Should an Athlete Turn Pro “Early”

Chapter 24

The Question

Should an athlete turn pro early?

We will examine this question with the intent to reach an optimal decision ex-ante.

To stay or not to stay

When an athlete has an opportunity to turn pro before his or her NCAA eligibility runs out, an important and complicated decision must be made.

The athlete must conduct a benefit-cost analysis. The costs are the expected costs of leaving school early and turning pro, and the benefits are the expected benefits of staying in school.

If expected benefits outweigh expected costs: Athlete should turn pro early

If expected costs outweigh expected benefits: Athlete should stay in school

To stay or not to stay

Everyone makes a benefit-cost analysis when making any decision. Although this is the case, notice that some decision are more important than others and thus an individual might proceed more carefully in the more important decisions.

There is also uncertainty that surrounds the costs and benefits (thus expected benefits and expected costs) are analyzed. An individual might also be risk averse (dislikes risk or uncertainty). Also, probabilities may also be hard to assess for a young athlete.

Cost of Leaving School

Benefits of staying in school:

- Athletic development – more time to get ready for professional competition
- Education development – completing a degree is far more difficult if one leaves early
- Physical and emotional maturity – physical size, strength, endurance, and skill may all be improved before trying to compete with mature professional athletes
- Enjoying college life

Benefits of Leaving School

Benefits of leaving school

- Professional Earnings – an athlete can earn a salary on a professional team rather than playing for free on a college team
- Cost of an Injury – staying in school may increase the chance of sustaining an injury before getting picked up by a professional team
- Changed Market Conditions – competition for a position may be better one year than the next. Agreements between the league and the players ‘ union may change the landscape
- Poor Team Performance – an athlete may look at his or her returning teammates and decide that the team will be weak and therefore reduce the athletes’ performance
- Risk of Reduced Personal Performance – an athlete runs the risk of underperforming if he stays at the school

History of Early Entrants

A larger number of early entrants typically do not do so well in the NFL draft

- Undrafted players can sign free-agent contracts with any team that is interested, but they cannot return to college football. These players may have been better off if they had remained in college, but that is not a certainty
- For some players, a better choice might be to finish their education rather than try for the NFL

Simple Economic Model

We can use a simple economic model to analyze how athletes might make their decision.

We will focus on the effect on lifetime earnings of turning pro at various points in time, in order to keep our analysis simple.

Simple Economic Model

We start when the athlete graduates from high school, and assume that he or she will have a career of T years whenever he or she turns pro.

Remaining in school and preparing for that pro career cause earnings to grow at a rate of r. This growth rate declines over time, so:

- $r_1 > r_2 > r_3 > r_4$ where r_1 is the growth rate during year 1, r_2 is the incremental growth rate during year 2, and so on. In this model, we also assume that each r is positive (they don't get worse).

This is a reasonable assumption as an athlete should grow (get better) from year to year. Also, this growth should get less and less each year (meaning the athlete is still getter better, but at a decreasing rate).

Simple Economic Model

If an athlete turns pro right out of high school, the present value of his or her lifetime professional earnings (V) can be written as:

- $V_0 = \sum_{t=1}^{T} \frac{S_t}{(1+i)^t}$

Where S_t is the athlete's salary for season t, i is the appropriate discount rate, and T is the length of his career

If the athlete attends high school for a year, and then turns pro, he gets a higher salary (in this model) of $S_t(1 + r_1)$:

- $V_1 = \frac{(1+r_1)}{1+i} V_0$

If $V_1 > V_0$, then it is better to be in college for a year than turn pro right out of high school.

Simple Economic Model

Let analyze this, notice from our equation:

$$V_1 = \frac{(1+r_1)}{1+i} V_0$$

Where $(1 + r_1)$ and $(1 + i)$ are just numbers greater than 1. Notice that $V_1 > V_0$ only if $(1 + r_1) > (1 + i)$, or $r_1 > i$.

We can do similar analysis for additional years spent in college. Consider an athlete analyzing whether to spend an additional year of college (given he has already spent one year in college):

$$V_2 = \frac{(1+r_2)}{1+i} V_1$$

Again, if $r_2 > i$, then $V_2 > V_1$, and thus the athlete should spend one more year in college.

Simple Economic Model

Thus the athlete will postpone going pro (in other words, staying in college) another year if $r > i$.

Example: Suppose that an athlete expects to receive a lifetime (discounted) professional earnings of \$5,000,000 if he has not attended a year of college. Suppose that $r_1 = .07$ and $i = .05$. Should the athlete attend college at least one year? If so, what is his expected lifetime professional earnings if he stays an additional year at college?

Yes. We will show that $V_1 > V_0$. Notice that $V_0 = 5{,}000{,}000$. Thus:

$$V_1 = \frac{(1+r_1)}{1+i} V_0$$

$$V_1 = \frac{(1.07)}{1.05} 5{,}000{,}000 = 5{,}095{,}238$$

Simple Economic Model

Example: Now, suppose that an athlete expects to receive a lifetime (discounted) professional earnings of $10,000,000 if he has attended three years of college. Suppose that $r_4 = .10$ and $i = .08$. Should the athlete stay at college one additional year? If so, what is his expected lifetime professional earnings if he stays an additional year at college?

Yes. We will show that $V_4 > V_3$. Notice that $V_3 = 10{,}000{,}000$. Thus:

$$V_4 = \frac{(1+r_4)}{1+i} V_3$$

$$V_4 = \frac{(1.10)}{1.08} 10{,}000{,}000 = 10{,}185{,}185$$

Simple Economic Model

In this simple model, the decision rules are:

- If $r > i$, delay (stay in school)
- If $r < i$, turn pro

What influences r?

- Determinants of r include: experience, maturity, injury, competition from rivals, team quality, coaching quality, coaching quality, and so on
- The value of r differs from one player to the next

Can r be negative?

- Yes, there are examples on the book where r is negative

Uncertainty

If a player knows that a future $r < i$, then why are there examples of players staying in college (since they would be better off going pro earlier)?

- The problem is that the player usually does not know their r. They might have an idea of what their r will be, but they can't be certain

Other values that are not certain are career length (T) and future salaries (S). Again, the players might have an idea of what T and S will be, but they can't be certain.

The player's best guess of what these values will be are called expected values (we will not delve into this subject as it is not in the scope of this course).

Note that "expected" growth rates, career length, and future salaries are based on subjective (what the athletes think) probabilities.

Age Limit

Almost all professional sports leagues and organizations put some age limits on eligibility to participate

This is to protect young athletes from injury, burnout, and the stress of professional competition

The age limits, to some extent, protects incumbent participants from competition provided by newcomers

The NFL's rule of requiring players to have been out of high school for at least three years. This means that the player will have three years in some college program. This benefits the NFL because college football programs provide a free training ground for the NFL. It also reduces risks for NFL teams because each athlete's potential will be somewhat easier to asses.

Leaving High School Early

Leaving high school to play in the NBA can be risky. Although it worked out for players like Garnett, Kobe, James, and Howard, there are some cases where it does not work.

Jeremy Tyler skipped his senior year and decided to go to Europe to play pro basketball. The team that signed Tyler found that he had problems with being on time and had other off-court problems. He was largely unproductive. Tyler played reduced hours, was lonely, and struggled with a different culture. Due to these issues, Tyler quit the team and returned home. Tyler was not mature enough for the life of a professional basketball player on and off the court.

Questions to Think About

(From Blair): Following his junior year, Peyton Manning decided to return to the University of Tennessee for his senior year rather than head to the NFL. Manning explained that he enjoyed being in college. No doubt he also hoped to beat the University of Florida and perhaps win the Heisman Trophy. He neither won the Florida game nor the Heisman Trophy. Was staying at UT a mistake?