# Orchestrated Crime: the high yield investment fraud ecosystem

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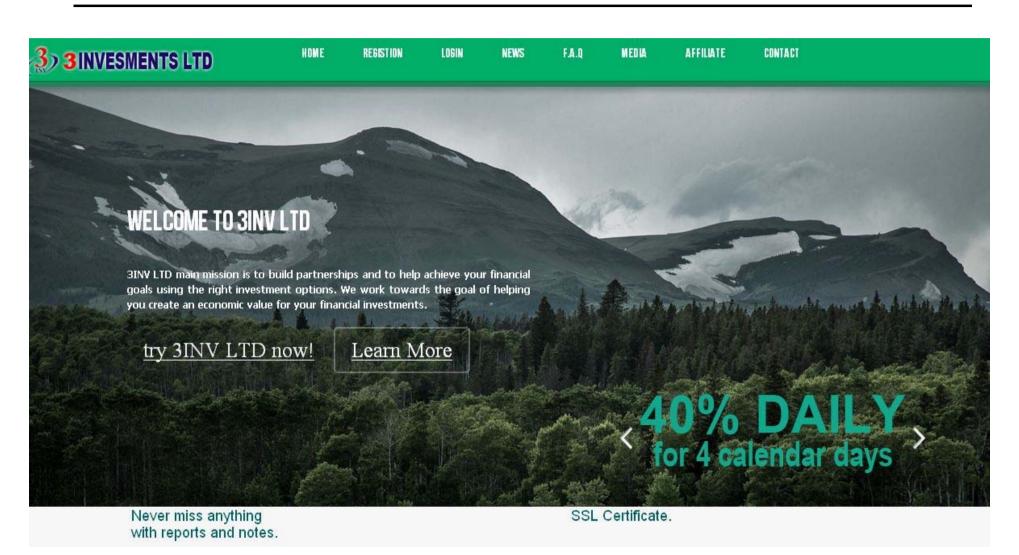


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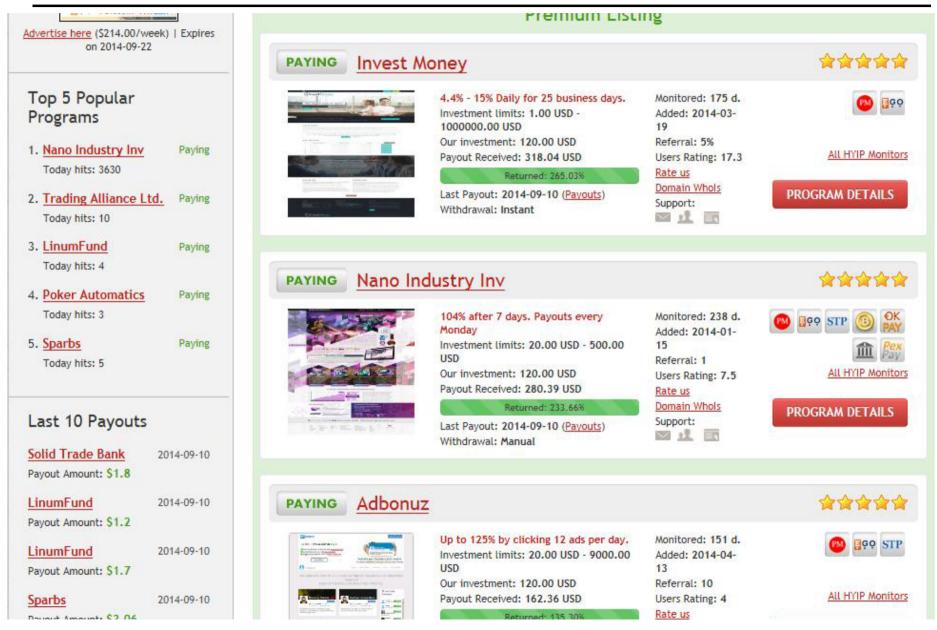
# High Yield Investment Programs (HYIPs) are websites that promise investors high returns on investment



#### HYIPs are fraudulent "Ponzi" schemes

- Existing investors' returns are paid from new investors' funds
- Eventually, of course, no new investors can be found
- Investors lose their money when the schemes collapse
- They've been studied before ... by Moore, Han & Clayton (2012)
- This previous work described the **aggregators** which list lots of HYIPs but didn't properly understand how they fitted in to the ecosystem. This work fixes that...

# An aggregator site gives the details of lots of HYIPs and indicates whether or not they are currently paying

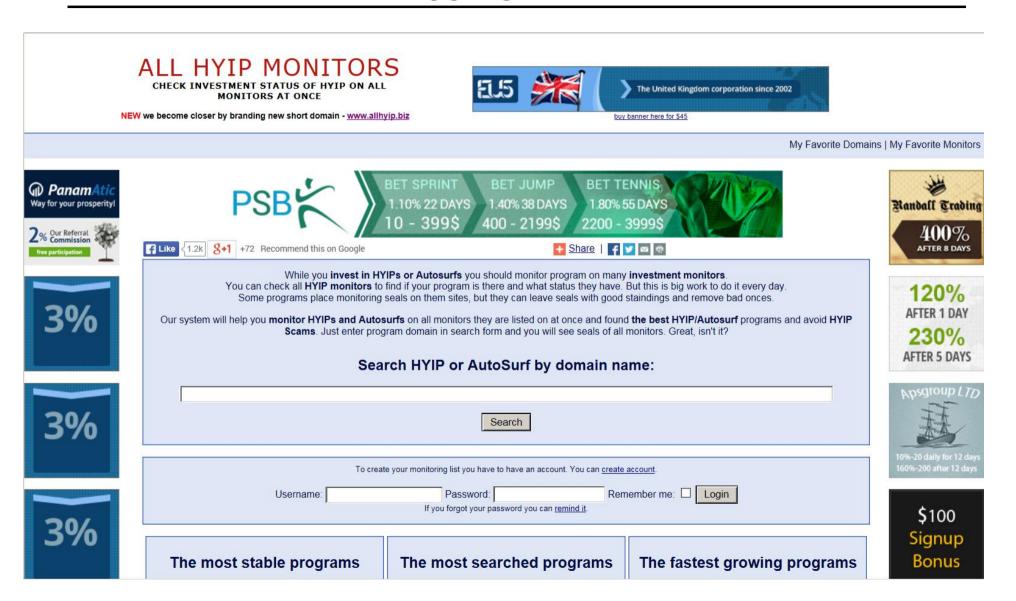


## The role of aggregators

- List active HYIP websites
  - they charge for a listing (more for premium listings)
- Carry adverts for HYIPs
  - they charge for this (duh, obviously)
- Get paid a referral bonus for investments made through them
- Invest in the HYIPs and monitor if interest is paid
  - THAT IS, TO BE LISTED AN HYIP PAYS (eg \$10) UP FRONT
  - THEN IT PAYS 1% (or whatever) of (eg \$200) EVERY DAY
  - IF IT FAILS TO PAY IT IS MARKED TO BE IN DEFAULT

THE HYIP ITSELF PROVIDES THE CAPITAL FOR THIS INVESTMENT

# An meta-aggregator site gives the details of all HYIPs that are listed on all aggregator sites



### The role of meta-aggregators

- List active HYIP websites scraped from all the aggregators
  - this is a free service
- Carry adverts for HYIPs
  - they charge for this (duh, obviously)
- Get paid a referral bonus for investments made through them
- Provide historical data about past HYIPs, referral bonuses etc.
   etc. (which are really useful for our research)

## The HYIP eco-system

 Kit developers: sell software to run HYIP and aggregator websites

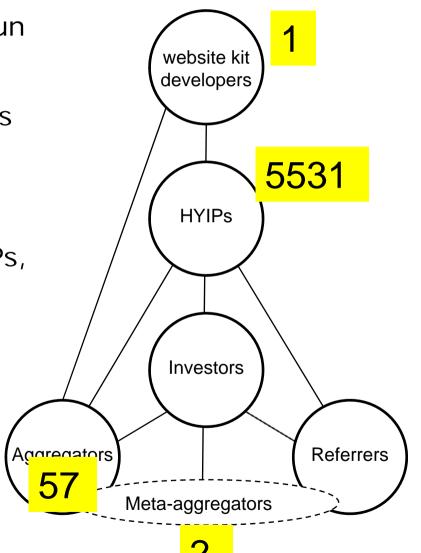
HYIPs: the ponzi scheme websites

 Investors: the people who put money into the ponzi schemes

 Aggregators: publish lists of HYIPs, promote and monitor them

 Referrers: individuals who refer investors to the HYIPs

 Meta-aggregators: collect and publish data from multiple aggregators



#### What we'd rather like to know

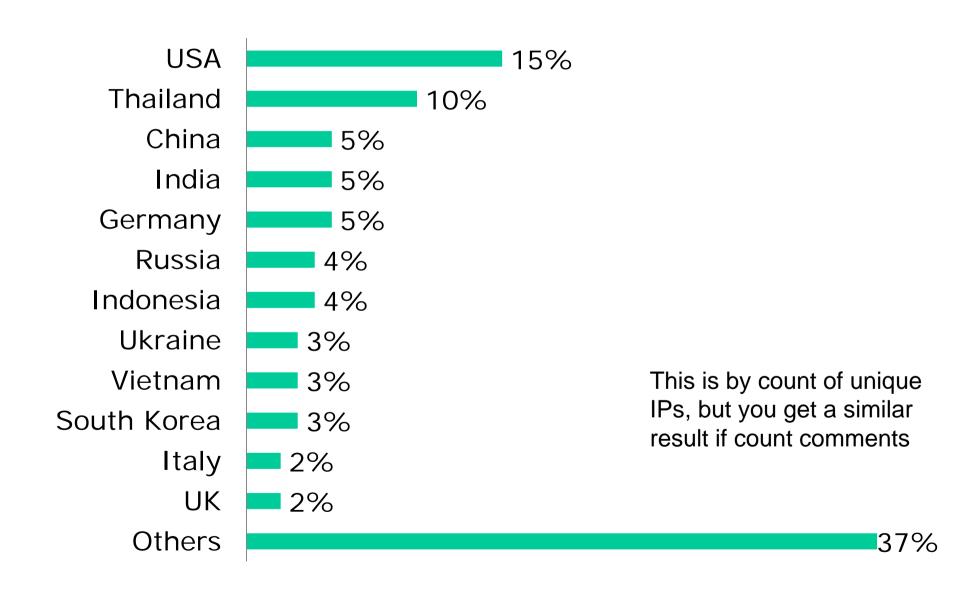
Who invests in HYIPs?

Can the investors make a profit ?

Where does the money go?

How might we disrupt this ecosystem?

### Location of comment posters



#### Statistics for referrals

- HYIPs report their referral rates: average 5.37%
- Some HYIPs report how many investors AND how many were referred to the site: average 35.13% (Apr–Jun 2014, n=54)
- BUT they might be inflating these numbers!!
  - so we rank in order of investors and find referral rates fairly constant apart from biggest 25% of sites ... if we only consider the other 75% then referral rate is 43.46%
  - NB: if you avoid investing by following links you probably don't count as referred, so this is right direction to adjust
- Some HYIPs report who referrers are (Apr

  –Jun 2014, n=108)
  - 48.05% of these are aggregator websites
  - NB: we don't see (m)any incentives for manipulation here
- Oddment: 57% of referrals to one website were from Uganda!

#### Can estimate income for aggregators

- Listing fees (average \$20,877, stddev \$23,318)
- Advertisements (average \$33,280, stddev \$24,604)
- Interest from investment stakes in HYIPs
  - aggregators report payout ratios as one of their stats per HYIP
  - mean stake was \$128.62, stddev \$45.46
  - paid out ratios ran from 18% to 147%
  - income average \$79,302 stddev \$35,947
- Referral income not generally available
  - have data for just one aggregator (uhyips.com)
  - at average rates they'd get \$42,797 but report getting \$73,068
  - perhaps they get better rates?

#### Can estimate income for kit developers



http://www.goldcoders.com

- Sells HYIP kits at \$145 (plus \$99 for a unique design)
- Sells HYIP aggregator kits as well (\$145 or 10% of income)
- Offer to set up domain, website etc. if you're a neophyte
- Rumoured to have back doors, so people do pay if they use it
- Market share is 75% (and has been 50% + since 2005)

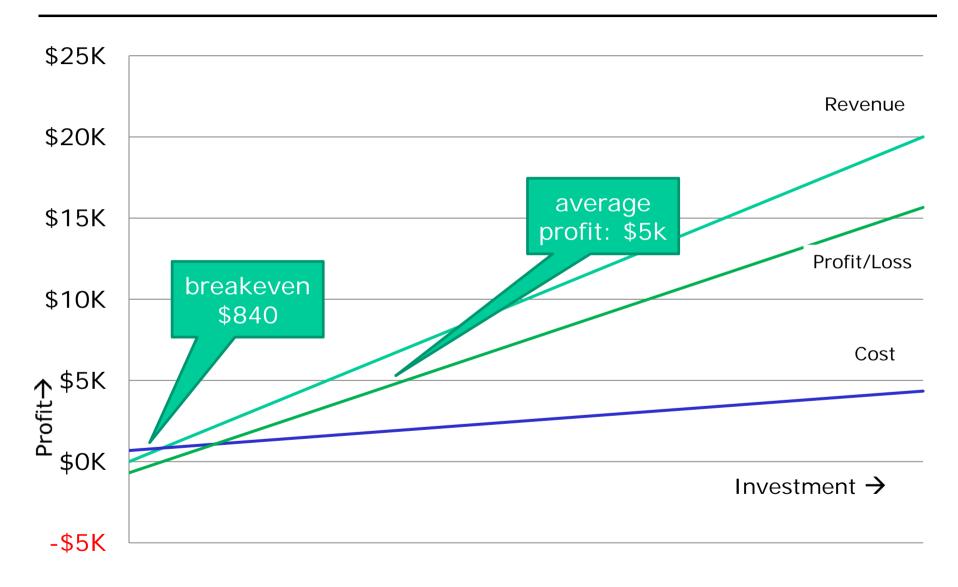
#### Can estimate income for HYIPs

- Infrastructure costs are low (hosting + kit) <\$200 for 2 months
- Sites choose to list on an average of 4.04 aggregators
  - stddev is 4.29 (this is a trade-off between cost & exposure)
  - we estimate costs here average \$94.52
- Aggregator interest payments are \$303 (stddev \$1216) over lifetime of site (as you can see, somewhat variable)
- Investor payments (hard to calculate since may default early on these compared to paying the aggregators)
- Additional advertising (we have no data)
- Referrer bonuses (we do not trust self-reported data here)

#### An overall model for the HYIP economy

- Total cash arriving from investors = \$46.7 million in 2013
  - using the uhyips.com referrer data & scaling
- Payments to aggregators
  - total \$3.1 million: 3 made over \$200K, 4 made over \$100K
- Payments to other referrers
  - total \$565K
- Income for GoldCoders
  - at least \$672K, on reasonable assumptions \$975K
- Payment processor income
  - around \$582K

## Profit/Loss breakdown of a typical HYIP



#### ... and more

- The paper has lots more data and analysis ...
- In principle an investor can make money by putting in money as early as possible... if they are smart they can do as well as the aggregators
  - that means that they make money in about 16% of cases
  - however, the downsides are such that average return on capital will be just 76% ... this compares badly with roulette!
- So perhaps the regulators/police should intervene?
  - their monopoly position orchestrating the whole scam suggests to us that we should start with the kit suppliers!

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http://www.lightbluetouchpaper.org



