2019 recent trends in Geekbench score per CPU price

From 2006 – 2020, Geekbench score per CPU price has grown by around 16% a year, for rates that would yield an order of magnitude over roughly 16 years.

Details

We looked at Geekbench 5,[1] a benchmark for CPU performance. We combined Geekbench's multi-core scores on its 'Processor Benchmarks' page[2] with release dates and prices that we scraped from Wikichip and Wikipedia.[3] All our data and plots can be found **here**.[4] We then calculated score per dollar and adjusted for inflation using the consumer price index.[5] For every year, we calculated the 95th percentile score per dollar. We then fit linear and exponential trendlines to those scores.

Figure 1 shows all our data for Geekbench score per CPU price.

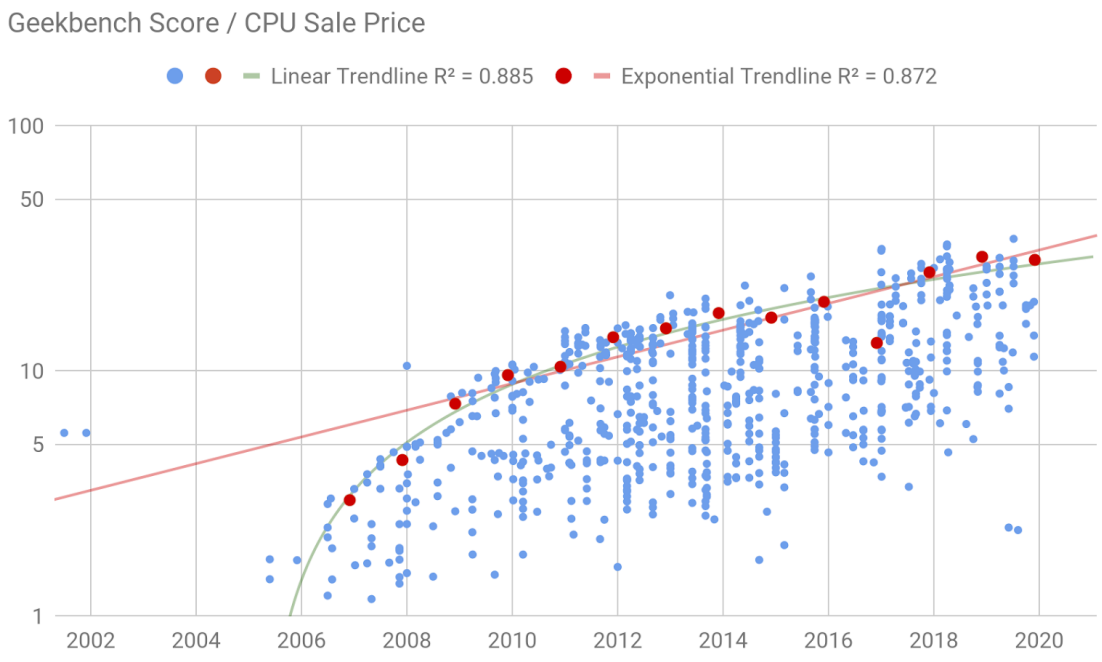

Figure 1: Geekbench scores per CPU price, in 2019 dollars. Red dots denote the 95th percentile values in each year from 2006 – 2019 (we start at 2006 since we have <= 2 data points a year prior to then). The exponential trendline through the 95th percentiles is marked in red, while the linear trendline is marked in green. The vertical axis is log-scale.

The data is well-described by a linear or an exponential trendline. Assuming an exponential trend,[6] Geekbench score per CPU price grew by around 16% per year between 2006 and 2020, a rate that would yield a factor of ten every 16 years.[7]

This is a markedly slower growth rate than those observed for **CPU price performance trends** in the past, however since it is for a different performance metric to any used earlier, it is unclear how similar one should expect them to be– from 1940 to 2008, **Sandberg and Bostrom found** that CPU price performance grew by a factor of ten every 5.6 years when measured in MIPS per dollar, and by a factor of ten every 7.7 years when measured in FLOPS per dollar.[8]

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Notes

1. "Introducing Geekbench 5." Geekbench 5 – Cross-Platform Benchmark. Accessed April 2, 2020. **https://www.geekbench.com/**. ↵
2. "Processor Benchmarks." Processor Benchmarks – Geekbench Browser. Accessed April 14, 2020. **https://browser.geekbench.com/processor-benchmarks**. ↵
3. Starting with Geekbench's list of CPUs, we Googled '<CPU> Wikichip' and '<CPU> Wikipedia' to find lists of processor release dates and prices. We then copied Wikichip tables into **this spreadsheet**, tab

'Wikichip / Wikipedia Information', and used **this script** to parse CPU data from tables in individual Wikipedia pages before copying them into the same spreadsheet. ↵

4. The 'Geekbench Scores' tab lists all the Geekbench CPU scores, while 'Wikichip / Wikipedia Information' stores all our scraped release dates and prices. ↵
5. "CPI Home." U.S. Bureau of Labor Statistics. U.S. Bureau of Labor Statistics. Accessed April 14, 2020. https://www.bls.gov/cpi/. ↵
6. Where ambiguous, we assume these trends are exponential rather than linear, because our understanding is that that is much more common historically in computing hardware price trends. ↵
7. See **this spreadsheet**, sheet 'Geekbench Scores' for our calculations, which are next to the cell marked 'Exponential trendline from 2006 – now'. ↵
8. See our **Trends in the cost of computing** page, section 'Sandberg and Bostrom'. ↵

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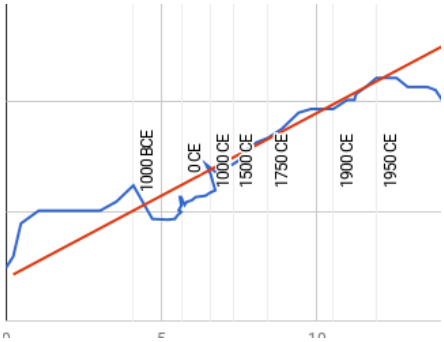

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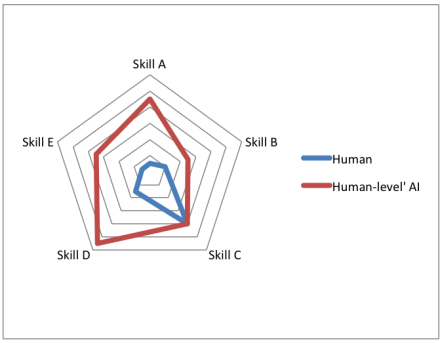

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