EMLYON business school

EDUCATING ENTREPRENEURS FOR THE WORLD

INTERMEDIATION AND DISINTERMEDIATION IN THE FINANCING OF INNOVATION

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Eu-SPRI Early Career Researcher Conference

AGENDA

- Introduction
  - Setting the ground: innovation and finance
  - Intermediation and disintermediation in financing innovation
- Intermediate finance
  - Early-stage independent VC
  - Other forms of VC
  - Non-VC intermediaries
- Disintermediated finance
  - Business angels
  - Crowdfunding

INTRODUCTION

INTRODUCTION

- Objective is to:
  - Give and overview of the link between finance and innovation
  - Suggest some possible avenues for future research
- Special focus on difference between different types of intermediated and non-intermediated finance

INTRODUCTION

SETTING THE GROUND: INNOVATION

- What do we talk about when we talk about "innovation":
  - Invention vs. innovation
    - Inventions: ideas that may or may not result in economic profit
    - Innovation: inventions that are commercially exploited
  - Technological vs. strategic innovation
    - Technological innovation: innovation that derives from technological inventions (e.g., development of new production technology, development of molecule)
    - Strategic innovation: innovation that derives from non-technological inventions (e.g., new organizational structure, redesign of the product)

INTRODUCTION

SETTING THE GROUND: INNOVATION

- Empirical studies differ in how they measure "innovation"
- Different measures capture different aspects of "innovation":
  - R&D and patents are the input and output of technological inventions but tell us little about:
    - Commercial value of invention (i.e., innovation)
    - Non-technological innovations
  - Non-technological innovation is measurable almost exclusively using questionnaires
- Nuances on the type of "innovation" being addressed are sometimes poorly reflected in theoretical setting

INTRODUCTION

SETTING THE GROUND: FINANCING

- What do we talk about when we talk about financing:
  - Profit-making: investments with the objective of making money
  - Non-profit-making: funding that has non-commercial objectives (e.g., R&D subsidies, tax breaks, loan guarantees…)
- I will focus here only on financing that has:
  - profit-making objectives
  - equity or equity-like features (i.e., that shares the upside of innovation)

INTRODUCTION

SETTING THE GROUND: FINANCING

- Why is this distinction important?
  - Non-profit making finance: typically objective is to promote innovation

  →Link between finance and innovation is direct

  - Empirical studies are essentially studies on the effectiveness of this type of financing)

INTRODUCTION

SETTING THE GROUND: FINANCING

- Why is this distinction important?
  - Profit-making finance: objective is to make money, not innovate

  →Link between finance and innovation is indirect

  - Theoretical framework needed to determine why (and under what conditions) this link may exist
  - The theoretical framework varies depending on the specific objectives of the investor being considered

INTRODUCTION

INTERMEDIATION AND DISINTERMEDIATION

- Disintermediated financing
  - an investor (i.e., the individual who is actually investing the money) is responsible for
    - selecting the companies
    - performing the due diligence
    - structuring the deal
    - supporting the company during the investment phase
    - managing the exit from the investment (if any)
- Fully intermediated financing: all steps are delegated to a specialized intermediary
- Clearly, intermediation can also be partial or distributed across different intermediaries

INTRODUCTION

INTERMEDIATION AND DISINTERMEDIATION

- Venture capital (VC) is the most common type of fully intermediated finance for innovative startups (Sahlman, 1990)
- The most common type of VC is the independent VC, which is structured in funds characterized by:
  - Limited Partners (LPs): ultimate investors
  - General Partners (GPs): responsible for all investment activities and paid a management + incentive fee (carried interest)
- VC investment is:
  - staged: money is invested gradually and only if results come
  - temporary and exit is typically after 4-6 years

INTRODUCTION

INTERMEDIATION AND DISINTERMEDIATION

- There are other types of VC:
  - Captive VC funds
  - VC investing in later stages
- There are other non-VC intermediaries in the financing of innovation:
  - Patent investment funds
  - Hedge funds
  - Accelerators

INTRODUCTION

INTERMEDIATION AND DISINTERMEDIATION

- Disintermediated finance:
  - Business angels and family offices
  - Sovereign wealth funds

- Partially intermediated finance:
  - crowdfunding

EARLY STAGE INDEPENDENT VC AND INNOVATION

EARLY STAGE INDEPENDENT VC

- I will begin by focusing on the form of financing of innovation that is most explored by the literature: early-stage investments made by independent VC investors
- Later we will consider two aspects that are slightly less explored:
  - Early stage investments by captive VC investors
  - Later stage investments

VC AND INNOVATION

- The literature on the impact of independent VC investment in early stage companies on innovation is well developed
- There are still aspects that need to be clarified but we have a good overall understanding of the phenomenon
- I will begin by discussing the most typical theoretical frameworks adopted by this literature and then show some empirical approaches to the problem

WHY COULD VC FOSTER INNOVATION?
VC INVESTMENT IN INNOVATIVE STARTUPS

- Independent VC wants a return on its investment (IRR) → how does innovation link to that?
- Let's start from the theoretical reason why VC exists in the first place
- The finance literature offers two broad theoretical reasons:
  - Chan (1983): efficient information collection
  - Casamatta (2003): provision of advice

VC AND INFORMATION COLLECTION
CHAN (1983)

- Ingredients:
  - asymmetric information on the companies
  - search costs for investors
- Results:
  - Without intermediaries market for ‘lemons’
- Role of VC
  - Positive role for intermediaries, which reduce the duplication of search costs
- Intuition:
  - Each investor has too little “skin in the game” to justify a proper and independent analysis of all potential investments in early stage companies

VC AND ADVICE

CASAMATTA (2003)

- Ingredients:
  - VC has value-enhancing abilities (e.g., coaching, advising)
  - Moral hazard
- Results
  - a “standard” contract (i.e., one that is not contingent on success) between the adviser and the company is inefficient
- Solution:
  - The only way for VC to exploit its value-enhancing abilities is to bundle them with money and buy a share of the company
- Intuition:
  - Advisor-company contract fails more or less for the same reason why a loan is unfit for young innovative companies

CONCLUSION

- VC uses its unique abilities to generate profits
- The two theories differ in what these abilities are
  - Screening (i.e., picking winners)
  - value-enhancing skills (i.e., building winners)
- The theories lead to similar conclusions about the role of VC for innovation:
  - Without VC, young innovative companies will be underfunded have fewer soft-skills than optimum
  - Those that get VC will prosper → potential for innovation will be unleashed
- VC boosts innovation because it has a competitive advantage in investing in innovative companies

EMPIRICAL EVIDENCE

- There is a vast body of empirical works on VC ←→ Innovation
- I will start by pointing out a couple of common empirical issues with this literature and then present some representative works

EMPIRICAL EVIDENCE

REVERSE CAUSALITY AND ENDOGENEITY

- The link between VC and innovation can be driven by:
  - Causality: VC improves innovation (building winners)
  - Reverse causality: VC seeks innovative companies (picking winners)
- Typically, we want to distinguish the two, which requires appropriate econometric techniques including:
  - Matching
  - Pre/post analysis
  - Granger causality
  - Quasi-experimental settings
  - Instrumental variables
  - Heckman two-step regression
  - Dynamic panel data models

INDUSTRY-LEVEL PATENTING

KORTUM AND LERNER (2000)

- Panel study on 20 US industries over three decades
- Dependent variables:
  - Patents (technological inventions)
- Reverse causality addressed using quasi-experiment (ERISA regulatory change in 1979) and instrumental variable approach
- Results support impact of VC on innovation
- Similar evidence by Popov and Roosemboom (2012) for Europe

INDUSTRY-LEVEL PATENTING

HIRUKAWA AND UEDA (2001)

- Panel study on US VC-intensive industries
- Dependent variables:
  - Patents (technological inventions)
  - TFP (all forms of innovation)
- Reverse causality addressed using Granger-type analysis
- Results support innovation-first hypothesis but are inconclusive on the impact of VC on innovation

EQUITY FINANCE AND R&D

BROWN, FAZZARI AND PETERSEN (2009)

- Panel study on US high-tech industries
- Dependent variable:
  - R&D investments
- Reverse causality addressed using dynamic panel estimation (DIF-GMM)
- Results show that a link between finance and R&D is present in young but not in mature companies
- The authors estimate that the financial cycle explains up to 75% of aggregate changes in R&D

EMPIRICAL EVIDENCE

DISTRIBUTIONAL ISSUES

- At micro level an additional dimension of complexity comes from the distributional properties of innovation variables (e.g., R&D expenses, patents)
  - zeroes
  - outliers
- The phenomenon is amplified by the natural tendency of VC investments to have extreme distributions (a lot of failures and a few extremely successful deals)
- In isolation this problem is easily solved, but in combination with reverse causality it may become daunting and make the results extremely unstable

(sum) patents

	Percentiles	Smallest		
1%	0	0		
5%	0	0		
10%	0	0	Obs	10915
25%	0	0	Sum of Wgt.	10915
50%	0		Mean	.0574439
		Largest	Std. Dev.	.4347662
75%	0	9		
90%	0	10	Variance	.1890217
95%	0	10	Skewness	12.5496
99%	2	11	Kurtosis	206.6612

PATENTING BY VC-BACKED FIRMS

ENGEL AND KEILBACH (2007)

- 142 VC-backed German startups (and matched sample of non-VC-backed firms)
- Innovation variable:
  - patent applications
- Reverse causality addressed using:
  - propensity score matching
- Results indicate that VC-backed firms file 5-15 times more patents but the difference is not statistically significant due to high variance (see previous comment on distributional properties)

PATENTING BY VC-BACKED FIRMS

BAUM AND SILVERMAN (2004)

- Canadian biotech startups between 1991 and 2000
- Reverse causality addressed using:
  - Heckman-type regression
- Innovation variables:
  - patent applications and patents granted
- Authors conclude that VCs “pick winners” because they select companies on the base of the same characteristics that predict success

PATENTING BY VC-BACKED FIRMS
BERTONI, CROCE AND D'ADDA (2010)

- 351 Italian new technology-based companies
- Innovation variable:
  - Successful patent applications
- Reverse causality addressed using:
  - Pre and post VC analysis
- Results indicate that, compared to non-VC-backed companies, VC-backed companies:
  - do not patent more before they get VC
  - do patent more after they get it

PATENT PATTERNS IN VC-BACKED FIRMS

ARQUÉ-CASTELLS (2012)*

- 233 Spanish VC-backed companies
- Innovation variable:
  - Successful patent applications
- Reverse causality addressed using:
  - Dummy variable identifying VC-companies
- Results indicate that the rate of inventions follows an inverse U-shaped pattern after VC investment

→ invention phase first → increase in patenting

→ commercialization phase later → decrease in patenting

INNOVATIVE STRATEGY AND VC

HELLMAN AND PURI (2000)*

- 173 Silicon-Valley startups
- Innovation variable:
  - Survey data about innovative strategy (introduction of new-to-the-market product or service) and time to market
- Control for reverse causality:
  - Split sample regression, control for industry P/E, pre-post VC analysis
- Results:
  - Innovative companies attract VC
  - VC accelerates threefold the transition from invention to innovation in companies with innovative strategy (no difference in imitators)

OTHER VC INVESTORS

WHO ARE THE OTHER VC INVESTORS

- The papers illustrated above analyze if and how investments made by independent VC investors in early stage companies boost their innovation
- However, this leaves out some types of VC investors:
  - Captive VC investors
  - VC in later stage companies
- These investments are theoretically distinct from those seen above

CAPTIVE VC

- A captive VC resembles an independent VC in terms of investment practices and general structure but…
  - The distinction between the provider of capital and the fund is not complete
- Captive VC funds are set up by:
  - Banks → Bank-affiliated VC (BVC)
  - Non-financial companies → corporate VC (CVC)
  - Government-related entities → government VC (GVC)
- The fund provider has an influence on the investment decisions of the captive fund
  - This has interesting theoretical consequences on the link between VC and innovation
- We will focus on CVC and GVC

CORPORATE VC AND INNOVATION

- Theoretical difference: the parent company has a direct interest for inventions and innovations in the target company
- Result:
  - Technological proximity plays an important role
  - CVC may want to open a window of opportunity for the parent company
  - Risk of expropriation

CVC AND INNOVATION

CHEMMANUR, LOUTSKINA AND TIAN (2014)

- 3,314 CVC-backed firms and 6,111 IVC backed firms
- Innovation variable:
  - Patents (count and citations)
- Reverse causality controlled using:
  - Matching, fixed effects, dif-in-dif
- Result:
  - CVC has stronger impact on innovation than IVC
  - Two reasons:
    - Better technological knowledge
    - More ability to take risk

CVC AND LEARNING FOR INCUMBENTS

DUSHNITSKY AND LENOX (2005)*

- CVC activity provides a technology window to the parent company
- CVC investments are followed by an increase in the innovation rate (patents) in the parent company
- The increase is greater:
  - The weaker is the intellectual property regime
  - The greater the parent company's absorptive capacity
- In a related study Dushnitsky and Lenox (2006) show that CVC investment creates more value (Tobin's Q) when it is strategically (vs. financially) focused

SWIMMING WITH SHARKS
KATILA, ROSEMBERG AND EISENHARDT (2008)

- So when will an entrepreneur accept the risk of misappropriation from a strong incumbent?
- Result:
  - When entrepreneur needs resources
  - When resources are uniquely provided by the corporation
  - When defense mechanisms work well

TECHNOLOGICAL RELATEDNESS
DUSHNITSKY AND SHAVER (2009)

- 1,646 CVC-backed startups in the 1990s
- Result:
  - Weak intellectual property protection (IPP) regimes:
    - Less likely that there will be an investment
    - Investment is unlikely to happen if the parent and target are in the same industry
  - Strong IPP regime:
    - More likely that there is a CVC investment
    - Industrial overlap does not matter

GOVERNMENT VC AND INNOVATION

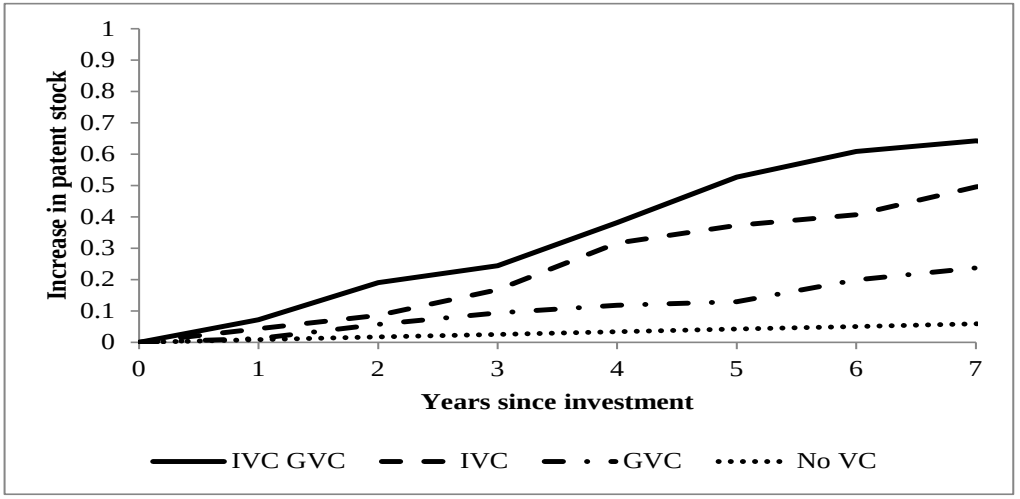
- GVC also has an interesting theoretical difference with independent VC with respect to innovation
- Promoting innovation is a policy objective
  - GVC cares about innovation *per se*
- GVC funds may be broadly classified under two categories:
  - Innovation-driven GVC: innovation is explicit objective
  - Local-development GVC: innovation is an implicit objective (innovation spills over locally)

INNOVATION GVC VS. IVC
BERTONI AND TYKVOVÁ (2014)

- Is GVC more effective than IVC in promoting innovation?
  - Yes because of
    - Stronger focus on innovation
    - Longer time horizon and no rush to commercialize
  - No because of
    - Fewer financial and non-financial resources
    - Less performance-related incentives
- Sample of European biotech companies
- Innovation variable: patents (simple count and citation-weighted)
- Reverse causality controlled using fixed effects and IV
- Result:
  - IVC boosts innovation more than GVC
  - No evidence that GVC boosts innovation (not even those GVC funds that have innovation as explicit objective) at all (but see next slide)
- Poor GVC performance consistent with works on exit (Cumming and Johan, 2010; Cumming et al., 2014) and productivity (Alperovych and Hüber, 2014; Grilli and Murtinu, 2014)

COMPLEMENTARITY OF IVC AND GVC
BERTONI AND TYKVOVÁ (2014)

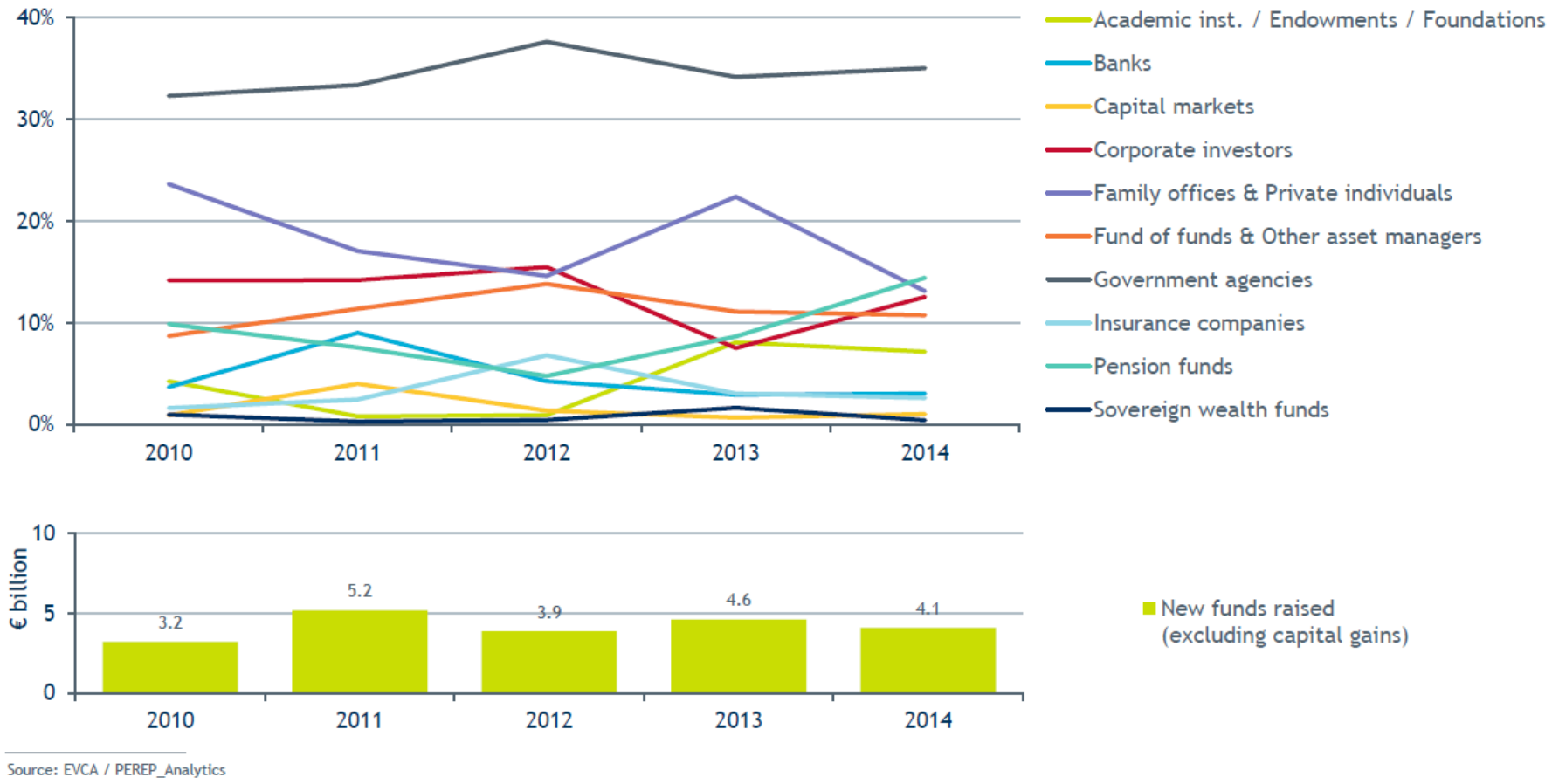
- Evidence that GVC and IVC are complementary
  - Combination of performance-oriented objective from IVC and patient capital from GVC seems to be optimal for innovation
- Similar results obtained by Cumming et al. (2014) and Grilli and Murtinu (2014)



THREE THINGS WE DON'T KNOW ABOUT GVC AND INNOVATION

- GVC funds differ in their objectives, governance, investment practices. How this reflect on their impact on innovation?
- The interaction of GVC and IVC seems crucial but how does it work? Which arrangement is most effective?
- The role of the government in funding IVCs in Europe is now predominant, and seems to be non-neutral (Buzzacchi, Scellato, Ughetto, 2013) How is this affecting the impact of IVC on innovation?

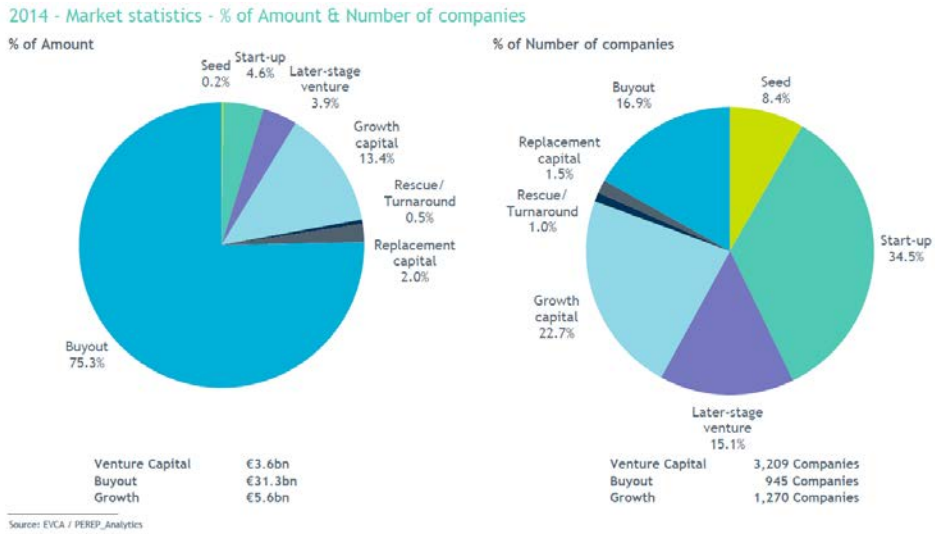
SOURCE OF VC AND PE FUNDS IN EUROPE



Source: EVCA / PEREP_Analytics

LATER STAGE INVESTMENTS BY VC

- For each euro invested by VC in Europe in 2014, 75 cents went to buyouts
- Buyouts do not respond to the same logic as early stage deals
- What can we expect in terms of innovation?
- Two contrasting theories (see Meuleman et al. 2009):
  - Buyouts are efficiency-driven → cut current costs, including R&D → reduce innovation
  - Buyouts unleash the innovative potential that is muted in mature companies



QUANTITY OF PATENTING AFTER BUYOUT

UGHETTO (2010)

- Buyout companies in Europe between 1998 and 2004
- Innovation variable:
  - Patent applications and patent stock
- Reverse causality addressed using:
  - Two-step estimation
- Results:
  - Governance: independent VC tends to reduce patenting
  - Specialization: specialized fund have a more positive effect
  - Size: acquirer with larger portfolio have more significant effect

QUALITY OF PATENTING AFTER A BUYOUT
LERNER, SORENSEN AND STRÖMBERG (2011)*

- 472 buyouts in the US
- Innovation variable:
  - Patents count and quality: citations, generality, originality and oppositions
- Reverse causality controlled using:
  - Theoretical argument
  - Fixed effects
- Results:
  - No reduction in patenting rate
  - No change in generality and originality
  - More citations
  - More focus in the technology classes in which the firm is historically strong

STRATEGIC INNOVATION AND BUYOUTS

BERTONI, LE NADANT AND PERDREAU (2015)*

- 885 buyouts in the UK-CIS
- Innovation variables:
  - Strategic innovation (e.g., change in strategy, organization, management practices)
  - Innovation-related activities (e.g., innovation-related training, change in product design)
- Reverse causality controlled using:
  - Pseudo-Granger causality
- Main results:
  - Strategic innovation and Innovation-related activities
    - Decline in low-tech industries
    - Increase in high-tech industries

NON-VC INTERMEDIARIES

PATENT INVESTMENT FUNDS

- Intellectual property is now seen as one component of the alternative assets allocation of large institutional investors
- Patent investment funds (PIFs) are funds that buy patents from innovator with the objective of making a financial return by selling and franchising the patents
- Two bug differences with VC:
  - The target here is the patent itself not the innovator
  - The time horizon is longer (20 years)

INTELLECTUAL VENTURES

- Interesting PIF: Intellectual Ventures (IV)
  - Funded by Microsoft former CTO (PhD in physics at the age of 23, studied with Stephen Hawking)
  - Raised $6bn and bought about 70,000 patents
  - Defending patent infringement aggressively
  - Apple, Google, Intel, Microsoft and Sony all have invested in IV funds

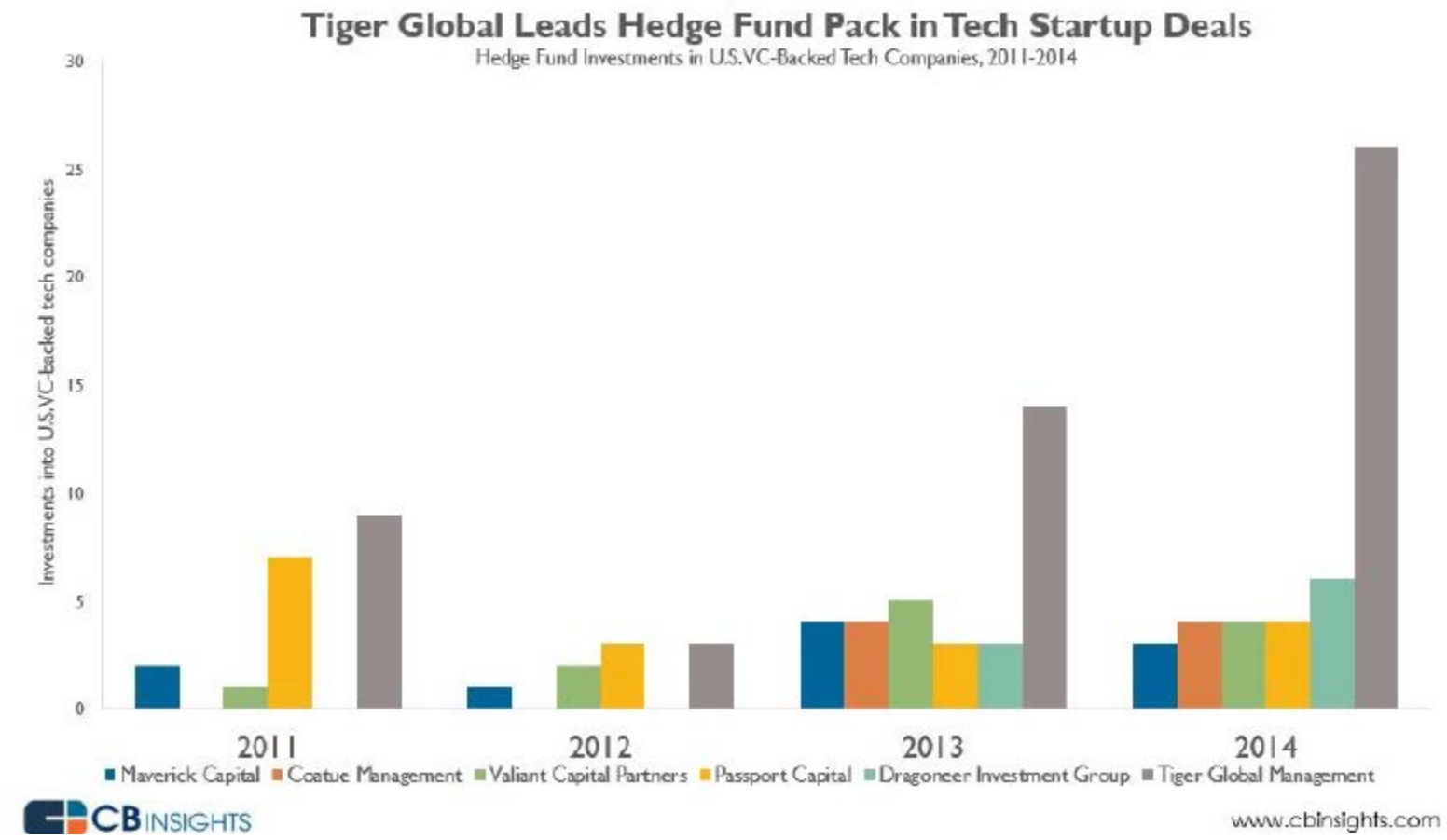
FEW THINGS WE DON'T KNOW ABOUT PIFS

- Do PIFs favor innovation?
- What patents are sold to PIFs and by whom?
- How the option to sell patents to a PIF affects the patenting behavior of innovative companies?
- How the litigation threat posed by PIFs affects the patenting behavior of innovative firms?
- What is the value of PIFs for its corporate investors?
- What is the relationship between patents acquired directly by large high-tech companies and those acquired by the PIF they invested in?

HEDGE FUNDS

- Hedge funds (HFs) are investment vehicles subject to light regulation (i.e., more or less free to invest how, when and where they want)
- Typical HF strategies (e.g., global macro, long-short, event driven…) has little to do with innovation
  - As one VC put it: "They are the antichrist of patient, supportive early-stage investing"
- However recently HFs have participated more and more in high-profile deals (e.g., Box, Dropbox, Snapchat, Pinterest). Why?
  - Companies go public later → pre-IPO private placements to HF (e.g., Twitter and Facebook)
  - Some HFs are exploiting in private companies the expertise they developed in public company (crossover investing)

SOME HFS INVESTING IN VC-BACKED STARTUPS



HF VS VC

- Compared to VC, HFs tend to be passive and hand-off
- Snapchat was one of the first to get a round fully funded by an HF but it already had a number of VC investors involved
- Some see the involvement of HFs in early stage companies a step towards the unbundling of finance and advice (see Casamatta, 2003)
- HFs have a completely different fee structure:
  - 2/20 is the same but:
    - Often no hurdle rate or market benchmark
    - Incentive fee paid on annual performance rather than fund (or investment) IRR
- Unclear what will happen when tech valuations will go down

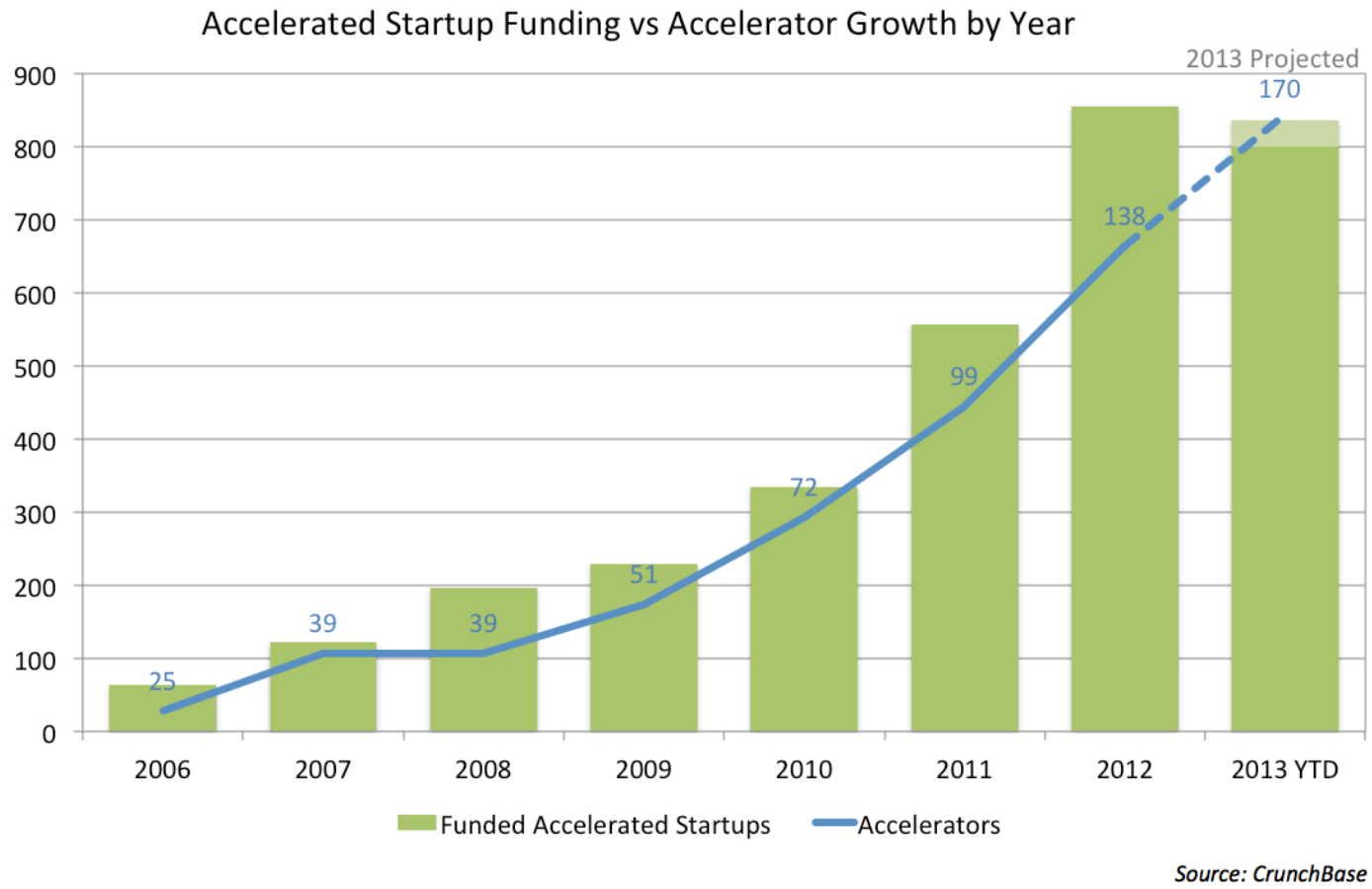
A FEW THINGS WE DON'T KNOW ABOUT HFS AND INNOVATION

- How innovation affects the entry and exit of HFs
- How exposed to cyclicality are HF-backed companies
- How HFs differ from VC in supporting innovation
- How HFs combine with VC in supporting innovation

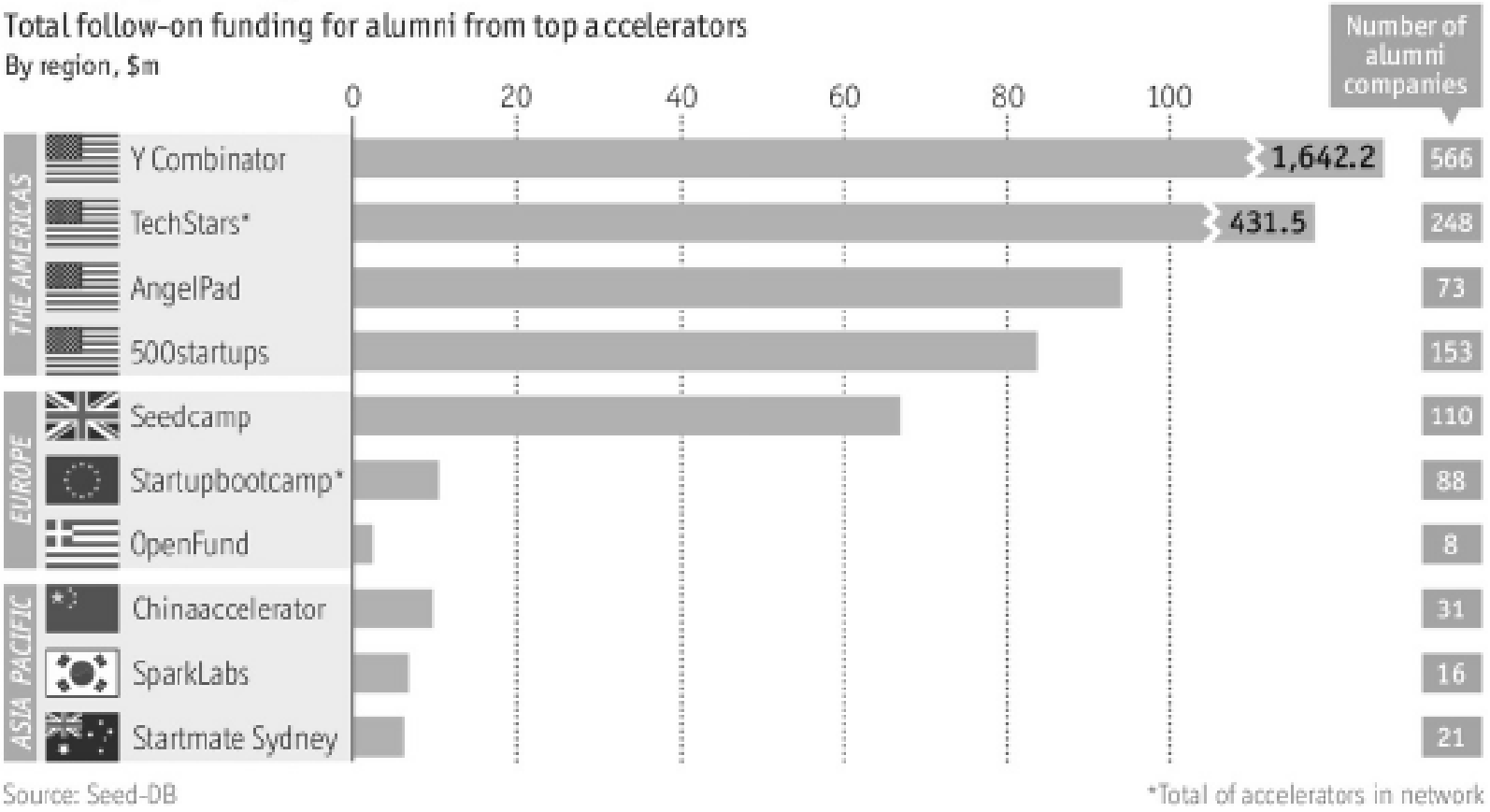
ACCELERATORS

- At the other extreme of the spectrum are accelerators
- Accelerators are the “next generation” of incubators
  - Throughput time is shorter (sometimes only a few months)
  - Interaction with experts during the stay is intense
  - Companies don’t stay in the accelerator after the “acceleration” period is over
  - Accelerator get paid with an equity stake in the company
  - Accelerators are private
- The business model of accelerators is closer to that of VC than to that of incubators
  - The largest accelerator (Y combinator) is sometimes referred to as a VC investors

ACCELERATORS AND INCUBATORS



FOLLOW-ON FUNDING FOR ALUMNI OF ACCELERATORS



A FEW THINGS WE DON'T KNOW ABOUT MODERN ACCELERATORS

- How accelerators shape the innovative activity of accelerate companies (we have plenty of evidence on incubators, but accelerators may be different)
- Do accelerators leave a permanent imprinting on accelerated companies?
- How accelerators attract VC and how the two type of investors interact
- Accelerators differ dramatically in their governance, focus and practices: how these factors affect their impact on innovation?

DISINTERMEDIATED INVESTMENT

BUSINESS ANGELS

- Individuals who invest directly in startups → no intermediation
- Typically they have industry expertise and invest in a professional manner
- Main difference with VC-intermediated investment:
  - Use of own experience to:
    - evaluate the project
    - support the company
  - Direct involvement in the company
  - No pressure to exit after pre-specified period

ANGEL ACTIVITY

7,5 b€	5,5b€	2b€	80 m€
European Early Stage Investment	Business Angels	Early Stage VCs	Equity Crowdfunding

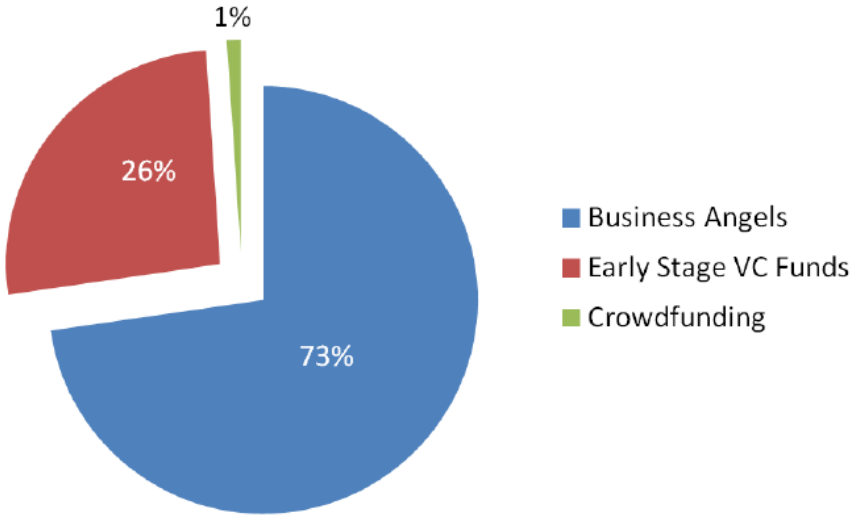


Fig. 1 - The three main areas of early stage investment in Europe. Figures in M€.

Source: EBAN Statistics (2014)

THE ICEBERG EFFECT

	2011	2012	2013
Visible market	427	509	554
Reported by BANs or Federations	298	330	431
Investment by non-reported BANs	129	179	123
Share of visible market	*9%*	*10%*	*10%*
Non-visible market	4317	4590	4989
Total Investment	**4.744**	**5.099**	**5.543**
# Investments	26.158	29.130	33.430
# Jobs created	154.597	178.813	184.170
# Business Angels	241.444	261.430	271.000

Source: EBAN Statistics (2014)

BUSINESS ANGELS AND INNOVATION
KERR, LERNER AND SCHOAR (2011)

- Startups that pitched to two US business angel groups
- Innovation variable:
  - Patenting
- Reverse causality addressed using:
  - Regression discontinuity
- Result:
  - Within a narrow range of perceived quality, firms funded by angels are 16%–18% more likely to have a granted patent
  - The non-financial contribution of angels seems to be more important than their financial contribution

BUSINESS ANGELS AND INNOVATION
COLLEWAERT AND SAPIENZA (FORTH)

- 54 teams of angels and entrepreneurs in Belgium and the US
- Results:
  - Conflicts between angels and entrepreneurs harm innovation
  - Conflicts are more harmful when:
    - Priorities are not agreed upon investment
    - Angels and entrepreneurs have less diverse experience
    - Communication is frequent

CROWDFUNDING

- Phenomenon exists ever since (the basement of the Statue of Liberty was crowdfunded), but that has gained enormous popularity thanks to specialized internet platforms
- General idea behind crowdfunding is: get small amount of money from many people in order to realize an idea
- Behind this general concept lie many different "flavors" of crowdfunding
- Generally speaking, crowdfunding tends to:
  - Involve little money: between $10k and $100k
  - Be about something more than finance (somewhere between marketing and finance)

TYPES OF CROWDFUNDING

- Different types of crowdfunding may be identified based on what "investors" get in return for their money:
  - Donation based
  - Reward based:
    - Tangible or intangible reward
    - Pre-sale
  - Equity based
    - Club
    - Holding
  - Credit based (P2P lending)

WHY CROWDFUNDING

BELLEFLAMME, LAMBERT AND SCHWIENBACHER (2014)

- Theoretical model comparing reward-based and equity crowdfunding
- Main theoretical point:
  - In both forms of crowdfunding, we assume that crowdfunders enjoy some additional utility over other regular consumers. As we illustrate with real-world examples, crowdfunding is most often associated with community-based experiences that generate "community benefits" for participants.
- This is opposite to both Chan (1983) and Casamatta (2003)
- Fundamental results:
  - Reward-based crowdfunding allows price discrimination and is efficient when amount raised is low
  - Equity-based crowdfunding becomes more efficient when amount raised is high

CROWDFUNDING AND INNOVATION

- The innovation is made possible by crowdfunders who care about the innovation *per se*, besides its financial returns
- Another fundamental difference with VC is that the support from crowdfunders is null or limited to early feedback on the product

CROWDFUNDING AND INNOVATION
MOLLICK (2014)

- 48,500 crowdfunding campaigns
- Innovation variable:
  - Success of campaign
  - Fulfillment of obligation
  - Delay on initial plan
- Result:
  - Success of campaign depends on personal network, project quality and geography
  - Vast majority of funded campaigns deliver
  - 75% deliver later than promised, delay is increasing with amount raised

WHAT WE DON'T KNOW ABOUT CROWDFUNDING AND INNOVATION

- How reward-based crowdfunding shapes product development
- How equity-based crowdfunding boosts current innovation and flexibility of innovation process
- How different forms of equity crowdfunding differ in their impact on innovation
- How the characteristics of innovation affect success rate of equity and reward based crowdfunding
- A study on along the lines of Kerr et al. (2011) would be interesting

CONCLUSIONS

CONCLUSIONS

- Our knowledge of the link between finance and innovation is at the same time vast and narrow
  - It's vast because the literature is huge
  - It narrow because the literature is extremely concentrated on few topics
- This means that there is still room for original and interesting work, but not on the mainstream
- In the next two slides I divide some keywords in two groups:
  - Things we know
  - Things we don't know
- I conclude with a general recipe for a successful paper

GROUP 1
WHAT WE KNOW

- We know a lot about:
  - early stage independent VC investment
  - technological inventions (patents, R&D)
  - treatment effect on quantity of innovation
- We know something about:
  - Captive VC
  - Later stage VC
  - Accelerators
  - Business angels

GROUP 2

WHAT WE STILL DON'T KNOW

- We know little about:
  - Strategic innovation
  - The interaction of different types of investors
  - How finance shapes:
    - the direction of innovation (see *s)
    - how inventions turn into innovation
  - Crowdfunding
  - Informal business angels
- We know nothing about:
  - PIFs
  - HFs

MY RECIPE FOR A SUCCESFUL PAPER

- In order to brew the perfect paper you need to pick 1-2 elements from Group 1 and 1-2 elements from Group 2
- First recommendation: parsimony
  - 2, 3 elements are enough
  - 4+ elements are an overkill
- Second recommendation: get the right mix
  - If all your keywords are from Group 1:
    - there's a very high chance this has already been done
    - If not: maybe nobody cares?
  - If all your keywords are from Group 2:
    - There's a very high chance this is not feasible
    - If it is you might still have too many moving parts

YOUR TURN TO GET TO WORK NOW!

And please feel free to ignore the last slide and create your paper your own way!