Grain Into Gold

A Fantasy World Economy

A Simple and Sane Supplement
for use with your Fantasy Role-Playing Game

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INTRODUCTION

Too many good campaigns and good campaign worlds have gone down the tubes because the economics of the setting got out of control. Typically this happens when adventurers roll back into town with so much incredible loot that they off-balance the economy. One of the root causes of this is not the generosity of the game master (as is typically blamed), but instead the lack of logic and intelligence in the game systems economics. What every game master needs is an economy that works for all ranges of people: the rich, the poor, and everyone in-between.

This supplement is presented as a generic supplement, and as such it should work for just about any fantasy role-playing game system and setting. In some cases, it can serve to augment the current economy of the game. In others, it may need to replace the current economy. At the very least, it should serve to give every game master a much stronger basis for his or her economics and monetary choices. It should also serve to give a multitude of ideas, both for adventures/encounters and for treasure and loot to be found.

The Basics

Let's start with the basics. It will be assumed that this economy exists in a civilized area of the world. Whether rural or urban, there is a civilization, and it has advanced to the point of relatively reliable government protection and the presence of coins. Despite the fact that barter was historically used far more often than coinage, this economy runs mainly on coins. If you, as a game master, decide to use barter, then the underlying values indicated here can still guide you to the relative value of barter.

Coins are pressed out of precious metals by governments or their agents. Although counterfeiting could happen, the average person would assume that the coins they are receiving and using are genuine. To keep things simple, the following conversion rates will be considered standard:

10 copper coins	=	1 silver coin
10 silver coins	=	1 gold coin
100 copper coins	=	1 gold coin

These conversion rates are relatively standard among many games and should serve well here. They are not required; any conversion rate can be used. The more intricate or difficult to calculate the conversion rate might be, the more difficult it will be to use in-game. For simplicity, copper coin will be abbreviated as "cc". silver coin will be abbreviated to "sc", and gold coin will be abbreviated to "gc". The silver coin will be considered the standard currency used.

In an effort to make this system of economics work in most settings, averages will be used and discussed throughout the book. The true nature of averages is that they are almost always wrong. For example, generalities will be made about livestock and their general worth, but these averages will not take into affect the differences in weight of the animals. Obviously, a bigger hog or steer will have more meat and be more valuable, both to the breeder and to the butcher.

It will be up to the game master to determine when averages are appropriate (to speed the game along) and when they are inappropriate (such as when detail becomes important). Averages might be perfectly fine for a class of products during one gaming session, but the details may become important the next time out. This will be especially important if the player characters get directly involved in trade.

Considerable research has gone into this supplement, including research into historical, medieval life. The averages and generalities of this book are based on a combination of historic fact, historic opinion, and modern practices. Whenever possible, historic facts were used, but even these do not always work when given a magical, fantasy environment. Historic opinions have certainly been used. Hopefully few, if any, of them are old wives tales. When modern practices were used as a basis for generalities in this work, they were scaled back in an effort to make them more appropriate for the setting and technology. Because of this, knowledge of one time period or historic culture is not sufficient to generate the entire economy. A blending was necessary and therefore used.

An important factor must also be stated here in the beginning. Although most game worlds are written and designed so that player characters can adventure through them, this system of economics assumes that **adventurers are <u>not</u> the most important people in the world.** Adventurers have their place and can become important, but the world really cannot revolve around them. This simply does not make sense. Even if they save the world from disaster, they will not be the focal

point of the world's economy. Adventurers may live "rock-star" lives, but they simply fill one section of the economic picture.

The Focus

The focus of this supplement is to put an economy into the hands of game masters that they can use in their worlds. The economy must work equally well for the poor, the middle class, and the upper classes. It must make logical sense and still be easy enough to use that it does not interfere with game play. If the players or game master have to do homework just so they can play, at least some of the fun will be lost.

As part of this focus, it will be important to show how different types of people live, each according to their own means. This will hopefully be done without too great a dependency on any game setting and will retain the generic nature of this supplement.

Tone

Lastly, economics, as any college student will tell you, can be boring. Game masters do not want to sit around and read boring stuff, even if it is good for their game. In hopes of alleviating some of the boredom, we have tried to take a lighter tone with this supplement. Please understand that the intent of this tone is only to try and keep a gaming supplement from turning into too much of a text book.

STEP 1 - BREAD

Growing Grains

Everyone needs to eat, and the food has to come from somewhere. Because of this, an economy really starts with the cost of food and builds up from there. Since we are discussing an economy, we are assuming an established civilization set in a particular place. This means an agriculture based society where some farmers are able to grow surplus food that they can sell. Most farmers strive to be as self-sufficient as possible, but even the most self-sufficient will typically need to trade for some things. The farmers who grow excess are truly the base of the economy.

Farmers want to get as much yield out of the land with as little expense and effort as they can. If a farmer could plant fewer seeds and work less in the fields while still producing the same crop, he would do it. After all, that would allow him to spend more of his time on other tasks that are also important to the livelihood of his family.

At an overly simplified level, farming requires two bushels of seed sown to produce eight bushels of seed harvested on an acre of land. This varies by crop types, but is often true. It is likely that the farmer will lose a like amount (around 25%) to taxes and spoilage together. The result is that assuming a farmer brings in a yield of eight bushels of seed per acre, after preparation for the next year's planting and taxes are taken into account, he will only have half his harvest to feed his family.

Farmers must also balance the uses of their land. In some cultures a field will be used two years in a row and then allowed to lie fallow for a year so that the nutrients of the soil can regain strength. Other cultures practice some manner of crop rotation, typically by substituting legumes (beans or peas) for the cereal crops every third year. In this manner they can still harvest a crop from the land, even though it is a crop of much less value than the cereal grain.

In this supplement more attention will be paid to the cereal grains, then to other crops, because it is these grains that yield flour and thus bread. Bread is considered to be the staple of life in most cultures, and thus is the most common crop grown for surplus.

Before this gets overwhelmingly dry, let's use an example. *Take Bob the farmer for instances. Bob is going to represent our average (if somewhat successful) farmer. He is a family man with a wife Betty, a son Ernie (old enough to help, but too young to move out) and a daughter Emily (old enough to help around the kitchen a little bit). Bob owns 30 acres that he inherited from his father. Bob grows all manner of crops, but mainly he grows grain.*

Bob's father believed in letting the fields lie fallow, but Bob is an innovator. He heard about this new fangled way of planting and he's been doing pretty well with it for five or six years. Every spring, he hitches up his ox and plows his fields. Because Bob and his son Ernie take good care of their fields and their ox year round, they can typically plow an acre a day. While the two men are finishing up the plowing, Betty sows the seed kept from last year's harvest. Betty will sow about two bushels of seed per acre.

Bob and Betty will plant 20 of their 30 acres with cereal grains. Every year they switch the fields around, and 10 acres are planted with peas. Of the 20 acres of cereal grains, Bob is probably planting wheat, rye and barley. Of the 30 acres, one is probably set aside for Betty's garden too, but this is relatively minor and we work with nice round 20 and 10 acre lots.

Let's assume that it is an average to good year and nothing goes wrong. Bob planted 20 acres of grain and

grew 160 bushels of grain (gross). Bob and Ernie set aside 44 bushels of grain to use next year as seed. (They are expecting some of it to spoil or be lost to rodents and so are padding the reserves.) The tax collector comes to the door the day after harvest (Boooo!), and takes the government's cut of 36 bushels of grain. (Remember, we are over simplifying.) This leaves Bob with 80 bushels of grain that he can sell or eat through the next year.

Don't forget, Bob also planted 10 acres of peas. His net yield after taxes, reserve for spoilage, and next year's seed, Bob will have 40 bushels of peas. If you are worried about how Bob is going to store all of this, we will assume he has a nice big barn and a nice sized silo. More interesting would probably be how the tax man carted off 54 bushels of grain from Bob and each one of his neighbors, but we don't like him so who cares what his problems are.

Selling Grains

In most cases, grain is not the end product. The end product is flour. The standard way to turn grain into flour is to bring it to a mill. Mills need to be powered, and how the mill is powered is up to you. Water wheels and wind mills are probably the most easily thought of, but animal power or even magic could be used based on your setting.

Once we are on the subject of milling, we are about to actually begin discussing economics and money. Mills were expensive to build and required skill to run. For the service of turning grain into flour, the miller would typically receive one-sixth of the produced flour. (Depending on the economics of the situation - supply & demand - millers might charge between one-fourth and one-eighth of the total milled.)

Getting back to our example: *Now that Bob has all this grain, he needs to sell some of it. Bob has to take his grain to the miller in order for it to be sold in a market.*

Just about every farmer believes just about every miller to be a fat, rich cheat. They are often right. Rather than answer this question fully, we will assume that Bob the takes his grain to John Miller, a reasonably fair miller. To make the math easier, Bob decided to bring 12 bushels of grain to John for milling. John would probably offer to buy the grain off Bob, but Bob knows he can make a little bit more if he sells it himself. So John mills 10 of the 12 bushels of grain for Bob, and Bob carts off the produced flour.

It is possible to grind grain at home without a mill and a miller, but this produces a lesser quality flour and requires an incredible amount of work. Most farmers and their families would rather use their time in other pursuits and allow the miller to grind their grains into flour.

Grinding wheat grain into flour causes some loss in the weight of the grain as certain portions of the grain are not to be included in the flour. Though a skilled miller can get more flour out of the grain than an unskilled miller, this is again an area where averages will be used. Typically 30% of the grain will be lost during milling. In other words, for every 60 pounds of grain (a bushel of wheat grain), only 42 pounds of flour will be produced.

Yes, it's time to go back to Bob: *So home from the mill goes Bob. He carted 12 bushels of grain to the mill for a total weight of 720 pounds of grain, but he is only bringing home 420 pounds of flour home.* And you wondered why he thought honest John Miller was a fat cheater.

In some societies the miller may not take his cut off the top, but guarantee some percentage of the grain as flour. For instance, if a miller promised 33 pounds of flour per bushel of grain, the farmer would know what to expect. Of course, using the example of Bob, this would mean Bob went home with 396 pounds of flour (12 bushels times 33 pounds per bushel), but if the miller were not good enough to consistently get 70% yield from his mill, this might be a safer bet. (Of course, John Miller is a perfectly average miller and therefore gets it right every time, but this is an admittedly simplistic example.)

Using Grains

What is Bob going to do with all that flour? He is going to have Betty make bread. Of course, she learned all the tricks from her mother and can make bread in many different forms in hopes of keeping her family from becoming bored with her cooking, but when it comes down to it, bread is likely to be the most substantial part of their diet.

When Bob comes home with his 420 pounds of flour, Betty starts calculating (home economics at is root). She can make bread, rolls, muffins, griddle cakes, and various other bread substances, but her family probably needs about two pounds of "bread" every day. This means that the flour Bob brought home will last them for about 210 days. Of course, that is just one aspect of their diet, though an important aspect. Don't forget, Bob also had a crop of peas, and Betty had an acre of garden for herself.

It would be foolish to believe that farmers in the age of swords and sorcery ate a diet of nutritional meals. It is far more likely that they did not eat enough of anything to keep their health at its peak. Despite this, the

"required" food presented in this supplement will assume that people are eating healthy meals of healthy portions. If the math does not add up, the people in the lower social classes cannot survive. This would lead to malnutrition and hunger, which would have been common.

Wheat flour makes white bread. It is important to remember that white bread is a luxury item. With all the examples surrounding Bob and his family, if they truly grew wheat and had it milled into flour, they would be more likely to sell the white flour to the wealthy and use the money to buy cheaper, more substantial foods.

Agriculture Math

Different crops require different amounts of seed and produce different yields. Some crops are simply easier to bring in than others, because a particular crop might be more at risk from frost, blight or insects. Of course there is the very real concern for what the market wants. A farmer may be able to grow more oats than wheat, but wheat may be a more valuable crop at the market. The following chart begins by showing various crops and what would be assumed to be required to seed vs. harvest.

	Seed	Gross Yield	Net Yield
Barley	144	672	528
Corn (shelled)	112	1,680	1,568
Oats	112	352	240
Peas	90	300	210
Potatoes	1,000	2,750	1,750
Rye	168	784	616
Sweet Potatoes	400	2,500	2,100
Wheat	120	480	360

This chart shows the pounds per acre needed to plant/seed as well as the gross and net (of seed for next planting) yields in the same pounds per acre.

Looking at the chart (and forgetting what was just said) it would seem that growing wheat was stupid, and growing peas was only for morons, but there is more coming. One of the most important issues is that not all these crops will grow everywhere. Potatoes should only be grown where there will be a freeze (or blight will wipe out the entire crop). Sweet potatoes hate frost and should be grown in more tropic regions. Oats are easy to grow, whereas barley can be risky in the first few weeks after planting. Despite the adage that man does not live by bread alone, few men are willing to live without it.

To further explain the value of crops, the following chart will attempt to reduce the net yields into the net product. As in our wheat example earlier, Bob lost a considerable amount during the milling. At this point, we will forget about the taxes and payment to the miller, because neither of these things actually reduces the amount of food produced, just the amount that the individual farmer gets.

	Pounds per acre	Lost in Production	Net Yield
Barley	528	30%	370
Corn (shelled)	1,568	50%	784
Oats	240	30%	168
Peas	210	0%	210
Potatoes	1,750	0%	1,750
Rye	616	40%	370
Sweet Potatoes	2,100	0%	2,100
Wheat	360	30%	252

Where is all this taking us? It is taking us to the bakery. The truth of the matter is, the price of wheat flour is not set by the grain, or by the flour itself, but instead by how much people are willing to pay for a loaf of bread.

The Baker

The baker is typically not a farmer, but instead someone who lives in the city. Farm-folk are typically trying to grow enough crops to feed their families with some left over for trading. The baker is purchasing all of his basic ingredients and is being paid for parts and labor. The baker's family eats when he collects coins for selling bread to other hungry families.

To continue our overly simplified examples, we will assume that bread is only flour and water. A skilled baker would make his own yeast, and the other ingredients are generally minor in cost when compared to the flour. Further simplifying our example, we will look at a half pound loaf. In a perfect world, the baker would charge four times the cost of his ingredients for his product, but baking is considered an unskilled profession, especially when it comes to baking bread. In theory, anyone could do it. Therefore, the baker can probably only charge twice his ingredients for the retail value of his bread.

For a half pound loaf of bread should contain roughly eight "servings". A hard working laborer would probably have two servings of bread with a meal, while a less active person would be more likely to have one. This means that most families would probably consume a "loaf" of bread during a normal meal.

We will set the cost of a loaf of bread (8oz.) at 5cc (copper coins). This means that the baker would be willing to pay 2.5cc for the required flour or 5cc for a full pound of wheat flour. We will walk through the math of

what this would return to our example farmer later. We have just established the most basic fundamental of an economy: the cost of a loaf of bread.

Bread back to the Farmer

OK - So the baker will pay 5cc for a pound of flour. Because of the milling process, a pound of flour really takes 1.43 pounds of grain (because 30% is lost). To get 1.43 pounds of grain processed by the miller, the farmer needs to bring a pound and two-thirds, because the miller will take one-sixth. So to sell a pound of flour to a baker for 5cc, the farmer really needs to grow 1.67 pounds of grain.

Let us see how reasonable this is for the farmer. According to our charts above, the farmer can grow 360 pounds of grain on an acre of land (net of seed). Assuming that every pound and two-thirds of grain equals one pound of flour, the farmer is growing 210 pounds of flour per acre. At 5cc per pound, the farmer is now netting 1,050cc or 105sc per acre of wheat. Our example farmer had 20 acres of wheat, so we should assume that he will net 2,100sc for his wheat crop annually. As you will see later on, this is around the annual wage of a basic laborer, but our crafty farmer has more tricks up his sleeve. Of course, taxes are also coming, but the bad news can wait.

STEP 2 - FOOD

Now that we have set the price of bread, it is time to use this as a base to set the price of other foods, though hopefully in a quicker fashion.

Livestock

We quickly need to begin discussing livestock. Although meat can be seen as a luxury item, it is unlikely that most people would be willing to do without it. Furthermore, the discussion of livestock also includes the extremely valuable products of dairy, wool and leather.

Cheese

Perhaps the most important livestock product is cheese. Cheese is a healthy and hearty food with good preservation life. Obviously milk originates from a cow or a goat. Though other animals can give milk, they are far less commonly used for such. Focusing on cow's milk for a moment, we come to the first problem with an "average" economy. Cows produce about 80% of their milk in the late spring to early fall. This means that milk would be in far greater supply in summer than in winter. This would normally mean that milk would be far cheaper in summer than in winter. There goes any hope of an average price.

When we take cheese into account, we can begin to ignore this, because cheese (unlike milk) can be preserved and therefore eaten throughout the year. Assuming that the cheese is made in higher quantities during the summer, it can still be stored and sold or eaten any time. Of course, there are so many different kinds of cheese that any averages are useless, but we have burned that bridge long ago.

Current common averages say that a cow will give an average of eight gallons of milk each day. Of course this is an average across the year and thus not indicative of anything. Anyway - It seems wrong to assume that fantasy cows are as good at producing milk as their modern counter-parts. This is where a strong poetic license shows up again. For crop yields, modern production was reduced by 80% with liberties thrown in. While this is based on strong research and is a close approximation, it seems an unfair comparison when taken to milk production. Lacking a good historic guide, we are going to estimate that our cows produce five and a half gallons of milk every day.

Some good sources have reported that four gallons of milk make one pound of cheddar cheese. Assuming that a standard farm mother would have some uses for milk around her home, it seems reasonable to believe that she would use the four gallons to make a pound of cheese and use the rest for other things. Assuming this is true, with a single cow, the farm mother could provide about one pound of cheese for her family per day.

To price the cheese, we must first know how much it would cost the farmer to keep the cow. Dairy cows can not be relied on to range for their food as beef cattle might, so their food will need to be brought to them. Since we have shaved down the production of milk, let's shave down the size of the cows as well. We will pretend that an average cow weighs about 600 pounds. This average cow will probably need to eat about 18 pounds of hay and feed a day. (3% of weight seems to be a fair measure.)

If a farmer were to plant a field of hay, he might expect to get up to two tons of hay per acre as a crop. Since the cow is eating 18 pounds a day, the farmer is going to need over three tons of feed for the cow for the year. If times are tough, the farmer might feed some of the straw from the wheat to the cow, but this would likely only save him about a half a ton of feed before it started to impact the health of the cow. This means that a farmer

will likely use an acre and a half to feed a dairy cow, possibly less if straw is used. Of course, the better the dairy cow eats, the better its milk production will be. To put a price on this, we have to figure out how much the farmer would earn if the field could be used for something else. We already know that the farmer could earn 105sc per acre for wheat, so for now we can assume that the farmer is giving up around 150sc in wheat in order to feed his cow. (In modern times, all cattle pretty much eat corn, but this doesn't match what we've found in the past. Yes, everything from health to production will go up if the cow eats more nutritious grain.)

Under this scenario, the farmer has substituted 150sc in wheat flour for a pound of cheese a day or 365 pounds of cheese. The simple calculation would be that cheese would then cost about 4cc per pound, but this is not completely fair. The farmer has to do a lot more work for the cheese than he would for the flour. He needs to plant and harvest the hay, feed and care for the cow, milk the cow, make the cheese, age the cheese, store the cheese, and anything else we have forgotten since we are not farmers. The 4cc calculation seems fair for the milk, so we will declare that the four gallons of milk cost the 4cc or 1cc per gallon of milk in the warm seasons when it is plentiful. The cheese making seems to be relatively skilled labor and we should probably put a pound of average cheese at 12cc. (There will be a lot more on this skilled vs. unskilled labor later.)

As many people know, the cow produces milk mainly for its calf, so our farmer needs to keep his cow "in the family way" every year. We can ignore what he trades to the bull owner for that, but we should not ignore the calf itself. Effectively, every farmer who owns a dairy cow will have a young cow on his hands every year. This is a good thing. While such a young animal cannot produce milk, it can be sold or slaughtered.

Cattle

Beef is often considered to be the top of the luxury list, as wheat flour is to the other cereal grains. To effectively discuss beef cattle, we have to declare the averages again. First off, corn fed beef seems to be an odd dream. The yields from the historic corn crop simply could not justify feeding it to cattle exclusively. Sure, ranchers might feed corn just before the animal is taken to the slaughter house to fatten it up, but unlike today's industry, this would be the exception and not the norm.

So what do they eat? We are going to assume that beef cattle for the most part forage across open fields. It would seem odd that there would be enough farmers in this fantasy world to have taken up all the space, so our cattle will roam wild plains and forage on what they find. Again, the ranchers will probably supplement this feed, but for the most part, the ranchers are not paying much to feed their animals. They certainly are not devoting and acre and a half of planted and cared for hay to each animal every year.

While the cowboys may be able to lead the cattle around the plains munching as they go, the rancher still needs a huge amount of land to contain his cattle. There will be times, such as winter and breeding, when he will want to control the entire herd with fences and not as a moving herd. It is the cost of this land, and the cost of feeding the cattle at these times that will run up the actual cost of the cattle.

The common practice among ranchers would be to breed their animals in the summer and fall to produce calves in the spring. In this manner they can fatten the calves for a year and a half and then sell them before winter sets in. (Winter is the most expensive time period in which to keep cattle since they cannot forage for themselves during this time.) A cattle rancher needs to keep his breeding stock and the young through the winter in order to sell them the next fall. At 18 months old, the steers should be large enough for the butcher, though it is the two-year olds that are old enough to breed. The typical ratio is one bull for every 25 cows. Done properly, a cattle ranch is a self-perpetuating money flow. The cattle continue to breed, then age, and are then sold to the butcher.

We avoided the cost of hay during the dairy cow discussion, but it is important now, because the cattle rancher is not expected to grow his own feed. As previously mentioned, a planted field of hay would be expected to yield two tons of hay. The nice thing is, an unplanted (wild) field of hay could grow as much as half that total. Because of this, it would be expected that any farmer with extra time or out of work laborer would likely try to locate some wild hay fields (basically an open plain) and harvest the hay. After the cattle rancher sells his fall stock, he is going to be looking to spend that money to buy the winter feed he needs.

We are again assuming that beef cattle, like dairy cattle, are around 600 pounds and eat about 18 pounds of food per day. The cattle rancher probably only needs to feed them 100 days (winter) before being able to turn them out to the pasture land again. This means that roughly a ton of hay will get each of the rancher's cattle through the winter. Weighing the time it would take a farmer or laborer to bring a load of hay to market, 25sc per ton seems a valid price. Although not yet fully established, feed corn is about 42cc per bushel (of 56 pounds). To fatten up the cattle for the butcher, the rancher will feed them mainly on corn for the last week. A week's worth of corn will cost the rancher 9½sc. At this

point, each steer would be costing the rancher about 35sc, assuming it was born from his own breeding stock.

Once the steer is brought to market, the butcher cares mainly about how much the animal weighs. Our typical animal is going to weigh 600 pounds. This 600 pound animal should produce about a 360 pound carcass. This 360 pound carcass will produce about a 238 pounds of meat. Assuming that the butcher can deal directly with the cattle rancher, the butcher should be able to get the 600 pound steer for 60sc. Thus the butcher will want to double his money by selling the meat for 5cc per pound or a total of 119sc for all the meat. It is important to remember that this is fresh meat and there are no refrigerators. This fresh meat is nearly useless to most people because they would have to use it immediately. They might be willing to buy small amounts, but no one could buy fresh beef in bulk. This is when the butcher makes sausage and by using his skill increases his profits.

Pigs

Pigs are probably a more important source of meat for most people than beef, mainly because they are cheaper to breed and cheaper to keep. Most farmers can afford to have a sow. Pigs are "cheap" because they are relatively easy to feed. They can thrive on forage and left-overs. By left-overs, we mean the outer shells of pumpkins and squashes, the outer leaves of cabbage, potato eyes, corn cobs, etc. etc. There are probably few things that a farm family would be able to "throw out", but if it was going to feed the pigs, some waste was not necessarily waste. Remember, the breeding sow still needs to be fed in winter when she cannot forage. She will probably need about six pounds of food per day, most likely corn but likely cut with slop as well.

Pigs also breed better than cattle. An average sow could have four piglets every year, and those piglets could be fattened up for slaughter before the winter came. In the normal course of things, pigs were typically slaughtered after harvest because the weather was cooler and there was a reduced chance of the pork rotting as it was being turned into cured ham.

Comparatively, a pig could forage in the woods, while a cow needs nearly an acre and a half of farmland to grow the feed. Coupled with the faster maturity and larger number of births, pork is a good solid meat source for the poor. Since the pigs we are describing are not fed to enormous sizes, we will call an average pig at 200 pounds. This means that the carcass should weigh about 120 pounds and there will be close to 80 pounds of meat. Because it is far more common, pork will cost half of what beef does, so 2.5cc per pound from a butcher. This means a butcher could sell the pork from a single pig for 200cc. Since the butcher is doubling his money on the purchase of the pig, he will buy a 200 pound live pig for 10sc.

Chickens

Chickens produce two major commodities: eggs and more chickens. Focusing on the meat first, broilers (or fryers depending on the region) are chickens bred to be eaten as meat. While a broiler might be slaughtered anywhere between four and ten weeks, depending on the size desired, our average chicken is going to be slaughtered at six weeks. This means that the value of the chicken is going to be directly proportional to the amount it will cost to feed this chicken for six weeks.

With the cost of feeds, it would seem most likely that the chicken ranchers would allow their chickens to roam as much as was safe in hopes that they would find some natural food. Factoring this in only to a small degree, our average roaster will eat about a pound of feed (mainly corn) per week. Using our overly relied on "average", an average chicken, accounting for its slaughter at six weeks, would weigh about four pounds, and thus produce a carcass of just under three pounds.

The butcher is going to want to sell chicken carcasses for roughly the same price as pork (also a "family farm" style of meat). This means that the per pound rate for chicken would also be around 2.5cc per pound. Thus a chicken would gross a butcher about 7cc (4 pounds less 30% times 2.5cc per pound). Since we have already established that it would take about 4.5cc to raise the chicken (.75cc per pound of corn times the six weeks). The question comes down to whether or not a butcher would slaughter chickens for such a small amount of profit. Between the two, only 2.5cc is to be split. This might lead to people purchasing their chickens directly from the farmer, but a butcher would likely want to keep some around to keep his customers happy.

Welcome to true economics. The butcher and the farmer would really prefer to charge more for the chicken to make the same profit margin they would on pork, but people probably would not pay that much. That means that while chickens might be raised for the family, they are probably not as profitable as pigs when sold. It is important to remember that chickens have a much higher live weight to cooked meat ratio than hogs, but it is difficult to make a customer understand all that math across a butcher shop counter.

You are about to see that egg laying is likewise not an extremely profitable business enterprise, though still a very good way of providing for the family. We have established that a chicken eats about a pound of feed a

week or .75cc per week of corn. Though modern chickens are producing over 200 eggs per year, research has indicated that 120 is closer to the mark for a chicken "back in the day". Calculating the feed for the year against egg production for the year, each egg would cost the farmer about one-third of a copper coin to produce. (This does not take into account the cost of keeping cocks or coops or anything else.) Even at .5cc per egg, the farmer is not getting very much profit on his eggs, but it seems unlikely that the market would bear a higher cost.

Hey - It's about time for an example! *Farmer Chuck raises chickens. He has a big coop, a good sized yard for them, and he grows his own corn. In fact, Farmer Chuck grows an acre of corn for his chickens. His acre of corn brings in about 1,568 pounds of feed for his chickens. He keeps 3 cocks to keep his 15 egg layers happy and productive. In a year, his egg layers and cocks together will eat about 936 pounds of corn (15 hens plus 3 cocks at one pound per week). He also raises some roasters, why don't we say he goes for 104 roasters so he can have one in the pot and one roasted every week. The roasters will eat 624 pounds of feed during the year (104 chickens at a pound a week for their six weeks of life). Farmer Chuck has used up just about all of his 1,568 pounds of corn from his single acre feeding his chickens and he has 1700 eggs (15x120-100 roasters) and 104 roasters. Seems like a lot, but it is only four or five eggs a day, probably enough for baking or perhaps for a small breakfast supplement for the family.*

As mentioned in the example, the ratio of five hens to one cock seems to be an agreed upon calculation. A whole chicken, roasted or fried, will likely provide sufficient meat for a family of four's meal. A whole chicken in a soup is likely to provide 12-16 servings with only minor additions (salt with onions and/or carrots). While Farmer Chuck might not be getting rich quick, it looks like he is providing a fair amount of food for his family in this method.

Orchards

"Orchards" is probably not the best title for this section, but you get the idea. We are going to talk about fruit. Fruit of the tree and fruit of the vine and fruit of the everything else. Unlike the crops we have talked about orchards are perennials not annuals. That means you do not have to replant them every year. Generally that would mean that there is no cost to planting. Well, there is obviously a lot of labor that goes into planting and maintaining an orchard, but there really isn't a lot of cost. This is of course because you don't eat the seeds. In grain, you are eating the seeds, but in fruit, you spit them out. The huge drawback to an orchard is that you have a large space that is not being farmed while the trees are growing to maturity. You know what, we're going to assume the trees are all mature and bearing fruit. Call it inheritance.

Apples

Apples can be one of the most important crops in some cultures. Not only do they supply nutrition, but they can be manipulated into a variety of dishes that helps to keep them from becoming "old hat". Of course the most important "dish" that apples become is cider. In some cultures cider is more common than beer. Of course at this point, we're really not talking about nutrition any more.

A bushel of apples is 48 pounds and typically contains about a gross (144) of medium sized apples. Adjusted for the time period, our average acre of apple orchard will produce about 40 bushels of apples every year. Now apples are mostly water, and simply do not provide the same intensity of "food" that grains do, so we need to make them much cheaper. All things considered, .75cc per pound or 36cc per bushel sounds about right.

To help explain what a bushel of apples is, let's consider the following: A bushel of apples yields about 3.25 gallons of cider. A bushel of apples yields about 25 quarts of apple sauce. An average pie (9") requires about two pounds of apples.

Using this math, if a bushel of apples costs about 36cc and makes 3¼ gallons of cider, then a gallon of cider costs about 11cc just in apples. Since this cider is relatively easy to make, we're only going to double the cost of the apples to come to 20cc per gallon or 2½cc per pint. We're rounding down because what's left of the apples after the cider has been pressed out of them makes good feed. Hard cider (fermented cider) will triple the cost of the apples. While this process should yield more profits for the cider maker, it is such a common product that the supply will keep the price down. So hard cider will run about 4cc per pint.

This math makes cider far more expensive than beer. Cider is typically higher in alcohol content than beer, with averages running about 150% of beer's "kick". While this helps to justify the cost, the true reason for the difference is that you can only get 130 gallons of cider from an acre of land, where you can get 500 gallons of beer. This can be justified in that beer is something you would drink all the time and cider is more of a recreational event.

Applejack is a highly concentrated cider made by freezing all the water out of the cider to leave the alcohol behind. With hard cider at 4cc per pint, applejack would probably run about 20cc per pint and carry a whiskey-level kick.

Grapes

Grapes are an important crop the world over for one reason - wine. OK - Grapes don't actually grow in an "orchard", but they grow on vines, and you don't replant the vines every year, so it's the same thing. No really - it is. So if we say an average acre of vineyard (grape orchard) yields 1,200 pounds of grapes or 25 bushels of 48 pounds, we have a fair assessment of the fantasy level crop. Few people care about the grapes, they just want to know how much wine this makes.

We have it on fairly good authority that it takes about 12 pounds of grapes to make a gallon of wine. This means our average acreage yield could result in 100 gallons of wine. While this certainly seems possible, it might not be the kind of thing a simple farmer could handle on his own. The problem really isn't the wine making, it is the storing. Wine usually needs a year or two to complete and at various points during that time, it needs to be tended. If a farmer is going to be producing large quantities of wine from his many acres of vineyards, he is going to need facilities to handle all of this. We're only trying to suggest that large wine production is something more likely at a major vineyard and not at a local farm. The local guy is probably just making wine for his family.

Grapes can obviously be eaten in their natural form or used in recipes. Grape jellies and preserves would seem a normal item in most pantries, then as they are now. And don't forget raisins. It takes about 4½ pounds of grapes to make a pound of raisins, but raisins are a good preserved food being high in energy and nutrition. Of course the fact that raisins can typically be made simply by laying the grapes out in the hot sun does not hurt their popularity with those who need to "make" them.

In order to keep grapes in line with other farm products, we've priced them at 1.5cc per pound. Since there is very little work that is required to turn grapes into raisins, we're going to call a pound of raisins 7cc, which is a minor rounding up from the straight cost of the grapes. Wine requires 12 pounds for every gallon, so we're already looking at 18cc per gallon of wine, just for the grapes. Wine making is something most farmers would have some idea of how to accomplish, but it would probably not be as common as brewing beer. We're going to leave wine at a triple your money kind of product (just as beer and cider are), so a gallon would cost 54cc. Obviously after the last section on cider, this is a major step up in price, but like the argument before, where an acre of farmland can yield 500 gallons of beer or 130 gallons of cider, an acre of farmland will only yield 100 gallons of wine.

Nuts

Nuts are a fantastic source of protein. They are also reasonably easy to preserve, since they simply need to be dried a bit. This makes them a fantastic food source to the fantasy world. While many people will have a couple of nut trees on their property, there will also be orchards filled with nuts. In addition, during the right season, foragers would be able to collect a very large amount of nuts simply by wandering through the right groves in a forest.

Nuts were a major source of food and energy historically. Almonds were even used to form a milk substitute during seasons when milk was not readily available. They were used as food, as a garnish, and as a flavoring. They were also used for a variety of other products such as the creation of dyes, but this is not really what we're after right now.

Starting with walnuts, we're going to give an acre of walnut trees a yield of about 475 pounds. This is pretty misleading, because you don't eat the entire walnut, just the meat inside. Since this is only about 10% of the total weight, you wind up with about 48 pounds of edible walnut per acre. This is probably not a lot if you were trying to grow a cash crop. For the farmer who has just a couple of trees on his property, each walnut tree should drop enough walnuts to provide about a pound and a half of nut meat per tree. With just a couple trees, the farmer's wife has access to this important product. One of the other main features of walnut trees is that if the farmer is low on funds or the tree does not seem to produce enough nuts, walnut wood is highly sought after for furniture. Harvesting a couple of trees for their wood would be a likely way to earn a couple extra coins if things got tight. Walnuts are also a good forage, and can be found by those who know the woods.

Almonds were probably more important for a couple of reasons. They are equally as nutritious and useful to walnuts, but every acre of almond trees is going to yield about 250 pounds of nut meats, almost five times the amount of walnuts. Per tree, an almond tree could produce about two to three pounds for our fantasy farm family. Almonds are a warm weather tree and won't grow is as cold a climate as walnuts will.

It probably does not matter, but almonds in the shell are typically about 50-55% shell and 45-50% meat. Also,

the almond milk recipe is pretty much a cup of finely ground almonds to two cups of boiling water to make a milk substitute. This probably isn't of any use, but we thought it was interesting.

Chestnuts are not as compact a nutritional source as walnuts or almonds, but they are still a favorite addition for flavoring certain dishes or of course alone. In the right conditions, an average farmer should average about 300 pounds of chestnuts (in the shell) per acre. Figure this will probably yield about the same weight in nut meat as the almonds (somewhere around 250).

Hazelnuts will produce about 365 pounds of nuts in shell per acre or about 87 pounds of nut meats. They are typically not considered as good tasting a nut as walnuts, but are one of the best nuts if the oil is being sought.

A quick estimate will put walnut and almond meats at 5cc per pound and hazelnuts and chestnuts at 3cc per pound of meats since they are not as desired. This will probably seem high when compared to meat, but nut meats are comparable to meat, at least nutritionally. They are also fairly rare as an acre does not produce all that much from a poundage standpoint. One of the reasons they are not even higher is that foragers can produce them as well. Anything that can be found in the wild at the same quality as it can be found domestically is going to lower the price.

A couple things about nuts - The nice little shells that people think of as nuts are not what fall off the tree. Typically nuts fall off the tree inside a husk. The husk is typically pretty big, kind of stinky, and has a tendency to rot on the ground. If you don't maintain the base around the trees, you wind up with a big stinky mess. Also, it is true about squirrels and nuts, and chipmunks and nuts, and most other rodents. They like 'em! and They'll swipe 'em. If you think keeping crows out of a corn field is tough, try to keep the squirrels out of a walnut grove. Of course, you might just see this as a source of meat, but we'll leave that up to the individual farm folk.

Spices

The honest truth is that mainly due to the preservation methods of foods, but due to several other factors as well, most cooking in this day and age was boring. Farmers grew what grew well in their region, and they did not have a lot of choices when they went to the market. Meat was frequently preserved (salted or pickled) and having been mainly range fed, wasn't as good as it could be to start with. There was only one possible way to improve all of this: Spices!

With spices being the most important way to add flavor to a meal, they take on an importance that modern man may never fully understand. Tie this to the fact that most spices only grow in small regions of the world, and the high demand and small supply send the prices straight through the roof.

One of the more common spices is mustard because it can grow in a multitude of climates. Grinding the mustard seeds and making mustard (paste) is a fairly standard cooking recipe, so if we assume that the mustard costs about 5cc per pound and the other ingredients (typically vinegar, salt and possibly other spices and/or sugar) cost another 5cc, then two pounds of mustard costs 2sc due to doubling. Actually, mustard will fade fairly quickly (lose its taste), so most cooks will actually make their own.

Along this same trend, onions, horseradish, and even garlic can also be grown in a number of climates and will be more common, thus less expensive. With each of these vegetables, storing is likely to diminish their flavor, even more so if they are cut or damaged in any way. Most gardeners will find some manner of pungent plant to keep in their gardens. You don't need a lot of these to make a difference in your cooking. Herbs, will work in much the same way, with local cuisines making use of whatever herbs they can legitimately grow themselves.

The next series of spices are typically only grown in small areas, especially tropical regions. They are the rare spices that form the spice trade. It is not overly dramatic to assume that wars could erupt over the spice trade, and it is wise to recall that the New World would likely have remained hidden for some time if competing nations had not been seeking to out-do each other's routes to the spices.

Having given it that build up, what are these spices worth? Well, lacking a good model, we based our estimates on history. There are documented values of these spices after they had been shipped halfway across the globe, so we've based our "Cost in a Distant City" prices on those facts and worked back from there. Black pepper is probably the most sought after spice, along with ginger, mace, saffron and cloves. Cinnamon ranks right up there with these others. Each of these can be seen on the later charts. Fortunately, with most spices, a little goes a long way.

but why Wheat?

After reading through this, and if you snuck a peek at the listings at the end of the book, you might be asking yourself, "Why in the world would someone grow wheat, when these other crops might have been able to provide

more money?" It is a good question, much as we hate to admit it.

There are several reasons for the price of wheat. First off, it is a very common crop. Every farmer wants to eat it, so every farmer grows it. The more common something is, the cheaper it is. Secondly, grain and flour can be kept. After a trip to the miller and paying him his cut, the farmer has a food source that will easily keep through winter as long as he can keep the rats out of it. Most other crops need to be worked by the farmer before they can be preserved, and preservation frequently causes the product to lose flavor. Probably most important is that wheat flour is a super source of food. So many of the more prolific crops are mostly water. Grain and flour are not. They take up little space, but provide a great deal of energy. Lastly, bread is culturally a staple of life. If the "bread winner" expects to eat bread, then by gum there better be bread on the dinner table.

The other side of the coin is the view of other crops. Many of the other crops, including other cereal grains, are seen as livestock feed. While this is a cultural issue and probably varies from one culture to the next, if barley is seen as pig chow and oats as horse chow, they simply will not be consumed by people as often. Maybe it's a matter of taste as well as culture, but the perception of a crop is very important to its price and demand.

STEP 3 - LAND

In an agriculture based society, land is the most important commodity, and arable (farmable) land is the most important type of land. Trying to set a price on land is like trying to capture a rainbow - it just does not work. The value of land is based on what can be done with it, what has been done with it, where it is, where everything else is, where the people are, and on and on and on.

Having said that, we are going to try to set a value on land. Looking at farm land from a business perspective, the typical analysis is an estimation of how long the new purchase will take to pay for itself. Most businesses run under the assumption that five years is a legitimate "turn-around" time. Assuming a farmer can make 105sc per year off an acre of land, it is reasonable to assume that a perfectly average acre of farmland would cost about 500sc (rounding down to be reasonable).

Acquiring Land

There are several ways a farmer can acquire land. The feudal method is similar to share-cropping. The farmer is allowed to farm a piece of land, but in turn must pay an extremely high tax (often about 50%) or must work the ruler's land for a certain amount of time. There are a number of problems with this society, most of which cause the farmer to live a miserable life of hunger, fear and despair. So let us look at a different style of life.

The pioneering spirit is more of a hardy, breed adventure kind of life. People go out into a wilderness and carve a life out for themselves and their family. The land is more of a grant, because it is a wilderness and not a farm. The ruler of the land would rather see a farm than a field of wild grass and is willing to give the land to the farmer for free, assuming that the farmer pays a tax (a slightly more reasonable 20-25%). In this fashion the farmer "owns" the land and can give it to his heirs.

In a purely commercial environment where farmland can only be purchased, it seems implausible that any farmer without land would be able to buy land. Where would this farmer have gotten 500sc to buy an acre of land, let alone the 15-20 acres he would legitimately need to feed his family? Such an environment with such a barrier to land ownership is probably more of a historic reality. One of the few ways around such a barrier is the existence of money lenders who have this much coinage and are willing to lend it in exchange for interest. While interest often serves as another tax on the farmer, it can be a practical way to own land.

Water

Although you typically do not have to buy it, water is a requirement of all living things. It is therefore also a requirement of plants (crops - get it). Without water, a farmer cannot farm. We are going to assume that our civilization is advanced enough to understand irrigation and have several methods by which it can work in the local environment. The only trick is, there has to be water.

Farm land without rainfall is not farm land. It's called a desert. So we can assume that by calling it farmland, it indeed has rainfall. Even if it has enough rainfall, irrigation might be required, either to improve crop yields or to guard against dry spells and droughts. A farmer can dig a well for his family, but a well is not enough to water his crops.

The best farm land will have water access. Even if this is a ditch with a small stream, it is water. Flowing water is typically safe to drink. Stagnant water is too frequently unsafe to drink. Whether the farmer has a stream, a pond or a lake, water is an important land feature. Of course, a farm with water access will likely be more expensive. How much more expensive will depend

on the amount of water and what other properties the water has. If the water is teeming with fish, that would be a good feature. If it flooded every year, that might be a bad feature (though it is beneficial to some crops).

Lastly on water front property, it's just damn pretty. People often prefer to live on the water. They are willing to put up with more bugs and flood risks, just to have the view. It is intangible things like this that make setting a price on anything a hazardous exercise.

Buildings

Land is only one piece of the real estate. The other is the buildings. While farm land is the most important thing when we're talking about land, the home does matter. The buildings are even more important when you are looking at an "urban" dweller (seems odd calling our fantasy city urban, but it is). In the city, there would be almost no land and the entire value of the land would be based on the house that sat on it.

But what if we're talking about a city where the people are not going to be helpful in erecting homes and tent camping is strictly forbidden? Now we need to get into the true costs of real estate (even though we avoided it in the last section).

Two options: rent or own. Owning can be very difficult for average people, but adventurers will get there eventually. To own a house, you either build one or buy one. Let's think about a couple of things here. In real life, inflation continues to push the price and value of homes up. Our fantasy economy does not have inflation. That means that the purchase of a home is not really an investment. Secondly, mortgages are assumed to be difficult to come by. That means that most of the middle-class home owners either built it themselves or inherited it, because they could not afford to buy it.

Carpenters build homes. (We are talking about nice houses here, not log cabins. A carpenter will build the house, not a beaver. No offense to anyone living in a beaver built home.) The carpenter will build it from lumber, hopefully local lumber. Lumber is not trees; it was a tree, but it isn't any more. To turn a tree into lumber either takes a lot of work or a sawmill. Sawmills did work back in our fantasy environment, typically under water power.

OK, a couple of facts and estimates. Two guys sawing (with a pit) could saw about 200 boardfeet of lumber in a day. That's 200' of 1" thick x 12" wide boards. At its most simplistic, a 10'x10'x10'shack would use a minimum of 1,000 boardfeet of lumber assuming that the walls were 2" thick. Realistically, even this structure would probably use 1,400 boardfeet when you consider crossbeams, a possible interior wall, rafters, etc and the darn thing still has a dirt floor. An average home of this tiny size would use 1,750 boardfeet. This allows for overlapping panels, interior walls, doors and door frames, etc.

Right now we know that 200 boardfeet required two men one day. It's nearly impossible to guess what it took to fell the trees for the sawmen, but we'll say a lumberjack could supply about 400 boardfeet of timber in a day. That includes the work to transport the timber out of the woods and to the sight of the sawing. So if each of these guys makes about 6sc per day, then it takes 15sc of labor to create 200 boardfeet of lumber.

If this is done by a sawmill, it will greatly reduce the price. To start with, the sawmill is about 20 times faster than the guys with the saws. It probably produces a better grade of product too. Now the guys in the sawmill probably make more than the sawers, because they need more skill. There are also more of them, probably four to six guys running things. So to produce 4,000 feet, we have five people at 8sc per day plus the ten workdays out of the lumberjacks at 6sc per day. At this scale, 4,000 boardfeet will cost 100sc or 200 feet will run 5sc, one-third the price of having it done by hand. But of course, once the lumber is stacked, loaded, and transported to the city, it is sold for 15sc per 200' as well.

We're going to build a house in the city. It is going to be an average house. It is going to have a root cellar, a fireplace, a parlor/living room, a kitchen with a stove and an oven, an upstairs with a slanted roof, two bedrooms, some storage areas, a wood shingled roof, and a raised wooden floor. This is a pretty nice house, and probably not true to the period, but this is high fantasy so we don't need a bunch of dirt floors and thatched roofs.

We will need at least 12,500 boardfeet of lumber for our average house. That's close to 1,000sc in lumber. We're going to need a carpenter and his crew. They are going to need about 30 man-days to do the job at 11sc each. They could probably do it faster if it was not two-stories, but then we would need a bigger lot. Speaking of which, the lot is going to cost 500sc. No, it's not anywhere near an acre, but in the city lands costs far more than it does in the country. Our lot will be big enough for the house and a small yard big enough for kids to play in or plant a small garden (but probably not both).

We'll build the fireplace from brick, because we have no idea what it would cost to gather enough stones to do the job. Brick making was a huge endeavor requiring gathering clay in late fall, molding it in spring or summer, drying the bricks in the hot sun and then baking them in a kiln. This was probably not a job that a person could do every day, so we'll assume that the brick maker

was also either a potter or a mason. Trying to figure out how many days of labor went into the brick making is difficult, but we're going to give an average. A brick maker would make less than a potter, because there is less skill involved, and it is probably not his primary profession. A day's worth of work would probably produce about 125 bricks (9"x4½"x3" tall). Now a brick maker would not start the day and make 125 bricks by the end of it, but that's how it works out. So 18 bricks are roughly 1sc.

Our fireplace is going to take about 1,000 bricks or 56sc worth of bricks (or 75sc in the city). The mason is going to take three days to do the job, floor to rooftop. A mason charges about 11sc per day, plus his apprentice at 5sc per day means the entire fireplace is going to run just about 125sc (that's with the bricks figured in). Now don't go thinking you're going to fit a 30 gallon cauldron in this fireplace. Oh, it will handle a five gallon pot or probably even a spitted goose, but this is still a normal house for a family of four to six people.

The root cellar, the oven and the other stuff are not going to be that much more. Ditch diggers are relatively cheap, and the carpenter probably only needs an extra day to shore up the root cellar before he started the rest of the work we already figured in. Likewise, the mason probably built the oven as part of the fireplace.

The items that we have laid out here do not yet reach 2,000sc. But there is so much more that needs to go into this house that we have not yet begun to consider. There is the iron hook that holds the stew pot over the fireplace, the iron grate that holds the logs off the fireplace floor, the metal hinges on the doors and the metal latches on the doors and shutters, the shutters themselves, the iron brackets that hold the bar across the door, and so many things we can barely start to list here.

To have a house built in a city would require the handling of all these things, and probably very close supervision of the work, even if you don't know what you're doing. Even before any furniture walks in the door, we're thinking it's another 1,000sc in items from the smithies, thresholds, and maybe even a small fence to mark the lot lines. So a two-bedroom, story and a half, relatively small wooden house is going to cost 3,000sc to build.

To be honest, it's less than we expected. Furthermore, in most settings, the homeowner would do some of the work himself and cut the costs a little more. If you think we're cheating on the extra 1,000, you're not thinking about all those hand made nails that are holding the wooden shingles on. We also haven't taxed the house yet. That would probably be about 20% of the value of the house, so 600sc would be normal.

So what does it cost to rent such a place? Here's how we figure it: The landlord just shelled out 3,000sc to build it. Assuming that the house will last about 15 years (it should last a lot longer, but there's no guarantee), he will want to double his outlay, or charge 6,000sc in rent over the 15 years. He also has to cover the 600sc per year in the taxes or 50sc per month. Rounding way up (because he thinks that most renters cannot afford to buy their own places and therefore have no choice) and you are looking at 85 to 100sc per month, depending on the landlord and the location of the house. This is of course unfurnished.

Just as a renter might not have the funds to buy a home, they probably do not have the funds to buy furniture. It would be more common for landlords to provide some of the more basic furniture in their rental properties. Any furniture provided would be factored into the rental price as well, probably on a landlord doubling his money in five to seven years of renting it out. So if a bed cost the landlord 60sc, the rent of the place would go up 17cc per month (60sc doubled divided by 72 months). This is of course an estimate and the landlord is simply going to ballpark it (rounding up wildly of course).

And as if all that about buildings wasn't enough - what do you put inside them? We're not going to spend too much time on this, but you have to think about how much work went into normal items. Without power tools, a rather standard chair could take three days of work, including the legs on the lathe, the carving, the sanding and routing of the seat. Then the construction which was unlikely to include any nails.

Our average chair is going to be roughly equivalent to what somewhere in the modern era would use for a dining room chair. Research shows about 30-35 hours of work, so we'll call it three days. Like most carpenters, the furniture maker will earn about 11sc per day. Because the wood would probably not be all that expensive for a chair, we'll round up to 35sc for a chair. To distinguish this from some cheap thing slapped together by an unskilled carpenter, a "rough" chair would probably only take a day to put together. It would look uglier, but it would still stand, so it only costs 13sc. There might be chairs out there that don't cost that much, but they probably are not safe.

The bigger the piece is, the more expensive the wood is going to be. Most furniture makers could fell a single tree and get ample wood for chairs and stools, but once you move to tables and cabinets, the wood most likely needs to come from the sawmill. Taking a large wardrobe or armoire, especially if there are drawers involved, the piece could easily use close to 10sc just in wood. Because of the way that the wood would be cut,

large tables would be made from joined planks and not from a single piece of wood. While the furniture makers would probably be skilled enough to mask this fact, they will also be expected to be paid for that expertise.

STEP 4 - OVERHEAD

Throughout this discussion of economics, we have been talking about the "variable costs", the costs that fluctuate depending on how much is going to be produced. Obviously, more seed will produce more crops. But there is another aspect of production: fixed costs. Besides the land itself, there are other things that will have to be paid for in some manner in order for the farmer to be able to grow crops. Some of these items are discussed here in order to make the point; there is little chance of covering everything that would need to be on a farm.

The Ox

Probably the most important tool to any farmer is his ox. Most importantly, the ox pulls the plow before seeding, but the ox is also one of the primary work engines of the farm. It can pull wagons, help rip stumps out of the ground, and generally apply far more muscle power than any farmer could hope to supply on his own.

Oxen are more typically used than horses for several reasons. Oxen are easier to maintain in that they require less attention than horses and they will eat hay and forage, while horses require far more expensive oats. It is true that an ox is slower than a horse, but this slower, steadier pull is of benefit when plowing. Also, though a touch morbid, an ox can (and will) be eaten when it is too old to work. Offering food and a much large piece of hide makes the ox valuable even at the end of its "useful" cycle.

The Barn

The barn is not simply a garage for the farmer's tools; it is a vital storage facility and work area. Filling the hayloft with hay is only the most simple storage aspect of the barn. It is also home to the farmer's animals, and an inadequate barn could allow the animals to get sick. The barn can also be used for various harvest and after harvest activities, such as drying (malting) the barley, sorting grades of vegetables, etc. It is a large covered work space which allows activity throughout the year. Chances are, the farmer's barn is bigger than his house and certainly offers more floor space.

The House

Speaking of the house, the farmer needs somewhere for his family to live. Even if it is a teepee, there has to be a home somewhere, and it will not magically appear for free. (OK, it is high fantasy so anything is possible, but it does not seem a likely occurrence.) Frequently, neighbors will help a farmer erect his house or even his barn, but this is only going to happen if the farmer is already part of the community. If the new farmer is a stranger or simply picks a time when everyone is busy, he is likely to be on his own as far as erecting any buildings.

The Family

Darn those kids are expensive! Sure you get to put them to work in the fields and all, but boy, can they eat. A farmer's main goal is to grow enough food to provide for his family. Failing to meet this goal is a catastrophe. Not only does the family need to be fed, but they need to be fed year-round. This means that the food must be processed so it can be preserved. This takes at least time, but is also likely to use up other resources. We'll get into the cost of feeding the family later.

Seed

Throughout our discussions, we are assuming that a farmer grows his own crops and saves enough seed for the next year's plantings. It doesn't always work that way. Whether the farmer is trying a new crop or just starting out on his own, there are times when he will need to buy seed. Some products are in fact their own seed, such as the grains. In these cases, the price of the "seed" is fairly easy to determine. When the seed is not a part of the sold product, it will be kept by the farmer for his use or could be sold to other farmers. While excess seed might be garbage or livestock feed in most cases, this does not mean that a farmer is going to let it be sold for next to nothing. Any farmer who sells seed creates his own competition. They also know what the seed is worth, because they are using it to grow their crops. Typically a farmer will sell seed for about one-sixth of its value as a crop. For example, tobacco seeds are remarkably tiny and an ounce should be enough for a farmer to plant four acres worth of tobacco. Four acres worth of tobacco is worth around 425sc, so the seed for this crop would be worth about 70sc. Weight or the required work to produce this seed is usually not factored in. This is cheaper than most of the "seed" crops (grains), but in these cases the seed really was a by-product of the other work.

Notable Omissions:

This seems as good a place as any to mention that there are a ton of things we are not covering in this supplement. At the same time that we are not figuring out how long an ox would live or how much repairs to the barn would be every year, we are not factoring in the possibility of gathering more than one crop from a field per year. Some regions might have a long growing season that allows some crops to be planted in spring, harvested in summer, replanted in summer and harvested again in early winter. That is not being considered here, and is something you will need to decide for yourself.

Similarly, inflation, deflation, and the volatile nature of commodities prices are not being considered. If a gold rush starts nearby, not only will everything be more expensive, but the 10-1 relationship between cooper, silver and gold will go out the window. If you want to get this deep into the economics of your world, we applaud you, but it would take far too much space to try and help you figure it all out here.

STEP 5 - CUTTING CORNERS

As previously stated, some of the more common families (lower and middle classes) simply do not appear able to properly feed, cloth and house themselves using these rules. This is because they cannot; at least they cannot without cutting a few corners. Most people actively involved in raising a family will tell you that home economics is not so much about learning how things are done as it is about learning how to get by. Old wives teach young mothers how to make ends meet when there simply is not enough to go around.

Here are some of the tricks used to get a family through hard times. Because of the subject matter, it will not be organized into sections as the other chapters are, but will be presented more as trivia. It is intended to give you an idea of how things might happen, not as a checklist or procedural guide.

- House wives can cut wheat flour with cheaper oat or barley flour. Neither of these other flours will make good bread if used entirely on their own, but when mixed with the wheat, they can still produce a good loaf of leaven bread. Unscrupulous or desperate people have also been known to cut flour with sawdust or plaster.
- The butcher described earlier used the meat from the cow, but we did not get into the details of everything that can be gained from the animal. Nothing from a cow or pig would be wasted. The intestines are used for sausage making as are most of the organs. (The intestines of sheep were often used for condoms, but that is a whole other book.) The hide would have been carefully removed and preserved, either being turned into leather by the butcher or more likely sold to the leather worker down the street. Bones were frequently ground and used for fertilizer, but they might first be used to make soup or at least bullion. Probably most important is that an additional 10-15% of the meat's weight can be added if you include the organs (heart, liver, etc.). Whether its in haggis, sausage or something else, few people would let this additional food source go to waste.
- Animals need to be fed enough to survive the winter. In the spring and summer, they will likely be able to forage for themselves. Many ranchers would underfeed their breeding animals over the winter, gambling that the animals would survive and regain their strengths during the warmer months.
- Bread is important and desirable, but potatoes will do. The starch in potatoes can be used fill a person's stomach, but it simply is not as efficient as grain. This is not important if it can keep the family from going hungry.
- Any good cook can substitute lesser quality ingredients. Of course it will cause the end product to be of a lesser quality, but at this point we are really talking about survival and not enjoyment. Cheaper flour and use of potatoes have already been mentioned, but these are just the tip of the iceberg.
- There are probably no consistent measures in the world. This means that anyone without the highest integrity is likely to fudge a little when measuring their products. Bartenders might put too much head on a beer. A dry goods owner might use a slightly smaller than normal scoop for the flour. A brewer might add a little water to his cider. Once again, these methods will result in the end consumer getting less quality, but if the cheater can cheat everyone, just a little, there will be stronger profits for him.
- There have been discussions of livestock being fed. To cut the corner on livestock, they simply need to be turned loose. This will likely require extra work of rounding them back up again and extra risk from predators and possible accidents, but it sure can save on feed. If dairy cattle are turned out to forage, they will probably produce less milk, but if there is simply nothing to feed them, it is better they forage for less than starve in the barn. Of course

unscrupulous farmers might "accidentally" allow their animals to get lost in their neighbors' fields.

- While we want to think of our farm families as happy and well-fed, they might not be. As simple as it sounds, simply not eating enough helps to stretch the family's food budget, just like it does for the animals. While this is likely to result in a higher rate of illness and less energy, it is the reality of the situation.
- There is nothing saying that a farmer cannot also be a craftsman. If a farmer is not making ends meet by what he produces on his farm and he has a skill, he will sell his services on any day he can afford to be away from the farm. If he doesn't have a skill, than he can work as a laborer on someone else's farm.

Hunting and Gathering

As busy as a farmer or a craftsman would be, there must be times when the work is slow and they have an afternoon or a morning "off". Now they could lay around and get some extra sleep, but chances are they will attempt to entertain themselves while bettering their family's pantry. Hunting, foraging and fishing are great ways to do this.

Hunting

Assuming there are no poaching laws (or if they are poorly enforced), going out hunting could be an entertaining break from normal work as well as a great way to put meat on the table. People normally think of deer, elk or even buffalo when they think of hunting, but game birds and small game can be great for the family as well. Game provides meat as well as a pelt or feathers, very useful in a self-sufficient family.

Certainly hunting is a profession, but it is also a sport that would likely be practiced by many people. Bringing down a deer could make a major change in the quality of food a family ate through the winter, while a pair of squirrels would likely only benefit the family for a night. Big game would either be butchered by the hunter or given to a professional butcher who would probably keep as much as a third or half of the animal.

Most sport hunters will not be able to sell their kills unless it is to butcher they are very familiar with. Typically businessmen like to have more dependable sources of their products (in this case meat) and would not want to have to rely on sport hunters who may or may not make the all important shot. This does not mean that the meat goes to waste. It just means that sport hunters are far more likely to eat their kills than to sell them.

Fishing

Fishing is actually a less common sport than hunting. This is because hunting uses skills the person probably learned for another reason, such as participation in a militia. It would be more common for a family to have a bow around the house, than a fishing pole for exactly this reason. Historically, few people knew how to swim, making fishing a hazardous sport.

Those who do fish are likely to do it more often than the sport hunter, possibly most mornings before starting the chores of the day. Of course fishing requires access to water containing fish and this might be difficult for some to come by.

Like game, fish caught by sport fishermen are most likely to be eaten or salted by the fisherman himself (or his wife) and not sold for profit. Salted fish is a long established provisional food and could be counted on for the family when other food sources were scarce.

Foraging

Foraging was probably more common for the women of the family, but could be done by anyone. Whether they were after nuts or berries or mushrooms, foraging involved getting into the shady forest and searching for some of the luxuries of life. Foraging for herbs and honey could also help a family quite nicely, as could a couple of extra eggs.

Unlike hunting and fishing which can still be done in the winter, foraging is far more of a warm weather event than a cold weather one. Cold weather foraging is more likely to bring home fire wood, another vital household endeavor.

Foraging is best done by people who know the area and know what they are doing. Poisonous mushrooms are only one of the dangers of foraging gone bad. Unlike fishing and hunting, some of the products from foraging are very difficult to duplicate on a farm and might be saleable to the right vendor. Certain herbs, some berries, perhaps mushrooms (the safe kind), or wildflowers might all be rare enough that in small, unreliable amounts they were still worth buying.

Like mining and other unpredictable endeavors, setting an income on foraging is extremely difficult. There is a major luck factor involved, though there is also skill involved. For a game master to include foraging in a game, first the sought item(s) have to be reasonable for the region, and then it should be like gambling. Face it, if you spend your whole day wandering around the woods and all you have to show for it at the end of the day are a

few feathers and a load of fire wood, you've wasted a day you could have been making cheese or pulling weeds or knitting. Of course if the feathers are the mystic gold phoenix feathers, you may be able to sell them to a mage for the value of the entire corn crop this year.

STEP 6 - MIDDLEMEN

It is a fact of life that anyone who involves themselves in a commercial transaction will expect to see a "piece of the action". Because of this, it will typically be cheaper to buy food directly from the source (the farmer or the cattle rancher), but who has time for all of that? Middlemen make things easier, either by gathering things into one place or transporting them to distant locations, or both.

Transporters

There are two main styles of transport: caravans and shipping. For lack of a better description, the difference is only by land or by sea. Caravans do not necessarily need to include camels; they are more likely to be wagon trains loaded down with all manner of goods. Obviously, caravans are only necessary when shipping is not a viable option. The cost of maintaining the animals and equipment necessary for a caravan is extremely high. On top of the wagons and their "engines" is the cost of the teamsters and caravan guards. Even though this is tedious low paying work, these men expect to be paid.

Shipping can be faster and require fewer sailors than a caravan needs teamsters, but it has some severe disadvantages. First of all, owning a ship is a major barrier to entry. Getting a team of horses and a wagon is far cheaper than purchasing a ship, even a small one. This allows caravan-style merchants to start small and build up. Shippers need to start big and build even bigger. Shippers are also more at the whim of the weather than caravaneers are. An extended calm will not affect a caravan the way it would a ship, though nasty weather can certainly slow either style. In some cases the weather can be beneficial to the shipper, but this also raises the risks to a much higher degree.

It is the risks of both these styles of transport that truly justify the additional cost they charge. Shipwrecks are too common an occurrence, and a single shipwreck could wipe out a shipper's profits for a year or a life-time, depending on the size of his operation. Whether it is bandits or pirates, both transporters are at major risk from thieves. The thieves do not have to be as obvious either as many products have a tendency to "fall off the truck" when not properly supervised.

Both styles also require infrastructure. By this we mean that ships need ports and caravans need roads. While it is certainly possible to move goods without ports and roads, it is not practical. Yes, a ship could use long boats to transport cargo to shore, and a caravan could roll over open plains, but these are not good ways to run a consistent business.

Factoring the cost of transport is difficult to do. First off, the cost of moving a product is going to depend on the weight and the size of an object. A ton of feathers may weigh as much as a ton of lead, but it is going to take up a lot more space in the hold or wagon. The next important factor is distance, but only in so much as how long it takes to travel. Most shippers will track distance in number of days, not miles, because it is the cost of the men (and animals) they have to cover while transporting the goods. Of course, if a good wind blows a ship into port early, the shipper will not be giving discounts.

Chief among the cost of transporting goods is the risk involved. The risk of theft is a very important one, but risks of spoilage need to be considered too. Transporting crystal or glass is much more difficult than transporting barrels of flour because the fragile objects have a tendency to break. Breakage is a loss to the transporter, who will need to raise the price of the other objects to cover what was lost. Obviously food stuffs are also prone to spoilage. Most shippers do not want any part of food that will rot if it takes a couple extra days to get it to market. Those willing to take the risks are going to demand higher profits to cover them should they ever lose one of these races with time.

All of this has been rather nebulous because it has to be. There are simply too many factors affecting transportation. This discussion on transportation has sort of assumed that the transporters would be cartage services that would move goods from one place to another for a fee. This is not the typical scenario. More typically, the transporter is a merchant.

Merchants buy goods from one person and sell them to another. They are (typically) 100% middlemen. Unlike the butcher who buys from the cattle rancher and sells cuts of meat, the merchant buys cattle and sells cattle, or buys ceramic urns and sells ceramic urns. A merchant does nothing to enhance the product. Despite this, he expects to make a profit.

Most merchants are transporters. They will buy goods cheaply where they are produced and transport them to where they are rare. The bigger their operations, the cheaper it will be for them to move goods, so the bigger their profits will be. This is what causes

merchants to be the true wealthy people in a society; the margins of scale work in their favor until their wealth is making them even wealthier. Of course they are taking risks, and they will pass the cost of these risks on to their customers.

Buying cheaply is the first hurdle, and most merchants (or their agents) are experts at tricking, swindling, seducing, threatening, or whatever it takes to give the producer the least price for his or her goods. While we are sure there are honest merchants out there ... wait ... scratch that - it's not even worth pretending. OK, so all merchants are greedy, and its time to get on with it.

Now that we have discussed most of the major forces causing the cost of transportation to vastly increase the cost of a product, it is important to note that the merchant is going to charge whatever he thinks he can get for the product at the other end. It is less a matter of figuring out the cost of the good at the start and the cost of the transport as it is figuring out what the market will bear. If the merchant does not think he can buy something, move it and at least double his cost, he is not going to buy the item in the first place. Some items just are not worth shipping across the world.

If a good is easily transportable and only needs to go a short distance (3-5 days), the merchant is going to be looking for items where he can double the cost. If an item is still relatively easy to transport, but needs to go a long distance (around a month traveling), the merchant is likely to be looking for four times the cost of the good in the new region. The same good traveling across an extreme distance (up to two months) could easily fetch six times the original cost. Risk could add 20-100% increase to the cost, but 50% seems likely. Difficult to transport items (extremely large or heavy) can only be taken on a case by case basis on how much additional effort they would be to transport.

It is important to remember that the most important trade goods of the ancient world were things like spices, silks, furs, and precious metals and stones. These are the kinds of things that traders could buy cheaply in their native lands and sell for solid profits where they are rare.

This is pretty arbitrary and it is intended to be simple. Most merchants would not bother to figure out the costs of moving cargo, because there is simply too much that would go into it. In a region where transport was extremely competitive, the merchants would have to start taking a much more detailed look at their cost and assigning those costs to the items rather than simple doubling.

One of the easiest ways to figure out the cost of moving cargo is to figure it out at the wagon or ship level. Let's assume that overland transport is typically by wagon. Each wagon has a teamster to drive it and a guard to guard it. It also has some overhead costs for the trail boss, the cook, etc, so let's add another half a person to each wagon. Each of our wagons is going to be pulled by a team of six horses and have a capacity of about 15,000 pounds. (This is fairly close to a Wild West wagon, but it should work here.) It would travel about fifteen miles a day, because of all the stopping to water the horses and the shape of the roads and such.

So how much did the wagon cost and how long will it last (in number of trips)? Same with the horses; how much and how long? How much feed do the horses consume?

It just so happens that wheelwrights, blacksmiths and carpenters all make 11sc per day. History says to make a wagon of this size would have taken four men several weeks. Let's say four men, 25 days, at 11sc per day or 1,100sc. Let's estimate another 100sc for the wood, the metal fittings, and any other materials necessary, and we've got a huge plains crossing cargo wagon at 1,200sc. Obviously, this is not a peddler's wagon, and much cheaper variations would be available. Despite this sizable outlay of money, if one assumes that the wagon will last eight years (like a house, this is not valid, but takes the risks into account), each day's run of the wagon is worth about 5cc.

Six horses cost about 600sc, though tough wagon pulling horses might be more expensive than "average" horses. Anyway, that's 4cc per day for the team, assuming a five year useful life. Of course supplying oats for the team would probably run about 12sc per day. We're not going to feed our staff, but we are going to pay them a full day's wage. Chances are the caravan master would dock the workers' pay for the food they were served, but to the merchant it would all net out. So we have half an unknown overhead guy (figure 10sc per day), a teamster (7sc) and a guard (10sc). Therefore moving this wagonload of stuff 15 miles would cost 35sc. Figure the wagon can haul 30 barrels of stuff, without too much regard for what the weight of the stuff in the barrels was. You can break this down to a fairly easy 1sc per barrel per day, but remember that this will only cover the merchant's expenses (and probably not fully). If he were charging a cartage fee to someone else, he would need to start at 2sc per barrel per day.

How far apart are the cities? Hopefully you know this part. Is there a road between the cities or just a dirt trail? An actual road (even a fantasy era one) would probably move the wagon to 20 miles a day. Assuming two cities are 200 miles away from each other with a road half the way, it would take the wagon about twelve days to cross from one city to another. That means each barrel would cost the merchant 12sc to transport.

If the cargo was a barrel of beer, the beer would probably only cost 24sc, and the transport would cost another 12sc, thus adding 50% to the cost of the beer (before the merchant's profits). On the other hand, if the barrel contained wine worth about 162sc, then the shipping only added about 7½% to the cost.

While this is a fairly good example, it is only one example. Maybe there is only one guard for every two wagons. Maybe the guards have horses. Maybe the horses have been replaced with oxen (who probably will not get a speed increase from the road, but will cost less to feed). The wagons could be shorter, use fewer animals, but carry less. The points go on and on. Still these calculations are more for the merchant than the game master. The merchant needs to know what it is profitable for him to transport, more than he needs to figure out what his mark-up will be. His mark-up will be whatever the market will bear.

Ships are another matter entirely. Some samples of the ships that first crossed the Atlantic give a huge variety of cargo sizes, but the big merchant ships that could hold about 1,000 barrels seem to be pretty average. Trying to continue our averages, it seems likely that to sail the ship requires a captain, two officers, and an average of 25 sailors. We're going to figure the same thoughts about paying for their food (we'll just pay them for a full day and assume it somehow works out). This means that the salary costs are about 300sc per day. The only information we can find on a ship being built of about this size at about this time indicated that it took 5,000 man-days to complete the vessel, though this did include sails, rigging, metal working, and the rest. Assuming that most of the carpenters, sail makers, ship builders, and other craftsmen involved make 11sc per day, this ship will cost 55,000sc in labor plus materials. Shipbuilders cannot use just any wood for the ships. Enormously long planks are needed, requiring the tallest trees. We're going to run the price of a 250 ton (1,000 barrel) merchant trader at 75,000sc. Now this is an ocean going trader. It is bigger than the ships that brought English colonists to America, but smaller than the Spanish treasure galleys. Obviously, there will be smaller ships, even smaller ships that can still cross an ocean, but we're trying to give averages.

So what do you wind up with? 75,000sc over 15 years is 13-15sc per day. Add in the salaries of the crew and you are looking at 310-320sc per day. Now, as long as a ship is following the currents and weather patterns, an ocean going vessel could probably make about 75 miles per day; much faster than a caravan. But the risks are <u>much</u> higher. If a freak storm hits a caravan, some of the cargo might be lost. If something happens to a ship, it is all or nothing, with a good chance of losing not only the cargo, but the 75,000sc ship. Put this with the chance of bad weather or no weather (a calm) stopping the ship from moving. While this can also happen with a caravan, shipping is at a far higher risk of being stopped due to weather.

So, do the ship owners charge 3.2 copper coins per barrel per day to move merchandise across an ocean? Probably not. First off, the shipper has to charge up front, so he has to take into account expected slow downs. Then he has to take into account the risks from weather, pirates and whatever else. Then he has to make a profit. Depending on the risks and the greed of the shipper, you're probably looking at 1-2sc per barrel per day of expected travel with 1.5sc being average.

Two last points about sea travel. First, the fastest way is seldom a straight path. The 75 miles per day speed assumes that you are following the currents. That often means traveling far more miles than you would want in order to gain the best speeds. Secondly, shipping is a huge risk for the ship owner. Between the massive costs of the ships and the risks involved, most ships will be owned by more than one person. If a number of shippers each own a smaller part of several ships, they spread their risks around. Of course, this means that piracy against one of these ships will anger a large number of wealthy people. It's fun making tons of enemies all at one time!

To Market

We don't want you to feel as though you've just read the last section for nothing. It is important to understand what the costs are to the merchant. We mentioned at the beginning of this chapter that there were two things about middlemen - transporters and gatherers. Gatherers gather the goods into one place so the customer can buy them more easily. For this service, they receive a decent fee. These gatherers then form a marketplace.

The marketplace is located in a city or at least in a town. A small town might have a dry goods store that serves as a marketplace, but it will lack many of the dynamics. In a big enough marketplace, just about anything for sale can be bought. Merchants will cram their stores, stalls or booths with anything they think they can sell.

Remember that the rules of today do not affect the people of our fantasy world. The laws about food preparation and storage simply do not exist. Likewise, laws about selling defective or even dangerous items do not typically arise, though there might be laws against selling poisons and the like.

While some merchants will have brought goods from across the seas to the market, some have just ridden around the countryside collecting things from the farmers. The farmers have neither the expertise nor the time to always go to the city and sell their goods from a market stall. Just to complicate your life as a game master, things in a marketplace will never really have a price on them. Haggling isn't expected, it's required. Depending on the culture, the initial price offered could be ten times the expected sale price. Player characters skilled in selling or haggling should be able to get the price down lower than the merchant expects, but not lower than the merchant can afford. Of course with all the discussions of averages, in the end everyone pays the same price anyway.

If a merchant buys a good and then resells it, he is likely to add at least 50% to the cost of the item. If the good is relatively common to the region and there is fierce competition, this could be lowered to 33% or even as low as 20-25%. Whether a good is common is more dependant upon the number of people selling it in the marketplace than where it came from. If fifteen merchants all bought little statues from across the globe, it is the competition that will drive the price down. This mark-up is joined to the increased cost of goods that have been brought in from a distance. Therefore a product that had been on a wagon for six days and is sold at the market will likely cost three times what it cost from its producer (double for transport and +50% for marketing). The transporter may have sold it to a local merchant, so each is taking his cut, or a local merchant may have also been the transporter, in which case he is reaping all the profits for himself.

Before we walk away from this evil class of horrible traders, it is important to note that they do bear risks and expenses themselves. They need to pay for their store or stall. They need to purchase the inventory before they sell it and maintain it until they do. They are at risk from thieves and from spoilage, just as the transporters are. Probably most importantly, they operate directly under the supervision of the local government and probably have the most difficult time avoiding taxes. We don't want you to feel sorry for them, but there is their side of the story as well.

When determining prices in a city, you will need to figure out if something is bought from a market or from the "source". For example, a sword maker might be creating swords in his shop in the city and be considered a "source". Three blocks down, a merchant in a marketplace might be selling swords as well and be marking them up. Will their prices be different? Probably. How do you handle this? There's a couple of things you can do. First off, who has the better quality? Maybe the merchant bought some cheaply crafted swords in a distant city and can under price the local merchant with his shoddy goods. Maybe the merchant has the best crafted swords in the world and people will be willing to pay more for them. Maybe the swords are exactly the same and the merchant is just a better salesman and that is how he gets people to pay more. This assumes that the people buying do not know everything. They probably don't know the sword smith, they don't know how to judge the quality of a sword, and they don't know everything that the people reading this supplement now know.

Obviously, the concept of a market means that the same stuff costs different amounts of money at different places. This can be a real pain (time consuming wise) to a game master trying to handle life outside the adventure as well as inside the adventure. It is probably easiest for the game master to determine the prices of what things cost in the place that the player characters are most likely to be. If the group is based out of a particular city, then just discuss the prices as though they were all based there. Then if a character is somewhere else and you have the time to determine what the price would be in the new spot, use the different price. If you don't have the time, just use the original price from the "main" city. You can rationalize this as the character would be willing to spend the same amount abroad as he would at home, so he doesn't haggle the price properly.

Plunder

Let's face facts - We're talking about high fantasy gaming, so eventually an adventurer is going to walk into some shop and tell the owner that he has something of value. Let's go out on a limb and assume that the shop owner does not assume that the item is stolen, but instead believes that the adventuring type person did in fact get it out of the lost tomb of some moldy lich. We will therefore assume that the city guards are not being called and everyone is willing to deal somewhat equitably.

Depending on the culture, some merchants will no doubt be willing to deal with adventurers and other looters. Why? Because it is profitable. The second dealing with adventurers becomes expensive, they would stop. So a merchant under these circumstances would only buy from an adventurer if they could get the item from the adventurer cheaper than they could get it from their suppliers.

We just explained that simply bringing the goods to market is a 50% mark up. That means that the merchant paid about two-thirds of the retail value for most of the items in his shop. Now dealing with adventurers is risky.

(Of course it is, you're all carrying swords and have bad guys all mad at you.) On top of that, the merchant probably cannot be certain of the quality of the items. Suppliers he uses every month deliver basically the same stuff every time. Adventurers bring in weird bits and odds and ends.

For a merchant to want to deal with independent suppliers, he is going to want to pay them around one-third to one-half the retail value of the items. (Retail value is what he thinks he can sell it for.) Things he can simply put on a shelf and sell, he will be more inclined to lean towards 50%. If there is anything that needs to be done, such as sizing armor, cutting the raw gemstones, or cleaning the silverware, the merchant is going to lean more towards the 33%. The exception to this is extremely rare items. If this is the mystic crown of King Everyoneforgothisname, the merchant is going to be more willing to pay up. The one nice thing is if characters have carried the item to a region where it is rare, they should get 33-50% of the inflated price due to the transportation.

Some things just aren't worth selling, no matter how cheap the party is willing to let them go. Also, the character needs to know what kind of merchant would be interested in what kind of stuff. A jeweler will not be interested in furs, and a furrier is not interested in magic weapons. OK, they might be, but probably not from a retail point of view.

If the retailer believes that the items are stolen, chances are they will drop this percentage to between 10-15%. This is mainly due to the risks involved, but also because crooked merchants (ha - that implies that there are fair ones - whoops, back to the book) are greedier. Anyone willing to buy and sell stolen goods is looking to squeeze every penny out of every sale.

STEP 7 - CRAFTSMEN

Craftsmen may be selling a good, but they are really selling their expertise in producing that good. The butcher is in fact a craftsman. He takes livestock and produces edible meat. Carpenters, smiths, bakers, and leather workers are all good examples of craftsmen, but they are just scratching at the surface.

Crafts and Science

A craftsman does not necessarily earn his money based on the amount of work he does, but instead on how much education he has. Longshoremen do an enormous amount of work, but since anyone with the proper muscles could do that job, they do not get paid very well. (It is now that the writer of this book would like to apologize to any and all longshoremen who happen to know where I live. I respect you, really I do.) A chemist may spend a large part of his day watching various beakers boil. While few would consider this to be strenuous labor, the chemist is going to produce medicines and be paid extremely well for his work, because no one else really knows how to do it.

People of this age typically knew how to do the things that were required in their lives. They knew these things because it was rarer to have someone around who would do them for money and because they were quite often too poor to pay anyone to do anything. This is why farmers erected their own barns, slaughtered their own animals, sharpened their own tools, etc.

So when it comes to tasks that most people think they could do themselves, if they had the time, they are not going to be as eager to pay a lot for it. These common skills are the worst paying craftsmen jobs. Now is probably a good time to mention that labor is not a craftsman's job. Laborers labor, craftsmen craft. Laborers are longshoremen, teamsters, woodcutters, harvesters, porters, and on and on. In some cultures soldiering is considered a laborer's profession, though since it is dangerous, it pays more than simple labor.

As the craft becomes either more difficult or a more closely guarded secret (rarer), the cost for having someone do it goes up. There are two ways a craftsman can look at his trade and his earnings. The first way is that the craftsman will take a look at his cost of materials and then try to make a multiple of that cost. In this style, common crafts would likely double the value of the materials, while more specialized work would likely quadruple the cost of the materials. Examples of this have been given earlier, such as the butcher willing to pay 10sc for a pig if he believes he can earn 20sc for its meat. (You'll catch us calling this a "cottage industry", because people can accomplish it in their cottages.)

The other way to look at earnings is that a craftsman should earn a certain wage every day. Whatever portion of the day it takes a craftsman to accomplish a certain task should then require him to increase the cost of the materials by that amount. For this example, let's look at Frank the Furrier. Frank the Furrier buys pelts from the local trappers and turns them into beautiful coats and garments for the people of his community. Since Frank works out of his shop in a small town, we can forget about all the transport and marketplace costs, but this is a fairly rare situation. Furriers would normally make between 12sc and 15sc per day as a wage (skilled craftsmen). Since it takes Frank

about two days to craft a fur cost (believe it or not there is some basis in fact for this), he probably would want to charge his cost of materials plus 28 (14 x 2) for the garment. Assuming that this was a rabbit fur coat, rabbit pelts run about 5cc each for fairly good quality pelts. Gauging a requirement of 55-60 pelts necessary for a full length coat (again some basis in fact - you should be startled by the amount of silly research that went into all of this), the coat would sell for around 58-60sc.

So which method should be used? Whichever one the market will bear. Probably a better plan is to think about whether the task at hand is something the person does on the side or for a living. Typically, someone who's full-time profession is crafting a certain item or style of item will think of their wage as earning a certain amount each day. Those who do something on the side, such as an innkeeper brewing beer, will be more inclined to think about what they can get in exchange for the materials. Since they are not doing it every day, they will not really be able to think of it along the lines of how much they need to earn each day. Another way to see it is that someone will look at it from the cheaper method, whichever way that works out to be. Chances are the person content to make less will set the price for the market.

Specialization

There are two reasons that specialization is important. The first is that most craftsman skills will be closely held secrets. Whether these secrets are only taught to your children, to your clan, or to your guild, they are going to be held close to make them more valuable. If each person only knows a few secrets, each person can continue to earn a living and be valuable. The second reason is simply that tools are expensive. In the modern age tools are expensive, but affordable. In an age where every tool is hand-made and of materials that will <u>not</u> last a life-time, purchasing special tools for a special job could make the job too expensive to do. By each craftsman being specialized, a craftsman can own only the necessary tools for the one job and hopefully be able to afford that smaller number.

Of course, the opposite side of the coin is the rural craftsman. A rural craftsman who does not have a large number of competitors as would happen in the city needs to be the jack-of-all-trades. For a craftsman to survive in a rural environment, he needs to keep busy working every day. There simply would not be enough specialized work is a smaller community to keep a specialized craftsman busy.

What do we mean by "specialized". Well first off, in the country, you will find a blacksmith in just about every sizable town. Even in the smaller towns, there will be one or two guys who sort of know what they are doing. These blacksmiths will handle all manner of metalworking, probably using pig iron they purchased from a trader or in a major town.

In the city, you will not find a "blacksmith". There will be smiths of so many different types that it will make the uneducated visitor's head spin. There will be farriers who make horseshoes and shoe horses, silversmiths, gold smiths, tinkers (yep that's a tin smith), tool makers, armorers, and buckle smiths, just to name a few. You might even get them specialized into sword smiths, dagger smiths, axe smiths, etc. instead of the catch all "weapon smiths". This is true on the wood side too, where you have carpenters who build houses, cabinet makers, coopers (barrels), wheelwrights, shipwrights, woodcarvers, furniture makers, and in a completely different field but still related to wood, wicker workers.

The bigger the city, the more specialized the craftsmen will be. While there may be craftsmen willing to blur these lines in order to get work, they will probably be regulated by a guild of some type that seeks to keep them locked into their role. The specializations should be nearly dizzying to anyone outside of the profession, but to those who make their money in this manner, they will be willing to fight to maintain their livelihoods.

Risky Jobs

Certain jobs include a risk factor, a chance that the person doing the job will get hurt. There are all manner of risk factors, and if you think hard enough someone could get hurt at any job, so we're really just talking about the bigger risks and the bigger probabilities.

A night watchman is employed to stand guard. No one really expects him to get hurt, despite the fact that he is technically ready to fight to protect the goods. A soldier is employed year-round in case a war should occur. People expect that a soldier stands a fairly good chance of injury. Even if the country isn't at war, it is expected to be possible. An explorer, is probably going to make a very good wage, because not only is he at risk from the dangerous people and animals, but also from falling off cliffs and into rivers and such. The bigger the risks and the more likely the risks, the higher the pay.

Now to set numbers on these. Most people who take dangerous jobs recognize that they are dangerous, but still believe that they are completely safe. Otherwise they would not take the job. No soldier joins up thinking, "I'm going to get myself killed!" He thinks, "Someone

might shoot at me, but I'll bet I'm better and I'll get him first." Because of this imagined invulnerability, people getting paid to take risks, never really get paid enough for the risks they take. In fact, riskier jobs seldom pay more then 20% above what they would pay if there were little risk.

Of course, really risky jobs can pay much more. This is the difference between a soldier getting paid more than another laborer and an adventurer getting paid far more than the soldier. An adventurer is probably walking into a situation that would get most people killed. Typically an employer will consider certain death (at least for an "average" person) as something they are willing to pay someone else for, since obviously they won't be doing it themselves. But what is it worth? No one can know. That's why the payment for adventurers should be based on how much the employer is going to profit, and not necessarily the worth of the life of an adventurer. If the adventure is to recover stolen jewels valued at 6,000sc from an army of bandits, the employer needs to factor the loss of 6,000sc against what he thinks he can get the fools, I mean adventurers, to do it for. An army of bandits might be worth a third of the recovery, while a couple of thugs holding the stolen jewels might only be worth a 10% finders' fee.

Crafts

Smiths

There are all manner of smiths, but basically a smith is someone who works metal. We are assuming that some metal working skills exist in most of the main cultures in the fantasy world. You would find a blacksmith in most towns and villages, and more specialized smiths in the bigger towns and cities. Here are some examples of their works.

Toolmaker

The toolmaker is perhaps the most common specialized smith, and in fact most blacksmiths will be mainly toolmakers. A toolmaker will craft the farming implements needed on the farm or ranch. Turning pig iron into a tool is very difficult work. Some sources indicate that it would take the majority of a day for a blacksmith to craft a hoe, one of the simplest of tools, but this time would be cut down if the smelter delivered the iron in a better form. The thing working against tool makers is that most smiths could craft tools, so they would be considered one of the most common smiths. Because of this, we will set his daily wage at about 11sc.

Horseshoes typically weigh about two and a half pounds each, so that's 10 pounds of iron/steel for each horse. Steel is worth 16cc per pound, so just the metal for the shoes is going to cost 16sc. How long it takes the blacksmith to bang out a set of shoes really depends on how he received the metal. If he got it in fat slabs, it will take quite a while. If he got it in rods generally the thickness needed for the shoes, it will take less time. Let's assume that the smelters cater to the smiths, to lessen the amount of work done. A set of four horseshoes could wind up costing 20sc. Why 20? Because that way they can be 5sc a piece, and it all kind of works out. Lesser graded steel could be used, possible lowering the price to 12-15sc for the set of four.

The farrier will probably want 5cc per shoe to put them on. This way, a farrier who expects to make about 10sc per day would need to shoe around five horses a day. Assuming that a farrier makes his own nails, generally cares for the horse's hooves, and needs to size the shoes to the particular horse, this seems like it might make sense. A rapid fire farrier who just whips the shoes off and puts the new ones on in his own barn would charge less. Of course a clever farrier will simply stay quiet about the old shoes, but the blacksmith should be able to find some use for the old shoes, so the recycled steel should have some value to him. The blacksmith might pay as much (actually reduce other prices) as 6-8sc for the old shoes. Honest, friendly farriers might split this with their customers lowering the price of shoeing a horse to 19sc (20+4x.5-3).

Back to the toolmaker - A hoe crafted from a stick and a lump of iron would cost around 6sc, for the work in crafting the handle and bending the metal into a sturdy digging tool. Obviously this shows that our tool maker must have some knowledge of woodworking as well as metal working so he can craft the handle. Some skill is also necessary in properly assembling the tool with rivets. Similarly, the slightly simpler hatchet would run about 4sc. There is less handle to craft and the sturdy, chopping blade is easier to craft than the longer thinner hoe blade.

Higher tech tools, such as an auger (15sc) or even scissors (8sc) would require more fine work by the smith and would be more expensive. Hand tools such as chisels (3sc) or even hammers (5sc), are smaller than the hoe and therefore cheaper. The long, curved blade of a sickle would make that tool run about 9sc, while a full sized axe with its substantial head and handle would run about 12sc. These tools being discussed are intended to be tools. While getting hit with one would certainly hurt, these items are not intended to be considered "battle ready".

Armorer

This is a fantasy game, so we need to talk about armor and weapons. Armorers are smiths specialized in the crafting of metal armors. More than glorified blacksmiths, they know the tricks of fitting armor to the person and allowing movement from within a tin can.

Wire is one of those technological things that most people do not think about. In our own history, the process of making wire was pretty much the same from before the Roman Empire until the Renaissance. The primitive method folds a thin strip of metal over into a circular shape forming more of a tube than a wire. This wire could then be worked into a wire or left as a thin tube. The more advanced form is to draw the metal through a dye, forcing it to become smaller and thinner. This was a very difficult process that required a lot of hard work and some fairly high tech methods. Because of this, wire is not a cheap thing, but instead is fairly expensive. Smiths who draw wire will expect to be paid for their efforts, both in heavy work and in their superior skills.

To craft chain mail armor requires a large amount of wire. Most smiths intending to craft chain mail will draw the wire themselves, rather than pay someone else to do it. If they do not have the technology to pull wire, they probably should not be armor smiths. In fact, we are going to make some assumptions about chain mail armor. First, someone must be drawing a huge amount of wire to form the chains. Secondly, a true armor smith would not do all of the tedious work to form the chain mail, but would leave the bulk of the work to apprentices or even slaves. If a master had to sit down and link each ring, the costs for chain mail would be astronomical. With all of this going on, the making of the wire, the forming of the rings, the linking of the rings, the forming of the chain mail into a suit of armor, crafting a suit of armor would probably require between 100 and 150 hours. Even contributing the bulk of that time to cheaper labor, when the cost of the metal and thus metal wire is factored in, it seems reasonable to charge 275sc for a suit of chain mail. While if the wire is crafted by the armor smith and his crew, the bulk of this is profit to the smith; if he must buy the wire, there will be little profit to the smith, perhaps payment for his two or three days of work. This assumes that the armor is relatively form fitting and made of several pieces. This is not simply a long chain mail shirt/dress. Remember that changing the size of the rings, or the weave of the rings (patterns) will have a major impact on the time required and thus the cost.

Plate mail armor is basically chain mail armor with additional plates added for protection. These plates must be hammered out by a master armorer, including the ever famous breastplate. The plate mail that we think of is articulated, meaning that it is built to allow as much mobility as possible while still incasing the wearer in steel. This is some pretty high tech stuff, and certainly not within the skill set of every armorer. Because of that, and because of the time necessary to build and construct all the plates and joint pieces, plate mail armor will run 850sc. This would imply that a master armorer makes closer to 25sc per day and it takes him about a month to craft this armor. This also assumes that many of the more mundane tasks are handled by apprentices and such, since even a month's worth of hard work might not justify the crafting of such piece of science and art.

Weaponsmith

Two things need to be balanced when we are talking about the crafting of weapons. The first is that hand-crafted weapons are so much more common that their smiths would be both better at making them and more hurried. Balance this with the lower technology and greater effort required with lesser materials. So it would take both longer and shorter to make weapons in our fantasy world. Of course, there is no such thing as an "average" weapon, but we've ignored that argument for so long, that we see no reason to let it slow us down now.

OK, so the sword smith walks into his shop and gets to work on that new long sword. Chances are it's a multi-person job, just like armor crafting where apprentices handle all the lesser work and masters handle the more difficult tasks. Because of this, we can't just say X hours at Ysc per hour. This is also a really good excuse, because depending on a huge number of factors, it might take a day or a month to craft the weapon.

For argument's sake, there must be some smithy where the smiths are churning out weapons for the army. Though they're probably making spear heads, they are probably making a few swords as well. This is as close to an "average" weapon as we're likely to get. Our average long sword is going to be a hefty weapon weighing in around three to four pounds. Let's assume that's three pounds of steel (at 16cc per pound or roughly 5sc of steel). We're going to make a couple of inferences. First, average the master and the apprentice's time to an average cost of 10sc per day. Assume a week to take steel to sword, so seven days at 10sc per day means 70sc. This yields a total of 75sc for a long sword. We've taken the liberty of assuming that the long sword's hilt was done by the sword smith or at least in his shop. This might or might not be accurate, but in either case, it is part of the finished process.

Now a dagger would probably use about a pound of steel, but we'll round it up to 2sc worth of metal. Now a sword smith is probably not going to put his efforts into a dagger, so it would probably be crafted by an apprentice and a journeyman. While we want to say that they could bang out a dagger in a day, it would probably take longer, though possibly a lot of the work would be done by an apprentice. Let's call it an even 10sc for labor and our fighting dagger would be 12sc. Now this is not a knife that a commoner cuts his bread with, but a battle ready weapon sufficiently strong to block swords in combat (at least some of the time). In both the case of the sword and the dagger, sheathes and scabbards are custom crafted for the weapon by a leather worker, not a smith. Leather workers are not housed in a smithy.

Those spears we were talking about would probably have blades not to unlike our dagger. The metal crafted into the spear point would probably be a little over a pound and probably be pounded out by apprentices under the guidance of journeymen. This would probably put the head at about 10-12sc. Spear shafts were expected to be sturdy and reasonably aerodynamic. Though throwing a spear was probably not the best use of this heavier weapon (that's what javelins and lighter spear-like weapons were for), it did need to be a possibility. Now forming a long sturdy pole with some manner of aerodynamics is not the easiest thing to do in a world without power tools. Crafting (probably with a primitive lathe) and hardening the wooden shaft would have taken some expertise, some time and a shop with good tools. It is difficult to believe that a couple guys sitting around a campfire could whittle a branch down to a spear shaft strong enough to be used effectively in combat. Bolting the head to the shaft should have been relatively easy, so we'll ignore that as a costly step. All told, figuring that the woodworker could probably only turn out one or two 6' spear shafts in a day, and the shaft becomes about 8sc, for a 20sc spear. Remember that simply looking at a 6' spear and a 15" dagger, most people will assume that the bigger weapon would cost more, simply because it is bigger. Oh, and we just told you how much a crafted staff would cost too - 8sc.

A battle axe is an odd weapon, because an average is an extremely difficult thing to come by. Some people swear that a battle axe is a one-handed weapon, while others claim it is two-handed. Then the whole issue of over one blade or two, or an ox-tongue, or a spike, etc. We're looking at high fantasy, so we are going to say that the battle axe is a huge weapon with a huge double bladed axe at the end of it. Now this isn't two blades on the same handle, but one massive double sided axe. This is not something that they will risk too much apprentice time on, because a mistake would have ruined the massive blade. The handle has to be bigger and tougher than the spear's handle. We're probably talking about doubling that cost (to 16sc). We're going to assume 10 pounds of steel, even if they do not all go into the weapon (some might be discarded during the process, but would have been used initially to make certain the blade would be big enough). Assuming that the master works about four days on this (at 15sc), the total is 60sc for labor, 16sc for metal and 16sc for handle, round that down to 90sc for the massive battle-axe, probably only of use by fantasy armies, but fun nonetheless.

A quick explanation about the long sword vs. the battle axe: While the long sword is lighter than the axe, it requires more precision to craft it than it would with the battle axe. While a crafting a battle axe would certainly take skill and an incredible amount of muscle, it relies on its brute size for its strength, whereas the long sword is a longer weapon, more susceptible to snapping if poorly crafted. You know, maybe this is opinion, but again, it feels right.

Services

While services are not crafts, they work the same way. If you need a painter to paint for you all day, he will have a fairly established daily wage he expects to make and will charge accordingly, plus expenses. OK, maybe that was a bad example, because it is almost a craft.

Let's try this one - An innkeeper needs a kid to stand near the entrance of the city/town and convince people to come to his inn. So what do you pay the kid? Let's assume the kid is salaried and not commission, though this might be a bad example because the kid probably would have been commission. Anyways. What is a kid's time worth? Not much. Probably 4sc, the cost of the cheapest laborer we've discussed so far, maybe not even that.

All right - this one is better. There is a fortune teller in the bazaar. For the people who stop at her booth, she reads their fortunes in their palms or her cards. It takes her about a half hour to do a person's fortune. Assuming that she is not the lead in to some extended scam, she probably should make about the same as a craftsman. If she is mostly a sham, she probably earns about 10sc per day. If she honestly has some magical powers, she might earn considerably more. At 10sc a day, you might think she would charge 5cc per person, because 10sc over 10 hours with a half hour per reading. Probably not. She needs to make 10sc per day. If her tent does not have a constant flow of people, she needs to charge more than 5cc. If she expects that in a day she will get five people each for a half hour session, she will charge about 2sc

each. More to the point, if the average fortune teller in the bazaar gets five people a day, the established price of fortune telling will be around 2sc, and each one will work hard to get more than five.

This is the real trick to the services. They need to balance the work they do against the total amount they need/want. The same is theoretically true of craftsmen as well, but we are assuming that as long as the craftsman has a product, sooner or later a merchant will buy it and find a place to sell it. Service providers cannot stock up inventory. Like craftsmen, the rarer a service provider's service is, the more money they will get for it. It gets worse when the service providers abilities are rare and rarely used. A scribe who translates hideously obscure languages might deserve 25sc per day due to the rarity of his trade, but because he only works an average of three hours a week, that three hours of work could cost someone 175sc.

Just another point here, a farmer, especially a dairy farmer, cannot easily take days off of work. You have to figure out if there are holy days where the religious do not work in your world. If a service provider needs 10sc per day to provide for his family, he needs 70sc per week. If he only works six days a week, he needs 11.5-12sc per day of income.

STEP 8 - TEXTILES

For those of you who are drifting a bit, textiles are the things they make clothing out of. We are going to broaden the definition somewhat so it encompasses all manner of cloth, hide, fabric, and weaving. Well, you'll get it as we go through it.

Wool

Wool is probably the base textile. Common, can be crafted by commoners, and warm, it serves most purposes. Later in this book there will be a discussion of sheep. There we will show why fleece goes for 2-3sc per pound. This sounds like a lot; it's five times the cost of beef. But there is a lot you can do with a little. In the hands of a skilled spinner, a pound of wool could be spun into 2,000 yards of yarn or 15,000 yards of wool thread. The problem when it comes to turning all that yarn into fabric is that depending on what you're doing with the fabric (the stitches, the needles, the tightness, etc.), 2,000 yards of yarn could be 25 square feet of wool "fabric" or 5½ square feet. This is a pretty big difference.

To try and use averages, we're going to say that normal wool clothing will make about 20 square feet per pound of fleece, while "winter wool" will only make 6 square feet per pound. Just to mix it up, "heavy wool" will be 12 square feet per pound. This way we can have a "normal" average and still make warmer garments and even the overly thick sweaters that people really want to think of when they are facing winters without a modern furnace. (Though felt would have been available, we are not going to cover it as a form of fabric or clothing.)

Especially when we are talking about wool, it is easier to think in terms of knitting and not in terms of yards of fabric. This way there is very little waste. We've avoiding talking about how long it takes to do things, especially things that would probably be done around a farm and not by a craftsman, so let's not start now. To take fleece and turn it into a sweater requires a couple of different jobs. First the fleece must be carded (kind of straightened) and cleaned. Then it must be spun into thread or yarn. Once it is yarn, it can be knitted into a sweater. Even assuming that carding and spinning are very basic skills, one would need to double the value of the wool twice to represent the work here, then triple or quadruple that cost to represent knitting (which requires skill and knowledge). In the end you have a 2sc pound of fleece (let's use the bottom end) turned into a sweater costing 36sc. Once again, economics steps in.

It is likely that all three of these tasks would be handled by the women of the family and more to the point, not the one who is doing all the cooking and house running (either a girl or an older woman). Not as much value is placed on what Grandma does all day. (Yes - The elder generation holds incredible wisdom, but if she's not in good enough shape to be out weeding the garden, then her value as a worker is greatly reduced.) So let's call washing, carding and spinning one job, even though the spinning alone would likely take a skilled spinner all day. Now assuming that the sweater is not exactly a work of art we can legitimately say that spinning is a double your cost job, and the knitting is a triple your costs job. Now we have a relatively low quality sweater costing about 12sc. (Did we forget to say that a wool sweater would probably use about a pound of wool? Maybe this is somewhere between wool and heavy wool, but who can define these things exactly?) One of higher quality would probably be 16-20sc, from quadrupling the "cost" of the yarn. So what we've really done is established the cost of a sweater and of one pound of yarn (its 4sc in case you were not paying attention - double the 2sc for the fleece). All this and we haven't even dyed the wool yet.

The trick is that one would think that because heavier wool was used for the heavier sweaters that they

would be more expensive by the same factors. This is not necessarily true. For one thing, the people are probably not willing to pay twice as much for one sweater over another, even if the one had twice as much yarn. In defense of this thought, the worker probably did not spend twice as much time spinning and knitting.

Weaving

The main problem with weaving is that you need to figure out how technologically advanced your world is. All this silly research seems to show that a low tech weaver could make about nine to ten inches an hour. Assuming the loom was about 30" across and the weaver worked for ten hours a day, the weaver would create about two square yards of fabric in a day. When the technological improvement of the "flying shuttle" came about, the output was basically tripled. Now the flying shuttle was invented in 1733 in our world; not exactly modern, but typically beyond what most fantasy games are willing to go with.

Rather than try to differentiate between woven and knitted fabrics, we will use the normal wool, heavy wool and winter wool averages of 20, 12 and 6 square feet per pound. The important thing is that woven material is going to look a lot different than knitted material, and most people will think it looks better. The other thing is that weaving is more of a profession and less of a cottage industry. That means that the woven fabrics and woven goods are going to cost more than the knitted goods because of the extra step taken in their creation.

Once we leave the cottage industry and enter the professional world, things move from multipliers to per day costs. We're going to assume that there is some kind of technological advancement that makes weaving three times faster. So a weaver creates about six square yards of fabric per day (or 54 square feet). It shouldn't really matter what weight of fabric is being made, because that will be more dependant on the yarn/thread than the weaving work itself. The simple calculations come out in the following manner: A weaver makes about 8sc per day. A pound of wool thread costs about 4sc. Therefore, it takes a weaver half a day and one pound of wool thread to make 20 square feet of wool fabric. This fabric would then be worth 7sc or 31.5cc per square yard. It would take the same weaver a quarter of a day and a pound of wool to make 12 square feet of heavy wool fabric or 43.5cc per square yard. It doesn't seem right to have a weaver crafting winter wool; that's more of a knitting thing.

One final point: Although we are assuming that professional weavers have some fancy looms that let them produce six square yards of fabric in a day, farm weavers would probably need to work the old-fashioned way with smaller looms. Hopefully they would be able to reach two square yards a day, but more likely they would be producing even less than this because of the smaller size of their looms.

Cotton

Cotton has the same problem as woven fabrics - where is the tech? Simply put, without a cotton gin, cotton is an expensive fabric. Before the cotton gin (1794 on Earth), a person could process about a pound of cotton a day. After the cotton gin, it was more along the lines of 50 pounds a day. Compared to wool, where sheering a sheep results in six pounds of wool for a short amount of work, cotton has to be picked. After it has been harvested, it still requires a full day's work to get a pound of it to the point that wool is at right after it comes off the sheep.

What's all this mean? Well, assuming the slaves spent their off time picking the little seeds out of the cotton (you know - their spare time), you can still justify growing the stuff, but it is going to be more expensive than wool. An average framer can bring up about 145 pounds of cotton per acre. About 10% is lost in the cleaning process, so we're now down to 131 pounds per acre. Assuming you use a 365 day year, three acres of cotton is more work (cleaning) than one person can handle in a year. Still, whoever the person cleaning the cotton is, this is a <u>low</u> paying job. If a pound of wool is worth 2sc and a pound of wool yarn is worth 4sc, let's add 4sc per pound on to both these numbers to represent the cost of the slave's work or half the cost of a weaver. (Why slaves? Is this a whole racist thing? Come on - No farmer is going to waste a day cleaning cotton like this. So unless he's growing like a quarter acre of cotton, he's going to have some extremely low cost labor doing this. That leads to slave labor. It's the only way to make it work.)

OK, so a pound of cotton fiber is 6sc and a pound of cotton yarn is 8sc. Cotton is a much lighter fabric than wool, because it can be spun to a thinner thread. Thin cotton (really normal cotton) is a light fabric, while thick cotton is about equal to normal wool. Therefore, we'll make a pound of thick cotton fabric yield 20 square feet of material and thin cotton will yield about 27 square feet. To make matters worse (price wise) cotton is typically woven, so at 8sc and 6 sq. yards a day, a weaver will want about 50cc per square yard for thick cotton and 40cc per square yard for thin cotton. While this seems sort of in line with wool, you have to remember that the

wool is a warmer, heavier fabric. You're getting more for less with wool. If cotton is local, it is affordable. If wool is local and cotton needs to be brought in, the costs are just going to go through the roof.

(Those of you watching may have noticed that a day's spinning for a wool spinner just became more valuable than a day's spinning for a cotton weaver. This is because we double the cost of the fiber, but not the cleaning, and a cotton spinner has to spin more because it is finer. This assumes that the same cheap labor is still around and can spin as well as pick seeds out. Clever, wasn't it.)

Leather

Not to get confusing, but when we talk about leather, we might mean all sorts of animal hides that have been cured, or we might mean specifically cattle hides that have been cured. We'll try not to get too confusing. (And for any of you out there going, "Hey, leather isn't a textile"; just stop being so technical all the time. It works the same way, so we're including it.)

The most important thing to remember in pricing leather is that it is a by-product, well sort of. Typically it is the meat of the animal that made it valuable and the hide is going to be used more as an afterthought. However, there are some animals where it is the hide that really shows the benefits and the profits.

A full grown cow sent to slaughter will probably yield about 36 square feet of hide. Now, not all of this hide is useful, because it is in an odd shape, but that's life. More likely, the person using the leather will have certain projects where all that scrap leather can be used. Now we priced the beef so the butcher would make the profit he wanted, so the leather is free, right. Of course not. But what is it worth?

Tanning leather can be done a number of ways. One of the most primitive was to use the brains of the animal to tan it. (Go ahead - euhhhh. Just be glad we didn't go into some of the other methods.) This was obviously the cheapest method. Other methods involved the use of salt or chemicals. The problem is, that because the hide is sort of free, we simply have to work backwards.

Wool fabric costs 31.5cc per square yard. Leather is about as useful for clothing as wool, but it has a lot of other uses too, so it should be more valuable. Putting it at about 50cc per square yard makes it roughly the peer of woven heavy wool. That seems closer to the target. We rounded it up higher assuming there are cultures that will desire leather over wool, so we think we can justify it at 50cc per square yard or about 5½cc per square foot. Seems logical.

Tanning takes a long time using ancient methods, so long that we have to think of it as a cottage industry. A tanner cannot figure out how much money he makes in a day, because nothing he does is done in a day. Tanning also takes attention. This isn't some job where everything just sort of sits all by itself. You have to stretch the hides, and soak them, and clean them, on and on. So it is less likely that farmers are doing this for themselves. Historically, tanning was such a stench ridden profession, that it could only be performed in certain areas, typically outside of the city.

So we have a tanner who is going to turn a steer's hide into something worth 200cc (36 square feet or 4 square yards times 50cc per yard) over the course of days, weeks or even months. If you figure that the excessive amount of time required and the fact that nobody really wants to do it because of the smells, it seems likely that a tanner should earn six times his costs for his product. That means that butcher would earn about 30-35cc for each steer hide he sold to a tanner. That assumes that the butcher removed it reasonably intact. If the butcher cut the hide off in strips, he's going to get a lot less for it. All in all, this feels right - a cow hide is 3sc, and a tanned hide is 20sc.

Clothing

As we mentioned way back in **Wool**, clothing costs, especially when based on woven fabrics, can be very high. Our knit wool sweater ran about 12sc, and that was for a relatively low quality item. Not that it would fall apart or anything, but it probably wasn't the prettiest thing you ever wore.

Using some historic references, a gentleman would wear a shirt, breeches, a vest (waistcoat), and an overcoat ("great coat"). Looking at what we can determine, a shirt would take about 3-3½ square yards of fabric. A vest would take about 2 square yards. The breeches would be around 2½ yards, and the overcoat would be closer to 7. Now this isn't the best use of the fabric. This is making certain that the weave of the fabric stays reasonably consistent throughout the garments, or in other words, wasting a lot of woven fabric. (Yes, the tailor will have pet projects for the waste, probably, but not when his big customer is in the shop.) Now a tailor ought to make about 10sc per day (pretty average for a craftsman). The question is how long does it take a skilled tailor to make all these garments.

The answer (you guessed it didn't you) is "it depends". A tailor could crank out several simplistic

shirts in a day, but why would someone go to a tailor for something simplistic (that their mother or wife could easily do at home)? This means that if we are going to talk about the commerce of clothing, we need to start talking about fine clothing. Simple tunics can be whipped together by anyone, but if you want fancier stuff, you go to the tailor. Even still - it depends. A nice dress shirt and vest might take a tailor the better part of a day to put together, or it might take three days if the vest is to have embroidered borders and the shirt is to be stitched in a particular style with pleated sleeves and a fancy collar. (Big assumption - There are no sewing machines. Everything is done by hand.)

Because of the huge variations (and the fact that no one can even imagine not using a machine to sew nowadays), we need to use some poetic license with the amount of time necessary here. It seems that a skilled tailor could put together our breeches, shirt, and vest combo in a full day's work if he did not need to put too much extra work into it. This would require 7-8 square yards of fabric in addition to the full day's work (10sc a day for a tailor). Remember that this is square yards and before we were talking about square feet. Let's try the following chart for some simple guesses:

Garment	Sq.Yds.	Hours	Retail
Shirt	3¼	3	13sc
Vest	2	2	9sc
Breeches	2½	5	13sc

Now this chart assumes that this is a fairly fancy set of clothes and that it is made from a fine cut of the fabric (the kind of stuff a merchant trying to make a point wears). Seems pretty high doesn't it. That's what we've been trying to show when it comes to craftsmen. Anyone who has ever had their clothing custom made for them understands that this is way things go. Those of us who are use to machine made products, off the rack, this seems completely strange. (Please do not think this is the kind of finery that a noble would wear to court. That stuff is on an entirely different scale. This is "everyday" merchant wear.)

So how do we bring this down to the level of a normal guy? Start by remembering that it would be odd for a common worker to have a large number of changes of clothing. As you can see, clothes cost a lot of money, so unless your job demands you looking good (and pays you well for it), your average farmer or craftsman was NOT a clothes horse.

Still - they have to have clothes that don't cost them their entire salary. The 12sc sweater would probably be a relatively normal part of the commoner's wardrobe, something warm and dependable and made by mom (or grandma, or whoever).

Dyes

Dyeing is similar to butchering, although it takes skill, many people know how to do it on the farm, and are therefore not willing to pay true craftsman prices for someone to do it for them. Typically, dyeing would not double the cost of the fabric or yarn, but instead be a multiplier of the cost of the dye. If a dyer needs to buy dye or the materials to make a dye, he or she would probably be looking to quadruple those costs. This four times multiplier is due to the length of time necessary to dye cloth. Frequently, it can take multiple dying with drying between or a long period of time in the dye. Combination colors, such as might be needed to make orange or purple, will cost twice as much if the dyer needs to perform the dying twice, such as if he first dyes it blue and then red to make purple. In some cases purple dye might be available, but this would probably be rare.

People like colors. No one wants to wear drab off-white/gray all the time. If they are poor, they will accept that they must wear wool (or whatever) the same color as it came off the sheep, but if they have any money at all, they will want a little color in their lives. Spilling sauce on your shirt does not count as dyeing it. Dyeing usually expects that the job is done uniformly.

Dyes are also typically regional. In one region yellow dye might be relatively cheap, whereas in another region purple might be common. The trade between these two regions will be fast and furious as both sides want the other color. For this reason, we're not going to actually tell you that purple costs one thing and red another. Besides, there are so many ways to make dyes that it really doesn't make sense to try and find an average. For simple dyes, fabrics would probably cost +20% what they would in their normal color. For combination dyes, figure you need to add 35-40%. More specialized colors would probably increase the cost by as much as 50%. It is entirely up to you to determine if there is that one color that costs fantastically high amounts.

Bleaching is similar to dying, except that it removes the colors. (We hope you knew that.) The primitive way of bleaching is simply to leave the item out in the sun. Chances are this will pale the colors, but not remove them, but it would still be used. Chances are that no one could actually charge for this. It would be considered part of preparing or cleaning the yarn or fabric. Frequently, a fabric had to be bleached before it could be dyed, so it would take the color. With enough fabric being bleached, this could begin to impact farmland.

Chemical bleaching began in our world during the 1700s. It is up to you if your world will have sparkling whites, but due to the fact that a chemist was probably involved in preparing the bleach, and improper use would destroy the garment, a bleacher would probably be a reasonably well paid professional. Figure a true white garment would probably be rare, something only used for finery. Because it was rare and special, true white would probably double the cost of the original fabric.

STEP 9 - PRESERVATION

Let's face it - Modern people are spoiled. We have refrigerators, freezers, vacuum sealing, plastic bags, and a ton of other ways to keep food from going bad. The folks we're talking about in this supplement didn't. Most of their food went bad overnight if they didn't eat it. So preservation is a remarkably important issue.

Preservation of food normally takes time and frequently money (in the form of other ingredients), but at the same time, it often causes the food to taste worse. This means that people are paying more for less, because they had to. The alternative was eating all through summer and starving in the winter. Unless your world has hibernating humans, this probably won't work for you.

There are many ways to preserve food. We're going to talk about some of them, hopefully the more common ones. Part of the problem with this discussion is that we are going to assume that these methods work. They don't always. Some times, something goes wrong, something very normal, and the food is ruined. We're not really going to get into that. In most cases the mistakes should be relatively random. Just because one pot full of something went bad does not mean that everything in the pantry is ruined, even if they were made at the same time. If everything in the pantry is ruined, the family might not make it to spring.

Salt

Salt is one of the most important commodities in the world. It is vital for human life and health, vital for the preservation of foods, extremely useful as a spice to flavor the food, and generally needed in more applications than can be imagined.

Salt can come from a very large number of sources, but three are typically the most common. Perhaps the easiest source of salt is the ocean. Simply capturing sea water and evaporating off the water to leave the salt can be done on any shoreline. Because of the imperfections in sea salt, this is the lowest quality of salt and might not be useful for some preservation tasks.

Salt can also be mined in certain areas. Like other mining, it is difficult to put a number on how much salt could be removed from a mine in a day or month, and thus it is fairly difficult to determine its value. While this salt is a better preservative, many people prefer the taste of sea salt, if that's what they became use to.

Gathering salt from natural springs or saline deposits will yield what is perhaps the most pure salt, but these are the rarest of the salt finds. It is not unheard of for a stream to flow through an underground salt deposit and carry that salt along with it to the surface where the water can be evaporated and the salt gathered.

Of course any of these salt collections could be refined and purified, but that requires skill, expertise and typically energy. (The saline deposits are frequently pure enough not to require any refining.) Refining the salt will improve its functionality in preservation and typically its taste, but it might not necessarily be worth it. Refining salt should be considered to double the effort of collecting it and as we said requires skill and education. Since many people would be content with the mined rock salt, they may not be willing to pay for the refining.

Since salt is such an important product, it is not really priced by the work involved in gathering it. Frequently, the price of salt is more dependant upon the shipping of it than the gathering of it. Even with primitive tools, some sources indicate that a man could gather up to 500 pounds of salt a day. This seems like a sure way to become fabulously wealthy in a very short period of time, but how exactly is this primitive man with his primitive tools supposed to move 500 pounds of salt every day?

To figure out a price for salt, let's assume we have a rock salt mine. They are pulling blocks of salt out of this thing faster than they can load them onto wagons. If a man can pull 500 pounds of salt out of a mine in a day, he would probably not expect to make more than 8sc a day. Now six pounds of salt are definitely going to cost more than a copper coin. So as we mentioned - forget that.

Away from a production area of salt, refined salt would go for about 3sc a pound (in a city). Walking this back, the city added 50% and the transport quadrupled the price. This would mean that a pound of refined salt at the site would run about 5cc per pound. Therefore since refining doubled the price, every pound of salt coming out of the mine would normally run 2.5cc per pound. This seems to make sense since it is about the cost of most grains. While the two are not directly related, it would make sense that people would want to have

corresponding prices of these two important commodities.

In case you're interested, refining the salt usually requires the ability to distill it in some fashion, basically mixing it with water, then separating the salt water from the imperfections, then separating the salt from the water, again. This does not require a scientist with a lab, as there are several primitive ways of accomplishing the same thing.

Despite the fact that salt is such an important commodity, or maybe because of it, there will likely be different grades of salt. From the suggestions we've already laid out, there will be rock salt (refined and unrefined), sea salt (refined and unrefined), and spring salt (probably just the unrefined type since it is likely to be of a very similar grade to refined rock salt). It is also likely that a household might have more than one type in the house at a time.

If you are looking to go a different way with your economy, using salt as the basis for trade is a good way to go. Instead of silver and copper coins, people would carry salt in their purses. It has some historic basis, and would make a pretty cool twist to life. More people would need to carry scales, and barter would probably be a lot more prevalent, but it's a good way to make a big impact with a small change.

Sugar

Typically sugar comes from two main sources: beets and cane. Sugar cane produces more sugar per acre, but sugar beets grow in far more climates. Basically, either crop is harvested, chopped up, and then squeezed to get the juice out of it. (Sometimes, the crop might be soaked in water to get more of the sugars out if before the squeezing.) The syrup is then boiled down, and the sugar crystals should grow and yield the sugar desired. Of course this is tougher than it sounds; otherwise everybody would be doing it.

It is likely that many regions might lack the technology to produce sugar as we know it. After doing all this work on the sugar cane and sugar beets they will likely come out with "raw sugar". This will probably not affect much of what people are doing, but it might prevent homemakers from producing fantastically light cakes and smooth frostings. These would be left for bakers who would pay a lot more for the highly refined sugars.

We are talking about sugar here because it is very useful in preserving foods. Fruit preserves and other items require sugar, but everybody knows that sugar is also a sweetener. While sugar is one of the easiest sweeteners to use, if sugar is not common to the area, honey or some other sweetener will probably be more commonly used.

Moving into our average statistics, modified for the typical fantasy setting, an acre of sugar cane will yield about four tons of cane, while an acre of sugar beets will yield about half that, or two tons of beets. The amount of sugar extracted from these two crops is rather small. Sugar cane (assuming a more primitive technology) only gives about a 5% return on sugar for weight of the cane. Sugar beets will give up about 8% of their weight in sugar. This means our average acre of sugar cane will produce about 400 pounds of sugar, and our average acre of sugar beets will show about 320 pounds of sugar. Again this is the raw sugar and refined sugar would probably lose about 10% of these totals.

So how much? Well, an acre of cane yields about 400 pounds of sugar. An acre of grain yields about 125sc worth of profit. Making sugar should be worth a lot more than grain, so we'll triple the value of the sugar produced to 375 then round up. (Tripling seems fair because harvesting cane is difficult work, as is producing the sugar.) It seems normal that a pound of raw sugar would cost about 1sc. The refining process takes expertise, but does not add that much to the product, at least not from the commoner's point of view. In addition, refined sugar isn't another process; it is just doing the original sugar extracting process better. Therefore, we will put refined sugar at 15cc per pound.

Not all of that lost weight is useless. Some of it will become molasses (probably about one gallon of black strap for every ton of raw sugar or one gallon per five acres of sugar cane.). The waste from the sugar cane can be burned to heat the evaporation processes in the sugar processing. The remaining pulp of the sugar beets might be fit for livestock feed.

Preserved Foods

As was mentioned previously, sometimes preservation doesn't work. Even if it works, the question is, for how long? Typically the goal of preservation of foods is to get it to last until there is a food supply again, or through the winter. This actually helps, because just about every kind of food is going to be easier to preserve in cold weather than it would be in heat.

When we are talking about preserved food, we are going to assume that it will remain preserved for about a year. More than this just doesn't match up with history, at least not from an average stand-point. It would be normal for a food producer to continue eating the older

preserves while making new ones, thus creating a never ending cycle of stored, preserved foods.

Ham

We've determined earlier that pork costs about 2.5cc per pound. A typical ham from our typical pig is 15 pounds, so it would cost about 37.5cc. While there are many ways to preserve a ham, curing a 15 pound ham with salt would probably require about 1.2 pounds of salt. At 3sc per pound, this means that the salt needed to cure the ham would be almost equal to the cost of the ham itself. Also remember that a cured 15 pound ham would likely only weigh 12 pounds after the water had been evaporated out of it. To be honest, unless the farmer who raised the pig had access to a cheaper source of salt, it is more likely that he would find a cheaper way to preserve his pork, such as smoking it or even using sugar. (Sugar curing a ham would likely only require 2/5ths of a pound of sugar which would therefore only cost about 4cc if the farmer grew his own sugar beets.)

So, OK, we know what the ingredients cost the farmer, what does the end product cost the consumer? Well, we start at about 42cc. Not only does curing a ham take some expertise, but it also takes a long time. Furthermore it is far more valuable than the pork was, because it will keep, maybe as long as a year. We're going to triple the cost of the materials. It would be more, but every farmer will be doing it, so the competition will be pretty high. So a cured ham weighing 12 pounds would likely cost 12-13sc. All in all, it is four times as expensive as the raw pork, and this seems to fit logically.

We are going to use this four times model for most salted and smoked meats. It is a good, reasonable estimate both from a profit standpoint and from a value point of view.

Salted Fish

As we just mentioned, preserving with salt can be expensive. Of course, if you are sitting next to an ocean full of salt, it seems more reasonable to use it.

You know, we haven't talked about fishing as a commercial enterprise, you know, for money. There's a lot of fish in the sea, and they make for good eating. The problem is, once they're out of the water, they tend to stink the place up if you don't eat them right away. Therefore, it was probably a good idea to talk about fish in this section. (See - and you thought there was no plan.)

Assuming that the fishing in the area is good, a fisherman can produce a good supply of fish. Since the fisherman is more of a gatherer (or a hunter if you insist), he is not the person in the community who is going to be setting the price of meats. It is the ranchers who have a far more consistent supply of meat who will set the price, and the fisherman will fit into the economy that is created.

So the question than comes to how much is fish meat worth, when compared to beef, pork and poultry. With beef at 5cc per pound and chicken and rabbit at 2.5cc per pound, it makes sense that fish would be closer to poultry than to beef. Assuming that culturally fish is not as prized as other meats (because it is game and does not need to be raised), we will set the average price of fish at about 2cc per pound. We fully recognize that this is a bit silly because there are SO many different kinds of fish that one price simply does not cut it, but we are in our magical world of averages.

If the fresh fish is 2cc per pound, then the salted or smoked fish would be 8cc per pound. Salt water fish is more likely to be salted, because it can be done cheaply. Fresh water fish (from lakes and streams) is more likely to be smoked, because it is assumed that timber for smoking is more readily available. Of course, shipping the preserved fish will greatly increase the cost.

As for how much a fisherman makes in a day - not that much. For a fisherman to make as much as a standard craftsman (10sc) he would need to sell 50 pounds of fish a day. If he could catch that much, would he still have time to sell it? Chances are that a fisherman will catch as much as he can, feed his family, sell a little fresh fish and smoke or salt the rest. Fishermen's huts are stereotypically poorly constructed and poorly maintained, because they're poor. Now a fisherman who can consistently bring in oysters is a different story.

Sausage

This might seem like an odd place to discuss sausage, but it is the perfectly appropriate place. Sausage is made by finely chopping cheaper cuts of meat with the fat, typically adding salt and spices, and mixing the lot. Sausage can simply be packed into a ceramic pot and sealed with tallow, or it can be packed into intestines, tied to the right size and then smoked or dried to preserve it. Since sausage is not made of the best cuts of the meat, it is relatively cheap to make. Beef sausage takes a lot more work than a normal cut of beef, but would normally cost about the same amount of money (around 5cc per pound). Again, this is probably because about 1-1.25cc worth of materials were used to make it, and the butcher quadrupled his costs. Dried or smoked sausage that was fit for preserving through the winter would probably cost about 1sc per pound, not because there is less work involved than in preserving other meats, but such sausage was always intended to be used preserved, and therefore a lot of the prep work would have gone in while

it was being prepared. If you're having trouble figuring out how less than 1cc of beef went into a pound of beef sausage, you are not factoring in the fat, the organs, cheap cuts of beef, and probably the pork. Sure, butchers would cut beef with pork while making sausage. They still do it today.

Let's treat pork sausage the same way. Fresh pork is worth 2.5cc per pound, so, so is pork sausage. Preserved pork sausage would run about 5cc per pound, though this "pound" of sausage probably was a pound when it was fresh, and weighs less after smoking or drying. The same would have been true of beef sausage. Other than beef and pork, venison and other game sausages would be common, especially the bigger game, such as elk and buffalo.

If you're asking why this was all done, think about a farmer on a farm. He slaughters a pig of 200 pounds for 80 pounds of meat. His family cannot eat 80 pounds of meat. (OK - maybe they could, but they shouldn't.) He turns some into ham, some into bacon, and the rest (after a really nice pork roast) into sausage. That way they continue to have some meat at various meals, instead of gorging themselves on the meat when it is fresh.

Pickling

The most obvious food made from pickling is pickles, at least to most of us. Pickling vegetables involved soaking them in brine (salty water), then storing them in vinegar. There is also the adding of spices and boiling and cooling the whole lot a couple times. Despite the fact that most vegetables that would be pickled (cucumbers, beets, onions, etc) are relatively cheap (often around 1cc per pound), the salt and vinegar needed to pickle them are not. To do things "the correct way" and use white wine vinegar, pickled vegetables can sell for as much as 5sc per pound. The use of malt vinegar can greatly reduce the price, but so can cutting the vinegar with some other things, typically pickling spices and/or beet juice. Even if short-cuts are used, pickled vegetables will still run about 2sc per pound. Remember that this is the weight of the vegetables. Since they are probably in a ceramic jar filled with the vinegar mixture, a pound of "food" is going to weigh a lot more than a pound. Typically available would be pickles, beets, mushrooms, corn relish, pickle relish, peppers and olives, with horse radish, green beans, green tomatoes, watermelon rinds, peaches, onions, asparagus, and garlic also possibilities. Actually pretty much anything can be pickled; it's all a matter of taste. Hey, don't forget pickled eggs.

Besides vegetables, meats can also be pickled, either with salt/brine or with vinegar. Corned beef is one of the best known pickled meats. Because it is simple to accomplish and often made with lesser cuts of beef, corned beef would probably cost 12½cc per pound, instead of the more common 2sc per pound (four times the fresh meat cost of beef). Sausages may also be pickled, especially if the smoking or drying process used is not as reliable as necessary. Pickled sausages are common inn food because they can be left out in the open (behind a bar for instance) and served whenever. Many other preserved sausages need to be better cared for, typically by leaving them sealed and out of the way. Where preserved sausages cost double what a non-preserved sausage would, pickled sausages will probably cost two and a half times.

One thing that is important - No one is allowed to stick their hand into the jar or barrel of pickled anything. You have to use a spoon or fork that probably sits in the barrel all the time. Sticking your hand in can ruin the pickling mixture and cause the whole batch to spoil. Anyone caught sticking their hand into the pickle barrel is in for a very rude departure from the tavern.

Canning

OK - so it was really around 1800 that a guy took a bottle, a cork and some food stuffed inside it and boiled it to develop the "canning" process. The question is what would they have available to our fantasy culture. As has been previously described, people did know how to stick stuff in jars (typically stoneware) and seal it for later. OK, so they often used fat or tallow, but cork was used as well. The real question comes down to when people figured out that boiling killed germs (even if they don't know what germs are or believe that things exist that small).

So what? you ask, and probably not for the first time. Canning is one of the best methods of preserving food. Rather than get too far into a discussion of what canning might be able to do, we'll try to take a tech-neutral stand and talk about preserves, jams and jellies.

The high technical definitions work like this: Preserves are small pieces of fruit (or the whole fruit if it is small enough) in jelly. Jam is fruit cooked in sugar until it is a mushy spread. Jellies have pectin and will be firm. (Pectin can be gotten from cooking and straining apples and should be accessible to most cooks.)

Most fruits are only available for a limited time every year. Making the fruits into jams and jellies allows them to be saved for use later in the year. Mixing the fruits with a large amount of sugar and cooking them appropriately is typically all that is required to make these preserves. Sounds like a double your costs kind of cottage industry. Besides, trying to make too much at

once can prevent the stuff from jelling to the right consistency, knocking out any industrial attempts at this market. As with pickling, the fruits themselves are pretty cheap, often less than 1cc per pound, but sugar is about 1sc per pound, and you are typically mixing (our overused average again) an equal amount of sugar and fruit. This means that most jams, jellies and preserves are going to hover somewhere between 2sc and 25cc per pound. This isn't as fair as it sounds, because a pound of fruit and a pound of sugar should make more than a pound and a half of jam, so we'll call the in the city price 2sc per pound and the at source price 15cc. Obviously sweeter fruits need less sugar and would therefore be cheaper to make, but it probably comes down to supply and demand as to which preserves are over 2sc and which are under.

A note on preserved foods: As is about to be discussed, containers can be an extremely expensive portion of the cost of things. Typically, someone could go to the store and put what they bought in their own container, but not with preserved foods. Most preserved foods are preserved because they have been sealed into their containers. To take them out is to expose them to the possibility of spoilage. Therefore, someone can go to the dry goods store and get any portion of flour they want, but they would have to buy the blueberry jam in whatever form and container it came in.

STEP 10 - CONTAINERS

In the current culture, we forget that things do not naturally occur in paper boxes and plastic bags. Before the age of machines, every container needed to be made by hand, a process that severely impacts the cost. The cost of packaging is so high, that few products, especially at the retail level, come packaged at all.

When a person walks into a dry goods store to purchase a pound of flour, the shopkeeper will grab a scoop and measure out one pound of flour into whatever container the customer happened to bring in. Hopefully the person brought in the appropriate style of container, because a bag made of loosely woven cloth could cause a trail of flour to follow the customer all the way home.

This is true of most products. Even beer would be sold from a "bucket shop" where the customer brought in a bucket which was filled with beer so it could be transported home. Obviously baskets are one of the best known containers for the common man, but various other methods can be used as well.

Barrels

Barrels are made by a skilled tradesman known as a cooper. The cooper will make barrels and buckets of various sizes and for various purposes. Obviously if the customer wants a barrel to keep clothing in, it can be of lesser quality than if they want to brew beer in it. The clothing barrel simply does not have to be water tight.

Barrels do cost money, so breweries, wineries and other industries are typically willing to pay to recover their barrels. Most will charge their cost for the barrel the first time and then continue to exchange them for free. Obviously, the business does not want to refund the customers' money, they simply want to swap empty barrels for full with the customers no longer paying for the barrel itself.

Using some terminology from older days, a barrel or a cask is considered to be water-tight. A keg is not. Further, casks are the smallest, then kegs, then barrels. We're going to go with barrels being 32 gallons. That's what we've assumed when talking about shipping, so we're going to go with it. Of course, a barrel can be of any size and since each is made by hand, it is going to be a little different.

Research says that it took about a full day's labor for a cooper to build a barrel (our 32 gallon size). This included shaping the staves, cutting and sizing the saplings used for hoops, and assembling the barrel to the proper shape and size. Because a cooper spent all day on the project and it required a decent amount of specialized wood (typically white oak was used for liquid containers), we're going to call our standard barrel worth 14sc. Buckets and kegs were a lot easier to make, and a cooper might have been able to churn out four buckets in a day. Everything we are assuming assumes that these are wooden barrels with wooden hoops. There is no smithing necessary for these barrels.

Pottery

Pottery is one of the earliest crafts a culture will usually develop, and it can be one of the most important. Pottery gives a civilization pots to store preserved foods in, serving platters to keep food safe during the meal, cups to drink from, etc, etc, etc.

First, let's define it:

Earthenware

For the purposes of our discussions, earthenware is the most primitive form of pottery used in our cultures. It is seldom white or even gray and is more likely to be

reddish or brown, depending on the clay used to form it. It is also fired at a lower temperature than the other styles, so it might be possible as a home craft. Earthenware is porous, and therefore not useful for a lot of purposes. It is unfortunately still used for serving dishes in some areas, leaving the people open to some serious health risks.

Stoneware

Stoneware is a higher quality pottery. First off, it can be off-white or grey, and typically is thinner (lighter) than earthenware. Stoneware is also good for handling foods, since it is not porous. Stoneware requires a higher firing temperature than earthenware, so it more likely to be created by a craftsman, greatly increasing its cost.

Porcelain

Porcelain, at least for our descriptions, is the high end of pottery. Porcelain is white or sometimes translucent. A luxury good of the highest quality, porcelain is basically stoneware that looks really good. Porcelain does require higher temperatures for firing than even stoneware, and the technology (or the materials) to make it might be beyond some cultures.

Production

The thing is, whether it is earthenware, stoneware or porcelain, the production is generally the same. The materials and the firing in the kiln are what change, but that does not really affect the labor.

So let's focus on stoneware for a moment. Highly skilled potters can "throw" a lot of bowls on a wheel in a day, but our potter probably has to mix the clays, work the wheel, place the product for drying, and handle the firing. OK, so there are apprentices around to help. So how do we handle all of this? A journeyman potter makes 9sc per day. A journeyman potter can probably throw as many as 50 medium sized plates or bowls in a day, if that is all he does. If this is the case, he probably needs the support of two other people to handle the clay, possibly power the wheel, move stuff around and work the kiln. One of these will probably be another journeyman, while another is an apprentice. So 50 bowls cost about 24sc in labor. We're going to assume that the other two guys are glazing the piece too, but this is your standard, boring, low bowl or plate. By the way, we did not charge for the clay. We're assuming that the apprentice went and dug it out of the river bed.

Now earthenware is probably a cottage industry. The products are probably not as uniform as those made by the professional potter, and they probably look amateurish. While it would take a farm wife much more time to produce the bowl or plate, it would not be as valuable. If she turned out good products, she might be able to get half of what the professional gets or about 2.5cc per plate.

For porcelain, the transport would probably be the thing. Where it was created, it would be relatively normal, possibly 6cc per standard bowl instead of 5cc. Being considered a rare and valuable trade good, these would be shipped all over the place and the prices would rise accordingly.

STEP 11 - MINING

OK - Up front we're going to admit something about mining: There are no averages. There are too many differences in mining to come up with averages. Putting a number on the amount of mineral pulled out of a given hole in the ground per day is not plausible. Some holes just have more minerals than others. On top of that, processing the ore that comes out of the ground takes different amounts of effort. There just is not a legitimate way to estimate the amount of effort it would take to gather a particular amount of any mineral.

So to determine the value of metals, we have to come up with a method. Well we have one - comparing them to each other. It is already established that gold is ten times more valuable than silver and silver is ten times more valuable than copper. You swallowed that without a complaint, so we'll just keep following that pattern.

If you've ever checked out the prices of gold and silver in the real world, you know they change daily, if not minute to minute. Not only that, but gold does not cost 10 times as much as silver. Not at any real point in time that we can find. In fact gold will probably sell for closer to 60 to 80 times what silver goes for. This mean one clear thing - Our fantasy environment is not based on the real world and real world prices will not help. Batting 1000 aren't we!

While gold may be less common than silver, it is actually a little easier to get. Gold nuggets can be found in streams and relatively pure sources can be found. This makes gold worth less than its rarity might have normally allowed for. Silver is not a real trick in most cases, but it often contains other styles of impurities. In some cases silver is the impurity, as in some forms of lead. So while silver is far less common than iron, its rarity does not fully answer for its price. Although copper can be found in nature, it is far more commonly found within another source such as cuprite or malachite. This means that the copper needs to be smelted out. Copper may be more

common than gold and silver but since extra work is necessary to "gather" it, it is worth more than its common nature would indicate. See how we made that work?

Iron is one of the most common elements, but it, like copper, requires working. In fact, iron requires a lot of working. The only thing keeping iron cheap is how common it is. Iron is required for steel, and thus is probably the most useful of all the metals available to our fantasy economy. With the work required and the high demand, it is only the high supply that allows it to not be the standard by which all other metals are priced.

Iron ore is heavy stuff, so we have to assume that the ore would probably be smelted right at the mine. This will probably take some of the transportation costs out of the cost of iron, as long as enough fuel can be found at the mine to power the smelting process. When comparing supply to demand and considering work required, it seems likely that steel would be equivalent to copper. If this is true, iron would probably be worth about one-third, because of the expertise it takes to smelt steel.

Serious Note - we're not talking about steel as you understand it today. This is not the steel that makes tracks for diesel locomotives or forms I-beams that hold up skyscrapers. This is wrought iron that has been carburized or in some way strengthened towards steel. In many cases, the tempering of the steel will be done by the metal worker and not by the smelter or mining company.

Tin is both useful by itself and more importantly in making bronze (with copper). Tin is more rare than copper, but requires about the same work to collect it. While copper seems to be about three to four times more abundant than tin, tin is not in as high a demand as copper. Despite its being more rare, we'll call tin equal in value to copper as well. Bronze, being a mix of the two equally valued metals is not equal in price to either of the two metals. Bronze is more valuable than copper and requires more experienced smelters. Because of this, bronze is going to be worth twice as much as copper.

But wait, that means that bronze costs more than steel. Yep, it does - if each is taken at its source. If iron is native to a land and tin is not, bronze is going to be far more expensive than steel, but the reverse is also true. If tin is native and iron is not, bronze will wind up costing less than steel. There are also certain applications where bronze (a non-rusting metal) is going to be more useful than steel. In these applications, the extra money will be for good reason.

The other side of the bronze coin is pewter, a mix of mostly tin with some copper and/or lead thrown in. Pewter is commonly used for dishes and cups, especially when tin is abundant and the pottery of the region is poor. Though pewter is made of the same stuff as bronze, it is easier to work. Also it is mostly tin, so anyone smelting tin can easily shift it towards pewter without much extra effort. We're putting pewter at the same cost as tin and copper.

The last metal used by our fantasy economy is lead. Lead is fairly easy to smelt from most of its forms and is relatively common. It also has many applications and thus a high demand. To make things fair and hopefully easy, lead will be about the same value as iron, and thus about one-third the cost of copper.

Coinage

Well, we've told you that gold is worth ten times as much as silver and we've told you about silver coins, but we haven't told you what a pound of silver is worth. Oh, you think you know what a pound of silver is worth, but you don't. Even if we tell you that there are 25 coins to a pound, you still don't know.

You see that's the trick. Minting money takes time and skill. If the people or governments that minted money traded fair value for the coins, then they would receive no money for the efforts of minting the money and turning it into coins. Anyone smart enough to press coins is not going to be dumb enough to do it for free.

So there is the rub. Here's how we solve this. An ounce of silver is worth 1sc. Therefore a pound of silver is worth 16sc, but there are 25sc in a pound. That means that a silver coin weighs about ? rds of an ounce. In case you're not getting this, a pound of silver is worth 16sc, but 16 silver coins do not weigh a pound; they weigh less. The difference is the profit to the person pressing the coins. In reality, the coin mint is only making about a 50% increase in profits on the cost of materials. Compared to what other craftsmen can do, this is not an exceptional amount of money, but when you start thinking about gold coins, they are still making a good profit.

Coin minting will probably be the most highly regulated industry in any civilization. The coins probably have the government's name or symbol on them, and that government wants to make certain that the coins are what they say they are. Moreover, that government probably wants a cut of the profits as well. It is this regulation that forces coin minters to make low value (copper) coins too. After all, if you could make ?gc from every gold coin you pressed, why would you make copper coins? (Because the government told you to!)

Some governments might also use a lesser grade or alloy of the precious metals, but too many of these tricks will not only be noticed, but also cause international problems. After all, if one country stopped accepting the

coins of another country because they said they weren't worth the appropriate amount of metal value, tempers and perhaps armies would rise. It is exactly this kind of silly little thing that could spark a war.

STEP 12 - MORE

Well, there were two ways to go: cram everything into the chapter that seemed appropriate or give you a taste of what was going on and stick a ton of details at the end. This is the place that a ton of details have been stuck. Each little blurb should help you understand what's going on and why certain things cost what they do. That's not to say that these items are not important, but the hope is that you're still awake and coherent. If that is in question, you can leave this stuff until later.

More Crops

Barley

Barley is a cereal grain and can be used in a lot of ways that wheat or rye is, but it is most commonly used to make beer. A pound of barley makes about a gallon of beer. An acre of farmland should produce about 528 pounds of barley (net of seed). Let's just round this down to 500, and say that an acre of land can produce the resources for 500 gallons of beer.

Since you only need about an ounce of hops for every eight pounds of barley, we are going to assume that the hops is immaterial to the cost of the beer. Maybe it is grown in the herb garden or purchased for a couple of coppers, but it is not significant. Of course, for a major brewing operation, the hops required will have a cost, but it should not materially affect the cost of each beer.

This should be fairly easy. A pound of barley costs about 2¾cc based on its value as a cereal grain (just behind wheat). Brewing beer takes some time, so we would normally quadruple the parts for the retail cost, but "everybody" knows how to do it. So we'll call it a triple your money kind of event. Tripling 2¾cc gives you 8¼cc for a gallon of beer. Beer is served in pints, so each beer is roughly 1cc. Again, beer is so common it is cheap.

Of course there are all manner of beers. Some of the most common and easiest to make would be the ales. This is probably what we're talking about here. Some of the more difficult beers require cold temperatures to be properly brewed. These would probably be brewed seasonally (when the weather permitted) and therefore be more rare. These seasonal beers would probably run between 1.5cc and 2cc per pint (or roughly four to six times the cost of the barley).

Potatoes

Potatoes are the staple of life in some cultures, replacing bread. Bread, by weight, is probably twice as good a food energy source as potatoes, but under the right conditions, four times as many potatoes can grow in any given acre. While this certainly makes them a prized crop, they are not as portable or versatile as most of the cereal grains.

Rather than split hairs, let's just agree that potatoes are a great crop for a poor region. As has been mentioned, and history made so painfully obvious, potatoes should not be grown in a climate that does not have a good solid frost. When moved out of their typical climate, potatoes can blight, wiping out entire regions of crops. This can happen with almost any crop, but potatoes are famous for it.

Potatoes (and all the related crops) have a very high "seed" weight. This is because to plant potatoes, you have to allow them to begin sprouting and plant basically a quarter potato in the ground. Our yield numbers are fairly conservative, trying to take into account the lack of farming technology in our fantasy environment.

Peas and Beans

Peas and beans are more frequently grown as a rotational crop than as a crop intended for sale. This is because they can "give back" to the soil in ways that the cereal grains take from the soil. Despite this, no farmer is going to plant and harvest a crop and then throw it away. This and the low production are two of the main reasons that peas and beans are such cheap food sources.

To make matters worse, peas and beans need to be boiled for a long period of time before they can be eaten, and typically the water they have been boiled in should be thrown out and replaced during this preparation. The cooks of this era were typically schlepping their own water around in buckets, so they were not highly inclined to be preparing peas and beans, unless it was the food that was sustaining the family.

While the crop yields on these plants seems dismally low, it is important to remember that while the "seeds" that are eaten by the family do not amount to much in the way of food, there is a lot of "waste" that can be used to feed the animals around the farm. The bush stalks are good hay and the pods can be fed to a number of different animals. Looked at from the big picture, a farmer can decide to leave a field fallow one out of three years or he can put some work into it, bring in a crop of

peas and add to the pantry of his family and the hay loft of his animals.

Because so much of the peas and beans are used to feed animals, some people believe the entire plant to be a feed plant. This makes a cultural bias against these crops and drives their price even lower.

Olives

Olives are probably more important as a source of oil than they are as a food. To eat them, olives must be pickled, typically in salt. Because of the cost of salt, this might make pickled olives a high cost, luxury item. As oil, a ton of olives should produce about 50 gallons of oil (trying to reflect more primitive methods). Since olive oil is an important "crop", we need to think of it in terms of harvest the olives and double that cost to press the oil out of them. With 125sc per acre being used at various points of this book, let's do some math. An average acre of olives is about 1,400 pounds. This acre's worth of olives will yield 35 gallons of olive oil. Since we are doubling the cost of the crop for the work involved, 35 gallons of oil are worth 250sc or generally 7sc per gallon.

In contrast, an acre of sunflowers only produces about 255 pounds of sunflower seeds (net of seed planted). This in turn yields about 89 pounds of hearts which can be turned into about 4.5 gallons of oil. Sunflower oil would be priced compared to olive oil and would likely be less desired. If the same calculation were made to determine the price of sunflower oil, each gallon would run about 22sc. In some markets this might work, if the olive oil needs to be brought in from across the sea, but the sunflower oil is local. If the olive oil is really only selling for 7sc per gallon, then the sunflower oil would only net about 6sc per gallon.

Melons

Keep your mind on the subject - fruits. I mean, oh never mind.

Just want to mention that melons are mostly water and require a large amount of water or irrigation to grow. Don't let the weight of a melon fool you, there isn't much substance there. Pound for pound, melons are not going to sustain a person, certainly not like a potato.

Squashes

The squashes have more substance to them than the melons, but are still not going to fill a person up the way more starchy foods will. The summer squashes, like the zucchini, are eaten raw. The winter squashes, like the pumpkin, are more of a storage food and will often be stored to be eaten later. These winter squashes are probably not eaten whole, but instead the meat is eaten and the rind it thrown to the pigs. Be aware of this when thinking about how much food a family needs to eat.

Citrus

Citrus only grows in warmer regions that receive ample rainfall. This makes it less common. In order to transport the most valuable aspects of the fruit, many different methods can be used. The fruit can be salted, shipped, then soaked in water to remove the salt. This can be expensive and greatly lessen the flavor. One of the more common methods is to extract the essence and the juice and ship them. An acre of lemons can produce 30oz. of essence oil and 70 gallons of juice. Both these products must still be properly sealed or treated to preserve them, but it is far easier to protect the smaller amounts than to protect wagonloads of fruit. With these yields, a gallon of lemon juice would probably run about 4sc, while the essence would run 15sc an ounce.

A quick glance at the charts will show that all citrus fruits are priced the same. This is because, despite the differences, they will typically be treated the same by the customers. Generally they are considered to be interchangeable. Of course, the second a cultural difference causes them to be seen differently, the values will swerve away from each other as well.

Other Fruit

One fruit needs to be the dominant fruit in the region. For our references, we're assuming its apples. All the other fruits are being priced based on apples. Apples and cider are considered the normal or average fruit, just like wheat is considered the average grain. This is a cultural thing and changing the basic fruit should not really upset the apple cart (sorry, had to say it).

Pears, peaches, and plums could all easily become the standard of fruit. Each of these grows reasonably well in its climate and can be harvested and used. Though apple cider is considered the norm, pear juice is common in some regions, just as plum wine is common in others. Each of these fruits also lends itself to various methods of preservation.

More Livestock

Goats

Goats are in most ways like mini-cattle. They can be raised for meat or for milk. The differences in these products is mainly (goat vs. cow) is mainly one of taste.

Most people will prefer whichever they were brought up with.

On the milk side of the equation, goats give about an eighth of the milk a cow does. Using our earlier estimate, this means that an average goat would give about two-thirds of a gallon of milk every day. Dairy goats are going to weigh in around 60 pounds and probably require about two and a half pounds of grain and hay per day for feed.

Using similar percentages as we used for sizing down cattle, an average meat goat is going to be about 40 pounds. After slaughter and butchering, there would be around 20 pounds of meat, called chevon. Though the meat is leaner than beef, it would probably be difficult to convince someone that goat meat is more valuable due to the lower fat content. Commoners typically do not think in these mathematic ways.

Attempting to take the altered size into consideration, our 40 pound goat will eat about a pound and two-thirds of hay and grain a day. Seeing as our average goat will live an average of eight months, our goat will eat about 400 pounds of grain and hay while being fattened. Of course, a good shepherd will be able to wander the goats through pasture land and reduce the costs of this feed.

It seems that the cost of chevon should be roughly equal to beef. This assumes that the two meats are of similar quality and it is only cultural norms that make one or the other preferred. If the goat could be grazed in open pastures and only needed to be fed through a winter and just before slaughter, the goat would likely eat about 2sc of hay (winter) and between 2 and 3cc in grains just before slaughter. From the butcher's point of view, he is going to sell about 20 pounds of chevon for 5cc per pound. He therefore is willing to pay 5sc for the goat, thus doubling his money for his efforts of slaughtering the animal. In both these calculations, the rancher can double the cost of feeding the goat, and the butcher can double the cost of purchasing the goat. Since this is an ideal situation, goat meat could come down in price with both rancher and butcher still making a legitimate profit.

Sheep

Let's cut straight to it. Sheep have two main products - wool and meat. For meat we are really looking at lambs. Lambs born in the fall will need to be housed over the winter on feed. Otherwise they can be shepherded over open pasture land. To be honest, feeding a lamb over the winter while waiting for it to mature for slaughter is a break even process. The lamb will probably cost at least 7sc to feed through the winter and probably only net about this much from a butcher. The trick here is that the lambskin is one of the more sought after leather products, and this additional profit from the slaughter of the lamb will make up for the lack of profit to the butcher.

Adult sheep are much larger than lambs and eat much more. So much more that they are not necessarily worth fattening up just for slaughter. Adult sheep are kept around from their wool. An average ewe would weigh about 90 pounds, and could produce an annual fleece of 6 pounds. (Both these numbers have been arbitrarily reduced from modern levels.) Feeding a ewe through the winter should take about a third ton of hay and about 70-75 pounds of grain. This would cost as much as 12-20sc, depending on how well it was fed, whether or not it was intended to be in breeding shape, and what kind of grain was used. Simply, this means that fleece will cost 2-3sc per pound, the cost to winter it divided by the pounds of fleece gathered. Sheering the sheep should take such a small part of the rancher's day as to not materially affect the cost of the fleece.

So where is the rest of the value? Well, a ewe would be expected to have one or two lambs every year. Lambskin leather is considered one of the softest leathers and is used for special purposes, such as women's gloves and other light usage. (Don't try to make shoes out of it!) Because it has special purposes, it is more valuable than cow leather, even though it is not as strong. Lambskin (after tanning) is worth 7sc per square yard, so using the same formula as we did for leather, lamb hide is worth one-sixth of that or about 9cc per lamb. Figure that before selling to the butcher, the rancher probably sheered the lamb for three to four pounds of fleece, and there is some money to be made. (If the rancher is sheering his lambs days before they go to the butcher, he probably has to knock a little off the 7sc price, which is the value of a lamb with a coat.)

Rabbits

Rabbits are another good farm animal because they too have two products: meat and fur. Rabbits do require maintenance as do all animals, but they eat relatively little. A rabbit could probably be fed on less than seven pounds of grains, hay and vegetables a month. Since most rabbits will mature to roasting age in about two months, this is a relatively small amount of food. Another factor in the cost of raising rabbits is that they are able and willing to eat certain less desirable parts of the vegetable, such as carrot greens, beet tops, pea pods and dandelions. The rabbit will require some legitimate feed, but some of the rabbit feed can come from "waste".

Even with this small amount of food, rabbits do not produce a lot of meat. Granted rabbits have very light

weight bones, and a high percentage of the carcass is good meat, but it is a very small carcass. Because of this, rabbits are not always sold by weight, but instead simply by the carcass. A rabbit carcass would probably sell for around 5cc, but this is a break even price considering the feed they require. Possibly the breeder will earn a copper coin on this deal, if corners were cut in the feeding of the rabbit. It is two factors where rabbit breeders make their money - volume and fur.

It seems the agreed upon ratio for rabbit does to bucks is about 8 to 1. This obviously raises the cost of maintaining the rabbits, but is better than chickens. Rabbit does can produce up to eight litters of six bunnies every year. Trying to cut this back to our averages in a historical setting, six litters of 3.5. This is arbitrary, but seems reasonable considering some of the research into death rates and predators. It still yields 21 rabbits from each doe per year.

Rabbit pelts are a common fur used in clothing and a farmer raising a number of rabbits should be able to make a good profit off their fur. A good quality pelt should net a farmer 5 or 6cc, thus doubling the value of the animal when compared to its feed. If a farmer kept six does, he would likely have around 125 pelts to sell per year. While the farmer is not likely to get rich, this is a nice steady income for a person tied to the seasonal nature of the harvest. This also assumes that the farmer skinned and dressed the pelt. This certainly requires work, but there are several tanning techniques that are very cheap.

Other Fowl

Oh let's try and pick up the pace. Turkeys, ducks and geese can all be raised on a farm. While each one provides eggs and feathers, it is primarily the meat that they would be raised for. Ducks and geese also produce down feathers, which would be highly sought. The funny thing about down is that the feathers really are a "garbage" by-product. The feathers themselves do not really have a value, but collecting them does. If a goose is raised for meat, it will probably give some feathers when it molts (live plucking) and when it is slaughtered. All told it will probably give about an ounce and a quarter in down and about six ounces in small feathers. The really fancy pillows and comforters might only have down, but the average ones will have both. An average pillow will have about 22oz. of feathers or three birds worth. (Remember, this is both the feathers from the slaughter and from the live pluck. Figure 60% of the feathers are from the slaughter.) While the plucking really does not take much time, it can only be done a few times a year (every six weeks give or take).

Let's assume that a pillow is about half a square yard of fabric. (Yeah - it's the livestock section, but this is what's really important.) Half a yard of light linen (farm) is 1.25sc. Getting the feathers, cleaning the feathers, sewing the pillow, and stuffing the pillow - really not that big a deal to be honest. Triple the cost of the fabric and you've got an average pillow that goes for 4sc. The pound and a half of feathers is really only worth the 2.5cc in the rounding up. Now if the feathers needed to be sorted to take the down ones out, they would be worth more; maybe as much as 1.5sc (roughly six times what the other feathers are worth) or 1sc per pound.

Oh yeah, eggs. Using the same ratios we used for chickens, we will expect that a duck would lay about 100 eggs per year, a turkey will lay around 40, and a goose would lay less than 30. If the eggs are allowed to hatch, it is reasonable that each hen would produce around 24 ducks, 8 turkeys, or 8 geese.

We're going to be overly generous and say that all three of these birds are really good foragers, the duck and geese even better than the turkeys and chickens. A duck would be mature enough to roast after eight weeks. At this point it would probably weigh about four and a half pounds and yield a two and a half pound carcass. The slightly larger roasting chicken ate a pound of feed per week for six weeks, but our duck is only going to eat a half pound of feed per week for eight weeks or 3cc worth of feed. This is because the duck is assumed to be eating pond vegetation. We're pricing all poultry at 2.5cc per pound, because we don't see people seeing a huge difference between goose, chicken, duck or turkey. That means that the duck produces 6.25cc of meat on only 3cc of feed. The duck is actually a possible way to make some money in farming.

OK - Our average goose is going to live for much longer, but on much more forage. Like the duck, the goose is going to live on pond plants and some supplements of feed. We're going to give the goose about 5cc of feed over its 15-20 weeks of life and expect it to be about 10 pounds when ready for slaughter. Our 10 pound goose provides 6 pounds of meat at 2.5cc or 15cc on 5cc of feed. It took longer to get it to the butcher, but it was worth it, especially since we're hoping that the goose produced some down too.

Lastly, let's say an average turkey weighing in at 18 pounds will forage and eat an additional 27 pounds of corn and feed when growing to maturity (over 16 weeks). This means that after slaughter the turkey provides 12 pounds of meat or 30cc worth of meat for about 20cc of feed.

While the ducks and geese forage better, this is only if they have access to a fresh water pond. Without this, they are going to be a lot more expensive to raise.

The turkeys will forage extremely well if there are nut or seed trees in the area (chestnut or oaks with acorns). It all depends on what land the rancher has to work with.

More Stuff

Linen and Canvas

To make things easier, we're going to create some definitions: Canvas - fabric/material made from hemp. Linen - fabric/material made from flax. There are a bunch of definitions out there as to exactly what linen means, so let's just go with these. While canvas will typically be considered to be courser and rougher than linen, this is not necessarily always true. Hemp fabrics can be soft, but they usually aren't.

Both hemp and flax are grown and then retted after harvest. Retting basically rots the unimportant parts and leaves the fiber that you want to spin into thread or yarn. Both of these crops bring in a good amount of long fiber, we're going to call it 150 pounds of long fiber per acre of hemp and 100 pounds for flax. (Hemp grows taller too so its long fibers are better for strong cloth.) Both crops also yield a like weight of short fiber, which is more like cotton. It too can be spun and made into fabric, but it lacks the strength of the long fiber. We're going to call these good linen (long) and farm linen (short) and strong canvas (long) and soft canvas (short).

OK, so we have 100 pounds of long fiber and 100 pounds of short fiber after the retting of an acre of flax. We're going to price these at 14cc per pound for the long stuff and 10cc per pound for the short. This will put a field of flax in line with some of the other more profitable crops. With the retting taking a bit longer than wool would take, we'll use a 2½ multiplier for the fiber to the thread/yarn. Since light linen is also about 20 square feet to the pound, we are looking at light linen costing 30cc per square yard (20 square feet costing 35cc for the thread and 30cc for the labor). "Normal" linen would be heavier, close to the weight of heavy wool and thus 40cc per square yard. The farm versions would not be as strong and would be likely closer to 33cc per yard for farm linen and 25cc per yard for light farm linen.

Canvas is more plentiful (in the field), a little easier to spin due to the longer fibers, and makes a slightly courser fabric. Keeping the fiber in line with linen, the soft canvas fiber would run about ?sc per pound and strong canvas fiber would be about 1sc per pound. This means that canvas thread would run about 16?cc per pound (soft) and 25cc per pound (strong). Using the same general weights for canvas and light canvas as we did for linen (12 and 20 square feet per pound), we come up with strong canvas being 32cc per square yard and soft, light canvas being 21cc per square yard. Soft canvas and strong, light canvas are around 26cc and 25cc per yard.

Lots of numbers, lots of fabrics, lots of confusion. Right? Hopefully not. Why all this mess? Because we can now use these fabrics to make farm clothing. Assuming that the farmer sells the strong canvas thread to the weaver and keeps the soft canvas for his home, grandma can now weave the family clothing from thread that is worth 17cc per pound, instead of 40cc per pound for wool. Not that a tailor would make pants out of soft, light canvas, but if he did, it would be less than 10sc, instead of 13sc. Since it is now to be made by the family, it is effectively free. Work pants made from canvas and light linen farm shirts should keep the family clothed without spending the seed money.

Oh, and it gets better. Both flax and hemp are seed crops. Flax seed can be pressed for linseed oil, an important component in paints, stains and other liquids that require fast drying. Hemp seeds can be pressed for their oil which is commonly used in soaps or some of the same purposes as linseed. What's left over after the oil has been pressed out is typically decent feed. Though in modern times, linseed oil is the main crop and linen is more of a by product, in the fantasy era, linseed oil might not even be a consideration for many of the farmers.

As a secondary "crop" we're going to say that the linseed oil and hemp oil only need to make 60sc, half the "normal" cost per acre. Not that this is going to greatly reduce what the farmer charges for the fiber, but that's how it goes. An acre of flax will produce 140 pounds of linseed (net of seeding next year), which will in turn produce about 42 pounds of linseed oil (just about five gallons). An acre of hemp will produce a net of 50 pounds of hemp seed which produces 13 pounds of hemp oil. This would put linseed oil at 29cc per pound or more likely 24sc per gallon. (We double the cost of the seed to pay the guy for pressing the oil out of it.) The hemp seed is only producing about a gallon and a half. At our original price estimate, this would be 80sc per gallon, but no one would pay that. Hemp growers might press some oil for their own soaps and such, but the oil could not sell for much more than the linseed oil, perhaps 30sc per gallon. Would they still do it? Maybe. Chances are that most would feed it to the cattle.

Silk

Silk is an animal fiber and the product of lots of worms making lots of cocoons. The planning here for you as the game master is whether to use domestic or wild silk worms. Domestic silk worms are more delicate,

but they also produce a stronger and lighter (whiter) silk. The main reason that they produce a stronger silk is that they are killed before emerging as moths. This prevents them from breaking the silk strand of their cocoon when they emerge. This method produces a single silk strand that could be thousands of feet long. Wild silk worms will typically emerge from their cocoons before the silk can be harvested, thus requiring more spinning of the thread and making it less strong.

These worms eat an incredible amount of food. Domestic worms require an orchard of mulberry trees to sustain them. Wild worms will eat a bigger variety of leaves, but they still are voracious. It also takes an enormous amount of the worms to make the fabric. With domestic worms, it is likely that a major operation could bring in two "crops" of silk worms during the year. This is because of the way in which the worms hatch and the presence of the mulberry leaves, and is practical despite the fact that the worms only live about two months. (Eggs must be preserved during the rest of the year.) Wild worms are not as delicate nor as dependant upon one type of leaf and therefore can be found mating nearly year round.

Rather than try to figure out how many worms someone has (since it will probably be in the tens if not hundreds of thousands if they plan to export), lets talk about other things, like what they can accomplish in a day. The best we can find shows that it would take about 25 hours of work to take silk from cocoon to a yard of fabric. Assuming these are domestic worms, you have to throw four months of the year away, since they will spend this time caring for the worms while they are alive. Seems reasonable to think that it might take this long to gather as well. So with a third of the year shot, it really takes 37.5 hours to produce a yard of fabric. Assuming that these weavers also earn about 8sc per day, we know that the labor is worth about 30sc per yard. Now the worms eat an incredible amount of leaves. Taking a decent crack at estimating how much they eat versus how many mulberry trees you can get in an acre versus what that acre would be worth if it weren't for all those damn mulberry trees, let's say each pound of silk costs 3sc in leaves. This assumes that mulberries grow reasonably easy in the spot where the silk worms are.

Silk costs 33sc per yard, six times as much as thick cotton or heavy wool. But we haven't really defined what this silk fabric is. This is a light weight fabric, probably having about 36 square feet or 4 square yards to a pound. A lighter weight silk that we're going to call gauze silk will be about 6 yards to the pound. Weighing the efforts and leaves required there, we're going to call this 24sc per yard.

Velvet is a form of silk fabric woven to have a "pile", similar to suede. True velvet is woven from silk, but other fabrics could be woven to mimic velvet. The specialized loom makes two pieces of velvet at the same time which must then be cut apart to form the fabric. Because of the special expertise and use of far more silk thread, velvet is three times as expensive as silk or 100sc per square yard. Obviously, velvet is only suitable for royal ceremonial clothing. Even the filthy rich wouldn't wear this stuff too often.

Rope

Obviously rope is made from the textile fibers we've been discussing for clothing. A lot of the same issues factor in here: how much it costs to produce, where it can be produced, how difficult it is to prep for spinning, etc. Basically rope making is just thread making taken to a much higher degree. (Huge oversimplification, but you get the point.) The most common ropes are cotton and hemp, depending on the region. Hemp, because it is a longer fiber, is stronger. A pretty typical rope is about ?" thick. At this diameter, a hemp rope has a working load of about 250 pounds. Theoretically it could hold four to five times that before it would snap, but this would be the safe amount to trust to the rope. Everything from the rope making a right turn (like over a cliff) to sudden yanks can greatly reduce what a rope can really take, so let's try and be safe. So hemp rope, ?", 250 pound load. Cotton rope, ?", 150 pound load.

Finding the strength of other ropes is difficult, but we're going to put the average strength of a silk rope at twice that of a hemp rope of the same diameter, so a ?" silk rope would have about a 500 pound working load. Because flax/linen and hemp are relatively similar, we're going to assume that their strengths were relatively similar too. Technically, linen should be a little weaker than hemp because the fibers are shorter, but it would probably be by only a small amount.

The cost of the rope is another thing altogether. Let's start with the materials. We have it on relatively good authority that a 50' of a ?" hemp rope would weigh around two pounds. Two pounds of strong hemp thread is 5sc. (You did get that we're using the strong fibers and not the soft, right? Soft wouldn't be much stronger than cotton.) First you spin the fiber into thread, then twist it into yarn, then twist the yarn into twine, then twist the twine into rope. Honestly, we cannot find good historical estimates of the time it took to make rope. A couple of things are obvious, to make long ropes requires a lot of space (straight) and more length requires more hands. We're not going to get too deep into the hugely long ropes required for ships, but they would be very

expensive. Using what we can find about spinning of thread and yarn, we're going to estimate that a day's work for a rope maker would probably produce about 50' of rope. As always, this is an average, because you would probably have one or more people spinning thread all day and two or three guys out making twine and rope, but as an average it works fairly well. Now we've put a rope maker at 8sc per day, but this is an average too. there was both skilled and unskilled labor involved, so a master rope maker would make far more than this and basically supervise. Anyway, 50' of hemp rope costs 8sc for labor and 5sc for materials. (You didn't think we just came up with the 50' for no reason did you?) Therefore, a rope maker would want 13sc for 50' of hemp rope with a working load of about 250 pounds.

Shorter ropes will cost about the same per foot, but as the length increases, the price per foot will too. Obviously heavier, stronger ropes will require more materials and more labor. Also, we have treated this as a craftsman product. It is likely that farmers are making their own twine and possibly even trading/selling it. They would probably ask far less than the professional rope makers, but you need to pick the right tool for the job. Do you just need something simple or is your life hanging from that rope?

Bowstrings should have a working load approximately equal to their draw weight. Being incredibly shorter than 50' and much thinner than ?", they will be less expensive. If the same foot cost were applied to a bowstring (typically about 5'), a string would cost about 13cc, but we don't need 250 pounds test. In fact we need right around one third of the rope's strength and diameter. (Dividing by three does often work with ropes, but you usually cannot divide by any old number.) It looks like rounding up to 5cc for a bowstring should work nicely.

Other Leathers

OK, so cow leather costs 5sc per square yard, and lambskin leather costs 7sc per square yard. What about the rest? Horsehide is about as versatile as cow leather, so it should cost about the same. It is probably less common because there is less reason to skin a horse, so some might not do it. Pigskin is a worthy leather, but it carries the stigma of being from a pig. Furthermore, without special processing, it has a completely different and undesired grain. Pigskin is going to 3sc per square yard. Buckskin is also less desirable because it comes from game and is considered less reliable. We'll put buckskin at 4sc per yard, since it will always have a market among outdoorsmen. As for exotic leather, such as alligator, snake and dragon, it's anybody's guess as to what the market will bare.

Suede and hard leather are methods of processing the leather, and shouldn't really affect the price. Most leathers would be harder/stiffer than we know them today. The really soft supple leathers would require expert tanners and more expensive solutions, resulting in far more expensive leathers.

Lye

Lye is formed when water is passed through hard wood ash, typically with a filter that will keep the wood ash from going into the lye liquid. Lye was used to make soaps, or it was boiled down to potash. Potash could be further fired (typically in a kiln) into pearlash. Potash and pearlash were also used in soaps, but also in glass making and a long list of industrial applications. Various forms were used to dissolve hair, clean pipes, soften olives, crisp pretzels, and prepare hominy. A little disturbing isn't it. Lye and potash were farm products that most people would have made for themselves. Pearlash required better equipment and therefore is something that probably would have been produced by a chemist or potter.

Honey

Honey is an incredibly important product in some areas, because without sugar cane or sugar beets, honey is the only sweetener. Even when these other products are available, honey is still important, especially for candy flavors.

Back in our fantasy world, bee keepers would have had a hard time collecting honey without killing all the bees. That's not a great way to be a bee keeper. One of the best early plans (again, this was probably around the 1700s, so you might not want to go with it) was a bee hive with separate places for the bees to store honey. These hives could yield about 10-15 pounds of honey a year continuously. In addition to the 12.5 pounds of honey average, such a bee keeper would probably wind up with a quarter pound of beeswax. This assumes that the beekeeper is taking steps to preserve the wax for the bees. Too much damage to the combs will force the bees to worker harder on making wax than on making honey and could cost the beekeeper quite a bit of honey.

Now if the beekeeper is looking to collect the wax and is not as concerned about the honey, than things will be different. First off, instead of watching the hives and frequently gathering honey, the beekeeper needs to leave them alone, probably for most of the year. Just as winter is setting in, and the bees are all ready for a nice winter with their stored honey, the beekeeper should drive off or

kill the bees and scrap the entire amount of wax. After draining off the honey (varies on how much by season), the person could render the wax. If done at the proper time of year, such an operation could yield about 30 pounds of wax and up to 30 more pounds of honey. Of course the next year there is very little chance the bee keeper will get anything, unless he can convince a new swarm of bees to take up residence. This is the more old fashioned way of doing things and relies on more luck than skill.

What about wild honey bees? Well, finding a bee hive in the woods can be a great thing or a horrible thing. It is possible for bee hives to have hundreds of pounds of honey and comb (could be 50/50 in late fall or 15/85 honey to wax in spring). This sounds like a fantastic deal, but of course collecting it can be extremely dangerous. A typical bee hive would be about 20 pounds of wax and some honey.

But what's it worth? A gallon of honey weighs about 12 pounds. A pound of sugar costs 1sc. While sugar is better at sweetening things without adding flavor, many people like the taste of honey, so we think it should be more expensive. It is likely to be rarer, despite the fact that many farmers will have a beehive on their land. If a half pint (a cup) of honey costs 1sc, than a gallon would cost 16sc, comparable to 12sc for the same weight of sugar. More than sugar, less than refined sugar.

The wax is only plentiful if you wipe out the bees, making it rather expensive. It is also one of the most common forms of candle light, as well as being used as a sealant and in medicines. Beeswax candles seem to burn about five hours per ounce, so a pound of wax is worth 80 hours of light. This does assume that the candle is reasonably well protected from drafts and such. Since the wax is relatively rare and requires some minor work in getting it ready for sale, we are going to call it 3cc per pound.

Molasses and Rum

We talked about producing sugar from sugar cane and even mentioned that you get about one gallon of black strap molasses for every ton of raw sugar you produce. But what if you want a different kind of molasses? You know...the kind you make rum out of. Oh sure, you can cook with molasses and all that, but let's get to the real product.

When you are trying to make molasses, instead of just taking the unsweetened black strap kind, you can get on average 60 gallons of molasses out of an acre of sugar cane (figure 48 gallons from an acre of sugar beets). Fermented and distilled, molasses produces about two gallons of rum for every three gallons of molasses. The power/proof of the rum is only restricted by the distilling technology available.

While the technical name for this type of molasses would be first molasses, we're going to call it sweet molasses as opposed to black strap which the stuff they drained all the sugar out of. So instead of 400 pounds of sugar, a cane farmer can get 60 gallons of molasses, but he's doing less work. Instead of tripling the producer's revenue (as he would with sugar), we'll double it, so a molasses maker would expect about 240sc for his acre of cane and all the work he put into it. That's 4sc per gallon of molasses.

To get to the value of the rum, we first need to assume that the materials for a gallon of rum (a gallon and a half of sweet molasses) cost about 6sc. Distilling requires some skill, so we'll quadruple this to 24sc per gallon of rum. This would probably be a relative good quality of rum. If someone with less skill were doing the distilling, we would only double of triple the cost of the materials, or come to around 15sc per gallon.

Oil

Before we get too far from beeswax, let's mention the other lighting options. Whale oil is going to be one of the best options. It gives great light, burns well in lamps, relatively little smoke, and it burns evenly. Not only that, but it is available in relatively large quantities. All you have to do is go out and get the whales.

Let's rule a couple of things out first. We're assuming that crude oil is not considered a fuel source and the technology for refining crude does not exist. This means there is no kerosene and no paraffin; both are petroleum products. We will also ignore natural gas as a fuel.

The cheapest and most common form of oil used would be tallow. Tallow is basically animal fats. Boil the fat, then take the top layer of fat off after it cools. Do it again to help the purity, and you have tallow. Anyone cooking, especially cooking beef, can and would do it. The problems with tallow are pretty important. It can go rancid. When burned, it spits and pops, in addition to not giving a bright even light. Perhaps most importantly, it's so common that it really is "garbage". It burns pretty fast too. If a pound of beeswax is worth 80 hours of light, a pound of tallow is probably only worth 20. Less output and less quality, wow this stuff isn't winning any awards. It can be pretty useful though. Tallow was probably the most common sealant used to seal various types of preserves. It can also be used in making soaps and a bunch of other stuff. OK, so this is something that a careless cook would lose to the fire, but a careful person

could gather "for free". In comparison with beeswax, it should be 25% of the price due to burning time and 30-50% of the price due to quality. That's about .25cc per pound. For arguments sake, we'll go with this price since it would take two days to produce, but that does not make it a trade good.

Now whale oil is the real deal. There is a reason that the whales of Earth were hunted nearly to extinction, and it is the value of their oils. Whale oil is one of those things that is so common and so important that it needs to have different grades. The cheaper stuff would not be as clear or burn as clean as the really good stuff. Also, although an oil lamp filled with whale oil would give off more light than a candle, it would also burn oil faster. The cheaper whale oil would probably burn about an ounce every two hours in a standard lamp. In a lamp that only gave off as much light as a single candle, the burn would be closer to four hours per ounce. It would probably be smokier than beeswax. This is considered to be "average" whale oil.

Because it burns a little smokier and shorter than beeswax, we're going to set the price at 1sc per gallon. That means a pint would cost about 1.25cc. It also means that 80 hours of oil burning costs 1.56cc as opposed to beeswax which runs about 3cc for 80 hours. Beeswax does not seem that much better, but in a whaling town, whale oil is going to be available in large quantities. Away from that whaling town, it will cost around 4.5cc per 80 hours of burn. Once again, what is used depends more on availability (and not paying for shipping) than on true basic value.

Some whales just had better oil than others. Rather than get too deep into it, we will just make one other category we'll call "superior oil". Superior oil burns cleaner (less smoke) and longer. If we have an ounce of superior oil in a small candle-bright lamp, we will get six hours an ounce and in a more standard lamp, we'll get two and a half hours per ounce. Superior oil will cost twice as much as average oil or 2sc per gallon. At this point, the better burning (longer and cleaner) ounce of superior oil is cheaper than beeswax. This is because it is considered to have a larger supply. Not every whaling town will be "swimming" in superior oil, but for those that do, we know what they'll be lighting their lamps with.

We keep telling you that whale oil is in bigger and better supply than beeswax. Remember that a bee keeper looking for honey only gets a quarter pound of wax per year. An average whale would produce on average about 2,000 gallons of standard whale oil. Each one of those gallons is valued at a silver coin, so the math is pretty easy. That doesn't count the baleen (whale bone) or the meat. Obviously, some whales are bigger and could produce as much as 3,600 gallons or even 5,000. One whale killed and processed for 3,600 gallons of average oil was worth what a craftsman could make in a year of hard labor. Superior oil only came from certain whales. A good example of a whale with superior oil yielded 500 gallons of superior oil and 4,000 gallons of standard whale oil.

Two extra items: Ambergris, sometimes found in certain whales' intestines was worth a king's ransom for its use as a perfume base. This stuff was so valuable, that we're going to call it 45sc per ounce, but finding it was entirely by luck. Sperm whales carried something referred to as spermaceti. We'll call it head wax, another common name due to the fact that it came from the animal's head. Head wax was by far the purest wax and made the best candles. Up to 500 gallons of this stuff could be found in a sperm whale, and each gallon would go for 4sc easily. Don't forget whale bone (baleen) which is used for buggy whips and corset stays (and any number of other uses that plastics could not serve before they were invented). Forget the whale meat; it was probably eaten by the crew or thrown overboard. Whaling boats were typically at sea for months or years at a time and would not bother with whale meat.

Another type of wax that we can give our fantasy world is bayberry wax. For every 10 pounds of bayberries you dump in a caldron and boil, you can skim about a pound of wax off the top. Not the easiest thing in the world to do, but beats getting stung by bees. Now it's tough to tell how many berries you can get per tree (actually it's a bush, but at 40' tall, who cares). It seems like a full sized tree could have as much as 40 pounds of berries. No one seems to have orchards of these things, so it is tough to determine how many trees you could get in an acre. Instead, we'll assume this is a cottage industry. Now beeswax costs 3cc per pound, and beeswax and bayberry wax seem to be of equal quality. The only difference would be that bayberry wax is more of a hobby and beekeeping is more of an industry. We're going to set bayberry wax at 2.5cc per pound. If the culture prefers the scent of bayberry over beeswax, then we would reverse the two prices.

Vinegar

Vinegar can be made from most alcoholic beverages, including wine, ale and cider. It is used in cooking, and in some cultures is extremely common. Probably more importantly for our topics, it is used in pickling. Vinegar can come in as many varieties and qualities as the beverages do, so rather than tell you how much vinegar costs, just figure it costs about 10% more than drink it was made from.

Trapping

The estimates are based on the fact that a skilled trapper in a good area should be catching a beaver about 50% of the time. Historically beaver trappers would use 5 or 6 traps, so we are thinking that an average trapper catches 2½ beaver a day. We're going to call a beaver trapper a skilled craftsman and give him 11sc a day, so the pelts will cost 4-5sc each. Beaver is going to be the staple of our fur trade (along with domestic rabbit). All other fur bearing animals will be based on the cost of beaver and not necessarily on the amount of work they themselves require. As with rabbit pelts, this assumes that the pelts have been dressed by the trapper and are in relatively good shape.

Most trappers will spend their money on their traps and equipment. They will also need some of the finer things in life: whiskey and tobacco. Other than these items, the fur trapper is probably not running up much of a tab. Because he is catching his food and living in a tent or cabin, when the fur trapper sells his pelts for the season, he will be walking away with a sizable purse. Of course, fur trapping in the summer months is all but useless as the fur bearing animals have all shed their warm coats, but the profits from the busy season(s) should keep him in good spirits.

Many of the other fur animals are a little tougher to catch than beaver, mainly if they roam over larger areas. The larger the range, the more difficult they will be to locate and trap. Because the world is expected to have huge wilderness tracts in it, fur animals should be more common. The larger number of animals, and the fact that we are going to assume that caravans and shippers carry silk, means that supply is relatively good and demand is not unreasonably high. If you would like to add a fur fad (such as beaver skin hats) to your world, it might make for fun with economics, but we are not going to build it into this supplement. One more quirk - Some animals are simply not as desirable in this game world, because people know what they are. Most important in this quirk is that mink is not the high end of the fur market, but instead lower on list.

Mink and fox are harder to trap than beaver. Fox pelts are more desirable, making it worth the extra effort. This only goes so far, since fox pelts are smaller than beaver pelts. The trapper can use smaller, cheaper traps of course. Despite the size difference, fox pelts will sell for about the same as a good beaver pelt - 5sc. Mink on the other hand are much smaller, closer to the size of rabbits. In the reverse of the fox and the beaver, the mink, though larger, will sell for the same price as the rabbit (5cc), if it is a good fur.

Furs

The two most popular fur garments are coats and jackets. Coats are full length (just above the knees), while jackets only come down to the waist. Beaver and rabbit are the most common. They are good reliable furs that will keep a person warm in the extreme cold. Canine furs have a tendency to shed and are not as popular as some of the others, though tough guys will still want wolf jackets. Similarly, many of the rodent furs need to be "babied" a bit. Some of the most valuable furs are going to be the aquatic animals for their water shedding capabilities.

Buttons exist, but are more rare. Zippers are just way out. Therefore, most of these garments are going to have one, two or no buttons. They would be held closed by belts or broaches. This would be pretty common and some heavy duty broaches (capable of piercing and holding fur) will be common place.

Fur mittens will also be a very common item as are fur hats. Slippers and blankets would less common, and more of a sign of wealth. Other items like a fur muff would exist, but other items made of fur might be made of summer furs. A fur garment intended to keep someone warm should be made from an animal that had a winter coat (usually late fall or early spring). A coin purse would be more likely from a sheared fur or one that was already a lesser grade of fur.

The prices of the garments listed here are based on the fact that a furrier makes about 14sc per day. The cost of each pelt, the number of pelts necessary, and the cost of labor have been added together to develop this cost. Since "everyone" is now wearing fur, the wealthy need to do something to separate themselves. They will insist on only the highest quality furs; furs from animals seemingly never touched by disease or snagged on a branch in the forest. They will also demand the best possible furriers, people who make 25-30sc per day, not the regular skilled craftsmen. These designers will of course sell their products for remarkably higher prices, prices more closely equivalent to modern day fur costs. This doesn't mean that the regular folk are walking around in fur rags, just in furs made from animals that look like they were once alive, not pristine pelts.

Game

An average deer (white tailed) is going to weigh around 125 pounds. (Remember that this average includes both sexes.) Such a deer would probably yield about 55 pounds of venison. An average elk would weigh around 500 pounds, and yield about 195 pounds of meat. It is unlikely that there would be a difference in the cost of venison whether it was deer or elk. Some cultures

would downplay the meat because it was game, and probably pay about the same as fish or 2cc per pound. Other cultures would prefer the meat and it could easily sell for 3cc per pound (more than pork, but less than beef). It is really up to you as the game master to make that call. An average deer will yield about 1¼ square yards of hide, while an elk should give about 2½ yards. Elk hide is thicker than deer hide and will make warmer coats and jackets.

Slavery

Yeah, we know it's a taboo subject and all, but it is likely to exist. It would not necessarily exist in every culture, but some will likely have it.

So what is a slave worth? Slaves with no skills (the most common type) would be priced like other beasts of burden. While a human slave (or similar race) is no where near as strong as a horse, the human can be expected to follow instructions better, enter a house, and use hands to accomplish work. A human slave would also be expected to have a longer life span of use, though not necessarily a longer life as a brute laborer. With a very basic horse costing around 100sc and a war horse around 250sc, a human who has had any training as a slave would be valued closer to the war horse. The human would be trained to follow directions and do basic work. This assumes that the human slave has enough strength to be useful as a laborer.

Slave labor would be most common for tedious, laborious tasks, such as carrying heavy objects, picking seeds out of cotton, stoking the fires of a smithy, and most mining. Slaves would also be used in more dangerous situations, including pearl diving, care of dangerous animals, and any number of unusual situations.

Slaves might seem very cheap at 250sc. After all, this is roughly a month and a half's pay for a laborer. The obvious difference is that a slave needs to be fed and housed. Of course neither of these would be pleasant, but they are additional expenses. A diet barely capable of keeping the slave mostly healthy might cost around 100sc annually per slave. The other added expense to the use of slaves is the supervision. Not only do slaves need to be supervised while working (since they are untrained), but they need to be guarded in case of attempted escape.

Slaves with skills would be rarer, and thus far more expensive. A good way to think about it is if a laborer slave costs 250 and a laborer normally makes 6sc per day (we're using a porter for an example), then a slave who could weave would cost about 350sc. This is because a weaver makes 8sc per day or about a third more, thus a weaving slave costs about a third more. If a slave were a skilled craftsman and thus the equivalent of a 12sc per day wage, he or she would cost closer to 500sc. Of course, it takes a skilled slave buyer to determine if these skills are legitimate or if they are simply a lie told by the slave auctioneer.

Just as there would be extremely expensive wines and fur coats, there are extremely expensive slaves. Slaves of great beauty or skilled gladiators come to mind as the priciest. It is not possible to put a price on such a slave, but it would seem as though a champion gladiator could go for thousands.

You can always make slavery illegal in your world, but time and tradition in fantasy role-playing games have always used the slave traders as an easy adversary. Now you know why the slave traders do it.

Dining

Cooking for other people is similar to most other skills that are common to both the seller and the customer. The best way to figure out what it would cost to eat out is to quadruple the cost of the basic ingredients. Of course, this is mainly for informal settings, such as a local tavern, inn or lunch cafe. When things are stepped up to the big fancy restaurants, not only are the ingredients more expensive, but since there are more people working on the food and they are taking more time, they expect to be compensated. Nice restaurants will probably multiply the ingredients by six to come to a fair price while fancy restaurants will eight to ten times the cost. These more expensive places need to pay for the waitresses, the hostess, the busboys, the chef, the cooks and the fine linens.

One common trick is for a restaurant to charge four times the perceived cost of the ingredients. By this we mean that if they tell you its venison stew, but it's really squirrel (and they think you won't know) they're going to charge you as though it really were venison. Hey, everybody's got an angle.

Baskets

We are putting baskets down here because they are more of a cottage industry and probably do not belong up with barrels and pottery. With any style of basket making, the tougher the materials, the longer the life of the basket, but the more difficult the work. The common material used for a basket is whatever is locally available, just like always. If one region has abundant bamboo, they will use it for baskets, probably baskets strong enough to be a desirable import elsewhere.

Plaited and twined baskets are what most people think of when they are thinking of baskets. They have a

more checkerboard pattern. Coiled baskets are spiral designed baskets made from more of a sewing style, but they too make good serviceable baskets for storage. A coiled basket can take several days to make, but other baskets can be easily finished in half a day.

Not only are baskets typically made in the home, but they are typically used there as well. Merchants are typically not shipping goods across vast distances in baskets, unless there is some special application.

Valuables

Up to this point, we have been working extremely hard to convince you that that everything has value. Yet, there are some things that are valuable simply because they are valuable. Everything made into jewelry falls into this category, so you get the idea of where we are going. Most of these things are valuable because they are pretty to look at and rare. If they cease to be rare (no matter how that comes about), they will decline in value rapidly!

Diamonds

May as well start at the top, eh? Diamonds are the most valuable of the standard gemstones because they are incredibly rare, incredibly hard (and tough to break), and they are incredibly beautiful. Incredible, huh?

Diamonds can be found under a number of conditions, but since they are formed deep underground, miners or explorers need to wait for natural forces to bring them to the surface, or at least closer. More on mining later.

It is unlikely that our fantasy environment has the tools necessary to cut diamonds to the fantastic degree that they are worked today. Diamonds can be found in octahedral (8-sided) shapes, and then polished to a jeweled sparkle. Anyone with the tools and skill to work diamonds in this fashion is going to be well paid.

Because it is a good number and seems legitimate, we will declare that an "average" diamond is worth 1,000sc. What's an average diamond? An average diamond is one-carat in weight, has average color and clarity (generally white or without color and no obvious defects, though defects will be visible if the diamond is studied closely). It also has a simple cut, typically an octahedron or half an octahedron, and is polished. Books have been written about diamonds and their value. The better the quality (fewer imperfections, cleaner transparency, increased size, more skillful cutting), the more expensive the diamond is. Minor improvements in quality will increase the price quickly, though lesser quality stones are still quite valuable.

A diamond in the rough (just came out of the ground) is not so much a thing of beauty. A raw diamond such as this would be worth about 60% of its "finished" value to a gem cutter, or a gem that will end up as our average diamond would be worth 600sc to the miner who sold it to the jeweler.

Because bigger diamonds are rarer, they are worth vastly more money. A very basic way of increasing the value of bigger diamonds is to double the value at every 50% increase in size. Under this method a diamond that weighed a carat and a half would be worth 2,000sc. The weight increased 50% and the price increased 100%. Following this forward, a two carat diamond is about 3,500sc, a three carat diamond is about 7,000, and a five carat diamond runs close to 16,000sc. Somewhere between 56 and 57 carats, the diamond costs about 1,000,000sc, assuming that you allowed such an astronomical figure in your game. The problem with bigger diamonds is that they are seldom of a consistent quality. This often leads to the cutting of huge diamonds so imperfections can be removed, leaving high quality smaller diamonds afterwards.

Ugly diamonds have a use too. Because of the diamond's incredibly durability, diamond drills are among the best cutting tools available. Industrial diamonds (possibly as much as 75% of the diamonds found) are still expensive, but would probably cost about half as much as a jewelry diamond.

Gemstones

Since gemstones are valuables and do not truly hold value except for their value as rare, beautiful jewels, we are simply going to compare them to diamonds and set their price in that manner. While we will be judging things on carat weight, few civilians in our fantasy world would have the ability to weigh a gem. They will judge it solely on the apparent size. If one gem looks bigger than another due to a clever cut, the customer will go for the seemingly larger gemstone, no matter what the true weight of the stone is. The same rules on increasing price (double) as size increases (x1.5) seem to be appropriate here as well.

Rubies, sapphires and emeralds are commonly the top of the gemstone heap, just after diamonds. They are considered the most beautiful of the gemstones, typically because of their rich colors. This would price an average stone at about half of the cost of the diamond or typically 500sc for a one carat stone.

Amethyst was at one time considered the equal of rubies, sapphires and emeralds, until large deposits were found in South America. (Obviously we are talking about Earth here.) This makes it difficult to judge what they

should be worth in our fantasy world. If there are no large deposits of amethyst in your world, then they would equal the other precious stones at 500sc for a one carat average stone. If there are large deposits (which is how we will be pricing them), amethysts will be down around 25sc for a carat.

So what about everything else? It's really up to you as the world's creator. Price is going to be based on the rarity of the stone. Maybe aquamarines are relatively rare and are therefore close to amethyst in price (say 20sc per carat), while opals are common enough for the working classes at 5sc per carat. Throw a religious significance at obsidian and it skyrockets in price, even if it is relatively common. There are two ways you can do this: 1) decide what value each of the stones has and then make the world reflect the appropriate rarity or 2) decide the rarity and then set a price accordingly. Transparent stones that reflect light are almost always going to be more valuable as jewelry than opaque stones that do not. It's all a matter of sparkle.

Pearls

There is a trap you can fall into with pearls. Modern pearls are typically "cultured". This means someone did something to the oyster (put something in it) to make it make a pearl. This has made pearls a lot cheaper in the modern age than they ever were before. You cannot compare modern prices on pearls to other modern jewelry; pearls are far rarer in our fantasy world and are therefore worth far more than they would be in a modern world.

Pearls are broken into two classifications: baroque and round. Baroque pearls are misshapen. These pearls are far more common than the round ones. Round pearls are perfectly (or seemingly to the naked eye) round. These are extremely rare and of course therefore more valuable. Button pearls, or pearls that are round but flat on one side, are nearly as valuable as round pearls because the flat side can frequently be hidden in jewelry. Most pearls are white or close to it. There are also colored pearls, such as rose, blue, black, gold, lavender, etc. All colored pearls (other than the ones that look off-white) are going to be rarer and therefore more valuable.

Before pearls were cultured, the chances of getting a pearl in any given oyster were about 10,000 to 1. Because of this, pearls are not so much an occupation as they are a sideline while doing other things, such as fishing, diving for sponges, or foraging for kelp. There are some edible pearl oysters, but they yield very little meat.

Although averages are extremely difficult to judge, a "standard" baroque pearl would be approximately 10mmx5mm. Such a pearl would normally cost 20-25sc to a jeweler, assuming it was of "average" color and "average" surface. A similar "standard" round pearl would be 6mm, about the same size as a one-carat round cut diamond. Such an utterly perfect pearl would cost about 500sc to the same jeweler before it had been set into a piece. Once set in a simple pendant, it would be likely to cost 750sc retail.

More - Quickies

The following items are intended to be brief, but intended to explain why we think some of these things should cost what you see on the big list.

Arrows: Whether a primitive head (flint, obsidian, etc.) or metal, fashioning an arrow seems to take about an hour. For the primitive heads, this includes the flaking of the stone. Metal heads should be relatively quickly shaped, and the work comes in sharpening them. Working the shafts will take some time as well. Again, the fletcher is likely to use some manner of stock that is very close to the shape and size he is looking for to reduce the amount of woodworking. Gluing the fletchings may not be incredibly time consuming, but making certain that they are where they need to be for true flight is a difficult task. Some of the work can be done by apprentices, reducing the price. The materials are probably immaterial (no pun intended), except for the head. Still, the metal in the head will be as light as possible. Balancing the cost of the materials against the reduction in price due to the apprentice's participation, a standard arrow for a standard bow would be 1sc. This is for a combat ready arrow, not something only strong enough to shoot into hay targets. Bigger bows shoot bigger arrows which would be slightly more expensive due to the increased price of materials.

Backpacks: Backpacks take more time for a leather worker to fashion than clothing because they are expected to bear a weight. In order for the straps to hold the load, there is a lot more stitching that goes into any type of bag than there would be into a pair of pants that are not going to be expected to hold major loads along the seams. To make this work, we're going to assume that a backpack takes about as long to produce as a pair of pants (5 hours), but only uses about a square yard of fabric. Therefore, a standard (somewhat small) backpack or rucksack would run about 10sc, half for labor and half for the leather. Bigger packs will require somewhat more labor and a lot more leather.

Saddle: A plain saddle takes a saddle maker six days to craft. Saddle makers make more money than other leather workers, because they also need woodworking skills and in some cases metal working skills for some of the tack. Putting a plain saddle at 75sc seems dead on. Fancy saddles with designs, special stitching, etc. can take twice as long. Assuming they are using normal materials, 150sc will work. Any fancy additions, including more expensive leathers, precious metal or stone decorations, etc will increase this cost. Not every one needs to use a saddle. A peasant riding an old donkey might just use blankets, because he cannot afford the saddle.

Sailcloth: Sailcloth is typically made from canvas or linen, but can be made from any material. The problem is that sails need to be incredibly wide, something not possible on period looms. A major ocean going vessel would likely be more than eight yards across, yet most looms would only be a yard, so each sail would be made of nine or more strips sewn together. Between the material needed, the extra sewing and the space required, the main sail on our big ocean going merchant ship would probably cost over 500sc.

Land Passage: Just as wagons move cargo, some would be built to move people. Let's assume that although smaller and lighter, a stage coach (people wagon) would cost about the same to build as a cargo wagon. Let's assume the rest is the same (driver, guard and six horses), except for the caravan support people. This leaves us with a stage coach that probably moves six people costing about 30sc per day. Now assuming the roads are good, this wagon is going to make much better time, possibly as much as 100 miles in a day. This speed is due mainly to the lower weight, but also the fact that the stage is probably traveling from town to town and dropping passengers at an inn. There is no need to "make camp" or even time to prepare food. Chances are the operator of this passenger "line" will charge about 10sc per day to transport people, thus doubling his costs. He might fix it so he delivered people to his own inns along the way, milking more money out of his passengers.

Sea Passage: Passengers wedged into a boat took up about as much space as eight barrels. Therefore, if our 250 ton merchant ship were transporting people instead of wine, it could probably move about 125. Assumedly, the shipper would treat people much like cargo, and the passengers would cost about 12sc per day to transport. This is not a cruise, but a tiny bunk with barely enough room to move about next to it. If a better class of transportation exists, it will cost considerably more.

Lumber: We told you how much it costs to have wood cut into lumber, but we never told you how to get that lumber. Light woods would average about 3,500 boardfeet per acre before you cleared the land completely. Heavy woods, or what is often referred to as a working forest, would average about 30,000 boardfeet, but would likely vary from 20,000 to 40,000 depending on the types of trees. Lastly, one of those ancient forests that has never been touch (you know, the kind the elves are always hugging) could top out around 100,000 boardfeet per acre.

Animals: It has been briefly mentioned earlier that horses cost 100sc. This price comes from the cost of beef cattle. What!?!? A steer on its way to the butcher weighs 600 pounds and costs 60sc. An ox working in the fields weighs 1,200 pounds and costs 120sc. Most cultures assume that a horse and an ox can do the same work, which is sort of true. A horse is more expensive to feed and therefore considered to be less desirable, so it will cost 100sc. A war horse is trained for battle. By this we mean it is use to loud sounds and will not shy like an untrained horse. A war horse is not necessarily stronger than a "normal" horse, but it might be. Remember, these are all averages. A really strong horse is going to be worth a lot more than 100 or 250sc. As with slaves, a race horse cannot really have a value put on it. If it is fast enough to win its owner huge purses and huger bets, it will have a huge price tag. Just to make it that much more annoying, the 100sc price of a horse is when you buy one straight off the ranch. In the city, it would be more likely to be 150sc.

While mules are better suited to hot, rocky or steep regions, they are sterile, taking away an important value of most animals, the ability to create other valuable animals. For all their benefits, they are typically not as strong as a full blooded horse. Between their two drawbacks, we're going to price an average mule at 90sc. Depending on the culture, this could vary from 75-100sc. Donkeys are smaller still and thus weaker. They have much better agility on broken ground, but they have that nasty stubborn streak (actually self-preservation, but who cares if it interferes). Easier to maintain than horses, they too have plusses and minuses, though the minuses win out and we'll price them at 70sc.

Heating: There are two main sources of heating a home: coal and wood. Coal's advantage is that less lasts longer, plus there are no spiders or other critters to worry about. Wood's advantage is that it is easily accessible to anyone who can get to a forest. The closer the forest, the

less likely people are to buy wood or even coal for that matter.

There are different grades of coal and wood. Hardwoods burn longer than softer evergreens. Similarly, some coal is good enough for the smith and some is only good enough to heat a home. Coal mines are probably worked by slaves or the cheapest labor possible, because it is very dangerous work. Some sources have said that a man could pull about 500 pounds of coal out of the ground in a day. (Remember that this is without use of any machines.) 500 pounds of coal would therefore be worth about 7sc, the daily wage of a miner (a semi-skilled laborer profession). Even this, is the coal useful to smith in his forge. The lower quality stuff is going to be cheaper, about half the price, so a ton (2,000 pounds) of home heating coal is going to be worth about 15sc at the mine. A cord of wood lasts about as long as a ton of coal but takes up twice as much room. We're going to peg this at 10sc, at the forest. Of course with both these products, delivery is going to wind up being the bulk of the price. This makes sense, because a lumberjack could probably fell, size and split a cord of wood in about a day and a half.

Assuming cold but not extreme temperatures and a very small house, a cord of wood or a ton of coal would be likely to heat a home for six to eight weeks, including cooking dinner.

Measures: We've used some measures that have multiple meanings in different parts of the world or in different time periods. Pretty consistently this is what we mean:

Barrel - standard would be 32 gallons, but they make them all sizes
Bushel - 8 gallons - varying weight
Ton - 2,000 pounds
Tun - 8 barrels or 256 gallons

STEP 13 - MAGIC

Well, we said it was a fantasy economy right? Well then where's the magic? Magic is a commercial service and product just like anything else. It is for sale, and game masters need to figure out how much it's worth.

First, you need to know if magic is common or uncommon. We're going to assume that magic is not illegal, because that opens a whole new set of problems. Whether magic is common or not can change from region to region and culture to culture too, just like any other commodity. If you think we're treating magic too loosely, you're right, but so are we. Unless magic is restricted to certain people by birth, meaning only those born a certain way can use it; it is a commodity and needs to be sold as one.

Low Magic

If the culture has little magic, then anything magical is going to be extremely expensive, but also rare. Even if someone had the enormous bags of gold necessary to buy a magic wand in such a place, magic wands would hardly ever be for sale.

If magic could be learned by anyone with the proper training, than a low magic environment needs some explaining. Maybe demons once tried to take over the world because of those silly conjurers and since then every one hates magic. Or the Mages' Guild has rules where only 12 people in the whole world can use magic at any one time. Hey - in epic fantasy, these things can happen.

But here's the big point: If magic is so rare, it is not really part of the economy. It's kind of like the lottery, really not impacting our economy. Sure for one person it is a HUGE bonanza, but even with that one person throwing their money away left and right, it is not a major blip in the economic trends. It's just too isolated. So when does it matter?

High Magic

OK, first let's explain a bias. It is the belief of the writers of this supplement that high fantasy games need more magic than they already have. Most games have magic systems aimed entirely at causing damage to enemy forces, with a couple of magic tricks thrown in to defeat enemies as well.

High fantasy practically demands (in our view) that there be magic available for everyday life. That doesn't mean that peasants are flying out to the fields on magic carpets, but magic carpets should be available. But it is more than magic carpets. The fabulously wealthy would have all manner of magical items to make their lives easier, more comfortable and blatantly more fun.

Enchantments

Check the game system rules for the rules on enchanting objects. Chances are they will give you at least a vague idea of what is necessary both in terms of time and materials. Guess what, this is what makes it easy. Enchanters are just like any other craftsman, except they make a $#!+ load more money. (Why do they make more money? Because even in our high fantasy setting,

there are a small number of them and rarity breeds expensive.) An average enchanter makes about 300sc per day; yep, that's 30x what a mundane craftsman makes.

Assuming that the game rules tell you what an enchantment takes, you can figure out the cost of the materials and add 300sc per day of enchanting. Pretty easy stuff right? But wait, now you're worried about game balance. What if the game rules say that it takes an hour to make a magic sword and all you need is a normal sword? Then a magic sword would cost all of double a normal weapon, and that would change everything.

You know, it might. If as a game master, you are OK with someone turning a mundane sword into a magic sword with only an hour's work and no risk to the enchanter, you seriously need to think about the scarcity of magic in the game. If it were that easy, why wouldn't every army have an enchanter somewhere churning out magical swords for their troops? Even with two weeks vacation, you're looking at 2,000 magical swords a year. OK, not the most exciting career in magic, but definitely good work. You know what, you just might decide that you are OK with that, and pretty much everyone is going to have a magic sword going forward.

If the game rules swing the other way, such as the enchanter needs to give his undivided attention to the magic sword for three months just to produce the least magical effect, you need to think about that too. If the enchanter could only make three swords a year, would he? We mean is there nothing better he could do with his time to make money? Like farming? (By the way, if either of these extremes is in place, you have to take that whole 300sc per day rate with a healthy amount of salt.)

Game balance is a vitally important issue, but with a standardized economy based on understandable rules, everyone has an even starting point. If everyone in one army has magic swords, it is most likely that everyone in the neighboring army does too or at least magic spears. We'd like to use the modern wizard fairy tale as an example. Everybody in school has a broom, it's just that some are better than the others.

There is an unfortunately good chance that while the rules were telling you how to make magic items, they mentioned eye of newt and toe of dragon-thingie. These are of course things we have not yet covered, so you don't know how much an eye of newt or toe of dragon-thingie costs. If there is a group of people using magic and magical components, there will be a merchant ready to sell them. Some of these items, like eye of newt, sound really weird, but they probably are not that hard to come by. If there is a market for it, either someone will be raising newt's for their eyes, or someone will be hunting them for their eyes. Try and figure what a newt farmer would spend raising the newt's, build in his profit factor (double or quadruple), and give the consumer the benefit of the fact that each newt produces two eyes.

When it comes to hunting, you need to take the risk factor into account. Let's face it, adventurers could make big profits hunting down dragon things and collecting their thingies. Chances are, if there was a big enough demand for it, there would be several teams of adventurers who would be expert dragon hunters who would go out after these thingies every so often. It will be tough to measure these costs, but it will be directly related to the reward money paid to the adventurers.

Enchanters will probably live in big cities where there are enough people to buy their products. As a game master, you can get fairly far by saying the guild restricts the sale of magical items and that's why they're so expensive, but then you have to determine how much the enchanters are making per day and if it's enough. More likely, you need to figure out what the enchanters are doing with their days. If you decide they do not produce magical items every work day, what are they doing? If its research, then you have an opening for some really cool magical items or adventures. And, since rules were made to be broken, what happens if an enchanter makes items and sells them for less than the guild wants him to?

Alchemy

Alchemy is very similar to enchanting. The only difference is that alchemists typically make about half of what an enchanter does, meaning 150sc per day. They still need to gather the same kind of odd ingredients, and hopefully the game system will make enchantments take a longer time than potions.

Look, if the potion only lasts a minute, it has to be a lot cheaper than an enchantment that lasts forever. In a high-fantasy campaign, healing potions and other essentials almost need to be available. If this form of magic is not available retail, every adventuring party is forced to bring the spell caster with the healing powers along on an adventure. This seems a pretty limiting factor, and it also assumes that healers are more commonly available for adventuring than alchemists are available to sit home in their cozy labs. Is the healing of adventurers such a noble task that there are so many guys with potent healing powers willing to risk their own necks to do it?

Alchemy can also be restricted by guilds, but it seems more likely to be restricted by the required laboratory. Making potions isn't something you whip up in a cauldron or home chemistry set; you need equipment. Of course, the equipment is expensive, so the more powerful potions are only going to come from the

really established alchemists. This allows lower powered potions to be commonly available and powerful ones to be far rarer.

You also might want to consider containers. Everyone believes that potions come in bottles, and assumes these bottles to be glass. (OK maybe not everyone, but most.) Is glass the right thing? Maybe something stronger should be used. Maybe porcelain is the right way to go. Maybe crystal is good, or maybe because it has lead in it is absolutely wrong. If the bottles need to be specially treated, alchemy could become very expensive.

What about taste? Just like getting a kid to take medicine, getting an adventure to take a potion might be affected by taste. If a healing potion cost 400sc, maybe the great tasting ones cost 425sc. If you're already paying 400sc, you might be willing to pay an extra 25sc to have it taste minty or like bubble gum instead of bitter vinegar. This also might affect the ingredients. Maybe the strength enhancing potion contains fresh tiger's blood. This might be a vital ingredient to make the magic work or it might be a coloring that someone devised centuries ago to make the potion look better. Maybe some of the alchemists know this and don't use it, making their potions cheaper, but appear as if they might be faulty. Magic is a commodity; it needs to be marketed.

Healing Magic

Our last piece leads us right into the next topic on magic, healing. We keep saying that the world should not revolve around adventurers, but on healing magic it sure seems to. Simply counting the number of modern hospitals will show that adventuring is not the only way to get hurt.

So what to do about the average citizen when he or she gets hurt? First off, the average citizen is probably a farmer and therefore is probably out of luck for the major healing spells. Even if the local priest is a skilled magical healer, can the farmer get from his farm to that healer in time? (If the game has rules for bleeding to death the answer is no; if the game assumes that simply surviving damage is enough, well, probably as long as he doesn't live alone.) Would the local priest help the farmer? Only if his religious taxes were paid up. (See the **Taxes** section later.) Without this type of help, a farmer could probably not afford to be magically healed.

So what about the craftsmen and the merchants, who are assumed to have some money? Depending on their station in life, they could probably afford some level of healing. The more money they had, the more they could afford. The question is how much to charge them.

Religious organizations typically attempt to help people and thus would try to offer healing as cheaply as possible. Of course with all manner of pagan gods and spirits, anything is possible. Depending on the game system, some worlds might not even have secular healers. So the religious magical hospitals are the place to go. What? You don't have magical hospitals in your world? Only adventuring priests? You might want to think about that, but we already told you we were biased.

Whether the spell is healing or some other non-combat related spell, there has to be a cost for having it cast. Typically only the most learned of spell casters can cast the really powerful spells, and the more learned guys cast better low level magic too. So we know that the High Priest is going to charge more than the altar boy.

Factoring in the time it takes to cast the spell will typically not work. Most magic is done in the blink of an eye (less than a minute). Figuring the hourly rate on this is of no use. Some magic requires spell components. If this is the case, add them into the cost of the spell, typically at double the retail rate. If the spell caster can only cast a certain number of spells a day or is tired by spell casting and thus needs to rest for a short time after each spell, you can use this to try and compute a daily rate, but if the High Priest casts 50 spells a day, this daily rate isn't really a good judge. It seems that a healer who could cast spells that only someone of his experience could cast would have underlings to cast the lesser spells. Therefore, if the High Priest has three spells no one else (or hardly anyone else) can cast, divide his daily rate by these three spells. For a powerful guy, the rate should probably be around 250sc per day.

The risk factor should be the highest cost item in magic. Some game systems will actually charge the spell caster a year of life (aging) for casting certain spells. One of two things would have to happen if that were the case: Either the spell caster only casts that spell a couple of times in his entire life (meaning only on the King or the Prince) or there has to be some manner of age reducer. If the spell ages the caster, factor the cost of reducing his age into the spell costs. If the caster risks pain, the costs will skyrocket, even if the pain would only be caused on a fumble. Spell casters are among the most intelligent people in the world. Unlike the more mundane risk takers, these guys would know and understand the odds and not be willing to take risks without proper compensation.

There is another risk as well, that of making a mistake. We are assuming that the spell caster has some morals. They might think twice before raising some adventurer from the dead. Most moral systems would make the spell caster at least partially responsible for the actions taken by someone whose life they "saved". Would the priest of the god of life and justice raise an

assassin in the service of the goddess of death? Money might not buy the healer off in these circumstances.

Other Magics

If a powerful healer makes 250sc per day, what about a different type of magic user? It all depends on the culture. It is easy to say they make about 200sc per day (at least the powerful ones). Healers make more because their services are more in demand. Someone may want a sorcerer to use his fireball to clear a forest, but he needs a healer to fix his compound fracture.

If mages are common enough, and agreeable enough, you would find illusionists who charge 20sc per day to entertain at parties, or conjurers who would charge laborer rates for the use of their minions as unskilled labor. It all depends on how common magic is in our high fantasy world. As with other services where the service provider, in this case the spell caster, is not "working" the entire day, remember to divide his daily rate by the number of hours or minutes he actually works in the day. Just as a fortune teller is not constantly busy and therefore has to adjust the rates, a spell caster is not going to be casting for eight to ten hours straight.

STEP 14 - TAXES

Yeah, we warned you; the bad news is towards the end. Sooner or later someone is going to come collecting taxes. We're going to try to give you some ideas on how taxes can be collected, along with a strong bias as to what would be considered normal.

Types of Taxation

To determine how taxes are to be collected and how much, first we have to talk about all the different kinds of taxes. Most systems of taxation rely on various hybrids of the following styles.

Income Tax

Income tax might be familiar to many modern people, but it would be less common in the fantasy world. The main reason for this is it is VERY difficult to monitor and determined cheaters will find it very easy to circumvent. This is an age without cash registers, where bookkeeping is probably done on a chalkboard and erased at the end of the day or week. The merchant knows how much money he has by looking in his pocket, not by reconciling his check book. So when the tax man comes and says, "How much did you make last year and give me X% of it" the tax payer would honestly have no idea.

One way this method can work is for tax payers to give "every sixth one" to the tax collector. In this manner, a craftsman would craft his goods, and every sixth one created would be considered the property of the tax collector or the government. Of course, in this style, the craftsman would want to craft a lesser quality (quicker to make) version for the taxes, but the tax collector might have the ability to pick which one of the six he wanted to take, to keep the vendor honest. This is still a very difficult method to monitor as the craftsman can easily lie about how many were made and hide those of exceptional quality.

This same method can be used to tax farmers (every sixth pound of grain...), scribes (the receipts from every sixth document...), etc. but it never becomes easy. Closely related to the income tax is the sales tax where the merchant is expected to charge an additional Y% on top of the actual item, collect this additional amount, and turn it over to the proper taxing authority. If you can't see the opportunities for lying and cheating here, then you fell asleep back in the Mining section. Forgetting the record keeping and monitoring issues, such a method would require extremely easy math; the people selling the merchandise do not have calculators or powerful math skills.

Property Taxes

So if income and sales taxes don't work, what does? Property taxes work. For property taxes to work, a tax collector walks up to a home or business, applies some mathematical formula to what he sees and determines how much the owner owes. The formula might be Xsc per acre of farmland plus Ysc per bedroom of the house, or Zsc per square foot of shop space. Whatever it is, it can be seen and measured. Some methods might even consider the value of the house or shop and apply a percentage to that. This becomes a lot more subjective in that the tax collector gets to value the house he is about to tax. There is a reason tax collectors are not thought to be very honest!

If the formula is simple enough and the tax collector can be feared enough, this method works best. Of course it is not exactly fair. After all, in the income tax system, a farmer who lost half his crops to a tornado would not owe as much in taxes. Under most property tax methods, land is taxed at the same rate whether it produced something of value or if it burned in a fire. Also, under this style of taxation, if the goods inside the home or business are included in the formula (and they likely are), a shopkeeper could be taxed over and over again on goods he is having trouble selling. Fair or unfair, property taxes are probably the most common in our fantasy environment.

Property taxes can be made to "replace" income taxes by over taxing income producing properties. For example, maybe every bedroom in the city is taxed at 100sc per year, but every hotel bedroom is taxed at 300sc per year. This is intended to collect taxes from home owners but also to gather more from the property earning the income. (This tax would force innkeepers to overcharge their guests. Since the guests are assumed to be foreigners, the taxing authority collects money from people it does not control, always a benefit!) Another example would be to charge 10sc per acre of woods, 20sc per acre of open fields (including fallow fields), and 30sc per acre of planted farmland. Again, the profit producing farmland is more heavily taxed because it is assumed to be earning a profit. Fields are more of a profitable land, because they assumed to be pastures for animals. Taxers need to beware though. A tax like this encourages people to leave the woods in place, which might not be of benefit to the government.

Tariffs

Tariffs are taxes on goods entering the jurisdiction. For tariffs to work, the government needs to be able to control its borders and investigate all merchandise entering. If they cannot control the borders, smugglers take advantage of the system.

Tariffs are often used not only to raise money for the government but to reward or punish other foreign entities. If one government is angry with the way another acted, it might raise the tariff on all goods coming from that place, or maybe only on certain ones. Like if King Fred is angry that Queen Madge invaded Silvertania, he might raise the tariff on all goods from Madge's kingdom or only on the silver coming from there, because he would assume it had all been looted from the now oppressed Silvertanians. Of course, Queen Madge would probably respond by raising tariffs on Fred's kingdom's stuff, but that's politics, not economics.

Tariffs work best when dealing with cities, especially with city walls. This greatly reduces the opportunities for smuggling, though cheating and lying are still practiced.

Tariffs help to protect a region's own crafting while punishing crafting from somewhere else. Sometimes this is the intended goal, but typically it is a side benefit. It will be important to figure out if the craftsmen inside the region have boosted their prices to match the inflated costs of goods coming in from somewhere else. Chances are, if the quality is the same in both places, the locals will try to charge more to improve their profits, while still undercutting the foreign competition. The way this works is, if there is a 10cc tariff on every 25 gallon cask of wine brought into the region, the local wine maker is going to charge 5cc more for his casks than he would normally. This way he gets more money while still charging less than the foreign wine merchant can afford to charge.

Because tariffs work on so many levels, political manipulation, protection of locals, and raise money, they are very common. They are often very confusing, especially if there is a different rate applied to the same item if it comes from different places. This confusion can cause tax collectors to delay merchants or "miscalculate" certain things in order to cheat the merchant. Of course if the tariffs, either because of the rate or the complexity, are considered unfair, trade to that kingdom will dry up.

Tolls

Income taxes and property taxes tax the people who live within the jurisdiction. Tariffs largely tax people from outside the region. Tolls tax both, though they are largely aimed at foreigners. A toll is basically a tax in order to use a road, often times a road across a bridge or through a gate. In theory, the tolls help repay the entity who built the road, but more typically they are simply a money making scheme. Toll collecting often comes at a price. The kingdom or whatever collecting the tools needs to guard the toll station, guard the money collected, and safely transport that money to a safer place. All of this can often lead to toll booths that are more expensive to sustain than they collect.

Community Service

The main taxes during the feudal period were based on what we're going to call community service. Basically community service is when a peasant farmer needs to go work in his lord's fields. This way the lord gets his crops tended and harvested (all for his cellars) without having to work or pay hands.

After the use of people as farmers, the most common form of community service (again the backbone of the feudal system) was the pledging of military might. If each landowner must fight for the lord or king when called upon, he is really supplying a community service. On a lesser scale, maybe every able bodied man between the ages of 15 and 35 is expected to serve in the city-state's militia, including training three days a month.

A less common method of this is that a landowner is responsible for the, maintenance of something on behalf of the government or lord. This could be a road, a fence, a wall, a garrison tower, etc. As long as the road met the specifications, the local landowner either paid lower taxes or maybe even no taxes. This is often thrown in as a tax increase without actually charging someone more. Most

people tend to see time as less important than money, but you never know what is going to set off a rebellion.

Religious Taxes

Maybe they are not exactly taxes, but many religious communities collect taxes of their own. Because the payment of these taxes is a moral obligation of the church members, it can be more closely based on income, because the church member is expected to be honest. A 10% tithe is the best known of these taxes, but they can take any number of forms, including community service.

Historically, church "taxes" were very real and were an obligation that every serf and nobleman had to cover. In a fantasy world that has many gods, who often take active and showy parts in the day-to-day activities of their churches, things might work differently. Our history has a church that was a true political power and a global unifying force. It is difficult to judge how to balance obvious divine power with the competitive nature of the different gods, spirits and pantheons.

Religious taxes, if they exist, are in addition to governmental taxes. Rarely the two entities will consider each other when assigning taxes to the people. Most typically they will assign what they feel they need or they feel is appropriate. Religious taxes will often be about half of what the governmental taxes are.

Rates

What rate of tax is charged is an odd question. You could figure out how much the government needs, then figure out a rate that will get them that much money. Or, you could come up with a seemingly fair rate, figure out how much money that would give them, and then figure out what they do with it. That's a lot of math.

We've already tried to establish that a governmental tax rate should probably be around one-fifth to one-sixth. The thing is, that is not for one particular tax, but for all of them added together. Somewhere in the government there should be a tax guy who is trying to figure out what each tax and all the taxes will do to the little guy (typically the farmers, since they are the largest part of the population). If the King thinks one-fifth is fair, there are probably a combination of taxes that when you look at them all in total come up to about one-fifth for a pretty normal person. Of course, as an average, it will not be true for everyone.

The other thing is, the tax maker is going to want to encourage certain things and discourage certain things. Chances are the tax codes will not be as complicated as a modern day bureaucracy, but only because they do not have as many governmental employees. The more people involved the more complicated it will be. Maybe the King likes beef and hates mutton, so he taxes all animals raised for meat at 1cc per leg. This will cost 2cc for fowl and 4cc for everything else, but in taxing a lamb at the same rate as a steer, he has barely affected the steer (per pound) but greatly impacted the cost of the chicken and the lamb. This is most likely when discussing tariffs where the rates will be very arbitrary according to the government's wishes.

CONCLUSION

This entire supplement was crafted to help explain why things should cost what they do and how to establish a thriving economy in your fantasy world. It was never intended that you should figure out the names, family size, crops, annual income, annual expenses and general health of every farmer in your world. Please, do not waste time figuring out minute details that won't matter to your players.

We hope that you take this supplement and use it in your campaign world. By that we mean that we hope you will determine the kinds of food that are eaten in different cultures and how expensive things are. We hope you will have a better idea about how much a sword will cost when purchased in the Iron Hills versus one bought on the far side of the ocean. Mostly, we hope that it has sparked the seeds of adventure within your mind and you have come up with hundreds of things you want to write down to make your world that much more exciting than it was before.

As for the excessive explanations: We explained a lot of these things so you can adjust them to your game. If you want a magical or technological advancement, you hopefully have the information necessary to change the way things are done and tailor them to your game. Nothing is more frustrating than seeing two items in a fantasy role-playing game that blatantly are out of whack in their pricing. There might even be a decent explanation for it, but without the details, you don't know. More than likely, the game designer did not put enough time into the economy of the setting and made some blatant mistakes. The most common mistake is to use modern comparisons, forgetting that the Industrial Revolution kind of changed how everything was done. Hopefully, we helped you begin reversing those mistakes.

Work Ethic

The amount of work and effort required to make all of this stuff has not really been given its due. Farmers work incredibly hard to bring in their crops. Butchers

exert great energy to slaughter and prepare animals. Cooks slave over hot fires for hours to turn simple ingredients into filling and appealing dishes. All of this has been assumed.

It is likely the case that should a farmer, hunter or gatherer become lazy, their family will face extreme difficulty and likely sicken or die. Farmers might be able to hold out on stores, but not for more than a year's time. Hunters and gatherers will never make it anywhere close to that long.

All of this ignores that we are assuming that a farmer works all day in the fields, then comes home and does crafts at night. (By crafts, we're talking about tanning leather or curing hams, not collecting shells or painting models.) There is some truth to this, at least historic truth. We are also assuming that after cooking, cleaning and caring for the farm animals, the woman of the farm spends the night knitting her family's clothing. Is she exhausted? Duh. We assume her life is very difficult, very tiring, and probably not very rewarding (you know in all the "we appreciate you" kind of ways). However, we expect that this is exactly what she is doing.

We are also assuming that a ten-hour work day is the norm. You are just not going to find a nice employer who feels that an eight hour work day with lunch and smoke breaks deserves a massive wage. This also plays into the craftsman skills and how many hours we think they are working on their goods. If a craftsman is willing to work 14 hours a day, he would probably not lower the prices of his goods, because others would keep the price level where it was. He would probably just have more stuff to sell. Don't think that this automatically means that this craftsman has a lot more money. If the other crafters are working ten hours and then going home and doing stuff around the house, the workaholic might have more stuff to sell, but he needs to buy his meals in a restaurant and hire a person to clean his house, and a handyman to fix the stuff he's not there to take care of. It's kind of a vicious cycle.

Recreation

So what do they all do for fun? Well, as we just said in the last note, they work pretty much as long as their awake. All work and no play - not very reasonable. One of the best things thy can do for recreation is to do some sort of work that they find relaxing. For some people, this might be sewing or other needlecraft. For a lot of farmers, this could be fishing or hunting. Spending a spring morning fishing might be a great way to relax and bring home lunch as well.

With all the cottage industries going on, some of the farm folk are going to be brewing their own beer, distilling their own whiskey, and even making their own wine. While these people will probably not give all of their wares away for free, they will share with their neighbors on holidays and special occasions. There are some historic references to every farmer brewing up a couple barrels of beer, and when it's ready, they share with the community. That way there is a rotation where everyone shares their beer, and there is a place to have a pint most of the time. (Obviously, this is for towns without established taverns.)

There are also traveling performers who would probably come to any major town. They might be singers, jugglers, storytellers, or even actors. If a town is big enough to have a tavern, it will probably attract some manner of performer. This helps to break up the week or month. Of course, no one trusts these performers, but they are willing to throw a couple coppers at them for the performance.

For anyone with spare time (and believe it or not, farmers can find some free time in the summer), there are normal games, like chess, cards, checkers, or certain dice games. The problem is that the equipment for these games is relatively costly. Without manufacturing plants and printing presses, cards and chess pieces can be pretty expensive. Games like horseshoes, which use items they already have laying around, are better (cheaper).

Vital to both the economy and mental health of the people would be fairs and festivals. Fairs would probably include livestock auctions and certain farming and cooking type competitions. There would be fun and recreation, news shared, new methods discussed and enough trade of animals to avoid inbreeding. These fairs would probably be sponsored by the local nobleman to encourage exactly this kind of economic advancement. It also serves as motivation to bring in traders and merchants that might ignore the region without such a gathering of people. Anyone with some authority can sponsor a fair or festival - the government, a religion, a social club, or even a big enough family.

Sports and athletics are probably also big recreational events, both while be played and being watched. Horse racing, swimming, archery, even football, soccer or rugby style sports would be good. These types of recreation also help to prepare the men and boys for war. Whatever style of troops the region prefers will often determine the style of sports they play. And of course, don't forget betting on sporting events! The betting is often more energetic than the sport itself.

HOW TO MAKE ALTERATIONS FOR YOUR WORLD

You may have arrived at this point, having read or at least skimmed the entire supplement and think, "This is crazy. This isn't anything like my world." And you are perfectly within your rights to do so. (We hope you don't, but who knows.)

Hopefully you at least see the logical flow that created this economy and why it is what it is. From there, you can start to tweak it. Maybe the farmers in your world are all druids or have access to better farming methods than our history would allow, and you want to increase all of the crop yields to double what is listed here. Chances are that almost all food prices will go to half at that point. It might not have a direct impact on the craftsmen however. While they would not need as much money for food, they probably cannot double their output, so as food became cheaper, the cost of well crafted items might stay roughly the same.

Or how about this - Maybe the merchants in your world are simply afraid to mark up items to the extent that has been suggested here. They will need to charge something for their services, but if they are using teleporters to move goods across the globe, then the transport costs are going to plummet.

Silk costs too much, so instead of having weavers make silk fabric, let's let poor farmers make it. Now it is more of the leaves cost (3sc) times a multiplier, of oh let's say six. Four square yards of silk fabric now costs 18sc or 3sc per yard. Wow, that's cheaper than the other stuff. It probably won't change the world too much, though you'll have to figure out how those silk growers eat.

Maybe the gold, silver and copper ratios are completely different. This is likely to only affect the cost of jewelry and coins, but it will have an impact. Maybe everyone eats potatoes and wheat is considered a feed crop. Or corn is king and rye bread is queen. These food related demands are going to bring some flavor (please forgive the pun) to your world while probably altering only a few things.

Here's a good one - Maybe the city was built by a carpenters' guild that still controls the politics in the city. If one craftsman's guild holds true power in a region, they will force the prices for their goods and services up and others' down. In this city, a cooper might make 15sc a day, while a blacksmith only makes 9sc. This will impact the economy greatly, though possibly only the local economy.

Even if your world generally runs on the "silver standard" (where things are typically priced according to their value in silver) there are going to be areas where this doesn't work. Trading posts trade, they don't sell. Everything out at a fur trapping trading post would be listed according to how many pelts it was worth, even pelts. Some pelts would be worth more than others. The trader probably does not want silver; oh he'll take it, but at a mean markup. The same might be true of a general store in a very rural area. They might value things according to how many eggs or pound of wheat things are worth. Let's keep going. We're on a roll. Nomads who trade everything according to how many cattle or camels things are worth. Hunters who trade according to how many dead gazelles something is worth. Any of these things could be happening, while the rest of the world roll on exchanging coins.

Our goal is not necessarily to have you follow every cost in this books number for number, but instead to use some manner of base to develop an economy. Hopefully with the tools here, it will not be hard. The easiest thing for you to do is to simply take all the charts in the back verbatim. (That means exactly as they are written - in case you didn't know. Yeah, you knew, but that other guy didn't.) Hopefully, there is enough stuff listed to allow you to run your world.

HOW TO DESIGN YOUR ECONOMY

You have seen all the steps, but they do not lay out a plan by which you can actually make all of this work for your world. That's what this section is all about. There are some questions you have to answer before you can make an economy fit into your world. In each Step, you will be asked to determine if you are going to follow the path that this book does, which is relatively similar to some historic points, or if you are going to go down your own path.

Grab a blank notebook or at least a piece of paper. Jot down some ideas as you go along. This shouldn't take you very long, but you don't want to waste any good ideas you have while you're taking the time to think through it. In case you're overwhelmed, we went through the project for one of the cultures in our world. It should help you understand how it all comes together.

Ready? Here we go...

Preliminary

Do you have a campaign world already? The questions here assume you have a world and you are adding an economy. You can start with an economy and build a world around it, but obviously this is going to take more time. If you have your world established, grab your notes and have them right with you. That way you can refer to things that you might not remember off the top of your head.

You might want to go through this section a couple of times, once for every major culture in your world. Establishing different economies in different regions will give you and your players enormous amounts of adventuring plots and ideas, as well as help your players role-play in your world. If your world is one big empire, you only need to go through the questions once, since there will only be the one economy.

Step 1 - Bread

You need to establish what the most basic food in your world is. Here, we've presented wheat bread as the staple of life. Whatever the most basic food is, is going to be the origin of the economy. Not only does it need to be preferred, it needs to be common. It helps if it winds up costing a nice round number too.

Step 2 - Food

OK, now you know what the basic food is, and probably know what it costs. Now you need to mold the culture. What grows where? What foods are considered people food and what foods are considered pig slop? What foods are delicacies, and is there anything special because of that?

Step 3 - Land

Land questions usually revolve around the government and how people get land. Do the nobles own all the land and the people rent it? Is their a feudal system? Does everyone buy land? Are there any special terrain features, like mountains, swamps or rivers? This was probably important to know in the last step, but build on it here.

Step 4 - Overhead

What are the taxes like? Do they use horses or oxen? Does everyone have their own barn or do they share? Does the average farmer grow something like barley or tobacco that requires a drying shed?

Step 5 - Cutting Corners

What is a standard way of cutting corners in this culture? This can be very important because it will determine how people value certain luxuries. If the standard is wheat bread, and they cut corners with other grains, than rye bread would be seen as poor. On the other hand, if rye bread is the norm, than what is wheat bread? Is it a delicacy or undesirable? Is hunting allowed or is that poaching? Do they know how to fish? Is the forest filled with walnut trees?

Step 6 - Middlemen

What kind of trade moves through the region? Are there organized trade routes? To where? How safe are these roads? Are there huge merchant cartels or small peddlers? Is there a special, cool, or magical way to deliver goods? What are the marketplaces like? Are they huge open air things where carts just pull up or is it an organized section of the city with storefronts? Are the transporters the retailers, or do they sell to the merchants in the city?

Step 7 - Craftsmen

How are the craftsmen organized? How are they monitored? Does one guild hold excess power? By now you would have needed to decide who really is in charge. Is it the landowners? the merchants? the craftsmen? the

soldiers? Each group would have a different view on trade and the "appropriate" laws to govern it.

How do craftsmen charge for their craft? Do all members of the guild charge out at the same rate or do master's cost more than apprentices? Are there any other goofy rules they use to protect their monopoly on their knowledge?

Step 8 - Textiles

What sort of fabric is made locally and does it fit the climate? What dyes are local and which are available from other regions? Are there any disagreements concerning textiles, like one fabric is "fashionable" while another is considered poor? Is some type of clothing or fabric considered "wrong" such as fur or perhaps a certain type of fur?

Step 9 - Preservation

What do they use to preserve? Is there a lot of salt, sugar, or smoking? Is one style so common that there are different qualities of it available? Is there something that is preferred preserved over fresh? Does everyone preserve their own or are their craftsmen who preserve food? How good are the methods? Does the local technology result in a lot of rotted preserves? What do these people eat during the winter? How is that affected by the climate?

Step 10 - Containers

What do people prefer? What is locally available? Are containers decorative or hidden away in cellars? Can the containers be reused? (OK, so this is boring, not all the others are.)

Step 11 - Mining

What can be mined in the area? What is mined in the area? Think about metals, precious stones, salt and a host of other things. How elaborate are the mines? Are they strip mining or have they dug so deep into the earth that they risk knocking on Hell's door?

Step 12 - Magic

What has magic done that has changed the world? This is the toughest part, because it requires the most ingenuity on your part. Few game systems ever address the possibility that magic might have purposes outside of warfare, so your books and books of rules are probably not going to help you much here.

Mixed into this questions really is the question of where is the technology of your world. Are there any anachronisms? Has the technology of your world followed Earth's pretty closely? What about gun powder? What about mechanical engines, even simple ones like grandfather clocks? This supplement assumes that smiths can craft beaver traps from metal. Does your world have the technology to accomplish this? Does your world have the technology to smelt steel or is everything back in the Bronze Age?

Magic can pretty much replace every technological advancement from science. Has it? Is there a magical cotton gin? Do teleport tunnels allow even common farmers to travel great distances? Do weather witches hold the rain over the fields in order to increase the crop yields? Can the druids or beats masters wipe out plagues of locust before they destroy the crops? Have supernaturally strong golems replaced construction machines of the modern era? Any one of these will slant the economy, and these are just a tiny list of possibilities.

Chances are, unless you have established certain magical standards or services in your world, you are going to want to say that magic barely affects your world. This is the kind of thing your can use going forward or to fill in where it makes sense. In the beginning of this book, we said that adventurers were NOT the most important people in the world. They should not be the only ones able to use magic to their benefit, but that is the way that a lot of rule books are written (for obvious reasons). At first this piece can wait until everything else is flowing. After all, this is the piece that rocks the boat; it won't hurt you to hold off on it until later.

Step 13 - More

If you go through this process, some things are going to change. After this work, some things might be cheaper and some things might be more expensive. Unless it has already caused huge game balance issues, leave it alone. If one of the characters has a string of 15 ponies and you raise or lower the price of ponies - leave the character with his 15. Don't try to go back and adjust his amount of money or number of animals based on the new rules, simply enforce them going forward.

At the same time, actually enforce them going forward. Don't worry about some cry baby who is whining that you changed the rules to hurt his character while you were helping some other character. You know what, that player is never going to be happy. If you've walked through the logic of the economy and it makes sense to you, then trust yourself and stick to it.

The Economy of the Rhoric Culture

This is our example of how the steps work. Feel free to swipe this culture completely.

Preliminary

Some of you may already be exposed to the Rhoric culture. It is the setting for the Rhum city supplements that Board Enterprises has been putting out for years. At its most basic, it is based on various northwestern European cultures from the Middle Ages, heavily influenced by magic and other races. It is a temperate climate with harsh winters and warm summers.

Step 1 - Bread

While bread is the most common, root of food, the common bread is rye bread. Wheat flour is used for special occasions, such as pastries and cakes. Since both are still available, there does not seem to be a good reason to change the root prices as they appear here, but when computing how much a family can live on, they are going to have a slightly easier time of it since they are typically "cutting corners" by eating the more prolific rye instead of wheat.

Step 2 - Food

Rye bread is the king of foods, and beer is the king of beverages. Second to beer is apple cider, both sweet (non-alcoholic) and hard (alcoholic). The Rhorics live amid large forests, unsuited for vast cattle ranches. Because of this, they eat a lot more poultry and game. Those forests are filled with large deer, which are more common meat sources than the cattle which are brought up from the south.

In this chillier climate, citrus fruits are an extreme delicacy. The smaller number of cows means that most milk is from goats, though in the Rhoric regions there is a mix of both goat and cow milk and cheese products. Beans, carrots, cabbages and potatoes are considered the food of the poor, but they are not "feed" products. There are some local wines, but local and imported wines are simply not as popular as the barley beverages. In fact, the beers of this region are so good that they form the chief export. The sugar from the abundant sugar beets serves to sweeten the cuisine and form another export.

Cinnamon is imported in such huge amounts that it is not even a delicacy, but a staple. This does not make it cheap, but it is available, even to the commoners. A very large number of local spices share the next tier. Everybody has a different way of spicing there sausages (the main use of pork), and there is no "common" method.

Step 3 - Land

Rhum is the largest government in the area and it is a loosely formed city-state that does relatively little outside its walls to govern the region. This means that local nobility control small areas, but the majority of the people are cutting their farmland out of the wilderness. While this allows for a freedom from taxes and oppression, it leaves them open to bandits and lawlessness. Most settlers will want to band together into small towns, or pay Rhum some taxes in hopes of being defended. While this means that established farms near the city will be very valuable, there is still room for entrepreneurial farmers to stake a claim to a patch of land and build their own farms. The best and flattest land is probably already covered with barley fields.

Step 4 - Overhead

A Rhoric farm is a relatively normal thing. It would have a barn, a house, probably a cellar, and possibly other small buildings. While the farm might not have it, many small towns have ice houses, typically caves where the residents work together to store ice in the winter into the summer months. Rhoric farmers are very likely to have bows to hunt game and defend themselves. Though oxen are the most common draft animal, there are some draft horses in this region. Some farms have a building just for their "dairy" where they would keep the dairy goats or cows and the cheese making equipment. A common Rhoric outbuilding is the coal or wood shack, where fuel for the winter months would be kept. Blizzards have been known to prevent farmers from getting back into the woods to gather more fuel.

Step 5 - Cutting Corners

Several points have already been established. Rye is more common than wheat. Barley is around in huge quantities. Game is considered a suitable alternative to livestock.

Furthermore, stews and soups work well in the cooler environment. They utilize the barley and other forms of cheap food to stretch the limited meat. The woods provide a skilled gatherer with mushrooms, berries and various other (more substantial) forms of forage. This is not only culturally acceptable, but it is seen as being enterprising and intelligent by the extremely practical Rhorics.

Step 6 - Middlemen

Rhum is a cross-road to other, larger cities. This means that thing pass through or at least by Rhum frequently and open the town up to a wide selection of products. Not only does the city serves as a huge marketplace, but small towns near it have formed marketplaces in order to compete with their giant neighbor.

Step 7 - Craftsmen

The guilds in Rhum control the craftsmen, but it is a major city. While most goods and services are available,

not even the guilds can completely keep competition from coming in. This keeps the costs reasonable, though in-line with the higher costs in a city as indicated throughout this book. For the normal levels of skill, everything remains in line with this book, but there are brewers and wood carvers of exceptional skill in the city who rightfully earn far more than the standard rates.

Step 8 - Textiles

Rhum is mainly about furs and wool. As mentioned, cattle are less common here, so leather is used more often for equipment and less often for clothing. As would be expected, buckskin and other game leathers are common alternatives. Linen, like leather, is more commonly used for stuff (tablecloths, sheets, draperies, etc.) than for clothing, and cotton is just too expensive and too far away to be of use. Silk is imported as a luxury items, but understandably will cost more.

Step 9 - Preservation

There are no natural salt sources in the immediate area, but there are salt mines to the north and sea salt from the east. So while salt is available, it is more expensive. Sugar beets do grow here, and this is the main source of sugar to the region, though it is considered to be of a lesser quality. Preserved vegetables are the most common pantry item, though they might be "canned", preserved in sugar, or pickled in vinegar. Cheese is also a good solid winter food.

Step 10 - Containers

The Rhoric beer industry requires a huge number of barrels, and there are barrel factories in Rhum that churn out large numbers of high quality barrels. Some of these used barrels find their way into the local homes, or "retired" factory workers will make extra money for themselves by crafting buckets and casks.

Rhoic clay is also considered some of the best pottery clay in the world and potters craft an unbelievable assortment of ceramics. Rhoric ceramics are better known for being sturdy than for being pretty, but both the ceramics and the skills are very common.

Step 11 - Mining

The Rhorics trade with the dwarves to the northwest and have access to some of the best metal goods in the world. Their own local industry has some copper and iron mining, but with the true masters nearby, it can be cheaper to import.

Step 12 - Magic

Rhum has access to the best of the world's enchantments and alchemicals, but typically on a non-military basis. Some of the best enchanted weapons in the world are crafted in Garnock, a city far to the south of Rhum and a historic enemy. Tariffs in Rhum outlaw the importation of weapons from Garnock, so any of these will require smuggling.

There are skilled enchanters and alchemists in Rhum and their non-violent products are available to any who can pay the price. Adventurers do tend to fence their goods in Rhum where such activities are more acceptable, so loot and plunder can help to fill the military piece of the action.

Step 13 - More

Rhum is the site of a university and several smaller schools of education. This allows book learning as well as the more practical skills learned for careers. Rhorics have an even more stoic work ethic than many other peoples. Because of this, they are quick to demonize merchants and other wealthy people who did not "earn" their wealth through hard work. They are a religious people and give to a number of religious charities.

The Economy of the Dharvic Culture

The Rhoric culture is so "normal" that we wanted to show you that things work for "exotic" cultures as well.

Preliminary

The Dharvic culture is based around the coastal city of Dalavar. It is loosely based on the fictional culture of the Arabian Knights stories. Though Dalavar has agriculture and ample water, surrounding the general area of this oasis city is one of the largest deserts in the world.

Step 1 - Bread

Bread is still the staple of life in Dalavar, but it is different bread than most are familiar with. Both corn and wheat grow near, but the crops are not as certain as they are in other regions. Hurricanes can crush them or sand storms can bury them. Because of this, the bread in Dalavar is made from a mixture of the two grains. This flat bread is not too dissimilar to a tortilla, only it will have more wheat or corn depending on which crop was more plentiful that year.

Step 2 - Food

Though bread is still the staple of life, couscous is served with most meals. Lamb and goats are raised in this region for dairy and meat, but not for wool, and in fact the native animals have very little wool. Eggplant is a very common side item. The outlying areas are known for growing a diverse series of spices. Dates and

almonds are common enough that the poor can afford them from time to time.

As an ocean port city, all manner of foods and goods are available in the city, but at a cost.

Step 3 - Land

Because of the desert, farmland is at a premium. People will not be able to go out and find a piece of land to farm. The nobles of the city control the farmland. They employ peasants and slaves to work their fields and often give these people very small parcels of land to farm for themselves (less than an acre). This is to allow the commoners something to supplement what they are paid, but this land is typically the worst farmland available. Irrigation is a huge issue, and there are craftsmen who specialize in keeping the fields wet.

Step 4 - Overhead

Buildings are common in the city, but outside the city in the farmland, there are typically only tents. Granaries are built of adobe, similar to long, low igloos. Slaves are often cheaper than draft animals and it is not uncommon to have slaves pulling plows and working the fields with hoes. Such slaves are considered cheap and are poorly cared for.

Step 5 - Cutting Corners

Fishing if one of the best ways to cut corners or supply more for the family. With such a huge gap between the haves and the have-nots, theft is not considered as immoral as it might be in some cultures. This does not mean it is not severely punished, just that it is not taken personally.

Step 6 - Middlemen

Merchant ships travel the ocean and camel caravans cross the desert. As previously mentioned, neither of these routes is all that safe due to the higher than normal crime rates, including pirates and bandits. Dalavar also serves as the main trade port for the Quassim Islands nearby, a small archipelago filled with primitive peoples who supply pearls, rice and slaves.

Merchants come in all sizes, from peddlers to nobles. The culture allows these merchants to trick their customers and outright lie when trying to make a sale. This dishonesty is considered part of the process, and anyone tricked is considered to have lacked the proper skills to defend themselves.

Step 7 - Craftsmen

The weavers of Dalavar are considered some of the best in the world. They deal mainly in silks, but also in some of the wool brought in from the hillier country surrounding the deserts. Dyers need to be able to bring something special to the table, and some of the dyes crafted in Dalavar are far beyond anything thought possible in other cultures.

Because the nobles are the dominant force in Dalavar, the craftsmen are free to work as they can. Dishonest workers who sell poorly crafted products serve to keep the public from being willing to pay too much for goods. Because of this artists are one of the best paid professions, because the quality of their product is obvious to the customer.

Step 8 - Textiles

As previously mentioned, silks and wild colors are available in Dalavar. The warm climate prevents any heavy clothing from being worn. In addition to the fantastically expensive fabrics made here, there are also some stranger textiles that can be common, such as camel hair and tanned fish hides (typically the largest ocean fish).

Step 9 - Preservation

Salt is available in large quantities and is not regulated by the nobles. (The ocean is not considered to be owned by the nobles and is thus open to any commoners.) Salted fish is one of the most common preserved foods. The lack of winter allows an extended growing season. Although the farmland does not produce as many crops, it can produce two harvests during the year.

Step 10 - Containers

The lack of wood in the region means that most containers are either pottery or baskets woven from palm fronds. There is a large glass making industry in the city that also provides containers, but any barrels would have been imported from somewhere else.

Step 11 - Mining

There is very little mining near the city of Dalavar. As previously mentioned, there are hills and mountains surrounding the deserts where some mining does take place. In addition the Tandish culture on the other side of the desert and the mountains (to the north) has vast mining industries and the two cultures trade by sea.

Step 12 - Magic

Dalavar is the seat of some of the most bizarre magical schools in the world. In this city, doing business with demons and spirits is considered normal business. Alchemy and other dark sciences abound, but always with the taint of something unearthly. This is not the realm of druids or other natural magics, but instead of

dark pacts and darker secrets. The incredible wealth of the nobles allows them to have magic to flaunt, including flying carpets, incredibly powerful magical protections and sorcerers for bodyguards.

Step 13 - More

Dalavar's slave trade is one of its most economical industries. Slavers raid the people of the Quassim Islands to the east and the Detheb people to the south. These slaves are sold to the Glodons farther to the south or to the peoples of the other continent.

Though Dalavar is a major sea port, it is to some degree the end of the world. Past the Quassim Islands to the east is a vast and uncrossed ocean. All trade is to the west, after first going north or south since Dalavar is roughly in the middle of the eastern coastline.

EXAMPLE FARM FAMILY

All this information needs to relate to something or it is useless. In order to relate it to something, we're going to try and show an average farm family and how they get by. Farmer Bob was a little too basic, so we're going to switch to Farmer Joe.

Farmer Joe lives in a temperate zone. Most of the grains grow well near him. Apples are very common. The growing season is sufficient, but early frosts have been known to greatly reduce harvests.

Farmer Joe has a wife, a son who helps him in the fields, a daughter who helps her mother around the house, and a mother-in-law who ~~just sits around and complains~~ helps out some. He has 30 acres. About a mile from his farm is a wooded area where they can go forage or even fish in the pond. Past the next farm is an open area where the local lord pastures his cattle. Farmer Joe and his neighbors are allowed to pasture their livestock here as well.

Let's start with the livestock. They keep six dairy goats. These goats produce enough milk to sustain the dairy requirement of the family. In order to do this, they will consume roughly 600 pounds of food each during the year. To feed them, Farmer Joe will grow a half acre of hay and a half acre of oats. Joe Jr. will also take them to the pasture from time to time to let them feed there as well. The farm's ox is the work engine of the entire farm, but it requires fuel too. Being twice the size of a beef steer, the ox eats twice as much. Farmer Joe will grow an acre of hay and an acre of oats just for the ox, though during the summer months when he is not pulling the plow, the ox should be able to graze in the pasture to supplement his feed.

Joe's wife Jolene likes chicken and makes a mean chicken soup, so they breed chickens as well. Just like our earlier example, Jolene can raise about 100 chickens and over 1,500 eggs on one acre's yield of corn. The family also raises pigs. They have two sows that produce eight piglets each year. Joe slaughters six of the pigs for the family and sells two. Joe actually uses a half acre to grow corn for the pigs, in addition to all the "left-overs" they eat. Assuming that each of the six dairy goats produces a kid every year, Joe can either slaughter the kids or sell them. The chickens, the pigs and the goats provide ample meat for the family through the year.

Joe needs to grow grains for the family too. Remember that half acre of corn for the pigs? The other half is for the family for corn meal. On top of this, he grows an acre of wheat for flour and an acre of barley for flour and for other cooking. These two and a half acres will get the family through a year, though they would probably prefer higher quality food.

In a similar fashion, the family has an acre of apple trees and an acre of cabbages. These two crops provide the basis for covering the family's fruits and vegetables, but this is really subsistence living. Up to this point, Joe has used only nine of his 30 acres. Joe lets ten of his acres go fallow every year, to let them recover from the previous crops. He also needs an acre for his home, his barn, his grain bins, etc.

To provide variety in her family's life, Jolene uses one acre for her garden. She grows onions, carrots, leeks, herbs, peppers, and other smaller crops to help the family avoid dull dinners. We're not going to assign any nutritional value to this area, but from a qualitative sense, it is vital!

So Joe has nine acres left to make his money. He works it like this: another acre of land is part of his apple orchard. He actually has two acres of trees, one for his family and one for sale. He has five more acres of wheat and an acre of rye. The acre of rye is intended for sale, but it also stands as a safety net. If something happens to his wheat, corn or barley crops, he hopes that the rye can be used to replace one of these crops and keep the family alive. With his last two acres, Farmer Joe plants an acre of hemp and an acre of winter squash and pumpkins. He will sell the long fiber hemp and most of the squashes, but keep the shorter fibers and a few of the squashes to offset the constant stench of cabbages in his home.

When Farmer Joe goes to market, he can sell two pigs, 6 kids, 65 gallons of sweet cider, 65 gallons of hard cider (he's been doing this for years, so the hard cider is actually last year's crop), 1,050 pounds of wheat flour (net of what he gave the miller), 308 pounds of rye flour (again net), 150 pounds of strong hemp thread (that mother-in-law had to be kept busy), and a mixed load of about 3,600 pounds of pumpkins and winter squash. The sum total for his farm's production, after he has already fed his family, is just over 1,500sc. If all you look at is this amount of money over the course of the year, it would look tragically small, but Farmer Joe's family ate meat most days, and had enough bread and grain to fill their stomachs.

We have not discussed taxes yet. Depending on the region, taxes could be as high as 25% of the person's income, but would probably fall around 15-20%. As discussed, income taxes are extremely tough to measure, especially on farmers. So here is how our sample noble lord is going to charge taxes:

14sc per acre of farmland - supposedly based on a 20% tax rate and every acre being worth about 100sc per year, but only used every two years.

15sc on every major building such as a barn or a house

5sc on every minor building (not to include tool sheds or outhouses)

Farmer Joe has 30 acres, a house, a barn, a grain bin, and a small building where he does his cider pressing and storing of the hard cider. All told, Joe owes 460sc in taxes. Let's assume that the market gives Joe a better return than the lord, so he sells his stuff and then gives the coins to the lord. This leaves Joe with about 1,000sc. For those of you who think Joe just got taxed at 30-40%, you are forgetting all the food his family ate. All that production was theoretically taxed as well. Under a tax system such as this where Joe will be taxed on his land whether it is growing something or not, it is understandable why he would want two acres of apple orchards, though not so clear why he would allow the fields to go fallow instead of trying for peas or something.

Let's not forget some of the other items that Joe has that have not yet been counted. Joe and Joe Jr. might go fishing and bring home dinner. Jolene and Jodi (the daughter) might forage in the woods for nuts and berries, while enjoying the shade of the trees. Grandma is back at the house spinning the 150 pounds of short hemp fiber and making clothing. She will also probably get some wool from the goats. Joe is slaughtering several pigs and possibly a kid or two - that is a good leather supply. Maybe Joe Jr. is good with a sling or bow and can take down some game while walking the goats and ox in the pasture land. Even a couple rabbits or a pheasant would make a nice addition to the table. Hidden out in the barley fields, Joe is probably growing some hops (or maybe Jolene has it in the herb garden). Joe is probably brewing some beer out of all that barley.

All told, we think Joe provides nicely for his family, though they live a relatively dull life. Chicken soup with barley, corn biscuits, bread, and cabbage make up the majority of what they eat. While it may be dull, they are far from starving. If the weather were to turn against them, the surplus wheat and rye would serve to hold the family through the difficult times, but they would have difficulty making the taxes. In the lean years, Joe probably has to sell all the cider instead of keeping some for next year's hard cider. The soft canvas probably is sold as well as the strong. The family probably lives more on cabbage and those chickens and pigs might be sold instead of eaten. Chances are they will be more dull and miserable, but they should survive.

Let's quickly look at one variation on this: a 20 acre farm. With almost everything staying the same, a farmer with 20 acres can still have 2 acres of corn, 1½ acres of hay, 1½ acres of oats, an acre of barley, 2 acres of apples, an acre for the garden and one for the house, an acre of hemp, an acre of squashes and an acre of cabbages. So far everything would be the same. With fewer acres, fewer would be left fallow, so now there are only 6 fallow acres. By dropping the wheat acres to the one needed for the family and eliminating the rye acre, we've reduced the farm to 20 acres without changing what the family produces for their own consumption. Of course, their income is reduced to around 900sc, of which 320sc is due in taxes, leaving less than 600sc for any expenses, maintenance or repairs needed. On top of this, if severe weather were to hit the region, the 20 acre farm family would be hard pressed to find enough to eat.

Costs of Food

Well if that's what an average farm family would be doing, what about other groups of people? We mentioned that a slave could be fed for a year for around 100sc. Here are two examples that should feed a slave for a year (keep alive and mostly healthy, but not really):

Example 1: 100lbs of potatoes, 180 pounds of corn, 450 pounds of cabbage, 50 pounds of apples, 500 pounds of pumpkins, 34 gallons of milk, 140 pounds of beans or peas, 35 pounds of peanuts. Cost: about 82sc. Uses about an acre of land, not including the milk. Issues: intentionally undercuts the "required" dairy.

Example 2: 200lbs of potatoes, 180 pounds of corn, 350 pounds of cabbage, 180 pounds of grapefruit, 180 pounds of lemons, 68 gallons of milk, 140 pounds of fish. Cost: about 100sc. Uses about half an acre of land, not including the milk or fish. Issues: "appropriate" amount of dairy, but fish must be provided.

These examples are provided as a means to show a bare minimum necessary for survival. You have to remember that even if this food is provided, someone has to prepare it. That means either giving the slaves enough time to make their own food or providing a mess hall of sorts that would feed them. We are not pretending that this is a balanced diet or that it would keep people healthy, only that it should be theoretically sufficient to sustain life, assuming that all these foods grew well in the same region.

Trying to upgrade the quality of food to what an adventurer might eat, we offer the following menu. This one day's worth of food meets the modern govemmental guidelines for how much an active person should eat, but do not take into account that the person might be a 275 pound warrior. Anyway, it still seems like a fair average day's food for an adventurer.

Morning Meal: cup of oatmeal (porridge), pint of milk, small hunk (? cup) cheddar cheese, small apple

Mid-Day Meal - beef stew (2oz beef, medium potato, ½ cup carrots), 2 squares of corn bread, small apple, pint of beer

Evening Meal - pork chop (5oz), half a ½pound loaf of bread, corn (cup), green beans (cup), zucchini (½ cup), plum, 2 pints of beer

Assuming the person were to buy all of these things from local, rural producers, the meals could cost as little as 5cc, 3½cc, and 7½cc. More likely, they were bought in an inn or restaurant in a city and would therefore cost about 8½sc or four times the inflated "in city" costs. That's pretty high, huh? That's what happens when you eat out every meal. Can't hurt to make something yourself at home, but then of course, you need to have a home.

FAQs

What most people don't know about most frequently asked question sections is that they are written long before any one actually sees the document. In other words, they are not frequently asked, but instead a catch all area for what the writers think you will not understand from the book. In the long tradition of such sections, we give you the FAQs:

So how do I start?

At Step 1.

No, really smart ass, how do I start?

You need to have some idea of your world. The world we typically use has a historical basis for most of the cultures (meaning they are based on something from the "real world"). While these do not answer all questions, they can be used as a go-to for anything that has not yet been developed.

One of the best things to do is to determine the weather. You don't have to figure out annual rainfall, just say, "This land has the same weather as Denver Colorado", or wherever. Of course, if it has the weather of a certain place, it should also have a similar terrain to that place. Don't put Denver's weather on a swampy coastal region.

Once you know what the weather is like, look up the place you made it similar to (in this case Colorado). You should have a pretty easy time figuring out what they grow in Colorado. Check out the state's department of agriculture or something along those lines. If you know what they grow, then you can determine what the food staple is and what needs to be brought in from afar. Simply knowing local crops vs. imports is enough to get the economy going.

I don't have a world. Where do I get one?

We think every game master needs to develop their own world. OK, having said that - go buy one at the hobby shop or from the pdf download dealer where you got this supplement. The thing is, some of the world's out there are probably far more detailed than you want to think about. If you're just starting there might be far more detail than you can wrap your arms around.

Feel free to use Fletnern. You can get details on it for free at:
http://www.boardenterprises.com/ fletnem.html

There is a basic outline there to give you a start. Now, you've got the write up on Rhum in the previous section and you have details on the world Rhum is in. Hopefully that is enough to get you going. If you want more, Board Enterprises sells city supplements detailing Rhum. This is not a shameless plug, OK, maybe it is.

This is way too much math. How am I supposed to know what stuff costs in each different spot?

Use a spreadsheet program. The charts in this book give you a good basis for prices. Once you've figured out what's local and what's imported, you can make a spreadsheet where the rows are items to buy and the columns are the different places to buy them. If you haven't fleshed out the shops and stores, this will serve as a good price list for the different regions.

I'm super smart and super advanced. So what do I do now?

You flesh out the shops and stores; didn't you read the last FAQ? Oh, you're super smart so you skimmed over that one.

By giving the shops and stores better descriptions, you can determine if their prices are "average" or not. Maybe one store really caters to the customers and gives great service. They will cost more than the run down shack where you have to kick the rats out of the way to get to the merchandise. That's the way of things. Remember that the prices listed here are averages. That means that there will be higher and lower examples.

How do I start - Short-cut method?

You want to play tonight and start using this wonderful new supplement, but how?

Print the price list sheets. At the top write the name of whatever town or city your player characters will be in during the next session (typically their home town). Go through with a highlight marker and mark each price that is appropriate. All the local goods would have the Cost at Local Marketplace price marked, with some of the crafts marked as Cost at Source. Anything that came in on a local caravan would have the Cost in a Nearby City price marked. Anything that needed to be imported from a distance (such as shipped from another continent) would be marked in the Cost at a Distant City column. This will also give you a chance to change any prices that are not appropriate for your city or cross out goods that simply would not be available.

But what about Farmer Brown? I must know how Farmer Brown and his family will survive the winter?

First off, sometimes people (like you) can take role-playing a little too far. You might need some counseling.

If you thought that was funny (in other words, you are not off seeking counseling), it might be fun to figure out what an average farmer would be like. This could help in case adventurers wind up meeting an average farmer or hiding in/being chased through his fields (you'd be all set). Maybe after you work your way through it you realize that something doesn't make sense and you can adjust for it. Maybe there isn't enough open space (wilderness) for livestock to forage and therefore the animals will need to be fed. This will vastly increase the cost of meat, and in turn, rapidly increase the cost of all food which will now be in higher demand.

What about inflation?

We didn't talk about inflation for a really good reason - it is too hard to track ever increasing prices in a game. The game is supposed to be fun for the game master too, but if you are building economic models to track inflationary pressures as they move through your fantasy world, well, seek counseling. It is the strong belief of the developers that inflation, deflation and debasement of the currency are simply too much economics to throw into a game. If as a game master you had to track this stuff, there would be no time to write or run adventures. As much as it might not make historic sense, ignore inflation.

In the example of a farm family, you give estimates on how much food the family needs during the year. Where did these estimates come from and how can I estimate how much food people eat?

We used the USDA's food pyramid as a guide. The new format tries to guide people as to how much they need to eat at different stages of life. As a guide, it seems pretty good.

You guys are brilliant! How do I get to be as smart as you?

Unfortunately, true brilliance is something you're either born with or you're not. Don't try for it. If you haven't shown it yet, maybe you're a gifted longshoreman. (Once again we would like to mention our deepest respect for all longshoremen, especially those who might know where we live.)

Why are you always making fun of longshoremen?

Two reasons - 1) We live in the middle of the country and do not expect that there are many longshoremen nearby, but there are teamsters. Therefore, if we made fun of teamsters, they might have a better chance of finding us. 2) Loading and offloading ships in this fantasy setting would have been extremely difficult work. It would have required great strength and stamina,

but little or no brain power. Obviously, today, such people drive complicated cranes and forklifts, but back then, there was no skill involved at all, other than bend at the knees. Thus, longshoremen are a great example of unskilled labor. 3) (So there's a 3; get over it big counting boy.) We think it's funny. You don't have to agree, but hopefully it helped to make this less of a text book, and a little easier to read.

I read all sorts of historic books and they tell me that the knights didn't have <blank>?

The assumption here is that foods such as potatoes, corn, etc that are native to "the New World" were not available to medieval peoples. That is 100% true, but fantasy worlds aren't "period". If you want to make your world, or some culture in it, completely ignorant of entire lines of crops, go right ahead, but there is no reason that a fantasy world would have isolated crops in the same way that Earth did. In theory, this would happen, but we're also assuming that global travel is possible in the same era as armored, horsed combat. That isn't true to Earth, at least not medieval Earth. Think outside the box a little, huh?

I have a question you did not answer here. What do I do now?

Write us an email at info@boardenterprises.com. We're actually pretty nice about replying to emails, though don't expect a two-hour turnaround.

CHARTS

Agriculture - Crops

pounds per acre	Type	Seed	Gross Yield	Net Yield	Price sc/lb	sc per acre gross
Almonds (in shell)	Or	perenial	500	500	0.250	125
Anise	Gr	8	100	92	2.000	184
Apples	Or	perenial	1,920	1,920	0.075	144
Bananas	Or	perenial	800	800	0.200	160
Barley	Gr	144	672	528	0.275	145
Beans-Fava	Bs	150	400	250	0.175	44
Beans-Lima	Bs	100	400	300	0.175	53
Beets	Rt	100	2,000	1,900	0.070	133
Cabbage	Lf	minimal	6,000	6,000	0.025	150
Carrots	Rt	250	2,000	1,750	0.075	131
Cherries (sweet)	Or	perenial	1,000	1,000	0.150	150
Chestnuts	Or	perenial	300	300	0.250	75
Cinnamon	Or	perenial	80	80	3.000	240
Corn (shelled)	Gr	112	1,680	1,568	0.075	118
Cotton	Fb	minimal	145	145	2.250	326
Figs	Or	perenial	500	500	0.200	100
Flax Fiber	Fb	minimal	200	200	1.200	240
Flaxseed	Gr	40	180	140	0.400	56
Garlic	Rt	500	2,000	1,500	0.150	225
Ginger	Rt	300	3,000	2,700	1.500	4,050
Grapefruit	Or	perenial	2,500	2,500	0.075	188
Grapes	Or	perenial	1,200	1,200	0.150	180
Hay-planted	Gr	minimal	4,000	4,000	0.013	50
Hay-wild	Gr	-	2,000	2,000	0.013	25
Hazelnuts (in shell)	Or	perenial	265	265	0.095	25
Hemp	Fb	minimal	300	300	0.833	250
Hemp Seed	Gr	50	100	50	0.450	23
Horseradish	Rt	100	1,200	1,100	0.100	110
Lemons	Or	perenial	3,000	3,000	0.075	225
Lettuce	Lf	minimal	2,000	2,000	0.030	60
Limes	Or	perenial	1,500	1,500	0.075	113
Mustard, white	Gr	6	200	194	0.500	97
Oats	Gr	112	352	240	0.200	48
Olives	Or	perenial	1,400	1,400	0.090	126
Onion	Rt	minimal	5,000	5,000	0.040	200
Orange	Or	perenial	2,000	2,000	0.075	150
Peaches	Or	perenial	900	900	0.150	135
Peanut	Rt	150	450	300	0.125	38
Pears	Or	perenial	1,850	1,850	0.075	139
Peas	Bs	90	300	210	0.175	37
Pepper, black	Or	perenial	900	900	6.000	5,400
Pistachios	Or	perenial	330	330	0.300	99
Plums	Or	perenial	800	800	0.150	120
Potatoes	Rt	1,000	2,750	1,750	0.080	140
Pumpkin	Sq	minimal	5,000	5,000	0.025	125
Rice	Gr	100	1,100	1,000	0.120	120
Rye	Gr	168	784	616	0.175	108
Saffron	Lf	minimal	1	1	160.00	160
Sugarbeets	Rt	minimal	4,000	4,000	0.030	120
Sugarcane	Fb	perenial	8,000	8,000	0.015	120
Summer Squash	Sq	minimal	1,000	1,000	0.100	100
Sunflower Seed	Gr	5	260	255	0.200	51
Sweet Potatoes	Rt	400	2,500	2,100	0.070	147
Tobacco	Lf	minimal	425	425	0.250	106
Tomatoes	Bs	minimal	500	500	0.150	75
Turnips	Rt	minimal	4,000	1,250	0.100	125
Walnuts (in shell)	Or	perenial	475	475	0.050	24
Watermelons	Sq	minimal	8,000	8,000	0.020	160
Wheat	Gr	120	480	360	0.300	108
Winter Squash	Sq	minimal	3,000	3,000	0.035	105

Type Legend

Bs	Bush
Fb	Fiber
Gr	Grain
Lf	Leaf
Or	Orchard
Rt	Root
Sq	Squash

Agricultural Processing

	Net Farming Yield	Lost in Reduction	Net Production
Almonds to Almond Meat	500	50%	250
Almond Meats to Almond Oil	250	54%	115
Banana to Peeled Banana	800	50%	400
Barley to Flour	528	30%	370
Cherries to Pitted Cherries	1,000	18%	820
Chestnuts to Chestnut Meat	300	16%	252
Corn to Meal	1,288	50%	644
Cotton to Cotton Fiber	145	10%	131
Figs to Dried Figs	500	75%	125
Flaxseed to Linseed Oil	140	70%	42
Grapes to Raisins	1,200	78%	264
Hazelnuts to Hazelnut Meats	265	67%	87
Hemp Seeds to Hemp Oil	50	75%	13
Oats to Meal	240	30%	168
Pistachio to Pistachio Meat	330	45%	182
Plums to Prunes	800	75%	200
Rice to Brown Rice	1,000	25%	750
Rice to White Rice	1,000	35%	650
Rice to Rice Flour	1,000	40%	600
Rye to Flour	616	40%	370
Shelled Peanuts to Unshelled	300	35%	195
Sugar Beets to Raw Sugar	4,000	92%	320
Sugar Cane to Raw Sugar	8,000	95%	400
Raw Sugar to Refined Sugar	400	10%	360
Sunflower Seeds to Hearts	255	65%	89
Sunflower Hearts to Oil	89	60%	36
Tobacco to Chewing Tobacco	425	75%	106
Tobacco to Smoking Tobacco	425	80%	85
Walnuts to Walnut Meats	475	90%	48
Wheat to Flour	360	30%	252

Production Examples

	Raw Material	Cost (sc)		Produces		Value
1 lb.	Wheat flour	0.500	=	Bread	2 Loaves (8 oz.)	1.000
1 lb.	Barley	0.275	=	Beer	8 pt.	0.800
1 lb.	Oatmeal	0.325	=	Porridge	10 Bowls (½ cup)	0.650
1 bu.	Apples	3.600	=	Cider	3.25 gal.	6.500
1 bu.	Apples	3.600	=	Applesauce	25 qt.	7.000
1 bu.	Apples	3.600	=	Apples	144 medium	3.600
1 bu.	Grapes	7.200	=	Wine	4 gal.	21.600
4 gal.	Milk	0.400	=	Cheese	1 lb.	1.200
40 lb.	Olives	3.600	=	Olive oil	1 gal.	7.000
1 gal.	Milk	0.100	=	Cream	8 oz.	0.150
8 oz.	Cream	0.150	=	Butter	4 oz.	0.300

Salaries

Occupation	Category	sc p/ day
Alchemist	Magic	150
Apprentice	Smith	5
Armorer	Smith	14
Armorer - Leather	Leather Worker	12
Armorer (Master)	Smith	25
Baker-Bread	Cook	8
Barber	Service	10
Basket Maker	Carpenter	8
Basketweaver	Tailor	7
Blacksmith	Smith	11
Bookbinder	Scholar	7
Bowyer	Carpenter	12
Brewer	Cook	8
Brewmeister	Cook	16
Brick Maker	Potter	7
Buckle Maker	Smith	9
Candle Maker (Chandler)	Specialized	9
Carpenter	Carpenter	11
Carriage Driver	Laborer	8
Chemist	Specialized	15
Child's Governness	Service	7
Cobbler	Leather Worker	10
Cooper	Carpenter	11
Cotton Picker	Tailor	4
Cutler (Knife Maker)	Smith	11
Distiller	Cook	14
Doctor	Service	18
Enchanter	Magic	300
Farrier	Smith	10
Fletcher	Carpenter	10
Furniture Maker	Carpenter	11
Furrier	Leather Worker	14
Glass Blower	Specialized	12
Goldsmith	Smith	14
Instrument Maker	Carpenter	12
Jeweler	Smith	16
Locksmith	Smith	14
Lumberjack	Laborer	6
Mason	Potter	11
Miner	Laborer	7

Occupation	Category	sc p/ day
Painter-House	Service	8
Painter-Portrait	Service	15
Paper Maker	Scholar	8
Pastry Chef	Cook	12
Perfumer	Cook	18
Porter	Laborer	6
Potter	Potter	9
Prostitute (Brothel)	Service	12
Prostitute (Streetwalker)	Service	6
Purse Maker	Leather Worker	9
Rope Maker	Tailor	8
Rug Maker	Tailor	8
Saddle Maker	Leather Worker	12
Sage (Researcher)	Scholar	10
Sailor	Laborer	8
Scabbard Maker	Leather Worker	9
Scribe	Scholar	9
Sculpter	Potter	13
Sentry	Soldier	10
Ship Builder	Carpenter	9
Ship's Captain	Specialized	50
Ship's Officer	Specialized	24
Silversmith	Smith	12
Skinner	Leather Worker	7
Soapmaker	Specialized	9
Tailor	Tailor	10
Tanner	Leather Worker	9
Teacher	Service	8
Teamster	Laborer	7
Tinker	Smith	9
Tool Maker	Smith	11
Toymaker	Carpenter	10
Vintner	Cook	9
Wagon Driver	Laborer	7
Weaponsmith	Smith	12
Weaponsmith (Master)	Smith	15
Weaver	Tailor	8
Wet Nurse	Service	6
Wheelwright	Carpenter	11
Woodcarver (Artistic)	Carpenter	14

MASTER PRICE LIST

	Class	Com.	Cost at the Source (sc)	Cost at Local Marketplace (sc)	Cost in a Nearby City (sc)	Cost at a Distant City (sc)
Belt, leather, with iron buckle	Clothing		1.00	1.50	3.00	6.00
Boots, leather, ankle-high, brown	Clothing		10.00	15.00	30.00	60.00
Boots, leather, thigh-high, brown	Clothing		12.00	18.00	36.00	72.00
Breeches, good linen, fine	Clothing		15.00	22.50	45.00	90.00
Breeches, good linen, light, fine	Clothing		12.00	18.00	36.00	72.00
Breeches, silk, fine	Clothing		90.00	135.00	270.00	540.00
Breeches, thick cotton, fine	Clothing		17.50	26.25	52.50	105.00
Breeches, thin cotton, fine	Clothing		15.00	22.50	45.00	90.00
Breeches, wool, fine	Clothing		13.00	19.50	39.00	78.00
Button, ivory	Clothing		6.00	9.00	18.00	36.00
Button, wood	Clothing		0.35	0.53	1.05	2.10
Chain mail, full suit	Clothing		275.00	412.50	825.00	1,650.00
Coat (great), good linen, fine	Clothing		38.00	57.00	114.00	228.00
Coat (great), good linen, light, fine	Clothing		30.00	45.00	90.00	180.00
Coat (great), heavy wool, fine	Clothing		40.00	60.00	120.00	240.00
Coat (great), thick cotton, fine	Clothing		45.00	67.50	135.00	270.00
Coat (great), thin cotton, fine	Clothing		38.00	57.00	114.00	228.00
Coat (great), wool, fine	Clothing		32.00	48.00	96.00	192.00
Coat, beaver fur	Clothing		90.00	135.00	270.00	540.00
Coat, buckskin	Clothing		50.00	75.00	150.00	300.00
Coat, fox fur	Clothing		150.00	225.00	450.00	900.00
Coat, leather (steer), black	Clothing		50.00	75.00	150.00	300.00
Coat, leather (steer), natural color	Clothing	c	45.00	59.85	119.70	239.40
Coat, lynx fur	Clothing		180.00	270.00	540.00	1,080.00
Coat, rabbit fur	Clothing	c	58.00	77.14	154.28	308.56
Coat, skunk fur	Clothing		110.00	165.00	330.00	660.00
Collar, dog, with iron buckle	Clothing		0.80	1.20	2.40	4.80
Dress, simple, good linen, fine	Clothing		22.00	33.00	66.00	132.00
Dress, simple, good linen, light, fine	Clothing		18.00	27.00	54.00	108.00
Dress, simple, silk, fine	Clothing		150.00	225.00	450.00	900.00
Dress, simple, thick cotton, fine	Clothing		27.00	40.50	81.00	162.00
Dress, simple, thin cotton, fine	Clothing		22.00	33.00	66.00	132.00
Dress, simple, wool, fine	Clothing		20.00	30.00	60.00	120.00
Gloves, wool, knit	Clothing		5.00	7.50	15.00	30.00
Handkerchief, good linen, 1'sq.	Clothing		0.70	1.05	2.10	4.20
Handkerchief, soft light canvas, 1'sq.	Clothing		0.50	0.75	1.50	3.00
Hat, beaver fur	Clothing		9.00	13.50	27.00	54.00
Hat, rabbit fur	Clothing		6.00	9.00	18.00	36.00
Hat, very large, beaver fur	Clothing		15.00	22.50	45.00	90.00
Hat, very large, rabbit fur	Clothing		14.00	21.00	42.00	84.00
Hat, very large, skunk fur	Clothing		20.00	30.00	60.00	120.00
Hat, wool, knit, simple, 3 color	Clothing		4.00	6.00	12.00	24.00
Horse shoe, lesser steel	Clothing		3.00	4.50	9.00	18.00
Horse shoe, steel	Clothing		5.00	7.50	15.00	30.00
Jacket, beaver fur	Clothing		45.00	67.50	135.00	270.00
Jacket, buckskin	Clothing		32.00	48.00	96.00	192.00
Jacket, fox fur	Clothing		38.00	57.00	114.00	228.00
Jacket, leather (steer), black	Clothing		37.00	55.50	111.00	222.00
Jacket, leather (steer), natural color	Clothing	c	33.00	43.89	87.78	175.56
Jacket, lynx fur	Clothing		120.00	180.00	360.00	720.00
Jacket, rabbit fur	Clothing		100.00	150.00	300.00	600.00
Jacket, skunk fur	Clothing		70.00	105.00	210.00	420.00
Jacket, wolf fur	Clothing		75.00	112.50	225.00	450.00

	Class	Com.	Cost at the Source (sc)	Cost at Local Marketplace (sc)	Cost in a Nearby City (sc)	Cost at a Distant City (sc)
Kilt, wool	Clothing		18.00	27.00	54.00	108.00
Leather armor, full suit	Clothing		80.00	120.00	240.00	480.00
Leather armor, with metal studs, full suit	Clothing		105.00	157.50	315.00	630.00
Mittens, wool, knit	Clothing		2.00	3.00	6.00	12.00
Napkin, good linen, 1'sq.	Clothing		0.70	1.05	2.10	4.20
Plate mail, full suit	Clothing		850.00	1,275.00	2,550.00	5,100.00
Saddle	Clothing		75.00	112.50	225.00	450.00
Saddle, fancy	Clothing		150.00	225.00	450.00	900.00
Sandals, leather, natural color	Clothing		4.00	6.00	12.00	24.00
Scarf, gauze silk, 4'	Clothing		13.50	20.25	40.50	81.00
Scarf, silk, 4'	Clothing		17.50	26.25	52.50	105.00
Scarf, wool, knit	Clothing	c	5.50	7.32	14.63	29.26
Shield, medium, steel	Clothing		60.00	90.00	180.00	360.00
Shield, small, steel	Clothing		30.00	45.00	90.00	180.00
Shield, small, wooden with iron rim	Clothing		25.00	37.50	75.00	150.00
Shirt, good linen, fine	Clothing		15.00	22.50	45.00	90.00
Shirt, good linen, light, fine	Clothing		12.50	18.75	37.50	75.00
Shirt, silk, fine	Clothing		100.00	150.00	300.00	600.00
Shirt, thick cotton, fine	Clothing		18.00	27.00	54.00	108.00
Shirt, thin cotton, fine	Clothing		15.00	22.50	45.00	90.00
Shirt, wool, fine	Clothing		13.00	19.50	39.00	78.00
Shoes, leather, black	Clothing		7.00	10.50	21.00	42.00
Socks, wool, knit, thick	Clothing	c	2.50	3.33	6.65	13.30
Socks, wool, knit, thin	Clothing	c	1.20	1.60	3.19	6.38
Staff, walking, plain	Clothing	c	2.00	2.66	5.32	10.64
Sweater, heavy wool	Clothing	c	16.00	21.28	42.56	85.12
Sweater, winter wool	Clothing	c	24.00	31.92	63.84	127.68
Sweater, wool	Clothing	vc	12.00	14.70	29.40	58.80
Vest, good linen, fine	Clothing		10.00	15.00	30.00	60.00
Vest, silk, fine	Clothing		70.00	105.00	210.00	420.00
Vest, thick cotton, fine	Clothing		12.00	18.00	36.00	72.00
Vest, wool, fine	Clothing		9.00	13.50	27.00	54.00
Backpack, leather, ~1.25cu.ft.	Container		10.00	15.00	30.00	60.00
Backpack, leather, ~1.25cu.ft., halfling straps	Container		9.50	14.25	28.50	57.00
Backpack, leather, ~3.5cu.ft.	Container		15.00	22.50	45.00	90.00
Backpack, oiled leather, ~1.25cu.ft.	Container		11.00	16.50	33.00	66.00
Backpack, suede, cylindrical, ~2cu.ft.	Container		9.00	13.50	27.00	54.00
Bag, buckskin, simple (1? cu.ft.)	Container		6.50	9.75	19.50	39.00
Bag, duffle, buckskin, ogre straps (~3.5 cu.ft.)	Container		11.00	16.50	33.00	66.00
Bag, strong canvas, simple (1? cu.ft.)	Container		5.00	7.50	15.00	30.00
Barrel, 15 gallon, cedar, water tight	Container		10.00	15.00	30.00	60.00
Barrel, 15 gallon, oak, water tight	Container		10.00	15.00	30.00	60.00
Barrel, 15 gallon, pine, water tight	Container		9.00	13.50	27.00	54.00
Barrel, 20 gallon, oak, water tight	Container		11.00	16.50	33.00	66.00
Barrel, 32 gallon, oak, water tight	Container		14.00	21.00	42.00	84.00
Basket, ash, wicker, 9"dx10"h	Container		4.00	6.00	12.00	24.00
Basket, ash, wicker, water tight gum, 9"dx10"h	Container		7.00	10.50	21.00	42.00
Basket, bamboo, plaited, 12"dx15"h	Container		10.00	15.00	30.00	60.00
Basket, oak, plaited, 2 handles, 15"dx12"h (bushel)	Container		7.00	10.50	21.00	42.00
Basket, straw, plaited, 6"dx6"h	Container		2.00	3.00	6.00	12.00
Basket, willow, wicker, 24"x15"x2"h	Container		6.00	9.00	18.00	36.00
Basket, willow, wicker, handle, 15"x8"x6"h	Container		5.00	7.50	15.00	30.00
Basket, wool, coiled, 10"dx18"h w/ lid	Container		30.00	45.00	90.00	180.00
Basket, wool, coiled, 6"dx6"h	Container		10.00	15.00	30.00	60.00
Bottle, clear glass, quart	Container		0.80	1.20	2.40	4.80
Bottle, green glass, quart	Container		0.40	0.60	1.20	2.40
Bucket, 2 gallon, pine, hemp handle	Container		3.00	4.50	9.00	18.00
Canteen, wooden with cork stopper (quart)	Container		2.00	3.00	6.00	12.00

	Class	Com.	Cost at the Source (sc)	Cost at Local Marketplace (sc)	Cost in a Nearby City (sc)	Cost at a Distant City (sc)
Cart, donkey/pony, wooden	Container		40.00	60.00	120.00	240.00
Cart, push, wooden, one-axle, small	Container		25.00	37.50	75.00	150.00
Cask, 2 gallon, oak, water tight	Container		6.00	9.00	18.00	36.00
Coin purse, canvas, drawstring, 3"x4"	Container		0.35	0.53	1.05	2.10
Coin purse, suede, drawstring, 3"x4"	Container		0.40	0.60	1.20	2.40
Flask, green glass, pint	Container		0.70	1.05	2.10	4.20
Jug, stoneware, 1 gal.	Container		4.00	6.00	12.00	24.00
Keg, 15 gallon, pine (not water tight)	Container		4.00	6.00	12.00	24.00
Pot, earthenware, 1gal.	Container		1.25	1.88	3.75	7.50
Pot, porcelain, 1gal.	Container		3.00	4.50	9.00	18.00
Pot, stoneware, 1gal.	Container		2.50	3.75	7.50	15.00
Pouch, belt, rabbit (6"x4"x3")	Container		1.20	1.80	3.60	7.20
Pouch, belt, soft canvas (4"x3"x2")	Container		0.50	0.75	1.50	3.00
Purse, coin, leather, cheap	Container		0.40	0.60	1.20	2.40
Quiver, leather, 10 arrows, 20" tall	Container		2.50	3.75	7.50	15.00
Sack, leather, simple (~1 cu.ft.)	Container		5.00	7.50	15.00	30.00
Saddlebags, leather	Container		10.00	15.00	30.00	60.00
Scabbard, long sword, leather	Container		5.00	7.50	15.00	30.00
Scroll case, wood	Container		6.00	9.00	18.00	36.00
Sheathe, dagger, leather	Container		2.50	3.75	7.50	15.00
Ship, merchant, ocean going	Container		75,000.00	112,500.00	225,000.00	450,000.00
Wagon, cargo	Container		1,200.00	1,800.00	3,600.00	7,200.00
Waterskin, leather, gallon	Container		5.00	7.50	15.00	30.00
Waterskin, leather, half gallon	Container		3.00	4.50	9.00	18.00
Chicken, broiler (4lbs.)	Creature		0.55	0.83	1.65	3.30
Dog, attack/war, trained	Creature		65.00	97.50	195.00	390.00
Dog, hunting, trained	Creature		35.00	52.50	105.00	210.00
Donkey	Creature		70.00	105.00	210.00	420.00
Goat, meat (40lbs.)	Creature		5.00	7.50	15.00	30.00
Hog, pork (200lbs.)	Creature	vc	10.00	12.25	24.50	49.00
Horse, average	Creature		100.00	150.00	300.00	600.00
Horse, war	Creature		250.00	375.00	750.00	1,500.00
Lamb, meat (50lbs.)	Creature		7.00	10.50	21.00	42.00
Lobster, live (1lb.)	Creature		0.10	0.15	0.30	0.60
Mule	Creature		90.00	135.00	270.00	540.00
Ox	Creature	c	120.00	159.60	319.20	638.40
Pony	Creature		75.00	112.50	225.00	450.00
Rabbit	Creature	vc	1.00	1.23	2.45	4.90
Steer, beef (600lbs.)	Creature	c	60.00	79.80	159.60	319.20
Ale (gallon)	Food	c	0.80	1.06	2.13	4.26
Almonds (pound meat)	Food		0.50	0.75	1.50	3.00
Aniseed (pound)	Food		2.00	3.00	6.00	12.00
Applejack (pint)	Food		2.00	3.00	6.00	12.00
Apples (bushel)	Food	vc	3.60	4.41	8.82	17.64
Apples (pound)	Food	vc	0.08	0.09	0.18	0.37
Beef (pound)	Food	c	0.50	0.67	1.33	2.66
Beef, corned (pound)	Food	c	1.25	1.66	3.33	6.65
Beef, salted (pound)	Food	c	2.00	2.66	5.32	10.64
Beef, sausage (pound)	Food	c	0.50	0.67	1.33	2.66
Beef, sausage, dried (pound)	Food	c	1.00	1.33	2.66	5.32
Beef, sausage, pickled (pound)	Food	c	1.25	1.66	3.33	6.65
Beef, sausage, smoked (pound)	Food	c	1.00	1.33	2.66	5.32
Beer (gallon)	Food	c	0.80	1.06	2.13	4.26
Beer, seasonal (gallon)	Food		1.40	2.10	4.20	8.40
Beets, pickled (pound)	Food		2.00	3.00	6.00	12.00
Biscuit, hardtack (3oz.)	Food		0.20	0.30	0.60	1.20
Bread, rye (8 oz.)	Food	vc	0.44	0.54	1.08	2.16
Bread, wheat (8 oz.)	Food	vc	0.50	0.61	1.23	2.45
Butter, salted (pound)	Food		1.20	1.80	3.60	7.20

	Class	Com.	Cost at the Source (sc)	Cost at Local Marketplace (sc)	Cost in a Nearby City (sc)	Cost at a Distant City (sc)
Cheese (pound)	Food	vc	1.20	1.47	2.94	5.88
Chestnuts (pound meat)	Food	c	0.30	0.40	0.80	1.60
Chestnuts (pound meat)	Food		0.30	0.45	0.90	1.80
Chevon (pound)	Food		0.45	0.68	1.35	2.70
Chicken (pound)	Food	vc	0.25	0.31	0.61	1.23
Cider, hard (gallon)	Food	c	3.20	4.26	8.51	17.02
Cider, sweet (gallon)	Food	c	2.00	2.66	5.32	10.64
Cinnamon (pound)	Food		4.00	6.00	12.00	24.00
Clams, gross, in shell (8 pounds)	Food		0.40	0.60	1.20	2.40
Clams, in shell (pound)	Food		0.05	0.08	0.15	0.30
Cloves (pound)	Food		5.00	7.50	15.00	30.00
Corn meal (pound)	Food	vc	0.18	0.22	0.44	0.88
Corn, feed (bushel)	Food	vc	4.20	5.15	10.29	20.58
Corn, feed (pound)	Food	vc	0.08	0.09	0.18	0.37
Duck meat (pound)	Food	c	0.25	0.33	0.67	1.33
Egg, chicken	Food	c	0.05	0.07	0.13	
Figs, dried (pound)	Food	c	0.80	1.06	2.13	4.26
Fish, fresh, whole (five pounds)	Food	c	1.00	1.33	2.66	
Fish, fresh, whole (pound)	Food	c	0.20	0.27	0.53	
Fish, salted (pound)	Food	c	0.80	1.06	2.13	4.26
Flour, rye (pound)	Food	vc	0.35	0.43	0.86	1.72
Flour, wheat (pound)	Food	vc	0.50	0.61	1.23	2.45
Ginger (pound)	Food		1.50	2.25	4.50	9.00
Goose meat (pound)	Food	c	0.25	0.33	0.67	1.33
Grain, barley (10 pounds)	Food	vc	2.75	3.37	6.74	13.48
Grain, wheat (pound)	Food	vc	0.30	0.37	0.74	1.47
Grapes (bushel)	Food	c	7.20	9.58	19.15	38.30
Grapes (pound)	Food	c	0.15	0.20	0.40	0.80
Ham, sugar cured (12 pound)	Food		12.50	18.75	37.50	75.00
Hay (ton)	Food	vc	25.00	30.63	61.25	
Hazelnuts (pound meat)	Food	c	0.30	0.40	0.80	1.60
Honey (8oz.)	Food		1.00	1.50	3.00	6.00
Jam, fruit (pound)	Food	c	1.50	2.00	3.99	7.98
Lemon essence (ounce)	Food		15.00	22.50	45.00	90.00
Lemon juice (gallon)	Food		4.00	6.00	12.00	24.00
Mace (pound)	Food		5.00	7.50	15.00	30.00
Milk (gallon-in season)	Food	vc	0.10	0.12	0.25	
Milk (gallon-out of season)	Food	c	0.30	0.40	0.80	
Molasses, black strap (gal)	Food		6.00	9.00	18.00	36.00
Molasses, sweet (gal)	Food		4.00	6.00	12.00	24.00
Mustard, condiment (pound)	Food		1.00	1.50	3.00	6.00
Mustard, seed (pound)	Food		0.50	0.75	1.50	3.00
Mutton (pound)	Food		0.40	0.60	1.20	2.40
Nutmeg (pound)	Food		2.50	3.75	7.50	15.00
Oatmeal (pound)	Food	vc	0.33	0.40	0.81	1.62
Oats (pound)	Food	vc	0.20	0.25	0.49	0.98
Oil, olive (gallon)	Food		7.00	10.50	21.00	42.00
Olives, pickled (pound)	Food		6.00	9.00	18.00	36.00
Pectin (cup)	Food		0.20	0.30	0.60	1.20
Pepper, black (pound)	Food		6.00	9.00	18.00	36.00
Pickles, malt vinegar (pound)	Food		2.00	3.00	6.00	12.00
Pickles, wine vinegar (pound)	Food		5.00	7.50	15.00	30.00
Pork (pound)	Food	vc	0.25	0.31	0.61	1.23
Pork sausage (pound)	Food	vc	0.25	0.31	0.61	1.23
Pork sausage, dried (pound)	Food	vc	0.50	0.61	1.23	2.45
Pork sausage, pickled (pound)	Food	vc	0.65	0.80	1.59	3.19
Pork sausage, smoked (pound)	Food	vc	0.50	0.61	1.23	2.45
Pork, salted (pound)	Food	vc	1.00	1.23	2.45	4.90
Rabbit carcass	Food	vc	0.50	0.61	1.23	2.45

	Class	Com.	Cost at the Source (sc)	Cost at Local Marketplace (sc)	Cost in a Nearby City (sc)	Cost at a Distant City (sc)
Raisins (pound)	Food		0.70	1.05	2.10	4.20
Ration, dairy cow, hay, daily (18lbs.)	Food	vc	0.23	0.28	0.55	1.10
Ration, horse, oats/hay, daily (20lbs.)	Food	vc	2.00	2.45	4.90	9.80
Ration, ox, hay, daily (36lbs.)	Food	vc	0.45	0.55	1.10	2.21
Ration, sow, corn, daily (6lbs.)	Food	vc	0.45	0.55	1.10	2.21
Ration, warhorse, oats/hay, daily (25lbs.)	Food	vc	3.00	3.68	7.35	14.70
Rations, person, day (hardtack, salt pork++)	Food		2.50	3.75	7.50	15.00
Rum, fine (gal)	Food		24.00	36.00	72.00	144.00
Rum, poor (gal)	Food		15.00	22.50	45.00	90.00
Salt, rock (pound)	Food		0.25	0.38	0.75	1.50
Salt, rock, refined (pound)	Food		0.50	0.75	1.50	3.00
Salt, sea (pound)	Food		0.20	0.30	0.60	1.20
Salt, sea, refined (pound)	Food		0.45	0.68	1.35	2.70
Salt, spring (pound)	Food		0.50	0.75	1.50	3.00
Shrimp, whole raw (pound)	Food		0.08	0.12	0.24	
Strawberry jam (pound)	Food	c	1.50	2.00	3.99	7.98
Sugar (pound)	Food		1.00	1.50	3.00	6.00
Sugar, refined (pound)	Food		1.50	2.25	4.50	9.00
Turkey (pound)	Food		0.25	0.38	0.75	1.50
Venison (pound)	Food		0.30	0.45	0.90	1.80
Venison sausage (pound)	Food		0.30	0.45	0.90	1.80
Venison sausage, dried (pound)	Food		0.60	0.90	1.80	3.60
Venison sausage, smoked (pound)	Food		0.60	0.90	1.80	3.60
Vinegar, cider (gal)	Food		3.50	5.25	10.50	21.00
Vinegar, malt (gal)	Food		0.88	1.32	2.64	5.28
Vinegar, white wine (gal)	Food		6.00	9.00	18.00	36.00
Walnuts (pound meat)	Food	c	0.50	0.67	1.33	2.66
Wine (gallon)	Food	c	5.40	7.18	14.36	28.73
Bed, queen, sleigh	Furnishing		60.00	90.00	180.00	360.00
Blanket, wool, 3'x4'	Furnishing		5.00	7.50	15.00	30.00
Bookshelf (80"x34"x10" deep)	Furnishing		70.00	105.00	210.00	420.00
Bowl, shallow, earthenware, 6"d	Furnishing		0.25	0.38	0.75	1.50
Bowl, shallow, porcelain, 6"d	Furnishing		0.60	0.90	1.80	3.60
Bowl, shallow, stoneware, 6"d	Furnishing		0.50	0.75	1.50	3.00
Brush, hair, wood with boar bristles	Furnishing		12.00	18.00	36.00	72.00
Brush, hair, wood with wood teeth	Furnishing		4.50	6.75	13.50	27.00
Caldron w/ lid, cast iron, 2 gal. (20lb.)	Furnishing		34.00	51.00	102.00	204.00
Caldron w/ lid, cast iron, 4 gal. (40lb.)	Furnishing		55.00	82.50	165.00	330.00
Candle, bayberry wax, 6" taper (4oz.)	Furnishing		0.10	0.15	0.30	0.60
Candle, beeswax, 6" taper (4oz.)	Furnishing		0.12	0.18	0.36	0.72
Candle, tallow, 6" taper (4oz.)	Furnishing		0.06	0.09	0.18	0.36
Chair	Furnishing	c	35.00	46.55	93.10	186.20
Chair (rough)	Furnishing	c	13.00	17.29	34.58	69.16
Chess set, wooden, inlaid board	Furnishing		50.00	75.00	150.00	300.00
Comb, hair, wooden	Furnishing		1.50	2.25	4.50	9.00
Comforter, lt. linen (farm), down (3.5'x6')	Furnishing		28.00	42.00	84.00	168.00
Comforter, lt. linen (farm), feather (3.5'x6')	Furnishing		25.00	37.50	75.00	150.00
Comforter, lt. linen (farm), hvy. down (3.5'x6')	Furnishing		34.00	51.00	102.00	204.00
Comforter, lt. linen (farm), hvy. feather (3.5'x6')	Furnishing		28.00	42.00	84.00	168.00
Comforter, lt. linen (good), down (3.5'x6')	Furnishing		34.00	51.00	102.00	204.00
Comforter, lt. linen (good), feather (3.5'x6')	Furnishing		30.00	45.00	90.00	180.00
Comforter, lt. linen (good), hvy. down (3.5'x6')	Furnishing		40.00	60.00	120.00	240.00
Comforter, lt. linen (good), hvy. feather (3.5'x6')	Furnishing		34.00	51.00	102.00	204.00
Cup, copper (hammered)	Furnishing		0.70	1.05	2.10	4.20
Cup, earthenware	Furnishing		0.30	0.45	0.90	1.80

	Class	Com.	Cost at the Source (sc)	Cost at Local Marketplace (sc)	Cost in a Nearby City (sc)	Cost at a Distant City (sc)
Cup, porcelain	Furnishing		0.65	0.98	1.95	3.90
Cup, stoneware	Furnishing		0.55	0.83	1.65	3.30
Cup, tin (soldered)	Furnishing		0.50	0.75	1.50	3.00
Dice, lead, pair	Furnishing		0.50	0.75	1.50	3.00
Drum, wood and skin, 10"dx20"tall	Furnishing		18.00	27.00	54.00	108.00
Fan, feather, hand-held	Furnishing		10.00	15.00	30.00	60.00
Farmland (acre)	Furnishing		500.00			
Fork, tin, 6"	Furnishing		0.40	0.60	1.20	2.40
Glass, clear, drinking, 10 oz.	Furnishing		0.70	1.05	2.10	4.20
Glass, clear, stemware, 6 oz.	Furnishing		2.50	3.75	7.50	15.00
Glass, green, drinking, 10 oz.	Furnishing		0.30	0.45	0.90	1.80
Hour glass, clear glass, wooden housing	Furnishing		15.00	22.50	45.00	90.00
House (small, 2 bedroom)	Furnishing	vc	3,000.00	3,675.00		
House Rental (small, 2 bedroom)	Furnishing	vc	90.00	110.25		
Hunting horn, brass	Furnishing		30.00	45.00	90.00	180.00
Hunting horn, ram's horn	Furnishing		25.00	37.50	75.00	150.00
Ink, dark brown, 1oz	Furnishing		1.00	1.50	3.00	6.00
Knife, steak	Furnishing		2.50	3.75	7.50	15.00
Lamp, brass, oil, w/ glass chimney	Furnishing		5.00	7.50	15.00	30.00
Lamp, hurricane, clear glass, candle	Furnishing		2.00	3.00	6.00	12.00
Lock, iron, simple	Furnishing		6.00	9.00	18.00	36.00
Lock, steel	Furnishing		15.00	22.50	45.00	90.00
Lute	Furnishing		60.00	90.00	180.00	360.00
Lyre, wooden, 8 string	Furnishing		45.00	67.50	135.00	270.00
Mirror, polished steel, 3" d.	Furnishing		1.20	1.80	3.60	7.20
Mirror, silver, 4"d. w/ horn handle	Furnishing		25.00	37.50	75.00	150.00
Mountain horn, wood, 4'	Furnishing		25.00	37.50	75.00	150.00
Pan w/ handle, 12"d., tin	Furnishing		1.00	1.50	3.00	6.00
Pan w/ handle, 12"d., tin, copper bottom	Furnishing		1.40	2.10	4.20	8.40
Pillow, lt. linen (farm), goose feather	Furnishing		4.00	6.00	12.00	24.00
Pitcher, earthenware, 2qt	Furnishing		0.50	0.75	1.50	3.00
Pitcher, earthenware, 2qt., simple decoration	Furnishing		0.75	1.13	2.25	4.50
Pitcher, porcelain, 2qt	Furnishing		1.25	1.88	3.75	7.50
Pitcher, porcelain, 2qt., simple decoration	Furnishing		1.50	2.25	4.50	9.00
Pitcher, stoneware, 2qt	Furnishing		1.00	1.50	3.00	6.00
Pitcher, stoneware, 2qt., simple decoration	Furnishing		1.25	1.88	3.75	7.50
Plate, earthenware, 3.5"d	Furnishing		0.13	0.20	0.39	0.78
Plate, earthenware, 7"d	Furnishing		0.25	0.38	0.75	1.50
Plate, porcelain, 3.5"d	Furnishing		0.30	0.45	0.90	1.80
Plate, porcelain, 7"d	Furnishing		0.60	0.90	1.80	3.60
Plate, stoneware, 3.5"d	Furnishing		0.25	0.38	0.75	1.50
Plate, stoneware, 7"d	Furnishing		0.50	0.75	1.50	3.00
Platter, earthenware, 18"d	Furnishing		1.25	1.88	3.75	7.50
Platter, porcelain, 18"d	Furnishing		3.00	4.50	9.00	18.00
Platter, stoneware, 18"d	Furnishing		2.50	3.75	7.50	15.00
Pot, 1 gal., tin	Furnishing		1.20	1.80	3.60	7.20
Razor, straight, steel	Furnishing		3.30	4.95	9.90	19.80
Recorder, wood	Furnishing		12.00	18.00	36.00	72.00
Rug, bearskin	Furnishing		50.00	75.00	150.00	300.00
Skillet, 12"d., cast iron (8lb.)	Furnishing		11.00	16.50	33.00	66.00
Spoon, tin, 6"	Furnishing		0.30	0.45	0.90	1.80
Spoon, wooden, 10"	Furnishing		0.20	0.30	0.60	1.20
Stein, stoneware, 24oz.	Furnishing		2.00	3.00	6.00	12.00
Table (15"x40"x18"h)	Furnishing		50.00	75.00	150.00	300.00
Table (1'd, one leg)	Furnishing		14.00	21.00	42.00	84.00
Table, dining, oak (8'x3')	Furnishing		115.00	172.50	345.00	690.00
Table, writing, mahogany/rose., ornate (28" wide)	Furnishing		225.00	337.50	675.00	1,350.00

	Class	Com.	Cost at the Source (sc)	Cost at Local Marketplace (sc)	Cost in a Nearby City (sc)	Cost at a Distant City (sc)
Tent, single, canvas, simple, w/poles, stakes&rope	Furnishing		20.00	30.00	60.00	120.00
Toy sword, wooden	Furnishing		2.50	3.75	7.50	15.00
Trumpet, brass, straight, 8'	Furnishing		40.00	60.00	120.00	240.00
Wardrobe (88"x36"x28" deep)	Furnishing		90.00	135.00	270.00	540.00
Cartage, p/barrel, p/day, overland	Service		2.00	3.00		
Fortune telling (half hour)	Service		2.00	3.00		
Handsome cab, half hour	Service		1.00	1.50		
Lodging, common, ave. inn (each)	Service	c	1.50	2.00		
Lodging, common, cheap inn (each)	Service	c	1.00	1.33		
Lodging, double, ave. inn (each)	Service	c	3.50	4.66		
Lodging, double, boarding house (monthly-each)	Service	c	75.00	99.75		
Lodging, double, cheap inn (each)	Service	c	2.50	3.33		
Lodging, quadruple, ave. inn (each)	Service	c	3.00	3.99		
Lodging, quadruple, cheap inn (each)	Service	c	2.00	2.66		
Lodging, single, boarding house (monthly)	Service	c	100.00	133.00		
Lodging, single, religious hostel	Service		2.00	3.00		
Scribe, writing or copying, per hour	Service		2.00	3.00		
Shipping, p/barrel, p/day, sea	Service		1.50	2.25		
Shoeing horse (w/ 4 shoes)	Service		19.00	28.50		
Stabling horse, w/ hay, no grain, per day	Service	c	0.75	1.00		
Travel, coach, p/day	Service		10.00	15.00		
Travel, ship, p/day	Service		12.00	18.00		
Ambergris (ounce)	Substance		45.00	67.50	135.00	270.00
Amethyst, cut (carat)	Substance		25.00	37.50	75.00	150.00
Beeswax (pound)	Substance		0.30	0.45	0.90	1.80
Brick (9"x4½"x3")	Substance		0.06	0.08	0.17	0.33
Bronze (pound)	Substance	c	2.41	3.20	6.40	12.80
Buckskin, tanned (sq. yard)	Substance		4.00	6.00	12.00	24.00
Claw, bear (good condition)	Substance		0.30	0.45	0.90	1.80
Coal, home heating (ton)	Substance		15.00	22.50	45.00	90.00
Coal, smith quality (500 pounds)	Substance		7.00	10.50	21.00	42.00
Copper (pound)	Substance	c	1.20	1.60	3.20	6.40
Cord, hemp, ? " (60#), 50', wt. <1lbs	Substance		8.00	12.00	24.00	48.00
Diamond, cut (2 carat)	Substance		3,500.00	5,250.00	10,500.00	21,000.00
Diamond, cut (carat)	Substance		1,000.00	1,500.00	3,000.00	6,000.00
Diamond, industrial (carat)	Substance		500.00	750.00	1,500.00	3,000.00
Diamond, rough (carat)	Substance		600.00	900.00	1,800.00	3,600.00
Down, goose (pound)	Substance		1.00	1.50	3.00	6.00
Emerald, cut (carat)	Substance		500.00	750.00	1,500.00	3,000.00
Fabric, canvas, soft (sq.yard)	Substance	vc	2.60	3.19	6.37	12.74
Fabric, canvas, strong (sq.yard)	Substance	vc	3.20	3.92	7.84	15.68
Fabric, canvas-light, soft (sq.yard)	Substance	vc	2.10	2.57	5.15	10.29
Fabric, canvas-light, strong (sq.yard)	Substance	vc	2.50	3.06	6.13	12.25
Fabric, cotton, thick (sq.yard)	Substance	c	5.00	6.65	13.30	26.60
Fabric, cotton, thin (sq.yard)	Substance	c	4.00	5.32	10.64	21.28
Fabric, linen, farm (sq.yard)	Substance	c	3.30	4.39	8.78	17.56
Fabric, linen, good (sq.yard)	Substance	c	4.00	5.32	10.64	21.28
Fabric, linen-light, farm (sq.yard)	Substance	c	2.50	3.33	6.65	13.30
Fabric, linen-light, good (sq.yard)	Substance	c	3.00	3.99	7.98	15.96
Fabric, silk (sq.yard)	Substance		33.00	49.50	99.00	198.00
Fabric, silk, gauze (sq.yard)	Substance		24.00	36.00	72.00	144.00
Fabric, velvet, silk (sq. yard)	Substance		100.00	150.00	300.00	600.00
Fabric, wool (sq.yard)	Substance	vc	3.15	3.86	7.72	15.44
Fabric, wool, heavy (sq.yard)	Substance	vc	4.35	5.33	10.66	21.32
Feathers, goose (pound)	Substance		0.15	0.23	0.45	0.90
Firewood (cord)	Substance	vc	10.00	12.25	24.50	49.00
Firewood (per day)	Substance	vc	0.20	0.25	0.49	0.98

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Fleece (pound)	Substance	vc	2.00	2.45	4.90	9.80
Gold (pound)	Substance		106.67	160.00	320.00	640.01
Hide, cow (4 sq. yards)	Substance	c	3.00	3.99	7.98	15.96
Hide, lamb (.75 sq. yards)	Substance		0.90	1.35	2.70	5.40
Horsehide, tanned (sq. yard)	Substance		6.00	9.00	18.00	36.00
Iron (pound)	Substance	vc	0.44	0.53	1.07	2.13
Ivory, white, elephant (pound)	Substance		100.00	150.00	300.00	600.00
Lambskin (sq. yard)	Substance		7.00	10.50	21.00	42.00
Lead (pound)	Substance	vc	0.44	0.53	1.07	2.13
Leather, cow (sq. yard)	Substance	c	5.00	6.65	13.30	26.60
Leather, full hide	Substance	c	20.00	26.60	53.20	106.40
Lumber (200 board feet)	Substance		15.00	22.50	45.00	90.00
Oil, hemp seed (gallon)	Substance		30.00	45.00	90.00	180.00
Oil, linseed (gallon)	Substance		24.00	36.00	72.00	144.00
Oil, whale (gallon)	Substance		1.00	1.50	3.00	6.00
Oil, whale, superior (gallon)	Substance		2.00	3.00	6.00	12.00
Papyrus, 11"x11"	Substance		0.50	0.75	1.50	3.00
Parchment, lambskin, 11"x11"	Substance		1.00	1.50	3.00	6.00
Pearl, baroque	Substance		22.00	33.00	66.00	132.00
Pearl, button (6mm)	Substance		250.00	375.00	750.00	1,500.00
Pearl, round (6mm)	Substance		500.00	750.00	1,500.00	3,000.00
Pearlash (pound)	Substance		4.00	6.00	12.00	24.00
Pelt, beaver	Substance	c	4.50	5.99	11.97	23.94
Pelt, fox	Substance		5.00	7.50	15.00	30.00
Pelt, mink	Substance		0.50	0.75	1.50	3.00
Pelt, rabbit	Substance	vc	0.50	0.61	1.23	2.45
Pigskin (sq. yard)	Substance	c	3.00	3.99	7.98	15.96
Potash (pound)	Substance		1.00	1.50	3.00	6.00
Quill, porcupine	Substance		0.03	0.05	0.09	0.18
Rope, cotton, ? " (150#), 50', wt. 2lbs.	Substance		24.00	36.00	72.00	144.00
Rope, hemp, ? " (250#), 50', wt. 2lbs.	Substance		13.00	19.50	39.00	78.00
Rope, hemp, 1" (1200#), 100', wt. 27lbs.	Substance		225.00	337.50	675.00	1,350.00
Rope, hemp, 1" (1200#), 50', wt. 14lbs.	Substance		90.00	135.00	270.00	540.00
Rope, silk, ¼" (225#), 50', wt. 1lbs.	Substance		30.00	45.00	90.00	180.00
Rope, silk, ? " (500#), 50', wt. 2lbs.	Substance		52.00	78.00	156.00	312.00
Ruby, cut (carat)	Substance		500.00	750.00	1,500.00	3,000.00
Saffron (pound)	Substance		160.00	240.00	480.00	960.00
Sapphire, cut (carat)	Substance		500.00	750.00	1,500.00	3,000.00
Seed, tobacco (oz/4 acres)	Substance		70.00	105.00	210.00	420.00
Shell, pearly (1"d)	Substance		0.03	0.05	0.09	0.18
Shell, pearly (2"d)	Substance		0.10	0.15	0.30	0.60
Shell, pearly (3"d)	Substance		0.30	0.45	0.90	1.80
Shell, pearly (4"d)	Substance		0.70	1.05	2.10	4.20
Silver (pound)	Substance	c	12.03	16.00	32.00	64.00
Soap, hard/cake (pound)	Substance		0.80	1.20	2.40	4.80
Steel (pound)	Substance	c	1.20	1.60	3.20	6.40
Thread, canvas, soft (pound)	Substance		1.40	2.10	4.20	8.40
Thread, canvas, strong (pound)	Substance		2.50	3.75	7.50	15.00
Thread, linen, farm (pound)	Substance		2.50	3.75	7.50	15.00
Thread, linen, good (pound)	Substance		3.50	5.25	10.50	21.00
Tin (pound)	Substance	c	1.20	1.60	3.20	6.40
Tobacco, chewing (pound)	Substance		1.00	1.50	3.00	6.00
Tobacco, smoking (pound)	Substance		1.20	1.80	3.60	7.20
Wax, head, whale (gallon)	Substance		4.00	6.00	12.00	24.00
Wax. bayberry (pound)	Substance		0.25	0.38	0.75	1.50
Yarn, cotton (pound)	Substance	c	8.00	10.64	21.28	42.56
Yarn, wool (pound)	Substance	vc	4.00	4.90	9.80	19.60
Astrolabe, bronze	Tool		60.00	90.00	180.00	360.00
Auger, wood handle, steel head	Tool		15.00	22.50	45.00	90.00

	Class	Com.	Cost at the Source (sc)	Cost at Local Marketplace (sc)	Cost in a Nearby City (sc)	Cost at a Distant City (sc)
Axe, wood handle, steel head	Tool		12.00	18.00	36.00	72.00
Bear trap, steel, sharp jaws	Tool		40.00	60.00	120.00	240.00
Book, parchment w/ leather cover, 24 pages	Tool		30.00	45.00	90.00	180.00
Cage, steel wire, rabbit trap	Tool		16.00	24.00	48.00	96.00
Chalk, 4"	Tool		0.05	0.08	0.15	0.30
Chisel, wood handle, steel head	Tool		3.00	4.50	9.00	18.00
Cleaver	Tool		5.00	7.50	15.00	30.00
Fire starter (flint rock and steel rod)	Tool		0.60	0.90	1.80	3.60
Fishing pole, cane with line and hook	Tool		1.20	1.80	3.60	7.20
Grapnel hook, steel, four hooks	Tool		16.00	24.00	48.00	96.00
Hammer, wood handle, steel head	Tool		5.00	7.50	15.00	30.00
Hatchet, wood handle, steel head	Tool		4.00	6.00	12.00	24.00
Hoe, wood handle, steel head	Tool	c	6.00	7.98	15.96	31.92
Lantern, tin, yellow glass, pt. tank	Tool		7.00	10.50	21.00	42.00
Leash, leather, 12', no metal	Tool		1.00	1.50	3.00	6.00
Lock picks, steel, set of six	Tool		12.00	18.00	36.00	72.00
Magnifying glass, with copper handle (3"d)	Tool		12.00	18.00	36.00	72.00
Mallet, wood	Tool		2.50	3.75	7.50	15.00
Nail, steel, 3"	Tool		1.00	1.50	3.00	6.00
Nail, steel, horseshoe (28)	Tool		2.20	3.30	6.60	13.20
Needle, porcupine quill	Tool		0.05	0.08	0.15	0.30
Pen, goose quill	Tool		0.33	0.50	0.99	1.98
Pick, mining	Tool		20.00	30.00	60.00	120.00
Pitch fork, iron fork, wood shaft	Tool		7.00	10.50	21.00	42.00
Pitch fork, steel fork, wood shaft	Tool		9.00	13.50	27.00	54.00
Pry bar, steel, 15", pry head and claw head	Tool		12.00	18.00	36.00	72.00
Scale, balance, bronze, 3" disks	Tool		30.00	45.00	90.00	180.00
Scissors, wood handles, steel blades	Tool		8.00	12.00	24.00	48.00
Sharpening stone, 3"	Tool	c	0.80	1.06	2.13	4.26
Shears, wood handle, steel blades and spring	Tool		9.00	13.50	27.00	54.00
Shovel, wood handle, steel head	Tool	c	10.00	13.30	26.60	53.20
Sickle, wood handle, steel head	Tool		9.00	13.50	27.00	54.00
Spike, iron, 12"	Tool		1.25	1.88	3.75	7.50
Spyglass, with wooden tubes	Tool		20.00	30.00	60.00	120.00
Stake, tent, wooden, 8"	Tool		0.20	0.30	0.60	1.20
Tack, steel, ¾"	Tool		0.05	0.08	0.15	0.30
Tongs, steel with wood grips	Tool		5.00	7.50	15.00	30.00
Torch, wood, tallow soaked rag	Tool		0.20	0.30	0.60	1.20
Torch, wood, wax soaked rag	Tool		0.40	0.60	1.20	2.40
Trowel, wood handle, steel head	Tool	c	4.50	5.99	11.97	23.94
Arrow, bow	Weapon		1.00	1.50	3.00	6.00
Arrow, great bow	Weapon		1.40	2.10	4.20	8.40
Arrow, long bow	Weapon		1.20	1.80	3.60	7.20
Battle Axe	Weapon		90.00	135.00	270.00	540.00
Bolt, crossbow	Weapon		1.00	1.50	3.00	6.00
Bolt, heavy crossbow	Weapon		1.25	1.88	3.75	7.50
Bowstring, linen or hemp	Weapon	c	0.50	0.67	1.33	2.66
Club	Weapon		5.00	7.50	15.00	30.00
Crossbow, heavy, wood tiller, steel bow, w/lock	Weapon		175.00	262.50	525.00	1,050.00
Crossbow, wood tiller, steel bow	Weapon		75.00	112.50	225.00	450.00
Dagger	Weapon		12.00	18.00	36.00	72.00
Long Bow	Weapon		60.00	90.00	180.00	360.00
Long Sword	Weapon		75.00	112.50	225.00	450.00
Spear	Weapon		20.00	30.00	60.00	120.00
Staff	Weapon		8.00	12.00	24.00	48.00

c=common; vc=very common. Merchants do not mark-up common items as much due to competition. Commonality will likely change from region to region.

Livestock

	Live Weight	Reduction	meat pounds per animal	sc/lb	sc revenue per animal	retail cost of animal	cost to feed
Beef cattle	600	40%	240.00	0.50	120.00	60.00	35.00
Chevon (goat)	40	50%	20.00	0.45	9.00	5.00	2.30
Chicken	4	75%	3.00	0.25	0.75	0.55	0.45
Clams (gross)	8	13%	1.00	0.40	0.40	N/A	N/A
Duck	3.5	71%	2.50	0.25	0.63	0.50	0.30
Fish	1	40%	0.40	0.20	0.08	N/A	N/A
Goose	10	60%	6.00	0.25	1.50	1.20	0.50
Lamb	50	37%	18.50	0.40	7.40	7.00	var
Lobster	1	25%	0.25	0.40	0.10	N/A	N/A
Pork pig	200	40%	80.00	0.25	20.00	10.00	var
Rabbit	4	50%	2.00	0.25	0.50	1.00	0.40
Shrimp	1	50%	0.50	0.16	0.08	N/A	N/A
Turkey	18	67%	12.00	0.25	3.00	2.50	2.00