Industry lifecycles

Casual Connect LA 2017

Raph Koster, Independent designer

This isn't a business talk

- *But there are going to be a lot of business graphs.*
- *I apologize in advance if this doesn't seem designery enough!*

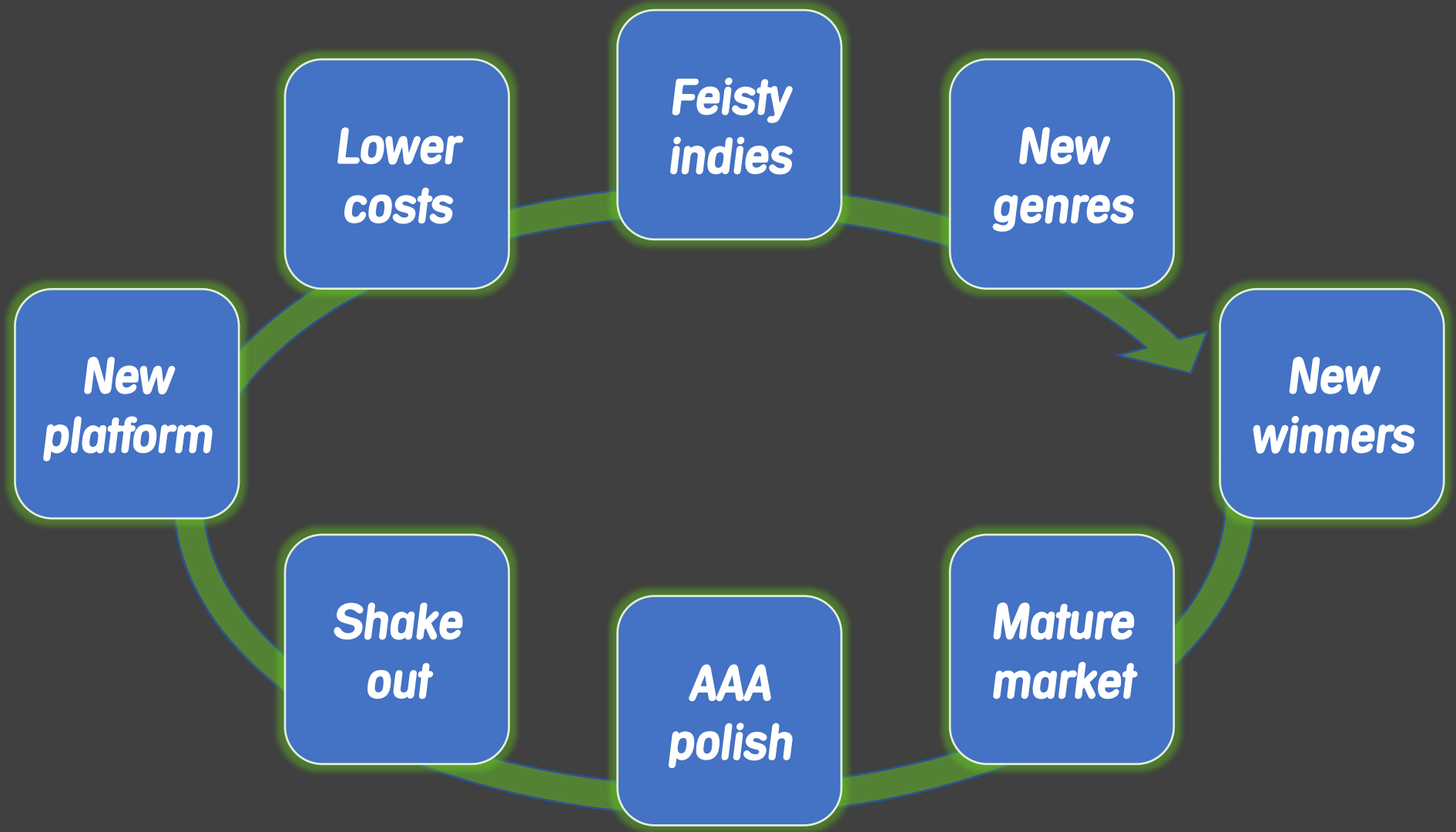
We design in business contexts

- *What we make is strongly driven by what we can get money for.*

- *What we can get money for is driven by*
  - *Fads.*
  - *Platform shifts.*
  - *Costs and return on investment.*
  - *Business model.*

- *So it helps to understand the business context!*

Standard lifecycle model



A platform comes out.

- *MMO, phone, handheld, Flash, Facebook, PHP web game...*





- *It is worse at the old sorts of games than the existing platforms*
- *It is better at something new.*

Platform characteristics

- It's cheap to develop for (compared to the older market).
- It's unproven, so big incumbents on older platforms only dabble.
- It has new controls, capabilities, constraints.
  - Old expertise is not as valuable.
  - Early entrants gain significant advantage on learning curve.

The first success

- *Some early entrants tackle the blue ocean, solve fresh problems, and earn significant money.*

- *It's almost inevitably something new in mechanics.*
  - *Often built entirely around the new controls: touch, tilt, mouse, etc.*
  - *Leverages the new capabilities: social, persistence, streaming.*
  - *To work around new constraints: latency, fewer buttons.*

Result

- *They quickly become dominant within the platform as revenue accrues to them.*

- *Some existing incumbents try to shift over, stumble, and incur large losses. Some die.*

- *Some incumbents make the turn, but it costs them a lot.*

Maturation

- *The new set of winners consolidates position.*
  - *They outspend smaller shops on polish, data, and marketing, to compete with other big companies.*
  - *Mechanics are risky and don't drive loyalty, so they spend on brand, narrative, art.*

- *Midsize shops must now spend more (which increases risk, and failures kill them) or less and build more carefully.*

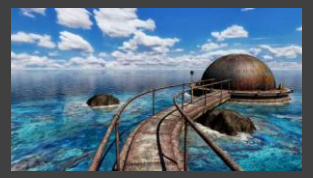
- *Small shops can get lucky still,*  *but many simply can't be profitable.*

Audience implications




- *Audiences who came up during blue oceans grew up on mechanical innovation.*
  - *To them, that is what games are!*

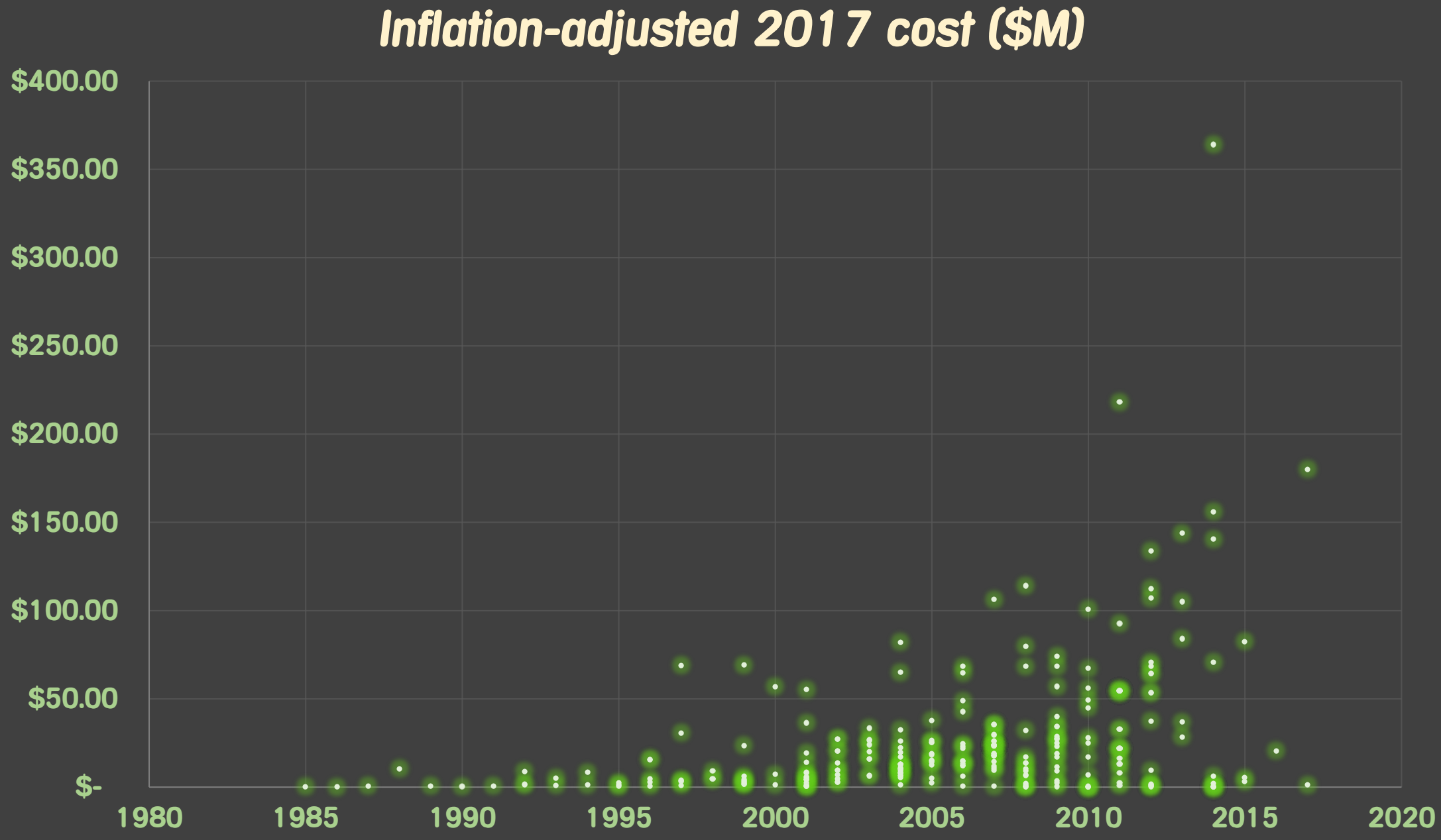





- *Audiences who came up during mature periods grew up on brands and stories.*
  - *To them, that is what games are!*

OK, but...

- *The cycles model is very common, we all know the lingo, and we think we know what that means for what games to make.*
- *But what if it's not a circle? What if we are spiraling to something?*
- *To answer that, we'd need a statistically significant data sample of highly confidential development costs covering three decades.*


Inflation-adjusted 2017 cost ($M)
$400.00
$350.00
$300.00
$250.00
$200.00
$150.00
$100.00
$50.00
$-
1980
1985
1990
1995
2000
2005
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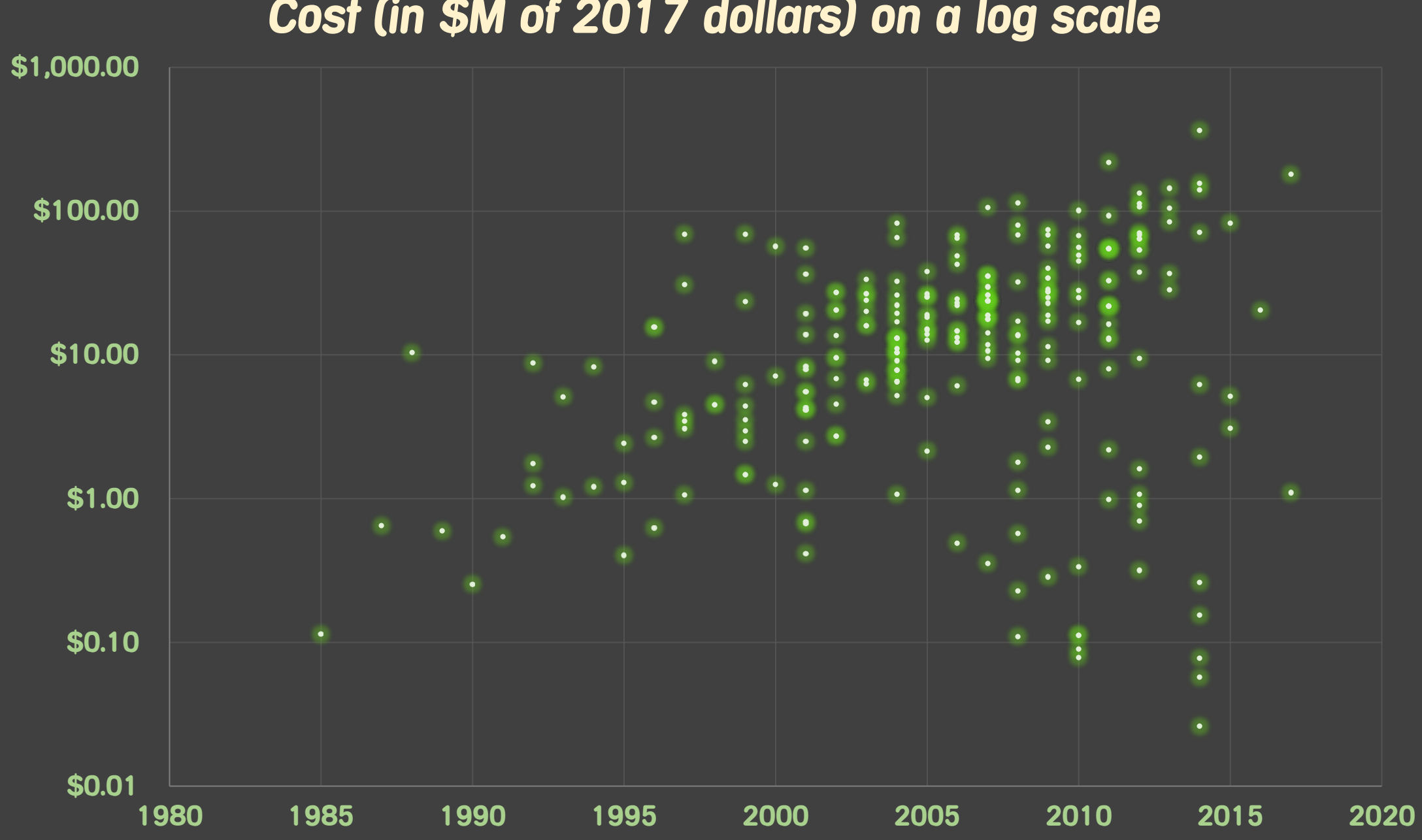
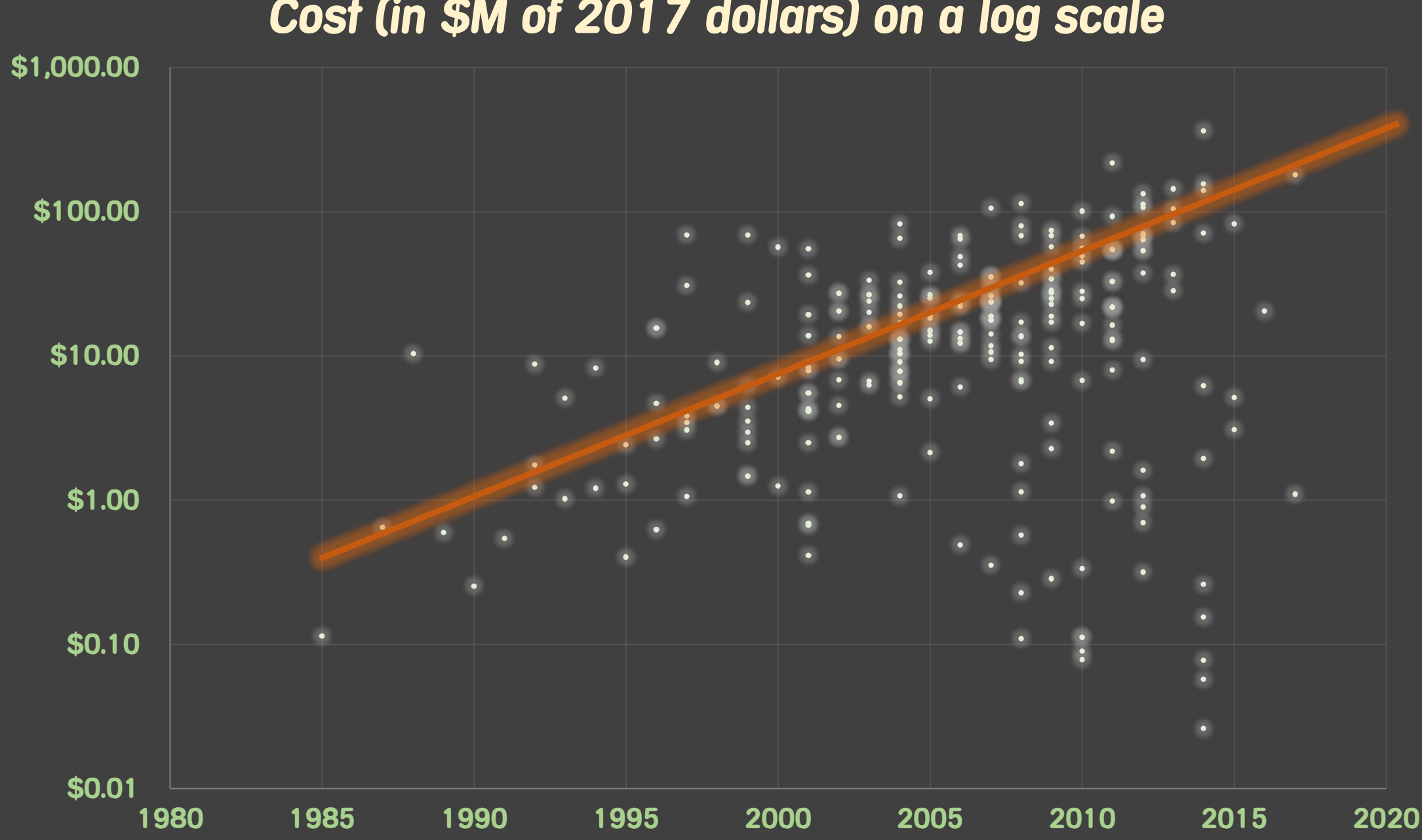
2020


Cost (in $M of 2017 dollars) on a log scale
$1,000.00
$100.00
$10.00
$1.00
$0.10
$0.01
1980
1985
1990
1995
2000
2005
2010
2015
2020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$100.00
$10.00
$1.00
$0.10
$0.01
1980
1985
1990
1995
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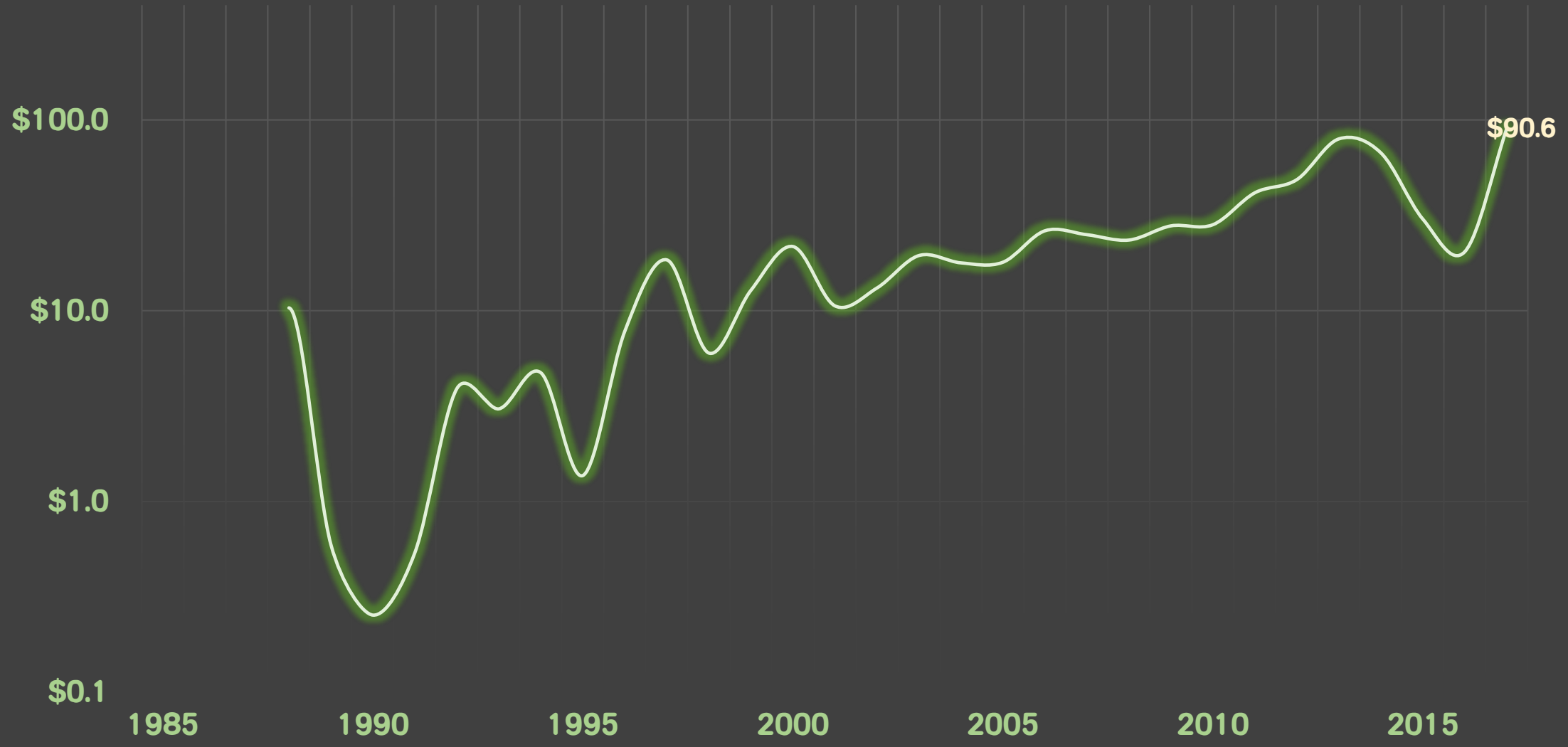
2005
2010
2015
2020

Observation #1: Costs

- *Costs on average go up around 10x every ten years.*
  - *Doesn't really matter what platform you are on.*
  - *This is likely over-reported, because big numbers tend to draw press and questions.*

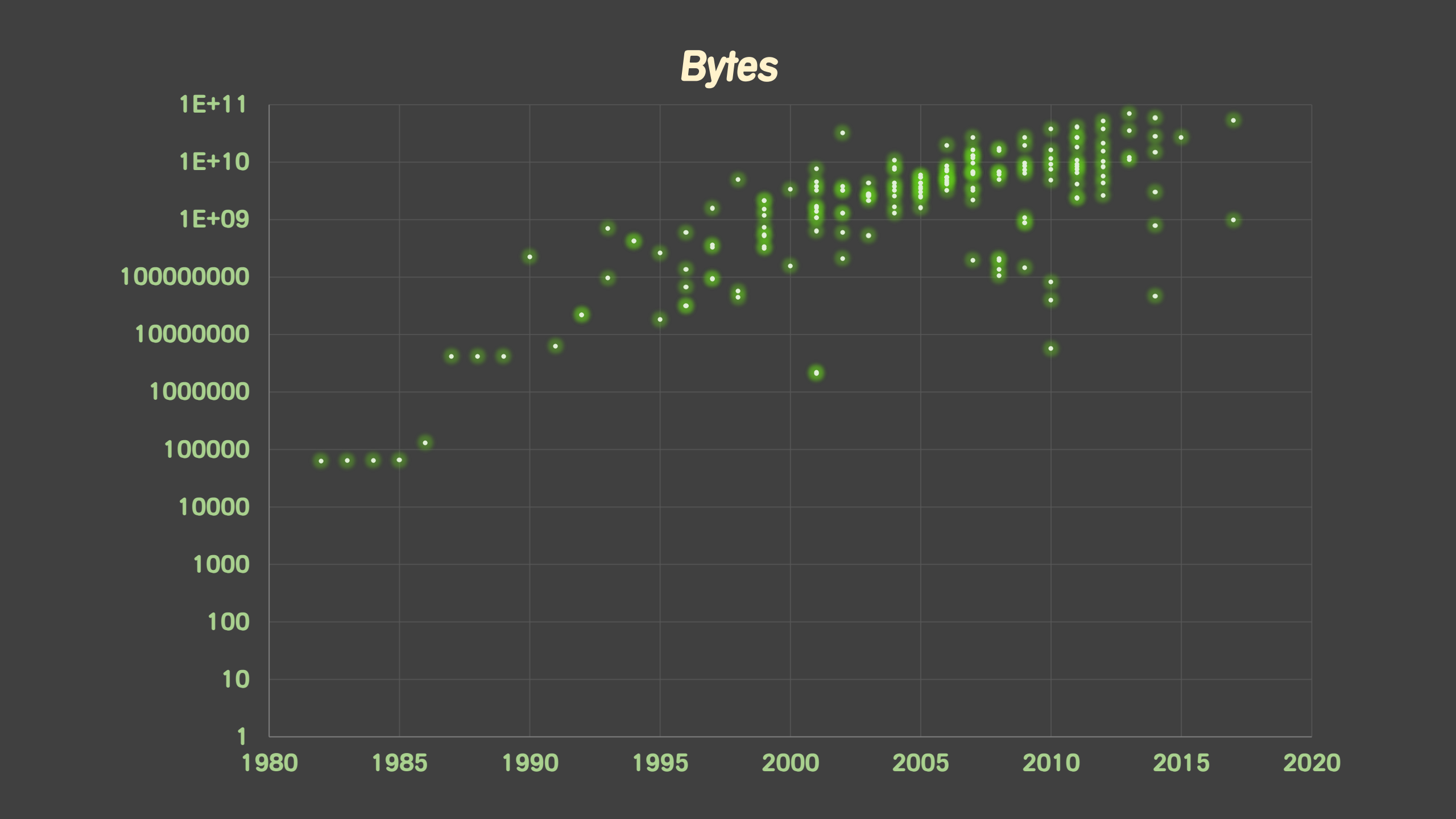
Avg dev cost, inflation adjusted, $M



Note poor data from last couple of years, and early days.

Wait, but…

- *You'd expect more step-wise progression at platform changes?*
- *What about the HUGE impact of Unity and other engines?*
- *What does this correlate to?*


Bytes
1E+11
1E+10
1E+09
100000000
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100000
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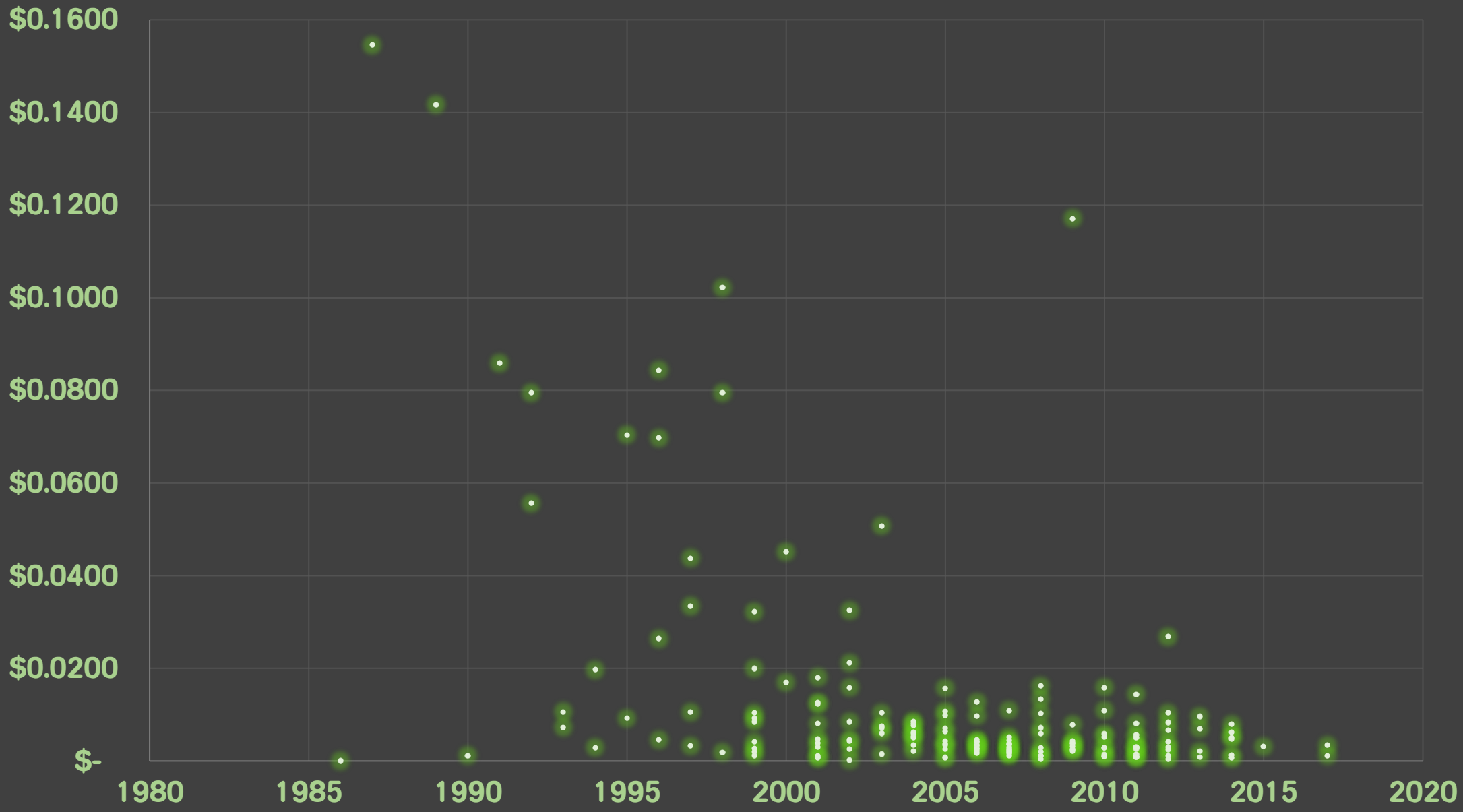
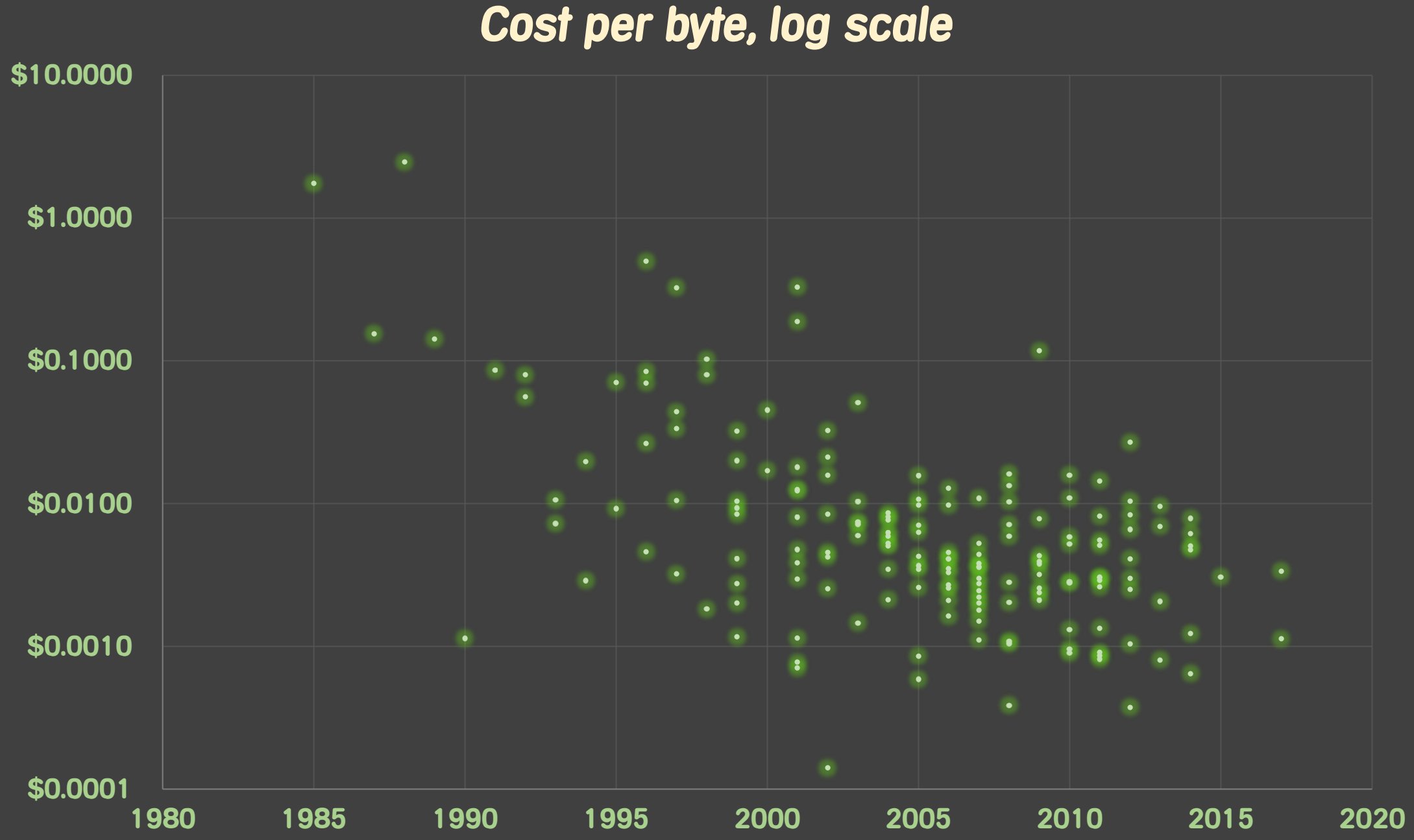
Observation #2: It's the data

- *Costs on average go up around 10x every ten years.*

- *Costs are strongly correlated to bytes generated.*
  - *I'm using install size or data on disk in these numbers.*
  - *But: improved compression, streaming, and algorithmic content are things.*
  - *Bytes are likely under-reported to a significant degree -- 30%?*

Cost per byte




Cost per byte, log scale
$10.0000
$1.0000
$0.1000
$0.0100
$0.0010
$0.0001
1980
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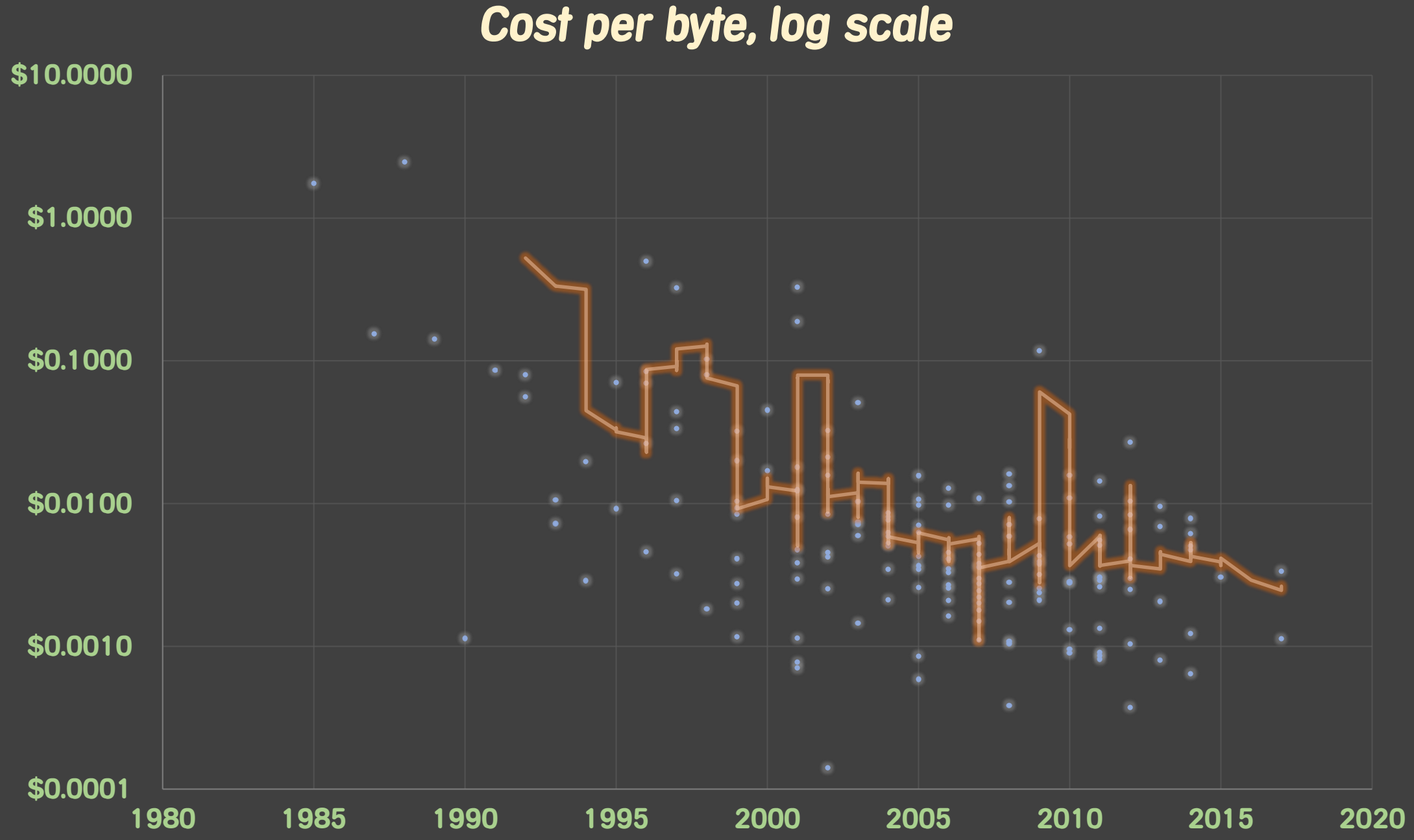
Cost per byte, log scale
$10.0000
$1.0000
$0.1000
$0.0100
$0.0010
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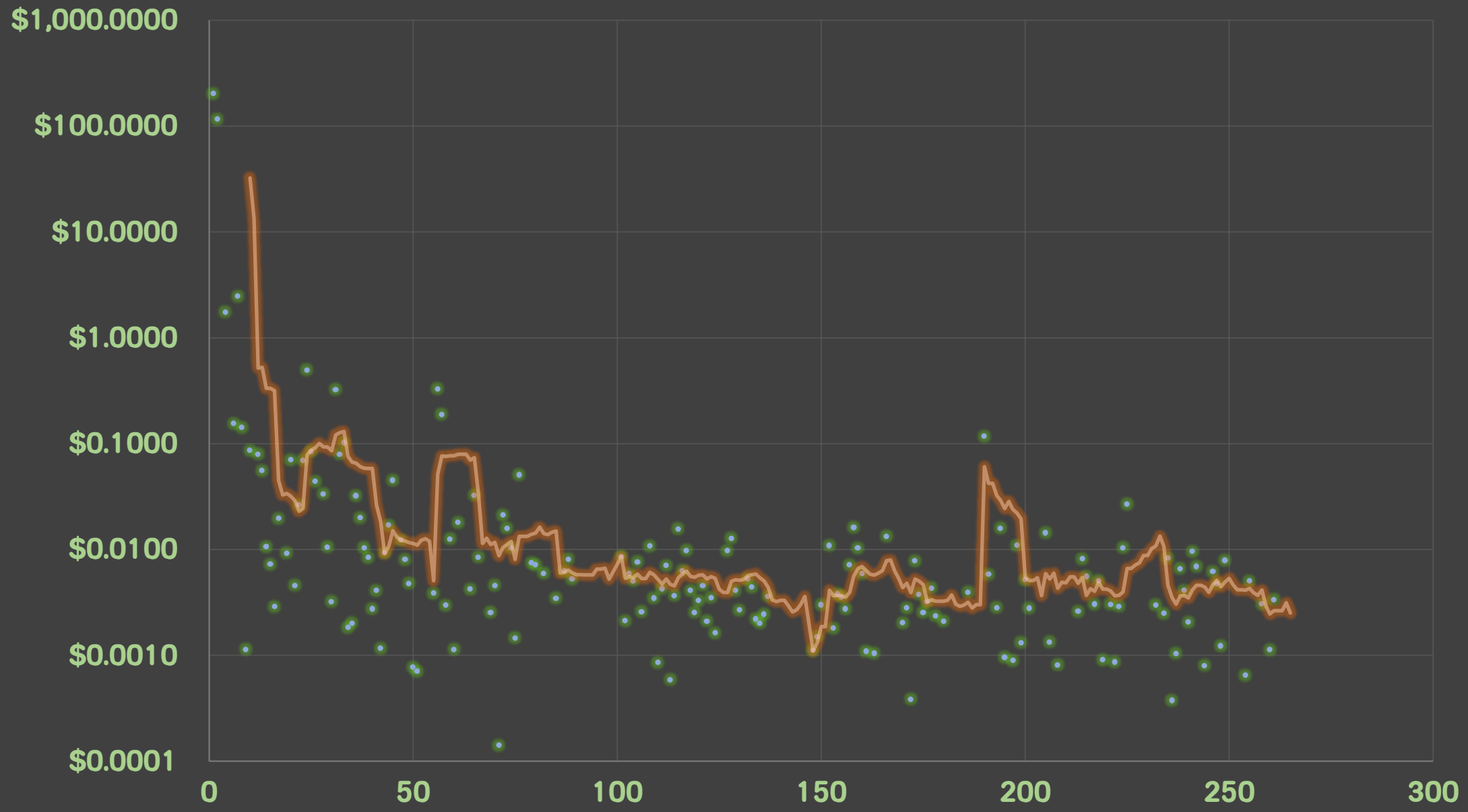
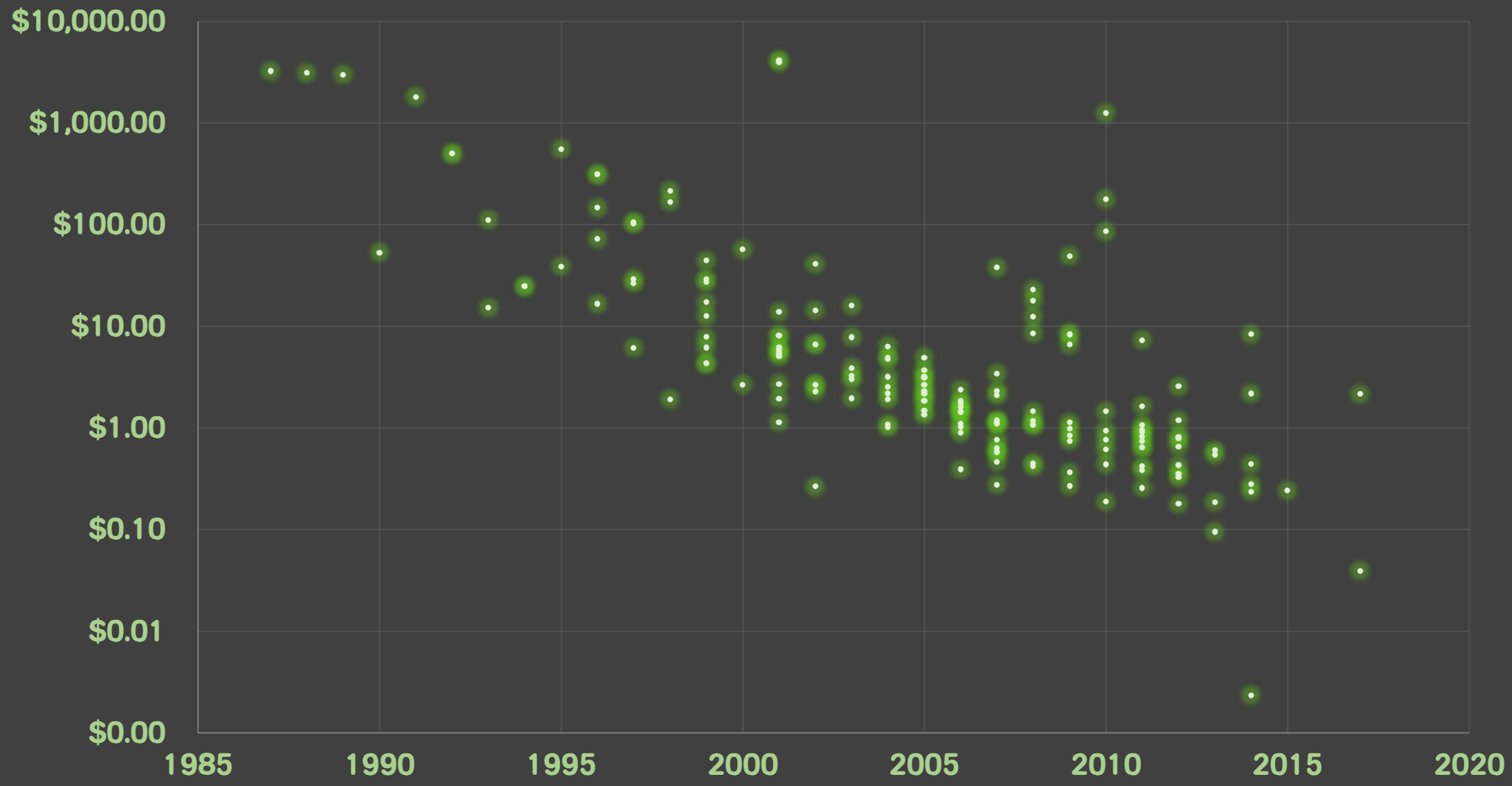

Cost per byte, non-annual
$1,000.0000
$100.0000
$10.0000
$1.0000
$0.1000
$0.0100
$0.0010
$0.0001
0
50
100
150
200
250
300

Observation #3: Engines

- *Costs on average go up around 10x every ten years.*
- *Costs are strongly correlated to bytes generated.*
- *Unreal and Unity appear to have roughly "frozen" the cost of development per megabyte.*
  - *Unreal Engine 3 by itself cost $30m.*
  - *We would have expected cost per byte to continue to drop.*
  - *Might the architecture and assumptions in these engines actually be holding us back from further efficiency gains?*

Player price per MB, inflation-adjusted



Observation #4: Services

- Costs on average go up around 10x every ten years.
- Costs are strongly correlated to bytes generated.
- Unreal and Unity appear to have roughly "frozen" the cost of development per megabyte.
- Outliers on price per MB are service-based games that have long retention.
  - E.g., MMOs – months of revenue without a content drip.

Caveat #1: Race to zero

- *Average price of a game has actually fallen far more dramatically than this data shows.*
  - *Steam sales*
  - *Free to play*
  - *Lack of mobile games in data set*

Caveat #2: Server streaming

- *Average price of a game has actually fallen far more dramatically than this data shows.*

- *Service-based games also have streamed bytes.*
  - *This means more bytes delivered for the dollar.*
  - *Where available, mobile install size was calculated using actual space used on device.*
  - *Caveat 1 and 2 may cancel each other out; I don't know. The trendlines look awfully stable...*

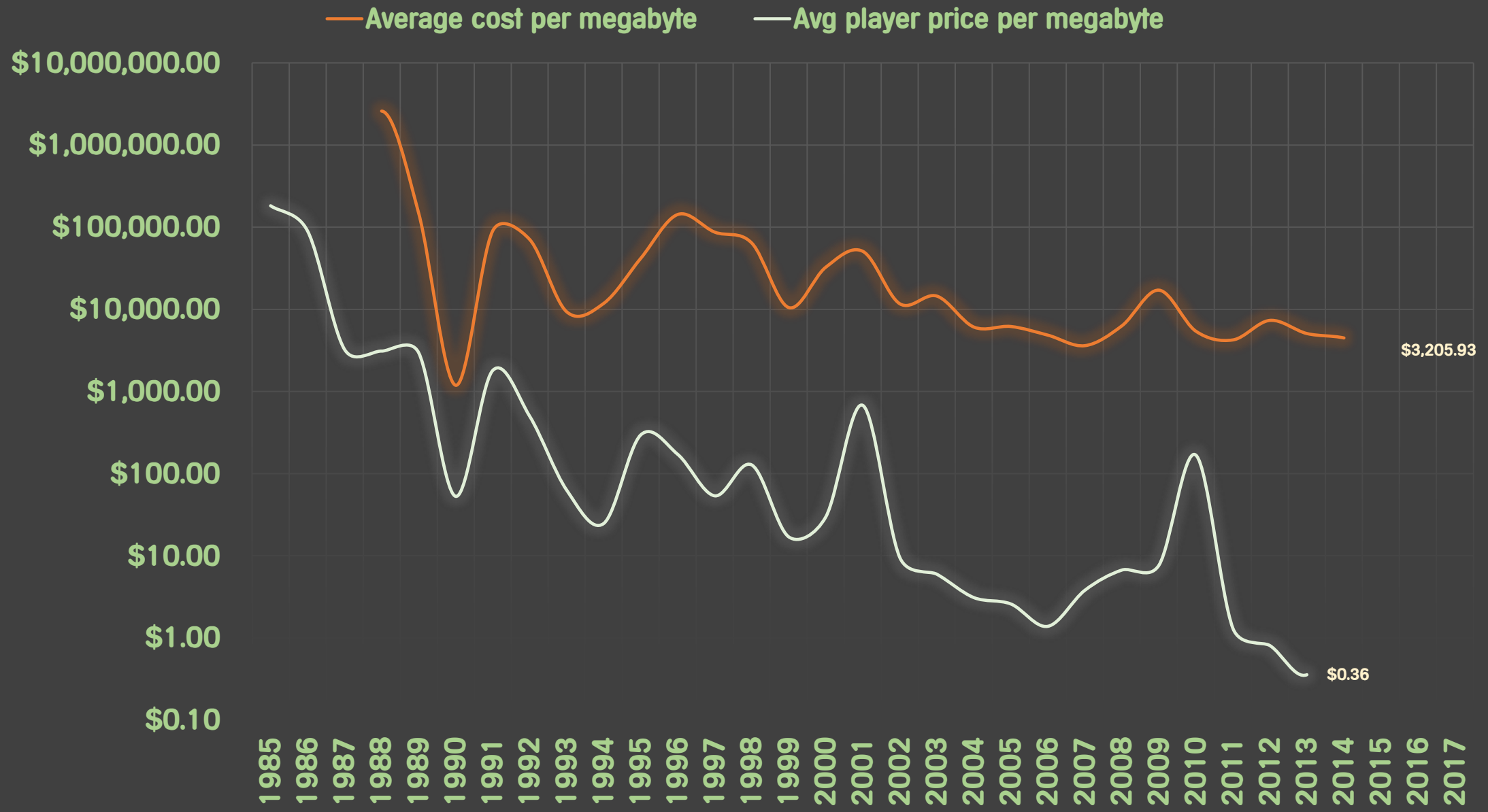
Caveat #3: LTV

- *Average price of a game has actually fallen far more dramatically than this data shows.*

- *Service-based games also have streamed bytes.*

- ***Service games have ongoing revenue, which means more dollars for the bytes.***
  - ***But we can't easily get lifetime value figures to graph against bytes.***
  - ***Older MMOs on the chart use a box + 6 month subscription revenue figure.***
  - ***Nonetheless, does that change this chart?***

Dev cost per MB vs player payment per MB

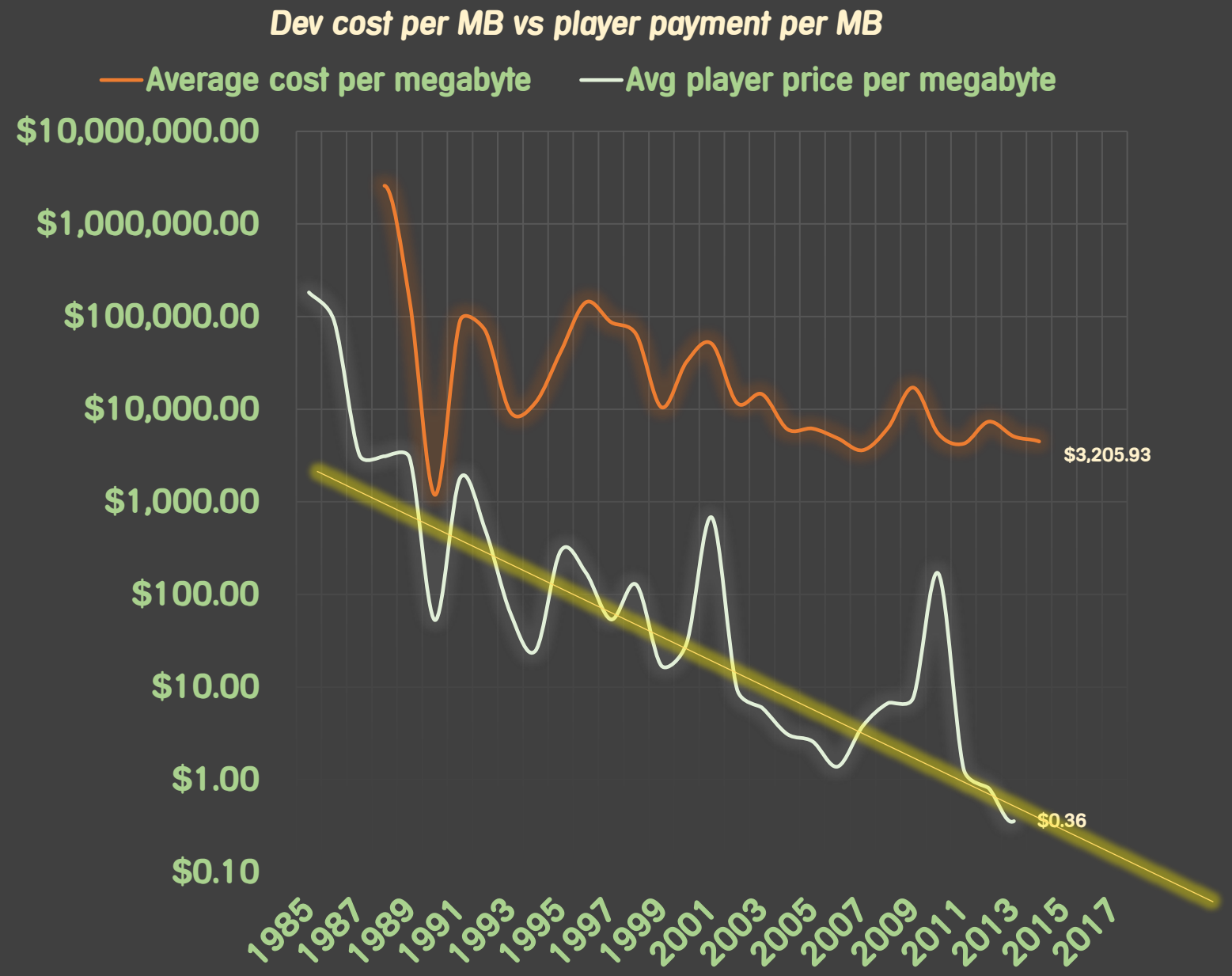


Observation #4: Trendlines

- *Costs on average go up around 10x every ten years.*
- *Costs are strongly correlated to bytes generated.*
- *Unreal and Unity appear to have roughly "frozen" the cost of development per megabyte.*
- *The slopes of those lines don't match.*
  - *Unless typical revenue from new business models hits a better price per byte, it's a bad trend for developers.*

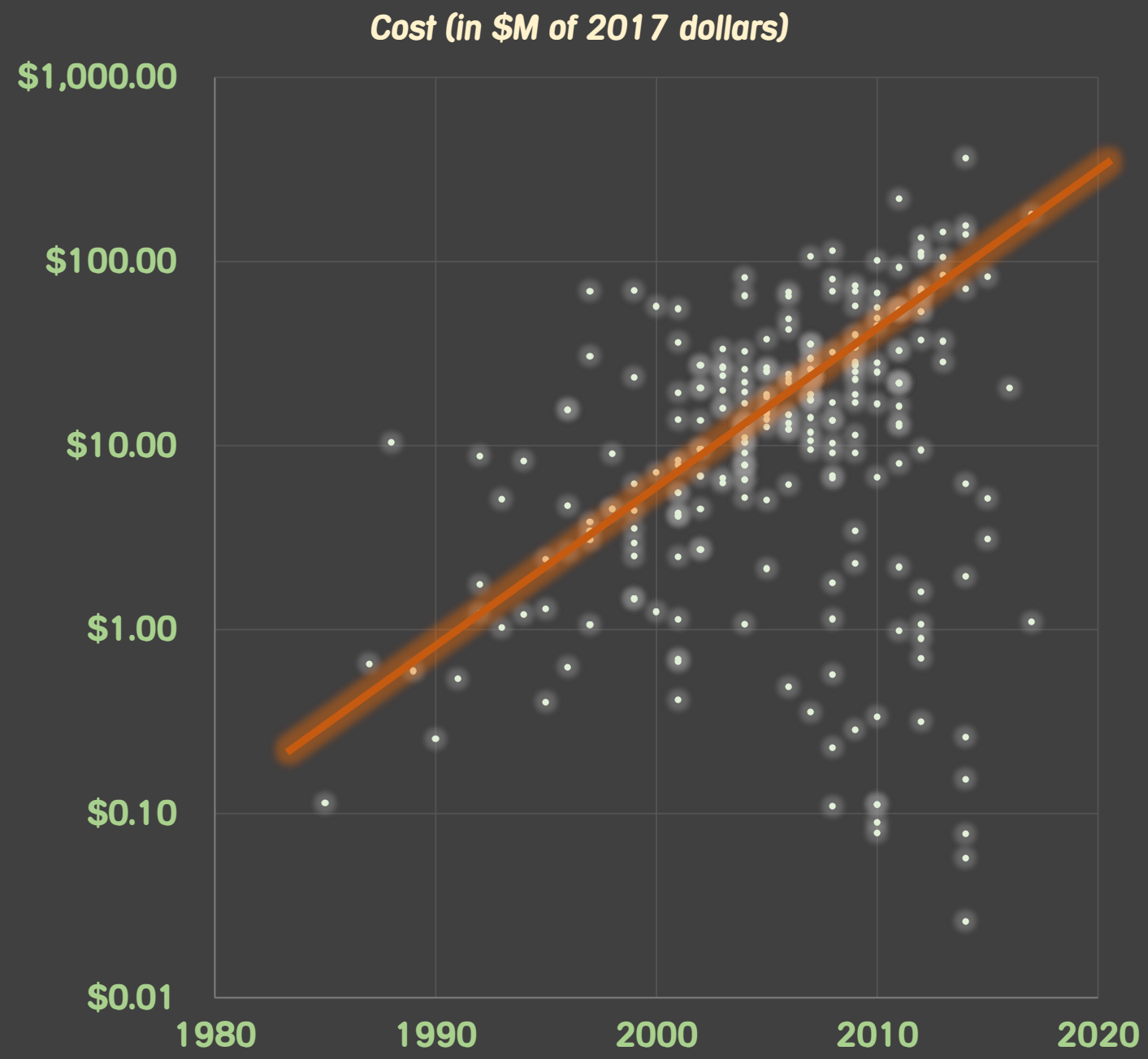
Forecast #1

- *Average player payment for byte reaches 0 (e.g., the average game is free to play) in about ten more years.*



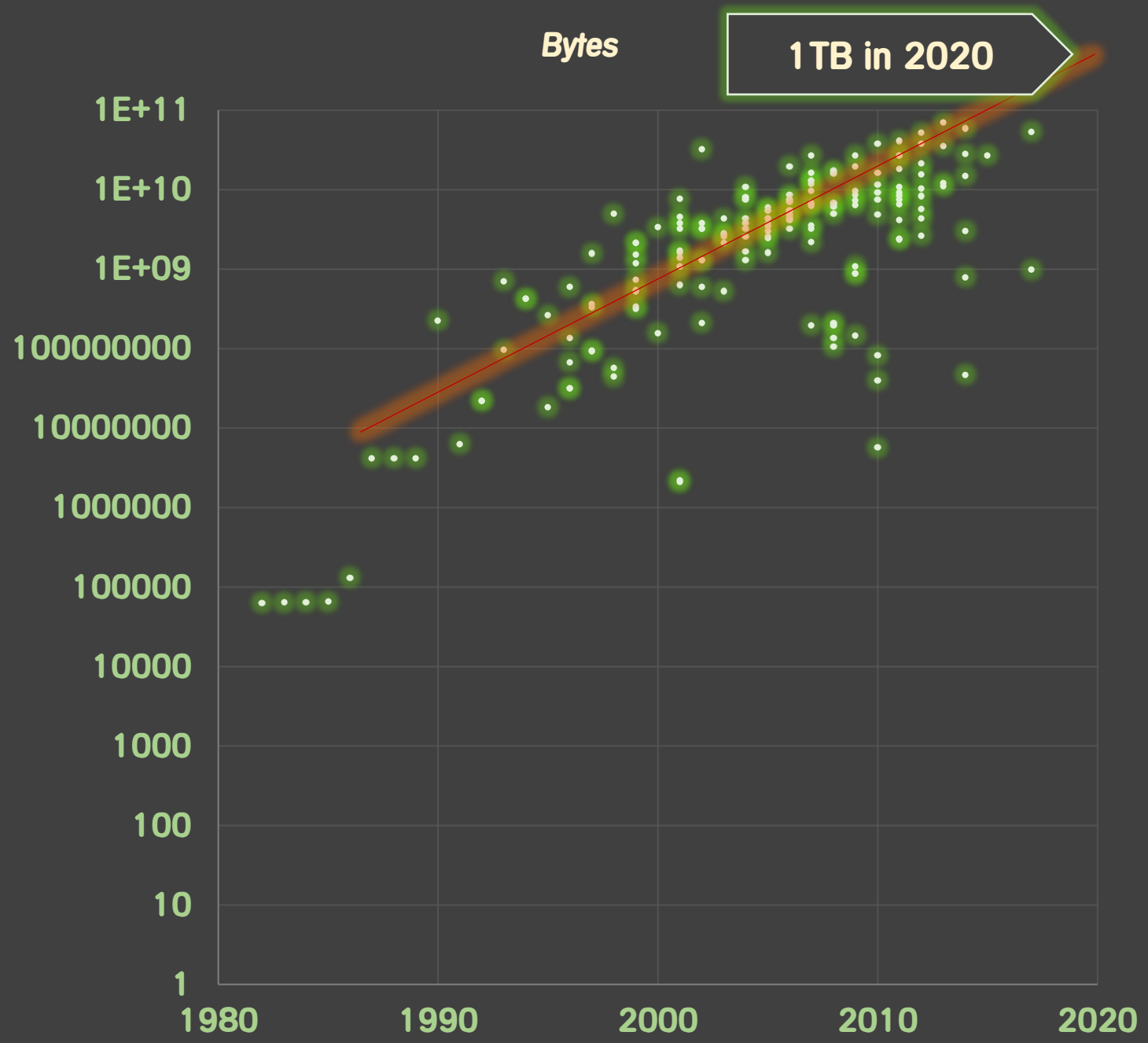
Forecast #2

- AAA games hit average costs of $200m by the early 2020s.
  - There's a huge spread so likely this is from tentpoles pulling the average up.



Forecast #3

- *Expect more system-driven games as studios hit practical caps on how many bytes they can generate and deliver.*
  - *This sets a cap on "story size" broadly defined.*
  - *E-sports, UGC, roguelikes, puzzle/simulation*



Speculation

- *The pressure is strongly towards upsell revenue.*
  - *Free to play, ongoing revenue, etc.*
  - *We knew this, but this shows it as kind of inescapable.*
  - *However, "content trickle" is the way this is done, and that doesn't actually help solve the issue.*
- *Run-time procedural generation is going to be vital in keeping bytes down.*
- *Emergent content that isn't bytes is super-critical.*
  - *Community.*
  - *UGC.*
  - *High skill ceilings.*

A coming wall

- This doesn't look very sustainable.
  - But free to play may have already changed it.
- Audience growth has saved us.
  - But audience growth involves increased marketing spend.
- But we're going to hit limits on the total addressable market.
  - We crossed the 50% threshold in many territories a while back.
- Either the rest of the world gets a lot more disposable income and starts buying games at US/EUR/JP prices, or the US prices have to go up.

A warning

- *You may have noticed I left out marketing costs. Figure everything doubles at least.*
- *Indies, casual developers, and mobile developers shouldn't feel like this is only an AAA problem.*
  - *Slope of mobile game sizes is much higher than slope of AAA sizes.*
  - *Marketing costs are worse in mobile, on a percentage basis.*
- *Where is our platform shift?*
  - *One that resets costs (not VR!)*
  - *AR?*

Designery advice

- *Bottom line: the entire industry is hitting "mature market."*

- *Work on systemic game design chops.*
- *Work on brand-building for systemic games.*
- *Embrace procedurality, emergence, user generated content.*
  - *Static content is your budgeting enemy.*
- *Migrate to a service business. Steep learning curve!*
- *"MMO" approaches are back. Lots of history, go learn it.*

- *As a creative: we had better find a way to get residuals. But that's another talk.*

A request

- This data set could use a lot more data points!

- You can (anonymously if you like) send me
  - Game name (need for de-duping, will not share).
  - Game development cost (I'll adjust it for inflation).
  - Year of game release.
  - Platform.
  - If you know it, total bytes for full install (plus streaming).
  - Send to contact@raphkoster.com.