

SPAIN: THE TORTUOUS PATH TO REINDUSTRIALISATION

Guillaume Derrien

In Spain, like in most Western countries, the 2008 crisis caused an unprecedented drop in industrial employment, the pain of which continues to be felt. In fact, there are almost 500,000 fewer manufacturing jobs than in 2008. Some of this decline, however, reflects an increasingly important shift from industrial firms to service offerings, which is not a bad thing. With the Covid-19 crisis and the EUR 69.5 billion Recovery and Resilience Plan (RRP), which will be rolled out over the next five years, strengthening industry in Spain has once again become an important area of focus for the authorities. A quarter of the RRP will therefore be dedicated to this objective. Spain currently enjoys comparative advantages in growth sectors such as the automotive sector and renewable energies, especially. Obstacles (low level of investment, shortage of skilled labour) remain significant, however, and will take time to resolve. In the long term, strengthening and modernising Spanish industry are two key levers to achieve the long-term goals set out in the España 2050 plan, which, among other things, foresees a significant increase in labour productivity and R&D by 2030, and still more by 2050.

2

CHINA'S PUBLIC FINANCES, A TANGLED WEB

Christine Peltier

China's public finances have been deteriorating for several years now, and the trend accelerated in 2020 with the Covid-19 crisis. Reforms introduced since 2014 have made the public sector's accounts more transparent and improved the management of local governments' budgets and debt. However, those changes have not stopped fiscal imbalances building up. In addition, large quasi- and extra-budgetary operations exist alongside the official budget, and there are many, sometimes opaque, links between the various public-sector entities. This means that analysing the public finances is often a complicated exercise.

13

ECONOMIC RESEARCH



BNP PARIBAS

The bank
for a changing
world

SPAIN: THE TORTUOUS PATH TO REINDUSTRIALISATION

2

In Spain, like in most Western countries, the 2008 crisis caused an unprecedented drop in industrial employment, the pain of which continues to be felt. In fact, there are almost 500,000 fewer manufacturing jobs than in 2008. Some of this decline, however, reflects an increasingly important shift from industrial firms to service offerings, which is not a bad thing. With the Covid-19 crisis and the EUR 69.5 billion Recovery and Resilience Plan (RRP), which will be rolled out over the next five years, strengthening industry in Spain has once again become an important area of focus for the authorities. A quarter of the RRP will therefore be dedicated to this objective. Spain currently enjoys comparative advantages in growth sectors such as the automotive sector and renewable energies, especially. Obstacles (low level of investment, shortage of skilled labour) remain significant, however, and will take time to resolve. In the long term, strengthening and modernising Spanish industry are two key levers to achieve the long-term goals set out in the España 2050 plan, which, among other things, foresees a significant increase in labour productivity and R&D by 2030, and still more by 2050.

What is the current situation?

The successive crises of 2008 and 2011 have left their mark on industry

Industry's share (excluding construction)¹ of total value added fell below the 15% threshold in 2019 (14.7%). At this level, Spain finds itself in the last third in Europe, around three points below the European average (see Chart 1). Despite a slight recovery in recent years, almost 480,000 industrial jobs – one in seven in the sector – have disappeared since the subprime mortgage crisis began in 2008.² Over the last 12 years, of all European countries, Spain is second only to Greece in terms of the biggest contraction in industrial employment (see Chart 2).

The two successive crises – of subprime mortgages followed by eurozone sovereign debt – left deep marks in the domestic industry. It suffered mainly due to the plunge in domestic demand (private consumption and investment), which was heavily impacted by the crisis itself, but also by the austerity policies that followed under Mariano Rajoy's government.³ Between 2007 and 2013, industrial production fell by almost 30% (see Chart 3), which represents both the sharpest post-war decline for the country and one of the largest contractions in developed countries. Industrial production in Spain remains more than 20% below its historic level reached in summer 2007. Manufacturing employment fell by a similar extent in the period 2007-2013 (-29.2% or -877,436 jobs). This crisis was therefore damaging both in terms of its size and its duration, as Spain experienced four years of economic recession over the five years between 2009 and 2013.

However, the manufacturing sector's share of value added remained relatively stable for almost 10 years, before recovering in 2020 with the coronavirus crisis, which caused a much greater drop in service activity (see Chart 4). Nevertheless, the share of industrial employment has steadily declined and reached a new historic low in 2021. Since then, new jobs have been created in services, but they have not been able to offset the destruction of jobs in industry: at the end of 2019, total employment in the country remained more than 3% below the 2008 level.⁴

1 Throughout this article, construction will be excluded from the industrial sector. We will also take 2008 and 2019 as comparison points, with the first corresponding to the start of the subprime mortgage crisis and the second the level reached before the start of the Covid-19 crisis.

2 There is a difference in the estimate of employment between that reported in Chart 2 and that in Table 1 (this is explained by methodological differences, with Chart 2 based on Eurostat data (National Accounting methodology), while Table 1 is based on Spain's National Statistics Institute (INE) (Labour Force Survey methodology). For more information, see <https://ec.europa.eu/eurostat>.

3 Exports of goods recovered much faster, surpassing their 2008 level by the end of 2010.

4 Total employment reached 19,779,300 in 2019 compared to 20,469,65 in 2008, a

SHARE OF INDUSTRY (EX-CONSTRUCTION) IN TOTAL VALUE ADDED IN 2019 (%)

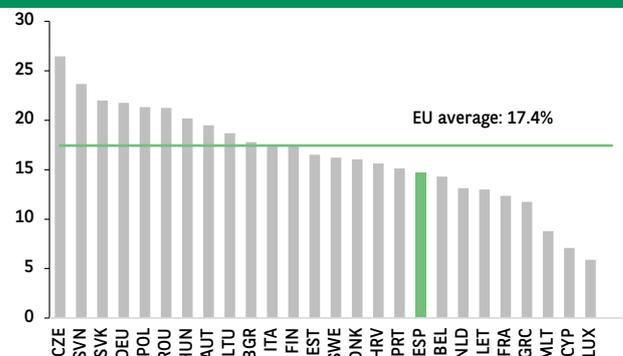


CHART 1

SOURCE: EUROSTAT, BNP PARIBAS

GROWTH IN INDUSTRIAL EMPLOYMENT BETWEEN 2008 AND 2019

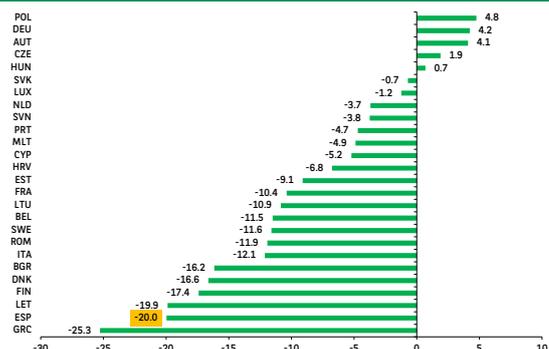


CHART 2

SOURCE: EUROSTAT, BNP PARIBAS

Few regions and sectors spared

The downturn has affected all regions of the country. Catalonia, the largest industrial region, has seen manufacturing employment shrink by almost 150,000 jobs since 2008 (see Table 1). Significant declines have also occurred in Madrid, Valencia and the Basque Country. Some regions have managed to maintain a relatively stable industrial base, with more contained job losses: this is the case for Navarra and Rioja, where almost a quarter of jobs still remain in industry, mainly in the

decrease of 3.4% (source: INE).



BNP PARIBAS

The bank
for a changing
world

SPANISH INDUSTRIAL EMPLOYMENT (IN THOUSANDS)

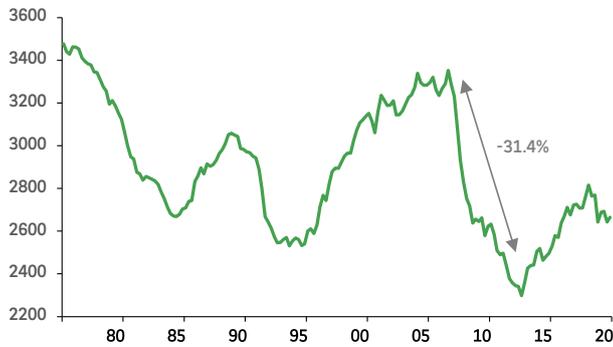


CHART 3

SOURCE: INE, BNP PARIBAS

WEIGHT OF SPANISH FIRMS IN GLOBAL VALUE CHAINS

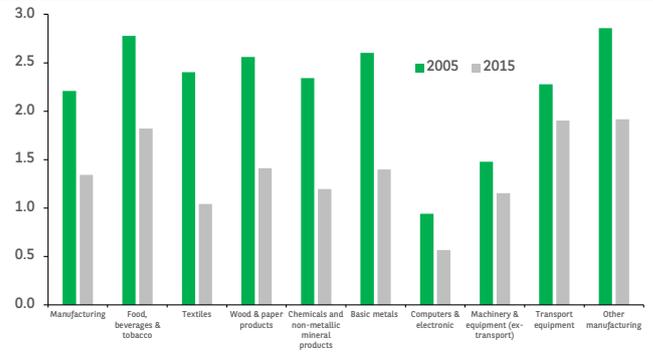


CHART 5

SOURCE: OECD, BNP PARIBAS

SHARE OF MANUFACTURING VALUE ADDED PRODUCED IN SPAIN (AS A % OF GLOBAL MANUFACTURING VA)

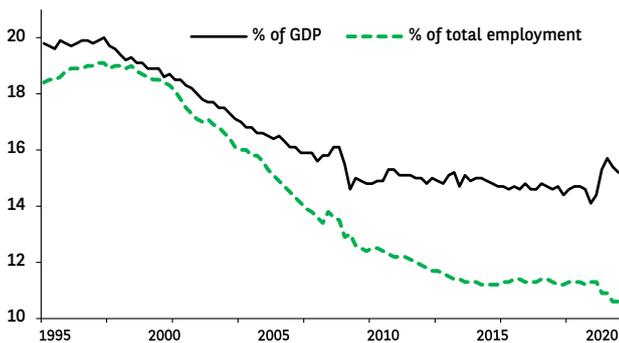


CHART 4

SOURCE: EUROSTAT, BNP PARIBAS

SHARE OF SPANISH VALUE ADDED EMBODIED IN THE COUNTRY'S FINAL DEMAND

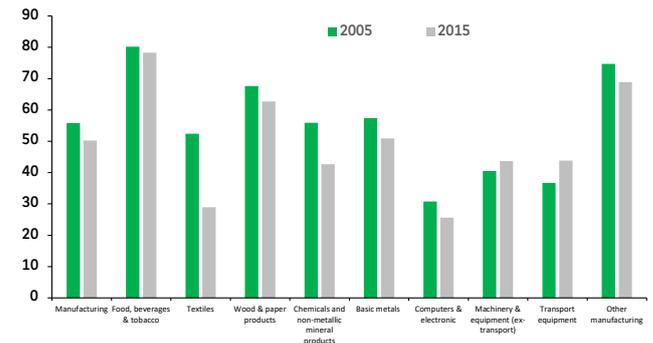


CHART 6

SOURCE: OECD, BNP PARIBAS

automotive and agribusiness sectors.

From a sector-based perspective, employment in textiles, one of the sectors most strongly competing with Asian countries, has continued to fall and now represents only 6% of total manufacturing employment.⁵ Metallurgy (and its associated sectors) and the mining industry are also experiencing a sharp downturn due, on the one hand, to the consequences of the slowdown in property activity in Spain (a source of demand for building materials) and, on the other hand, to stronger foreign competition, particularly from China. Substantial declines have also occurred in smaller sectors such as furniture and wood. A handful of sectors – mostly more labour-intensive – have managed to increase their level of employment, albeit to a limited extent. For example, 13,000 jobs have been created in food (agribusiness and beverages) over the past ten years. This has accentuated the importance of this sector in the Spanish economy, when it was already the largest industry. Spanish industry remains strongly rooted around three businesses: agribusiness, metallurgy and the automotive business. Prior to the pandemic, these three sectors accounted for almost four in every

⁵ We refer here to the total of the three categories “textiles”, “clothing” and “leather & footwear”.

ten industrial jobs. These figures corroborate the overall decline in Spain’s participation in global value chains⁶, a decline that was already underway before the 2008 and 2011 crises (see Chart 5), particularly in the textiles, chemical and electronics sectors – three sectors that have been hit hard by the growing competition from emerging countries. By extension, this phenomenon is also observed in the share of domestic inputs used in the country’s final consumption, which has also fallen significantly (see Chart 6). As a result, industrial products consumed in Spain are being manufactured less and less within the nation’s borders.

What factors contributed to this decrease?

The repercussions of the collapse in real estate activity

Global demand apart, the decline in industrial activity in Spain can be explained firstly by the profound impact of the correction of the real estate sector – and of construction in general – on the country’s demand for materials. Since the 1990s, as the speculative real estate bubble has grown, Spain has focused part of its industrial production towards construction, much more so than other European countries

⁶ <https://www.oecd.org/sti/ind/measuring-trade-in-value-added.htm>



INDUSTRIAL EMPLOYMENT BY REGION AND BY SECTOR

Industrial employment by region (in thousands)	% total employment (2019)	2019	2008	Variation (thousands)	Variation (%)
Andalusia	9.4	293.8	318.2	-24.4	-7.7
Aragon	19.6	115.1	132.8	-17.7	-13.3
Asturias	13.7	53.1	71.3	-18.2	-25.5
Balearic islands	6.5	37.0	42.4	-5.4	-12.7
Canary Islands	4.5	40.9	58.1	-17.2	-29.6
Cantabria	15.8	38.4	51.0	-12.6	-24.7
Castile and León	17.7	175.6	185.9	-10.3	-5.5
Castila-La-Mancha	16.5	136.0	150.0	-14.0	-9.3
Catalonia	18.1	621.2	767.4	-146.2	-19.1
Valencian Community	17.6	366.8	416.4	-49.6	-11.9
Extremadura	10.9	42.4	46.3	-3.9	-8.4
Galicia	16.4	179.4	215.1	-35.7	-16.6
Community of Madrid	8.9	276.6	325.1	-48.5	-14.9
Region of Murcia	13.8	84.7	94.6	-9.9	-10.5
Navarre	25.9	74.9	81.8	-6.9	-8.4
Basque Country	20.4	190.7	239.9	-49.2	-20.5
La Rioja	24.8	34.9	38.3	-3.4	-8.9
Ceuta	3.2	0.9	1.0	-0.1	-10.0
Melilla	2.2	0.6	0.8	-0.2	-25.0
Industrial employment by sector (in thousands)	% industrial employment (2019)	2019	2008	Variation (thousands)	Variation (%)
Extractive industry	1.2	32.6	52.7	-20.1	-38.1
Manufacturing industry	90.3	2494.9	2986.4	-491.5	-16.5
Food products	16.5	456.1	450.2	5.9	1.3
Beverages	2.3	64.5	57.4	7.1	12.4
Tobacco products	0.0	1.3	6.2	-4.9	-79.0
Textile	2.0	55.2	79.2	-24.0	-30.3
Wearing apparels	2.0	55.0	88.4	-33.4	-37.8
Leather & related products	2.0	56.0	58.2	-2.2	-3.8
Wood & products of wood	2.4	66.0	105.2	-39.2	-37.3
Paper & paper products	1.6	44.7	44.0	0.7	1.6
Printing & reproduction of recorded media	3.5	96.1	107.6	-11.5	-10.7
Coke & refined petroleum products	0.7	19.7	18.3	1.4	7.7
Chemical & chemical products	4.7	130.3	136.5	-6.2	-4.5
Pharmaceutical products	2.9	79.2	65.7	13.5	20.5
Rubber & plastic	3.8	104.9	107.6	-2.7	-2.5
Other non-metallic mineral products	3.9	108.9	212.1	-103.2	-48.7
Basic metals	3.2	87.3	115.4	-28.1	-24.4
Fabricated metal products, exc. machinery & equipment	8.6	237.4	374.4	-137.0	-36.6
Computer, electronic & optical products	1.7	46.7	56.9	-10.2	-17.9
Electrical equipment	2.5	69.2	98.0	-28.8	-29.4
Machinery & equipment	5.6	154.0	162.8	-8.8	-5.4
Motor vehicles, trailers & semi-trailer	8.3	228.1	236.7	-8.6	-3.6
Other transport equipment	2.7	74.6	69.6	5.0	7.2
Furniture	3.3	91.4	173.9	-82.5	-47.4
Other manufacturing	2.1	57.9	55.3	2.6	4.7
Repair and installation of machinery & equipment	4.0	110.5	106.8	3.7	3.5
Electricity & gas	3.3	91.2	74.4	16.8	22.6
Water, sanitation & waste management	5.2	144.3	123.2	21.1	17.1
TOTAL INDUSTRY	100.0	2763.0	3236.7	-473.7	-14.6

TABLE 1

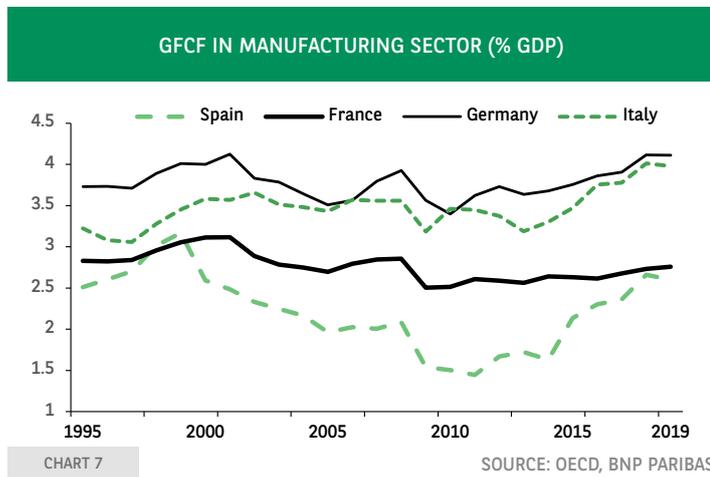
SOURCE: INE, BNP PARIBAS



have done. The very brutal corrective phase led to a slump in demand for intermediate industrial goods in this sector (mainly in metallurgy and in machinery and equipment). The drop in demand for building materials would explain almost a third of the fall in industrial production seen in Spain during the 2008 crisis.⁷

Investment deficit

The chronic investment deficit is a second explanatory factor for the gradual contraction in industrial activity. Gross fixed capital formation (GFCF) in the manufacturing sector fell by almost 40% between 1999 and 2011. The share of GDP devoted to this expenditure has increased over the past five years, but remains lower than that of the other major European countries, especially Germany and Italy (see Chart 7). Even though the economic recession of 2009-2013 and the austerity policies implemented at that time accentuated the decline (in the level) of manufacturing investment, the phenomenon was already underway from the end of the 1990s, as shown in Chart 7.



The “servitisation” of industry

A final phenomenon in play, which is not specific to the Spanish economy, is the growing trend of industrial companies to develop service activities in addition to their products. It can take various forms, such as consulting, financial services, logistics or support. This so-called “servitisation” concept is not new and is set to grow, particularly due to the ever-increasing digitisation of activities.⁸ The boundary between services and industry is therefore becoming increasingly narrow. This structural change in internal production, such as the greater use of subcontracting (see box 2), would partly explain the drop in “traditional” industrial employment in favour of new positions in services.⁹

7 M. Tiana, The impact of the economic crisis on Spanish industry, Bank of Spain economic bulletin, November 2012.

8 For a recent study of this phenomenon, see Mastrogiacomo et al. (2019), A world-wide survey on manufacturing servitisation, International Journal of Advanced Manufacturing Technology.

9 S. Guillou, Is the decline of industry due to the growth of services? OFCE Blog, May 2016.

THE IMPACT OF COVID-19 ON SPANISH INDUSTRY: SHORT-LIVED CONSEQUENCES?

Given the nature of the current health crisis and the government’s measures to stem the epidemic, industrial activity has held up much better than services. However, industrial production fell 9.6% in 2020. Although significant, this drop is far below that observed during the subprime mortgage crisis, when, in 2009, production contracted by 15.5%. There are also very marked variations between industries. The largest falls in activity were recorded in sectors closely linked to “compressible” household consumption, which was significantly reduced by lockdown measures (leisure, clothing, motor vehicles, transport). Industrial sectors that are more dependent on incompressible consumer spending (food, energy) or intermediates (raw materials, chemical industry, electronics) fared much better. Only the pharmaceutical sector grew in 2020, reflecting the significant increase in healthcare spending during the pandemic.

The gradual easing of restrictions during 2021 logically coincided with increased demand and a rebound in activity. Industrial production thus bounced back by 3.2% in the first half of 2020 compared to the previous half-year (H2 2020). Industrial employment returned in the summer of 2021 to near pre-pandemic levels.¹ In addition, opinion polls remained very positive during this period, with the Purchasing Managers’ Index (PMI) relating to employment remaining at a historically high level (55.7 in August). It is therefore likely that the Covid-19 crisis, if it does not deteriorate in the coming months, will have far fewer damaging consequences for Spanish employment and industrial activity than had the 2008 crisis.

1 According to the Spanish Employment Office (SEPE), in August, industrial employment was only 0.5% below the level seen in February 2020.

EVOLUTION OF INDUSTRIAL PRODUCTION (%)

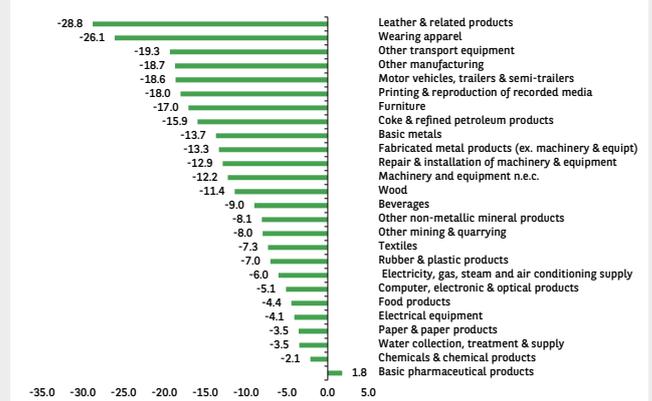


CHART 8

SOURCE: INE, BNP PARIBAS

BOX 1



THE MAJOR PERIOD OF INDUSTRIALISATION IN SPAIN

The end of the 1950s marks the beginning of a major period of industrial expansion in Spain, supported by significant economic liberalisation policies and extensive modernisation plans. The "Monetary devaluation and stabilisation plan", introduced in July 1959, started a marked devaluation of the peseta against the US dollar¹, which helped to improve the competitiveness of Spanish exporting companies. A second major four-year investment plan was introduced in 1964. It initiated large-scale industrial modernisation projects in many sectors such as energy (electricity, coal, gas), the automobile sector and rail and road infrastructure. At the same time, Spain was admitted in 1959 to the OEEC² (OECD today) and entered the European Common Market in February 1962. From then, Spain was able to access new industrial opportunities. Further reforms, including fiscal simplification measures and stricter antitrust laws, enabled the country's industrial development to continue.

In addition to these structural reforms, Spain benefitted from lower labour costs during this period compared to its European neighbours, which promoted the flow of foreign capital into the country³. In the space of 15 years (1960-1975), industrial production in Spain more than quadrupled (see Chart A.1)⁴. It subsequently had more moderate progress, although still sustained. The share of Spanish goods exports in world trade also increased gradually (see Chart A.2). The 1960s therefore corresponded to a period of economic growth and very significant industrial employment for Spain, which enabled the country to keep unemployment at a very low rate (below 3%). In 1975, almost 2,874,000 people were working in the manufacturing sector – around 22% of the total working population⁵ – a record level that will never be reached again.

The 1973 oil crisis triggered a period of economic difficulties for the country which lasted until the mid-1980s and ended with the elimination of almost a quarter of manufacturing jobs in the country⁶. Industrial employment then witnessed two cycles of rise and fall – in line with the economic cycle⁷ – which peaked in 2001.

The late 1990s and early 2000s therefore really correspond to the beginning of the stagnation phase, then to the decline in industrial employment that the country is currently experiencing, which has increased significantly since the 2008 global economic crisis.

INDUSTRIAL PRODUCTION INDEX (2010=100)

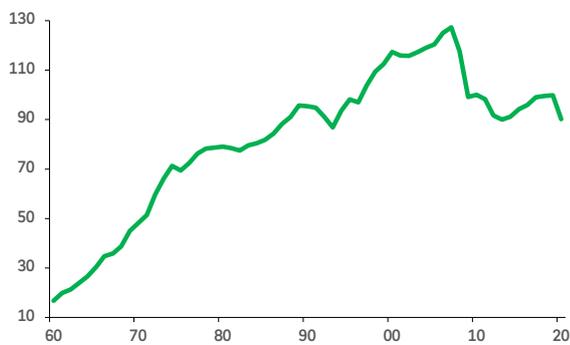


CHART A1

SHARE OF SPANISH GOODS EXPORTS IN WORLD TRADE (%)

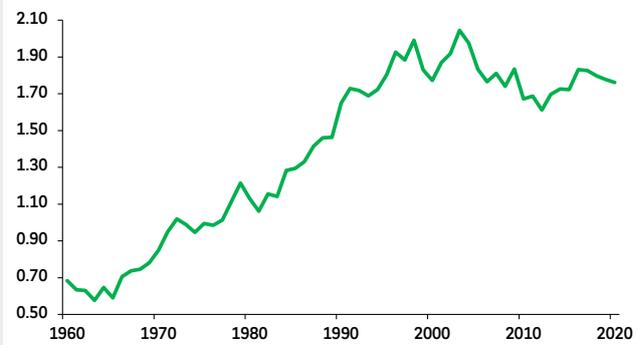


CHART A2

SOURCE: IMF, BNP PARIBAS

1 The Spanish currency was devaluated from 42 to 60 pesetas to a dollar.

2 Organisation for European Economic Cooperation

3 According to World Bank data, the net inflow of foreign direct investment rose from 0.37% of GDP in 1977 to 2.61% in 1990, a record at the time.

4 The industrial production index actually grew from 16.8 in 1960 to 69.4 in 1975 (2010=100), i.e. an increase of 313.1% (source: IMF).

5 The working population (15+ years) in Spain was 13,316,000 in 1975 (source: OECD).

6 Manufacturing employment fell from 2,965,299 in 1973 to 2,304,356 in 1985, a drop of 22.3% (source: AMECO European Commission).

7 Spanish GDP growth accelerated in the late 1980s, then slowed in the first half of the 1990s before accelerating again.



DEINDUSTRIALISATION: WHAT DOES THEORY SAY?

Theoretical studies on the phenomenon of deindustrialisation in advanced countries are basically focused on internal economic dynamics. They mainly identify two sources of explanation (see Chart B):

The first theory, highlighted by Baumol (1967),¹ concerns supply and focuses on differences in productivity between industry and services: at a constant production level, the faster increase in productivity in industry rather than in services leads to a progressively greater absorption of workers from the first sector into the second. However, this theory is not without criticism: lower labour in industry due to productivity gains can also lead to price decreases (the increase in productivity allows companies to lower their prices while maintaining the same margin), which leads to demand stimulus and therefore the need for labour. The net effects remain ambiguous, although a majority of studies agree on a net negative effect on manufacturing employment (Rowthorn and Ramaswamy, 1998).²

The second theory focuses on demand and relates a country's level of development to the structure of household demand. In other words, the more a country develops, the higher the per capita income, and the greater the increase of the share of spending on services. As a result, the elasticity of demand for goods decreases as household wealth grows. The decrease in the scale of industry in the economy could therefore be linked to this change in the structure of demand. Although this trend was not particularly evident in Spain, there is nevertheless a faster increase in household consumption of services than of goods, with average annual growth of 1.7% and 1.1% between 2000 and 2019, respectively (source: Eurostat).

Other studies highlight external causes, and mainly the role of global trade liberalisation. Industry in developed countries – and mainly those with a high level of low-skilled labour – is thus subject to greater competition from developing countries where labour costs are lower. This leads to relocation of jobs to these countries. In Spain's case, Donoso et al. (2014)³ show that local industry's higher exposure to Chinese imports has led to more significant job losses in this sector. Autor et al. (2013)⁴ reach a similar conclusion for the United States.

More explanations have emerged more recently. The first underlines the fact that more and more industrial companies are deciding to outsource some of the activities that are common to both industry and services, which would lead to the reclassification of some jobs from the first sector to the second sector (Baines et al., 2017)⁵. This is the case for support or assistance activities which are increasingly outsourced. Unlike other explanations, this phenomenon would not in itself mean a decline in industrial activity, but simply a new classification of jobs. The last explanation is the concept of industry servitisation (see What factors contributed to this decrease?).

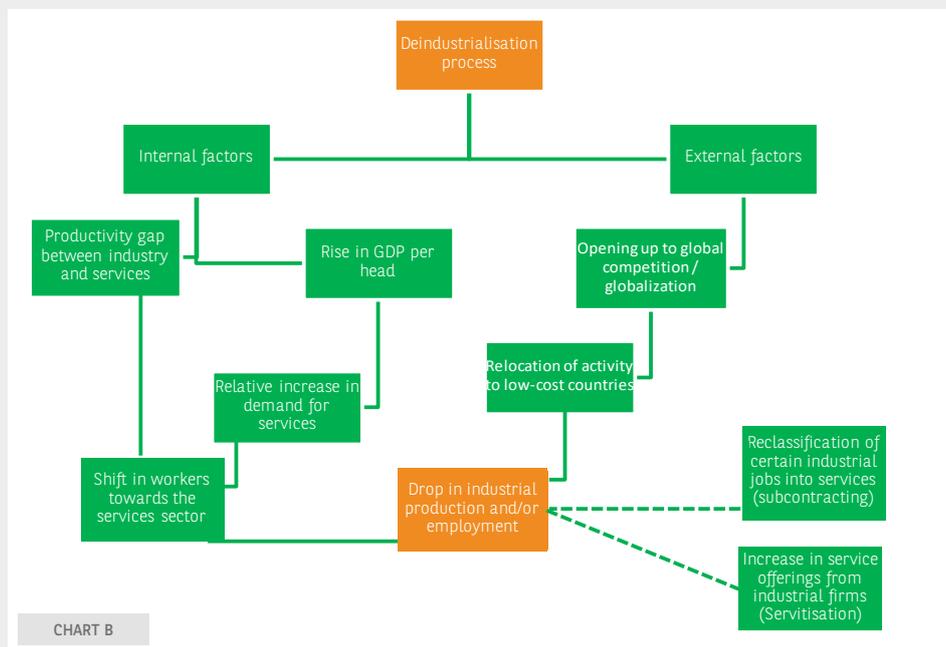


CHART B

1 WJ Baumol (1967), *Macroeconomics of unbalanced growth: the anatomy of urban crisis*, *American Economic Review*.
 2 R. Ramaswamy et B. Rowthorn (1998), *Growth, Trade, and Deindustrialization*, *IMF Working Papers*.
 3 Donoso et al. (2014), *Do Differences in the Exposure to Chinese Imports Lead to Differences in Local Labour Market Outcomes? An Analysis for Spanish Provinces*, *Regional Studies*.
 4 D. Autor et al. (2013), *The China Syndrome: Local Labor Market Effects of Import Competition in the United States*, *American Economic Review*.
 5 T. Baines et al (2017), *Servitization: Revisiting the State-of-the-art and Research Priorities*, *International Journal of Operations & Production Management*.

BOX 3

SOURCE: BNP PARIBAS

The national recovery plan or hopes for an industrial recovery

The revitalisation and modernisation of the industrial sector in Spain is a fundamental objective given the economic and environmental challenges facing the country, and the follow-on effects for employment. Industry also accounts for a large part of investment (particularly research and development) and economies of scale, and offers substantial export opportunities.¹⁰

The national Recovery and Resilience Plan (RRP)¹¹, developed over the past 12 months, was approved by the European Commission at the beginning of June. The first payments were made this summer with the transfer of an initial tranche of EUR 9 billion in July. This RRP will be implemented over five years (2021-2026) and will be provided with a total envelope of EUR 69.5 billion, precisely the total amount of subsidies allocated by the new European solidarity mechanism (Facility for the recovery and resilience). This RRP may nevertheless be extended to EUR 140 billion if Spain decides to use the loans offered by the European Commission under this new facility. According to estimates by the European Commission, the RRP would increase Spanish GDP by more than 2% by 2024.¹²

RRP measures targeting industry

The RRP is divided into ten main pillars and 30 components (see Table 2). The measures that we consider capable of supporting industry are highlighted in Table 2, which differentiates, on the one hand, the measures that are expected to have a direct and significant impact on industry (dark green) and, on the other hand, measures that have either an indirect (light green) or a very low (white) impact. Industry support measures are mainly concentrated in the fifth pillar (Modernisation and digitalisation of the industrial and SME fabric, restoring tourism and boosting Spain's entrepreneurial nation). At EUR 16.1 billion, this pillar accounts for almost a quarter of the total expenditure of the recovery plan for the period 2021-2026. In this respect, it is therefore the largest area of investment.

One feature of the Spanish RRP is the creation of a partnership between the public and private sector aimed at promoting investments in so-called strategic industries. This mechanism is one of the central elements of the España 2030 industrial policy (component 12 of the RRP). Named PERTE (for *Proyectos Estratégicos para la Recuperación y Transformación Económica*), this series of projects focuses on six sectors (see Chart 9), the specifications for each sector being defined by the government. The first PERTE project, and the only one to have yet (12 July) been finalised, concerns the automotive sector. Public support of EUR 4.3 billion is dedicated to this industry, mainly to speed up the development and production of electric and connected vehicles in the country.¹³ The government's objective is to increase the share of the automotive sector to 15% of GDP by 2030, compared with around

10% today.¹⁴ The specific objectives of the other five PERTE projects, as well as the budget allocated to each one, have not yet been disclosed at the time of finalising this article.

Alongside this direct support for industry, several measures are aimed at improving the competitiveness of SMEs (component 13 of the RRP) and the development of digital technologies (component 15). These two components aim to facilitate the creation, growth and restructuring of companies, to improve the business climate, as well as to boost productivity through the digitalisation, innovation and internationalisation of companies.

Finally, the RRP incorporates several industry programmes, introduced by the government in recent months, including the *España Digital 2025* plan (launched in July 2020 and corresponding to RRP component 15), the National Strategy for Artificial Intelligence (launched in November 2020 and corresponding to component 16), and the Spanish Strategy for Science, Technology and Innovation 2021-2027 (launched in September 2020).

THE PERTE PROJECTS

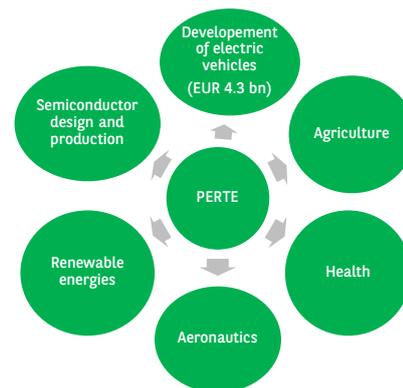


CHART 9

SOURCE: BNP PARIBAS

Can this plan succeed?

The purpose of this article is not to conclude on the effectiveness of future reforms and investments in Spain. Here we try to provide some food for thought by highlighting both the obstacles and opportunities relating to the success of industrial redevelopment in the coming years, in line with the national recovery plan.

The first hurdle will be non-price competitiveness and chronic lack of investment. As shown in the first part of this article, the share of capital expenditure remains insufficient when compared to the rest of Europe. Research and development (R&D) expenditure, in particular, accounted only for 1.25% of GDP in 2019, which is much lower than in other major industrialised countries (see Chart 10). In fact, Spain posted the second lowest ratio of R&D expenditure in Europe after Greece. Moreover, less than a third of R&D investment is directed towards the manufacturing sector, while other countries such as Germany, France and Italy devote almost half of it to this sector. Japan, on the other hand, spends three quarters of its R&D on it.

¹⁰ For a study of the link between industry and growth, see for example: *Manufacturing the future: is the manufacturing sector a driver of R&D, exports and productivity growth?* European Commission working paper, 2017.

¹¹ https://www.lamoncloa.gob.es/temas/fondos-recuperacion/Documentos/160621-Plan_Recuperacion_Transformacion_Resiliencia.pdf

¹² The impact of the RRP on GDP could amount to 2.5 points when including second-order effects (the spillover effect). See *Quantifying Spillovers of Next Generation EU Investment*, European Commission, July 2021

¹³ It should be noted that of these EUR 4.3 billion, only EUR 3.5 billion corresponds to new financing. EUR 800 million corresponds to the amount of the MOVES III subsidy programme that was launched before the RRP (in April 2021).

¹⁴ Figure for 2019 (Source: INE)



THE SPANISH RECOVERY AND RESILIENCE PLAN (RRP) FOR 2021-2026

RECOVERY PLAN COMPONENTS (2021-2026)			Amount (EUR billion)	Share of total (%)
Pillar 1	1	Sustainable, safe and connected mobility in urban and metropolitan settings	6.54	9.40
	2	Redevelopment of housing and urban regeneration	6.82	9.81
	3	Environmental and digital transformation of the agri-food and fishing system	1.05	1.51
Pillar 2	4	Conservation and restoration of ecosystems and their biodiversity	1.64	2.36
	5	Preservation of coastline and water resources	2.09	3.01
	6	Sustainable, safe and connected mobility	6.67	9.59
Pillar 3	7	Roll-out and integration of renewable energy	3.17	4.55
	8	Electrical infrastructure & support for smart networks	1.37	1.96
	9	Hydrogen development	1.56	2.24
	10	Fair transition strategy	0.30	0.43
Pillar 4	11	Modernisation of public administrations	4.24	6.10
Pillar 5	12	España 2030 industrial policy	3.78	5.44
	13	SME support	4.89	7.04
	14	Tourism sector modernisation and competitiveness plan	3.40	4.89
	15	Digital connectivity, strengthened cybersecurity and 5G deployment	4.00	5.75
Pillar 6	16	National artificial intelligence strategy	0.50	0.72
	17	Capacity building for the national science, technology and innovation system	3.46	4.97
	18	Strengthening the national health system	1.07	1.54
Pillar 7	19	National plan for digital skills	3.59	5.17
	20	Strategic plan to promote vocational training	2.08	2.99
	21	Modernisation and digitalisation of the education system	1.65	2.37
Pillar 8	22	Supporting and strengthening inclusion policies	2.49	3.58
	23	Active employment policies	2.36	3.40
Pillar 9	24	Support measures for the cultural industry	0.33	0.47
	25	Support measures for the audiovisual sector	0.20	0.29
	26	Support measures for the sports sector	0.30	0.43
Pillar 10	27	Measures and actions to prevent and combat tax fraud	-	-
	28	Tax modernisation	-	-
	29	Improving efficiency of public spending	-	-
	30	Sustainability of the public pension system	-	-
Total			69.53	100.00
	High impact on industry			
	Medium/indirect impact			
	Low impact			

TABLE 2

SOURCE: BNP PARIBAS, MONCLOA



The Spanish government hopes to significantly increase R&D expenditure's share of GDP over the next few years, to reach 3.0% of GDP in 2030 (the final objective being to reach 4.0% of GDP in 2050). This is one of the objectives set out in the España 2050 plan unveiled this summer (see next section). It is very ambitious: the ratio of R&D to GDP has never exceeded 1.4% in the past 25 years.

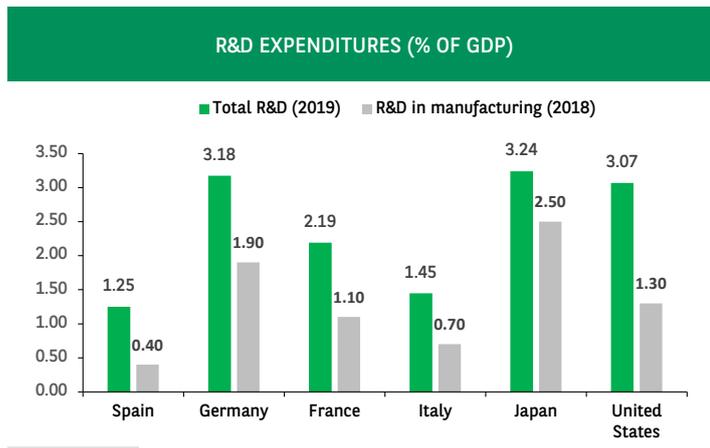


CHART 10

SOURCE: OECD, BNP PARIBAS

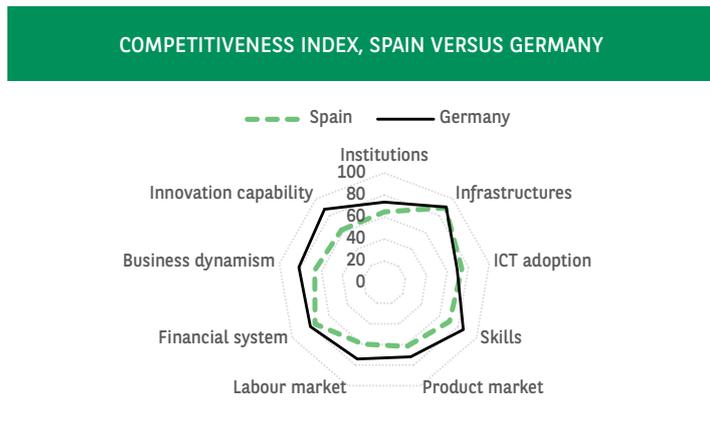


CHART 11

SOURCE: WORLD ECONOMIC FORUM, BNP PARIBAS

The problems with competitiveness can be seen at various levels, including the digitisation of activities, which today makes it possible to achieve significant productivity gains. The European Commission's DESI index¹⁵ highlights Spain's significant delay in training workers in new digital technologies. Indeed, the proportion of people with basic digital skills is just above the European average (58% compared to 57% in the EU). Furthermore, Information and Communication Technology (ICT) specialists' share of total employment is below the European average (3.8% compared to an EU average of 3.9%). That said, Spain is relatively favourably positioned in the global DESI index – the country is ranked 11th in Europe – thanks to advanced digitisation of public services (2nd) and very widespread connectivity in the country (5th). The massive expansion of digital technologies into the economy is at the heart of the national recovery plan, notably through the España Digital 2025 programme (pillar 15), but the delay in training workers in this area,

15 <https://digital-strategy.ec.europa.eu/en/policies/desi>

mentioned previously, remains a significant obstacle that will take time to resolve.

The Competitiveness Index developed by the World Economic Forum¹⁶ incorporates a wider range of indicators, including business environment, market regulation and infrastructure quality. Compared with Germany – the European industrial heavyweight – there are significant differences in performance, particularly in the capacity to innovate (which harks back to the low level of expenditure in R&D), the regulation of product markets, and the dynamism and ease of creating a company (see Chart 11).

However, significant internal adjustments to restore the country's price competitiveness have been being made for several years. The increase in labour costs in the industrial sector has slowed sharply in recent years, settling at a level of growth closer to that of inflation (see Chart 12). Nevertheless, the recovery in competitiveness through wage moderation does not significantly stimulate long-term competitiveness, since it depends more on productivity gains, and therefore on non-price competitiveness.

An ageing population in Spain and the gradual decrease in the working population that could result may also be a barrier to industrial redevelopment. Eurostat forecasts that Spain's population will decline by 2.6% by 2030 as a consequence of a decline in the birth rate. The reduction will therefore increase the need to make additional productivity gains in order to remain competitive. Moreover, the situation in the labour market remains very sensitive, with long-term unemployment and youth unemployment still very high. The health crisis has exacerbated this phenomenon, even though exceptional state support has helped to cushion the impact on employment considerably.

Budget constraints remain tight despite still very favourable financing conditions. As the Covid-19 crisis has struck, public debt has increased dramatically in recent months. Spanish Central Government debt has jumped by almost 30 percentage points of GDP since the beginning of 2020, exceeding the 125% GDP threshold (see Chart 13). For the time being, budgetary constraints are very broadly relaxed, thanks in particular to the European measures put in place to absorb the economic impact of the pandemic (the ECB's asset purchase programme [PEPP], the European Recovery Fund, the suspension of the Maastricht criteria). All of this should make it easier to maintain high

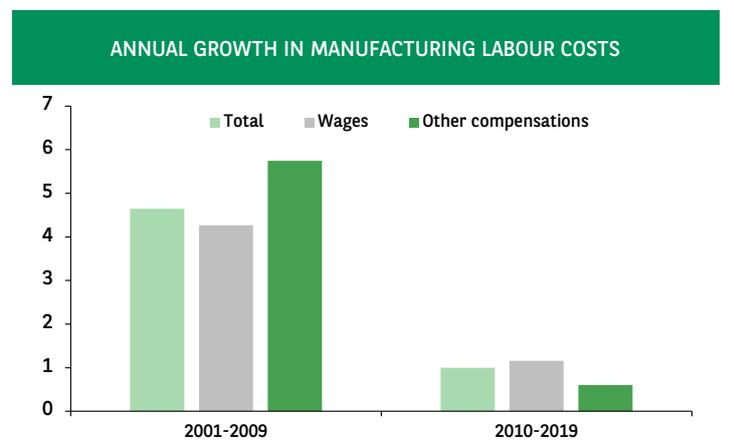


CHART 12

SOURCE: EUROSTAT, BNP PARIBAS

16 http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf



public spending. Sovereign interest rates remain at historically low levels. However, once the pandemic has passed, monetary policies will gradually become less generous and budgetary room for manoeuvre could narrow accordingly, which could limit government's investment capacity. The debt level of Spanish companies has also increased with the health crisis (see Chart 14). Nevertheless, the significant deleveraging efforts by Spanish firms over the past few years will help the private sector to recover more strongly than in previous crises.

GENERAL GOVERNEMENT DEBT AS A SHARE OF GDP

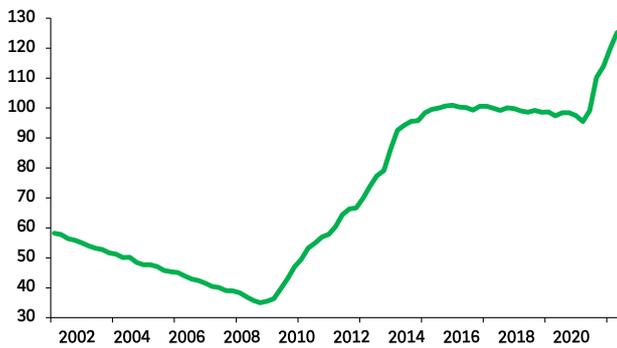


CHART 13

SOURCE: BANK OF SPAIN, BNP PARIBAS

NON-FINANCIAL CORPORATIONS CONSOLIDATED DEBT (% OF GDP)

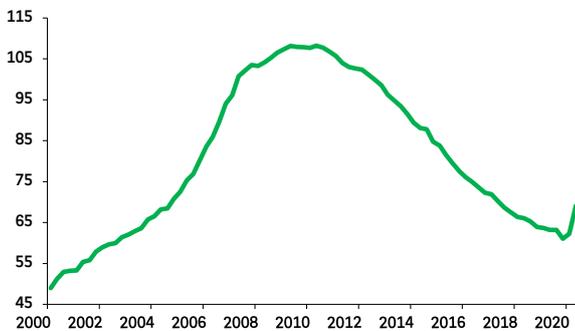


CHART 14

SOURCE: EUROSTAT, BNP PARIBAS

Comparative advantages to exploit

Nevertheless, Spain has assets it can lean on when looking to recover industrial activity over the coming years. As Europe's largest market for onshore wind power, competing with Germany for solar power, Spain is one of the most advanced countries in the development of renewable energy in Europe today. Eventually, job creation prospects are significant if the country manages to capitalise on this head start and, in particular, to take advantage of the "scale effects" that its current position confers on it. In particular, solar energy could create 1.73 million jobs in Europe by 2050, or almost half of the new jobs in renewable energies in Europe (between 3.3 million and 3.4 million).¹⁷

17 See Ram M. et al. Job creation during the global energy transition towards 100%

In its National Energy and Climate Plan for 2021-2030 (NECP)¹⁸, the Spanish government plans to invest almost EUR 240 billion over the decade and, hopes with this plan, to create 270,000 net jobs annually on average between 2021 and 2030 (see Chart 15). The development of this industry will have significant knock-on effects for many other sectors of the economy, directly (construction, transport, professional and scientific activities, etc.) and indirectly (trade, hotels and catering, etc.) due to the increase in economic growth, employment and consumption. The expansion of the renewable energy sector, which is central given the climate challenges and increasingly stringent environmental rules imposed by the European Commission, is therefore one of the main drivers of growth and employment in Spain for the coming years.

The automotive sector is a significant second lever. Spain is the second largest car producer in Europe after Germany. The government hopes to create around 140,000 new jobs thanks to its EUR 4.3 billion investment programme in electric vehicles.¹⁹

IMPACT OF NECP ON EMPLOYMENT, GOVERNMENT FORECAST (NET CREATION, IN THOUSANDS)

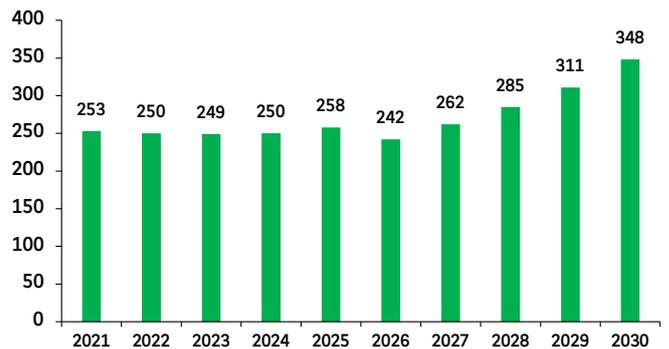


CHART 15

SOURCE: SPAIN NATIONAL ENERGY AND CLIMATE PLAN, BNP PARIBAS

Industrial redevelopment – an important factor for the success of the España 2050 plan.

These industrial agenda form part of a series of long-term objectives brought together within the España 2050 programme, which was unveiled at the beginning of July by the Spanish government. The plan, comprising nine principal elements and 40 quantified objectives, targets, among other things, a significant increase in productivity, employment rate and a drastic drop in CO2 emissions. The targets for productivity gains are very ambitious – an increase of 50% by 2050 – as are those for the share of total (public and private) research and development expenditure, which should more than triple to reach 4% of GDP (see Table 3). The government also wants to increase the share of large companies, which, in the long run, would allow greater economies of scale and investment to be leveraged, with the hope of boosting average productivity.

renewable power system by 2050, Technological Forecasting and Social Change, February 2020.
 18 https://ec.europa.eu/energy/sites/default/files/documents/es_final_necp_main_en.pdf
 19 <https://www.lamoncloa.gob.es/lang/en/gobierno/councilministers/Paginas/2021/2021>
 20 https://www.lamoncloa.gob.es/presidente/actividades/Documents/2021/200521-Estrategia_Espana_2050.pdf



The decline in industry has not only impacted the country's productivity and competitiveness. It has also played a major role in the destabilisation of employment in Spain today. In turn, this has led to a mechanical slowdown in wage increases in the country, with wage growth rates in services actually remaining lower than those in industry (see Chart 16). Between 2010 and 2019, nominal wages in services thus increased by only 4.0%, which, taking inflation into account, represents a real drop of around 7%.²¹ In real terms, wages in industry fell by just 1%, with nominal wages increasing by 10% over the period 2010-2019. There are many reasons for this, including a sharp rise in employment in tourism-related sectors (catering, hotels, culture), which are generally more precarious and less lucrative.

By unveiling its Recovery and Resilience plan and the España 2050 agenda in quick succession, the Spanish government intends to put industry at the heart of its economic and social development programme for years to come. The goals set for 2030 in terms of increased productivity and investment are ambitious but could run into a tight budgetary environment, as public debt has become very elevated in the wake of the coronavirus crisis. Furthermore, even though grants allocated by the European Recovery Fund offer additional budgetary margins, the government relies heavily on leverage to further mobilise private investment, which is not guaranteed. For example, with its EUR 4.3 billion support plan for the automotive sector, the government is counting on attracting almost EUR 20 billion of private investment. Eventually, the main objective of strengthening industry will be to create new job opportunities and reduce the unemployment rate, which remains far too high. With a target of a 12% jobless rate by 2030, the government still remains very cautious overall in terms of the success and impact of this industrial investment plan on employment and economic activity in the medium and long term.

²¹ The consumer price index increased by 11.0% between 2010 and 2019. Source: INE.

GROWTH IN SALARY, INDUSTRY & SERVICES SECTORS

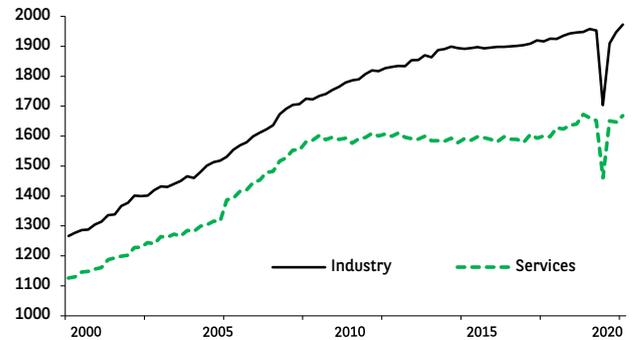


CHART 16

SOURCE: INE, BNP PARIBAS

Completed on 15 September 2021
guillaume.a.derrien@bnpparibas.com

SELECT OBJECTIVES FROM THE ESPAÑA 2050 PLAN

	2019*	2030	2040	2050
Hourly work productivity (constant euro, 2015)	42	46	53	63
R&D expenditure (in % of GDP)	1,2%	3,0%	3,5%	4,0%
Employment rate	62%	68%	72%	80%
Unemployment rate	18%	12%	10%	7%
Share of large companies (250+ employees)	31%	32%	33%	35%
CO ₂ emissions	-	-23%	-57%	-90%
Gini index	34	32	31	29
Population at risk of poverty (% total population)	22%	18%	15%	10%

* Average for 2015-19

TABLE 3

CHINA'S PUBLIC FINANCES, A TANGLED WEB

13

China's public finances have been deteriorating for several years now, and the trend accelerated in 2020 with the Covid-19 crisis. Reforms introduced since 2014 have made the public sector's accounts more transparent and improved the management of local governments' budgets and debt. However, those changes have not stopped fiscal imbalances building up. In addition, large quasi- and extra-budgetary operations exist alongside the official budget, and there are many, sometimes opaque, links between the various public-sector entities. This means that analysing the public finances is often a complicated exercise.

Whereas the government's "official" deficit has only showed a moderate increase in the last ten years, fiscal performance has deteriorated much more if we look at the data available for all government bodies. In addition to the increase in fiscal deficits and in the government's direct debt, there has also been a rise in local governments' indirect debt, which is notably taken out through their financing vehicles.

Although sovereign risk in the strict sense – i.e. the risk that the central government will have repayment difficulties – is not a concern in the short and medium terms, the structural worsening in the public finances has increasingly visible consequences. Firstly, the fiscal policy's room for manoeuvre has narrowed. In 2021, the authorities have already had to give priority to the adjustment of public finances after the sharp increase in fiscal imbalances in 2020, while at the same time extending certain measures to support domestic demand.

Another consequence is the increasing interconnections between the financial health of the government and that of state-owned enterprises (including financing vehicles). The excessive debt of state-owned enterprises (SOEs) represents a growing contingent risk for the central and local governments, but the dependency runs both ways. The most fragile local governments (LGs) are more reliant on their financing vehicles to help cover public investment. Besides, the financing conditions of firms owned by those local governments are becoming tougher, especially since there is now an erosion of implicit State support. Reforms to strengthen the financial health of both local governments and state-owned enterprises are thus becoming increasingly urgent.

Budget deficits before and after Covid-19 shock

In 2020, the combination of the Covid-19 crisis, the economic growth slowdown and the support plan implemented by the authorities led to a sharp increase in fiscal deficits and public debt, after they had already worsened for several years. The deterioration has been widespread, affecting all government bodies included in the official budget as well as quasi- and extra-budgetary entities. Fiscal adjustment efforts have become crucial and increasingly constrain China's economic policy.

A deterioration underway for several years...

The sharp increase in fiscal imbalances in 2020 followed several years of steady deterioration. The implementation of the new budget law in 2014¹ and the reforms that followed led to improvements in budget transparency and management. However, those changes have not prevented rising sources of vulnerability. Firstly, budget deficits increased gradually until the Covid-19 shock (see the box below for

definitions of the various budget balances and what they cover). Between 2015 and 2019, the "official" deficit only worsened from -2.4% of GDP to -2.8%, but the general budget deficit rose from -3.4% to -4.9% and the total consolidated deficit of all government bodies doubled from -2.3% to -4.6%. See *Chart 1*.

On the one hand, the structural slowdown in economic growth and global trade as well as reforms of the tax system (widening of the VAT base², reduction in income tax and customs tariffs, cuts in social-security contributions for enterprises etc.) have reduced budgetary revenue. The tax base (the general government's tax revenue) fell in the years preceding the Covid-19 crisis, from 18.5% of GDP in 2014 to 16% in 2019, and then 15.2% in 2020. On the other hand, total public spending and investment (of all four budgets) rose substantially to 41.3% of GDP in 2019 and 43.8% in 2020 from 37% in 2014, in order to support domestic demand. See *Chart 2*.

In addition, the reserves available to the government have dwindled. To help finance the general budget, the authorities have moved resources from the reserves of various public-sector funds (such as the stabilisation fund, various government funds and the fund financed through the profits of state-owned enterprises). Those transfers increased sharply in 2020, after already several years of rise (they took about 35% of the revenue of all the funds concerned vs. 25% in 2019 and 15% in 2016-2017). For example, transfers from the stabilisation fund to the general budget rose from RMB 100 billion in 2014 to RMB 280 billion in 2019 and RMB 530 billion in 2020 (0.5% of GDP), and the stabilisation fund's accumulated balance could fall close to zero this year. Meanwhile, the reserves of social-security funds reached almost 10% of GDP in 2019 after rising for several years. The government is not allowed to tap those reserves to fund the general budget, but yet most of the support measures introduced in 2020 were covered by those reserves.

The deterioration in public finances has mostly affected local governments. There is a structural imbalance between their revenue (due to their narrow tax base and central government transfers that are insufficient and based on a complex system) and their large spending responsibilities in terms of public services and investment. This has led to local government's large deficits (averaging -9.9% of GDP before central government transfers in 2015-2019, and -2.1% after transfers), ever-growing debt and heavy dependency on alternative and less well controlled sources of funding. These mainly consist of land sales, which have fed speculation in the real estate markets, as well as various local taxes and indirect debt via dedicated financing vehicles (see *Box and Chart 3*).

1 The budget law adopted in 2014 aimed among other things to: i) improve reporting by government entities and introduce the annual publication of the "four budgets", ii) streamline and improve the planning of local governments' spending, and allow them to raise debt directly in the bond markets, and iii) reduce the use of financing vehicles and separate their activities from local governments' budgets. Major progress has been achieved on the first point, and the local government bond market has grown quickly since 2014. However, the third objective has not been achieved, since financing vehicles have continued to proliferate.

2 The VAT reform, initiated through a pilot programme in 2012, was extended across China in 2016: the "business tax" that existed alongside VAT and applied to certain industries was replaced by a VAT applicable to all goods and services (with various rates depending on the sector).

3 The main tax cuts were applied in 2018 (for an estimated total reduction of 1.5% of GDP) and 2019 (2% of GDP).

4 C. Wong, National University of Singapore, East Asian Institute: *China's post-Covid goldilocks budget – How big should it be?* (18 March 2021).



CONSOLIDATED GOVERNMENT FINANCES

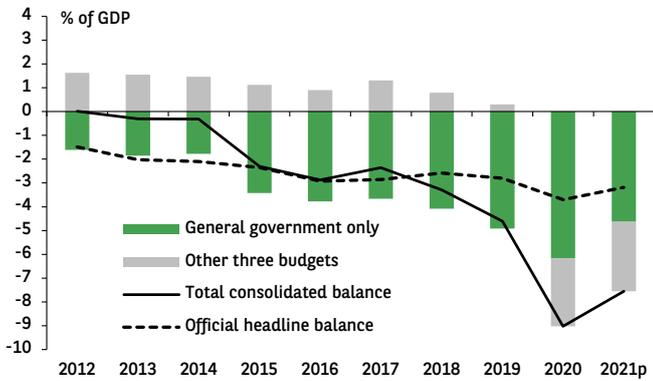


CHART 1

SOURCE: MINISTRY OF FINANCE, CEIC, BNP PARIBAS

GOVERNMENT REVENUES AND EXPENDITURES

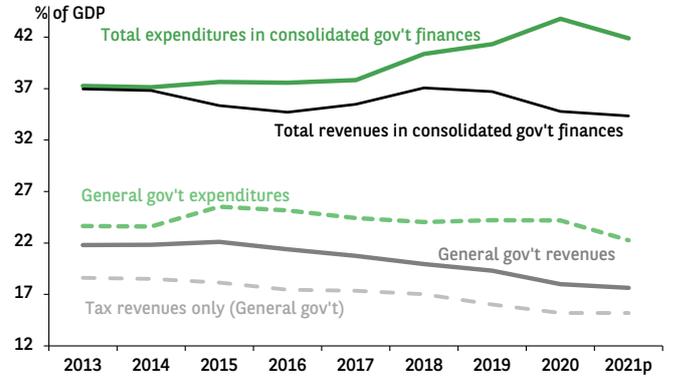


CHART 2

SOURCE: MINISTRY OF FINANCE, CEIC, BNP PARIBAS

GENERAL BUDGET

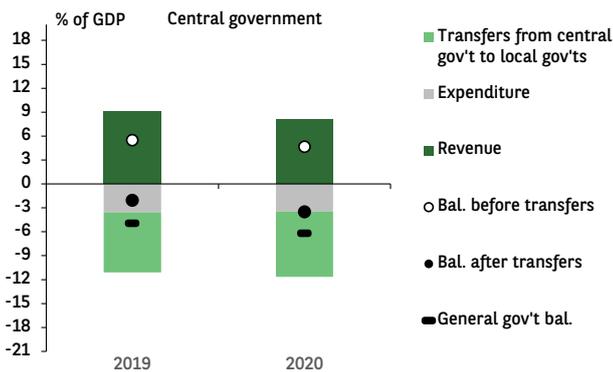


CHART 3A

SOURCE: MINISTRY OF FINANCE, CEIC, BNP PARIBAS

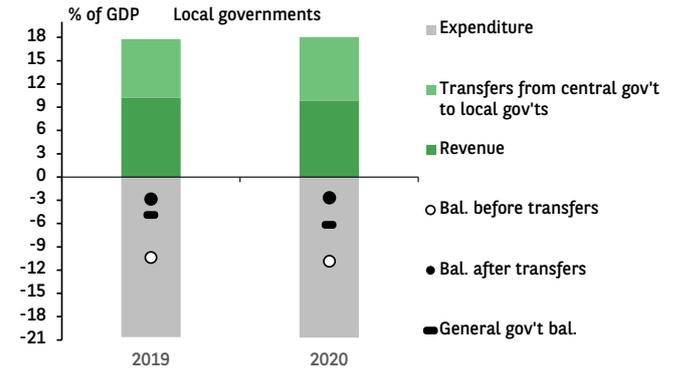


CHART 3B

SOURCE: MINISTRY OF FINANCE, CEIC, BNP PARIBAS

GOVERNMENT FINANCES EXCLUDING THE GENERAL BUDGET

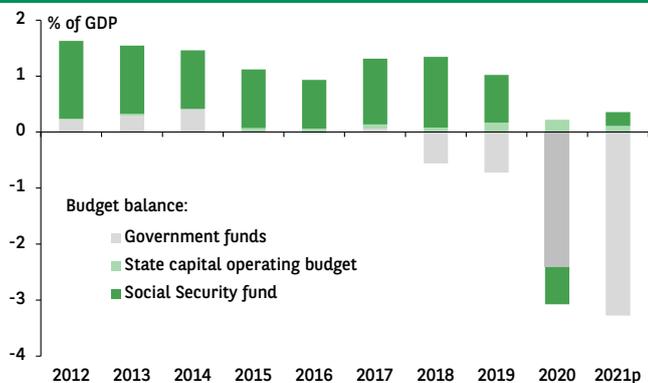


CHART 4

SOURCE: MINISTRY OF FINANCE, CEIC, BNP PARIBAS

NET GOVERNMENT BOND ISSUANCE

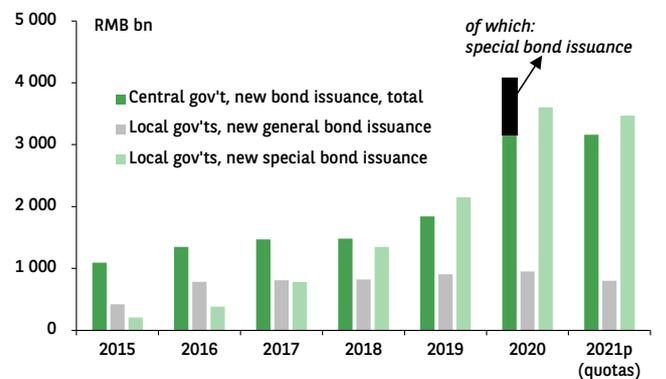


CHART 5

SOURCE: MINISTRY OF FINANCE, BNP PARIBAS



BUDGETARY, QUASI-BUDGETARY AND EXTRA-BUDGETARY OPERATIONS

• The annual budget deciphered

Since 2015, in its annual report¹ the Chinese finance ministry has presented its budgetary policy in four separate sections, which are not consolidated and based on cash flows. The “four budgets” or components of the public accounts are:

a) The general budget, or main budget of the general government (central government + local governments). It mainly comprises current spending. It has accounted for a gradually declining share of the consolidated public accounts (i.e. of the four budgets combined), to 59% in 2019 and 55% in 2020. Revenue comes from tax (85% of general budget revenue in 2019, equal to 16% of GDP) and other levies (3.3% of GDP in 2019).

China’s public spending is organised in an extremely decentralised way, with local governments responsible for most public services and carrying out 85% of general budget expenditure. However, their own revenue equals only 53% of general budget revenue. The resulting deficit is partly covered by transfers from central government. *See Charts 3A & 3B.*

The “official” budget deficit is the consolidated general budget deficit adjusted for transfers of revenue and reserves from other public-sector accounts. It is funded through “general” bond issues by both the central government and local governments.

b) The budget of government-managed funds, i.e. funds managed outside of the general budget, mostly by local governments. Their spending mainly consists of capital expenditure, including spending on infrastructure projects. Their share of total spending in the consolidated public accounts has gradually increased, reaching 22.5% in 2019 and 26.5% in 2020.

Government-managed funds are primarily financed by the own resources of local governments – regarded here as quasi-budgetary – including: various levies (on train tickets, aircraft tickets, lottery tickets etc.) and, above all, proceeds from land sales. Land sales account for more than 80% of the government-managed funds’ revenue in gross terms, and 15-20% in net terms (i.e. after land acquisition costs). Net land sales proceeds represented between 1.5% and 2% of GDP in 2019 and 2020.

The government-managed funds are also financed by “special” bond issues carried out by both the central and local governments (in the budget report, the authorities regard proceeds from special bond issues as budgetary revenue).

Outstanding “general” and “special” bonds represent the government’s official, explicitly budgeted, debt.

c) The budget of state capital operations, financed by transfers of profits by state-owned enterprises. The fund is managed by SASAC (State-owned Assets Supervision and Administration Commission). This budget covers certain social expenditures and certain costs related to reforms of state-owned enterprises. It accounts for less than 1% of the total consolidated public accounts budget.

d) The social security fund budget, which covers all operations related to the welfare system (pensions, health insurance, unemployment etc.). It represents almost 20% of the total consolidated public accounts budget.

The total consolidated budget balance for all government bodies is obtained by adding together the four budgets.

Efforts to increase transparency have been made in recent years, but the available data remains incomplete and sometimes hard to interpret. The existence of inter-government transfers and various accounting adjustments between the public-sector accounts also make analysis more complicated. *See Charts 1 & 4.*

• Extra-budgetary operations

Aside from these various budgets, **local government financing vehicles** (special purpose entities created in relation to specific investment projects) **and other public-sector entities** are also involved in implementing government policy via extra-budgetary measures. These measures include infrastructure investments which local governments cannot finance directly because of insufficient budgetary and financial resources. Therefore, in addition to the consolidated budget balance, there is also an extra-budgetary deficit that mainly represents the borrowing requirement of financing vehicles (which fund all their investments through debt).

¹ China’s Ministry of Finance (March 5, 2021): *Report on the execution of the central and local budgets for 2020 and on the draft central and local budgets for 2021* & China’s Ministry of Finance (May 22, 2020): *Report on the execution of the central and local budgets for 2019 and on the draft central and local budgets for 2020.*

... and that accelerated in 2020

The government introduced fiscal support measures at the start of the Covid-19 crisis in February 2020 and published all of its budget for 2020 in May. The official budget deficit target was increased from RMB 2,760 billion in 2019 to RMB 3,760 billion in 2020, which was due to represent -3.6% of GDP vs. -2.8% in 2019. At first glance, this seemed to indicate a moderate loosening of fiscal policy. In reality, the official deficit target announced in the spring of each year does not reflect all of the measures being considered. It can rather be regarded as a signal of the short-term direction of fiscal policy. In fact, the official deficit announced at the end of the fiscal year is always equal to the initial target (in 2020, the official deficit was indeed RMB 3,760 billion, which represented -3.7% of GDP in the end as GDP growth was slightly weaker than expected).

As a result, the fact that the official deficit in 2020 was historically high (above 3% for the first time) and that its increase was unusually large (RMB 1,000 billion, almost 1 point of GDP) pointed to a major fiscal easing. However, these figures underestimate the real extent of measures implemented in 2020. The analysis of data available for all government bodies and for the four budgets shows a larger increase in fiscal imbalances and a larger support plan, closer to 5% of GDP (which remains very modest compared with fiscal packages adopted in most developed countries).

The total consolidated deficit of all government bodies (the "four budgets") doubled year-on-year, from RMB 4,600 billion in 2019 to RMB 9,200 billion in 2020, i.e. from -4.6% to -9% of GDP. It was lower than the authorities' initial forecast (of -11.4% of GDP), since the economic rebound starting in the second quarter of 2020 allowed the government to limit stimulus spending and supported total revenue.

Over 2020 as a whole, the increase in fiscal deficits was explained primarily by the fall in total revenue (down 2.4% in 2020 compared with 2019), which in turn was mainly due to the decline in tax revenue (down 2.3%) and social-security contributions (down 13.3%). The increase in total expenditure (+9.2%) was moderate. It was mainly driven by LG investment (spending by government-managed funds jumped by 28.8% in 2020), while the increase in total current expenditure was very limited (+2.8%).

As a result, the general budget deficit rose from -4.9% of GDP in 2019 to -6.2% in 2020. With interest on debt rising very slightly and estimated to equal 1% of GDP in 2020, the general government primary budget deficit was -5.2% in 2020 vs. -4% in 2019. *See Chart 1.*

The balance of the three other budgets was in deficit for the first time in 2020 (-2.9% of GDP), because the post-Covid19 support package was implemented to a large extent through the quasi-budgetary government-managed funds (which posted a deficit of -2.4% of GDP in 2020), and through social-security funds, which posted an exceptional and probably temporary deficit equal to -0.7% of GDP. *See Chart 4.*

Around 40% of the total amount of the post-Covid19 stimulus package consisted of new public investment, mainly in infrastructure⁵. The rest consisted of one-off measures (some of which have been maintained in 2021) such as: healthcare expenditure (controlling the pandemic, medical equipment), tax and social-security exemptions and reductions, changes to the unemployment benefit system to accelerate payouts

⁵ New investments provided for by the stimulus plan were aimed particularly at areas such as transport infrastructure, environment, water and healthcare, urban/rural development, industrial parks and "new" sectors (high tech, internet networks, 5G, artificial intelligence).

and extend coverage (particularly for migrant workers), a reduction in levies, and other measures to help the most vulnerable corporates and households.

In addition to fiscal support, LGs' financing vehicles and SOEs also embarked on new expenditure (investments, recruitment). The resulting extra-budgetary deficit is hard to estimate. Based on available data and IMF estimates, it may have been around 4-5% of GDP in 2019, and it continued to rise in 2020.

Funding deficits on the local bond markets

The central government and LGs cover almost all of their official net borrowing requirement (i.e. after transfers from various public funds and excluding indirect extra-budgetary debt) through local bond markets.

The budget reports of the authorities plan the annual bond issuance quotas for: i) "general" bonds, issued by the central government (around two thirds of the total) and by LGs, and which usually finance the general budget up to the official forecast deficit, and for: ii) "special" bonds, which are mainly issued by LGs to cover specific expenditures of government-managed funds.

In 2020, total new general bond issuance exceeded the official budget deficit by almost RMB 300 billion, totalling RMB 4,040 billion. Moreover, new issues of special bonds by LGs increased sharply to RMB 3,600 billion (slightly less than the initially authorised quota), and were supplemented by an exceptional RMB 1,000 billion issue of special bonds by the central government (which had only carried out this kind of bond issue twice previously, once in 1998 and once in 2007). This means that the central government financed a larger share of fiscal deficits in 2020, in order to make up for the loss of revenue arising from the Covid-19 crisis. *See Chart 5.*

The issuance of general and special bonds does not pose any difficulty. Liquidity in the local bond market is abundant, supported by a large amount of available savings in the financial sector (national savings represent 45% of GDP and are still mainly invested locally). After a period of monetary policy loosening to respond to the Covid-19 shock in the first quarter of 2020, the central bank has cautiously tightened credit conditions since the fourth quarter, while maintaining comfortable liquidity levels in the local markets. The government's funding terms have remained stable. On average, since 2019, local governments have issued bonds at spreads of around 20-40 basis points (bp) over sovereign bond yields of the same maturity. *See Chart 6.*

Less room for manoeuvre, requiring more careful adjustments of fiscal policy

Last year, public finances were solid enough to absorb the Covid-19 shock. However, the government has much less room for manoeuvre as fiscal policy is now constrained by the need to reduce deficits and mitigate risks. In its last budget report, the finance minister acknowledged the "serious" nature of the situation. In order to meet their various fiscal policy targets (maintaining some measures to support domestic demand while making fiscal consolidation efforts and containing public debt growth), the authorities have to adjust their instruments more carefully, including through closer monitoring of public capital expenditure. They may also increase their recourse to taxes in the medium term.



The 2021 budget plan

The official deficit target for 2021 has been reduced by only RMB 190 billion to RMB 3,570 billion, or -3.2% of GDP, as opposed to -3.7% in 2020. This suggests a cautious policy tightening. In addition, in their March 2021 budget report, the authorities projected a reduction by less than 10% in the total deficit of consolidated public accounts, to RMB 8,470 billion in 2021, or -7.6% of GDP (assuming nominal GDP growth of 10%) vs. -9% in 2020. The expected increase in total public spending was +5.6% in 2021, down from +9% in 2020. Meanwhile, total revenue was expected to rebound strongly, rising by 9% after the contraction in 2020, supported by the upturn in activity and the gradual elimination of tax and social-security exemptions and deferrals for corporates (some tax support measures are still being maintained for small firms). Therefore, the fiscal adjustment that was planned last March relied on social-security funds, which were expected to return to surplus. The general budget deficit was also expected to improve from -6.2% of GDP in 2020 to -4.6% in 2021, which is lower than its pre-crisis level (of -4.9% in 2019). See Chart 1 & Chart 4.

Meanwhile, the deficit of government-managed funds was expected to continue to widen. According to the official forecasts announced in March, it was expected to reach -3.3% of GDP in 2021 vs. an actual deficit of -2.4% in 2020 and less than 1% in 2018 and 2019. This projection was based firstly on the expected stabilisation of land sales proceeds, illustrating Beijing's desire to cool the real estate market and, secondly, on a moderate slowdown in capital expenditure growth.

Mid-year adjustments

The sharp rebound in economic growth between the second quarter of 2020 and mid-2021 led to a solid recovery in government revenue and allowed a rapid adjustment of economic policy priorities. The authorities started tightening credit conditions from the fourth quarter of 2020 and revised public investment plans in the first quarter of 2021.

Tax revenue in the general budget recovered more quickly than expected in the first half of 2021 (up 22.5% year-on-year), already exceeding its level in the first half of 2019. Meanwhile, local government revenue from land sales also rose sharply (up 22.4% year-on-year), taking advantage of the recovery in the property market. See Chart 7.

At the same time, current expenditure in the general budget returned to normal in the first half of 2021 and capital expenditure by LGs was much lower than forecast. By the end of June, LGs had only issued 35% of their authorised quota of bonds for the year (and so the total annual quota was reduced slightly). That adjustment came alongside tougher credit conditions, and investment in public infrastructure quickly levelled off in the first half of 2021. See Chart 8.

Beijing is seeking tighter control over local governments' spending. The greater discipline being imposed on them and the closer monitoring of their investments in the last few months contrast sharply with the strategy adopted in 2008 and 2009, when Beijing gave carte blanche to the regions to spend and stimulate growth in response to the global financial crisis. Investment in public infrastructure projects remains a favoured countercyclical policy instrument, but it is being adjusted more closely in line with trends short-term activity data. These adjustments are intended to limit the rise in LG deficits and debt as much as possible, while retaining the ability to respond if domestic demand weakens. Given the sharper-than-expected and broad-based slowdown in activity in summer 2021, the authorities are likely to make further adjustments to bolster their monetary and fiscal policy support measures in the next few months.

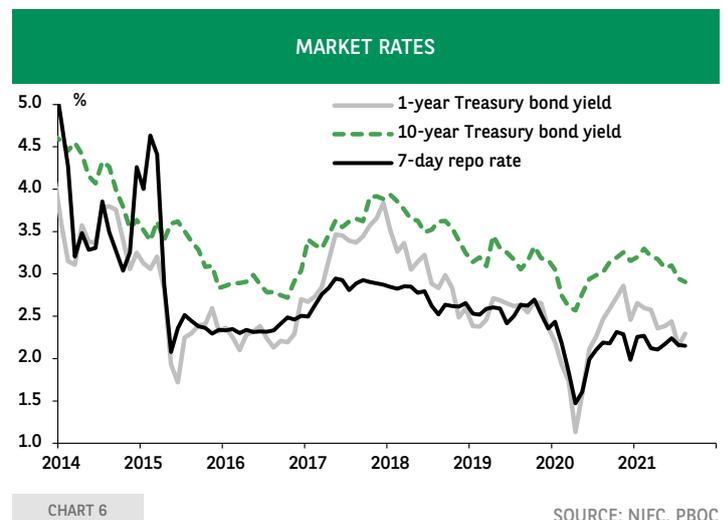


CHART 6

SOURCE: NIFC, PBOC

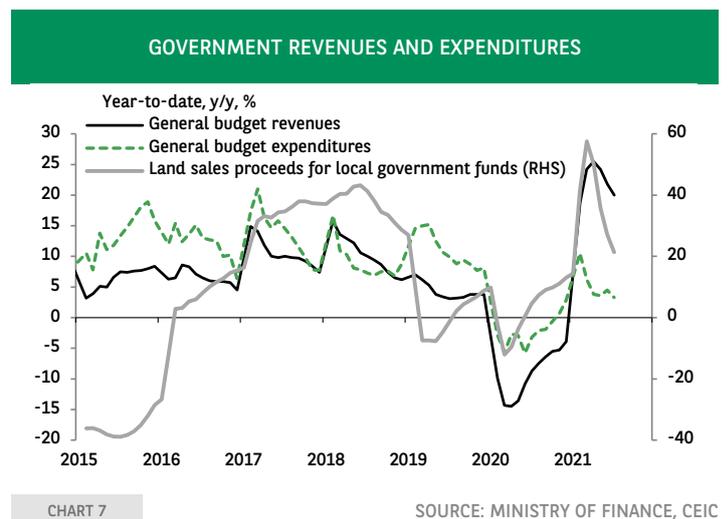


CHART 7

SOURCE: MINISTRY OF FINANCE, CEIC

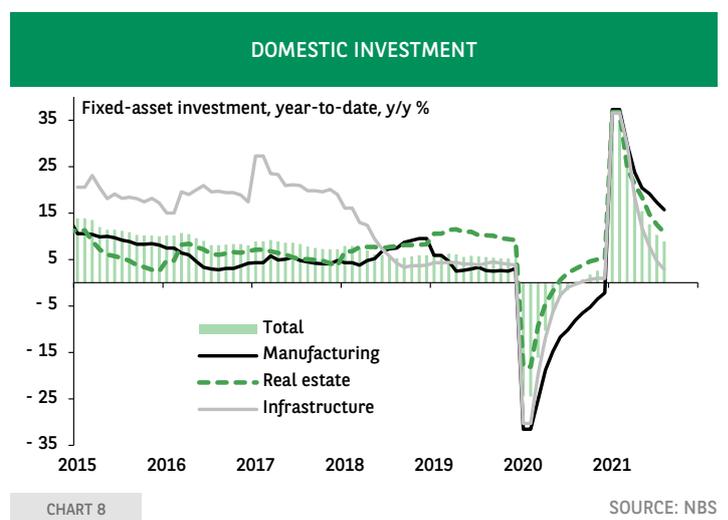


CHART 8

SOURCE: NBS

Public-sector debt: the problem of indirect debt and contingent risks

Despite the general deterioration in public finances in recent years and the Covid-19 shock, the central government is still in good financial shape and its direct debt remains very moderate. The conclusion regarding local governments is more complex. Their fiscal operations have become more disciplined and transparent because of reforms adopted since 2014, and their “official”, explicitly budgeted, total debt remains under control. However, LGs are still making extensive use of “extra-budgetary” financing vehicles to cover certain public expenditure. This is helping LGs overcome the shortfall in their resources, but it is pushing up their “implied”, or indirect, debt, taken out by their financing vehicles, in an opaque manner. This indirect debt is high, and situations differ widely from one region to another. Moreover, the central and local governments are also facing large contingent risks associated with the debt of state-owned enterprises. The interconnection between public finances and credit risk has increased.

Central government solvency still good

The solvency of the central government remains strong. Its debt is very moderate and highly sustainable, it has large assets and it can easily cover its financing needs in the bond markets. As a result, sovereign risk in the strict sense is not a concern in the short and medium terms.

The central government’s debt rose quickly in 2020, by 24% in nominal terms, whereas it had increased by 11-13% per year between 2015 and 2019. Given the sharp slowdown in nominal GDP growth, the debt/GDP ratio rose from 17% in 2019 to 20.6% in 2020, which remains very moderate. Debt interest costs are low: based on available data for the general government, interest payments represented only 4.4% of total revenue in 2019 (0.9% of GDP) and 5.4% in 2020 (1% of GDP).

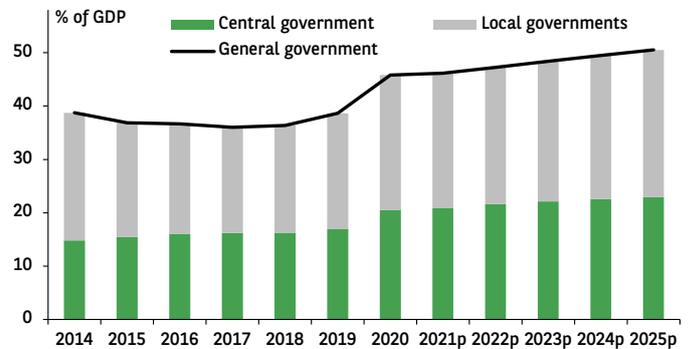
Refinancing risks are almost non-existent. More than 80% of the central government’s debt is long-term, and it consists almost entirely of bonds denominated in local currency. Most of these are owned by Chinese investors (principally commercial banks), which represent a stable base of creditors. The proportion of government bonds held by foreign investors remains low but it is rising gradually, reaching 10% of total bonds in 2020 vs. 3% in 2014. The central government has also made slightly greater use of international bond markets in the last five years, but the amounts involved remain very low: its foreign-currency debt amounted to 0.9% of total central government debt in 2020 (RMB 193 billion) or 0.2% of GDP⁶.

Finally, the government debt dynamics benefit from a highly favourable differential between GDP growth and interest rates, and this will remain the case in the medium term despite the expected slowdown in economic growth⁷. The apparent interest rate on debt (interest payments on existing debt, calculated for the general government) was estimated at 2.5% in 2019-2020 and is lower this year. Based on our central medium-term macroeconomic scenario (with a very slight downtrend in both fiscal deficits and in the apparent interest rate on debt), central government debt is projected to increase slowly but remain below 25% of GDP by 2025. See Chart 9.

⁶ More generally, the Chinese economy has limited foreign-currency debt, estimated at 10% of GDP in 2020 and consisting mainly of debt owed by banks and non-financial companies.

⁷ Real GDP growth averaged 6.7% per year between 2015 and 2019 and slowed to 2.3% in 2020. We expect 8.2% in 2021 and then 5.4% per year on average between 2022 and 2025. Nominal GDP growth averaged 9% per year between 2015 and 2019 and was 3% in 2020. It is projected to accelerate to 10.2% in 2021 and then average 7.5% per year between 2022 and 2025.

OFFICIAL GOVERNMENT DEBT DYNAMICS *



* Only includes direct debt that is explicitly budgeted. The projections do not take into account possible reforms of local government finances.

CHART 9

SOURCE: MINISTRY OF FINANCE, NBS, BNP PARIBAS PROJECTIONS

Local government debt: low clarity and high risk

Local governments are more indebted than the central government and there is a lack of clarity regarding their debt, since it is mainly taken out indirectly via their financing vehicles.

Since the new budget law was adopted in 2014, LGs have been authorised to borrow directly, subject to new debt quotas determined by the central authorities and specified in the annual budget report. As a result, the official, explicitly budgeted amount of total LG debt has increased since 2014⁸. It stood at 21.6% of GDP at end-2019 and 25.3% at end-2020. See Chart 9.

Taken as a whole, LGs’ official debt benefits from the same positive factors as central government debt, which make it sustainable over the medium term: a wide differential between GDP growth and interest rates, a highly favourable profile and moderate interest charges. LG debt consists almost exclusively of bonds issued in local markets, most of which are long-term and 80% of which are held by commercial banks, mainly regional ones. However, financial situations vary extremely widely from one province to another, and some local governments are already facing excessively heavy debt servicing charges.

Most importantly, direct bond issuance is not enough to cover the entire financing needs of LGs. This means that most of them are continuing to use financing vehicles. Although these vehicles have been banned from taking out debt on behalf of LGs since the 2014 budget law, their debt does in fact represent indirect, implied debt for their local governments.

It is a major source of vulnerability for public finances, primarily because this kind of debt has continued to rise rapidly in recent years and reached high levels. Moreover, local government financing vehicles borrow within an unclear regulatory framework and sometimes in a highly opaque manner. Their debt consists mainly of bank loans, along with bonds (the most “visible” portion of debt, estimated at 20-25% of the total in 2020) and other credits from non-bank institutions of the shadow banking sector. The total amount of debt is hard to gauge.

⁸ Some of the first bonds issued by LGs replaced the portion of their financing vehicles’ debt that the new budget law forced them to recognise. This swap programme totalled RMB 15,400 billion, equal to two thirds of the debt of financing vehicles at end-2014 (around 20% of GDP).



GOVERNMENT DEBT, AUGMENTED DEFINITION

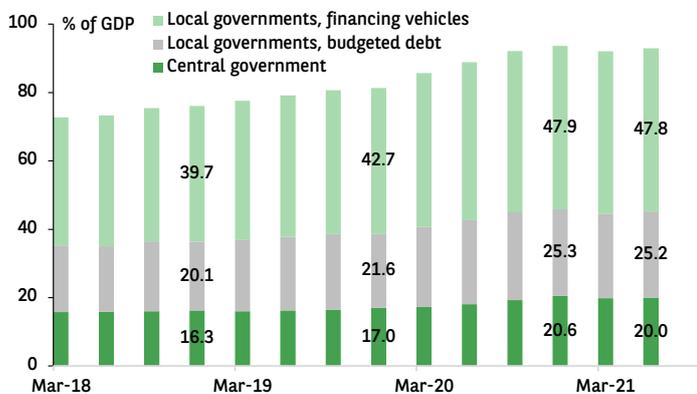


CHART 10

SOURCE: MINISTRY OF FINANCE, NBS, IMF, BNP PARIBAS

According to IMF estimates⁹, the total debt of local government financing vehicles and other extra-budgetary funds handling public investment on behalf of LGs has increased by 15-20% per year since 2018. It represented 43% of GDP at end-2019 and 48% of GDP at end-2020.

Therefore, the total (direct and indirect) debt of LGs amounted to 73% of GDP at end-2020, which is excessively high, including by comparison with other emerging economies or OECD countries. See Chart 10.

Lastly, there is a high risk that local government financing vehicles will experience difficulties to refinance and then repay their debt. Indeed, returns on their assets (mainly infrastructure) are long to come and often not high enough to cover debt repayments. The IMF estimates that at least two thirds of their debt is destined to be recognised directly as LG liabilities.

Debt of state-owned enterprises: increasing again in 2020 after three years of improvement

The central and local governments face large contingent risks associated with the excessive debt of state-owned enterprises (including financing vehicles)¹⁰ and high credit risks in the financial system.

Total debt of non-financial corporates was estimated at 162% of GDP at end-2020 vs. 152% at end-2019 and 158% at end-2016¹¹. The increase in the debt ratio in 2020 in fact followed three years of slight decline, and resulted from both the sharp slowdown in GDP growth and the faster rise in the debt stock (+10% in 2020 vs. +7.2% per year on average between 2016 and 2019). The debt increase was mainly driven by the public sector.

Based on CNBC estimates¹², the debt of state-owned enterprises (including financing vehicles) represented around 70% of total corporate debt, i.e. 114% of GDP at end-2020 vs. 106% at end-2019¹³.

9 IMF (2 December 2020): Article IV Staff report.

10 The frontier between financing vehicles and other SOEs is sometimes blurred. The purpose of financing vehicles is to support fiscal policy, whereas the operations of other SOEs are strictly commercial.

11 Data from the CNBC (Center for National Balance Sheet of China) – NIFD (National Institution for Finance & Development).

12 CNBC – NIFD (1 April 2020): *China's leverage ratio likely to increase in 2020. 2019 Report*.

13 Measured as a % of assets, the debt of SOEs rose in 2020 for the first time since

This means that financing vehicles were responsible for around 40% of that total. Accordingly, public-sector debt as a whole (government + non-financial corporates) totalled around 160% of GDP in 2020¹⁴.

Increasing interconnections between sovereign risk and credit risk

In 2020, public finances deteriorated while total SOE debt increased again. In addition to these dynamics, there is a growing interconnection between the financial performance of local governments and credit risks. On the one hand, the excessive debt of SOEs represents a contingent risk for the government. On the other, the fragility of some local governments is starting to lead to both tougher financing conditions and higher default risks for their enterprises. This could also affect the performance of financial institutions, particularly regional commercial banks that are the main creditors of local governments.

Payment difficulties experienced by state-owned enterprises have recently increased due to the combined effect of the deterioration in their financial performance and the weakening of state guarantees. In addition, credit conditions have become tighter since the fourth quarter of 2020.

The weak financial health of the SOE sector is not a new problem in China – it has been caused by poor governance, low profitability and excessive debt. The Covid-19 shock on activity and corporate profits has made the situation worse. SOEs' capacity to service their debt has deteriorated substantially, especially since new credits in 2020 went more to firms that already had the heaviest debt before the Covid-19 crisis¹⁵. State-owned enterprises belonging to local governments (particularly in the transport and real estate sectors) are estimated to be among the least able to service their debt; in the first quarter of 2021, around 10% of local SOEs had an interest coverage ratio (ICR) of less than 1, according to World Bank estimates.

At the same time, whereas SOE debt had long benefitted from (explicit or implicit) state guarantee (either by the central or local governments), this unconditional support has started to erode. This has resulted firstly from the authorities' reform efforts aimed at cleaning up practices in the financial sector and among SOEs, and at reducing moral hazard. However, the weakening of guarantees provided by local governments is also the result of their deteriorating public finances. Some local governments are simply no longer able to support their firms when required.

As a consequence, there has been a sharp increase in defaults among state-owned enterprises in the last year. So far, defaults have concerned bond debt more than bank loans (on which defaults are also less visible). In the local bond market, the total number of defaults among SOEs rose from 43 in 2017-2019 (with debt in default totalling RMB 41 billion) to 80 in 2020 (with debt in default totalling RMB 98 billion). The amount of debt falling into default was around RMB 38 billion in the first quarter of 2021 alone. See Chart 11.

The total amount of corporate debt in default remains limited (1% of all corporate bonds outstanding in 2020), but the rising frequency of default events clearly shows both the deterioration in financial positions and a change in behaviour in the Chinese market. Whereas most bond

2017, reaching about 65% vs. 63.9% at end-2019.

14 These figures seem to be at the lower end of the likely range. According to other available estimates, SOEs account for 67%-85% of the total debt of Chinese corporates. See: World Bank (*China economic update*, July 2020 & June 2021), OECD (*State-owned firms behind China's corporate debt*, 7 February 2019) and IFI (*Global debt monitor database*, September 2021).

15 IMF (April 2021): Global Financial Stability Report.



defaults initially affected private-sector enterprises (the first default happened in 2014), state-owned enterprises have accounted for most defaults since 2020, including some large firms. Meanwhile, although no financing vehicles have defaulted on their bond payments so far, payment difficulties have started to appear in relation to debts owed to shadow banking institutions.

The rise in default risk and the concerns of creditors have pushed up borrowing rates in the bond markets, the distinction between state-owned enterprises and private-sector enterprises has become less clear, and the market is pricing in less of an implied government guarantee, particularly in provinces that have the weakest finances. According to World Bank calculations, between the start of 2020 and mid-2021, the surplus risk premium applied to private-sector corporate bonds fell by around 20bp compared with bonds of SOEs owned by the central government and by 40-50bp compared with bonds of SOEs owned by local governments¹⁶.

Rising defaults among state-owned enterprises and the deterioration in local governments' finances have, in turn, contributed to tougher credit conditions in the most fragile regions. As a matter of fact, the proportion of new credits taken by corporates and households in the most indebted provinces fell sharply in the second half of 2020¹⁷.

The increasing interdependence between local governments, their enterprises and regional banks is therefore creating negative dynamics in credit risk – thereby weakening the financial sector – and in public finances. These dynamics are likely to continue, and defaults by state-owned enterprises could multiply in the next few months. Efforts to clean up practices in the financial markets represent a positive development that should improve the allocation of capital in the medium term. In the short term, however, the challenge for the authorities is to keep events of default under control, in order to stop the contagion effects spreading to the financing conditions of other economic agents and to prevent any risk of instability in the financial system (such as a confidence crisis and a sudden adjustment of market rates, leading to further defaults). This means that the Chinese state is likely to continue supporting the most sensitive and strategically important firms. At the same time, the authorities are expected to continue reforms aimed at reducing the debt of state-owned enterprises and local governments, because making public finances more sustainable will be necessary to help them to realise their medium-term development strategy.

Completed on 20 September 2021

christine.peltier@bnpparibas.com

OUTSTANDING BALANCE OF DEFAULTED BONDS

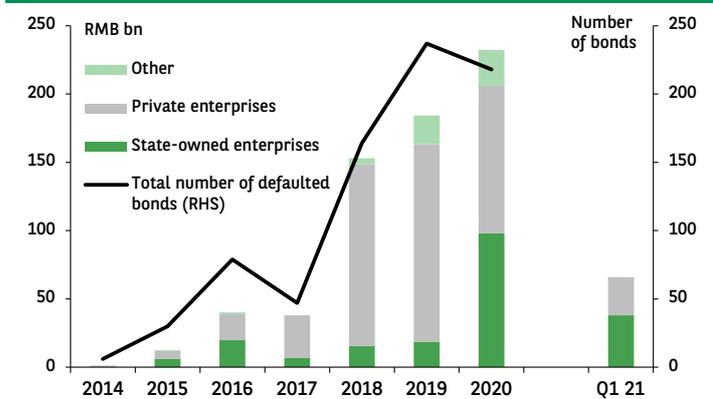


CHART 11 SOURCE: PETERSON INSTITUTE FOR INTERNATIONAL ECONOMICS, WORLD BANK

¹⁶ In the second half of 2020, the average spread was around 300bp for private-sector companies, 90bp for local government-owned companies and 70bp for central government-owned companies.
¹⁷ IMF (April 2021): Global Financial Stability Report.

GROUP ECONOMIC RESEARCH



CONJONCTURE

Structural or thematic topics.



EMERGING

Analyses and forecasts for a selection of emerging economies.



PERSPECTIVES

Analyses and forecasts with a focus on developed countries.



ECOFASH

Data releases, major economic events.



ECOWEEK

Recent economic and policy developments, data comments, economic calendar, forecasts.



ECOTV

A monthly video with interviews of our economists.



ECOTV WEEK

A weekly video discussing the main event of the week.



MACROWAVES

Our economic podcast.

The information and opinions contained in this report have been obtained from, or are based on, public sources believed to be reliable, but no representation or warranty, express or implied, is made that such information is accurate, complete or up to date and it should not be relied upon as such. This report does not constitute an offer or solicitation to buy or sell any securities or other investment. It does not constitute investment advice, nor financial research or analysis. Information and opinions contained in the report are not to be relied upon as authoritative or taken in substitution for the exercise of judgement by any recipient; they are subject to change without notice and not intended to provide the sole basis of any evaluation of the instruments discussed herein. Any reference to past performance should not be taken as an indication of future performance. To the fullest extent permitted by law, no BNP Paribas group company accepts any liability whatsoever (including in negligence) for any direct or consequential loss arising from any use of or reliance on material contained in this report. All estimates and opinions included in this report are made as of the date of this report. Unless otherwise indicated in this report there is no intention to update this report. BNP Paribas SA and its affiliates (collectively "BNP Paribas") may make a market in, or may, as principal or agent, buy or sell securities of any issuer or person mentioned in this report or derivatives thereon. BNP Paribas may have a financial interest in any issuer or person mentioned in this report, including a long or short position in their securities and/or options, futures or other derivative instruments based thereon. Prices, yields and other similar information included in this report are included for information purposes. Numerous factors will affect market pricing and there is no certainty that transactions could be executed at these prices. BNP Paribas, including its officers and employees may serve or have served as an officer, director or in an advisory capacity for any person mentioned in this report. BNP Paribas may, from time to time, solicit, perform or have performed investment banking, underwriting or other services (including acting as adviser, manager, underwriter or lender) within the last 12 months for any person referred to in this report. BNP Paribas may be a party to an agreement with any person relating to the production of this report. BNP Paribas, may to the extent permitted by law, have acted upon or used the information contained herein, or the research or analysis on which it was based, before its publication. BNP Paribas may receive or intend to seek compensation for investment banking services in the next three months from or in relation to any person mentioned in this report. Any person mentioned in this report may have been provided with sections of this report prior to its publication in order to verify its factual accuracy.

BNP Paribas is incorporated in France with limited liability. Registered Office 16 Boulevard des Italiens, 75009 Paris. This report was produced by a BNP Paribas group company. This report is for the use of intended recipients and may not be reproduced (in whole or in part) or delivered or transmitted to any other person without the prior written consent of BNP Paribas. By accepting this document you agree to be bound by the foregoing limitations.

Certain countries within the European Economic Area:

This report has been approved for publication in the United Kingdom by BNP Paribas London Branch. BNP Paribas London Branch is authorised and supervised by the Autorité de Contrôle Prudentiel and authorised and subject to limited regulation by the Financial Services Authority. Details of the extent of our authorisation and regulation by the Financial Services Authority are available from us on request.

This report has been approved for publication in France by BNP Paribas SA. BNP Paribas SA is incorporated in France with limited liability and is authorised by the Autorité de Contrôle Prudentiel (ACP) and regulated by the Autorité des Marchés Financiers (AMF). Its head office is 16, boulevard des Italiens 75009 Paris, France.

This report is being distributed in Germany either by BNP Paribas London Branch or by BNP Paribas Niederlassung Frankfurt am Main, a branch of BNP Paribas S.A. whose head office is in Paris, France. BNP Paribas S.A. - Niederlassung Frankfurt am Main, Europa Allee 12, 60327 Frankfurt is authorised and supervised by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin).

United States: This report is being distributed to US persons by BNP Paribas Securities Corp., or by a subsidiary or affiliate of BNP Paribas that is not registered as a US broker-dealer. BNP Paribas Securities Corp., a subsidiary of BNP Paribas, is a broker-dealer registered with the U.S. Securities and Exchange Commission and a member of the Financial Industry Regulatory Authority and other principal exchanges. BNP Paribas Securities Corp. accepts responsibility for the content of a report prepared by another non-U.S. affiliate only when distributed to U.S. persons by BNP Paribas Securities Corp.

Japan: This report is being distributed in Japan by BNP Paribas Securities (Japan) Limited or by a subsidiary or affiliate of BNP Paribas not registered as a financial instruments firm in Japan, to certain financial institutions defined by article 17-3, item 1 of the Financial Instruments and Exchange Law Enforcement Order. BNP Paribas Securities (Japan) Limited is a financial instruments firm registered according to the Financial Instruments and Exchange Law of Japan and a member of the Japan Securities Dealers Association and the Financial Futures Association of Japan. BNP Paribas Securities (Japan) Limited accepts responsibility for the content of a report prepared by another non-Japan affiliate only when distributed to Japanese based firms by BNP Paribas Securities (Japan) Limited. Some of the foreign securities stated on this report are not disclosed according to the Financial Instruments and Exchange Law of Japan.

Hong Kong: This report is being distributed in Hong Kong by BNP Paribas Hong Kong Branch, a branch of BNP Paribas whose head office is in Paris, France. BNP Paribas Hong Kong Branch is registered as a Licensed Bank under the Banking Ordinance and regulated by the Hong Kong Monetary Authority. BNP Paribas Hong Kong Branch is also a Registered Institution regulated by the Securities and Futures Commission for the conduct of Regulated Activity Types 1, 4 and 6 under the Securities and Futures Ordinance.

Some or all the information reported in this document may already have been published on <https://globalmarkets.bnpparibas.com>

© BNP Paribas (2015). All rights reserved.

HOW TO RECEIVE OUR PUBLICATIONS

SUBSCRIBE ON OUR WEBSITE
see the [Economic Research website](#)



FOLLOW US ON LINKEDIN
see the [Economic Research linkedin page](#)

OR TWITTER

see the [Economic Research Twitter page](#)



Published by BNP PARIBAS Economic Research

Head office: 16 boulevard des Italiens - 75009 Paris France / Phone : +33 (0) 1.42.98.12.34

Internet: www.group.bnpparibas.com - www.economic-research.bnpparibas.com

Head of publication : Jean Lemierre / Chief editor: William De Vijlder



BNP PARIBAS

The bank
for a changing
world