

The Civclassics Economics Bible

By bgbba of Yoahtl

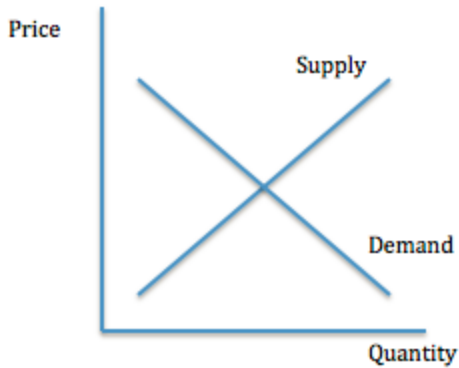
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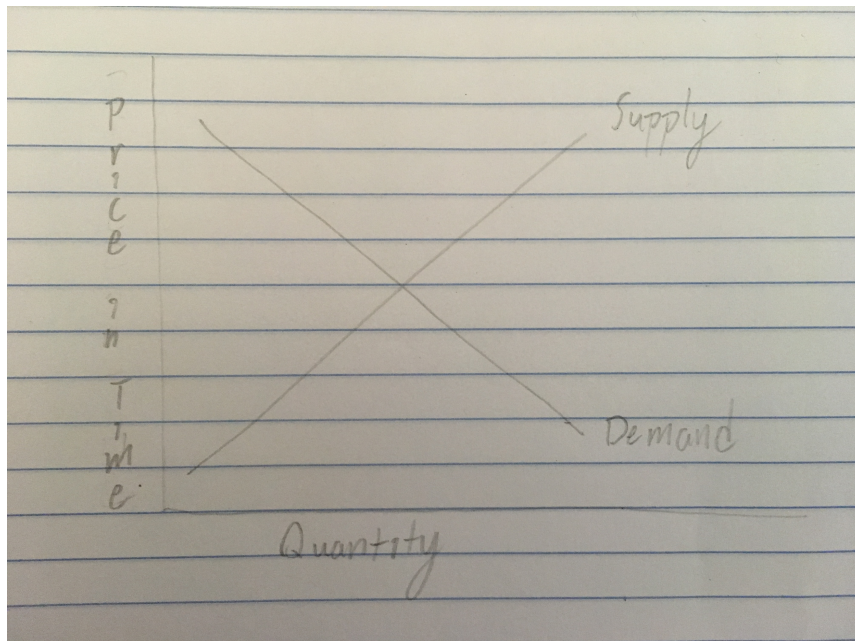
Tl;dr To all the teenagers who won't read through this whole document: If you want to get rich, have your group specialize in specific trade goods that you then sell directly in other people's cities because consumers won't come to you. And build railroads and dig trenches, they make trading with you worth it instead of a hassle. Keep your chin up and don't get discouraged and if you need help just ask somebody who actually knows what they're talking about, so not an ancap. - a guy who actually knows economics

The Basic Economic Model

At its most basic form, the economic model for micro and macroeconomics is this:



However, to keep things short, in civ we aren't limited by differing amounts of money and willingness-to-pay, but rather differing amounts of time and willingness-to-play. **This is the defining feature of civ: Willingness-to-pay is replaced with willingness-to-play.** Occasionally some ancap with a high school level of economics knowledge will try to claim that civ is a post-scarcity environment, and this is false. Civ is in a false-scarcity environment, which is totally different: Resources are effectively infinite, the constraint is playertime. Markets are determined by the constrained resource, which in civ is time, **not** ingame materials. What we really see in civ is this:



Different Types of Goods

| | Excludable | Non-excludable |
|---------------|--|---|
| Rivalrous | Private goods food, clothing, cars, personal electronics | Common goods (Common-pool resources) fish stocks, timber, coal, national health service |
| Non-rivalrous | Club goods cinemas, private parks, satellite television | Public goods free-to-air television, national defense |

Many resources in civ are common goods. Unlike in real life where at some level resources are finite, however, in minecraft many resources are infinite. Wheat farms will always regrow and there are always fish in the sea. Basic resources are never depleted.

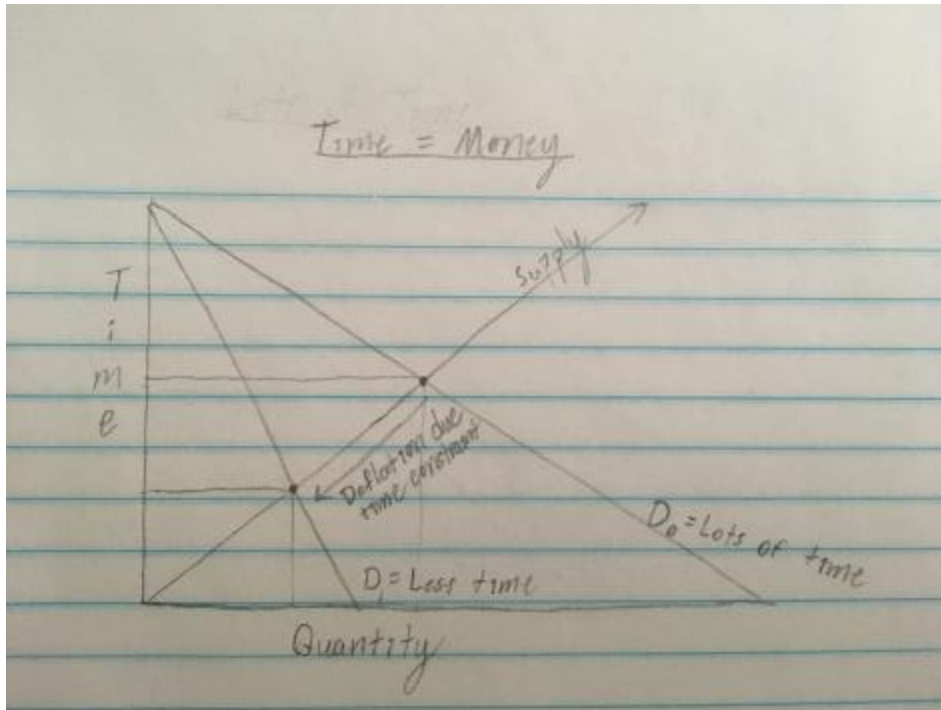
Contrary to this are things like land, which is nearly always run as a club good, with a nation controlling the land but all members of the nation having equal access. This is generally how the economy begins to take shape in civ. Groups exclude others from access to goods, creating club goods, while at the same time the mechanism by which exchanges happen is time, not money.



For a longer explanation on why this is, in real life we all have the same basic amount of time. Sure, there are biological constraints, but there is always 24 hours in a day. Ingame, however, this is not the case. The real constraint is playtime. Whenever an exchange happens ingame, what players are weighing isn't currency like in real life, it's actually willingness-to-play, a measure of how much playtime they are willing to commit. In real life, money is what varies between people, not time. Even if you can't allocate your time to working and thus getting money, the time passes for you at the same rate. Fundamentally, it's a question of allocating utility correctly, but IRL money is utility, whereas ingame fun is utility and playtime is the variable by which we differentiate levels of fun. Therefore, a basic model of civclassic's economy develops.

Basic Civ Server Economic Model

The basic civ economic model substitutes willingness to pay with willingness to play. In short: a measure of how much you are willing to sacrifice to obtain something. So when creating a model for supply and demand in civ, we do it like this:



The player with a demand curve D_1 for any given resource is somebody who has little time to spend on a given task, leading them to demand fewer resources and at a lower time input. The player with a curve D_0 however, has lots of time to spend and so will demand large amounts of resources and be willing to pay a higher price. The slope of the curve approximates what an economist calls 'willingness to pay', however I would define this in civ terms as 'willingness to play'. The steeper the curve, the less willing to play the player is. A player who suddenly has less time to spend would simply shift the curve inwards, rather than rotating it.

The player with a lower willingness to play values resources less because they gain less utility from them. They are unwilling to buy resources at high quantities at all, and the more resources in any given exchange they are less willing to play for them. And after all, this makes natural sense: If you only play 30 minutes a day, why would you be willing to spend large sums of liquid wealth that took you plenty of time to obtain just to get vast quantities of resources you won't

use? Where low time input players will demand resources and be willing to put in high time quantities is when there is a low quantity being offered. This seems counterintuitive, but this applies in real life. Study after study is done showing that poor people IRL will spend way more for small items than richer people will, and this holds true in civ. **Newfriends will pay vast sums for what appears to be a low-value item because a short-term player in the market is a short term thinker in the market.** This is why you see new players willing to grind for diamonds to buy bread by the stack and other things, because they see the short-term trades as having a greater utility than if they had more time to spend.

Personal Experience Note

The players who demand low quantities of items are often the ones least likely to be selling low quantities of items, because those low quantities of items are more valuable to them than a player who is operating at a larger scale. **The ‘fun’ utility per item is lower for long-term players.** New players quickly differentiate themselves into the ones which think short-term and the ones which think long-term and one of the easiest ways to tell the difference is by which ones whine the hardest about economics and prices when they first join rather than first trying to understand the system so that they can maximize their utility. Depending on how you run your town this is very useful information about which players to consider valuable and which ones to consider neutrally or negatively.

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On Specialization  
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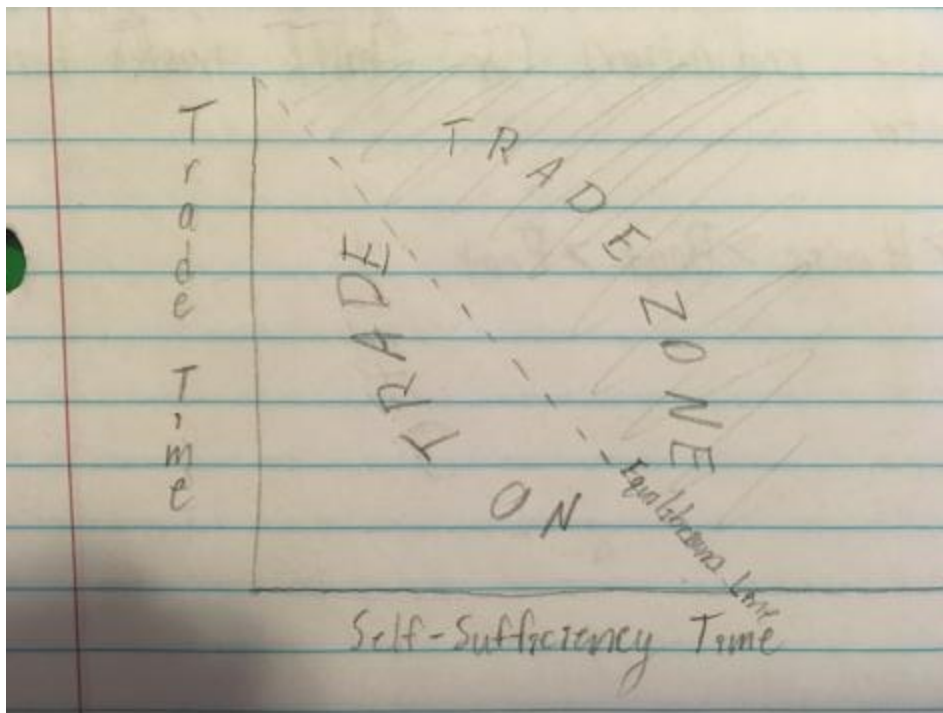
Specialization and the subsequent trading maximizes utility. I could go into why and maybe sometime I will, but this basic principle holds true in civ just like it does IRL because by and large this is a rule of nature. Specialization and exchanges benefit people. Just...remember this one, trust me it's worth it. If you really want to know why this is, it comes down to minimizing capital costs and maximizing time inputs going towards pure production of marketable material as opposed to having to waste time managing a whole bunch of different things. To any newfriends reading this: **Specialization benefits you.** *Trying to play this game like a glorified factions server will only lead you to burnout because you aren't allocating your time efficiently.*

Capital costs aren't always apparent. There is a ton of meta-knowledge on civ and remember, time = money in civ. Whenever something would take money in real life, think of it as taking time in civ. For instance, education. In real life, education is hideously expensive. This is true in civ also, with an added externality to the cost of it being "this isn't actually all that fun to learn". In civ, meta knowledge is king. This big old bgpost is a form of it and if you read the entire

thing, I'm impressed. *So remember, a lot of people will tell you that the only capital cost worth noting is the factory materials, but these people are ancaps and as we've established we shouldn't listen to these people. It's all about time inputs, materials are more-or-less irrelevant because you will always be able to get those if you invest enough time.*

Trade

This is where we get into the meat and potatoes of civ economics. The same models apply for individuals and nations but for simplicity I will just use models for an individual. I'll talk about the macro-scale things in a bit.



First, we need to be introduced to Trade Time and Self-Sufficiency Time. In this case, I am substituting the word cost for time, because again cost = time in civ.

The Equations

Self-Sufficiency Time (ST) = Time to obtain resources + amortized capital cost + opportunity cost + externalities

Trade Time (TT) = Travel time + supplier negotiation and search time + time to obtain liquidity + opportunity cost + externalities

Trade Axioms: $TT \geq ST$: Trade doesn't occur; $TT \leq ST$: Trade occurs

The Factors Within The Equations

Self Sufficiency

- Time to Obtain: Mostly characterized by gathering time, plus a little time for traveling to get to the location of the resource. This can be minimized in a few ways, such as locating population centers near critical resources, recruiting players to have a larger workforce, setting up exchanges to buy resources off of players at a slightly lower price than the market price, and other having more efficient gathering mechanisms such as semi-automatic farms and hopper systems.
- Amortized Capital: The cost of creating the infrastructure to obtain resources, such as farms and railroads, spread out over the total usage period of that infrastructure. In civ, this is usually quite low but for newfriends it can be a significant cost. Remember as I said above, newfriends often don't have much time to play and so the barrier of having to invest a lot of time up front when they aren't sure how much time they'll be using the infrastructure can be prohibitive to self-sufficiency for large scale production.
- Opportunity Cost: For every action taken there are others not taken. It's possible that being self-sufficient in something isn't the most efficient use of time. Would you spend half an hour mining enough diamonds to buy what you need or an hour getting it yourself? Would you spend two days soliciting buyers to sell things to at a high price or a few hours selling things at a lower price? This tradeoff is opportunity cost.
- Externalities: The long-term factors absent from the short-term only in the present analysis. Would you trade with somebody who might become a potential rival or enemy knowing it would fund them? Is there a risk you'll be killed and lose the items somehow? Safe cities and fortified areas lower the risk of externalities, but they are always present and often personal and unique to the group you are playing with.

Three Types of Trade in Civ

1. **Unique items:** Written books, dragon egg, prison pearls (this is a controversial one because of slavery implications but it does apply). This is remarkably simple to understand. In this case, ST will always be greater than TT because the cost to obtain it yourself is infinite, since you can't obtain it yourself. Worth noting is that this doesn't always apply when scaled up to a national level, since books for instance can be copied and as such can be considered club goods: The pool is infinite but only specific players have access. But people will travel to libraries to obtain these goods for their nation initially. IRL, copying books carries penalties or pays royalties to the author specifically because of this problem, in game this doesn't happen. A good addition to the printing press would be something to remedy this.
2. **Advanced production items:** Bastions, obby, enchanted gear, and most importantly XP. In this case, the capital cost of these goods is enormous and the quantities demanded so relatively small that amortized out it doesn't make sense for a nation to produce them unless there is an externality (ie, an embargo or security issues with foreign affairs). The ST of these materials is remarkably high, especially given the diverse inputs, much greater usually than the time to mine some diamonds and travel to whoever is selling them. (This is where Devoted failed disastrously, since most trade networks begin around obtaining XP and on Devoted the ST of obtaining XP was essentially 0 beyond a small initial investment.)
3. **Bulk raw materials:** Farmed goods, basic mined materials. Remember, for trade to occur $TT < ST$. Generally in civ this means production on enormous scale for international trade, but often internal trade sees bulk goods flow at smaller volumes, which I will explain later. Also remember what I noted earlier: *Newfriends value small quantities of goods more highly. They will travel for cheap, mass produced goods at smaller volumes than more established players.*

Personal Experience Note

While I will detail later the ways towns can improve their trade networks, I can say this: railroads are king in civ. This is because they minimize travel cost and travel cost increases exponentially due to the increasing danger of long-distance travel and the fact that many players have IRL time constraints that prevent long distance journeys. A railroad can, however, be AFK'd and so railroads are how trade occurs over truly long distance. The first infrastructure

investment a new town should be making, before even mid-tier factories, should be a railroad if they want to try to trade with others with any frequency. Any nation with a safe, extensive railroad network is going to automatically have a very low TT in any circumstance, so if you want trade build rails. On that subject...

Infrastructure and Investments

If you want to lower TT, you have to invest in infrastructure. Infrastructure can also lower ST as well, but you develop differently for that. Remember: a self-sufficient nation wants to minimize ST. A truly machiavellian leader would do well to actually isolate their nation from outside connections specifically to force TT as high as possible simply to maintain political control over the nation and keep prices artificially high so that they can sell production to bring in even more wealth while still providing goods to their internal market. Kovio and HanTzu had secret railroads throughout Chanada specifically for this purpose in 2.0.

Railroads are king because they minimize travel cost. However, there is a maximum carrying capacity of a railroad and anything above that you're going to want mules and donkeys because of their chests which add more space, whereas if you had a rail you'd have to double back. Generally, however, trade maxes out at inventories worth of compacted stacks, anything above that is rare to see if it ever even occurs due to the sheer scale involved.

Compactors enable higher trade volumes and so can make bulk trades worth doing. So it constitutes a critical infrastructure component, especially if placed near railroads. Always remember, a compactor is a club good by nature: If you want to maximize the benefits of infrastructure you have to restrict it to your friends or charge an entry fee.

Having a network of suppliers and reaching out to others on discord is a good way to minimize the time cost of finding a supplier of goods and negotiating prices.

This also goes for people supplying goods. On both sides of a trade, you want to minimize TT.

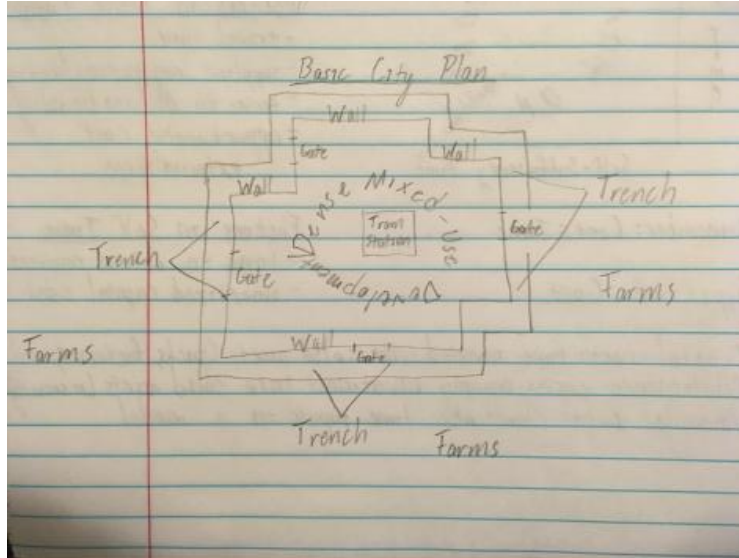
Of Density and Malls

City planning can help jump-start economies. A lot of people are going to really dislike what is about to be said, but it has to be said.

Malls don't work. Grid cities don't work. Ancap cities don't work. These three staples of civ are the harbingers of stagnation and economic failure.

Remember, minimize TT for trade to occur, even with people in your own nation. A dense, active city minimizes supplier negotiation and so minimizes the time input it takes to actually find things. Cities with giant boulevards that take 5 minutes to cross where each building is a giant blocky rectangle fail to minimize travel cost and negotiation cost. Activity builds on itself, always keep this in mind. You have to always remember that simple fact: activity begets activity. Dead, empty, inactive? Tear it out instantly. Destroy it. Rip it out. I know it hurts, but it absolutely has to happen for a functioning economy. The higher the standards for shop maintenance and player activity, the more trade your city will see.

Mixed-use areas are key as well. Having a central marketplace does work, but it isn't as efficient as having mixed use development. Players rarely forget to maintain a shop that is on the first floor of their house and if they do then you aren't wasting space on an inactive spot for days or weeks until that player fixes their shop. Remember, having a central marketplace is **never** more efficient than having mixed-use plots for players who live within your city because every supplier is also a customer. Having a shopping district leads to dead-zones in your city, always.



Security

Dense development also aids security cost. Dense cities require much lower time inputs to build defenses for, and similarly they require much lower meta-knowledge to defend in a PvP situation unless having a laggy convoluted continent-sized mess is your security defense like MtA in 2.0.

Remember: dense = safe. Basic defenses require very little capital cost if any: Yoahltl dug its trench system in a matter of days with iron picks because we were so poor, we just had a lot of players. And even then, a significant portion of the trench was being dug around a neighborhood of the city which at the time had a grand total of one semi-active resident. Any newfriend settlement can build basic defenses if they are dense and prioritize them.

Dense cities also tend to concentrate people into areas which can be trapped or snitched up to monitor players. A dense city is one in which a thief can't easily escape being found out. Yoahltl has never had a theft go unnoticed, because we are so dense that there is no area not covered by snitches. Yet we've hardly invested in snitches at all, since we needed fewer of them.

Currency

One of the most underestimated costs of trade time is liquidity. What I mean by this is the process by which players obtain liquid wealth. In civ, trade is done in diamonds and iron. No exceptions. This is just how it is, probably by convention. Any other system actually makes the cost of obtaining liquid wealth larger and so will inevitably fail because it strangles small item trade. (Remember, ST for small amounts of basic materials is amazingly low, a difference of five-ten minutes to go to the ATM for paper currency or finding somebody to get paid in paper currency is the difference between buying a stack of bread or harvesting it yourself.)

As I've said above, never listen to an ancap because they don't understand what they are talking about. Every ancap or wannabe central banker rubbing their hands at the thought of manipulating interest rates doesn't realize that the time it would take for players to use their currency is greater than the time it would take for the player to just do the thing themselves or mine diamonds and use those as currency. Diamonds are used as currency because they are the best option for trade. Universally useful, perfectly liquid, without need of government guarantees, and absolutely no danger of people hoarding them doing damage to the economy by taking money out of circulation. (This applies IRL as well, fiat currency skills. Paper money requires constant circulation to work, because otherwise the lack of valid currency will lead to demand shocks in which people don't have liquid wealth, which in turn puts people out of business, which leads to rampant unemployment, and the economy goes to shit. This is one of the many disasters which occurred in the late 1830's in the US as a result of Andrew Jackson restricting the currency supply to try to kill the central bank. Just food for thought.)

Banks do work (Wingzero54 proved this), but the capital moving in the economy going towards investments is too low and in-game currency is a poor substitute for actual time. What would work very well would be some form of 'labor bank', in which the bank is basically a work team that will assist with capital costs (remember, time is the valuable resource and input cost) and in return you repay your debt to them by helping with other capital projects for other players. This would require extensive organization but it could be done.

On a similar note, one could make wealth even more liquid by creating some sort of meta-game debit accounts where you can pay people wirelessly. Food for thought.

Opportunity Cost and Externalities

Opportunity cost is simple: instead of doing what you are, could you be doing something better? This is why, incidentally, why there is a market for iron: It's more efficient to mine for diamonds and then buy iron with them than it is to mass mine iron. Always.

Generally speaking, opportunity cost enters into the equation when dealing with highly concentrated resources. Diamond mining, for instance, are usually the best use of your time at any given point in time because it maximizes your total asset growth per hour. Farming and botting does a similar thing, except that the opportunity cost of running a bot is zero (which is why they are so economy-breaking, because they bring the cost of self-sufficiency to something nearing zero for all non-unique items).

Externalities are entirely different. A good example of an externality is reciprocity leading to friendly relations: by trading now, you reduce the future cost of trading because you minimize the time spent negotiating with a supplier. By establishing trust, you create a positive externality which drives down the cost of trading.

Fun is the biggest externality. Sometimes we just straight up hate to do something and will pay to avoid it. This is going to be the spiciest statement in this entire bpost: Autists do very well on civ servers because grinding isn't miserable for them at the same level. Fun can be viewed as reducing the cost of something (quite literally, time flies when you're having fun), or adding to the cost when it's not there (again, time doesn't fly). This rarely enters into trade for rare or unique items, but it does enter into it for small items, for instance the example of the newfriend paying for a stack of bread. Replanting farms just simply isn't fun, which increases ST. And for low amounts of cheap items, TT and ST are very, very close in value. A small increase in the value of ST due to self-sufficiency not being enjoyable can easily tip the scales. I, for one, nearly never harvest farms because I hate replanting with a passion, so I single handedly keep the market for bread going in Yoahltl at times, using iron I get from a fun activity, making rails, to pay for it.

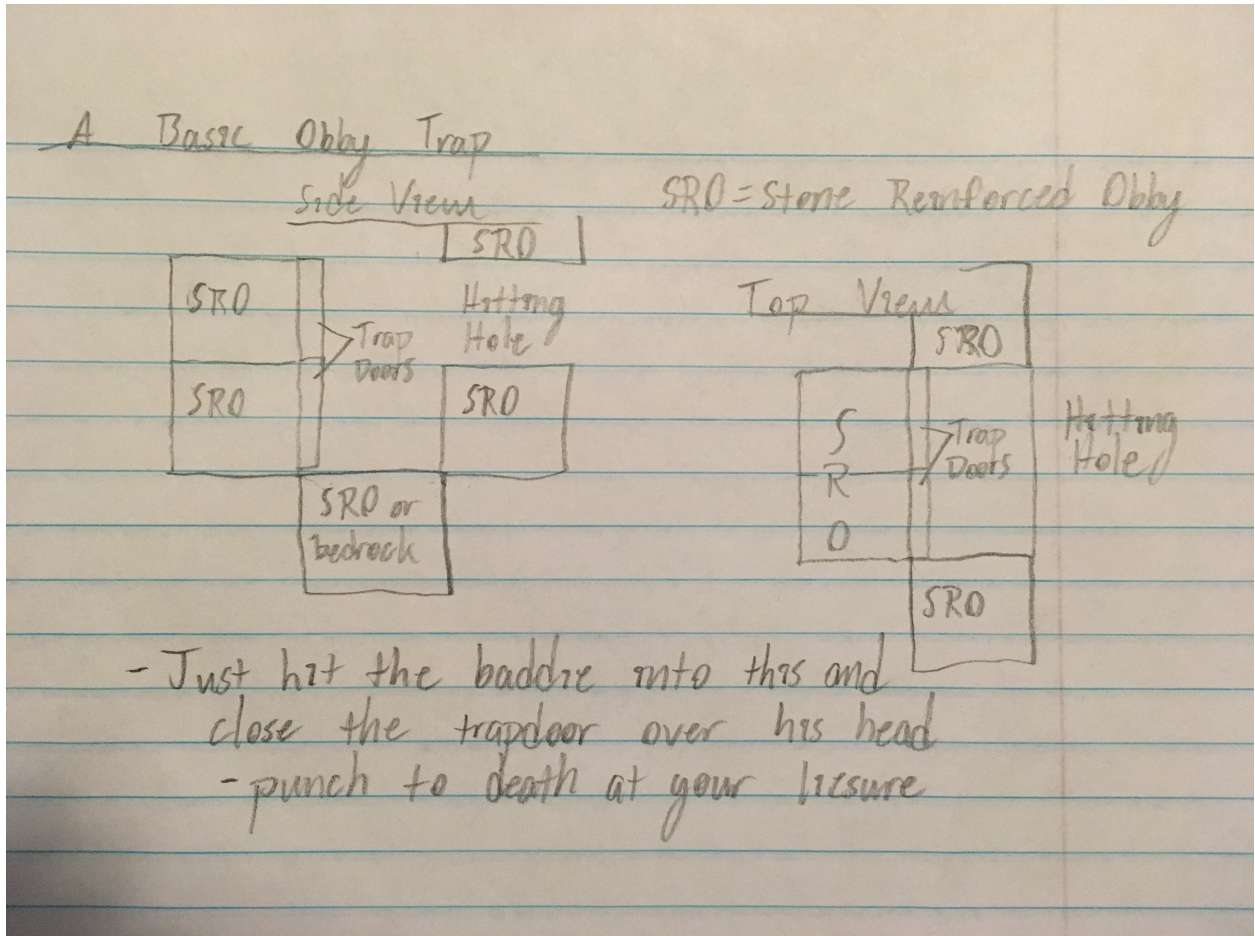
Personal Experience Note

It is often the case that the positive externalities of trading overwhelm all otherwise superior benefits of self-sufficiency. Trading with a major power which will guarantee security or act as a supplier in the future of other advanced goods is often critical for a new town. If given the opportunity to form positive relationships with other major powers, one should always strive to do so at any opportunity since the benefits will almost certainly outweigh the costs. This is negated, however, by choosing the wrong friends, which can lead to you getting targeted.

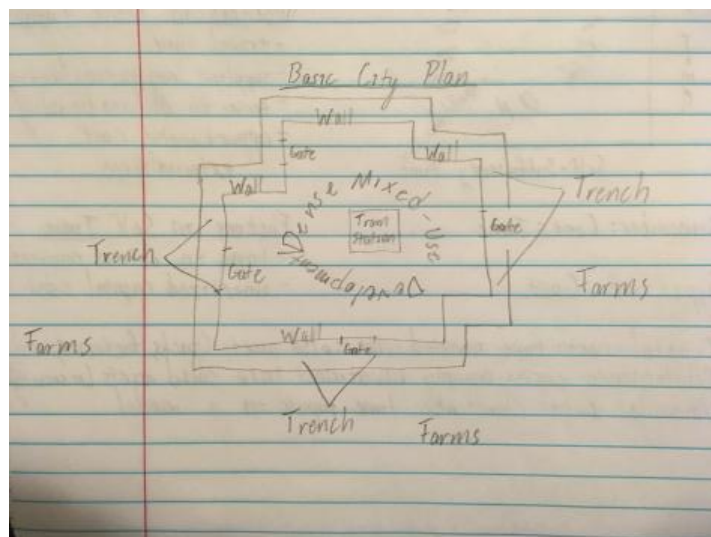
Practical Pages

Starting a New Town, City, or Nation

- Choose a bulk production good to specialize in. You will need to build up before you can afford to invest in advanced factories.
- Good infrastructure and a good trade network can beat a factory for overall efficiency until a certain point
- Your nation is a club good. Giving access to outsiders means you're dooming your own economy unless you are being given something very special in return (power of friendship counts, if you want it to). Remember, your nation is a club, consider what people you think should be let into the club.
- People will rarely travel for bulk goods and only if the cost of obtaining it themselves is higher than the cost of traveling to you to get it. With this in mind, it's easier to sell things to people if you have a shop set up in their city than it is for you to get them to come to you, which for powerful players might incur a very significant security cost. (Lest we all become Kazeprr and get taken out in horrific train accidents on trapped rails.)
- Security is paramount, especially for and from other newfriends. An escort mission sucks, but the cost of sending the one guy with decent armor and name recognition with somebody doing a trade deal is much, much lower than having to try to get one of your players freed from somebody who pearled them without knowing who they are or recovering from being killed by a raider. Remember, fortune favors the prepared. One dude in junk prot is enough to scare off most petty raiders or avoid stupid memers who can accidentally kill you by tossing potions at you or other bullshit.
- Trenches, canals, and basic stone reinforced walls can be built by even the newest of players, but they can trap or kill somebody in full prot just as effectively as if they were made by somebody who's been playing the server since day one. Anybody can dig a trench, don't assume that defense is exclusively for competent PvPers (except if you're playing devoted because of the bullshit defense balancing based around everybody being a top-tier vault lord, lol nice one Shaded).



Above: A basic trap. Below: A basic city designed around security and economic efficiency.



City Revival Guide

- Focus on the most active areas owned by active players
- Completely ignore anybody who just contributes in the metagame. Period. If they don't log in regularly to help revive the city, you should at the very least ignore them. Having brought cities back from the dead, the best way to deal with them is to straight up remove them from all metagame platforms entirely until they start logging in again. It's necessary.
- Focus on salvaging what infrastructure you have, namely rails. Make sure your railroad network is the first thing you fix up, up to and including salvaging rails going to dead outposts in order to maintain active trade routes. Recycling is easier than building new.
- Sort out your namelayer groups. If you can, obtain as many as you can and merge them into each other, kicking all the inactive players as you go and promoting the active, trusted ones to have bypass access. This alone saves you hours worth of bullshit having to look through who has access to what.
- If you can still produce XP and reactivate the infrastructure for that, do so and start selling XP to other nations for a boost of liquid wealth. By this point you should have your active trade rails and networks of players in friendly cities aware that you are back in town, so contact them and set up chests selling XP in their towns. If necessary, sell XP at below market value to ensure that you are getting liquid wealth.
- Once you have basic production and infrastructure online, begin the process of derelicting the dead weight. Anything unused or inactive, tear it down and seize the assets. Sometimes these players will come back at a later date and start whining about their stuff. Ignore them. If they genuinely cared about the town, they'd have at least stayed active enough to watch their stuff or notify you in the metagame that they were only temporarily absent. A player who builds a house and then quits after two weeks, only to reappear every dereliction, isn't a valuable asset, they are a toxic asset dragging the town down and they need to be purged like a weed from a garden. Remember: a city is a garden and the players are its inhabitants. Grab that bottle of weed killer and go to town on these players, they are a plague of the genre and contribute nothing.