Non-Competition Covenants in Acquisition Deals

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Abstract

We study the optimal strategic behaviour of the target of a business acquisition where the acquirer is afraid that the former may return to the market after the sale, and therefore uses a non-competition covenant which protects her (new) business against the future competition from the target. Yet, as the target can return to the market any time after the covenant expiry date, the value of the acquisition is comprised of both the intrinsic value of the acquired business and the value of a forward start option with a starting date that coincides with the expiry date of the covenant. Our findings suggest that the value of the forward start option of the target increases with the uncertainty of the profit flow associated with her return to the market and decreases with the time-to-maturity of the covenant. We also characterize the market conditions where the target should optimally re-enter the market as a follower, and provide closed (or quasi-closed) form solutions for her re-entry thresholds.
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1 Introduction

Firms often consider the use of non-competition agreements in business acquisitions in order to protect the acquired business from competition from the seller. A non-competition agreement is a covenant to the acquisition agreement which restricts the seller from competing with the buyer for a specified period within a specific geographic area. The covenant also benefits the seller since it gives the buyer more confidence that the anticipated earnings will materialize, enhancing the acquisition price.

Non-competition covenant are also considered in employment agreements to protect firms’ confidential information and their top employees from their former employees whose departure raises the threat of unfair competition (see, e.g., Gallo (1997); Franco and Mitchell (2008); Kräkel and Sliwka (2009); Bishara and Orozco (2012); and Starr (2015)).

These contracts are however often questioned by courts (see, e.g., Bishara and Orozco (2012)) and considered not enforceable. Although there are valid buyers interest that are protected by non-competition covenants, and the enforcement of these contracts often lead to economically efficient results, courts in the U.S. are nonetheless reluctant to enforce these agreements. Most courts inquire whether these contracts are ”reasonable” and as there is not yet a consensual theoretical framework to objectively identify and assess the ”legitimacy” of the competing interests between firms, the trial court decisions are not predictable (see, e.g., Gallo (1997); Bitė (2011)).

Non-competition agreements can also play an important role on the economic development. Gilson (1999) and Hyde (2003) suggest that the main reason for the success of the high technology industrial district in Silicon Valley and the failure of the one in Massachusetts’ Route 128 was the differential enforcement of covenants not to compete, i.e., the different legal environments led to higher employee turnover and therefore more firms in California (see, e.g. Gallo (1997); Bishara and Orozco (2012); and Buente (2012)).

We examine the effect of non-competition covenants on firms’ strategic behaviour regarding a business acquisition where at time $t = 0$ two firms (acquirer and target) agree with an acquisition deal which generates an expected profit stream given by $x(t)$, but where the acquirer is afraid that the target may return to the market after the sale and therefore imposes a non-competition covenant to the target with maturity $T$. The covenant protects...
the acquirer’s (new) business against the competition from the target until \( t = T \) but the latter is free to return the market any time after. We suggest that if the maturity of the covenant is sufficiently short, the covenant is equivalent to a forward start options with a starting date \( T \), and adds value to the target firm. Consequently, the price received by the target firm at is comprised of the value of the acquired business and the value of a forward start option with a starting date \( T \) whose value increases with the uncertainty of the target’ profit flow associated with her return to the market and decreases with the maturity of the non-competition covenant (Shackleton and Wojakowski (2007); and Pereira and Rodrigues (2014)). We examine the (acquisition-synergy related) market conditions where the target firm should optimally re-enter the market, competing with the acquirer as a follower.

The rest of the paper is organized as follows. Section 2 outlines the model assumptions, describes the market conditions and provides the value functions and investment thresholds for the (acquisition) target firm. Section 3 provides some illustrative sensitivity analysis. Section 4 concludes and offers some guidelines for further research.

\section{The Model}

\subsection{The value functions for the buyer and for the seller}

Consider an all-equity company producing a continuous profit flow \( x \) that evolves according to a geometric Brownian motion as follows:

\[ dx = \alpha x dt + \sigma x dz \]  

\( \alpha \) is a risk neutral drift, and \( \sigma \) the instantaneous volatility.

In absence of any operational or strategic flexibility, the value of the company is given by the present value of future cash flows:

\[ V(x) = \int_0^\infty xe^{-(r-\alpha)} = \frac{x}{r-\alpha} \]  

where \( r \) is the risk free rate of return. The company is being run by the shareholder as he has the relevant skills, knowledge about the business, and influence in the market.

There is a single buyer interested in acquiring the company. If the transaction occurs, we assume the seller’s characteristics presented above remain, even after leaving the company. Accordingly, we state:

\textbf{Assumption 1.} \textit{Based on his skills, knowledge, and influence in the market, the seller can re-enter in the business, competing with his former company.}

Standard procedures (see the Appendix) reveal that the optimal trigger \( (x_S) \) for re-
entry the market is:
\[ x_S = \frac{\beta_1}{\beta_1 - 1} \frac{r - \alpha}{\phi_S} K \]  

(3)

where \( K \) is the investment sunk cost, \( \phi_S \in (0, 1] \) the market share captured by the seller after investing, and

\[ \beta_1 = \frac{1}{2} - \frac{\alpha}{\sigma^2} + \sqrt{\left( -\frac{1}{2} + \frac{\alpha}{\sigma^2} \right)^2 + \frac{2r}{\sigma^2}} \]  

(4)

An natural consequence of Assumption 1 is that the buyer does not receive \( V(x) \) after the acquisition, as it is normally considered. Instead, he assumes the role of an active leader waiting for the (possible) entrance of the seller as a follower.

Fearing this potential future competition, the buyer would be interested to impose a non-competition covenant to avoid or delay the seller re-entry. This non-competition obligation lasts for \( T > 0 \) years.

An appropriate value function for representing the buyer position is similar to the one presented in Pereira and Rodrigues (2014):

\[ V_B(x) = V(x) - \frac{x\phi_S}{r - \alpha} e^{-(r-\alpha)T} N(d_1(x)) \left( \frac{x}{x_S} \right)^{\beta_1} N(-d_3(x)) \]  

(5)

where \( N(\cdot) \) is the cumulative normal integral, and

\[ d_1(x) = \ln \left( \frac{x}{x_S} \right) + \left( \alpha + \frac{1}{2} \sigma^2 \right) T \]  

(6)

\[ d_3(x) = d_1(x) + (\beta_1 - 1) \sigma \sqrt{T} \]  

(7)

The last two terms of the right-hand side of Equation (5) captures value that it is lost due to the potential re-entry of the seller. The second term captures the possible entry at \( T \), immediately when the non-competition obligation ends (if \( x(T) \geq x_S \)), and the last term is the value loss for an entrance in a later stage (if \( x(T) < x_S \)).

Because of the non-competition covenant, the seller receives a forward start option to invest that can only be exercised after \( T \) years. The appropriate value function for this position is as follows (see Pereira and Rodrigues (2014) and Shackleton and Wojakowski (2007) for the details):

\[ V_S(x) = \frac{x\phi_S}{r - \alpha} e^{-(r-\alpha)T} N(d_1(x)) - Ke^{-rT} N(d_2(x)) + \frac{K}{\beta_1 - 1} \left( \frac{x}{xF} \right)^{\beta_1} N(-d_3(x)) \]  

(8)

where \( N(\cdot) \) is the cumulative normal integral, \( d_1(x) \) and \( d_3(x) \) as previously presented,
and

\[ d_2(x) = d_1(x) - \sigma \sqrt{T} \]  \hspace{1cm} (9)

The first two terms of the right-hand side of Equation (8) is the European option pricing formula for a dividend paying asset with maturity \( T \), that is only exercised if \( x(T) \geq x_S \). The last term captures the value of exercising the option to invest later than \( T \), which happens if the trigger \( x_S \) is not reached at \( T \) \((x(T) < x_S)\).

In addition to the previous setting, consider the existence of a synergy resulting from the acquisition process, as follows:

**Assumption 2.** The acquisition creates a (“one-shot”) deterministic synergy \( \Sigma \). The synergy will be shared by agreement between the two parties, \( \alpha \Sigma \) to the seller and the remaining \((1 - \alpha)\Sigma\) to the buyer, where \( \alpha \in [0, 1] \).

For the sake of convenience, a deterministic synergy is assumed but the main conclusion would remain if uncertainty is introduced.

### 2.2 The effects in individual and global wealth

The acquisition leads to a wealth increment for the *buyer* \((\Delta W_B)\) that can defined as follows:

\[ \Delta W_B = V_B(x) + \Sigma - (P + \alpha \Sigma) \]  \hspace{1cm} (10)

where \( P \) is the price paid for the company’s assets in place.

The wealth increment for the *seller* \((\Delta W_S)\) is:

\[ \Delta W_S = P + \alpha \Sigma + V_S(x) - V(x) \]  \hspace{1cm} (11)

From a central planner perspective, the increment in global wealth \((\Delta W)\) is:

\[ \Delta W = \Delta W_B + \Delta W_S = \Sigma + V_B(x) - V(x) + V_S(x) \]  \hspace{1cm} (12)

It is easy to show (see the Appendix) that \( V_B(x) - V(x) + V_S(x) < 0 \) which means that the true synergy value is lower that \( \Sigma \):

\[ \Delta W = \Sigma_{\text{true}} < \Sigma \]  \hspace{1cm} (13)

We see that potential competition introduced by the *seller* destroys global welfare as the value loss for the *buyer* is not compensated by the value created to the *seller*.

In fact, only in the limiting cases where \( T \to \infty \) and/or \( \phi_S \to 0 \), we get \( \Sigma_{\text{true}} \to \Sigma \). In fact, is these extreme situations \( V_B(x) \to V(x) \) and, at the same time, \( V_S(x) \to 0 \) (see the Appendix).
Additionally, from global perspective, any acquisition producing a synergy such:

\[ \Sigma < V(x) - V_B(x) - V_S(x) \]  

should not be undertaken as the global wealth increment is negative (\(\Delta W < 0\)). However, myopic decisions may lead to non-optimal decisions.

As a consequence the parties involved in acquisitions should consider competition effect for the calculation true value of synergies.

(These conclusions may also be useful for regulators and policy makers.)

2.3 The price definition and its effects in individual wealth

For any fixed sharing rule for the synergies an appropriate price payment for the assets in place would lie as follows:

\[ P \in [V_B(x), V(x) - V_S(x)] \]  

which means that there is no single price that makes the parties indifferent. The **buyer** is willing to pay at most the value he receives from the transaction, \(V_B(x)\), whereas the **seller** asks, at least, the compensation for his value loss, \(V(x) - V_S(x)\). The impacts in individual wealth increment is:

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<tr>
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<th>(P = V_B(x))</th>
<th>(P = V(x) - V_S(x))</th>
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<tr>
<td>(\Delta W_B)</td>
<td>((1 - \alpha)\Sigma)</td>
<td>((1 - \alpha)\Sigma)</td>
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<tr>
<td>(\Delta W_S)</td>
<td>(\alpha\Sigma)</td>
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**Table 1:** Analysis of the individual wealth increments for different transaction prices.

[Additional analysis to be incorporated.]

2.4 The mitigation of the welfare loss

[Additional work to be done.]

- \(T \to \infty\)
- "Strategies" to reduce seller’s "comparative power" (\(\phi_S \to 0\))
- The seller keeps a stake in the company (an optimal one...)
3 Numerical Example

4 Conclusions

Our results show that the value of the forward start option of the target firm increases with the uncertainty of the profit flow associated with her return to the market and decreases with the time-to-maturity of the covenant. We also characterize the market conditions where the target should optimally re-enter the market as a follower, and our results reveal that her optimal re-entry time differs substantially from that of a follower in a standard leader-follower real option game. Our findings also suggest that the (ex-post) synergies (ex-ante) assumed for the acquisition deal determine both the price of the acquisition as well as the value of the forward start option and the optimal re-entry time of the target firm.

References


Starr, E. P.: 2015, Training the enemy? firm-sponsored training and the enforcement of covenants not to compete, working paper.
Appendix