, but as prices receded, so too did exploration funding," said Gonzalez. "Now Pemex's reserves are severely depleted and it is necessary to invest heavily in making new discoveries. We are very optimistic that the new reforms will help to bring about this much-needed investment."

However, this process will not happen overnight. Although the necessary change to the Constitution has already passed through both the Senate and the House of Representatives, this is entirely useless without a raft of enabling legislation to regulate the new sector. Laws pertaining to key issues such as the bidding process for new exploration blocks, Pemex's interaction with foreign private companies and local content clauses must now be decided upon. The final draft of the reforms was initially supposed to be passed by 30 April, when Congress recesses for the summer, but this deadline proved overly optimistic.

The debates were then postponed, with the idea being to hold special legislative sessions throughout May and June. This in itself caused controversy as key debates were scheduled to coincide with important World Cup fixtures. Privatising the sector remains a hugely sensitive issue and feelings run high among the Mexican population. Many believe that the country's oil and gas reserves form part of the national patrimony and should not be extracted for the benefit of foreign companies. As such, detractors from the opposition Party of the Democratic Revolution (PRD) accused Peña Nieto's Institutional Revolutionary Party (PRI) of deliberately using football to distract public attention in an effort to have the laws pass through more rapidly.

At the time of writing, the legislative sessions planned for June have spilled into July and still we are yet to see any concrete developments.

Nonetheless, if the reforms do pass then the benefits to the steel industry could be immense. Mexico has long suffered from extremely high electricity prices, which have forced mills to make savings in other areas and develop very robust cost structures. Roberto Benavides, audit partner at Deloitte Mexico, sees an immediate positive impact on local producers: "If the new energy reforms bring down gas and electricity bills as they are supposed to, Mexican manufacturers will be very well positioned to compete on an international level, especially with the USA where they are accustomed to very low gas prices."

Dieter Femfert, Commercial Director of Cryoninfra

The new framework will also offer potential to private companies to generate their own energy, which could be a huge boost to heavy industrial users. Some steelmakers, including DeAcero, are already eyeing up opportunities presented by this shift. Alfonso Camargo explained the company's plans to take advantage of the new laws: "Energy remains the largest cost for steel producers. As such, we have taken the decision to build a gas powered thermo-electric power station in Ramos Arizpe that will supply all the electricity we need at our plant. The facility will also generate excess energy that we will be able to sell to the grid, thus turning a cost into a profitable enterprise."

At the same time, the upturn in oil and gas activity will spur demand for speciality steels and should provide growth opportunities for companies involved throughout the value chain. "There is great potential in certain areas, such as production of steel tubes. All across Mexico we are seeing significant investments in pipelines to carry natural gas between the main production sites and the large urban centres. With the arrival of the energy reforms we expect that this sector will continue to expand rapidly," said Dieter Femfert, director of Cryo Infra, one of Mexico's key industrial gas suppliers.

Increased steel production is good news for gas providers too, as it presents many opportunities to create on-site generation capacity and higher-volume supply solutions.

In addition to tube-makers, fabrication shops will be among the immediate beneficiaries of this petroleum boom. San Luis Potosi-based special equipment fabricator, Aceros Hercules, has traditionally focused its efforts on the international market due to the complications associated with doing business with Pemex. Julio Güemes, Aceros Hercules' director, believes that the predominance of the state-owned giant has hindered the growth of more local operations: "Pemex is the only company that can move the oil and gas industry in

Mexico. The development of workshops has been determined by Pemex because it either has its own workshops or selected workshops that it works with. New workshops will enter into the industry because these new players will look for competitive price, service and quality."

However, not everybody is so optimistic. Victor Palencio Huezo is sales director of Grupo Mim, a key supplier of tubing and valves to Pemex that has seen double-digit growth in recent years. After many years in the industry, he is sceptical about the much-vaunted impact of the reforms: "While we believe that the opening up of Mexico's hydrocarbons to private investment is a great step forward for the country, we do not foresee a boom on the scale that is being hailed by politicians."

The recent mining tax hike to 7.5% has had a negative impact on mineral investment and there is a fear that some investors may view Mexico's entire resource sector with suspicion.

However, the main frustration, at least for most Mexicans, is the excruciating pace at which the bills are being processed. The government has been continuously promising that an economic boom is just around the corner but, as of yet, the opposite has been true. Progress has not been as rapid as originally promised and while Peña Nieto's achievements in pushing through his progressive agenda are impressive, he has yet to implement any of them. This has led some to give him the nickname "the great legislator," as many feel that he is yet to prove himself as an administrator. "Business leaders are complaining that the reforms are taking too long to implement and that we need concrete changes now," said Roberto Marquez Hiriart, director general of Villacero's industrial unit. "This is not possible. You cannot overhaul an entire state infrastructure overnight. These reforms constitute a turning point for the country and it is vitally important that we do it right. If this takes time, so be it."

At this point, opinions are divided as to exactly how the reforms will affect the wider economy. It is generally accepted that opening up the oil and gas industry is a very positive move, but much scepticism exists as to how well Mexico will bring these new laws into force. If Congress passes them swiftly then we could see new FDI streams opening up as early as 2015. However, if the debates get bogged down in political point scoring and obstructionism, which is eminently possible, then the subsequent loss of momentum could put off investors for several years to come. Looking to the long term, analysts worry that if the legislation is rushed through and is not carefully drafted then future governments could easily overturn it, thus rendering the entire undertaking an exercise in futility. ■

Construction: Big numbers, but where's the money?

A lack of Government projects is the main reason behind the Mexican construction industry's lacklustre performance. The industry contracted by 4.5% last year but a moderate recovery is on the cards as the state coffers re-open and the cash begins to flow

ALTHOUGH Mexico's construction industry currently ranks just below Brazil as the second largest in Latin America, with a total value of $75.7 billion, in recent years its performance has been less than stellar. After a forlorn 2012, the industry contracted by 4.5% in 2013. As construction applications account for more than 49% of metal structures and products, and 29.5% of forged and stamped metal products in Mexico, this downturn has had serious repercussions for the mills.

It is generally accepted that the main reason behind this drop in demand is a lack of government projects coming online. State investment accounts for more than half of all Mexico's construction projects, and since 2012, the government has been preoccupied with pushing through its extensive reform agenda, rather than focusing on project implementation.

That said, there is some cause for optimism. The first quarter of 2014 saw the beginnings of a moderate recovery and government infrastructure spending was up 14% on 2013 levels. "Now, we are starting to see a shift towards more active implementation of infrastructure projects," commented Alfonso Camargo, director commercial for profiles DeAcero. "As the state coffers are re-opened and cash begins to flow more freely we should see a sharp rise in construction, and a subsequent boost in the demand for steel products."

Aside from the slowdown in government spending, analysts also point to the house-building sector as a weight holding back construction growth. The market crashed in 2013 and many domestic residential property developers went into bankruptcy. The cessation of their operations has not been compensated by the arrival of international investors, who tend to view the sector as still too risky. This is an area that the government will have to address as a priority, as the country still suffers from an urgent need for affordable housing. It is estimated that it will be necessary to deliver approximately 500,000 new houses per year to satisfy demand, but current averages hover around 100,000 to 150,000.

There is, however, one notable exception to this trend: Puebla. The city of nearly six million people is the fifth largest in Mexico and has been growing rapidly for the past few decades, primarily thanks to the arrival of Volkswagen (VW) some 50 years ago. VW's plant is now the largest automotive facility in the Americas and has transformed Puebla into a beacon for young engineers. "More than 150 universities have been established, bringing high volumes of students and young people, which has stimulated demand for housing: right now 500 new houses and 4,000 apartments are under construction," said Jorge Zarick, director of local steel distributor, Tycsacero.

Looking to the medium-term, economists are forecasting a rebound in Mexican construction and some are predicting growth of 5% by 2015. Whether this is accomplished or not is highly contingent on the government's success in rolling out its ambitious National Infrastructure Plan.

Announced in April, the investment programme encompasses some 743 projects across six areas: communications and transport; energy; water; health; housing; and tourism. Total investment is projected to reach $619.1 billion, of which 53% is earmarked for Pemex. This high figure has been the subject of much debate, but Humberto Ibarrola of the Chamber of the Mexican Construction Industry (CMIC), is confident that we should believe the figures. "Our researchers at CMIC have extensively analysed the plans laid out within the National Infrastructure Program and we believe the figure of $619.1 billion to be accurate."

To meet this lofty target, the government is counting on a much higher proportion of private participation than previously seen in the country; up to 37% of funding is expected to come from the private sector. This will be enabled in part by a new framework to encourage more public/ private partnerships (PPPs) and also by the arrival of private investment into the oil and gas sector.

While many of the projects outlined in the plan are linked primarily to road construction and will have a relatively low impact on steel demand, there are several large expansions planned for the country's major ports, as well as the construction of a Transpeninsular Train in the Yucatán, all of which will be steel-intensive developments.

Sceptics point out, however, that the last National Infrastructure Programme, overseen by former President, Felipe

Forging ahead

Mexican foundries are looking to diversify away from the automotive sector to avoid catastrophe should future demand for cars take a nosedive. While the Mexican industry is ranked in 11th place by the World Foundry Organisation – and contributed $4.2 billion to the national economy – problems still need to be ironed out

Edgar A. Moncayo, Director General of Forja de Monterrey

MEXICO'S foundry industry has seen strong growth over the past five years. In 2011, the World Foundry Organisation ranking of casting industries put Mexico in 11th place. By 2013 the country had overtaken Korea, France and Italy to become the seventh largest global player, contributing approximately $4.2 billion to the national economy.

Unlike the steel industry, which is facing overcapacity both in terms of production volumes and service centre facilities, Mexican foundries are struggling to keep up with the surge in demand. 75% of castings produced in the country are destined for the automotive sector, which is continuing to grow rapidly. In the long run, this over-reliance on auto production could prove to be a point of weakness as demand for cars is cyclical: a sudden drop in sales volumes could send shockwaves through the industry. To combat this, many foundries are looking to diversify their client base, carving out niches producing specialised pieces for the oil and gas industry or components for electrical motors. For now, however, these remain minority markets: oil and gas accounts for just 4% of total demand. "By opening up the oil and gas industry to foreign investment we believe that the energy sector's participation could increase up to approximately 6%. In parallel, we will see a slight decrease in the dominance of the automotive sector," claims Bruno Jaramillo, executive director of the Mexican Foundry Society.

Traditionally seen as a sector dominated by small operations, heavy investment from foreign casting houses has shaken up market dynamics. Large enterprises have flourished, while smaller jobbing foundries have lost out. According to statistics from the Society, 5% of SMEs involved in the sector have closed their doors since 2011.

Germán Sánchez Madrigal is sales manager of Qualy, a medium-sized foundry located on the outskirts of Monterrey that caters to a range of high-level clients in the USA. He believes that many of these new foundries are heading south due to difficulties meeting the high environmental standards required in the USA. "Environmental regulations are more relaxed in Mexico. Qualy fulfills government requirements, but we believe there is more that can be done in this regard. Our facility has equipment to measure and prevent pollution, such as filters and measuring stations on the roof. We are very concerned about the foundry's relationship with the government and the community around us."

While environmental compliance may not be an issue for Mexican casting, the industry is not without its challenges. Patricio Gil is director of Blackhawk, one of Mexico's largest ductile iron foundries. He sees the lack of human capital as an issue that will become more acute in the future. "The enrollment in foundry or metal related degrees in developed countries is continuing to decrease year after year. We have been creating positions for graduates in order to attract more young engineers out of school. We are trying to get young people more excited about the industry," he stated.

A shift towards higher levels of automation in the industry will help to mitigate this problem, but there will always be a need for qualified operators and, in the absence of new personnel coming through the local universities, Mexican foundries will have to look elsewhere for their new members.

Another setback for domestic forges and foundries, particularly those looking to focus on pieces for the automotive sector, is the relative lack of speciality steel production in the country. Forja de Monterrey is a good example of a local operation that has been able to integrate itself into the automotive supply chain by adopting international standards and investing in strict quality control mechanisms. Director Edgar Moncayo is optimistic about the impact that increased speciality capacity will have on the company: "It is going to affect our business by shortening our purchasing cycle. Currently our purchasing cycle takes four months, so we must predict the market in advance. A specialised steel mill in Mexico would reduce the cycle to two months, shortening our lead times and reducing our credit lines to buy the steel."

Nevertheless, he does not believe that a more reliable supply will be enough to attract new domestic investments in the forging industry. The upfront capital costs associated with opening a brand new forge are extremely high. Furthermore, the process itself is also self-destructive, leading to very high operational costs. The level of expertise needed to run such an enterprise is very specific and not very well developed in Mexico. ■

Calderón, pledged MXN 152 billion to 76 projects, but only 25 of these were ever completed. As we approach the last quarter of 2014, we are yet to see ground broken on any of these new major public works. More cynical commentators fear that the current spending commitments may evaporate in much the same way as the previous wave. "The federal government has committed 40 billion pesos to infrastructure investment in the state of Michoacán but, as of yet, this has not materialised," complains Victor Cairo, CEO of ArcelorMittal Mexico.

The expansion of Michoacan's Lazaro Cardenas port has long been a key factor in the public spending agenda and, for many years, it has been showcased as one of Mexico's truly world-class logistics hubs. Developers now want to boost capacity and leverage its close proximity to the United States in order to attract freight away from the heavily congested Port of Los Angeles.

At the end of the day, Peña Nieto, unlike his predecessor, has a proven track record of infrastructure spending and has repeatedly shown his strong commitment to encouraging private investment in the sector. In this light, the issue is not so much whether or not these projects will come to fruition, but when. Government figures claim to be gearing up to get the ball rolling, but the state bureaucracy is a lumbering giant and it will take some time to build up sufficient momentum. Calixto Perez of Ferre Barniedo's views are representative of the whole sector in this regard: "We are optimistic about the future and we believe that there will be a number of opportunities created by the energy reforms and this public spending commitment, but the official timelines are very optimistic and it will take a few years for the benefits to be felt." ■

The great railroad revival

Mexico's steelmakers are heavy users of the country's rail network

Truck-based transport reigns supreme in Mexico. Approximately 78% of freight in Mexico is moved on the highways, compared to 58% in the USA, and close to 40% in Canada.

Railroads are clawing back market share from the truckers, particularly when it comes to cross-border movements between Mexico, the USA and Canada.

Between 1994 and 1998, Mexican rail underwent a privatisation process, which left two domestic carriers – Ferromex and Kansas City Southern de Mexico (KCSM) – in charge of the nation's railroads.

Since that time, the proportion of freight moved by rail within Mexico has jumped from 8% to 22%, and heavy investments in new tracks and better technology have created a seamless integration within NAFTA's rail networks.

This is extremely important to the country's steelmakers, which are heavy users of trains, both for importing raw materials from the North and exporting finished products back to the States.

The automotive sector, in particular, is a key client for the rail companies. Over 80% of the cars produced in Mexico in 2013 were exported to the USA by train.

Lately, there has been renewed interest in implementing a new reform of the railroads. There have been calls for new tracks to be built and for the sector to be opened up more to outsiders, but Ayala says there is no real need for new lines as most of Mexico's major cities offer good rail access to ports and the USA.

The World Economic Forum's infrastructure index places Mexico in 64th position for overall infrastructure quality. An analysis of the cost of rail transport, trucking, and the inefficiencies of border crossings reveals there is much room for improvement.

Yet, these statistics do not present an entirely clear picture of the reality. Ricardo Haneine is a partner at AT Kearney in Mexico City. He believes there is a regional divide within the countryand argues that the quality of the main corridors between major cities and access to the USA are both very good.

This reflects the more general divide between the booming industry of the north and central regions, and the stagnation and informality characterising the south.

National Infrastructure Plan investments should help to level the playing field across the country, but the trickle down effects will only become apparent over the next 20 to 30 years.

It is assumed that infrastructure investment goes hand-in-hand with rapid economic development, but not always. There is a need to co-ordinate infrastructure spending between the various involved bodies to ensure maximum return.

Along the Pacific coast, Mexico has many ports, and the respective state governments and local authorities have always sought to improve the quality of their own facilities.

However, there is not enough demand to keep the minor ports busy. There are two dominant terminals – Mazatlan and Michoacán – and the rest are unused, in spite of their relatively high quality and the modern technology. ■

Security – a problem of perception

The mass media is known for exaggeration and in the case of Mexico it has been working overtime on portraying the country as a lawless, anarchic society. The reality is something else. Mexico is a safer place to be than it was five years ago – but that doesn't stop businesses investing heavily in security

SECURITY, or rather perceived insecurity, is probably the single greatest concern for outside investors looking to move into Mexico. Fears for safety are heightened by a propensity within foreign media to focus excessively on stories relating to drugs, guns, and murder, often at the expense of any positive developments. In spite of this constant portrait of a country living on the edge of anarchy, it seems that Mexico is generally a safer place to be than it was five years ago.

In 2013, overall crime levels decreased slightly from 2012, while the number of homicides committed nationwide plunged by 16%. This was, however, tempered by a general increase in kidnapping and extortion.

According to the results of The American Chamber of Commerce's annual security survey, Nuevo Leon is the state with the worst security risks and Monterrey ranks as the most dangerous city. However, this is not an opinion shared by many of the state's inhabitants. "There was a particularly bad period when crime got out of hand, but thanks to co-ordinated efforts from the state and federal governments, the situation has improved considerably," said Alfonso Camargo, sales director of DeAcero and long-term Monterrey resident.

A decade ago, Monterrey was considered to be one of the safest cities in Mexico and enjoyed lower crime rates than nearby Texas. However, in 2010, cartel activity that had previously been confined to informal communities on the outskirts began to spill over into the elite residential neighborhoods scattered among the hills that surround the city. Carjackings became commonplace and dead bodies were left hanging from bridges as a warning to those who might choose to cross the drug lords.

Realising that existing police efforts were not effective, and that many police officers were in the pay of criminal gangs, the government began to collaborate with the private sector to build up a new police force from scratch.

Known as the Fuerza Civil, its members are recruited from outside law enforcement circles to ensure that they are free from the influence of corruption. Before being admitted to the force, they are subjected to a barrage of psychometric tests, which find their origin in the HR departments of Monterrey's largest corporations.

After passing through military training they are equipped with heavy firepower and dispatched to patrol the city's streets and highways. Their formidable presence has served as a powerful deterrent and anecdotal data suggests that they enjoy a far greater degree of trust from the general public than any other law enforcement body.

While initiatives like this may have had a dramatic effect on reducing violent crime, opportunistic theft is harder to police. "Companies within the steel distribution sector are directly affected by criminality through cargo theft and there is a thriving black market for stolen metal," complained José Antonio Ruiz, general director of Tubos Monterrey.

According to the American Chamber of Commerce, robbery is by far the most common crime that member companies suffer from. Worryingly, 20% of the companies that experienced robberies in 2013 saw more than five separate incidents over the course of the year.

While there are no statistics available as to the financial impact of these crimes on business, it is clearly high enough to justify the heavy costs associated with installing top-level security systems and employing 24-hour guards. Most companies that took part in the survey invest up to 4% of their yearly operating budget on security.

While crime is not going anywhere soon, it seems that the overall impact on the business environment is fairly minimal. "Of course security is an issue in Mexico, but it is not a deterrent to industrial investments. It relates more to the quality of life for people living in certain parts of the country," said Grupo Mim's CEO, José Alberto Garcia Lastra.

His diagnosis is backed up by the fact that only 2% of the companies surveyed by the American Chamber were considering relocating their operations outside of Mexico because of security problems. ■

Green traction

Decentralisation of environmental enforcement has led to more local action being taken against industrial offenders in Mexico. The nation's steel mills are starting to invest more heavily in green technology and there's even a resurgence in civil activism and community empowerment.

MEXICO used to be seen as a jurisdiction whose lax enforcement allowed industrialists free reign to cut corners on safety and environmental issues. While legal obligations for steelmakers may not yet have reached the high levels of compliance demanded by EU overseers, Mexico's reputation as a centre for cowboy outfits to operate however they please is beginning to fade. New rules and regulations relating to climate change and environmental stewardship have been introduced and the government has indicated that it is now prepared to go after those who transgress these requirements.

Andrés Delfino is general manager of Vesuvius Mexico, a company dedicated to the manufacture of flow control units and refractories for steel mills and foundries. He believes that while regulations themselves may be tight, enforcement is still lacking: "At Vesuvius we have a corporate policy to abide to the letter of the law in every country where we work, but not all companies are so diligent. Most of the major steel producers are investing heavily to improve their environmental footprint, but it will take time for their changes to have real effects."

It seems, though, that regulators are starting to catch up with industrial offenders. The past 20 years have seen a decentralisation of governmental handling of environmental issues. Previously, the Secretariat of Environment and Natural Resources (SEMARNAT) dealt with all environmental complaints through its head office in Mexico City, regardless of the nature of the offence or where it took place. Now, responsibility has been devolved to branches working at a local level. "While some of the smaller local authorities are not particularly sophisticated in terms of the resources at their disposal, they are more inclined to act than a distant centralised body," explained Manuel Ortiz Monasterio Q., director general of ERM Mexico.

According to data gathered by PwC, 25% of the total $11.5 billion invested by steel mills between 2010 and 2014 was dedicated to environmental improvements. This is partly a consequence of tougher laws, but also relates to the imperative of reducing energy consumption in the face of high electricity rates. Mills are increasingly looking to new technologies to help them reduce the amount of energy used in processes; a reduced environmental footprint is merely a happy by-product of the need to cut costs.

Gracida is Mexico's only manufacturer of industrial electromagnets. Over 40 years designing specialist equipment for steel mills, Gracida's president, Fidel Agustin Gracida Canseco, has seen steelmakers become increasingly demanding of their products: "In order to save energy, modern mills try and maintain high temperatures throughout their production chain, rather than cooling the steel down to transport it. This means that where we used to receive demands for magnets that could transport metal at 200ºC, now our clients are looking to move steel at 400ºC," he notes.

In parallel to this increased focus on environmental performance, Mexico has witnessed a resurgence of civil society activism and community empowerment, which has led to far stricter operating conditions for Mexican industry as a whole. If a community has a complaint relating to the way a large plant is operating, they now have ways and means of making their voice heard. "Although this is usually more of an issue with extractive industries, there has been at least one case where a steel mill in a peri-urban area was motivated to investigate their environmental performance solely because a local community was unhappy with their operations," said Roberto Frau, ERM's social and sustainability team leader.

The idea of a social license to operate is one that has gained much traction in Mexico over the past decade. In tune with this trend toward greater interaction with local communities, Mexican steel producers are increasing their expenditure on CSR and community projects across the board. In the words of José Luis Varga, general manager of Harsco: "Now more than ever, Mexico needs a reliable and honest business community, concerned about environmental impacts and its social

Fidel Agustin Gracida Canseco, President of Gracida

responsibilities."

For the past three years, ArcelorMittal has been awarded socially responsible enterprise status from the Mexican government for its contribution to improving living standards in the communities where it operates. According to CEO, Victor Cairo: "This is thanks to more than 30 different programmes that we manage within the communities where we are present. These include diverse initiatives covering a variety of causes, from helping female entrepreneurs develop their businesses and providing funding for child education projects to developing sustainable habitats for turtles."

To date, the company's social programmes have helped over 6,000 young people by ensuring that they have access to clean water and food, as well as the chance to receive a proper education.

In addition to social inclusion programmes within the communities where they have operations, Deacero has also collaborated with various branches of the federal government to design solutions for affordable housing. "Many poor people, particularly in rural areas, build their houses from adobe with no structural reinforcement," said Alfonso Camargo. "This can be very dangerous, so Deacero has engineered a wire reinforcement system to improve those properties' structural resistance and that can be sold at very economic prices to low-income communities." ■

Revolution through reform

Are Mexico's reforms a case of 'too little, too late' and if so what are the alternatives? Will Peña Nieto's government achieve its objectives and could he eliminate informality and furnish Mexico with 'developed nation status'?

OVER the past decade, Mexico's steel industry has undergone a profound transformation. The majority of productive assets have passed from domestic ownership into the hands of transnational corporations, while the growth of high level manufacturing has led to the adoption of international quality standards throughout the value chain. The relatively modest increase in total production volumes masks a considerable investment in improving operational efficiency and boosting environmental performance.

On a broader level, Mexico finds itself at a turning point. Peña Nieto's structural reforms could well prove to be the most significant driver of the Mexican economy since the 1992 signing of NAFTA. If all goes well, we should see tangible effects by the end of this decade. By encouraging even higher levels of foreign investment in growth industries, the country is assured of prolonged economic growth. The changes to financial and labour regulations, while a cause for complaint in the short term, will help bring about a new level of equality and a closing of the gap between the two divergent streams of the economy.

Some claim that time is running out for Mexico. The demographic boost that has helped sustain the country over the past 20 years is coming to an end and detractors claim that the reforms are too little too late. However, in the current situation, it seems that such detractors have no better alternatives to offer. In the meantime, the country will have to sit tight and wait for the legislators to do their job. If Peña Nieto's government achieves its stated aim to eliminate informality and catapult Mexico into developed nation status then this effort will surely go down as one of the great political overhauls of the 21st Century. ■

The Durango-Mazatlan Highway is one of Mexico's greatest engineering feats