

Demand elasticity on AdX web publishers

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go/demand_elasticity

Executive Summary

1. **Coverage:** Our analysis and experiments were on DRX web publishers only (for simplicity). These can be easily extended to DRX App publishers. Once AdMob Bernanke is completed, we can also do this on AdMob publishers. We can't do this on AdSense publishers at this point. The stats below are on DRX web publishers only.
2. **Increasing margins:** At 20% buy side margin, revenue goes down -0.9% (-\$53M) but the overall (buy+sell side) profit increases 6.5% (\$70M). At 17.5%, revenue drops -0.4% (-\$24M) and profit increases 4% (\$40M). At these margins, for every dollar in lost revenue we gain much more than a dollar in profit. Increasing margin beyond 20% starts to have a big revenue hit. The decrease in AdWords spend is mitigated to some extent by an increase in spend from other buyers. Please note that the \$70M listed above is only on the Adx web slice. This can be extended to apps, which will result in roughly doubling the profit increase.
3. **Decreasing margins:** Decreasing buy side margin costs profit without generating a lot of additional revenue.
4. **AWBid:** we also ran an experiment on AWBid targeting ~5% more margin. This experiment shows a \$2M revenue drop and \$15M profit gain.

Objective

Explore the impact on revenue, payout and profit on AdX for different AdWords buy side margins.

Methodology

Use Bernanke to target different adwords margins on AdX web publishers. Production margin is 15%. We ran bernanke simulation for margins from 10% to 25% in steps of 2.5%. We also ran two online experiments with margins 10% and 20% (rasta).

Results for all buyers on AdX web publishers

We report the total impact (across all buyers) on AdX web publishers.

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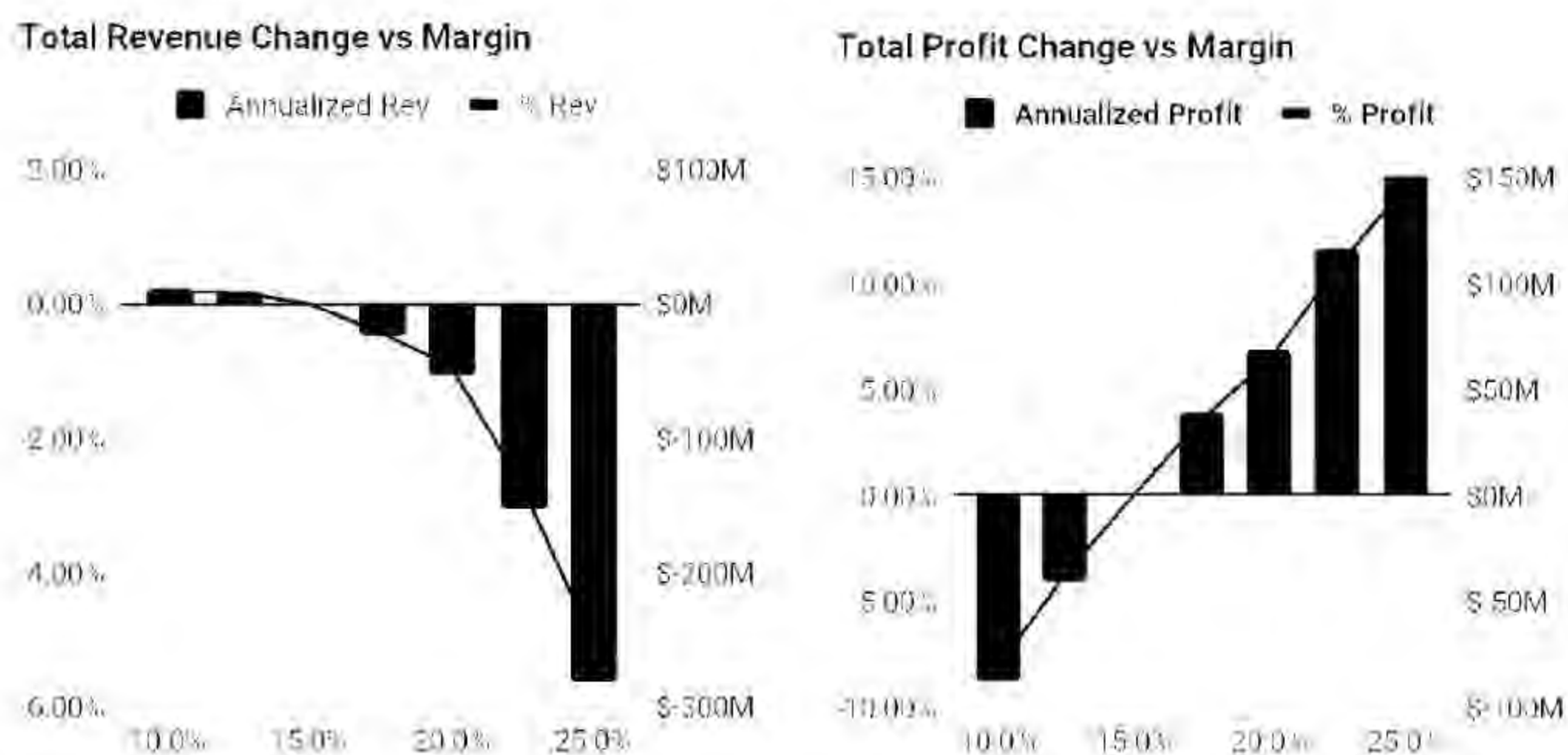


Figure 1: Total impact on revenue and profit relative to production, X-axis is the buy side margin, left Y-axis is the % change and right Y-axis is the annualized change.

Margin	Matched Queries	Revenue	Profit	Payout
10%	+1.9%	+0.2% (+\$11M)	-8.1% (-\$87M)	+2.4% (+\$101M)
12.5%	+1.1%	+0.2% (+\$9M)	-3.7% (-\$40M)	+1.4% (+\$57M)
17.5%	-1.3%	-0.4% (-\$24M)	+3.6% (+\$39M)	-1.5% (-\$63M)
20%	-2.5%	-0.9% (-\$53M)	+6.4% (+\$70M)	-2.9% (-\$125M)
22.5%	-4.9%	-2.7% (-\$152M)	10.8% (+\$116M)	-7.8% (-\$326M)
25%	-7.8%	-5.0% (-\$283M)	14.6% (+\$158M)	-13.2% (-\$552M)

Table 1: Total impact (% change and annualized change) on matched queries, revenue, payout and profit w.r.t production across all buyers on AdX web pubs.

Results for Adwords buyers on AdX web publishers

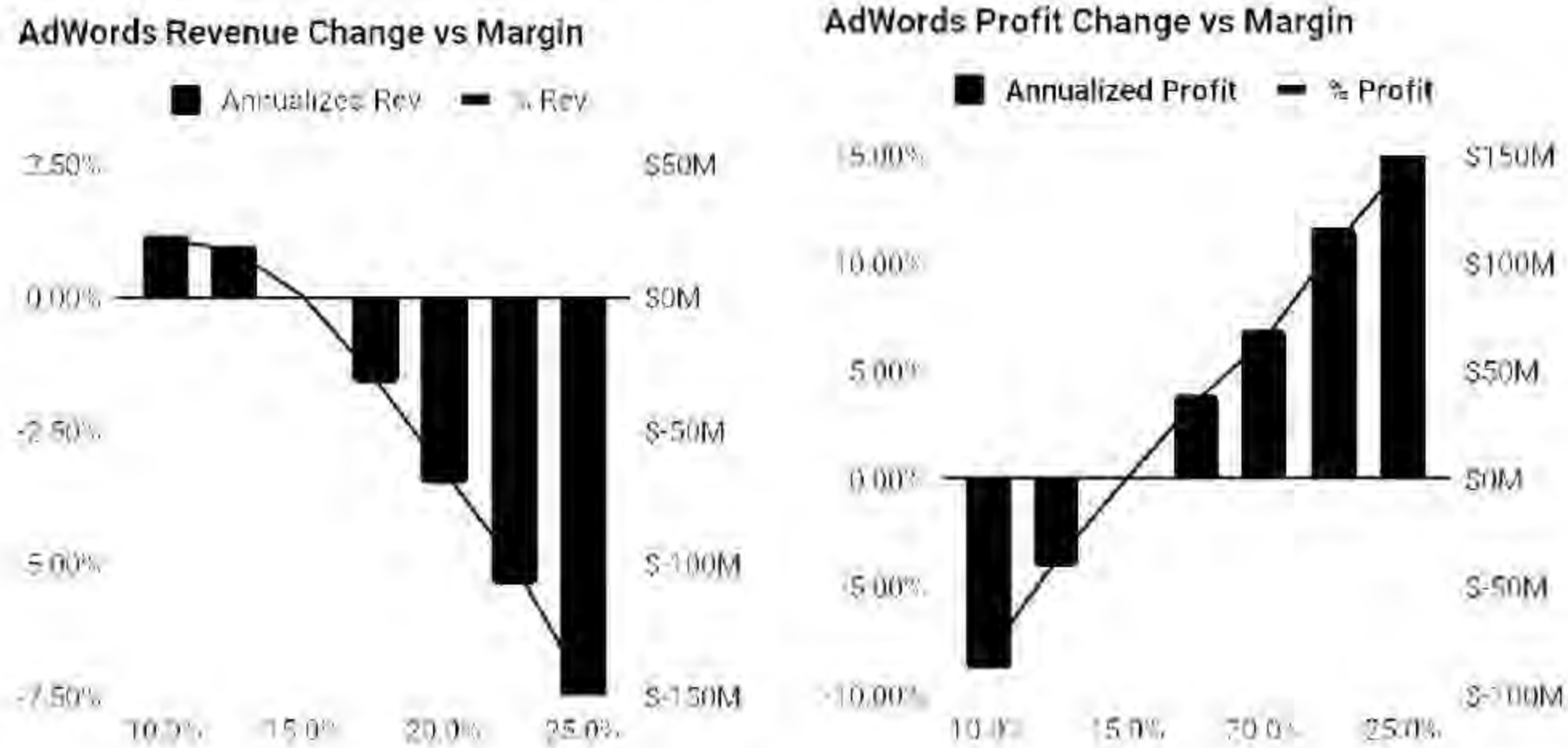


Figure 2: Impact on AdWords revenue and profit relative to production. X-axis is the buy side margin, left Y-axis is the % change and right Y-axis is the annualized change.

Margin	Matched Queries	Revenue	Profit	Payout
10%	+3.6%	1.1% (\$23M)	-13.3% (-\$86M)	7.2% (\$109M)
12.5%	+2.1%	0.9% (\$19M)	-6.1% (-\$39M)	4.1% (\$62M)
17.5%	-2.4%	-1.5% (-\$32M)	5.8% (\$38M)	-4.6% (-\$70M)
20%	-4.8%	-3.2% (-\$70M)	10.5% (\$68M)	-9.1% (-\$139M)
22.5%	-7.2%	-4.9% (-\$108M)	15.0% (\$97M)	-13.7% (-\$207M)
25%	-9.9%	-7.3% (-\$157M)	19.0% (\$123M)	-18.7% (-\$284M)

Table 2: Impact (% change and annualized change) on matched queries, revenue, payout and profit w.r.t production for AdWords buyers on AdX web pubs.