3. Germany

Key statistics	Germany	Peer average
Manufacturing GDP CAGR (2010-13)	2.8%	2.3%
Manufacturing GDP percentage of total GDP (2013)	22.2%	16.7%
Labor costs (US dollars per hour) (2015)	$40.5	$18.7
Manufacturing exports percentage of total exports (2014)	82.6%	60.2%
Highest corporate tax rate (2015)	33.0%	25.3%
Researchers per million population (UNESCO 2013)	4,472	2,852
Per capita personal disposable income (US dollars, 2015)	$24,110	$14,910
Per capita personal disposable income (US dollars) CAGR(2005-2015)	0.8%	3.8%

Supplemental analysis Germany – Competitiveness at a glance		
Manufacturing highlights	• With only about 1.1 percent of the world population in 2014, Germany is the world's third largest producer and is a significant exporter of passenger cars. • Germany is the third largest exporter of manufactured products after China and the United States.	• Germany's manufacturing sector accounted for 22.3 percent of its GDP in 2013. • Germany's small and medium sized enterprises (SMEs), called the Mittlestand, are composed of some 3.7 million companies and employ more than 60 percent of the country's workforce.
Advantages to manufacturers	**Dominance in manufacturing 'mechatronics':** • Machine and plant manufacturing is one of the five biggest industries in Germany followed by electronics manufacturing. • German Mittlestand produce sophisticated machine tools that the emerging markets need as they develop their manufacturing capabilities. **Automotive capabilities:** • Germany's marquee auto brands have created a name and strong customer loyalty for themselves across the globe. • High-end German cars are in demand from affluent consumers all across the new emerging markets, especially China.	**Growth of SMEs (Mittlestand) boosted manufacturing:** • Growth of Mittlestand with stable family ownership and the ability to produce sophisticated goods that cannot be easily replicated boosted manufacturing growth in Germany. • Government support in terms of tax breaks and depreciation allowances boosted SME growth. **Skilled labor:** • The "dual system" of vocational training, which combines classroom instruction with work experience is a model several countries are trying to emulate. • Around 60 percent of German young people take up dual training in one of the 344 trades (from tanner to dental technician) in the country.

Supplemental analysis Germany – Competitiveness at a glance		
Advantages to manufacturers (continued)	**Innovation capability:** • Germany is a leader in key new technologies, including renewable energy such as solar and wind power. Renewable sources accounted for 28 percent of the country's electricity generation in 2014. • Abundance of R&D institutes, continued government support to science and technology, and close links between industry and universities are some of the key factors for growth in innovation capacity.	**High quality infrastructure:** • Infrastructure is one of Germany's strengths. Swiss institute, IMD, ranks Germany 9th on the quality of infrastructure in 2015, among 61 countries, compared to other nations, such as Japan (13th), China (25th), and Brazil (53rd).
Challenges	**Lack of venture capital (VC):** • Most of the SMEs are dependent on bank financing while the venture capital market in Germany remains weak. In times of crisis, such as the euro zone crisis, it is essential for companies to not just rely on banks but look for other partners as well. • While VC is still in early stages in Germany, VC activity has declined since the financial crisis. While total VC investment as a percent of GDP was 0.045 percent in 2008, it dropped to 0.028 percent in 2010, and has further declined to 0.023 percent in 2014. **High labor costs:** • At an average hourly rate of US$40.50 per hour in 2015, manufacturing wages in Germany are among the highest globally.	**Vulnerability of German banks to the euro area crisis:** • Some of the German banks are highly leveraged, have low capital quality and profitability, and are significantly exposed to the euro area economies. • This vulnerability could affect the availability of finance within the economy at large, and impact SMEs, specifically. To this point: German bank new issuance of loans to SMEs has declined from 13.0 billion euros in 2009, the first full year of the recession in the country, to 9.8 billion euros in 2014. **Aging workforce:** • Labor shortages from a shrinking and aging workforce could reduce Germany's GDP growth by half-a-percentage point a year.
Things to watch out	**Stable, but modest economic growth:** • The Economist Intelligence Unit (EIU) pegs GDP growth at a modest 1.8 percent in 2015, with growth largely due to lower oil prices and domestic, rather than external, demand. Tightening demand from key emerging markets could trim export growth. **Energy transformation faces hurdles:** • Despite substantial recent investments in renewable energy sources, investment in the next two years may be constrained according to EIU, with alternative sources of financing, such as PPPs, offering limited access to capital. • Germany's ambitious "energy revolution" (Energiewende) aims to phase out nuclear energy, which accounts for 18 percent of energy production, over the next several years. Though renewable sources accounted for 27.8 percent of Germany's power consumption in 2014, up from 6.2 percent in 2000, it remains unclear renewables can ramp up to fill the energy production gap before nuclear phases out.	**Eurozone political turbulence:** • A German public hostile to the ongoing Greece bailout saga may have favored Chancellor Merkel's iron-fisted, austere approach, though unrest remains evident among the polis, in the streets of Athens. Survival of the Eurozone as a coherent entity and single currency is back in focus. • Closer to home, Russia's forays in the Ukraine resulted in strong sanctions in 2014, and German leadership may be required to stem an escalation of the crisis in the Ukraine, which at worst could devolve into a trade war, with serious economic and political ramifications.

Source: Deloitte Touche Tohmatsu Limited analysis [XXIV]