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The analysis of the underlying reasons of the inconsistent relationship between economic growth and the consumption of electricity in China – A case study of Anhui province

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1 **The analysis of the underlying reasons of the inconsistent relationship**
2 **between economic growth and the consumption of electricity in**
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16 **Highlights:**

- 17 •Real GDP, IS, HDD, CDD and IF are all positive factors of the consumption of
18 electricity.
19 •EI is the major inhibitor to the increase of electricity consumption, followed by FD
20 factor.
21 •The deviation is almost shrink, when the electricity consumption caused by other
22 factors except real GDP is eliminated.
23 •The GDP growth rate of Anhui is authentic.
24
25

26 **Abstract:** Researches revealed that there has been existed a relatively stable and
27 positive relationship between economic growth and electricity consumption. However,
28 the inconsistency between them appeared in 2008. Therefore, it is urgent to analyze
29 whether the GDP in China is cheated and to seek the underlying reasons contributed
30 to the deviation. Anhui province is selected to act our study area. In order to explore
31 the underlying reasons of the deviation between economic growth and electricity
32 consumption, a multivariable regression models is established in this paper. Empirical
33 results are as follows: (1) real GDP, industrial structure (IS), heating degrees days
34 (HDD), cooling degree days (CDD), investment in fixed assets (IF) are all positive
35 factors for the consumption of electricity; (2) IS is the major contributor to raising the
36 consumption of electricity, followed by IF, CDD, HDD, and GDP; (3) energy
37 intensity (EI) and financial development (FD) are negative factors, when the value of
38 EI increase 1.0%, the consumption of electricity will decrease 7.4%; (4) if the
39 electricity consumption caused by other factors except GDP is eliminated, the

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