Venture Debt Financing for Start-up Companies

Master's Thesis by

Filip Matejka

ANR: 326519

Submitted in partial fulfillment of the requirements for the

LL.M. International Business Law

Supervised by

prof. E.P.M. Vermeulen

Tilburg University

June 2016

Table of Content

Glossary

EU	European Union
EuVECA	Regulation No. 345/2013 on European venture capital fund
IP	Intelectual Property
IRR	Internal Rate of Return
SVB	Silicon Valley Bank
VC	Venture Capitalist
VL	Venture Lender
WTI	Western Technology Investment

1. Introduction

The entrepreneurial activity of start-up companies plays an essential role in the economy. Young high-tech businesses significantly contribute to innovation and boost the technological progress. These ventures persistently pursue commercialisation of new unproven products. Start-ups in general, but particularly those in their early stages of development are traditionally deemed financially-constrained. As a consequence, they are greatly dependent on external sources of capital. Entrepreneurs are provided with two options in terms of satisfying their capital needs. Start-ups can acquire capital to fund their growth and business operations by either equity or debt financing. Commonly, the primary source of growth capital for early stage start-ups is represented by equity investments realised by angel investors who are subsequently followed by VCs. Importantly, these early stage investors are characterised by a strong willingness to put their own capital at risk.

Nevertheless, after raising several equity rounds start-up's shareholders, especially founders, become reluctant to give up more equity and prefer to preserve their ownership shares so as to enhance the ultimate financial outcome. Under these circumstances, entrepreneurs search for an additional source of funds with a lower cost of capital in relation to equity financing. However, it must be noted that emerging companies have very limited access to external debt channels since they typically do not suit the risk-averse business model being applied by traditional debt providers. In fact, growth-oriented companies are characterised by posing significant funding risk resulted from a high probability of start-up's failure. From the perspective of traditional debt providers, young businesses present too risky investments. Such contradictions between banks and start-ups with regards to the inherent risk brought a so-called conventional wisdom in being. According to the wisdom, it is believed that "*start-ups and debt do not mix*."[1]

However, it appears to be of great importance to enhance the access of young innovative companies to external funds through debt instruments. As a response to this situation, venture debt industry emerged for the purposes to enable venture-backed start-ups to raise debt capital without compliance with the traditional lending standards. It follows that start-up companies under certain conditions can employ non-traditional debt facility called venture debt provided by specific venture lender that are willing to take on the risk of financing of enterprises without proven track record. Venture debt constitutes an attractive option allowing the start-up to satisfy its capital needs.

[1] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1171, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.

The purpose of the present thesis is to thoroughly analyse venture debt as a debt-based instrument which is available to growth-oriented companies despite the significant funding risk. The thesis is divided into five major sections in the way that each section concerns with the topic from a different point of view.

Before approaching the core of the thesis, it is essential to explain the grounds for the conventional wisdom advocated by traditional banks. Subsequently, data related to U.S. and EU lending markets will be provided in order to rebut the wisdom and prove the existence of "*robust*" venture lending industry. So as to properly understand the unique venture lending model, one chapter is also dedicated to a brief outline of venture debt origins.

The aim of the second section is to describe major categories of VLs, nowadays, operating in the venture debt market. VLs do not share similar incentives for providing venture loans, and they differ in the willingness to fund risky ventures which is reflected in the favourability of the credit terms for entrepreneurs. It will be examined what constitutes the real financial motives behind providing venture debt. Overall, this part of the thesis is focused on the explanation of main distinctions between the types of venture debt providers.

The third part of the thesis provides an in-debt analysis of the major determinants of venture lending decision. Emerging companies do not satisfy the traditional debt repayment criteria, know as "*belt and suspenders."* Accordingly, VLs must rely on alternative criteria enabling them to evaluate company's repayment capacity. The emphasis is put on identifying the features peculiar to start-ups which substitute for the traditional repayment standards. Subsequently, the variability of the substitution effect in reliance on additional factors, such as the company's stage of development will be assessed. Furthermore, it is believed that the requirements which start-ups must comply with do not only serve as pure substitutes but rather play an instrumental role influencing the likelihood of receiving venture debt. Thus, it will be examined to what extent these criteria are able to affect the incentives of VLs to fund a start-up. Since venture debt providers are expected to be interested in the start-up's performance solely during the term of the venture loan, it seems necessary to shed light on whether the company's ultimate success is of importance to them.

After analysing the venture debt from the perspective of debt providers, the thesis approaches venture debt from the point of view of the entrepreneurs. Most crucial, the fourth part is intended to break down the major benefits arising from employing venture debt for both the company's founders and existing equity investors. The flexible nature of venture debt allows the start-up to use the received capital in a variety of situations through the different stages of start-up's growth. Therefore, the thesis aims to demonstrate the most common uses of venture debt, together with the products of venture debt being offered in the lending market. Not only the

benefits but also the drawbacks should be taken into account by entrepreneurs when considering raising venture debt. Therefore, it is also essential to give an insight into certain negative aspects of venture debt.

The last section of the present paper points out the provisions most commonly included in venture loan term sheets. As an ending of the entire thesis, the author provides a case study illustrating the not negligible impact of the negotiated terms on the actual cost of the advanced debt. Likewise, the reason behind including the case study is to show the reliance of the possibility to utilize the funds efficiently on the negotiated timeline of the debt facility.

2. Venture Debt

Venture debt constitutes an attractive method how to satisfy start-up's funding needs essential for development purposes. Venture debt is considered to be a non-traditional source of growth capital. Crucially, venture debt is available to start-up companies, not only to later stage ones but also to early stage fledglings which do not satisfy traditional banking standards required by debt providers. In contrast, venture debt providers applying different lending model are willing to back negative cash flow ventures despite the inherent funding risk, however, in exchange for requiring higher returns on the debt investment. Venture debt represents an additional source of funds to equity capital. Moreover, it is deemed an exclusive debt facility accessible to growth-oriented companies.

Particularly for entrepreneurs, the purpose of venture debt is not to be raised as an alternative source of cash replacing equity financing.[2] As will be illustrated in subsequent chapters, venture debt follows venture capital investments and constitutes essential element within the venture lending business model. That is to say, venture debt is typically used as a supplement in relation to equity capital provided by angel investors but mainly by VCs.

Venture debt can be described as any form of debt financing for a company being still dependent on venture capital funding to support its operations and growth.[3] It follows that venture debt is available for pre-profit or even pre-revenue start-ups that basically pour all their funds raised through equity rounds in the area of company's research and development. Ibrahim defined venture debt as "*loans to early stage, rapid growth startups that have no traditional means of paying it back.*"[4] However, the definition provided by the co-founder of Leaders Ventures Patric Gordon appears to be more accurate. According to him, venture debt could be defined as "*form of debt financing for venture equity-backed companies that lack the assets or cash flow for traditional debt financing, or that want greater flexibility.*"[5] Crucially, two essential features of venture lending stem from above provided definition. First and foremost, it further supports the assumption that venture debt is supposed to be available to growth-oriented companies which are not creditworthy from a traditional debt perspective, but have already been backed by equity investors, especially VCs. In particular, the ability to attract certain venture capital firm plays a significant role regarding the entire lending decision process. Secondly, that not only early stage

---

[2] LEADER VENTURE, *Venture Debt Overview*, p. 3, available at <http://leaderventures.com/overview.pdf>.
[3] VENTURE INTELIGENCE, *Venture Debt – A Catalyst for Growth*, Handbook on Venture Capital, available at <http://www.innovencapital.com/sites/default/files/venture_debt.pdf>.
[4] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1171, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.
[5] GORDAN, P., *Venture Debt: A Capital Idea for Startups*, Kauffman Fellows Press, available at <http://www.kauffmanfellows.org/journal_posts/venture-debt-a-capital-idea-for-startups/> accessed on 20.4.2016.

start-ups can benefit from venture debt, however, also established companies generating some revenue commonly opt for venture debt so as to have greater flexibility.

To what extent venture capital backing influences the overall venture lending industry, and the incentives of VLs to provide venture debt will be addressed in following chapters. Likewise, it appears crucial in order to understand how venture lending works to analyse what allows VLs to mitigate the risk of financing of emerging companies.

Importantly to emphasized, venture debt is not a debt provided by angel investors or VCs that is typically convertible into equity upon next equity round, known as convertible debt or convertible notes. Likewise, venture debt cannot be mistaken for bridge loans made by VCs to support their portfolio companies which are, in many cases, underperforming.

2.1 Conventional Wisdom

According to the conventional wisdom, debt and young start-up companies do not mix. It is believed that start-up companies rely exclusively on equity investments as a source of growth capital. Such conclusion is built on the unpredictability of potential success characteristic for growth-oriented ventures. In fact, the traditional presumption stems from existing contradictions between traditional debt providers, known for their risk-averse nature, on one hand and start-up companies posing a substantial risk of failure on the other. Subsequently will be analysed what requirements must be satisfied by a company to become suitable from traditional banking aspect to receive a debt, and make clear as to why start-ups are unable to raise debt capital as an external source of cash.

Generally speaking, debt providers lend against borrower's repayment capacity based on compliance with traditional lending standards known as "*belt and suspenders,*"[6] essentially referring to resources of loan repayment. Traditionally, banks are considered to be a risk-averse source of external capital for businesses. When selecting their portfolio of borrowers, banks are highly cautious so as to avert potential losses incurred by loan defaults. For this reason, they require borrowers to meet the loan repayment criteria. These criteria serve to mitigate the risk of funding prior granting a loan and provide the lender with "*confidence*" that the debt will be fully paid off. As can be expected, start-up companies, especially in early stages of growth, typically lack these criteria. Under these circumstances, debt providers are unable to evaluate the creditworthiness of a given start-up. Therefore, emerging companies present risky investment opportunities with an unpredictable outcome. Unlike VCs, lenders cannot afford many loan defaults since, in the opposite case, the yields on fully repaid loans from other debt deals would

[6] LEVIN, S., *Venture Debt: Device Financing Lifetime or Anchor*, Elsevier Business Intelligence, IN VIVO, 2008, available at <https://www.wsgr.com/news/medicaldevice/pdf/venture-debt.pdf>.

not be sufficient to offset the incurred losses. VCs are willing to take on higher risk due to oversized returns generated by successful investments. Owing to multiple returns, VCs can afford to have the majority of their portfolio start-ups failed.[7]

When evaluating company's creditworthiness, traditional lenders are primarily interested in cash flow situation of a borrower.[8] Cash flow constitutes a primary source for servicing the outstanding debt. Consequently, during the due diligence process, banks are focus on estimating borrower's future cash flow balance. The best scenario is represented by a situation where it is expected the borrower is going to experience positive cash within the entire lifecycle of the debt facility. Nevertheless, to generate stable positive cash flow the company must be well established and already have a profit generating product or service on the market.

In addition to positive cash flow, the borrower is required to possess tangible assets, such as real estate, equipment or inventory that can be used as a secondary source of loan repayment. Debt capital is often provided in a form of secured debt which allows the bank to recoup advanced funds in the event of loan default. Therefore, the company is typically obliged to pledge its physical assets, which could be liquidated, as a loan collateral. In the case of failure to pay off the debt by generated revenue, the lender is entitled to satisfy the remaining portion of the debt from the liquidation value of the pledged assets. Accordingly, as a part of due diligence, lenders estimate by virtue of current collateral resale market conditions the value of company's assets.

So as to reduce the financing risk as much as possible, traditional debt providers prefer to back companies that are generating positive cash flows and possess liquidated tangible assets. Conversely, emerging companies typically experience a high rate of cash burn caused by significant investments in company's rapid growth. Provided that majority of the capital from equity financing is being invested in research and development, product or service marketing, and hiring key professionals, high-growth start-ups typically remain unprofitable within several initial years of their existence. Due to all these expenditures on one hand and no profit generating source on the other, start-up companies commonly experience negative cash flow when pursuing to raise needed capital. Therefore, the most probable future source of cash flows from capital infusion by equity investors.[9]

Furthermore, start-up companies operating in technology sector not only experience negative cash flow but frequently lack any physical assets. In contrast, the real value of high-tech ventures stems from holding a portfolio of unique IP, such as patents and trademarks. However,

---

[7] We have witnessed venture capital deals where several million equity investment eventually resulted in billion return in cases such as Google, eBay, and Yahoo.

[8] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1175, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.

[9] Ibid., p. 1176.

traditional lenders are reluctant to accept, for instance, patents as collateral due to potential issues regarding ascertaining the liquidation value of intangible assets.

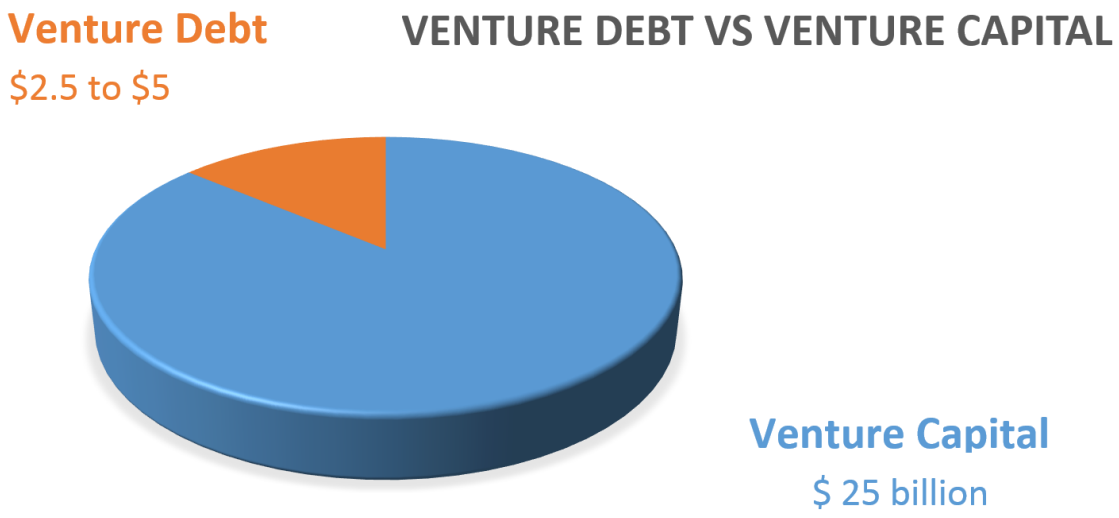
To conclude, growth-oriented companies do not satisfy none of the conditions required by traditional banks. Start-ups companies are known for lacking a proven track record, positive cash flow, and tangible assets. Moreover due to the high-level possibility of start-up's eventual failure, it is unlikely that founders will offer any personal guarantees in exchange for the debt, compared to small lifecycle businesses. Under these circumstances, emerging companies receive debt funds only in rare cases. Having concluded so, when satisfying their funding needs start-ups should be predominantly focused on attracting equity investments as a source of capital.

2.2 Rebutting of the Conventional Wisdom

Nevertheless, the conventional wisdom does not explain the emergence of the venture lending industry. Over time, a plentiful evidence clearly rebutting the conventional wisdom was garnered. Furthermore, it proves the existence of venture debt market consisting of specific debt providers that are lending profitably to risky businesses despite the loan repayment uncertainty.

Venture lending activities can be found in the U. S., where venture debt was introduced in its initial form of venture leasing, Asia, and Europe as well. Venture debt is now considered as a significant part of the capital structure of most U.S. start-up companies. To give a convincing example, start-ups, such as Facebook and Youtube successfully used venture debt as a source of capital to fund their growth. Although it was difficult to find relevant quantitative data, Sormani claimed[10] that two-thirds to three-quarters of start-ups based in U.S. employed venture debt when satisfying their capital needs.[11] Moreover, it is estimated that approximately 40% of device companies operating in a life science business used venture debt.[12] According to research from 2010 based on individual interviews with major venture debt providers in the U.S. market, venture debt contributes between $1 – 5 billion per year to the venture capital industry. Also, two interviewees estimated that the aggregate market size accounted for 10% - 20% of the total amount of venture capital investments. Provided that in the several years before 2010 the average annual venture capital investments amounted to $25 billion, it follows that venture lenders provided between $2.5 billion to $5 billion annually (see the pie chart bellow).[13]

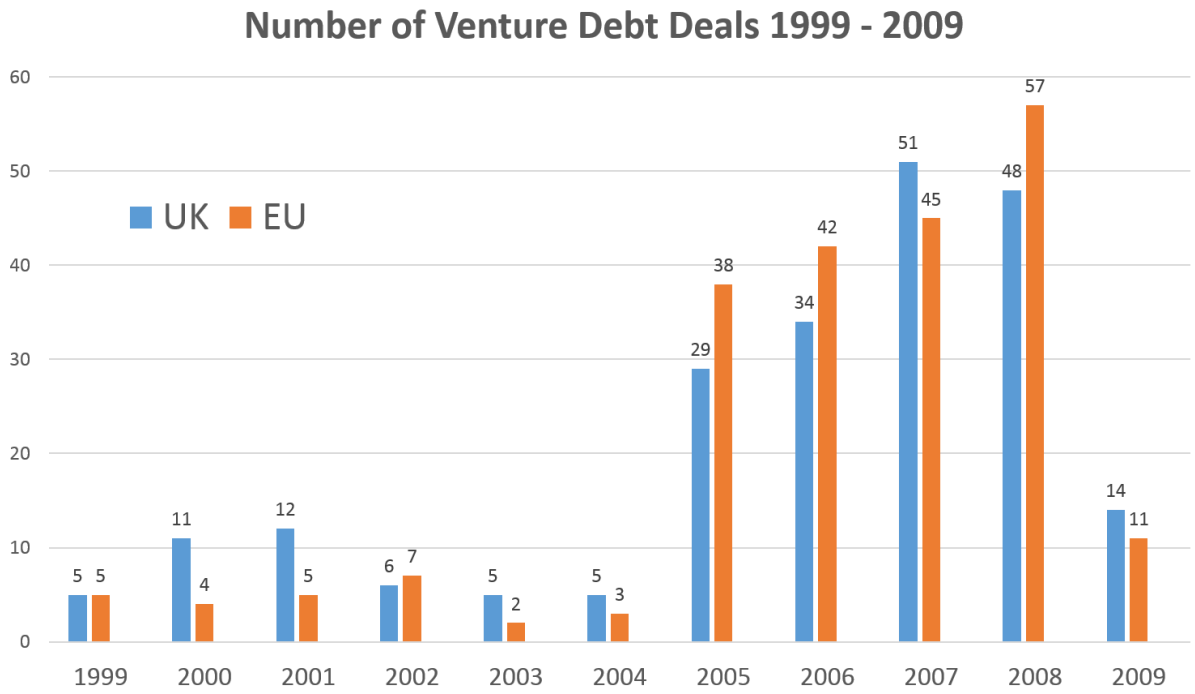
[10] Unfortunately, this estimate is releted to the period up to 2004.
[11] SORMANI, A., *Venture Finance Enhancing Growth*, EVCJ, 2004.
[12] LEVIN, S., *Venture Debt: Device Financing Lifetime or Anchor*, Elsevier Business Intelligence, IN VIVO, 2008, available at <https://www.wsgr.com/news/medicaldevice/pdf/venture-debt.pdf>.
[13] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1177, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.



2.2.1 Venture Debt in Europe

Venture debt was introduced in Europe in 1998 by one of venture debt pioneers today known as Kreos Capital. Base on quantitative data collected by three largest European venture debt providers; ETV Capital, Kreos Capital, and Noble Venture Finance, within a period of 11 consecutive years, from 1999 to 2009, those venture lenders carried out 427 deals in Europe, respectively 215 deals in Continental Europe and 212 deals in the UK. Similarly, they provided funds amounting to € 8 billion, with more than half invested in the UK. Based on the data, an increasing number of venture debt deals is observable within the period from 1990, however, with two exceptions. Because two VLs were in the process of raising funds and were not searching for investment opportunities, relatively small number of deals, 27 deals of approximately £8 million, were completed within years 2002 to 2004. Second exemption is represented, unsurprisingly, by the year 2009 which followed the financial crisis.[14] Importantly to mention, in 2003 one of the biggest U.S. lenders SVB entered the EU market. The SVB presence in the EU market undoubtedly increased the overall number of venture debt deal conducted from 2003 onwards.[15]

[14] SCOTT, S., *The Rise of Venture Debt in Europe*, BVCA, 2010, available at <http://thebln.com/wp-content/uploads/2010/05/The-Rise-of-Venture-Debt-in-Europe1.pdf>.
[15] Unfortunately, quantitative data regarding SVB's performance is not publicly available.



Source of data: SCOTT, S., *The Rise of Venture Debt in Europe*, BVCA, 2010.

2.3 Emergence of Venture Debt

Having rebutted the conventional wisdom by proving the existence of venture lending industry supplying start-up's with debt capital, it is necessary to shed light on the development of venture debt as it is known nowadays. Since the origin of venture lending industry, venture debt has been occurring in two fundamental forms;

- venture leasing, and
- venture debt.

Historically, enterprises had to rely on equity financing as the only way how to raise capital. Venture debt was introduced in the 1960s in the U.S. by specialised equipment leasing companies which started to offer equipment leasing for technology start-ups which were not eligible for traditional bank financing. Therefore, venture debt was originally structured as a venture lease for purchasing specific physical assets or equipment. Venture leasing emerged particularly to satisfy the need of hardware manufacturers, especially semiconductor companies. Those firms were followed by companies operating in a biotech industry characterised by significant capital requirements for building research laboratories. Accordingly, start-ups began approaching equipment leasing firms to search for alternative source of funds for valuable equipment purchases which would allow them to set aside equity for obtaining growth capital to finance underlying business activities, such as research and development and hiring professional employees. Start-ups intended to finance costly equipment with debt, as a form of financing with a lower overall cost of capital, and preserved equity capital for company's growth needs. In the

equipment lease form of lending venture debt was secured by the purchased equipment itself. However, the afforded funds almost never covered 100% of the equipment value.[16] In the late 1980s, Equitec Financial Group observed that virtually all start-ups' failures did not occur before reaching the fourth year after a company's foundation. Equitec subsequently began to offer leasing product on a short-term basis, three years in average, which covered the entire value of the equipment. Those equipment leases included "*equity bonus*", in a form of warrants or so-called success-based fees, compensating the higher risk profile of the start-ups and enhancing lender's returns.[17]

Venture debt in the form frequently used in the present market began to evolve from venture leasing in the 1990s when the traditional leasing companies and new entrants noticed the considerable growth in life science and informational technology businesses as new commercial opportunities. Also, in the course of time, equipment financing became less significant part of start-ups' capital needs. Particularly IT-oriented start-ups did not want loans for equipment purchases. Whereas, they saw the value of finance provided by leasing firms in the ability to extend cash runway allowing them to boost their growth by reaching crucial development milestones.[18] In addition, according to Andy Hirsch, technology start-ups wanted to appear more attractive to prospective acquirers and strategic partners by possessing more cash on their balance sheets and prove that they had some "*staying power.*"[19] Typically, the prospective acquirers or strategic partners are interested in how much cash a company has on its balance sheet rather that company's liabilities. As a consequence, the lenders start providing start-ups with growth capital loans including increased warrant coverage which were basically collateralized by the cash itself. Over time, venture lenders realised that the real essence of venture debt deals was not the start-up *per se*, but rather the cash received through future investment rounds of financing or relatively near exit event.[20]

Nowadays, venture debt is offered by VLs willing to back rapid-growth companies. However, in order to compensate the risk inherent in such ventures, they charge higher interest rates in relation to traditional banks. Moreover, such debt providers commonly take small ownerships stakes in their portfolio companies which help them to offset future losses. By exercising equity

---

[16] GORDON, P., *Venture Debt: A Capital Idea for Startups, Kauffman Fellows*, 2012, available at http://www.kauffmanfellows.org/journal_posts/venture-debt-a-capital-idea-for-startups/#footnotes> accessed 2.5.2016.
[17] BOWMAN, R., SPAZEK, S., *Best Practices for Sourcing Venture Debt: How to Create Parity and Foster Competition for your Deal*, Capital Advisors Group, 2012, available at <http://www.capitaladvisors.com/whitepapers/Best_Practices_for_Sourcing_Venture_Debt_3.14.pdf> .
[18] Ibid.
[19] LEVIN, S., *Venture Debt: Device Financing Lifetime or Anchor*, Elsevier Business Intelligence, IN VIVO, 2008, available at <https://www.wsgr.com/news/medicaldevice/pdf/venture-debt.pdf>.
[20] Ibid.

warrants, VLs can enhance eventual return from venture debt deal upon company's acquisition or IPO.

3. Venture Debt Providers

Before analysing the alternative criteria that make start-ups, which are not creditworthy from a traditional banking standpoint, eligible to a venture debt financing, it seems essential to describe major types of venture debt providers that can be found in today's venture lending industry.

Most importantly, from entrepreneurs' perspective, the type of VL has a significant impact on the favourability of credit terms. Even though VLs are considered to be less risk-averse in comparison to traditional banks, each type is characterised by a different willingness to approach risky projects. The main purpose of venture debt as financing instrument is to provide a start-up with a complementary source of funds which can be employed in the same way as equity without any uses restriction. Therefore, entrepreneurs should do their own due diligence on VLs, particularly the lender's reputation, for instance, the behaviour of a given lender in previous deals. Since different lenders bring a different set of conditions to the table, choosing a right partner is of great importance. Conversely, entering into an agreement with a wrong partner could have a detrimental impact on start-up's future existence, particularly in case inability to service the debt resulting in loan default.

The distinction between types of VLs consists, for example, in the source of funds, business goals followed by providing debt capital, and lender's risk-averse profile. In conjunction with different willingness to back risky and unproven start-ups, similarly to VCs, certain VLs are focused exclusively on established revenue generating start-ups. Under these circumstances, for instance, Bridge Bank, to some extent, resembles traditional lenders since it requires the prospective borrower to generate enough revenue from their operations to repay the advanced debt.[21] Traditionally, debt providers present at venture lending industry can be categorised into three groups based on how they are funded.[22]

Werdegar divides VLs into three categories as follows:

- banks,
- diversified financial institutions, and
- institutionally-backed funds.[23]

[21] LEVY, A., *Out of the way VCs: Banks muscle in on tech boom*, CNBC, 2014, available at <http://www.cnbc.com/2014/10/14/-as-banks-chase-boom.html>, accessed on 31.5.2016.
[22] Importantly, the source of funds also serves as an important determinant of lender's behaviour.
[23] LEVIN, S., *Venture Debt: Device Financing Lifetime or Anchor*, Elsevier Business Intelligence, IN VIVO, 2008, available at <https://www.wsgr.com/news/medicaldevice/pdf/venture-debt.pdf>.

Nevertheless, due to the economic events in 2008 the current venture debt market is mostly dominated by banks and "*pure*" venture debt firms. Therefore, the focus of the following part of the thesis is put on detailed description main differences between VLs operating either as banks or their non-bank counterparts, venture debt firms.

Although both bank and non-bank lenders have strong financial incentives to provide debt capital to rapid-growth businesses, the rationale behind the lending decision differs. Firstly, banks and venture debt firms pursue different financial outcomes. Secondly, as mentioned above, one of the major distinctions between those two types of VLs resists in the level of risk they are willing to take on. As a result, risk-averse lenders typically mitigate the higher risk by including negative restrictions which could diminish the flexibility of received debt capital. Even though the market standard is no covenants or MAC clause only, banks frequently insist on having more control over the borrower.[24] In comparison to the non-banks, term sheets of banks typically contain either financial or non-financial covenants. From the company's perspective, the number and nature of covenants significantly influence overall favourability of proposed terms, thus, constitute important criterion when choosing venture debt partner.

Another crucial reason for giving weight to proper VL's selection rests in the measures that might be taken by a given lender when a start-up approaches the zone of insolvency defined as a state where the entity in not able to satisfy its financial obligations as they become due. WTI, as one of the major non-bank providers, typically opts for a restructuring of the debt deals, meaning reducing the amount of each monthly payment by extending the ultimate loan repayment period. WTI prefers so-called "*friendly foreclosure*" allowing the start-up's management team to stay in place and continue to run the process of either finding additional capital funding or negotiating company's acquisition. Especially when aiming for company's sale, existing and experienced team is more capable of getting a better offer, as opposed to inexperienced group appointed as a result of lender's foreclosure.[25]

3.1 Venture Bank

Among U.S. major bank players in the venture lending industry belong, for instance, Comerica, SVB, Square 1, and Bridge Bank. European venture banks are represented by SVB and Barclays Bank. From the entrepreneur's perspective banks differ from venture debt firms in two ways; the level of interest rate and the size of the loan. The interest rate offered by banks is typically lower than venture debt firm's rate. The interest rate commonly ranges from 5% to 8%[26]

[24] LEVIN, S., *Venture Debt: Device Financing Lifetime or Anchor*, Elsevier Business Intelligence, IN VIVO, 2008, available at <https://www.wsgr.com/news/medicaldevice/pdf/venture-debt.pdf>.
[25] Ibid.
[26] SAMIR, K., *Venture Debt 101 – Banks vs. Venture Debt Firms, 2013*, available at http://pevcbanker.com/venture-debt-101-banks-vs-venture-debt-firms/>, accessed on 2.6.2016.

depending on the start-up's risk profile. For example, Comerica in 2013 started to offer 5% interest rate as the lowest among its competitors.[27]

Regarding the size of the loan, banks are typically, due to regulatory issues, willing to lend a smaller amount of debt per venture loan, respectively up to $2 million.[28] However, the size of the loan varies from deal to deal, but importantly for entrepreneurs, banks provide less capital in relation to non-bank lenders. Therefore, since bank's venture loans have a smaller principal base on which the interest can accrue in connection with the low-interest rate, the returns on the debt obtained through interest payments do not appear to be sufficiently attractive to assume high funding risk.

Most importantly, the real financial motivation for bank lenders is not the interest yield but the option to secure start-ups' deposit accounts. Banks usually use venture loans as a tool how to attract new clients for their other banking services.[29] It follows, they only provide venture debt on condition that start-ups deposit and maintain their cash with the lending institution. Firstly, such requirement provides the bank with greater security in case of the loan default since the bank is allowed to keep track regularly on borrower's cash balance on the account against the amount of outstanding loan.[30]

Secondly, fees generated from holding deposit accounts constitute an additional source of revenue. Interestingly, according to Ibrahim's interviewee, the bank's income from deposit accounts outweighs by approximately 10% what the bank makes off the interest and related fees. From the bank-based VL's perspective, venture lending is a real deposit-driven business.[31] Therefore, the additional revenue source from providing other banking services enables banks to offer lower interest rates. The more favourable interest rate charged by banks aims not only to secure the account of a given start-up having a high probability of further cash infusion but also to attract of company's VCs as prospective clients.

Additionally, to compare with non-bank lenders, banking institutions have significantly lower cost of capital. Banks fund their investments from the short-term liabilities (deposits) typically

---

[27] LEVY, A., *Out of the way VCs: Banks muscle in on tech boom*, CNBC, 2014, available at <http://www.cnbc.com/2014/10/14/-as-banks-chase-boom.html>, accessed on 31.5.2016.
[28] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1178, <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.
[29] LEVIN, S., *Venture Debt: Device Financing Lifetime or Anchor*, Elsevier Business Intelligence, IN VIVO, 2008, available at <https://www.wsgr.com/news/medicaldevice/pdf/venture-debt.pdf>.
[30] BOWMAN, R., SPAZEK, S., *Best Practices for Sourcing Venture Debt: How to Create Parity and Foster Competition for your Deal*, Capital Advisors Group, 2012, available at http://www.capitaladvisors.com/whitepapers/Best_Practices_for_Sourcing_Venture_Debt_3.14.pdf>.
[31] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1183, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.

holding by backed start-ups but also by venture capital and private equity firms[32] and theirs portfolio companies.[33]

3.2 Venture Debt Firm

Major non-bank players are WTI, TriplePoint Capital, Hercules Technology in U.S. market, and Columbia Lake Partners, Kreos, Habert in EU market. Venture debt firms pursue different business goals by providing venture debt. Venture debt firms, to a certain extent, resemble VCs regarding their attitude towards risky deals and thus are willing to fund start-ups which result in greater financial flexibility for the borrower. On the other hand, due to the distinctions in the business model, venture debt firms charge higher interest. Double digit rate is a standard, typically ranging from 9% to 15%.[34]

First and foremost, the yields on the debt by paying the interest and loan fees constitute the real financial motivator driving the deal. Unlike banks, they do not have an additional source of revenue from providing complementary services. Moreover, higher interest rates are justified by the fact that venture debt firms bear a much higher cost of capital. Typically, non-bank lenders raise funds either from outside investors (limited partners) or, in case they are publicly traded, by selling shares.[35] As opposed to bank lenders, the cost of capital is significantly higher. Likewise, the fact that venture debt firms typically do not include covenants contributes to the higher interest rate.

On the other hand, since non-bank lenders are not subject to banking regulatory oversight they are allowed to lend to riskier businesses but also to provide larger sums of debt. Based on Ibrahim's research, U.S. venture debt firms provide debt financing in the average size of $3 million and more. The size of the deal also depends on the companies stage of development. According to Levin, WTI, as a venture debt firm focused on lending particularly to life science companies, provides in average deals at about $3 million. However, its venture loans range from $500.000 to early-stage businesses and up to $20 million to later-stage companies.[36] Providing sizable loan results in a larger principal base on which interest and other loan fees accrue, thereby increasing returns on venture loan, which further affirms the conclusion that interest constitutes a primary source of revenue.

---

[32] According to Oscar Jazdowski, head of UK origination for SVB, in 2011 SVB bank almost 600 private equity and venture capital firms.
[33] PAVONI, S., *Is European venture debt gone for good?*, The Banker, 2011.
[34] SAMIR, K., *Venture Debt 101 – Banks vs. Venture Debt Firms, 2013*, available at http://pevcbanker.com/venture-debt-101-banks-vs-venture-debt-firms/>, accessed on 2.6.2016.
[35] LEVY, A., *Out of the way VCs: Banks muscle in on tech boom*, CNBC, 2014, available at <http://www.cnbc.com/2014/10/14/-as-banks-chase-boom.html>, accessed on 31.5.2016.
[36] LEVIN, S., *Venture Debt: Device Financing Lifetime or Anchor*, Elsevier Business Intelligence, IN VIVO, 2008, available at <https://www.wsgr.com/news/medicaldevice/pdf/venture-debt.pdf>.

In conclusion, when deciding whether to raise venture debt from a bank or non-bank lender, the former may appear to be more attractive particularly due to the lower interest rate. Nevertheless, as mentioned earlier, the essential distinction between the types of venture debt providers lies in their willingness to fund risky start-ups. Entrepreneurs should not take into account only the expenses stemming from the interest rate and loan fees, but also the restrictions included in the deal which could potentially limit the flexibility of using the afforded funds. The major types of covenants and the consequences for the start-up in the event of the breach will be described in a later chapter dealing with venture debt drawbacks.

In addition, as Romans argues, a bank, in fact, does not serve as a source of capital but is focused primarily on obtaining access to start-up's deposit. Bank is in essence service provider. He points out that "*banks are in the business of lending company's own money first off.*"[37] Moreover, banks typically do not provide more loans at the same time. In contrast, venture debt firm acts more as a partner in venture debt deal. They are willing to provide funds through several rounds depending on start-up's needs. For instance, TriplePoint Capital backed Facebook in 2007 with $ 30 million and 2008 with additional $100 million in debt financing.[38]

3.2.1 Venture Debt Fund as an Opportunity for Investors

Venture debt funds resemble venture capital funds, particularly regarding the legal structure. They are commonly structured as a limited partnership. The returns of limited partners are comprised of three major elements; base return from interest, fee-based return and returns from equity warrants exercised in the event of company's successful exit. As noted earlier, non-bank lenders charge relatively high-interest rates. Additional yields result from loan fees, such as origination, restructuring and prepayment fee. Importantly, the prospective return for limited partners is enhanced by the possibility of recycling the loan funds as the debt is repaid during the fund's lifecycle.[39] Certain funds manage to recycle investors' committed capital, the overall size of the fund, up to three times. It follows that fund generates proceeds from loan payments shortly after realising the investment which enables to pay the distribution to limited partners quarterly. As a consequence, venture debt funds have shorter so-called J-Curve[40] and therefore reach a breakeven point much earlier. These funds typically pursue a 12% to 18% IRR, with target debt

[37] ROMANS, A., *The Entrepreneurial Bible to Venture Capital: Inside Secrets from the Leaders in the Startup Game*, 2013, p. 87-88.
[38] TRIPLEPOINT CAPITAL Annoucements, *Triplepoint Capital Provides $100 milion Financing to Facebook*, 2008 available at <http://www.triplepointcapital.com/news/announcements/triplepoint-capital-provides-100-million-financing-to-facebook>, accessed on 1.6.2016.
[39] FAIRVIEW CAPITAL, *Venture Debt: An Applealing Hybrid Strategy,* 2013, available at <http://fairviewcapital.com/downloads/Fairview-Capital-Venture-Debt-Primer.pdf>.
[40] The J-Curve describes how cash flows in and out of a given fund. Typically, in the early years of fund's performance the J-Curve shoes negative returns due to paying the management fees and underperformance of realised investments.

returns ranging between 12% and 15%. The uniqueness of venture debt fund resists in a combination of features of venture capital returns with continual cash flow from the debt investment.[41]

4. Determinants of Venture Lending Decision

Having disapproved the assumption that start-up companies and debt do not go together and described the major types of VLs, now it is the right place to analyse under which conditions VLs are compliant to lend. In contrast to traditional lenders, venture debt providers evaluate company's repayment capacity by using alternative criteria which basically substitute for positive cash flow and tangible assets. Furthermore, those criteria serve as important indicators of start-up's quality.

4.1 Venture Capital

4.1.1 Venture Capital as an Alternative Repayment Criterion

In simple terms, VLs typically provide debt capital to start-ups that are backed by venture capital firm. Engagement of VCs in a given start-up plays a crucial role throughout the entire process preceding the actual debt granting. Interestingly, it appears to be of importance that not only the fact that a start-up has already attracted certain VC, but also the reputation of the VC in question. In most cases, the "*ranking*" of a VC determines the eventual outcome of the due diligence stage of venture lending process. Wilson argues that VLs literally do not loan against the creditworthiness of a given start-up but the creditworthiness of the inside VC.[42]

Typically, start-up companies in their early years of business, 3 to 5 years, invest the overwhelming majority of obtained capital in boosting company's growth. High-tech start-ups can easily burn millions through research and development without generating cash flow. Therefore, if a given start-up continues to grow successfully, until achieving a positive cash flow stage, next equity round constitutes most likely its future source of funds. In fact, contrary to traditional lenders, venture debt providers do not rely on start-up's ability to generate cash flow as a source of loan repayment but its ability to acquire additional venture capital. Venture capital, or more aptly the fact that a start-up has attracted equity investors constitute the most valuable determinant for evaluating start-up's creditworthiness. From VL's perspective, venture capital serves as primary source for paying off the debt. In other words, capital provided by VCs in future equity rounds substitutes for the absenting positive cash flow. In essence, VLs lend against the

[41] SCOTT, S., *The Rise of Venture Debt in Europe*, BVCA, 2010, available at <http://thebln.com/wp-content/uploads/2010/05/The-Rise-of-Venture-Debt-in-Europe1.pdf>.
[42] WILSON, F., *Financing Options: Venture Debt*, AVC, available <http://avc.com/2011/07/financings-options-venture-debt/> accessed 10.5.2016.

probability of follow-on equity investment either from current or new investors. As pointed out by one of Ibrahim's interviewee, "*venture debt is a business of funding to subsequent rounds of equity*."[43] From VL's point of view, a start-up which has already been financially supported by a VC poses a high probability of obtaining subsequent equity investments. Based on such assumption, start-up without support from VCs are not considered prospective investment opportunity. Therefore, VLs are reluctant to lend before venture capital investment occurs.

Furthermore, VL's reliance on venture capital creates a "*symbiotic*" relationship between VCs and VLs. The relationship between VCs and VLs is based on an implicit promise by VCs to repay the loan through additional venture capital infusion. Although VCs are not explicitly obliged to repay the loan, VLs consider the implicit promise credible. It seems that VLs are provided by the promise with a certainty of follow-on venture capital round and do not insist on an explicit promise.[44]

Nevertheless, if the VLs rely on the implicit promise why they often prefer to fund early stage start-ups rather than those in their later stages of development. The preference for early stage companies indicates that VLs do not rely on the implicit promise itself but that they ascribe a different degree of credibility to the VC's commitment which is shaped by several factors, particularly the company's stage of development.

4.1.1.1 Early Stage vs. Later Stage Start-ups

Following part will clarify as to whether the stage of start-up's development affects the probability of receiving venture debt. In fact, certain favourability for early stage companies is observable across the venture lending industry.[45] So why VLs prefer to grant debt to younger rather than mature start-ups.

Traditionally, VLs tend to fund start-ups that have recently raised Series A or Series B equity rounds of financing. According to a study research from the year 2012 carried out by Fischer and de Rassenfosse, the substitution effect between venture capital and positive cash flow is much

[43] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1184, <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.
[44] It is believed that promise on implicit basis might work provided that 1) the terms are clear, 2) whether the promise was satisfied is readily observable, and 3) the infringement is punishable by the market. Regarding VC's implicit promise, the terms seem to be clear and straight-forward since VL lends to the VC-backed company in exchange for loan repayment by VCs. Secondly, paying back the debt through follow-on investment or the breach of the promise are both observable. Finally, in the event of a breach VLs will not fund other portfolio companies of a given VC, thereby punishing the VC for not satisfying the debt. Additionally, not supporting own portfolio companies would induce negative consequences on VC's reputation within the venture capital industry. (IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1187, <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.)
[45] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1187, <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.

stronger for early stage companies.[46] Under these circumstances, it might indicate that venture capital "*perfectly*" substitutes for cash flow only as far as early stage start-ups are concerned. Thus, it appears crucial to shed light on factors supporting VLs' preference for early stage start-ups. Contrary to early stage ventures, established companies may reach the breakeven point, thereby inducing the traditional repayment criteria to arise and the start-up may subsequently become profitable.

Nevertheless, as emphasized earlier, VLs consider venture capital funding as a primary source of cash for servicing the debt. It follows that the preference for young start-ups resides in the likelihood of follow-on investments from VCs. Start-up which received its first venture capital poses a high degree of certainty that it will be able to raise additional funds through subsequent equity rounds and thus constitutes investment with "*minimal*" financing risk.

Several factors enhance the probability of future equity investment in the eyes of debt providers. Firstly, venture capital firms generally reserve capital to support their portfolio companies in follow-on investment rounds.[47] VCs typically applied a strategy consisting of multiple equity rounds which allow them to address the risk better. The reserves are often similar to the initial investment. Furthermore, VCs most likely employ these reserves to back their portfolio companies in early stages where the capital need is most urgent. Regarding the VC's reputation, no VC wants to be known for not supporting previously backed companies.

In addition, VCs do not have a reason to abandon companies in their early stage of development, since, as Ibrahim's intervenee opined, "*not enough can go wrong between the initial and follow-on rounds to not provide additional capital one the prior investment is burned.*"[48] In contrast, VCs appear not to be so tolerant when a start-up misses crucial growth milestones in later stages. Thus, such failures could prevent the company from receiving additional venture capital. VLs see the chance of company's abandonment higher for more mature companies, where the ultimate success may be estimated more precisely which enables VCs to appraise whether the investment is worth keeping at it.[49]

Interestingly, the willingness to stick with portfolio companies distinguishes VCs from angel investors, who do not commonly participate in subsequent equity rounds. According to Taulli, venture debt is suitable for companies with strong financial backing, not only from VCs. However,

---

[46] FISHER, T., de RASSENFOSSE, G., *Venture debt financing: Determinants of the lending decision*, Technische Universität München, The University of Melbourne, 2012, p 19, available at <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1909602>.
[47] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1187, <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.
[48] Ibid., p. 1186.
[49] Ibid., p. 1187.

VLs perceive the possibility of follow-on backing more certain in the case of VCs.[50] This further support the assertion that VLs bet on the likelihood of follow-on investment rather than purely rely on VC's implicit promise. Angel backed start-ups pose higher funding risk for lenders since the probability that the company receives additional equity funds depends on the ability of angel investors to attract new investors, VCs.[51]

Also, the fact that majority of start-ups fails contributes to why fledging start-ups are a safer investment. Unlike VCs, based on the relatively low returns on successfully repaid loans, VLs can afford only a few defaults. Interestingly, as Ibrahim argues, for the outcome of the investment is not determinative if the start-up fails but when. Owing to the VC's support at the beginning of company's development, lending earlier assures that the debt will be satisfied before start-up's failure. Based on above described, VC-backed early stage companies can be nearly confident that VCs will participate in follow-on equity rounds. Thus, VLs consider debt financing to those start-ups to be posing a relatively less financing risk.

In contrast, the lenders' assumption that follow-on investments to later stage start-ups are, to a greater extent, uncertain suggests that from venture lending point of view, venture capital does not entirely substitute for cash flow and rather alters into a complementary relationship in connection with company's advancing development. The support from VCs to start-ups in later stages of development becomes less intensive. Venture capital firms which are focusing solely on later stage equity rounds usually reserve fewer capital resources for their follow-on investments. The ultimate start-up's success relies on various determinants, such as revenue generating product and skilled management team, causing the loan repayment depending on more factors.[52] Therefore, more mature start-ups are typically required not only to be VC-backed but also to generate a certain level of revenue to be able to secure venture debt.[53]

Under these circumstances, as indicated earlier, the willingness to favour early stage start-ups contradicts the existence of the implicit agreement between venture capital and venture debt providers. In the opposite case, the substitution effect would have to be independent on start-up's stage of development. This conclusion suggests that VLs when predicting the likelihood of follow-on equity round of financing, rely on the degree of credibility of the promise. VLs do not mitigate the risk by relying on the implicit promise as such, but rather through estimating the likelihood that the start-up will receive future equity funds in dependence on the credibility of VC's

---

[50] TAULLI, T., *How Venture Debt Financing Works and How To Get It*, 19.9.2008, available: <http://www.bloomberg.com/news/articles/2008-09-19/how-venture-debt-financing-works-and-how-to-get-itbusinessweek-business-news-stock-market-and-financial-advice> 5.5.2016.
[51] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1187, <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.
[52] Ibid., p. 1188.
[53] For instance, Lighthouse Capital provide venture debt, between $10 and $20 million, to later stage start-ups that already generate some revenue.

commitment to support a given start-up. Factors, such as the stage of company's development and VC's reputation affect the degree of credibility that VLs ascribe to the promise. Therefore, for venture lending decision the underlying factor indicating that the next venture capital funding will occur is the credibility of investor's commitment.

So as to further reduce the inherent risk, VLs typically prefer to lend shortly after major equity investment took place, for instance, up to six months. In some cases, venture debt is provided as a part of venture capital round and usually accounts approximately for 30% to 50% of the total amount of capital.[54] In this case, a borrower receives venture debt when still have enough equity funds. VLs expect the loan to be partially repaid by the funds from recent funding before the company runs out of money. On the other hand, as will be analysed in detail in a later chapter, the fact that borrower begins to repay the debt without even using it negatively affect the actual cost of capital of the venture debt.

4.1.2 Venture Capital as a Signal of Start-up's Quality

The venture capital backing not only serves as a primary source of loan repayment. However, it also communicates signal regarding the start-up's future success. In other words, insider VC provides a start-up with "*quality tag*" which is instrumental for VLs when selecting prospective portfolio companies. VLs typically evaluate the general reputation of a given VC, prior working experience, and also fund's stage of life.[55] VC's reputation is essential, firstly, for the capacity to identify a start-up and, secondly, for the willingness to support the start-up financially. VLs during the process of due diligence typically assess VC's track record concerning the supportive attitude towards its portfolio companies in previous deals. A start-up backed by top-tier VC has a high chance of receiving venture debt. Not only because VL believe in the ability of such VC to properly select promising start-up, but also due to the ability to attract new outside investors who perceive such start-up as an investment with a potential to generate high yields.[56]

It follows that when selecting a start-up VL performs due diligence on both the VC firm and the start-up itself. However, since start-ups, especially the young ones, are challenging and costly to evaluate, lenders commonly piggyback on VC's due diligence. Relying on the due diligence conducted by VCs is also the reason as to why VLs prefer to lend immediately or in a short time after equity financing since the assessment documentation is "*fresh*" and readily accessible. Another reason why lenders do not put so much effort in start-up's due diligence results from the

---

[54] ACUZCO, J., *What I Venture Debt and How Should Startups Use It?*, 2015, available at http://nextviewventures.com/blog/what-is-venture-debt/>, accessed on 12.5.2016.
[55] Funds in their later stages life cycle often have less reserves for next equity rounds.
[56] HOCHBERG, Y., V., SERRANO, C., J., ZIEDONIS, R., H., *Patent Collateral, Investor Commitment, and the Market for Venture Lending*, 2015, p. 10, available at <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2506911>.

fact that VL's professionals are bankers with expertise in evaluating company's cash flow, balance sheets, and other tools allowing them to estimate firm's repayment capacity.[57]

In addition, VC serves as an intermediary within the relationship between start-ups and VLs. The relationship is characterized by informational asymmetries which negatively influence lenders incentives to provide a loan. The typical lending transaction involves entrepreneurs, VCs, as informed intermediaries, and lenders, as uninformed outsiders. Particularly, the infusion of venture capital conveys to the lender that the VC has strong incentives to monitor and guide the start-up due to own capital at risk.[58]

4.2 Intellectual Property

4.2.1 Intellectual Property as an Alternative Repayment Criterion

Similarly to traditional debt providers, to further mitigate the financing risk VLs require the provided capital to be secured by secondary source applicable in the case of start-up's failure to raise venture capital.

Traditionally, the repayment capacity of a borrower is not only based on ability to generate positive cash flow but also on the liquidation value of company's physical assets that could serve as collateral. A commercial loan is generally secured by inventory, machinery, and real estate. It follows that the value of collateralized assets constitutes a secondary source for paying off the debt. In the event of a default on the loan, the lender is entitled to seize and subsequently sell the collateralized assets. The sale proceeds are being used to satisfy the outstanding debt, primarily principal but also the interest if the proceeds can cover both. Most importantly, the possibility of liquidating borrower's assets but mainly the expectation of the liquidation value significantly affects VL's incentives to provide debt capital. Naturally, by requiring collateral, debt providers reduce the potential occurrence of losses incurred by borrower's inability to service the debt. Furthermore, the collateral also serves as an enforcing mechanism increasing the borrower's incentives to avoid the default.[59]

Consequently, VLs also require the borrower to secure the loan with collateral to ensure that the loan will be, to some extent repaid in the case of VC's failure. Typically, venture debt deals are secured by a blanket lien on all borrower's assets. However, the overwhelming majority of young growth-oriented companies possess no or few tangible assets which do not suffice to cover the

[57] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1190 – 1191, available at https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.
[58] HOCHBERG, Y., V., SERRANO, C., J., ZIEDONIS, R., H., *Patent Collateral, Investor Commitment, and the Market for Venture Lending*, 2015, p. 8, available at <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2506911>.
[59] Ibid., p. 7.

entire debt.[60] VLs are therefore placed in a position to find an appropriate substitute for tangible assets. The solution stems from the basic characteristic of start-ups as rapid growth companies operating in the technology and innovative sector. Those start-ups significantly invest in intangibles to enhance their uniqueness and strengthen their position in the market. The true market value results from start-up's IP, such as patents, trademarks, copyrights, and trade secrets. Crucial for VLs, IP represents a type of assets that can be liquidated, thereby being eligible to serve as collateral.[61] In general, the value of intangible assets resides in their ability to exclude competitors from employing the invention protected by the IP right.

Despite the liquidated nature of IP, companies possessing intangibles had traditionally limited access to debt capital due to the high information asymmetry and uncertainty of salvage value.[62] However, as opposed to traditional lenders, venture debt providers evaluate repayment capacity by virtue of the intangible assets holding by a given start-up. VLs are willing to accept IP as collateral. Therefore, the chance of receiving venture debt significantly increases supposing the intangible assets, especially patents, are offered to secure the venture loan. Crucially, the major determinant influencing the likelihood as to whether a start-up will receive a venture debt is the liquidation value of such assets. However, contrary to physical assets, intangibles *"are hard to value ex-ante and sell ex-post*".[63] Given the fact that among IP, patents are most commonly accepted collateral, the ensuing part will deal with factors affecting the value of patents.

Under these circumstances, the willingness of debt providers to lend against intangible collateral is basically shaped by two elements; the level of collateral market liquidity and the redeployable nature of intangible assets. Firstly, the liquidation value of patents is ascertained by the trading conditions in the patent resale market. The market liquidity depends predominantly on the number of prospective patent purchasers and costs expended in the process of finding and negotiating with them.[64] Overall, the likelihood that a start-up will receive a debt capital is directly proportional to the level of liquidity in the collateral market. It means that increasing market liquidity affirmatively alters lenders' expectation of the liquidation value of the offered assets and consequently the start-up's chances to secure venture debt increase.

---

[60] HARDYMON, F., LERNER, J., LEAMON, A., *Gold Hill Venture Lending*, HBS Case no. 804-083, 2005, p. 3.
[61] FISHER, T., de RASSENFOSSE, G., *Venture debt financing: Determinants of the lending decision*, Technische Universität München, The University of Melbourne, 2012, p. 4, available at <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1909602>.
[62] LOUMIOTI, M., *The use of intangible assets as loan collateral*, University of Southern California, available at https://pdfs.semanticscholar.org/0bd2/e9e8e0db733e3bad144200fdadad73dac23d.pdf>.
[63] HOCHBERG, Y., V., SERRANO, C., J., ZIEDONIS, R., H., *Patent Collateral, Investor Commitment, and the Market for Venture Lending*, 2015, p. 1, available at <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2506911>.
[64] Ibid. Page 7.

Secondly, the positive effect of "*thicker*" collateral market on the probability of obtaining a loan is enhanced, providing that the intangibles are redeplyable in its nature.[65] It can be classified between patents which are firm-specific and those being readily redeployable to alternative users. Needless to say, the liquidity of redeployable assets is higher in comparison with the assets that are tied to specific users or uses.

Now, for a closer understanding of the venture lending model, it is essential to consider as to whether substitution effect applies to the relationship between tangible and intangible assets. Ibrahim argues that start-up's IP fully substitutes for tangible assets. In the case of one Ibrahim's interviewee, intangibles served more than once as an alternative source of repayment. [66] Nevertheless, based on the empirical research performed by Fisher and de Rassenfosse a perfect substitution effect was not proven. The lack of substitutability between tangible and intangible assets is likely to be explained by the fact that the IP itself is typically bundled, for instance, with the patent professionals or valuable internal knowledge enabling full exploitation of the invention in question.[67] Such conclusion is further supported by the fact that high technology products are based on several interconnected patents where the actual value resists in holding the entire IP portfolio. To put it more simply, a piece of tangible assets is not substitutable by a single patent. However, despite the absence of substitution effect, it is clear that offering patents as collateral increases the likelihood of receiving venture debt.

Furthermore, possessing valuable intangible assets enhances the overall enterprise value of start-up, thereby increasing its eventual salvage value and making the holder more attractive for a prospective acquirer in the case of liquidation. Owing to the senior position in the capital structure typically taken by VLs, if the company ultimately fails the lenders will recoup the losses before equity or subordinated debt holders.

4.2.2 Intellectual Property as a Signal of Start-up's Quality

Likewise, the reputation of VCs, start-up's IP portfolio informs VL about company's qualities. According to the research study mentioned above, the even mere holding of valuable patents increases start-up's chances to receive venture debt.[68] Such conclusion proves that IP does not only constitute a type of assets capable of being liquidated. However, it also conveys positive

[65] Importantly, the patent's instrumental impact is applicable only provided that the collateral resale market is liquid.
[66] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1187, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.
[67] FISHER, T., de RASSENFOSSE, G., *Venture debt financing: Determinants of the lending decision*, Technische Universität München, The University of Melbourne, 2012, p. 16, available at <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1909602>.
[68] Ibid. p. 16.

signals with regards to start-up's prospective success. Hence, from lenders' perspective, IP's signaling value facilitates the process of start-up selection. Interestingly, the "*signaling effect of patents"* is much stronger for young start-ups since in the case of more mature companies the information asymmetries are reduced by availability of more information of a given company business.[69]

In general, IP, especially patents, pose two signaling effects. Firstly, owing to the ability to exclude other competitors from using the protected innovation, they directly affect start-up's future performance. On the other hand, patents indirectly advise investors on the quality of start-up regarding its innovative nature and high-quality technology.

4.3 Equity Warrants

Generally speaking, equity warrants serve VLs to compensate the risk-profile of rapid growth companies and allow them to participate in company's equity appreciation, thereby boosting VL's overall returns. By acquiring equity warrants, VLs can participate in the company's upside alongside with existing shareholders.

Equity warrants are options to purchase start-up's stock being exercisable through a future equity financing. The so-called "*equity kicker*" constitutes extra proceeds from the loan on condition of start-up's successful exit. Therefore, exercised warrants may eventually enhance overall yield from the debt capital in addition to the profit received through interest and other payable fees.[70]

Equity options entitle a VL to purchase start-up's shares, typically preferred stock, at a specified price, knows as strike price, within a given period. The right to exercise the warrants usually lasts up to 10 years, 7 to 10 years respectively.[71] More mature companies often negotiate shorter period, up to 7 years, since they are in a stage of development closer to an exit event. Equity warrants are, in most cases, expressed in the form of a percentage. Commonly, the warrant coverage ranges from 4% to 15%[72] of the total size of a loan[73] depending on the type of VL.[74] For instance, venture loan of € 2 million with 12% warrant coverage entitles the warrant holder to purchase shares worth 12% of € 2 million, or € 240.000. The exercise price is typically based on

---

[69] HESSE, M., LUTZ, E., TALMOR, E., *Patent Activity of Start-ups and the Structuring of Venture Lending Contracts*, 2015, p. 16, available at <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2630014>.
[70] COLOMBIA PARTNERS blog, available at <http://www.clpgrowth.com/our-blog/2016/1/4/warrants>, accessed 5.5.2016.
[71] SAMIR, K., *Venture Debt 101 – Banks vs. Venture Debt Firms, 2013*, available at http://pevcbanker.com/venture-debt-101-banks-vs-venture-debt-firms/>, accessed on 2.6.2016.
[72] Banks 4% - 5%, as opposed to venture debt firm, from 8% up to 15%.
[73] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1179, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.
[74] Ibid.

the share price in the most recent equity round. The granted warrants are frequently exercised before start-up's sale, IPO or change of control. Given the fact that warrants allow VLs to increase the ultimate return on the debt investment in the case start-up's successful exit, it is important to clarify, to what extent, the equity warrants constitute an incentive to provide a debt capital, in addition to major determinants venture capital and start-up's IP.

Ibrahim argues that warrants are not considered to be a significant financial driver for VLs. VLs find the chance to participate in the upside as a *"nice bonus*."[75] Conversely, on the grounds above mentioned research study, the majority of VLs provide debt funds with the aim to acquire an equity share in a start-up through warrants.[76] It is believed that equity warrants constitute important criterion within the process of venture lending decision. By offering larger warrant coverage start-up increases its chance of receiving venture debt. This conclusion entirely contradicts with the argumentation that VLs regard warrants only as a "*nice bonus*."

To resolve such discrepancy, it is crucial to approach this issue by looking at the different lending models applied by the bank and non-bank lenders. Firstly, as emphasized earlier, banks regard venture debt business as an opportunity to secure start-ups' deposit accounts. On the other hand, in the case of non-bank VLs the interest accrued constitutes a major source of yields. Non-bank lenders attach more importance to the option to generate additional profit from the loan. Furthermore, the emphasis put on the role of equity warrants in noticeable because venture debt firms commonly require higher coverage, as opposed to banks.

To conclude, regardless the type of VL, loans with equity warrants are in general preferable. The coverage amount offered by start-up affects the incentives of VL to back given the company.[77]

4.4 Start-up as a Lending Decision Determinant Itself

The above described significance of involvement of venture capital firm may suggest that for venture debt in order to work the essential element is venture capital, respectively the likelihood the next equity round of financing will occur. Since the follow-on capital investment constitutes the source of cash flow for paying off the loan, it might appear that VLs are not interested in start-up's eventual success. Furthermore, whether the start-up eventually succeeds often turns out after the debt has been fully repaid. This indicates that VLs are predominantly focused on the reputation of existing equity investors, rather than the actual qualities of the start-up, such as the

[75] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1183, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.
[76] FISHER, T., de RASSENFOSSE, G., *Venture debt financing: Determinants of Venture Lending Decisions*, Technische Universität München, The University of Melbourne, 2012. p. 9, available at <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1909602>.
[77] Ibid., p. 4.

uniqueness of start-up's product or service, skills of the management team, and reasonably sound business plan.

Mann came to a conclusion that start-up itself seems to be irrelevant from the venture debt provider's perspective.[78] It is true that the final decision whether to provide debt capital is to a great extent influenced by the reputation of start-up's VC, which serves as a contributory factor determining the likelihood of ongoing support from a given VC. Ibrahim does not oppose Mann's assertion. However, he opined that even through the major venture debt driver is represented by the credibility of investor's commitment to provide future cash infusion, the start-up's final success matters as well.[79]

Similarly to VCs, when appraising a given start-up as a prospective investment and addressing the funding risk, VLs typically focus on company's go-to-market strategy, product development, and the reputation of founders if they are "*repeat entrepreneurs*." Crucially, VLs place an emphasis on evaluating the key milestones defined by the management team. Subsequently, lenders try to estimate company's chances to attract outside capital. Glen Mello[80] adds that prior entering into loan agreement it is essential to develop a relationship with the prospective borrower.[81] From the nonbank's perspective, according to Dave Gravano from WTI, the process of approaching investment opportunity starts and ends with the start-up's management team.[82] The management team plays an essential role since the efficient team in conjunction with meaningful growth expectation carry a higher probability of attracting new investors for subsequent equity funding.

It does not seem surprising that VLs dedicate part of their due diligence to understand start-up's future strategy. VLs have several reasons why should be interested in company's continuing growth and ultimate success.

Firstly, the majority of VLs acquires equity in portfolio companies in the form of warrants. As mentioned above, by exercising granted warrants, venture debt providers can get a share in start-up's upside.

Second reason why start-up's performance is relevant to VLs stems from the rationale behind providing venture debt as far as bank-based lenders are concerned. For banks, a successful start-

[78] MANN, R., J., Secured Credit and Software Financing, Cornell Law Review, Vol. 85, p. 134, 1999, available at <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=167971>.
[79] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1187, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.
[80] Managing Director of SVB's accelerating team in Boston.
[81] ACUZCO, J., *What Is Venture Debt and How Should Startups Use it?*, NextView Ventures, 2015, available at: http://nextviewventures.com/blog/what-is-venture-debt/> accessed on 27.5.2016.
[82] GRAVANA, D., *Thoughts on Venture Debt from WTI*, Pevcbanker, available at <http://pevcbanker.com/thoughts-on-venture-debt-from-wti/> accessed 10.5.2016.

up that steadily grows constitutes a constant source of revenue generated by securing start-up's deposit account. Obviously, if the start-up fails, even after repaying the entire debt, the bank will lose an additional source of cash from proving banking services. Moreover, a successful start-up is usually capable of raising several follow-on equity rounds. It is likely that obtained capital will be deposit with the lending institution. Last but not least, the portfolio of billable services extends with the bigger client.

Thus, even though at the first sight VLs do not need to turn their attention to company's prospective performance, it is crucial for both types of VLs based on the reasons described above to select the right partner and closely appraise start-up's upside potential.

4.5 Factors Affecting the Trade in the Venture Debt Market

Based on the performed analysis of what criteria enable VLs to evaluate repayment capacity of start-up companies, the trade within the venture debt industry is, unsurprisingly, shaped by two elements; venture capital and intangible assets. VLs estimate the likelihood that future equity round will occur on the basis of the credibility of a given VC's promise to keep supporting the portfolio start-up. Most instrumental for VLs is, therefore, the reputation of existing investor, particularly the ability to provide further capital or attract new investors.

Secondly, VL's willingness to fund a start-up company possessing intangible assets is affected by the liquidity level of secondary IP market. Liquid market facilitates the overall liquidation process which is faster and enables to determine the liquidation value of such assets more accurately. Particularly, the uncertainty inherent in determining the market value of IP discourages lenders to accepts intangibles as loan collateral. More "*thicker"* trading in the resale market increases lender's willingness to lend against intangible assets. As a consequence, more technology start-ups would have the option to raise debt capital. Traditionally, the patent market was considered to be highly illiquid due to several reasons. The market is characterised by high transaction costs and conflicts between seller and buyer caused by a great difficulty to determine the value of patents. The inability to ascertain patent value results from the unique nature of IP. Patents lack comparables which would enable to estimate the value of a given asset.[83] However, nowadays it is apparent that more intangible assets, particularly patents, are being pledged as collateral[84] for debt financing, and the growing liquidity of patent resale market is observable.[85]

[83] HOCHBERG, Y., V., SERRANO, C., J., ZIEDONIS, R., H., *Patent Collateral, Investor Commitment, and the Market for Venture Lending*, 2015, p. 8, available at <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2506911>.
[84] Predominatly intangibles which generate revenue from patent and trademark licesses.
[85] SUNG, K., *IP Asset Value as Collateral: The Increasing Use Of Patents as Collateral In Asset-Based Lending*, abfjournal, 2016, available at http://www.abfjournal.com/articles/ip-asset-value-as-collateral-the-increasing-use-of-patents-as-collateral-in-asset-based-lending/>, accessed on 22.5.2016.

4.5.1 Commitment of the Equity Investor

Crucially, from the perspective of VL, the credibility of VCs' commitment to financial support risky start-ups is influenced by the start-up *per se,* respectively its continual growth by achieving key development milestones. Likewise, the reputation of existing VC has a significant impact on the probability of subsequent equity financing. Being backed by top-tier VC strengthens the credibility of VC's commitment from the perspective of VL. Moreover, it conveys positive signals about start-up's potential success to prospective investors. However, the credibility of investor's commitment is also affected by other causes.

Importantly, the credibility is significantly influenced by the current situation on the capital supply side. Negative shock in capital supply typically results in limited funds available to venture capital firms. Under these circumstances, VCs become capital-constrained. Moreover, also VLs do not have access to funds. Venture debt firms find themselves in a similar situation to VCs. Venture banks investing deposits of their customers are limited in the amount of capital available to provide to start-ups since among their cash resources significant position is held by particularly private equity and venture capital firms.

Additionally, VCs can be, to a certain extent, limited in marketing their funds due to the diversity of rules in different countries. In this case, VCs face high costs spent on raising requested funds. In the EU this adverse situation was eliminated by introducing EuVECA Regulation. EuVECA is intended to facilitate access to capital for equity funds qualifying for a so-called European passport. As a result, funds managers, managing assets under management in the size beneath €500 million, instead of the necessity to comply with different national laws they will be subject to single law regime within the EU.[86]

Knowing that VCs possess fewer funds that can be provided to start-ups diminishes incentives to provide venture debt.[87] From the point of view of VL, the credibility of capital-constrained VCs to support is lower in comparison with less capital-constrained VCs. Consequently, despite the achievement of crucial milestones, the start-up is deprived of receiving venture debt due to being backed by VCs with an insufficient amount of funds to supply additional capital. As indicated in the previous chapter, the reputation of a given VC plays a crucial role throughout the venture lending business model. In addition to the ability to choose promising

[86] KPMG, European Venture Capital Funds (EuVECA) & Social Entrepreneurship Funds Regulations (EuSEF), 2013, available at <https://www.kpmg.com/LU/en/IssuesAndInsights/Articlespublications/Documents/European-Venture-Capital-Funds.pdf>.

[87] Following the dot-com bubble, debt financing to start-ups backed by investors who closed funds before 2000 (less capital-constrained) slightly increased by 2002. Conversely, lending to start-ups backed by more capital-constrained investors fell from 17% average rate to mere 1.5% by 2003. (HOCHBERG, Y., V., SERRANO, C., J., ZIEDONIS, R., H., *Patent Collateral, Investors Commitment, and the Market for Venture Lending*, 2015, p. 4.)

start-up, support portfolio companies despite missed key milestones, and attract outside venture capital, top-tier VCs, despite unfavourable conditions in venture capital market, have better access to funds. It is believed that top VC are more likely to become less capital-constrained in relation to "*bottom*" VCs. Thus, economic cycles and certain legal impediments hindering access to capital may limit start-ups chances of raising capital directly by reducing the supply of VC funds on one hand, but also indirectly by restricting the access to debt channels by decreasing the credibility of the likelihood of future equity infusion.[88]

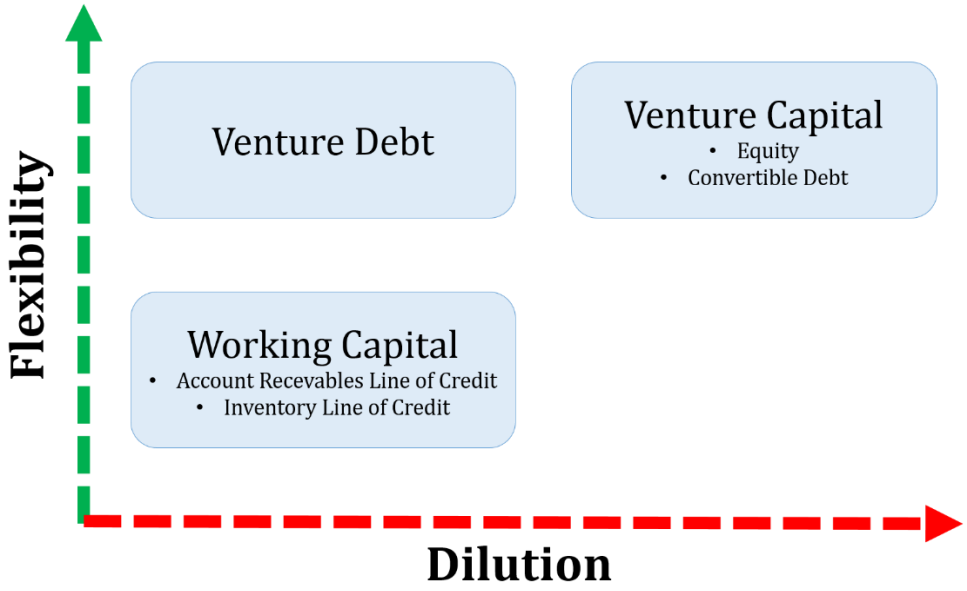
5. Venture Debt in Practice

5.1 Venture Debt Benefits

Venture debt represents an attractive option of acquiring a capital which could be significantly beneficial for the start-up. Since venture debt constitutes complementary, not alternative, source of funds to venture capital, taking on venture debt is intended to affect affirmatively both entrepreneurs and VCs engaged in a start-up. Importantly, receiving venture debt provides all equity holders with certain advantages equally, however, existing VCs are entitled to additional benefits applicable solely to them. Therefore, the following part will describe major incentives of companies behind raising venture debt instead of equity.

Nevertheless, it is of importance to first emphasise that venture debt is considered to be a financially flexible source of capital regarding its possible uses. Typically, venture debt is provided in the form of growth capital. Growth capital is not tied to a specific purpose. Therefore, venture debt could be employed according to each start-up's needs. Most importantly, start-up is entitled to use the funds "*in the same way a company would use equity, with no strings attached*."[89] Such funds can be used to finance working capital, invest in company's growth or other purposes, such as equipment purchase or financing acquisition.

[88] HOCHBERG, Y., V., SERRANO, C., J., ZIEDONIS, R., H., *Patent Collateral, Investor Commitment, and the Market for Venture Lending*, 2015, 8 p, HOCHBERG, Y., V., SERRANO, C., J., ZIEDONIS, R., H., *Patent Collateral, Investor Commitment, and the Market for Venture Lending*, 2015, p. 8, available at <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2506911>.
[89] LEVIN, S., *Venture Debt: Device Financing Lifetime or Anchor*, Elsevier Business Intelligence, IN VIVO, 2008, available at <https://www.wsgr.com/news/medicaldevice/pdf/venture-debt.pdf>.



5.1.1 Benefits for all Equity Holders

First and foremost, funders generally prefer to raise capital in a form of debt when they became reluctant to give more equity to outsiders, typically, as a follow-up to major equity round of financing which resulted in significant ownership dilution. Likewise, angel investors and VCs participating in early series of funding welcome the option to preserve their ownership shares.[90] Raising non-dilutive debt capital enhances the ultimate yield in the case of company's exit event. It can be objected that inside investors can provide capital on pro *rata basis,* thereby avoiding mutual dilution. However, such arrangement would further dilute founders' shares. Moreover, it could negatively affect their incentives to strive for achieving key development milestones and increasing the value of the business. Therefore, the major advantages for existing equity holders are that venture debt enables the company to acquire growth capital without incurring dilutive effect inherent in equity financing. In contrast, venture debt induces no or minimal dilution resulting from the equity warrants required by VLs.

As aforementioned, VLs typically require equity warrants in the start-up as to compensate the high risk of funding. However, the overall dilution from equity warrants commonly amounts only to 1% to 2% of the start-up equity.

Venture Debt Trade-off:

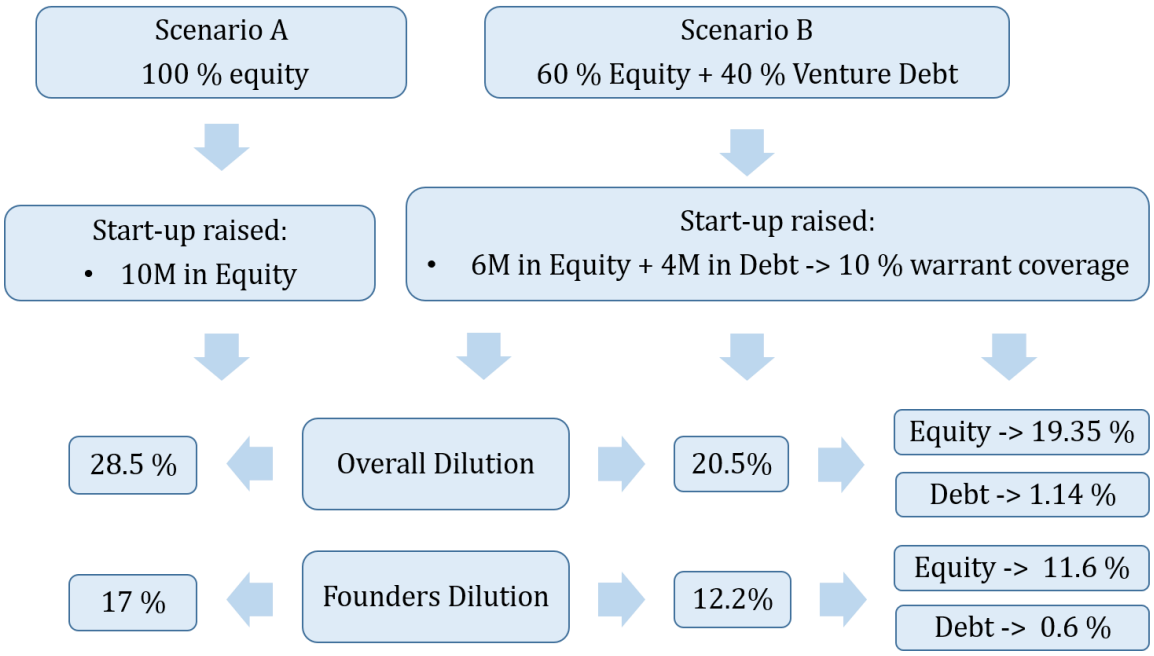
Early stage start-up company Drone XYZ raised Series A equity round of financing from Venture Capital over one year ago. During the company's development, it burned almost all funds

[90] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1196, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.

from initial equity round. In order to continue to grow Drone XYZ is going to raise Series B equity round.

Amount of Capital to Raise	€10 M
Drone XYZ Pre-money Valuation	€25 M
Ownership Structure	• 60% Founders • 40% VCs

Since Drone XYZ has recently achieved several crucial milestones, it attracted new outside VCs. However, both founders and inside investors want to avoid heavy dilution by the new capital. Therefore, Drone XYZ is contemplating to raise a portion of needed capital in venture debt. Following are provided two scenarios to illustrate the different outcomes of raising the same amount of capital by equity (**Scenario A**) and by a combination of equity and venture debt (**Scenario 2**).



By raising needed capital through a combination of equity and venture debt, Drone XYZ's shareholders would be able to reduce the overall ownership dilution by 8%. Moreover, the founders would be diluted only by 12.2%, instead of 17%.

Furthermore, venture debt provides a cash runway extension. The additional time afforded by venture debt infusion enables the company to postpone the next equity financing event which

would be otherwise inevitable to continue to grow.[91] Start-ups in general, but especially those in early stages of development, experience negative cash flow and are able to burn millions of cash until eventually reaching breakeven point and become profitable by their own operations. Company's cash runway is defined as a period until the company runs out of cash and further cash infusion is required. Venture debt allows the company to gain additional time, typically, ranging from six to twelve months.[92] The extended runway is crucial for a start-up to achieve critical milestones and accelerate growth. Despite the debt costs, by hitting key milestones, venture debt enables the company to increase its valuation ahead of next equity round, thereby avoiding additional dilution. Due to higher valuation entrepreneurs are not forced to give up a significant portion of equity in exchange for requested funds. In other words, the equity shareholders receive more funds for selling less equity that is more valuable. For early stage companies, the enhanced valuation is generally more important than the cost of debt. So if the debt can bring about the increase in valuation for follow-on venture capital financing it is considered to be a rewarding investment, regardless the expense of the capital.[93]

As venture debt is deemed to be a less expensive source of capital, compared to equity financing, it is of importance to point out what partial expenses are involved in determining the overall cost of venture debt. Importantly, to compare with the debt from traditional lenders, VLs typically require higher returns on provided debt capital so as to compensate the financing uncertainty. At first, the overall price of venture loan is comprised of the interest payment and loan related fees, such as origination or prepayment fee.[94] Needless to say, the granted equity warrants certainly contribute to the ultimate cost of venture debt. As will be illustrated in the case study, the actual cost of venture debt is also influenced by structuring venture loan term sheet, particularly the amortisation period.

In general, raising venture debt can reduce the overall number of equity rounds since the debt helps start-up to closer approach the stage of profitability. By decreasing the number of needed equity investments, the company's founders and early staged VCs preserve larger ownership shares resulting in higher ultimate returns.

---

[91] GORDAN, P., *Venture Debt: A Capital Idea for Startups*, Kauffman Fellows Press, available at <http://www.kauffmanfellows.org/journal_posts/venture-debt-a-capital-idea-for-startups/> accessed on 20.4.2016.

[92] Start-up raised 10 million in Series A equity round financing. However, the company believes it needs 15 million to hit crucial milestone. By raising 5 million of venture debt the company is allowed to extend its cash runway with minimal dilution and achieve the identifiable milestone.

[93] LEVIN, S., *Venture Debt: Device Financing Lifetime or Anchor*, Elsevier Business Intelligence, IN VIVO, 2008, available at <https://www.wsgr.com/news/medicaldevice/pdf/venture-debt.pdf>.

[94] FEINSTEIN, B., NETTERFIELD, C., MILLER, A., *Ten Question Every Founder Should Ask before Raising Venture Debt, Bessemer Venture Partners*, available at <https://www.bvp.com/sites/default/files/Bessemer%20Guide%20to%20Venture%20Debt.pdf>.

Venture lenders commonly do not require board seats or observer rights in the start-up, as opposed to VCs, which is acknowledged by entrepreneurs who are rather unwilling to provide a board seat to outside investors. It is partially rationalised by the fact that typical VL's portfolio of borrowers is very large. For instance, WTI, as supposedly the most active lenders, was engaged in more than 400 deals within a three-year period, respectively from 2004 to 2007.[95] On the other hand, based on the broad range of connections, VLs certainly add value to start-up's business. In addition, the need for management monitoring is mainly eliminated by control undertaken by VCs who has strong incentives to monitor the start-up in order to reduce potential agency costs. The oversight role constitutes another reason why top-tier VCs are preferable for venture debt deals. Importantly, the combination of debt and equity warrants held by VLs, to some extent resembles preferred shares of VCs, particularly regarding liquidation preferences, and thus VLs are less exposed to opportunistic behaviour from VCs.[96] The interest of both VLs and VCs is in favour of less risky strategies, whereas entrepreneurs often opt for the more risky way. In contrast, as far as bank lenders are concerned, they are endowed with a specific monitoring tool. Banks can observe start-up financial situation by securing start-up's deposit account.[97] They are able to check the cash balance readily and alternatively, take certain measures when the balance descents below an acceptable level. Such information could be communicated to VCs, thereby enhancing VC's own monitoring mechanisms.[98]

Lastly, venture debt, likewise any debt facility, enables the company to raise capital without the necessity of setting the valuation. Despite start-up's underperformance in conjunction with missed key milestones, a start-up can raise capital, without directly exposing company's development setbacks to outside investors that could potentially discourage investors' interest.

5.1.2 Benefits to VCs

Above described benefits of the venture debt applies to all equity investors, namely founders, angel investors and VCs. Following part clarifies specific benefits exclusively on the part of VCs. VCs have several reasons why to prefer the start-up to take on venture debt instead of providing needed funds by themselves.

---

[95] LEVIN, S., *Venture Debt: Device Financing Lifetime or Anchor*, Elsevier Business Intelligence, IN VIVO, 2008, available at <https://www.wsgr.com/news/medicaldevice/pdf/venture-debt.pdf>.

[96] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1195, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.

[97] According to one Ibrahim's bank interviewee, monitoring deposit accounts is performing on daily basis.

[98] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1195, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.

Most importantly, raising venture debt enhances IRR of existing VC. In essence, IRR could be described as the rate of return a given investment is expected to generate[99], thus, IRR constitutes a crucial factor for evaluating VC's performance. Thereafter, higher IRR conveys a positive signal to prospective investors. Traditionally, venture capital firm aims to reach a minimum IRR of 30%[100] to be able to attract fund investors and compensate them for the risk inherent in financing emerging companies. In the course of raising a fund, investors make a commitment to invest a certain amount of capital. However, they typically provide the actual funds in portions depending on VC's needs. Importantly, for calculating VC's IRR the committed capital is not counted until being drawn down.[101] Venture debt allows VC to delay next equity draw down, therefore, improve its "*alleged*" performance in the eyes of prospective fund investors.[102]

Secondly, since venture debt extends the start-up's cash runway VCs can reserve their capital for future equity rounds. The additional time is essential for VCs to further evaluate the company's worthiness. To assess the upside potential is of great difficulty, therefore obtaining more time affords VCs to estimate start-up's future growth prospects more accurately. Additionally, VCs can use the reserved capital to make follow-on investments across their portfolio or to invest in new opportunities.[103]

However, not all VCs are satisfied with taking on a venture debt by their portfolio companies. Their negative attitude toward venture debt stems from the fact that the "*true"* key driver for venture debt is the quality and reputation of concerned investors. Wilson argues that if the start-up company is receiving debt funds because of the creditworthiness of his firm and other venture capital firms involved in the deal, he would rather back the company with more equity and get paid for his capital in risk.[104] However, here a potential conflict between the founders of the start-up and the VCs may arise. Entrepreneurs generally employ external debt resources for the purpose of avoiding further dilution of their shares. In addition, as described in previous chapters, venture debt serves as a complement to equity. Therefore, certain companies opt for venture debt when the amount of capital to raise is too small for an equity round.

---

[99] INVESTOPEDIA, Internal Rate of Return – IRR, available at <http://www.investopedia.com/terms/i/irr.asp>accessed on 29.5.2016.

[100] *The Conscience of a VC,*2014*,* available at <*http://www.jmyang.com/blog/2014/6/24/30-irr-a-primer-for-first-time-entrepreneurs*>.

[101] Likewise, it is argued that providing venture capital to portfolio companies in stages imporve fund's IRR.

[102] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1197 – 1998, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.

[103] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1197 – 1998, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.

[104] WILSON, F., *Financing Options: Venture Debt*, AVC, available <http://avc.com/2011/07/financings-options-venture-debt/> accessed 10.5.2016.

5.2 Venture Debt Drawbacks

Most importantly, venture debt, similarly to any other debt facility, must be repaid at some point in the future. The borrower is obliged to pay back the loan principal and interest accrued. Typically, the debt is serviced through equal monthly payments of principal and interest over specified period. Under these circumstances, entrepreneurs must take into account the increase in company's cash burn rate when contemplating the actual runway extension afforded by venture debt. Alternatively, the venture loan can be structured as a ballon loan, which means that the debt will be paid back through "*bullet repayment*." In that case, borrowers are obliged to repay the entire principal at maturity.[105]

In the event of inability to service the debt at the maturity date, the start-up has several options. Borrowers can negotiate a restructuring of the loan with a more manageable repayment schedule, for instance, extending the amortisation period, thereby decreasing the number of instalments. Secondly, the borrower can refinance the loan by finding another lender providing the company with a new loan or replacing the existing loan with the entirely new loan agreement. In contrast, restructuring process rests in the mere altering of existing loan agreement.[106]

Another disadvantage of raising debt arises from covenants and other negative restriction included in loan term sheets. Covenants could be described as "*guidelines about what performance is required and accepted by both sides.*"[107] By adding either financial or non-financial covenants, VL aims to obtain more control over the borrower to reduce the risk of financing. However, it should be noted that venture debt deals contain a smaller number of covenants compared to traditional commercial loans.

Covenants are designed to entitle the lender, in the case of non-compliance, to take certain remedial actions typically varying from deal to deal. The violation of certain covenant technically amounts to a breach of the entire agreement which triggers the default on the loan. Depending on the negotiated terms, VLs usually have several options how to respond to the violation of a certain covenant. For instance, default rate covenant empowers the lender to increase the interest rate for the period of borrower's default. To make things worse, when the breach occurs, VL has

[105] COLUMBIA LAKE PARTNERS' venture debt blog, *Using venture debt – preventing a bridge round*, available at <http://www.clpgrowth.com/our-blog/2015/2/9/maturity-date> accessed on 11.5.2016.
[106] FEINSTEIN, B., NETTERFIELD, C., MILLER, A., *Ten Question Every Founder Should Ask before Raising Venture Debt,* Bessemer Venture Partners, available at <https://www.bvp.com/sites/default/files/Bessemer%20Guide%20to%20Venture%20Debt.pdf>.
[107] ROMANS, A., *The Entrepreneurial Bible to Venture Capital: Inside Secrets from the Leaders in the Startup Game*, 2013, p. 95.

alternatively a right to call the loan due and payable immediately. If defaulted start-up does not possess sufficient funds to pay off the entire debt, it can end up in liquidation.[108]

As indicated above, two types of covenants are included in debt deals, financial and non-financial. Financial covenants consist, for example, of achievement of specified revenue level or maintenance certain cash level on a balance sheet. Nevertheless, financial covenants are rarely used in venture debt deals, particularly in terms of early stage start-ups where the future financial performance is highly unpredictable. Moreover, to fully utilize the benefits of venture debt, start-ups should have a free hand to operate flexibly with no restriction. On the contrary, financial covenants can prevent the start-up from using the capital in situations where it needs it most. Importantly, the exclusion of financial covenants is regarded as an important feature distinguishing venture loans from traditional loans[109]

As a follow-up to above mentioned distinctions between the types of VLs, the number of covenants and other default clauses contained in loan term sheet constitutes relevant factor from a borrower's perspective. Banks are known for insisting on multiple covenants ensuring more control over a given start-up. Banks have greater incentives to monitor borrower's financial performance since they see venture lending as a business opportunity to attract new customers for other banking services. Accordingly, start-up's ongoing success constitutes the essence of their business model. Unsurprisingly, the condition requiring a start-up to bank all its cash with the debt provider is a norm.

In fact, non-covenant or MAC only is considered to be a standard for deals where non-bank lenders are participating. According to Werdegar, including negative covenants and MAC clauses appears to be in contrary to venture debt most valuable feature as a facility to extend start-up's cash runway.[110] Even though the borrower violates a certain covenant, VL is not required to trigger such provision. Moreover, according to Andy Hich, in the majority of cases, the emerged situation is resolved without applying any negative consequences. VLs also have practical reasons why not to call the loan prematurely. Having a good relationship with start-up's VCs can potentially bring future investment opportunities, VLs are willing not to call the loan since it would induce the end of collaboration with VCs.[111]

---

[108] MANSFIELD, Z., *Venture Debt: How Covenats Can Be Good, Bad or Ugly*, SPV Insight, 2013, available at <https://www.square1bank.com/venture-debt--how-covenants-can-be-good--bad-or-ugly>, accessed on 25.5.2016.

[109] LEVIN, S., *Venture Debt: Device Financing Lifetime or Anchor*, Elsevier Business Intelligence, IN VIVO, 2008, available at <https://www.wsgr.com/news/medicaldevice/pdf/venture-debt.pdf>.

[110] LEVIN, S., *Venture Debt: Device Financing Lifetime or Anchor*, Elsevier Business Intelligence, IN VIVO, 2008, available at <https://www.wsgr.com/news/medicaldevice/pdf/venture-debt.pdf>.

[111] IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009, p. 1194, available at <https://illinoislawreview.org/wp-content/ilr-content/articles/2010/4/Ibrahim.pdf>.

5.3 The Uses of Venture Debt

Since venture debt in typically not tied to determined purpose, it represents financing facility which is intended to serve a variety of uses. Numerous start-up companies employ venture debt to accelerate growth by achieving key development milestones ahead of next equity round of financing.[112] In this case, venture debt is typically raised as a part of equity round to secure incremental capital without raising expensive equity or following an equity financing to receive additional capital without incurring further dilution.[113] Likewise, in some cases, companies ask for venture debt when they need a quick infusion of growth capital that is too small for equity round. In general, start-up raises venture debt when it needs supplemental funds, however, wants to prevent the ownership shares of founders and inside investors from dilutive effect of equity financing.

Companies also use venture debt as an act of insurance against unexpected obstacles within the timing of company's growth. By providing additional time venture debt helps to overcome incurred hurdles without running out of cash due to incurred delays.[114] Venture debt could serve as insurance policy extending time to company's exit, especially in demanding and unpredictable markets where it appears to be expected possible struggles with the fulfilment of particular requirements.[115]

In general, since raising debt capital does not require to set start-up's valuation venture debt constitutes useful financing option for a start-up that occurred in need for additional funds, however, at the same time is underperforming, or just the market conditions are unfavourable. Under these circumstances, raising venture capital would probably result in down-round.[116] Down round is defined as a round of financing where the company's valuation is lower than the previous equity round.[117] Thus, venture debt could be utilized in order to avoid significant dilution for existing shareholders and prevent triggering the anti-dilution protection of inside equity investors.

---

[112] Venture debt can be utilized in the same way as equity, therefore, as an investment in the field of company's development, such as product development, pursuing new geographic expansion, or hiring professionals.

[113] GORDAN, P., *Venture Debt: A Capital Idea for Startups*, Kauffman Fellows Press, available at <http://www.kauffmanfellows.org/journal_posts/venture-debt-a-capital-idea-for-startups/> accessed on 20.4.2016.

[114] For instance, company called Evolve raised venture debt as to obtain additional time since certain timing issues regarding enrolling patients for its percutaneous heart valve clinical studies emerged.

[115] *Back to the Future: How to Fund a 21st Century Start-up*, 2013, available at: http://www.forbes.com/sites/groupthink/2013/01/16/back-to-the-future-how-to-fund-a-21st-century-startup/#61a785407a3c> accessed on 25.5.2016.

[116] FEINSTEIN, B., NETTERFIELD, C., MILLER, A., *Ten Question Every Founder Should Ask before Raising Venture Debt,* Bessemer Venture Partners, available at <https://www.bvp.com/sites/default/files/Bessemer%20Guide%20to%20Venture%20Debt.pdf>.

[117] INVESTOPEDIA, *Down Round*, available at <http://www.investopedia.com/terms/d/downround.asp>.

By raising venture debt start-up is able to eschew receiving funds through bridge round or bridge loan, which as will be explained, can negatively affect start-up's growth prospects in the eyes of the venture capital community.[118] Bridge round is frequently realised when a company, which raised venture capital, appears in a situation of need for a further cash infusion to continue to grow. Those companies either experience certain milestone delays or are making continuous progress but with higher cash burn rate than was initially expected. Under these circumstances, the start-up may attempt to raise needed capital by turning to new investors. However, the outside investors require hitting key milestones before funding. Alternatively, they might be willing to invest on conditions of discount which would likely result in down round. So as to prevent running out of funds before raising next equity round from external investors businesses typically request the inside investors for additional funds and which would bridge the company to the follow-on round. The bridge type of financing is traditionally offered in the form of convertible debt. In essence, a convertible debt is a debt vehicle that converts in equity upon the subsequent equity financing at the share price paid by the investors in the follow-on round. However, to compensate the risk, existing investors are granted by either equity warrants or discount into the next full equity round. Likewise warrants, the typically provided discount range between 15% and 20%. The discount constitutes a reduction in price determined in the next round the discount holder is entitled to get.[119] In fact, due to the warrants or discount the bridge round could be eventually significantly more expensive.[120]

Moreover, receiving bridge funds could have an adverse impact on start-up's attractiveness and may result in distrust from prospective outside investors. Firstly, the fact that start-up receives funds from existing shareholders may indicate that the company is not capable of raising external funds. Therefore, bridge loans are "*red flags"* pointing out certain failures within the company's development. Secondly, the runway extension is typically modest, up to two months. VCs participating in bridge round are well aware of the high risk of the bridge loan. The investors' intention is to provide enough cash to prevent portfolio company from bankruptcy but, on the other hand, if eventually the company fails, meaning struggle to raise additional funds, those investors will lose even more. They are enabled to control how the start-up performs "*on a short leash*" and if the company is making progress they just further extend the cash runway. However, this could influence the behaviour of start-up's management team which have to make

[118] SILICON VALLEY BANK, *Venture Debt – Maximizing Its Value In The Current Environment,* 2004, available at <http://www.sandhill.com/conferences/pdf/software04_014.pdf>. ,

[119] WILSON, F., *Financing Options: Bridge Loans*, AVC, 2011, available at <http://avc.com/2011/08/financing-options-bridge-loans/> accessed on 11.5.2016.

[120] The main advantages of bridge round are relatively fast process without need for in-depth due diligence conducted by new investors and setting the venture valuation.

compromises possibly hampering the long-term potential of the start-up.[121] In comparison, venture debt does not pose the negative signal since outside investors do not consider venture loan as a sign of growth difficulties, especially, since venture debt is typically raised relatively close the prior equity financing.[122]

Also, venture debt provides a start-up with a source of finance to fund significant capital expenditures, such as acquisition or purchase of valuable equipment. Start-ups contemplating to acquire competitor often turn to venture debt to fund these expenses by cheaper debt capital allowing company to retain equity as a growth capital.[123]

With regards to mature start-ups, established start-up generating some degree of revenue can significantly benefit from receiving debt capital with minimal dilution. Pre-profit companies that most likely in a short time achieve profitability stage of development prefer to raise debt. Most importantly, particularly founders are not willing to give up additional equity which would result in decreased profits from future company's operations. In this case, venture debt could be utilized as a bridge to profitability without incurring ownership dilution.[124]

5.4 Forms of Venture Debt

Nowadays, venture debt is available in several forms. VLs offer various types of venture debt products which supposedly fall under broad "*venture debt umbrella.*"[125] Nevertheless, some of those types of venture debt are classified as asset-based lending and thus require start-ups to satisfy additional conditions, such as generating a certain amount of revenue or possing an inventory. In addition, the raised funds are typically limited regarding their potential uses, as opposed to "*pure*" venture debt which may be used in the same way as equity. Therefore, the core of the following part is comprised of a detailed description of two main types of venture debt as it has been developed since the emergence of venture debt predecessor, venture leasing. In today's lending industry venture debt is provided in two general forms:

---

[121] SUSTER, M., *Startups and VCs Should Avoid "Pier" Funding*, Both Sides of the Table, 2010, available at <https://bothsidesofthetable.com/startups-and-vcs-should-avoid-pier-funding-8996a55e0121#.ulw4pw8mz> accessed on 11.5.2016.

[122] COLUMBIA LAKE PARTNERS' venture debt blog, *Using venture debt – preventing a bridge round*, available at <http://www.clpgrowth.com/our-blog/2015/2/26/using-venture-debt-preventing-a-bridge-round> accessed on 11.5.2016.

[123] FEINSTEIN, B., NETTERFIELD, C., MILLER, A., *Ten Question Every Founder Should Ask before Raising Venture Debt, Bessemer Venture Partners*, available at <https://www.bvp.com/sites/default/files/Bessemer%20Guide%20to%20Venture%20Debt.pdf>.

[124] FEINSTEIN, B., NETTERFIELD, C., MILLER, A., *Ten Question Every Founder Should Ask before Raising Venture Debt, Bessemer Venture Partners*, available at <https://www.bvp.com/sites/default/files/Bessemer%20Guide%20to%20Venture%20Debt.pdf>.

[125] MANSFIELD, Z., *Understanding Venture Debt*, SPV Insights, 2013, available at https://www.square1bank.com/understanding-venture-debt>, accessed on 25.5.2016.

- equipment financing,
- growth capital.

5.4.1 Equipment Financing

Equipment financing is provided in two forms; equipment loan or equipment lease.[126] An equipment lease is typically structured as an operating lease where the start-up receives funds for the purchase of specific physical assets or equipment. Essentially, the venture lessor buys the equipment or other assets requested, and subsequently leases it to the start-up in exchange for monthly principal plus interest payments over a specified period, typical three years, and granting equity warrants based on the overall value of the purchased assets. The ownership title of the equipment belongs to the venture lessor. The lease collateral is limited to the purchased equipment, and the lender is entitled to repose the assets in case of start-up's failure to make payments. At the end of the lease period, the lessee may purchase the equipment at its residual value, return the equipment to lessor or continue in the lease by reneuwing it.

Equipment loan resembles equipment lease with the main distinction that the lender does not retain the ownership of the equipment. The advanced funds are limited to use to purchase the specified equipment. However, a certain percentage of the loan amount is designated for so-called soft costs, such as shipping, installation, and taxes. Equipment loan is collateralized by the equipment.

Equipment financing enables the start-up to acquire equipment needed to run its business without paying the costs of such assets up front by capital which can be invested in other areas of a start-up business. It should be noted that not all VLs offer equipment financing.[127]

5.4.2 Venture Term Loan

Venture loan or growth capital loan is the most common venture debt product offered by VLs, importantly, the previously mentioned benefits refer to this debt product. Therefore, venture debt, as it has evolved from venture leasing, is typically received in a form of growth capital and structured as a term loan secured by a blanket lien on all the start-up's assets, including IP or excluding IP with a negative pledge on IP.[128] VLs hold a senior position in the capital structure. It follows that if start-up eventually fails venture debt will be satisfied before the equity and

[126] TRIPLEPOINT VENTURE GROWTH, *Financing Products*, availabe at <http://www.tpvg.com/company-overview/financing-products>, accessed on 24.5.2016.
[127] For instance, WTI provided venture debt in the amount of $ 300.000 to Facebook in order to purchase servers.
[128] Negative covenant prohibiting borrower to offer IP as collateral to other debt providers. It ensures venture lenders that based on their senior position within capital structure their debt will be satisfied preferentially.

subordinated debt holders.[129] In contrast to equipment leasing, where the lender has a right to seize the equipment VL is entitled to exercise the lien.

5.4.3 Working Capital Line of Credit

Numerous venture debt providers offer revolving lines of credit or so-called revolvers within their portfolio of debt products related to funding company's working capital. Working capital refers to financing everyday operations, such as account payables or wages, and unlike growth capital, it is generally not used to finance company's development or purchases of long terms assets. In other words, working capital serves as a source of cash for company's day to day operational costs. Among the most common revolvers belong accounts receivable or inventory line of credit. In these cases, lenders, almost exclusively banks and some non-bank asset-based providers, lends against borrower's account receivables or inventory.[130]

Importantly, working capital loans are typically classified as asset-based loans. Asset-based lending constitutes a type of debt instrument based on the value of borrower's assets.[131] Loans are usually secured by a blanket lien covering on all the assets financed by the loan or, depending on the risk profile of a given borrower, on all borrower's assets with excluding IP. Asset-based debt is a type of performance-sensitive debt. It means that more funds are available to the borrower if the value of collateralized (borrowing base) assets increases. Similarly to growth capital loan, the working capital line takes the form of senior debt. In general, providers of revolving loans do not include equity warrants. In the opposite case, the coverage ranges up to 2% of the size of the loan resulting in minimal dilution.[132]

Even though working capital loans are, in the case of some VLs offered as a venture debt, these debt instruments cannot be regarded as a "*pure*" venture debt owing to several reasons. As mentioned above, in the case of asset-based lending collateral plays a significant role determining the size of the loan. Moreover, the collateral constitutes the primary source of loan repayment. In other words, the loan is paid off by cash flow arising from the start-up's business. For instance, potential default of accounts receivable loan depends on whether the borrower's outstanding invoices will be collected. Secondly, the provided funds are usually employed in order to satisfy company's short-term liabilities.[133]

---

[129] HARDYMON, F., LERNER, J., LEAMON, A., *Gold Hill Venture Lending*, HBS Case no. 804-083, 2005, p. 3.
[130] COMMERCIAL CAPITAL LLC, *What Is an Asset Based Loan?*, available at <http://www.comcapfactoring.com/blog/what-is-asset-based-lending/>, accessed on 1.6.2016.
[131] Regarding accounts receivable line of credit the size of the loan is typically 75% – 85% of the value eligible account receivables.
[132] GORDAN, P., *Venture Debt: A Capital Idea for Startups*, Kauffman Fellows Press, available at <http://www.kauffmanfellows.org/journal_posts/venture-debt-a-capital-idea-for-startups/> accessed on 1.6.2016.
[133] ALLRED, D., Financing Technology: Trends in debt & equity termsheets, Silicon Valley Bank, available at <http://www.mccarter.com/files/Uploads/Images/CIC_VentureDebt_041614.pdf>.

In contrast, regarding venture debt loan, the primary source of repayment is cash flow from future equity rounds of financing made by VCs, and the collateral represents secondary source if the first one fails. Furthermore, venture debt is, in certain cases, available for early stage pre-revenue companies, which are experiencing negative cash flow. Whereas, asset-based lending is a common source of capital for revenue-stage start-ups.[134] Commonly, start-ups which have already received venture debt can later, when they start to generate revenue, raised cheaper accounts receivable loan.

5.5 The Anatomy of Venture Loan Term Sheet

The following section of the thesis aims to provide an explanation of terms commonly included in venture loan agreements. It should be noted that terms, such as the collateral, covenants, and equity warrants typically belong among credit terms, however, since their description has been already provided, these terms are not cover by present chapter.

A) Size of the Loan and Funds Availability

In some cases, the total amount of the debt capital provided differs from the available amount. The available amount of funds is the amount a borrower is entitled to draws down at the closing date. Most importantly, the interest and fees payable under the term sheet are determined by virtue of the entire loan amount. Likewise, in the case of warrant coverage. Typically, when the requested amount of debt is disproportional to the start-up's current valuation, it is preferable to fund the borrower in tranches (tranched loan). VL provides an initial amount of funds with additional portions of the overall loan available under achieving significant milestones. Therefore, the pre-set milestones serve as a trigger events for releasing additional capital.[135]

B) Interest Rate

The loan interest rate is typically based on an annual basis. The interest rate may be stated as fixed annual percentage, meaning that if the interest rate is 12%, then the monthly paid interest equals to 1% of the size of the loan. Alternatively, it may be stated as floating rate. In that case, the payable interest is determined by fixed percentage over a base rate, typically, bank prime rate, LIBOR, EUROBOR.[136] Depending on the floating base rate, the interest paid each month is not consistent within the amortisation period.

C) Draw-down Period

---

[134] SHADAB, H., B., *Performance-Sensitive Debt: From Asset-Based Loans to Startup Financing*, Harvard Business School, 2014, available at <http://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=1454&context=jbl>.

[135] ROMANS, A., *The Entrepreneurial Bible to Venture Capital: Inside Secrets from the Leaders in the Startup Game*, 2013, p. 92

[136] COLUMBIA LAKE PARTNERS' venture debt blog, *Interest rate*, available at http://www.clpgrowth.com/our-blog/2016/1/4/interest-rate>, accessed on 1.6.2016

The draw-down period refers to a period during which the debt capital is available to a borrower. Draw-down period extends typically from 3 to 12 months. Importantly, after its expiration the borrower forfeits the access to provided funds. Most crucially, the drawdown itself constitutes the starting point of the loan amortisation. In other words, from the moment when the start-up draws the debt, the borrower is obliged to begin with servicing the debt. As already mentioned, VLs prefer to fund start-ups which have recently raised venture capital. Moreover, some of them are only willing to provide debt capital as a part of equity round. Due to VLs' demands numerous start-ups are forced to raise venture debt shortly after a venture capital funding.

Therefore, it seems to be reasonable for VLs to prefer the borrower to draw the entire loan at the closing of the deal. VLs have several reasons as to why they are reluctant to provide a delayed loan, in other words, loans with a longer draw-down period. Shorter or no draw-down period increases the probability that the loan will be fully repaid since the borrower starts to service the debt immediately. From the lenders' perspective, the risk of default on the loan decreases with every principal and interest payment. Furthermore, provided that the debt is raised following major equity round, the start-up still possesses sufficient amount of cash on its balance sheet. Additionally, providing long draw periods is costly since VLs have to reserve capital which could be otherwise invested in other portfolio company.[137] Under these circumstances, the borrower will start paying back the loan prior even using the debt funds. As follows, borrowers, therefore, prefer loans with delayed draws that allow them to postpone the amortisation of the venture loan.

Moreover, the cost of debt is not only determined by the interest rate, fees, and equity coverage. However, it is also necessary to take into account other factors, particularly how much of the principal a start-up will repay by the time it runs out of the initial non-debt capital. Consequently, the moment when the start-up draws down the funds has a significant effect on the actual cash runway extension. To demonstrate how the timing of loan withdrawal affects the effective cost of debt and also its negative impact on the length of runway extension a case study will be provided in a subsequent chapter.

D) Amortisation Period

In essence, amortisation period determines the number of monthly principal payments the borrower is obliged to carry out. As aforementioned, the beginning of amortisation period is triggered by drawing down the debt. Once the funds are drawn borrower is required to start repaying the loan principal. The duration of amortisation period may be equal to the term of the

[137] LEADER VENTURE, *Venture Debt Overview*, p. 12, available at <http://leaderventures.com/overview.pdf>.

loan that is the entire period of the relationship between parties to the loan agreement.[138] Commonly, the term of venture loan ranges from 36 to 48 months[139]. To give some example, loan term sheet includes 6-month draw down period and 36-month amortisation period. Provided that the borrower withdraws the capital at the end of the draw-down period, the loan term will be 42 months.

E) Interest-only Period

Venture debt deals often include so-called principal payment holiday. The interest-only period refers to a period within which the borrower is required to make only interest payments. Since borrower is allowed to postpone the servicing of principal payments, interest-only period enables a start-up to save cash and, consequently, more extends company's runway. On the other hand, the borrower will eventually pay off the larger amount of interest causing the loan more expensive. From the perspective of VL, providing longer interest-only period causes the deal riskier. The interest-only period generally ranges between three and nine months.[140]

F) Facility, Back-end, Prepayment Fees

As already emphasized, the cost of venture debt comprises of the interest, equity warrants and loan related fees charged by VLs so as to enhance the overall return on the debt investment.

The facility fee or closing fee is an upfront fee payable at the closing day or when the debt is drawn down. The facility fee generally ranges between 1% - 2% of the loan amount.[141]

Back-end or maturity fee is a fee which is due when the loan is fully repaid. In some cases, maturity fee substitutes for equity warrants.[142]

Prepayment fee is basically a penalty for repaying the loan prior to the end of the amortisation period. Such fee is charged to compensate the lost interest. The fee constitutes additional cost on the part of the borrower for the possibility to pay the debt back earlier. Prepayment fee is structured as a percentage for each year within the amortisation period decreasing towards to the day of full debt repayment. Typically, the fee is stated 3% in year one, 2% in year two, and 1% onwards.[143]

---

[138] ROMANS, A., *The Entrepreneurial Bible to Venture Capital: Inside Secrets from the Leaders in the Startup Game*, 2013, p. 94.
[139] However, VLs offer loan with term period up to 60 months.
[140] ROMANS, A., *The Entrepreneurial Bible to Venture Capital: Inside Secrets from the Leaders in the Startup Game*, 2013, p. 93.
[141] Ibid., p. 94.
[142] COLUMBIA LAKE PARTNERS' venture debt blog, Interest rate, available at <http://www.clpgrowth.com/our-blog/2016/1/4/maturity-fee>, accessed on 1.6.2016.
[143] ROMANS, A., *The Entrepreneurial Bible to Venture Capital: Inside Secrets from the Leaders in the Startup Game*, 2013, p. 94.

G) Right to Invest

In addition to equity warrants, certain VLs require a right to invest which entitled a given VL to participate in next equity round financing.

5.6 Case Study

The following case study illustrates, by providing five different scenarios, how the structuring of the venture debt term sheet influences effective cost of venture debt and the actual runway extension. Since each month added to time runway provides a start-up with an option to achieve crucial milestone resulting in overall value enhancement, it appears to be essential to demonstrate how raising the same amount of debt under different credit terms affects the actual additional time afforded by venture debt.

Start-up company Drone XYZ is in negotiating process with five VLs (**Scenarios A – E**), each of them is offering to advance required capital under different terms regarding the duration of draw-down and interest-only periods.

DroneXYZ – Balance Sheet	
Available Cash	€ 6.000.000
Cash Burn Rate	€ 400.000/month
Cash Runway	15 months

DroneXYZ – Venture Loan Term Sheet						
Loan size			€ 3.600.000			
Annual interest rate			8 %			
Draw-limitation			One tranche			
Amortisation period			42 months			
Repayments			equal principal payments + equal interest payments			
Draw-down period						
Scenario A	**Scenario B**	**Scenario C**		**Scenario D**	**Scenario E**	
16 months	0 months	9 months	6 months interest-only period	9 months	9 months	6 months interest-only period

- For each scenario, the debt is drawn down the first day of the last month of provided draw-down period, and principal plus interest payments are being paid at the end of each month. The interest will be paid in equal payments for the entire term of the loan.

At the beginning of 16th month	Scenario	A	B	C	D	E
	Venture Capital Available	0	0	0	0	0
	Venture Debt Available	3.600.000	1.954.286	3.017.143	€ 2.832.000	3.346.286
	Debt Balance	3.600.000	2.314.286	3.257.143	€ 3.000.000	3.514.286
	Repaid Principal	0	1.285.714	€342.857	€ 600.000	85.714
	Repaid Interest	0	360.000	240.000	168.000	168000
Runway Extension (*number of months + cash available for the next month)		7 + 32.000	3 + 425.143	5 + 468.571	5 + 283.429	6 + 288.000
Total Interest Repaid		1.008.000	1.008.000	1.152.000	1.008.000	1.152.000
Effective Interest Rate		8%	12%	10%	9.5%	9.3%

- Provided data shows the amount of capital raised in recent equity round funding Drones XYZ would have at the end of the 15th month. Drone XYZ is enabled to operate for 15 consecutive months without needing an additional source of capital.
- The table provides the total amount of cash (debt capital) available to Drone XYZ at the beginning of the 16th month. The figures for each scenario varies depending on when Drone XYZ would begin repaying the debt and thus, how much of the debt capital would be paid back before burning all non-debt funds.
- Subsequently, the table shows the actual amount of debt capital available to Drone XYZ at the beginning of 16. month. Moreover, based on the date it can be observed how much of debt principal would be repaid until burning all the equity funds (by the end of the 15th month) without even using the provided debt.
- Most importantly, the present case study also presents the actual runway extension stemming from raising venture debt (number of months plus residual amount of cash insufficient to cover the entire month expenses)
- Lastly, the table demonstrates the effective interest rate on advanced venture loan calculated by using the actual debt available to Drone XYZ at the beginning of the 16th month and total interest that would be paid throughout the term of the loan.

Case study conclusion:

Firstly, the conducted case study clearly indicates that to benefit from employing venture debt to a maximal extent, entrepreneurs should negotiate longer draw-down period so as to

postpone the debt principal amortisation, thereby avoiding to service the debt through principal and interest payments before even touching the provided funds.

As can be seen from **Scenario B** – "*worse case scenario*," by drawing down the debt immediately after closing the deal, Drone XYZ would, by the time it runs out of equity funds, paid back approximately one-third of the debt principal, most importantly without employing such capital. Under these circumstances, the actual cash runway would account for three entire months plus part of fourth months. Moreover, the effective interest rate would be 12% since Drone XYZ would basically pay interest amounted to €1.008.000 for provided debt of €2.314.286. (see Annex B).

In contrast, **Scenario B** – "*best case scenario*" would extend the cash runway by seven months. It results from the availability to draw down the funds when the venture capital is fully exhausted. In this case, Drone XYZ would not start repaying the debt until actually utilizing it. (see Annex A)

Regarding **Scenario E,** Drone XYZ would be enabled to draw down the debt at the beginning of the 9th month, therefore, by the time, it would run our of the equity capital it would repay only €85.714 of the debt principal. Therefore, the actual cash runway would be more that six months. However, it should be noted that because of the six-month interest-only period Drone XYZ would pay six interest payments more, increasing the total interest repaid to €1.152.000, thereby making the venture debt slightly more expensive, however, with more time to grow without necessity of raising venture capital(see Annex E)

To conclude, as is evident from the performed case study, by negotiating longer drow-dawn period a borrower avoids paying back the principal when still using venture capital funds. As a consequence, when a company runs out of equity cash, it will have the use of a larger amount of debt capital which subsequently provides more additional time ahead of next equity raising. Likewise, the interest-only period affirmatively affects the eventual runway extension. However, it should be taken into account the increase in total cost of venture debt since borrower will eventually pay interest increased by a number of interest payments equal to the interest-only period.

6. Conclusion

The purpose of the present thesis was to analyse venture debt as a non-traditional debt instrument suitable, perhaps, most importantly, available to emerging companies. As indicated in the introduction, venture debt represents not a negligible source of funds in relation to venture capital, particularly in the U.S. market. However, it should be noted that venture debt is not unknown player within the EU venture capital industry, although, as a consequence of financial crises, it suffered almost collapse. As is apparent from the performed analyses, venture debt serves as a complementary source of funds to capital provided by equity investors. Throughout the thesis, the significant reliance of venture debt was demonstrated. Most crucially, it follows that venture debt is able to work only in growing equity market.

As was expected, the venture lending industry is dominated by two major groups of VLs operating either as banks and non-bank lenders. Importantly from the perspective of entrepreneurs, the major distinction between the types of VLs resists in pursuing different business goals by providing venture debt start-ups. Venture banks see lending business as an opportunity to attract new customers for other banking services in order to generate additional revenue. Banks, due to lower cost of capital, are allowed to offer more favourable interest rates, as opposed to venture debt firms.

On the other, even though VLs, in general, are considered to be less risk-averse in relation to traditional lenders, venture debt firms are more willing to approach risky ventures which is subsequently reflected in not including certain negative restrictions impeding the financial flexibility of a borrower. Nevertheless, to compensate the higher risk presented by rapid-growth companies they charge higher interest rate and require larger warrant coverage.

Since emerging companies do not satisfy traditional repayment criteria, it was essential to analyse the alternative criteria enabling the evaluation of start-up's creditworthiness. First and foremost, it was ascertained that VLs consider venture capital as a primary source of debt repayment. In essence, they lend against the likelihood of follow-on equity round of financing. It is believed that VLs rely on the implicit promise made by existing investors, particularly VCs, to repay the debt by additional venture capital infusion. Nevertheless, it must be emphasized that VLs ascribe a different degree of credibility to the investor's commitment to financial support previously backed start-up. When analysing venture capital as a fundamental feature making start-up eligible to receive venture debt, several factors affecting the credibility were examined. Firstly, VLs consider the VC's commitment more credible with regards to early stage companies where the follow-on equity round of financing is more likely to occur based on the described reasons. Secondly, an instrumental role is played by the reputation of existing VCs. In the case of top-tier VC, it is highly probable that the company receive additional capital either from a given VC or new investors. Since the reputation of VCs also conveys signals regarding the upside

potential of the company, well-known investors with a proven track record are being seen as a valuable tool for attracting new investments. Not surprisingly, VLs are reluctant to provide debt to start-ups backed by capital-constrained VCs. This finding further supports the significance of VC's reputation to the venture lending decision. To be found by VLs as a prospective investment opportunity a start-up must have the ability to attract top venture capital firm. The author considers such findings to imply a conclusion that the substitution effect between cash flow and venture capital is perfectly applicable only to early stage companies. Conversely, more mature ventures are typically required, in addition, to generate specified level of revenue from its operation.

Secondly, start-up's IP portfolio constitutes essential determinant of venture lending process which, however, do not substitute for tangible assets owing to the specific nature of intangible assets. However, mere holding of valuable intangibles increases the likelihood of receiving venture debt. Similarly to venture capital, especially patents communicate the quality and uniqueness of the start-up to potentially interested investors. Interestingly, in the case of early stage start-ups, patents are crucial in reducing informational asymmetries between capital providers and entrepreneurs.

Contrary to the stated presumption, it was proved that the ultimate success of funded start-up is relevant to VLs. As far as banks are concerned, continuously growing start-up constitutes a permanent source of revenue streaming from other banking services. Moreover, VLs are generally allowed to participate in company's equity appreciation by acquiring equity warrants so as to compensate the higher risk of financing. The opportunity to enhance the overall return on debt investment is more than welcomed and deemed by VLs as one of the major determinants within the venture lending business model.

As suggested in the introduction, the third section of the thesis approached venture debt from the point of view of the of entrepreneurs. Crucially, raising venture debt caused no or minimal, due to the equity warrants, dilution to existing shareholders. Venture debt is provided in a form of growth capital. Therefore, received funds can be utilized in the same way as equity without any strings attached. By extending cash runway, venture debt provides a start-up with additional time to achieve crucial development milestones, thereby enhancing start-up's valuation ahead of next equity financing. Likewise, venture debt can bridge pre-profit companies to profitability. In that case, venture debt allows to reduce the eventual number of venture capital rounds and thus preserve larger ownerships stakes for equity holders, particularly founders. In addition, venture debt is advantageous for involved VCs since it allows them to reserve capital that could be invested either across their investment portfolio or pursue new opportunities. VCs typically utilize the additional time to closer evaluate and estimate start-up's upside potential.

Venture debt is a debt-based type of financing. Therefore, start-ups should also expect certain drawbacks potentially affecting full utilization of the underlined benefits. In particular, to mitigate the funding risk VLs, depending on the type, insist on having more control over the borrower through including covenants and default clauses that may exacerbate the financial flexibility of the afforded funds. Start-ups should, when considering raising venture debt, take into account a VL's reputation and measures taken in previous deals where such clauses were triggered.

In most cases, venture debt is employed to accelerate start-up's growth and enhance the start-up's market value for the follow-on equity round. However, it can also be used to avoid bridge round financing which may negatively affect company's attractiveness in the eyes of prospective investors. Likewise, venture debt can be beneficial for a start-up experiencing certain setbacks to avoid raising capital through down round since debt financing does not require to set a company's valuation.

Since the present thesis's goal was to analyse venture debt as a financing instrument, it is necessary to emphasize, that debt capital provided through lines of credit, either accounts receivable or inventory revolvers, is not regarded by the author as a "*pure*" venture debt. Such finding is deduced from the fact that such these facilities apply different repayment criteria. Contrary to venture debt, the size of the line of credit is based on the value of pledge assets.

Finally, the last section explained the typical structure of venture loan term sheet with putting an emphasis on the importance of the negotiated timeline of venture loan. The case study provided at the end of the thesis, broke down how different draw-down and interest-only periods impact the effective cost of venture debt and the actual cash runway. One of the major incentives for raising venture debt rests in its ability to extend start-ups cash runway prior to next equity round. When start-up aims to hit key development every extra month is crucial since unforeseen obstacles can occur. Therefore, a start-up should eschew to start repaying the debt when still using the capital from recent equity funding.

It is of great importance to provide technology and innovative companies with access to external debt sources, thereby enabling them to grow continuously. Venture debt constitutes a perfect alternative to traditional debt and complement to equity capital when utilized and structured properly can be highly beneficial for start-up companies.

Annex

Annex A

Scenario A -> "best case"																								
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Monthly cash burn rate	400.000	#	#	#	#	#	#	#	#	#	#	#	#	400.000	400.000	400.000	400.000	400.000	400.000	400.000	400.000	400.000	400.000	400.000
Drow-dawn period = 16 months																								
Cash availabe - no debt	6.000.000	#	#	#	#	#	#	#	#	#	#	#	#	800.000	400.000	0	-400.000							
Cash availabe + debt	6.000.000	#	#	#	#	#	#	#	#	#	#	#	#	800.000	400.000	3.600.000	3.090.286	2.580.571	2.070.857	1.561.143	1.051.429	541.714	32.000	-477.714
Drow-down																3.600.000								
Debt balance																3.600.000	3.514.286	3.428.571	3.342.857	3.257.143	3.171.429	3.085.714	3.000.000	2.914.286
Principal payment																85714,3	85714,3	85714,3	85714,3	85714,3	85714,3	85714,3	85714,3	85714,3
Interest payment																24000	24000	24000	24000	24000	24000	24000	24000	24000
Debt balance at the end of the month																3.514.286	3.428.571	3.342.857	3.257.143	3.171.429	3.085.714	3.000.000	2.914.286	2.828.571
Runway extention	7 months																							

Repaid principal	0
Remaining debt funds	3.600.000
Remaining cash+debt	3.600.000
Repaid interest	0
Total interest	1008000

Scenario B -> *"worst case"*																			
Number of month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Monthly cash burn rate		400.000	#	#	#	#	#	#	#	#	#	#	#	#	400.000	400.000	400.000	400.000	400.000	400.000	400.000
drow-down period = 0 months																					
Cash availabe - no debt		6.000.000	#	#	#	#	#	#	#	#	#	#	#	#	800.000	400.000	0	-400.000			
Cash availabe + debt		9.600.000	#	#	#	#	#	#	#	#	#	#	#	#	2.973.714	2.464.000	1.954.286	1.444.571	934.857	425.143	-84.571
Drow down		3.600.000																			
Debt balance		3.600.000	#	#	#	#	#	#	#	#	#	#	#	#	2.485.714	2.400.000	2.314.286	2.228.571	2.142.857	2.057.143	1.971.429
Principal payment		85714,3	#	#	#	#	#	#	#	#	#	#	#	#	85714,28571	85714,3	85714,3	85714,3	85714,3	85714,3	85714,3
Interes payments		24000	#	#	#	#	#	#	#	#	#	#	#	#	24000	24000	24000	24000	24000	24000	24000
Debt balance at the end of the month		3.514.286	#	#	#	#	#	#	#	#	#	#	#	#	2.400.000	2.314.286	2.228.571	2.142.857	2.057.143	1.971.429	1.885.714
Runway extension	3	months																			

Repaid principal	1.285.714
Remaining debt funds	2.314.286
Remaining cash+debt	1.954.286
Repaid interest	360000
Total Interest	1008000

Scenario C																					
Number of month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Monthly cash burn rate		400.000	#	#	#	#	#	#	#	#	#	#	#	#	400.000	400.000	400.000	400.000	400.000	400.000	400.000	400.000	400.000
drow-dawn period = 6 months																							
Cash availabe - no debt		6.000.000	#	#	#	#	#	#	#	#	#	#	#	#	800.000	400.000	0	-400.000					
Cash availabe + debt		6.000.000	#	#	#	#	#	#	#	#	#	#	#	#	4.036.571	3.526.857	3.017.143	2.507.429	1.997.714	1.488.000	978.286	468.571	-41.143
Drow down							#																
Debt balance							#	#	#	#	#	#	#	#	3.428.571	3.342.857	3.257.143	3.171.429	3.085.714	3.000.000	2.914.286	2.828.571	2.742.857
Principal payment - interest only = 6							0	0	0	0	0	0	#	#	85714,28571	85714,3	85714,3	85714,3	85714,3	85714,3	85714,3	85714,3	85714,3
Interes payments							#	#	#	#	#	#	#	#	24000	24000	24000	24000	24000	24000	24000	24000	24000
Debt balance at the end of the month							#	#	#	#	#	#	#	#	3.342.857	3.257.143	3.171.429	3.085.714	3.000.000	2.914.286	2.828.571	2.742.857	2.657.143
Runway extension	5 months																						

Repaid principal	342.857
Remaining debt funds	3.257.143
Remaining cash+debt	3.017.143
Repaid interest	240000
Total Interest	1152000

Annex D

Scenario D																					
Number of month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Monthly cash burn rate		400.000	#	#	#	#	#	#	#	#	#	#	#	#	400.000	400.000	400.000	400.000	400.000	400.000	400.000	400.000	400.000
drow-dawn period = 9 months																							
Cash availabe - no debt		6.000.000	#	#	#	#	#	#	#	#	#	#	#	#	800.000	400.000	0	-400.000					
Cash availabe + debt		6.000.000	#	#	#	#	#	#	#	#	#	#	#	#	3.851.429	3.341.714	2.832.000	2.322.286	1.812.571	1.302.857	793.143	283.429	-226.286
Drow down										#													
Debt balance										#	#	#	#	#	3.171.429	3.085.714	3.000.000	2.914.286	2.828.571	2.742.857	2.657.143	2.571.429	2.485.714
Principal payment										#	#	#	#	#	85714,28571	85714,3	85714,3	85714,3	85714,3	85714,3	85714,3	85714,3	85714,3
Interes payments										#	#	#	#	#	24000	24000	24000	24000	24000	24000	24000	24000	24000
Debt balance at the end of the month										#	#	#	#	#	3.085.714	3.000.000	2.914.286	2.828.571	2.742.857	2.657.143	2.571.429	2.485.714	2.400.000
Runway extension		5 months																					

Repaid principal	600.000
Remaining debt funds	3.000.000
Remaining cash+debt	2.832.000
Repaid interest	168000
Total interest	1008000

Scenario E																						
Number of month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Monthly cash burn rate		400.000	#	#	#	#	#	#	#	#	#	#	#	#	400.000	400.000	400.000	400.000	400.000	400.000	400.000	400.000	400.000	400.000
drow-dawn period = 9 months																								
Cash availabe - no debt		6.000.000	#	#	#	#	#	#	#	#	#	#	#	#	800.000	400.000	0	-400.000	-800.000	-1.200.000	-1.600.000	-2.000.000		
Cash availabe + debt		6.000.000	#	#	#	#	#	#	#	#	#	#	#	#	4.280.000	3.856.000	3.346.286	2.836.571	2.326.857	1.817.143	1.307.429	797.714	288.000	-221.714
Drow down										#														
Debt balance										#	#	#	#	#	3.600.000	3.600.000	3.514.286	3.428.571	3.342.857	3.257.143	3.171.429	3.085.714	3.000.000	2.914.286
Principal payment - interest only = 6										0	0	0	0	0	0	85714,3	85714,3	85714,3	85714,3	85714,3	85714,3	85714,3	85714,3	85714,3
Interes payments										#	#	#	#	#	24000	24000	24000	24000	24000	24000	24000	24000	24000	24000
Debt balance at the end of the month										#	#	#	#	#	3.600.000	3.514.286	3.428.571	3.342.857	3.257.143	3.171.429	3.085.714	3.000.000	2.914.286	2.828.571
Runway extension	almost 6 months																							

Repaid principal	85.714
Remaining debt funds	3.514.286
Remaining cash+debt	3.346.286
Repaid interest	168000
Total interest	1152000

Bibliography

Books, Articles & Presentations

ALLRED, D., *Financing Technology: Trends in debt & equity termsheets*, Silicon Valley Bank.

BOWMAN, R., SPAZEK, S., *Best Practices for Sourcing Venture Debt: How to Create Parity and Foster Competition for your Deal*, Capital Advisors Group, 2012.

SCOTT, S., *The Rise of Venture Debt in Europe*, BVCA, 2010,

FAIRVIEW CAPITAL, *Venture Debt: An Applealing Hybrid Strategy,* 2013.

FEINSTEIN, B., NETTERFIELD, C., MILLER, A., *Ten Question Every Founder Should Ask before Raising Venture Debt,* Bessemer Venture Partners.

FISHER, T., de RASSENFOSSE, G., *Venture debt financing: Determinants of the lending decision*, Technische Universität München, The University of Melbourne, 2012.

FEINSTEIN, B., NETTERFIELD, C., MILLER, A., *Ten Question Every Founder Should Ask before Raising Venture Debt,* Bessemer Venture Partners.

HARDYMON, F., LERNER, J., LEAMON, A., *Gold Hill Venture Lending*, HBS Case no. 804-083, 2005.

HESSE, M., LUTZ, E., TALMOR, E., *Patent Activity of Start-ups and the Structuring of Venture Lending Contracts*, 2015.

HOCHBERG, Y., V., SERRANO, C., J., ZIEDONIS, R., H., *Patent Collateral, Investors Commitment, and the Market for Venture Lending*, 2015.

IBRAHIM, D., M., *Debt as Venture Capital*, University of Wisconsin Legal Studies Research Paper No. 1081, 2009.

KPMG, European Venture Capital Funds (EuVECA) & Social Entrepreneurship Funds Regulations (EuSEF), 2013.

LEADER VENTURE, *Venture Debt Overview.*

LEVIN, S., *Venture Debt: Device Financing Lifetime or Anchor*, Elsevier Business Intelligence, IN VIVO, 2008.

LOUMIOTI, M., *The use of intangible assets as loan collateral*, University of Southern California

MANN, R., J., Secured Credit and Software Financing, Cornell Law Review, Vol. 85, p. 134, 1999.

POLLOCK, R., D., HELLMAN, D., ZALTZMAN, H., *Venture Lending, Working Capital and Term Loans for Emerging Companies: Borrower and Lender Perspectives*, 2014

ROMANS, A., *The Entrepreneurial Bible to Venture Capital: Inside Secrets from the Leaders in the Startup Game*, 2013.

SILICON VALLEY BANK, *Venture Debt – Maximizing Its Value In The Current Environment, 2004.*

VENTURE INTELIGENCE, *Venture Debt – A Catalyst for Growth*, Handbook on Venture Capital.

ZALTZMAN, H., MORRONE, J., SMITH, E., *Term Sheet Tips For Emerging Cos. Seeking Venture Money*, Law360, 2013.

Websites

ACUZCO, J., *What Is Venture Debt and How Should Startups Use it?*, NextView Ventures, 2015.

Back to the Future: How to Fund a 21st Century Start-up, 2013

BOOST&CO, Venture Debt Terms.

COLUMBIA LAKE PARTNERS' venture debt blog.

COMMERCIAL CAPITAL LLC, *What Is an Asset Based Loan?*

EASTWARD CAPITAL PARTNERS, *Venture Debt*.

GRAVANA, D., *Thoughts on Venture Debt from WTI*, Pevcbanker.

INVESTOPEDIA, *Internal Rate of Return – IRR.*

INVESTOPEDIA, *Down Round.*

LEVY, A., *Out of the way VCs: Banks muscle in on tech boom*, CNBC, 2014.

MANSFIELD, Z., *Venture Debt: How Covenats Can Be Good, Bad or Ugly*, square 1 bank insights, 2013.

MANSFIELD, Z., *Understanding Venture Debt*, square 1 bank insights, 2013.

PAVONI, S., *Is European venture debt gone for good?*, The Banker, 2011.

TAULLI, T., *How Venture Debt Financing Works and How To Get It*, Bloomberg, 2008.

THE CONSCIENCE OF A VC, 2014.

TRIPLEPOINT VENTURE GROWTH, *Financing Products.*

SAMIR, K., *Venture Debt 101 – Banks vs. Venture Debt Firms*, 2013

SUNG, K., *IP Asset Value as Collateral: The Increasing Use Of Patents as Collateral In Asset-Based Lending*, abfjournal, 2016.

SUSTER, M., *Startups and VCs Should Avoid "Pier" Funding*, Both Sides of the Table, 2010

WILSON, F., *Financing Options: Venture Debt,* AVC, 2011.

WILSON, F., *Financing Options: Bridge Loans*, AVC, 2011.

WILSON, F., *Financing Options: Convertible Debt*, AVC, 2011.