



## How to interpret the decline in China's electricity consumption

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In 2010, The Economist created a Keqiang Index to track China's economy, named after then Deputy Premier of China, Li Keqiang. It was consisted of three indicators, namely electricity consumption, railways cargo volume, and loans disbursed by banks, which had weights of 40%, 25% and 35% respectively in the Index, demonstraing the relative importance of electricity consumption. Fast forward to August this year, the National Energy Administration's statistics showed that both electricity production and consumption recorded decline from a year ago by 2.2% and 1.5% respectively, consistent with the generally soft economic figures for the month. Days later, the PBoC reportedly injected RMB500 billion into the banking system through Standard Lending Facility (SLF). According to the National Bureau of Statistics, the unusual decline in both electricity production and consumption was largely due to the lower than usual temperature in August in the East China area. But the market's views are more on the pessimistic side.

### Decline in electricity consumption

The official statistics of China's electricity consumption, or demand for electricity, started in 2007, whilst those of electricity production, or supply of electricity, going back further to 1997. In recent years, demand and supply of electricity have been largely balanced. Therefore, statistics of electricity production can be used as proxies of consumption for years prior to 2007.

This year, the August economic indicators mostly came in weaker, with electricity consumption recording outright decline of 1.5% from a year ago, the worst performance since February 2013's decline of 12.5%. However, the previous decline was due to the seasonal factor of the traditional Chinese New Year falling in February 2013, while it fell in January in 2012. The long holidays round the traditional Chinese New Year are usually marked by shutdown of productions in factories, which can distort the year-over-year change of electricity consumption. In this case, the temporary decline in electricity consumption should not be interpreted negatively. The electricity production data also confirm such a pattern.

Net of this seasonal effect, the decline of electricity consumption in August is worrisome because it is the first decline since January to July 2009. Then the Chinese economy was in real trouble due to the shocks from the US sub-prime crisis and financial tsunami triggered

by the Lehman Brothers bankruptcy. Although China had launched the RMB4.0 trillion stimulus package, its exports were still contracting at alarming speed due to the synchronized recessions in the US, Europe and Japan, and 1H09 GDP growth decelerated to 7.1%. This time around, electricity consumption growth has been softening until it records outright decline, suggesting also troubles in the real economy.

Of course, the high comparison base of August 2013 somehow contributed to the decline. The unusually high temperature during summer time last year resulted in outsized 13.7% increase in electricity consumption in August, the largest increase in any single month last year. And in September, the increase was still high at 10.4%. Then in August this year, the lower than before temperature, especially in the East China area, damped electricity consumption, which is also corroborated by electricity production figures.

Generally speaking, the higher the temperature in summer time, the higher the household electricity consumption, followed closely by electricity usage by the services sector, with industrial usage the least affected. In August 2013, electricity consumption by households surged 21.4% from a year ago, while that by the tertiary industry up by 15.5%, both higher than the overall electricity consumption's increases of 13.7%. On the other hand, electricity consumption by the primary and secondary industries grew by 6.5% and 12.1% respectively for the same month, supporting this distinctive pattern. From the high comparison base, electricity consumption by households in August this year was down 5.7%, with that by the tertiary industry up by only 1.1%. However, it should not be misinterpreted.

### **Structural change in electricity consumption**

In August last year, electricity consumption by the secondary industry was up 12.1%, also the largest increase within the year, albeit at slower pace than that by households and the services sector. In recent years, besides the growth mandate, China also introduced measures to reduce excess capacity, reduce pollution and conserve energy consumption. If electricity consumption by the secondary industry is trending down due to these measures, it can even be argued that the reforms are paying off. Thus, closer examination of the electricity consumption by the secondary industry is warranted.

From the macro perspective, being the world's second largest economy, China has vastly different economic structure from the developed world. Investment still accounts for close to half of the economy (48% in 2013), while private consumption expenditure making up only 36% of it, a ratio far less than the level of more than two thirds in other major economies. In terms of industrial structure, the secondary industry still accounts for close to half of the Chinese economy (44% in 2013), a ratio far higher than the level of twenty percent or less recorded in most other developed economies. Although the proportion of the tertiary industry has increased to 46%, surpassing that of the secondary industry, it is still underweighted when compared to the seventy percent or more ratio in the developed world. Under such an

economic structure, electricity consumption will have different pattern.

In August this year, electricity consumption by the tertiary industry and households accounted for 13% and 14% of the total, up by about three percentage points from the past several years. The proportion of electricity consumption by the secondary industry declined by about six to seven percentage points during the same period to 70%, suggesting the efforts of reducing excess capacity and trimming investment in high energy consumption industries are beginning to pay off. Nonetheless, such a structure is far from being perfect because by comparison, electricity consumption by the tertiary industry and households in many developed economies accounts for between twenty to thirty percent of the total each when growth is dominated by services and private consumption expenditure. Industrial electricity consumption in these economies is never more than half of the total. In view of these, although the proportions of electricity consumption by the tertiary industry and households in China seem low, they may not be unreasonable because the total is pushed up by heavy industrial electricity usage.

When the Chinese economy continues to transform towards growth driven mainly by the services sector and consumption, and industrial electricity consumption records meaningful decline on the back of digesting excess capacity and energy conservation, the proportion of electricity consumption by the secondary industry will likely decline further from the current 70% to levels more compatible with the developed world. Then the proportion of electricity consumption by the tertiary industry and households will increase to more reasonable level even though their total volume remains unchanged. Hence, a feasible path to achieve this will be for the industrial electricity consumption to grow slower than that by the services, households, and total.

According to the US Energy Information Administration, China surpassed the US to become the economy to consume the most electricity in 2011, with total consumption at 4280 Billion Kilowatthours, up 22% and exceeding the US' 3883 Billion Kilowatthours. By then, China's gross domestic product stood at USD7.32 trillion at prevailing exchange rate, 47% of the US economy. It suggests its high energy consumption to produce one unit of GDP. In 2013, China's total electricity consumption continued to grow to 5320 Billion Kilowatthours, while that for the US slightly down, suggesting widening gap. Thus, even though China has successfully reduced per unit GDP energy consumption for years in a row (down 2.2%, 4.0%, 2.0%, 3.6% and 3.7% from 2009 to 2013, and 4.2% in 1H14), the task of energy conservation is still daunting.

## **Economic slowdown**

Now that the decline in August's electricity consumption has something to do with high comparison base and China's reforms, the question remains if it also has something to do with economic slowdown.

Since 2012, China's quarterly real GDP growth has been under 8.0%, reaching as low as 7.4%. And the four quarters since 1H13 saw real GDP growth at 7.8%, 7.7%, 7.4% and 7.5% on a modest slowing track. Meanwhile, China's electricity consumption growth slowed more dramatically from double digits to single digits until it recorded outright decline during the third quarter of this year. Though more volatile, it suggests a more worrisome slowdown in the real economy. According to the PMI indices compiled by both HSBC and the National Statistics Bureau, the manufacturing sector is barely above the expansion line of PMI at 50, while the services sector faring much better with PMI sitting north of 54 and improving. This is consistent with growth in electricity consumption by the tertiary industry outstripping the secondary industry and the economy as a whole.

However, the steeper slowdown in electricity consumption than the real economy itself suggests the Chinese economy is undergoing structural changes. At the end of 2013, final consumption expenditure accounted for 50% of China's economy (with private consumption and government consumption at 36% and 14% respectively). Gross capital formation made up 48% of the economy (with fixed asset capital formation and inventory at 46% and 2% respectively). Consumption outweighed investment. In 2H13, investment still contributed more to growth. But in 1H14, the situation reversed with consumption being the main growth driver. Such a shift in growth momentum will lead to moderating electricity consumption growth because the services sector and households use far less electricity than industries. But consumption driven growth itself will also moderate when compared to investment driven growth.

Nowadays, investment is still growing faster than consumption, although its pace of deceleration is also more severe. Beginning in 2013, investment in services surpassed that in manufacturing, and its lead continues in this year. For the first eight months of this year, cumulative growth in fixed asset investment in services was 18.2%, outstripping manufacturing investment's 14.1% growth. And in terms of FAI in manufacturing, growth of 11.8%, 9.0%, -7.3% and 6.6% was recorded in energy heavy petrochemicals, chemicals, ferrous metals, and non-ferrous metals productions. This also leads to decline in electricity production and eventually moderation in GDP growth. But the result is acceptable.

Industrial production data can corroborate such structural changes. In August this year, value added industrial production grew by only 6.9% from a year ago, the slowest pace since the financial tsunami. The value added in manufacturing grew by 8.0%, with growth in petrochemicals, chemicals, ferrous metals, and non-ferrous metals' value added at 5.7%, 8.9%, 3.5% and 11.1% respectively, all at the slowest pace this year. On top of that, electricity production decline in sync with consumption, leading to the 6.9% growth in industrial production. This implies further deceleration in GDP growth, which is reciprocal with decline in electricity consumption. But since it is mainly the result of China's proactive reform measures, it should not be interpreted in an overwhelmingly negative way.

# 主要經濟指標 (Key Economic Indicators)

<b>一. 本地生產總值 GDP</b>	<b>2012</b>	<b>2013</b>	<b>2014/Q1</b>	<b>2014/Q2</b>
總量 (億元) GDP(\$100 Million)	19,644	20,372	5,174	5,309
升幅 (%) Change(%)	1.5	2.9	1.8	2.6
<b>二. 對外貿易 External Trade</b>	<b>2012</b>	<b>2013</b>	<b>2014/8</b>	<b>2014/1-8</b>
外貿總值 (億元) Total trade(\$100 Million)				
港產品出口 Domestic exports	588	544	53	380
轉口 Re-exports	33,755	35,053	3,219	23,327
總出口 Total exports	34,343	35,597	3,272	23,707
進口 Total imports	39,122	40,607	3,588	27,067
貿易差額 Trade balance	-4,778	-5,010	-315	-3,360
年增長率 (%) YOY Growth(%)				
港產品出口 Domestic exports	-10.4	-7.6	7.2	4.6
轉口 Re-exports	3.2	3.8	6.4	3.8
總出口 Total exports	2.9	3.6	6.4	3.8
進口 Imports	3.9	3.8	3.4	3.9
<b>三. 消費物價 Consumer Price</b>				
綜合消費物價升幅 (%) Change in Composite CPI(%)	4.1	4.3	3.9	3.9
<b>四. 樓宇買賣 Sale &amp; Purchase of Building Units</b>			<b>2014/8</b>	<b>2014/1-8</b>
合約宗數 (宗) No. of agreements	115,533	70,503	7,902	51,491
年升幅 (%) Change(%)	6.2	-29.9	54.6	3.7
<b>五. 勞動就業 Employment</b>	<b>2012</b>	<b>2013</b>	<b>2014/5-2014/7</b>	<b>2014/6-2014/8</b>
失業人數 (萬人) Unemployed(ten thousands)	12.45	11.84	13.3	13.6
失業率 (%) Unemployment rate(%)	3.2	3.2	3.3	3.3
就業不足率 (%) Underemployment rate(%)	1.5	1.4	1.5	1.4
<b>六. 零售市場 Retail Market</b>	<b>2012</b>	<b>2013</b>	<b>2014/8</b>	<b>2014/1-8</b>
零售額升幅 (%) Change in value of total sales(%)	9.8	11.0	3.4	-1
零售量升幅 (%) Change in volume of total sales(%)	7.2	10.6	2.8	-1
<b>七. 訪港遊客 Visitors</b>			<b>2014/7</b>	<b>2014/1-7</b>
總人數 (萬人次) arrivals (ten thousands)	4,862	5,430	537	3,390
年升幅 (%) Change(%)	16	11.7	11.2	12.3
<b>八. 金融市場 Financial Market</b>	<b>2012</b>	<b>2013</b>	<b>2014/6</b>	<b>2014/7</b>
港幣匯價 (US\$100=HK\$)				
H.K. Dollar Exchange Rate (US\$100 = HK\$)	775.05	775.4	775.1	775
貨幣供應量升幅 (%) change in Money Supply(%)				
M1	22.2	9.7	14	17.6
M2	11.1	12.3	15	15.9
M3	11	12.4	15	16
存款升幅 (%) Change in deposits(%)				
總存款 Total deposits	9.3	10.6	13.3	14.1
港元存款 In HK\$	11.7	5.1	13.1	15.4
外幣存款 In foreign currency	7	16.2	13.6	13.5
放款升幅 (%) in loans & advances(%)				
總放款 Total loans & advances	9.6	16.0	16.0	15.5
當地放款 use in HK	7.1	13.8	14.9	15.6
海外放款 use outside HK	16.5	21.4	18.9	15.5
貿易有關放款 Trade financing	10.2	43.8	11.6	9.7
最優惠貸款利率 (%) Best lending rate (%)	5.0000	5.0000	5.0000	5.0000
恆生指數 Hang Seng index	22,657	23,306	23,191	24,757