Chapter Four

Tevye *Was* a Rich Man

The Quintessential Value Investor

I'D LIKE TO INTRODUCE YOU TO MY HERO, Tevye the Milkman. Didn't read about him in your investing books? Tevye came to life in the stories of Shalom Aleichem, and later to the silver screen in the musical *Fiddler on the Roof*.

Tevye is my hero not just because he is a font of worldly wisdom, or because he can sing, or because he is a great and kind father, or because he romances the memories of my ancestors. I honor Tevye because he is a *pragmatic value investor*.

Tevye lives in a small village in eastern Europe; he is a farmer and a milkman. He may not be familiar with the maxim that the value of any asset is the present value of the asset's future cash flows, but that doesn't prevent him from applying these principles.

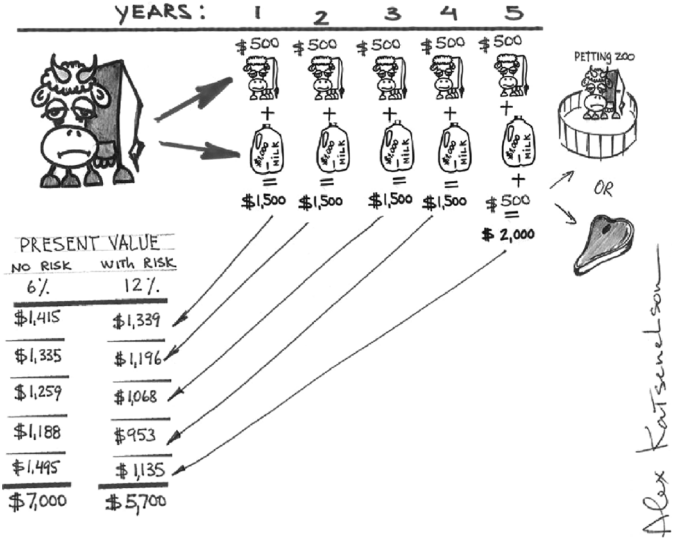
Tevye's story highlights what value investing is all about: analyzing an asset be it a cow, a stock, or a bond by assessing its risk; valuing it or figuring out what it is worth; and calculating a suitable purchase price. If an asset trades at the desired price or below it, you buy it; if not, you wait patiently until it gets to your target price. That's it!

Unfortunately, market noise often deflects us off this simple path, but it really is that simple. I often think about Tevye to keep my focus amid the daily noise.

Meet Our Hero

Tevye needs to buy a young cow. He plans to name her Golde, after his first wife. Based on his previous experience, he expects Golde to produce about 2,500 gallons of milk a year, bringing him about $3,000 in revenues a year. After paying for a barn, high-quality feed, stud fees, top-notch veterinary services, his otherwise unemployed nephew to take care of and milk Golde, and finally, taxes, he expects to pocket about $1,000 a year from the milk (see Exhibit 4.1).

Exhibit 4.1 What Is Golde Worth?



Source: Active Value Investing by Vitaliy Katsenelson (John Wiley & Sons, 2007, page 121). Reprinted with permission of John Wiley & Sons, Inc.

Tevye further expects Golde to rear a calf every year (fairly usual for cows), which Tevye will sell at a livestock auction for $500 (after tax). After five years of hard work Golde's milk production will likely fall off, and Tevye can then sell 700-pound Golde to his friend the butcher for $500. For the sake of those who don't want to see Golde slaughtered, he might sell her to a local petting zoo—he is

a kind man, after all. Tevye is not aware of it, but that final goodbye, Golde's liquidation, is called her terminal value.

What's She Worth?

Tevye believes that, at the most, Golde will be worth about ∮8,000 to him. He figures that between milk (∮1,000) and a calf (∮500) she will generate cash flow of about ∮1,500 a year for five years—that is, ∮7,500 plus another ∮500 from the butcher or petting zoo at the end of year five. So Tevye figures that it doesn't make sense to pay more than ∮8,000 for Golde.

But, the ∮8,000 he hopes to receive over the five-year period will not be the same as the ∮8,000 he pays today—a lot of things can happen in five years, including inflation and opportunities for Tevye to spend his money elsewhere; that is, opportunity cost.

Tevye's son-in-law, a banker, finds out that Tevye is contemplating buying Golde. Wanting to win his father-in-law's heart, he offers (on behalf of the bank he works for) to finance Golde's future cash flows by giving Tevye a lump sum of ∮7,000 today. In exchange, Tevye must agree to pay the bank ∮1,500 a year for five years and an additional ∮500 at the end of year five from selling Golde. In other words, the son-in-law's bank will finance Golde's purchase at 6 percent a year (or Tevye can deposit in the bank at 6 percent a year if he wishes to do so).

Tevye didn't really think he needed the financing, but his son-in-law gave him an important insight: If Tevye could predict and forecast Golde's cash flows with absolute certainty, taking all the risk out of the transaction, then he could accept his son-in-law's offer and buy Golde at the livestock auction for $7,000 at the most. But why bother buying Golde for $7,000? He could just give the money to his son-in-law and let earning 6 percent a year be his son-in-law's problem.

If Tevye bought Golde for $7,000, he would be compensated for inflation and opportunity cost but not for risk, and there was plenty of it.

- Golde could get sick.
- Feed prices could skyrocket, while Tevye might not be able to raise prices for his milk to offset the cost, and thus selling milk could turn into a profitless endeavor.
- Milk prices could decline due to competition from farmers across the pond.
- The "other" milk could start stealing shelf space from "real" milk in the local supermarket. (Tevye has never had much respect for soy milk, which he called soy juice. He told his daughters, "When you find an udder on a soybean, I'll call it milk.")

- Taxes could increase at the whim of people he doesn't know in order to finance things that Tevye does not really understand or care about.

Tevye's gut and experience are telling him he should at least demand double the riskless rate of 6 percent that his son-in-law is offering him and require a 12 percent rate of return for Golde's risky cash flows. This would bring Golde's fair value (also called intrinsic value) to about ₰5,700. In other words, instead of discounting Golde's cash flows (bringing future cash flows to today's value) at 6 percent—as his son-in-law did when he offered Tevye ₰7,000—Tevye thinks he should use 12 percent, as is shown in Exhibit 4.1. Some may say that would be asking for a 6 percent premium to a risk-free rate of 6 percent.

If Tevye bought Golde for ₰5,700 he would be compensated for inflation, opportunity cost, and the risks that come with owning a cow.

Of course, unpredictability of future cash flows could always turn in his favor. Milk prices might increase, feed prices and taxes could decline, beef prices could climb, Golde could turn out to be a super cow and produce a lot more milk than anticipated, or the petting zoo could pay several times what he expected for Golde. However, his years of experience have taught him to hope for the best

and prepare for the worst. If the future turns out brighter than he expects, that will be a nice bonus and he will be able to install indoor plumbing in his house.

Factoring In Risk

The margin of safety is dependent on the price paid. It will be large at one price, small at some other price, and nonexistent at some higher price.

—*Benjamin Graham,* The Intelligent Investor

Tevye never met Benjamin Graham, nor did he read his book *The Intelligent Investor;* he never heard of the "margin of safety"—buying stocks at a discount to fair value—that Benjamin Graham popularized in his writings. However, Tevye had several daughters' weddings to pay for, and this transformed him into a cautious farmer. He thought if he bought something at fair value (Golde at ₰5,700 would be fairly valued after factoring in the risk, as we have seen), then he'd have little margin for being wrong. Even if his forecasts were right on the money, there were still many variables that he could not control or forecast. He knew that forecasts were rarely right on the money and things usually went more wrong than right.

Exhibit 4.2 Golde's Absolute Valuation Stats

Sum of all Golde's cash flows	$8,000
Fair value if cash flows discounted at 6% required "riskless" rate of return	$7,000
Tevye's perception of fair value if cash flows discounted at 12% "risky" required rate	$5,700
Golde's purchase price (with 25% margin of safety)	$4,300

Source: Active Value Investing by Vitaliy Katsenelson (John Wiley & Sons, 2007, page 122). Reprinted with permission of John Wiley & Sons, Inc.

Discounting Golde's cash flows using the 12 percent risky rate provided Tevye some buffer for being wrong (see Exhibit 4.2). The 6 percent risk premium provided a $1,300 risk premium buffer (the difference between $7,000 and $5,700). However, if Golde was purchased at fair value of $5,700 and cash flows came in below Tevye's estimates, he would not be fully compensated for the risk taken. For this reason, he needed to buy Golde with a margin of safety.

He needed a margin of safety to protect him for two reasons:

1. If things turned out as expected or better, then he would have made an extra return from buying Golde below estimated fair value of $5,700. For instance, if he purchased Golde at $4,300, about a 25 percent margin of safety, and all assumptions played out as he expected, then in addition to earning a 12 percent

annual rate of return Tevye would make $1,400 from the margin of safety.

2. More important, if Tevye made a mistake in forecasting future cash flows, or some of the risks surfaced and impacted cash flows, he'd have a margin of safety to fall back on. At a 25 percent margin of safety, cash flows could be off by $1,400 and he still would make his 12 percent annual rate of return.

With these thoughts, Tevye went to the livestock auction looking for his Golde.

At the Livestock Auction

Tevye did not buy Golde on the first day of the auction. The weather was sunny, his fellow farmers were excited about the prospects of the cattle market, and the bidding for cows went too high—many sold above their intrinsic value. Many farmers got caught up in the excitement, forgot they were farmers, and bought cows like crazy, ignoring expected cash flows and hoping other farmers would buy these cows at even higher prices tomorrow.

The second day was more productive than the first, but still Tevye did not buy his Golde. The prices were still too high, but instead of obsessing over the market action and prices, Tevye did additional research on the cows that

were available for sale. He identified the best of breed, the ones that would be less susceptible to getting sick and had the potential to surprise him with their milk production.

The third day was Tevye's day—the day when he bought his Golde. It was a rainy day, and cattle prices reflected the weather; they declined. Many disappointed farmers who had just bought cows at prices above their intrinsic values with the hope of selling them at a profit now were selling them at any price, just to recover some of their investment. In addition all of this coincided with the liquor store next door having a huge sale, and many disenchanted farmers went to take advantage of it.

Tevye found his Golde. She was not the star of the show, but she was definitely best of breed; she met all Tevye's stringent quality criteria, and the best part was, Tevye bought her with a 25-percent margin of safety to her intrinsic value—he paid only $4,300!

The Final Tally

Without giving it a second thought, Tevye used a discounted cash-flow model to analyze Golde's purchase. He estimated the drivers of value:

- The revenues—milk, calves, and beef (or proceeds from selling Golde to a petting zoo)—she would produce over the years.

- The costs associated with taking care of his favorite cow, which had all the personality traits of his first wife (calm, cooperative, low-maintenance).
- Her longevity—the longer Golde can keep producing high-quality milk, the more valuable she becomes. (Note that the same logic applies to valuing stocks. The more durable a company's competitive advantage, the further and the more confidence you'll have in projecting its cash flows forward, and the further ahead you can forecast its cash flows, the more valuable is the company.)
- The external risk factors—the whims of consumer demand, taxes, political risks, regulation of the dairy industry, and so on.

Estimating all these creators (and possible destroyers) of value was an immensely important mental exercise, as it kept Tevye in the boots of a farmer instead of the fickle shoes of a speculator.

He believed that if, at the livestock auction on day one, his fellow farmers had been making their decisions based on expected cash flows from the cows, they would not have been buying cows as if milk were about to become the new vodka. Discounted cash-flow analysis would have cooled down the euphoria that came with a sunny day and rising cattle prices, and it would have kept the farmers from turning into speculators.

This process of analyzing and determining Golde's worth radiated a false appearance of precision, but for Tevye it was anything but precise. He knew that any time you use even simple math, the false appearance of precision is hard to avoid. For Tevye it was a framework of thinking about return and risk; it allowed him to bring in his real-world experience and quantify his assumptions. The process also helped him understand which creators and destroyers had the most potential impact on Golde's value.

If Tevye found a cow whose character he liked but whose cash flows he was less certain of—maybe there was a history of illness in its bloodline, or it appeared to lack the stamina of his Golde—he'd either increase the discount rate (maybe using 15 percent instead of 12) or increase the required margin of safety (perhaps from 25 percent to 40 percent).

External (not cow-specific) factors could also force Tevye to rethink his discount rate or margin of safety. Every so often a new government made promises to farmers that it could not keep, and later it had to raise taxes or print money to keep these promises. Higher taxes reduced his profits in a very apparent way, while high inflation corroded his profits in a more subtle way; or, as Tevye's favorite thinker, Yogi Berra, put it, "A nickel ain't worth a dime anymore." Either way, if Tevye had a feeling that

the current government was making promises it could not keep, he would start raising his required rate of return or margin of safety, proactively.

Tevye loved his overeducated son-in-law, the banker, insofar as he provided for his daughter, but Tevye was fairly certain that the banker's fancy valuation models that were based on elegant formulas with Greek symbols and provided exquisitely precise answers lacked common sense.

Price to "Anything"

Tevye used some shortcuts to assist him in purchasing Golde. These were the "price to anything" ratios (more accurately, price divided by anything), where anything could be earnings, cash flow, revenues, gallons of milk, or anything else! His son-in-law called them relative valuation tools, as they established a relative value link between a price and a value creator ("anything").

Relative valuation tools were not an intuitive to Tevye at first, but after using them for a while he learned to appreciate their simplicity and ease of use.

After a while, price-to-cash flow started to appeal to Tevye's intuitive sense. As shown in Exhibit 4.3, at ₰5,700 (Golde's fair value in his estimate), he would have paid 3.8 times Golde's annual cash flows of ₰1,500 (₰5,700 divided by ₰1,500), and so it would take him just a bit less than four years to break even on Golde's purchase.

Exhibit 4.3 Golde's and Similar Cows Relative Valuation Stats

	Price to Cash Flows
Highest price over previous five years: $12,000	3.8 times
Young farmer purchased Golde-like cow for $10,500	8 times
Golde's fair price according to Tevye: $5,700	3.8 times
Golde's purchase price (with 25% margin of safety): $4,300	2.9 times
Lowest price over previous five years: $4,050	2.7 times

Source: Active Value Investing by Vitaliy Katsenelson (John Wiley & Sons, 2007, page 126). Reprinted with permission of John Wiley & Sons, Inc.

Whereas estimating and discounting Golde's cash flows provided Tevye with an insight into Golde's value in absolute terms, relative valuation tools provided a relative assessment for pricing value creators when considering Golde's history or in relation to the valuation of other cows. Tevye found that often "price to anything" measures were an adequate shortcut to figure out the appropriate price of a cow.

Despite the provinciality of Tevye's livestock auction, farmers still had to disclose the cash flows and revenues that their cows generated in previous years in accordance with rules of the Cow Exchange Commission (CEC). The CEC checked the accuracy of farmers' claims, and those who had the audacity to deceive their fellow farmers were publicly whipped.

From his wealth of experience, Tevye knew that at 3.8 times cash flows a typical two-year-old cow (and Golde

had just turned two) was fairly valued. A quick look at historical price-to-cash flow ratios confirmed that on average a cow of Golde's stature changed hands at about 4 times cash flows. Also, over the previous five years, similar cows changed hands at as low as 2.7 times cash flows (putting a price tag of $4,050 on Golde), and went as high as 8 times (putting a $12,000 price tag on her). In Tevye's estimation, at 8 times cash flows ($12,000 price tag), Golde would change hands at a higher value than the sum of all the cash flows she could possibly produce for her owner over her entire productive life ($8,000).

Bingo! Tevye had an epiphany. He saw one of the greatest limitations of "price to anything" measures: In the heat of the moment these measures can lose their meaning for farmers and turn them into irrational speculators.

The Day Tevye Bought His Golde

On day two at the livestock auction, Tevye overheard two farmers having an interesting conversation. The younger one argued that at 7 times cash flows ($10,500) the cow he had his eye on was a great buy, as only yesterday (on day one) she had demanded as much as 8 times cash flows. The other farmer, substantially older than the first, who had experience and common sense written all over his wrinkled face (just like Tevye), said:

> Son, just because one fool found a bigger fool to buy a cow for a ridiculous price doesn't mean that's what the cow is worth. Knowing what happened in the past doesn't tell us what will happen tomorrow. After the dust settles and everybody comes down from all the excitement, prices will swing back to their true level. How long will that take? Well, it may or may not take a while; the answer will be obvious to us only after the fact. That's why I stop bidding on sunny days when everybody's got a smile on their face. True value gets real hard to peg on days like that. And of this I'm certain: The cash flows that this cow will bring for its owner in the future don't support the 7 times cash-flow multiple that she's trading for at the moment.

The younger farmer shrugged and bought a Golde-like cow anyway, expecting to sell it the next day (day three) at a higher price. As the older farmer predicted, the dust did settle, and it didn't take long at all. In fact, it settled the very next morning.

Tevye believed that the past price-to-cash flow ratio had its advantages, as it showed the valuation road on which Golde had traveled in the past. However, don't forget that he was a cautious fellow. He believed that knowing the past is helpful, but he understood that the valuation road that farmers will take cows down in the future might not be at all like the roads already traveled.

And as it turned out, the price-to-cash flow ratio quickly helped Tevye to identify undervalued cows at the

livestock auction. In addition, when farmers started to panic and cattle prices began to plummet, he could without difficulty gauge the level of cheapness of the overall cattle market. He objectively determined the required margin of safety for Golde—25 percent—and figured that he wanted to buy Golde at about 2.9 times cash flows (3.8, the fair value price-to-cash flow, reduced by a 25-percent margin of safety). Then he just waited for prices to drop and bought his Golde.

Tevye didn't buy Golde at the lowest possible price, but he bought her at a significant discount to her intrinsic value. Maybe if he had waited a little longer he could have gotten her a bit cheaper, but Tevye didn't mind, because he knew he'd bought a great cow at a great price. Besides, trying to outsmart the auction by scraping the bottom had emotional appeal but little practical value. It might have let him brag to his neighbors about how smart he was, but that was not Tevye. The bragging rights meant little to him, since they wouldn't help him to pay for his daughters' weddings; and after all, that is what this purchase was about.