

Down and Out in Westeros, or:
Economy and Society in George R.R. Martin's *Song of Ice and Fire*

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If you tell me your economy, I'll tell you who you are. Supply and demand, inflation, and interest on loans are all products of logic and human nature. Likewise, whether in our world or in a fantasy world such as George R.R. Martin's Westeros, natural resources, transportation, and hierarchies of power and money will all affect how a society develops. For instance, the Middle Ages were fortunate in that Europe has ample supplies of iron, waterways for trade and transportation, and winters cold enough to kill malarial mosquitos. On the other hand, West Africa, while fertile and rich in gold, also harbored parasitic diseases that drained away the supply of available labor.

The economy also affects warfare. Fighting wars costs money—a lot of money—and the procurement of funds was a major concern of medieval monarchs. The usual method of doing this was to skim off part of the money going around in the economy—in other words, to collect taxes, duties, and other revenues. In a pre-industrial society, the health of the economy, and thus the amount of cash available to rulers, will always be closely tied to the land and agricultural production.

Does Martin realistically model these relationships? At first, it appears that he is absolutely inconsistent. Prices in *A Song of Ice and Fire* seemingly have no rhyme or reason. The prices of basic commodities fluctuate widely between books, and what characters consider to be a lot of money also varies greatly. However, if we take a closer look at the underpinnings of the Westerosi economy, we find that these seeming contradictions come from the fact that Martin, ever the consummate world-builder, realistically models the effect that Westeros' unique political, social, and climatic conditions have on the economy (or, at least, that I know enough medieval history to make up a convincing cover story for him).

First, we'll talk about trade in Westeros and the effect that ten-year-long winters might have on a pre-modern economy. Then we'll look at prices, and, finally, the world of medieval high finance and how it relates to the Game of Thrones. This might all seem kind of scary, but remember that we're talking about a relatively unsophisticated agrarian economy: You don't need to be a Wall Street whiz kid to understand the relationship between corn in the granary and gold in the treasury.

So What's a Dragon Worth, Anyway?

Let's start with a crash course on Westerosi currency. According to Martin's word in the *Ice and Fire* role-playing game, a gold dragon is worth 210 stags, and a stag is worth seven stars or 56 pennies. This is similar to the old European duodecimal system, derived from Roman usage. For instance, a British pound sterling was divided into 20 shillings and each shilling into 12 pence, giving 240 pence to the pound. In France, the units were livres, sous, and deniers, after the Latin *libra*, *solidus*, and *denarius*; despite the Anglo-Saxon names, English pounds, shillings, and pence, were abbreviated *l*, *s*, and *d* respectively.

Interestingly, the English gold noble, issued in the fourteenth century, was worth *less* than the silver pound: Three nobles made a pound. A noble weighed 138.5 grains, while a penny was originally 22.5 silver grains, giving 5,400 grains to the pound sterling. One noble was thus equivalent to 1,800 grains of silver, making gold, by statute, roughly twelve times as valuable as silver by weight if we account for the amount of base metal in the coins. By way of comparison, a Venetian ducat, the standard coin of international exchange, was 54 grains of nearly pure gold. (If you want to convert these figures to metric, there are 15.4 grains to the gram.)

But what is a stag or dragon *worth*? And how can we draw meaningful comparisons between our world and Westeros when we don't have any way to compare coin size, purity, or the amount gold and silver in circulation? While Martin may not give us specifics on Westerosi currency, logic still applies. In a bullion-based economy, what money can buy depends on three conditions: the rarity of gold and silver; the amount of precious metal in the coins; and the supply of, and demand for, market goods.

Regarding the first condition, obviously, gold would be worthless if it was as abundant as horse manure—it would take three dragons to buy a loaf of bread that would otherwise cost a one copper. While the official face value of the coin (the *tale*) would remain the same—11,760 coppers to the dragon—the actual *money value* of the coin would fall. Something similar actually happened in Spain during the height of precious-metal importation from the New World, when commodity prices more than doubled from 1535 to 1575. People are rational actors, and, as history shows, no government can mandate prices in the face of massive inflation. If they try, black markets arise—or merchants simply refuse to take the tainted money. Since the Lannisters are still considered rather wealthy, we can assume that they have some basic understanding of numismatic theory and limit the Westerosi gold supply. This may be why, as Cersei reminisces, Lord Tywin gave Lord Rykker a murderous look when he suggested that, if the late King Arys needed money, he should sit Tywin on his chamber pot: Extorting gold from the Lannister vaults would cause massive inflation and ruin the house. Of course, Cersei didn't realize this because it's patently obvious that Tywin, in addition to not letting his daughter play with swords, neglected her basic economic education.

Regarding the second condition, what happens if we cut the amount of bullion in coins? Suppose the silver star contained only 50 percent of the precious metal it formerly did. Could you buy the same amount for the new, “light” coins and the old “heavy” coins? Obviously not—as we see in the real world, where fourteenth century France saw massive inflation as the kings debased the coinage to raise money to fight the English. (The need for silver to finance his campaigns was one reason King Phillip IV of France sacked the Templars.) According to the principle known as Gresham's Law, which was named after the sixteenth-century financier Thomas Gresham—but also expressed by the fourteenth-century French scholar Nicholas Oresme—bad money quickly drives good out of circulation as people hoard the old “heavy” money and spend the new. Inflation quickly ensues. (Gresham's Law is, as we'll see, a bit more complicated than this, but this is a near enough approximation for now.)

Note that this isn't the same as inflation in our own economy since we can't really compare money in the Middle Ages to money in the postindustrial world. In the modern world we have fiat money, not specie. In other words, a dollar bill will buy something worth a dollar because the US government says it is legal tender for all debts, public and

private. On the other hand, a Westerosi dragon, or Venetian ducat, or medieval British pound sterling, is *commodity money*, valuable because of its precious metal content. Also, things cost comparatively more where all work was done by hand. Imagine if a week's groceries cost \$250 for one person, or a sweatshirt cost \$1,000!

So how do we compare average prices in a way that is meaningful to someone who lives in a post-industrial economy? One way to compare is to look at average wages in a country with relatively stable currency, such as England in the fourteenth century. This has the additional advantage of matching Westeros' technology level and social organization, if not its size—but since we're looking at things on the local scale, we can take England as a pretty close model. At the beginning of the fourteenth century, a skilled English laborer such as a thatcher could earn three pence per day. By the end of the century, after the Black Death had caused a labor shortage, he could earn four. This adds up to about three pounds a year, accounting for holidays and idle times. Our thatcher's master, for his part, could earn four pounds per year at the beginning of the fourteenth century, and five by the end of the century.

In *The Hedge Knight*, Dunk notes that a man can live well on three dragons a year. We can perhaps roughly guesstimate the dragon at the time of *The Hedge Knight* to be roughly equivalent to English pound at the beginning of the fourteenth century. Similarly, aristocratic incomes could range from 200 pounds per year for a minor noble to 11,000 for a great lord, but since Westerosi lords can control areas the size of small European countries, we can guess that their incomes would probably be proportionately larger.

The Westerosi Economic Cycle

Now that we have some sort of monetary baseline, we need to compare these wages to what they can buy—in other words, we need to look at supply and demand. Historical economists use the price of a typical “basket of market goods” as a benchmark in order to figure out the purchasing power of coinage. This is somewhat difficult to calculate for Westeros, since Martin can be frustratingly vague about prices. Of course, we can't blame him for this: As a consummate prose stylist, Martin knows that giving precise amounts, no doubt calculated by the complicated and detailed price indices he has no doubt developed in the years between the publication of the volumes of *Ice and Fire*, would bore his readers. Instead, he only uses specific prices as plot points: A no-frills suit of armor costs about four dragons (actually, 800 stags) in *The Hedge Knight*, and to afford it, Dunk sells his horse Sweetfoot for 750 stags, or two and a third dragons. Eighty years later, Jaimie, who is probably as fine a judge of both horseflesh and currency as any man in Westeros, tells Brienne to offer a silver for a plow horse and single gold coin for a knight's palfrey—and that in desperate need in the middle of a war. (In the prologue of *A Feast for Crows*, Rosey the serving-girl's virginity is similarly on sale for a golden dragon.) All we know about the money Arya gets for Craven, however, is that is not enough for passage to Braavos.

Food fluctuates similarly. Dunk buys a tavern meal (actually, a double meal), pays with a silver stag, and gets a “handful of coppers” as change—let's say a dozen, making a single dinner 20 pennies. Decades later, the Hound throws a handful of coppers on the floor for cheap wine in *A Storm of Swords* and Brienne buys a room and three meals for a few coins—let's assume they're stars—on the road to Duskendale. A side of beef costs a gold crown and a bushel of corn costs a silver stag in King's Landing during the war,

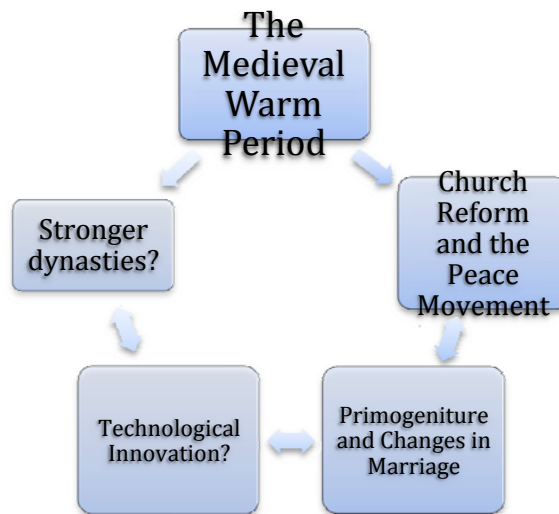
which is considered very dear. Likewise, a Duskendale baker does not have 50 stags for Lord Tarly's justice in *A Storm of Swords* and is lashed.

So, we see here a bit of an inconsistency: Money seems to buy *more* during the hard times of the War of the Five Kings, but people's *labor* (such as the price of prostitutes) seems to be worth less. We could say Martin has screwed up—after all, wouldn't the war lead to scarcity and higher prices? However, there is quite a reasonable explanation for all this.

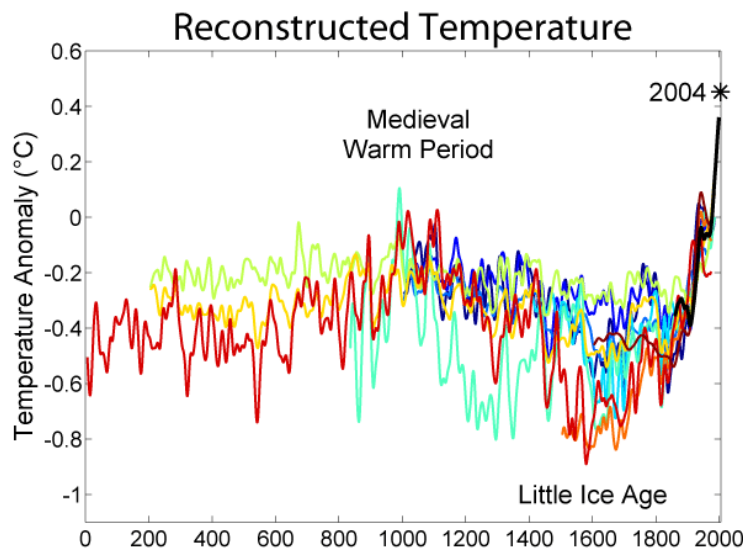
Let's look again at our medieval English laborer and his master. While our laborer's daily wage went up only 50%, from the beginning to the end of the fourteenth century, from around 2 pennies to 3, and his master's 20% from 4 to 5, their *actual purchasing power* increased by two-thirds. In other words, if you could buy three sausages with your wages in 1300, you could buy five in 1400. It was a good time to be one of the smallfolk—and the reason why was the Black Death. It seems odd to say that the death of half of the population was a good thing, but in many ways it had a positive effect on the lifestyle of the common person. To understand why, though, you need to have some background in medieval history.

Around the year 1000, Europe began to recover from the disorder that had followed the collapse of Charlemagne's empire. The ways in which this happened were probably as numerous as the arguments historians have deployed to try to explain it: social changes such as primogeniture instead of dividing lands between multiple heirs; a woman's family paying a dowry instead of her husband paying a bride-price raising the status of women; a peace movement that put moral pressure on the nobility to stop fighting one another and plundering the poor; and a Church that acted in its own interests to ensure both clear title to donations of land and its own independence, but wound up changing the way people thought about marriage and property by outlawing multiple marriage and making individual consent the basis of a valid marriage.¹ Some Cold War-era historians, watching Sputnik whiz by overhead and deciding that technological superiority was the critical factor in the rise and fall of civilization, have also innovated such as improved plows and the development of three-field farming as the critical factor—though these were probably not new inventions. Others have looked at the strong new monarchies in France and England—though medieval kings were still relatively weak and by no means had a monopoly on either power or authority.

¹ If you want to read about this more in depth, see this article I wrote for the Nerve.com Web site: <http://www.nerve.com/regulars/singlelife/003>



What many historians think today, however, is that the driving factor behind the Recovery was the environment. In a society where the primary economic activity is subsistence farming and the upper classes make their living by taking taxes and rents in grain, climate is everything. We have learned a great deal in the past few years from the data collected by paleoclimatologists such as tree rings, ice cores, and pollen samples, and, not coincidentally, global temperature corresponds greatly to the highs and lows of civilization. If we look at the chart below, we see that there was a temperature minimum—corresponding to the great plague of the sixth century—around the time of the fall of Rome. The temperature gets warm again in the tenth and eleventh centuries, and then cools off again in the later Middle Ages and early modern period before warming dramatically in the industrial age (partially as a result of human intervention).



(Credit: Wikimedia Commons. Different colored lines give different estimates; red is most recent.)

The result of this warm period was that Europe saw three centuries of steady expansion. The population grew and lords profited as peasants reclaimed land that hadn't been farmed since the collapse of Rome. New towns were built, following monks who pressed on into the wilderness looking to get away from it all or sponsored by nobility eager to collect taxes from markets. Art and culture revived, and cathedral towers rose up above the bustling cities of medieval Europe.

Then, in the first decades of the fourteenth century, disaster struck: The climate began to grow colder and wetter. From 1315 to 1322, there were seven years of non-stop rain. Crops failed, and sheep literally rotted in the field. Food became radically more expensive, and the poor were in some cases reduced to eating grass—and, according to some chroniclers, each other. Judging from skeletal evidence (our teeth set down a record of our lives, just as tree rings do), people were not getting enough to eat in the early fourteenth century. This, in turn, left them vulnerable to disease. Europe's population had reached its limit—what is called a Malthusian crisis. It was no wonder, then, that the Black Death carried off half the population from 1348 to 1350.

As grim as a fifty percent mortality toll might be, with the population diminished, there was more food—and land—and wealth—to go around for everyone. Those who struggled to farm poor land or who lived in serfdom could pick up and move to more promising locations. Prices for all sorts of goods dropped, and people could eat more and live better than ever before. For instance, the late fourteenth century saw the “birth of fashion” as commoners aped the clothing of their betters, and the nobility passed sumptuary laws and changed styles in order to reassert their place on the top of the social heap.

Even more important were the effects on the economy as the whole: The price of grain, which had skyrocketed, fell. However, the cost of labor went up, as the supply of workers had fallen and those who were left discovered their power to bargain. This squeezed the lords from both ends: Their income came from selling the grain grown on their lands, plus taking a share of the peasants' harvests paid to them as rents. The lords found the profits they took from the sale of grain fell, since demand had vanished and commoners were no longer willing to work their lords' land for free, as had been their traditional duty. The nobility's response—to farm out their properties in return for money rents—meant that well-off commoners could acquire the “capital” of the premodern world such as mills and fields, which they used to expand their fortunes even more.



What does this have to do with Westeros? Everything. The hallmark of Martin's world is the disturbed cycle of the seasons, with decades-long summers and winters. In

effect, Westeros experiences the climate cycles that medieval Europe did, but greatly accelerated. There must be an oversupply of grain in the summer, allowing population can rise. However, in winter, food is scarce and malnutrition and disease are rampant. With minimal family planning, Westeros probably sees a Malthusian crisis—perhaps not of Black Death-like proportions, but bad enough—every generation or so.

What are the economic effects of this cycle? In the spring, with the population still recovering from winter, we can predict there will be high wages and initially high commodity prices, which then fall as the harvests come in. The smallfolk will prosper, but, much as with Europe after the Black Death, the nobility will be feeling the pinch as they are caught between high labor costs and low commodity prices. Those who produce luxury goods for the well-off will therefore not be able to charge top dollar (or dragon) for their work. The price of animals (and therefore of horses and meat) will likewise be high as the herds slowly rebuild from the breeding stock kept overwinter.

As the summer goes on, population will increase. As a result, the supply of labor will go up and wages will fall. The price of grain will also go up as demand increases; however, the price of animals will come down as their supply increases. The situation will somewhat resemble that of the early fourteenth century, before the Plague. The nobility will rebuild their fortunes, the smallfolk will grumble, and those who sell specialty items to the nobility will be happy since they can now charge top dollar.

In the autumn, there will be equilibrium: wages will be high as repairs are made the last few harvests are frantically brought in, but so will prices as harvests are set aside in the granaries for the coming winter, causing commodity prices to ride. However, the price of meat will fall as cows, goats, sheep, and even horses are slaughtered to herd sizes that can be kept on stored fodder. That which can be preserved will be; the rest will be dumped on the market. No there will be rampant speculation in the grain, unless this is clamped down upon harshly. (If thieves lose fingers, grain hoarders probably lose whole hands. This was a problem in medieval Europe, too—Dante put hoarders in the fourth circle of hell.)

Finally, in winter, we see low wages since there's not much work to be done and high prices for scarce commodities. Both grain and meat are dear. The smallfolk suffer and die. Finally, in spring, the cycle will complete, with high wages but also initially high prices, much as it was in Europe after the Black Death.

The War of the Five Kings takes place at the end of a long summer. Money is worth more because wages are low but commodities, such as horses, are abundant. Thus, a good gelding can be had for a gold, and a baker does not have 50 stags to pay a fine. However, we can speculate that *The Hedge Knight* takes place in spring: Horses are dear, since they were expensive to feed and many did not survive the winter, but wages are relatively high. We see a rather excited and uppity population at the Ashford tournament, with money to spare. Prices will be high, with the exception being those who serve the nobility—such as armorers. Since their fortunes haven't yet rebounded from the winter, Steely Pate cannot charge optimum prices for his wares. (The majority of the price of armor is skilled labor, which is why it is such a high-value item.)

Thus, we see the seeming inconsistencies in prices in *Ice and Fire* are, in fact, merely artifacts of Westeros' climatic cycle. As in medieval Europe, much in Westeros depends on the weather.

So How Much does the Crown Owe?

Enough about the small folk's finances—what about the nobility? Things get even stranger when the aristocracy starts throwing money around. Edmure Tully offers 1,000 dragons for Jaimie Lannister's recapture, while the prizes in the Tourney of the Hand were 40,000 dragons for the joust, 20,000 for the melee, and 10,000 for the archery contest. The Hound, who won the jousting, has his 40,000 stolen (or, rather, forcibly exchanged for a letter of credit) by the Brotherhood Without Banners. Anguy, the winner of the archery contest, manages to spend the 10,000 on a prodigious debauch that no doubt had the shades of Fafhrd and the Grey Mouser looking down from some swords and sorcery heaven and throwing up their hands in despair. To secure the Second Sons' aid, Tyrion promises 100 dragons to the sergeants, 1,000 to other officers, and 10,000 dragons to Kasporio and Inkpots, and 100,000 (plus a lordship) to Brown Ben Plumm—but Salladhor Saan gets 30,000 a *month* for his pirate fleet of 30 ships. Meanwhile, Brienne's father offers only 300 crowns for her ransom (which Vargo Hoat judges too little) and Littlefinger buys the Gold Cloaks for about a single dragon per man.

Then there's the Westerosi national debt. The Crown is in debt to the Lannisters for three million dragons, to other creditors such as the Iron Bank for another three million, and to the Faith of the Seven for 900,000. The Lannisters must be immensely wealthy, but even that is a remarkable amount by medieval standards. Even the Fuggers only loaned Phillip II of Spain 1.6 million ducats—and Phillip had all the gold and silver of the New World to back him up.

France in the fourteenth century was in a similar situation to Westeros in the War of the Five Kings. Charles V had to raise three million crowns—about 500,000 pounds—to ransom his father, Jean II, who had been captured at the Battle of Poitiers in 1356. So what did Charles do to raise the cash? They did the same thing that apparently happened in Westeros: He debased the coinage.

You would think that the reason Charles V did this (or tried to, anyway—there was an uprising over it) was the same as the reason why Germany kept printing cash in the 1930s—to cause inflation and lower the effective value of the money he owed. But remember: this is commodity money, not fiat money. Its value is established by the market. The Weimar Republic saw runaway inflation because the government kept printing more and more money to buy foreign currency to pay Germany's war debt. Because the mark was still backed by a state saying “this is the only valid money,” creditors saw their assets wiped out. Whenever a recoinage happened in medieval France, though, people simply renegotiated debts. Similarly, debasing the Westerosi coinage wouldn't have stopped business as usual: the Crown would just would pay the Iron Bank of Braavos more of the new dragons, which is why the Braavosi were happy with the Crown up until Cersei stopped paying. (Again, Cersei is as ignorant of economics as she is arrogant and vain.)

The reason why monarchs had recoinages wasn't to cause inflation—though this was an inevitable side effect—but because when people were forced to take their money to the mint, the crown took a cut of the precious metal. This fee, called *seigneurage*, could be a significant source of income. Another monarch who did this was Henry VIII, who need to raise money to pay for his wars. Thanks to “Old Coppernose's” debasement of

the coinage, the English pound at the end of his reign in 1547 bought only one-sixth of what it had twenty years earlier.²

Now remember Gresham's Law—the idea that bad money drives out good. Here's the thing about Gresham's law: It only tells half the story. In fact, where there's a choice, *good* money drives out bad—which is why gold florins and ducats, which were amongst the best coins ever made, kept circulating alongside debased French coinage.

Furthermore, any recoinage will only take in part of the money, so the heavy and light coins will circulate together; the so-called “law” only applies if the “heavy” money and the “light” are forced to circulate at the same tale price, which is neither the case in Westeros nor medieval France. Fourteenth-century French account books are broken down by strong and weak money, and it took good business sense to keep straight what coins you were paid in, their denominations, and their weight.

The same thing obviously happens in Westeros. The Tourney of the Hand prizes, since they came from the royal treasury, were obviously in the new, “light” dragons. Edmure's reward for the Kingslayer and Brienne's ransom, like the Tullys and Tarths themselves, were old money, probably in cash—it's hard to make those aristocratic families empty their treasuries for reminting. Salladhor Saan's fees? New money, of course. The Second Sons' rewards? They *think* they're getting old money (all, perhaps, save for Brown Ben), but Tyrion will be paying them in the new. Of course, none of the characters mention if coins are heavy or light when they do business—it's hardly the stuff of exciting fantasy adventure—but it does. (This isn't why the people bite the coinage, by the way—it's to tell if it's gold-plated lead, which is even softer. Poor Pate never earned his gold link, so he's clueless as to why he should bite a dragon, but he does anyway.)

What Gresham's law *does* mean is that, if you have “light” and “heavy” coins in foreign trade, the “heavy” coins will tend to flee the country since, when you have a bimetallic system and you debase part of the coinage, you are, in effect, overvaluing the non-debased coins. This is why there are so many Westerosi dragons floating around the Free Cities—after all, Westeros has a trade deficit, since the nobility keep buying foreign luxury goods, and the merchants in Essos will only take good dragons. Soon, all the best Westerosi gold is in the Free Cities and actual dragons will be rare and valuable in Westeros—and if you notice, the only characters who seem to be handling dragons are either old-money families like the Lannisters or, like or the man Arya “pickpockets” on her first assassination and Alchemist/Jaqen H'ghar, from the Free Cities. (The same thing happened to Athens during the Peloponnesian War, when they had to buy food from abroad due to the Spartan blockade—as Aristophanes noted in his satire *The Frogs*, all the best Athenian coins were overseas!)

Eventually, it will be hard to find a good old dragon in Westeros, which explains why Oleanna Tyrell is hoarding old coins. The “hands” minted by Garth XII of Highgarden

² Medieval people were aware of this effect, which is why Nicole Oresme specifically warns against recoinage, and especially artificially changing the exchange rate of gold to silver to something different from what the market sets. Of course, many of his arguments hinge on the “unnaturalness” of making money from money and the fact that currency belongs to the community as a whole, not the monarch. By debasement, the monarch is essentially confiscating wealth from the people. Presumably Westerosi rulers have no such compunctions.

are small, worn, and thin. Cersei foolishly remarks that this is so that if a tradesman names a price in gold, she pays in these half-weight coins—but cheating merchants is very inconsistent with the open-handed Tyrell character. More likely it is because these are purer gold and thus a non-fluctuating reserve of wealth. Eventually they will be worth more than the debased dragons. And, of course, the Tyrells are Littlefinger's allies, so they know what the plan is.

So, to sum up, the reason why prices are all over the place in *Ice and Fire* is because Littlefinger has been devaluing the currency and old and new coins are both in circulation. The gold of Casterly Rock is dug from the ground; Littlefinger's gold, as Tyrion observes, is made from thin air—and not even Tyrion can figure out Petyr's books. Fortunately, we can.

Littlefinger's gambit

Debasement of the coinage isn't the only way in which Littlefinger is making money. Remember that Petyr has connections in the Free Cities—and he's definitely one to play both sides of the cyvasse board. How can we turn the devaluation of Westerosi currency to our advantage?

Medieval merchants were aware of regular regional variations in the economy and engaged in currency speculation. If a shipload of silk left Venice for the Champagne trade fairs, then it was a safe bet that Venetian ducats would be in demand in London and could be traded for British pounds at a favorable rate. These pounds would then increase in value when the English wool harvest came in. Another way of making a profit while avoiding charges of usury was to issue a loan in one currency (say, to buy goods overseas) which was then repayable in a different currency. The difference in exchange rate hid the creditor's profit.

Currency could be moved from one market to another with no actual movement of coins or precious metal by means of an instrument called a *bill of exchange*. Here's an example drawn from an actual fourteenth century bill of exchange transposed to Westeros: Varys wants to buy a boatload of Arbor red from Littlefinger in King's Landing. Varys pays 100 Pentoshi coins to Magister Illyrio, who gives him a bill of exchange payable for 50 Westerosi dragons. Varys then travels from Pentos to King's Landing, where he meets with a representative of the Iron Bank of Braavos, where Magister Illyrio has an account. The Iron Bank representative gives Varys 50 dragons, with which he can then pay Littlefinger.³

³ I should add a word here on the idea of money of account. Since no one wants to carry around bags of gold and silver, most likely the dragon, like the ducat, was primarily a money of account—in other words, paper money, given as a document called a “letter of exchange” that entitles the bearer to a certain amount of cash. Money of account came into being at international trade fairs in the thirteenth and fourteenth centuries, when the regular settling of accounts in all the various currencies would have been extremely time-consuming and tedious. Instead, sales and purchases were made entirely on paper, and accounts balanced and coins turned over at the end of business. Eventually, this involved sophisticated systems of credit and borrowing, all regulated by private banks and courts. This was not only key to any sort of commercial development in medieval Europe, but far more convenient than carrying chests of specie.

But let's imagine for a moment that there *is* no Arbor red. Varys has simply bought 50 Westerosi dragons. Why would he want to do this? Simple: he's speculating on currency. Let's suppose that the exchange rate for Pentoshi currency to Westerosi dragons goes up from 2:1 to 3:1. Those 50 dragons are now worth half again as much—150 Pentoshi coins as opposed to 100 (minus, of course, whatever fees the others take for their own profit). Varys has made a profit. On the other hand, if the exchange rate goes *down* so that those 50 dragons are now worth only 75 coins of Pentos (say because someone's debasing the Westerosi coinage), then he has *lost* 25 Pentoshi coins.

So, if we know that the Westerosi currency is going down due to the debasement of the currency, how do we use this to our advantage? The answer is: borrow the initial investment—in other words, do the same thing that modern traders do when they sell short. Let's suppose that, in our preceding example, instead of trading Pentoshi coins for dragons, Varys and Illyrio are doing it in reverse. They borrow the 50 dragons from Malaquo of Volantis at a time when the Pentoshi:Westerosi exchange rate is 2:1, with a promise to pay him back 75 Westerosi dragons in a month's time—a 50% profit for Malaquo. Varys and Illyrio do their trade and exchange the 50 dragons for 100 Pentoshi. No problem, but no profit or loss. Now, let's suppose, before the time Malaquo's due to be paid back, that the Pentoshi:Westerosi exchange rate goes down to 1:1, so that the coins are now on par. Varys and Illyrio can simply exchange 25 of their Pentoshi coins for 25 dragons. They make a net profit of 25 Pentoshi “out of thin air” (or, rather, out of Malaquo's pocket).

This sort of scheme also explains why someone wanted Arya's victim, who writes insurance policies for ships, dead so badly. In the fourteenth century, underwriting and insuring sea voyages was one way of getting around prohibitions on usury. While people in Martin's world don't seem to have any such compunctions against charging interest, we can assume that someone in the same line of work is also in the business of lending money. Certainly, people are bringing Arya's victim good gold Westerosi dragons, which are in ample supply in Braavos. In exchange he gives them a binder—a promise to pay at a future date. When they (or their heirs) are paid back, it's in debased Westrosi dragons. (The Kindly Man's admonition that sometimes Arya's victim doesn't pay is a bit of an oversimplification, but then, Arya doesn't need to understand international finance.) Of

Let's take 40,000 dragons the Hound won in the tournament as a case study. Since a gold dragon is large enough to walk across one's knuckles, these must be fairly big coins in a fairly gold-rich world. If a dragon weighed eight-tenths of an ounce, forty thousand of them would weigh a ton. No horse could carry such a load, though a team of draft horses could pull it in a cart. If they weighed .28 ounces (the same as a Sacagawea dollar coin, which is unlikely, since even impure gold would be much denser), that would still be 715 pounds—easier on our cart-pulling draft horses, but far too much for even a very fit warhorse to carry for even a moment without risking serious injury. If they weighed .12 ounces, the same as the historical ducat (which was much smaller than the dragon seems to be), that's still 304 pounds. A very stocky and fit horse could carry this and no other weight on its back, but would still likely break down quickly. Yet, as far as we know, Sandor, who is a very large man, departed King's Landing alone on Stranger. Thus, he probably carried some combination of coin and letters of exchange.

course, her mark is small potatoes—if he wasn't, he'd have a scale instead of biting coins, and he wouldn't be doing business in a soup shop—but the people doing this on the larger scale him must be raking in the dough.

Conclusions

Even a fantasy world has to follow the laws of economics. Martin is not only consistent, but rather brilliant in the way he handles a pre-modern economy. While he does not go into detail (since it doesn't affect the plot), the Westerosi economy is a realistic depiction not only of a medieval economy in the extreme conditions of a world where winter can last for ten years, but also pre-modern high finance.

Or, of course, I might just be very good at covering for him.