

Aerospace & Defence Update

Aftermarket deep dive: engine thrust & aftermarket trends in 4Q23

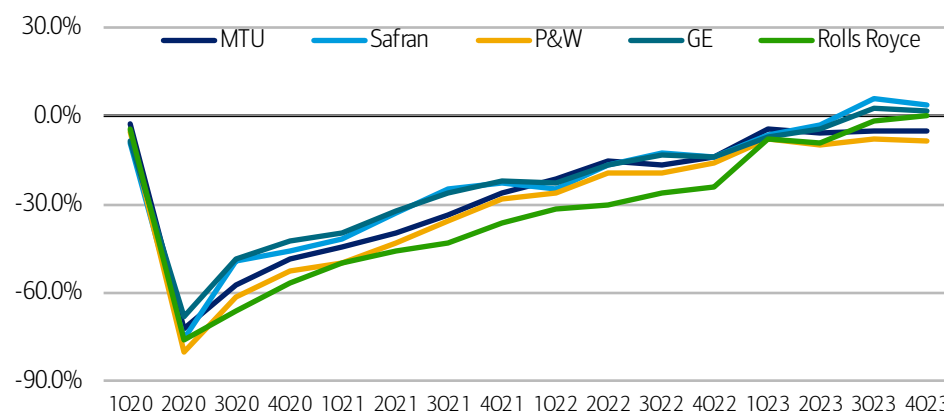
Industry Overview

Absolute hours decelerated sequentially in 4Q23

We analyse engine hours & thrust data for 4Q23 to draw preliminary considerations on aftermarket trends ahead of the 4Q23 print. Engine thrust had strong performance through 4Q23, although we have seen a sequential deceleration across all OEMs in terms of hours on an absolute basis after the traditional peak in travel due to summer season vs. 3Q23. China flight cycles have been supportive of Safran and GE, which have grown c. 21% and 18% YoY. On top of this, the WB recovery has continued, and this has been positively felt at Rolls, as it has been the only OEM improving thrust sequentially rel 2019 in 4Q23 vs 3Q23 (+1.7%). We continue to believe that [Rolls will land at the high-end of its FY23 EFH guidance](#) & Safran showing strong 4Q23 performance supportive of the 2023 aftermarket guidance grow of low 30s (prev. mid to high 20s).

Exhibit 1: Engine thrust by engine manufacturer vs FY19

Engine thrust across all OEMs were already at $\geq 95\%$ vs FY19 levels in 4Q23



Source: BofA Global Research estimates, Flightradar24

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Strong 4Q volumes with pricing also strong YoY

Based on 4Q23 engine thrust data, we expect strong aftermarket growth in the quarter despite an overall sequential deceleration. China and WB exposure have been drivers of the strong thrust performance of Safran, Rolls and GE in 4Q23. With YoY aftermarket growth at c.30% 9M23, we see room for [worldwide aftermarket growth of c.26% across our global coverage](#). However, the strong performance of some OEMs could suggest upside risk to our 2023 aftermarket estimates.

Every company saw their portfolio of installed thrust grow at least 9% YoY in 4Q23. MTU Installed thrust grew 10.1%, P&W 9.1%, GE 18.1%, Safran 21% and Rolls Royce 32.1%.

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Glossary:

GTF: Geared Turbofan

P&W: Pratt & Whitney

GE: General Electric

OEM: original equipment manufacturer

MRO: Maintenance, repair and overhaul

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Aftermarket deep dive: engine thrust & aftermarket trends in 4Q23

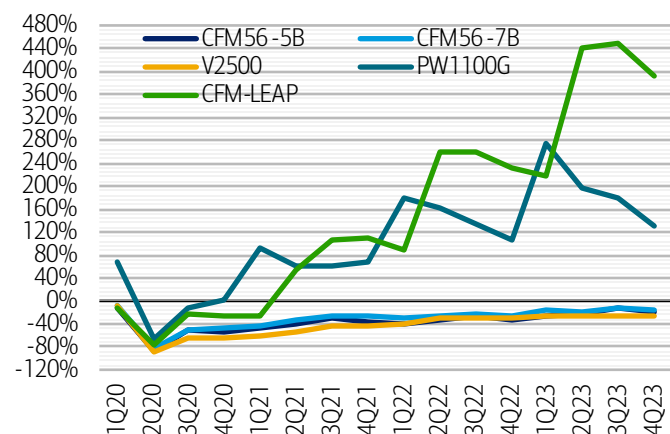
Ahead of 4Q23 results, we analyse engine hours & engine thrust data from FlightRadar24 as we see them as a reliable indicator of aftermarket trends. Given the aftermarket business is primarily driven by air traffic & engine/aircraft utilisation rates, we consider engine hours & thrust a good proxy of engine components utilisation also accounting for different engine size & power. We calculate engine thrust by multiplying engine hours with a constant thrust factor which differs for each engine type and accounts for engine size & power.

Mixed performance across both Narrowbody & Widebody

- Narrowbody engines thrust:** narrowbody engines showed a small sequential decline vs 2019 in 4Q23. The CFM56-5B and CFM56-7B declined by 5.3ppts and 3.4ppts while the V2500 slightly improved by 0.9ppts. On the negative side, the new engines deteriorated sequentially vs 2019 as the CFM LEAP & PW1100G declined by -56.6ppts and -49.9ppts respectively. The GTF inspections may have already been weighing on the PW1100G deterioration. However, we believe that this trend is primarily driven yet by a strong base effect as PW1000G is a new engine which was growing its installed base since 2019. The same applies to the LEAP.
- Widebody engines thrust:** across widebody engines, thrust data showed an overall sequential improvement, which to us confirms the worldwide WB recovery despite facing tough comps in 3Q23 (summer season). GP7200, GE90 and Genx-2B improved sequentially by 3.2ppts, 2.1ppts and 2.1ppts respectively vs 2019. On the flip side, Genx-1B declined by -2.8%, although it remains significantly above 2019 levels (+21.5%).

Exhibit 2: Narrowbody engines thrust vs FY19

CFM56-5B and CFM56-7B declined by 5.3ppts & 3.4ppts sequentially vs 2019 respectively

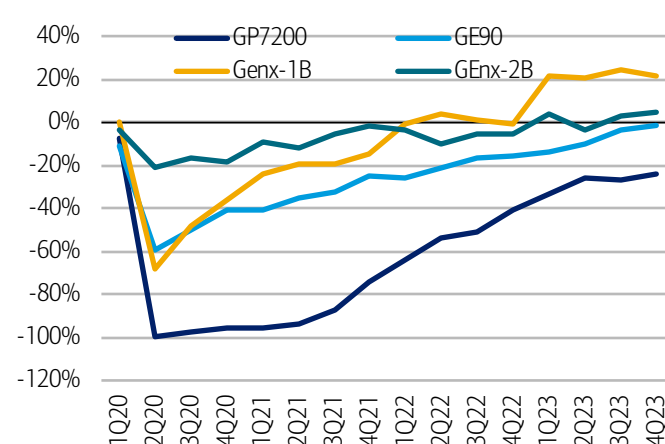


Source: BofA Global Research, FlightRadar24

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Exhibit 3: Widebody engines thrust vs FY19

GP7200, GE90 and Genx-2B thrusts improved sequentially in 4Q23 a mixed performance through 3Q23 vs 2019



Source: BofA Global Research, FlightRadar24

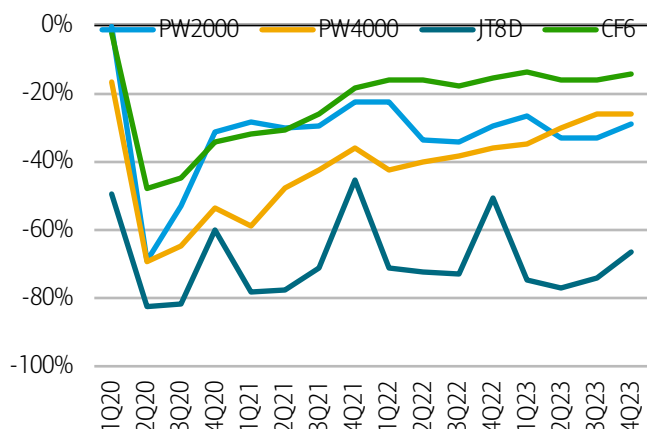
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- Freighter engines thrust:** Overall freighter engines improved its performance through 4Q23. The PW2000, CF6 and JT8D improved sequentially by 3.7ppts, 2.0ppts and 7.9ppts 2019 levels. The PW4000 slightly improved by 0.1ppts. We believe freight performance remains an area to monitor, precisely if economy enters recession given how sensitive freight is to the economic cycle.

- Rolls Royce's engines thrust:** Rolls Royce's engine portfolio exhibited the strongest performance in 4Q23 as it was the only OEM that improved thrusts sequentially vs 2019 levels (+1.7%). This was primarily driven by the Trent 500 and Trent 900 thrust that improved sequentially by 6.4ppts and 5.8ppts. In our view, WB recovery & China reopening has continued through 4Q23 and this has been felt positively on Rolls portfolio.

Exhibit 4: Freightier engines thrust vs FY19

Overall freighter engine thrust improved sequentially in 4Q23 vs 4Q19

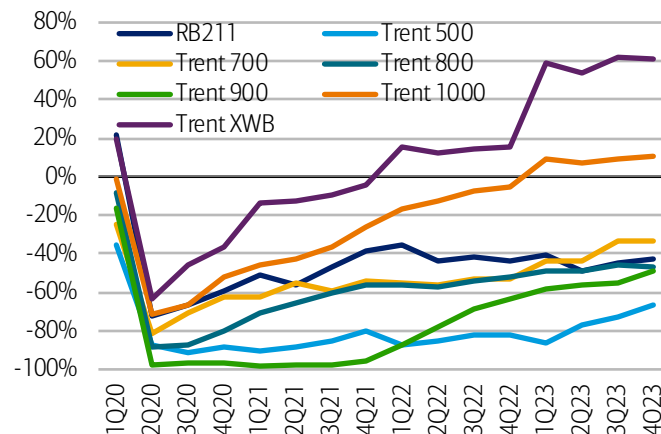


Source: BofA Global Research, Flightradar24

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Exhibit 5: Rolls Royce engine thrust vs FY19

Rolls is the only OEM which has improved its thrust performance sequentially in 4Q23 vs 4Q19



Source: BofA Global Research, Flightradar24

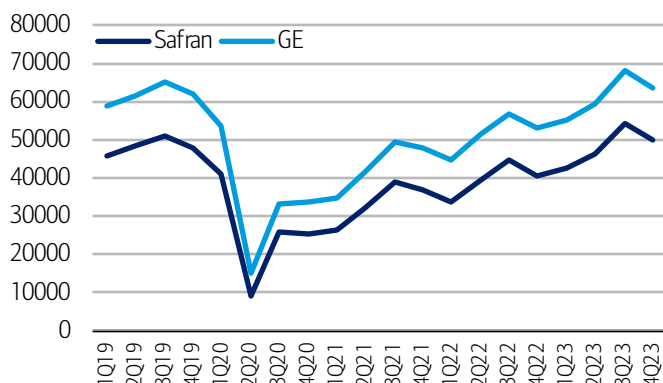
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Engine thrust & aftermarket growth by manufacturer

Total engine hours in absolute value across engine portfolios declined sequentially for all engine OEMs in 4Q23 (from c.161.5k to c.151.2k), with all OEMs reporting a sequential decline in absolute hours vs 3Q23. Safran, GE, P&W and MTU declined sequentially by 8, 7, 7 and 5ppts. However, Rolls 4Q23 absolute hours only declined sequentially by 1ppts. We believe that the negative effects of the GTF issues have not started to be felt strongly in the flight hours of both MTU and P&W. In our view, this will remain a significant watch item through 1H24.

Exhibit 6: GE & Safran engine hours evolution

GE & Safran engine hours were at c.+3.7% and +2.6% vs 4Q19 levels in 4Q23 respectively

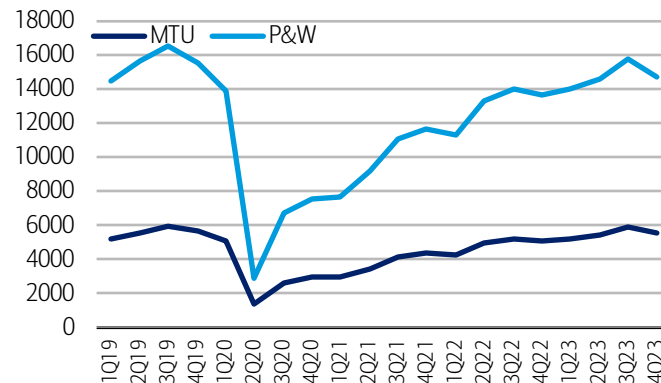


Source: BofA Global Research, Flightradar24

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Exhibit 7: P&W & MTU engine hours evolution

MTU engine hours were at -2.2% in 4Q23 vs 4Q19



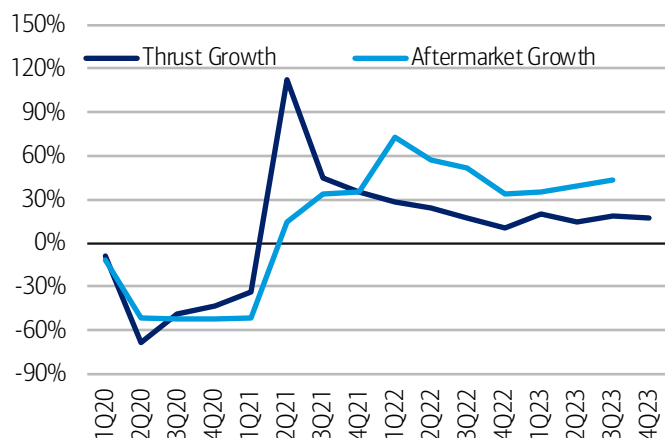
Source: BofA Global Research, Flightradar24

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At Safran 4Q23 YoY thrust growth remained sequentially flat at +21% vs 20.9% YoY growth in 3Q23. In our view, this clearly supports Safran's upgraded FY23 aftermarket guidance to low 30s (vs mid to high 20s previously).

Exhibit 8: GE thrust and aftermarket YoY growth

Engine thrust grew 18.1% YoY in 4Q23 vs 18.1% in 3Q23

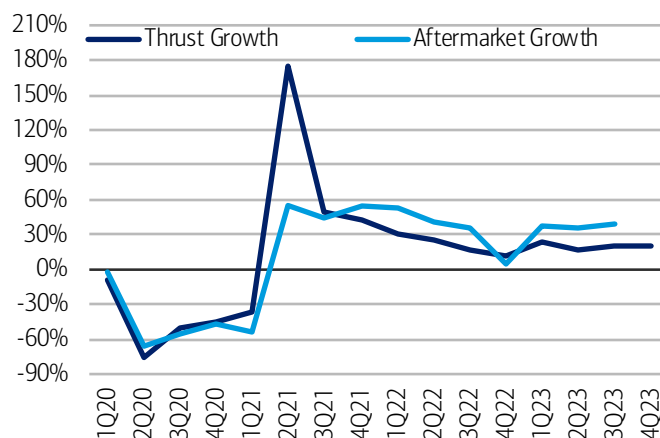


Source: BofA Global Research, Flightradar24

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Exhibit 9: Safran thrust and aftermarket YoY growth

Engine thrust grew 21% YoY in 4Q23 vs 20.9% in 3Q23



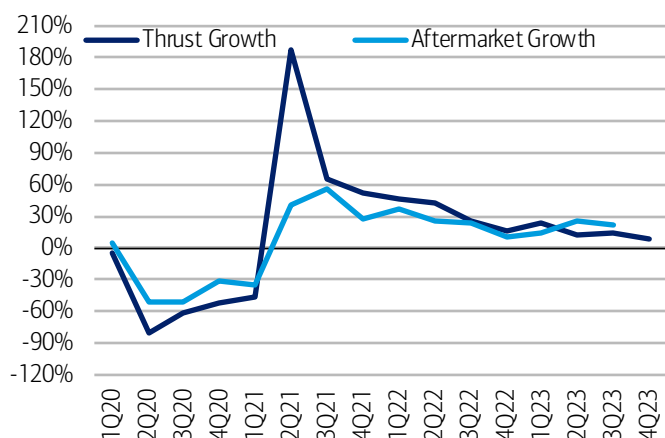
Source: BofA Global Research, Flightradar24

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At MTU 4Q23 YoY thrust decelerated vs 3Q23, from 14% in 3Q23 to 10% in 4Q23. We believe the negative effects of the GTF issue will be felt stronger through 1H24. However, the discrepancy of 4Q23 MTU & P&W thrust vs GE & Safran could be partially explained by the GTF impact.

Exhibit 10: P&W thrust and aftermarket YoY growth

Engine thrust grew 9.1% YoY in 4Q23 vs 14% in 3Q23

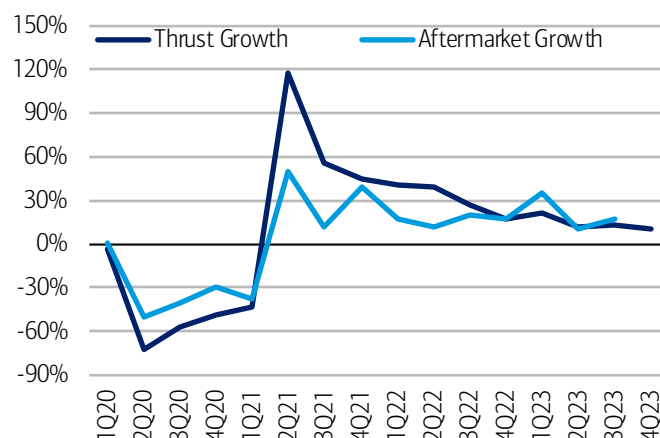


Source: BofA Global Research, Flightradar24

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Exhibit 11: MTU thrust and aftermarket YoY growth

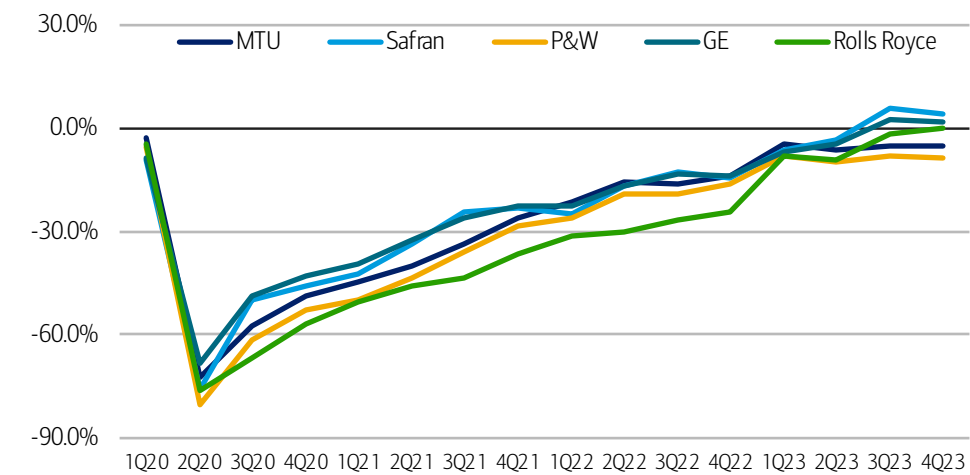
Engine thrust grew 10% YoY in 4Q23 vs 14% in 3Q23



Source: BofA Global Research, Flightradar24

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Exhibit 12: Engine thrust by engine manufacturer vs FY19
Engine thrust across all OEMs were already at $\geq 95\%$ vs FY19 levels in 4Q23



Source: BofA Global Research estimates, Flightradar24

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