BUILDING THE IDEAL PORTFOLIO

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A Review and Simulation of Business Angel Investment Returns

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Contents

Why We Did It …..

Rationale for the study

Why We Did It …..

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- Angel investment is significant and growing
- Performance varies
- Studies of performance are few and far between
- Assume all angel investors/portfolios have same probability of success
- Growth of portfolio investing, syndication, coinvestment
- Question – what is an effective deal size and portfolio size to generate acceptable returns?

"I got in on the ground floor, then had to tunnel out ."

22%
IS THE 'MAGIC NUMBER'?

What We Did …..

Study methodology

What We Did …..

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- Reviewed previous studies reporting on over 100 investments each
- Using data from largest study we undertook Monte Carlo simulation of returns profiles
- Simulated 90,000 portfolios representing 20.5 million investments in portfolios ranging from 5 to 450 investments
- For each portfolio size (5, 10, 15, 20 ….. 440, 445, 450 investments) we ran 1000 simulations


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What We Found ……

Key results

What We Found 1
Previous Studies

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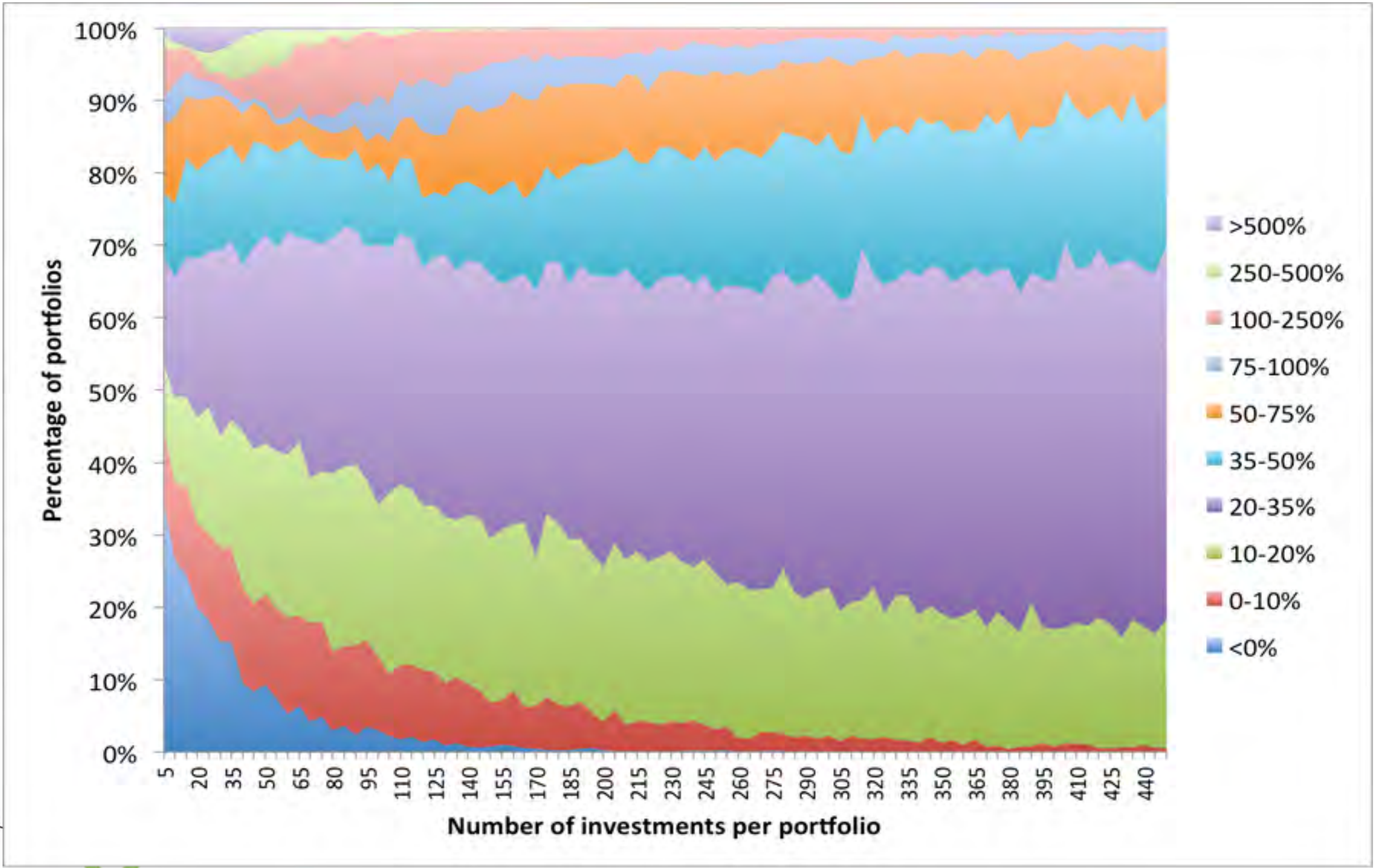
Year of Study	Author(s)	Total Investments	Exited Investments	IRR
2013 US	DeGennaro & Dwyer: "Expected Returns… by Angel Investors in Groups"	588	419	69.9%
2010 US	Roach: "Keiretsu Forum"	120	Unknown	15-33%
2009 UK	Wiltbank: "Siding with the Angels“	1,080	406	24.6%
2009 US	Band of Angels	200+	Unknown	18.0%
2009 US	DeGennaro & Dwyer: "Expected Returns to Angel Investors"	603	434	33.0%
2008-present US	Sohl: "The Angel Investor Market in the US (Annual Report)	Unknown	Unknown	20-30%
2007-2012 Italy	Capizzi, : “The returns of business angel investments”	553	143	17.6%
2007 US	Villalobos & Payne: "Startup Pre-Money Valuation"	117	117	24.3%
2007 US	Wiltbank & Boeker: "Returns to Angel Investors in Groups" (AIPP)	3,097	1,137	31.4%
2002 UK	Mason & Harrison: "Is it worth it? The Rates of Return from Informal VC”	372	128	37.4%

ANNUAL RETURNS (IRR) VARY FROM 17% TO 37%

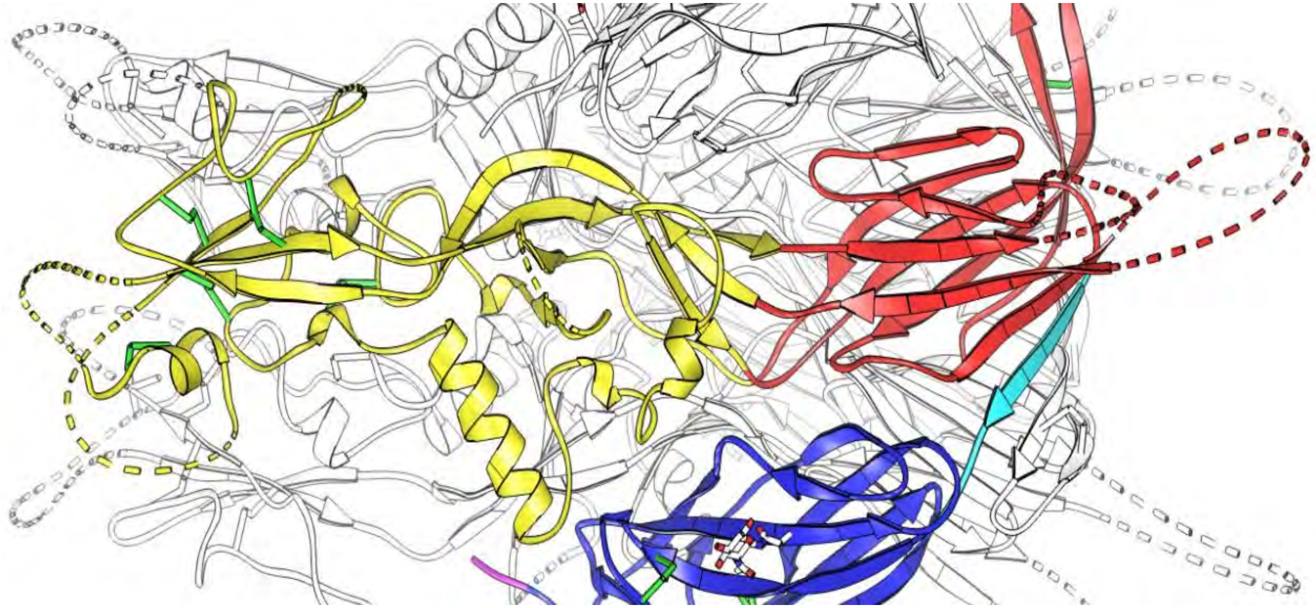
What We Found 2
IRR Returns Profiles



50 **IS** THE MAGIC NUMBER – ONLY AT THIS PORTFOLIO SIZE DOES THE RISK OF IRR<10% FALL BELOW 1 IN 5

What We Found 3
Key Results

- A very few investments account for vast majority of returns – returns are not generated evenly across the portfolio
- Bigger is not necessarily better – increasing deal size (eg beyond c.$0.75m) may actually lower returns
- Large portfolios generate higher returns than smaller ones, but still carry risk of poor returns (<20%) – there are no guarantees!
- Reducing the risk of negative or poor risk-adjusted returns requires 50+ investments, not 12-20 as widely assumed
- Performance of small portfolios varies enormously: Below 20 investments – 30% of portfolios show negative IRR, 40% in range 0-35% IRR, BUT 20% generate returns over 75%



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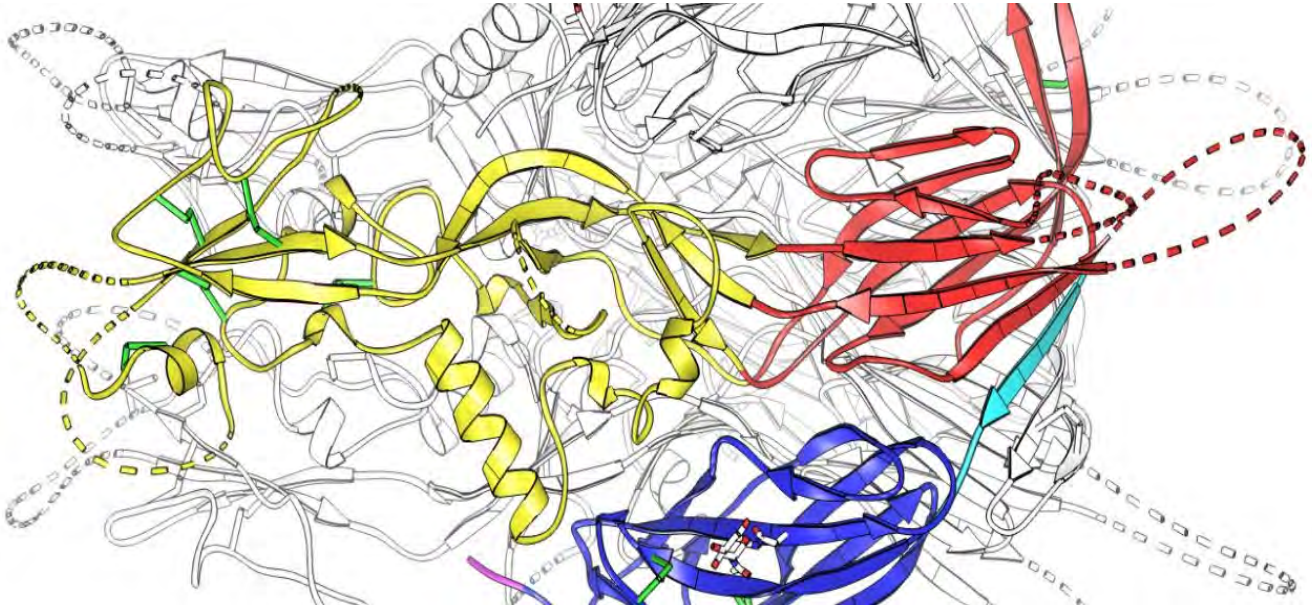
SIZE MATTERS

What We Found 4
Key Results 2

- **Patience is a virtue, but it doesn’t pay – the long hold time of angel investments reduces effective investment returns**
- **Escalation of commitment – continuing to support losing propositions rather than cut and run (the ‘living dead’ problem)**
- **A *caveat* – this analysis is based on data from angel groups (the visible market) and likely overstates returns experienced by wider population of angel investors (invisible market)**



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50 **IS** THE MAGIC NUMBER – ONLY AT THIS PORTFOLIO SIZE DOES THE RISK OF IRR<10% FALL BELOW 1 IN 5

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What It Means …..

Implications for policy and practice

What It Means

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- For individual angels - Example – 100 angels each invest in 5 ventures – only 1 or 2 will generate strong returns, vast majority experience flat returns or total losses
  - Join a group – risk mitigation is beyond individual's capacity
- For angel groups – Example: with average deal size of $500k, need to invest $50m for 90% chance of achieving >10% returns (with 20 members, each must invest $2.5m)
  - Become larger – risk mitigation requires scale in membership, capital and deals
  - Beware of increasing deal sizes (escalation of commitment) and holding periods (patience)
- For policy makers
  - Support network longevity not establishment – small networks with poor performance = disillusioned/ discouraged investors
  - Reconsider coinvestment schemes which increase deal size – may depress not increase returns
  - Reconsider how and when to offer tax incentives – what is the problem to be solved (flow of capital into market or support for reinvestment?)

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FOOD FOR THOUGHT

Thank you

A COPY OF THE FULL RESEARCH PAPER IS AVAILABLE ON REQUEST

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"I used to provide capital for business startups. Here's my card. I'm an angel investor."

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